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 so forths.

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.
<table>
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<tr>
<th>RECEIVERS</th>
<th>Cost</th>
<th>RMS, watts ch 8 ohms</th>
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<th>Mid-Frequency Control</th>
<th>Tape-to-Tape Dubbing</th>
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</tr>
</tbody>
</table>

*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 $89 - 960 about $109 - 980 about $159 - 1000 about $199 - 1020 about $279. Model 980 shown. ©1976 British Industries Co. A Division of Avnet Inc.
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1977 EDITION
THE COVER:
1. Dual CS 721 Turntable
2. Accoust-Mount Turntable Isolation System
3. Avid Model 103 Speaker
4. Lux MB-3645 Mono Power Amplifier
5. Sansui LM 110 Speakers
6. Stax SRX/SOR Headphones/Power Module
7. Crown IC-156A Preamplifier
8. Sony from Superscope Elcasset
9. JVC JR-S600 AM-FM Stereo Receiver
10. Zerostat Anti-Static Record Cleaner
11. Yamaha 800 Cassette Deck
12. Technics 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

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

Look at these benefits:

TREMENDOUS SAVINGS on every record and tape in print—no "agree-to-purchase" obligations of any kind.

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.

SCHWANN CATALOG lists thousands of titles; classical, pop, jazz, ballet, opera, musical shows, folk, rock, vocal, instrumental, country.

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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.

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SCHWANN CATALOG lists thousands of titles; classical, pop, jazz, ballet, opera, musical shows, folk, rock, vocal, instrumental, country.

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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.

100% IRON-CLAD GUARANTEES on all products and services. Everything is guaranteed factory fresh and free of defects or damages of any sort. Your total satisfaction is unconditionally guaranteed.

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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Department 29-1076
650 Main St., New Rochelle, N.Y. 10801

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See left for product identification.

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Editorial and Executive Offices
One Park Avenue, New York, New York 10016

Midwestern Office
The Pattis Group, 4761 West Touhy Ave.
Lincolnwood, Illinois 60641, 312-975-1100
Midwestern Adv. Manager, Arnold F. Hoffman

Western Office
9025 Wilshire Boulevard, Beverly Hills, Cal. 90211
213-273-8050, BRadshaw 2-1161
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582-2851

1977 STEREO DIRECTORY & BUYING GUIDE...
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.


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.

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
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 – 2/3 to 1 ½ grams
(Specification given using 1 gram VTF)
Separation – 20 db 20 Hz to 500 Hz
                         30 db 500 Hz to 15K Hz
                         35 db 15K Hz to 20K Hz
I.M. Distortion – (RCA 12-5-105) less than 0.8%
Stylus – 0.2 x 0.7 mil diamond
Effective Tip Mass – 0.2 mg
Compliance – lateral 30 X 10^-6 cm/dyne
                       vertical 30 X 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 ¾ db @ 1 kHz
Tracking Angle – 20°
Recommended Load – 17 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

For a free "How to Get the Most Out of Your Records" brochure write: Empire Scientific Corp., Garden City, N.Y. 11530.
CIRCLE NO. 21 ON READER SERVICE CARD

INTRODUCING

EMPIRE
2000Z
SUPER STEREO CARTRIDGE
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.

25% 40% 35%
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.

**APPORTIONING 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, $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.

$150 or so for a separate FM/AM tuner, $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.

Quadraphonic systems necessarily cost more than stereo systems of equal quality. In Fig. 3 we have represented a typical quadraphonic 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 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.

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.

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<th>Medium Price</th>
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<td>Over $350</td>
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<td>up to $200</td>
<td>$200-400</td>
<td>Over $400</td>
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<td>up to $250</td>
<td>$250-500</td>
<td>Over $500</td>
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</tr>
</tbody>
</table>

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**

<table>
<thead>
<tr>
<th><strong>TUNER (OR TUNER SECTION OF RECEIVER)</strong></th>
<th><strong>LOW PRICE</strong></th>
<th><strong>MEDIUM PRICE</strong></th>
<th><strong>HIGH PRICE</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>IHF Sensitivity, µV (dBf)</td>
<td>3.0 (14.7)</td>
<td>2.0 (11.2)</td>
<td>1.8 (10.3)</td>
</tr>
<tr>
<td>(mono)</td>
<td>or lower</td>
<td>or lower</td>
<td>or lower</td>
</tr>
<tr>
<td>50 dB quieting sensitivity, µV (dBf), mono/stereo</td>
<td>10(25.2)/50(39.1)</td>
<td>5(19.2)/40(37.2)</td>
<td>3(14.7)/30(34.7)</td>
</tr>
<tr>
<td>S/N (dB); mono; stereo</td>
<td>60/50</td>
<td>68/60</td>
<td>70/65</td>
</tr>
<tr>
<td>Selectivity (dB)</td>
<td>50 or more</td>
<td>60 or more</td>
<td>80 or more</td>
</tr>
<tr>
<td>Capture Ratio (dB)</td>
<td>3.0 or less</td>
<td>2.0 or less</td>
<td>1.3 or less</td>
</tr>
<tr>
<td>THD (%) (1 kHz, mono/stereo)</td>
<td>1.0/1.5 or less</td>
<td>0.5/0.8 or less</td>
<td>0.2/0.3 or less</td>
</tr>
<tr>
<td>Stereo Separation (dB, 1 kHz)</td>
<td>30 or more</td>
<td>35 or more</td>
<td>40 or more</td>
</tr>
<tr>
<td>AM Suppression</td>
<td>40 or more</td>
<td>50 or more</td>
<td>60 or more</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>AMPLIFIER (OR RECEIVER AMP SECTION)</strong></th>
<th><strong>LOW PRICE</strong></th>
<th><strong>MEDIUM PRICE</strong></th>
<th><strong>HIGH PRICE</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Power Out/Channel (Continuous watts)</td>
<td>10-30</td>
<td>30-100</td>
<td>over 100</td>
</tr>
<tr>
<td>Rated THD (at full output) (%)</td>
<td>1.0 or less</td>
<td>0.5 or less</td>
<td>0.2 or less</td>
</tr>
<tr>
<td>Rated IM Distortion (%)</td>
<td>1.0 or less</td>
<td>0.5 or less</td>
<td>0.2 or less</td>
</tr>
<tr>
<td>Damping factor</td>
<td>10 or more</td>
<td>30 or more</td>
<td>50 or more</td>
</tr>
<tr>
<td>Phono Hum (dB below 10 mV input)</td>
<td>60 or more</td>
<td>65 or more</td>
<td>70 or more</td>
</tr>
<tr>
<td>Aux Hum (below rated output)</td>
<td>70 or more</td>
<td>75 or more</td>
<td>80 or more</td>
</tr>
</tbody>
</table>

| **TURNTABLE SYSTEMS**                   |               |                 |               |
| Wow and Flutter (%)                    | 0.15 or less  | 0.10 or less    | 0.05 or less  |
| Rumble (dB, per 12in B)                | 55 or more    | 60 or more      | 70 or more    |

| **CASSETTE DECKS**                     |               |                 |               |
| Frequency Response (Hz +3dB)            | 50-12,000     | 30-15,000       | 20-18,000     |
| Wow and Flutter (%)                    | 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  |
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 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.

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.
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 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.
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 impedance, 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 sterec 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 periods (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 amplifier 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 new 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.

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

<table>
<thead>
<tr>
<th>SPEAKER POWER RATINGS</th>
<th>4-OHM SPEAKER</th>
<th>8-OHM SPEAKER</th>
</tr>
</thead>
<tbody>
<tr>
<td>25</td>
<td>2.5</td>
<td>2.0</td>
</tr>
<tr>
<td>50</td>
<td>3 - 3.5</td>
<td>2.5</td>
</tr>
<tr>
<td>75</td>
<td>4 - 4.5</td>
<td>3.0</td>
</tr>
<tr>
<td>100</td>
<td>5</td>
<td>3.5</td>
</tr>
<tr>
<td>150</td>
<td>6</td>
<td>4 - 4.5</td>
</tr>
<tr>
<td>200</td>
<td>8</td>
<td>5.0</td>
</tr>
</tbody>
</table>

---

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

ACCUPHASE, Tec Corp of America
10 American Dr. Norwood, Mass 02062

ACOUSTIC-ARCHITECTS, Inc.
3 Cole Place, Danbury, Conn 06810

ACOUSTIC CORPORATION
400 S Wyman St

ACOUSTIC GERMANY
15713 E 31st St

ACOUSTIC SYSTEMS, INC.
PO Box 711, Wheeling, Ill 60090

ACOUSTIC-TECH, INC.
Box 207, Proctorsville Vt 05153

ACOUSTIC-WAVE, Inc.
Development Ltd

ACOUSTIC-OF-HI-FI
4522 N Milpas Street, Santa Barbara, Cal 93105

ACOUSTICON CORPORATION
2615 Sand, New York, N Y 10019

ACOUSTIC RESEARCH, INC.
1036 W 44th, Indianapolis, Ind 46208

ACOUSTIC PHASE
2240 S. Manchester Blvd, Lawndale, Cal 90260

ACOUSTICAL STUFF
10525 SW 5th Ave, Beaverton, Ore, 97005

ACOUSTIC SYSTEMS
525 N Central Ave, Kent, Wash 98031

ACOUSTICURE CORPORATION
P.O. Box 360, Del Mar, Calif 92014

ACOUSTIC DESIGN LTD
Box 207, Proctorsville Vt 05153

ACOUSTIC PRODUCTS
25 Aberdeen Dr, Huntington, N Y 11743

ACOUSTIC-RESEARCH, INC.
61, 113

ACOUSTIC PRODUCTS
345 Fischer Street, Costa Mesa, Calif 92626

ACOUSTIC RESEARCH, INC.
741 Washington Street, New York, N Y 10014

ACOUSTIC RESEARCH, INC.
1055 Stewart Ave Garden City, N Y 11530

ACOUSTIC PHASE
114

ACOUSTIC SURFACES
7733 Telegraph Rd, Montebello, Cal 90640

ACOUSTIC TESTING CORPORATION
195 Arthur Dr, Bedford, Mass 01730

ACOUSTIC TESTING CORPORATION
392 N Milpas Street, Santa Barbara, Cal 93101

ACOUSTIC VISION
2101 N Woodwork Lane, Paraline, Ill 60067

ACOUSTIC VISION
350 Fifth Ave, New York, N Y 10001

ACOUSTIC VOICE PRODUCTS
1055 Stewart Ave, Garden City, N Y 11530

ACOUSTIC VOICE PRODUCTS
277 W. Madison St., Chicago, Ill 60610

ACOUSTIC WEAVE INC.
1250 N. Milwaukee Ave., Chicago, Ill 60622

ACOUSTIC WAVE
305 3rd Ave., New York, N Y 10001

ACOUSTIC WAVE
15713 E 31st St

ACOUSTIC WAVE
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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 the owner 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 low-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 when intercepting 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 sensitivities of the human ear at the frequency extremes. Many loudness compensation circuits are excessively effective 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 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 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 level at 75 dB (above 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 unusual, 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 ±0 Hz to 20,000 Hz ± 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 usually expressed in 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 drive its rated output voltage, which in turn should be sufficient to drive the power amplifier to its rated power. A related specification is the phonograph overload level. Although most phono preamplifiers require only a millivolt or two to reproduce recorded peaks, the designer is responsible for distortion to be generated if they cannot cope with the very high peak voltages generated when playing some heavily recorded discs. A phonograph 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 through the entire 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 input level of the phono preamplifier, as a signal-to-noise ratio (S/N) or input referred volts of noise (dB). The noise level is usually specified by the manufacturer, 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. A phono balance control matches the program levels on the two channels.

Four-channel, or quadraphonic, amplifiers are essentially 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, or 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 comes down to 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.

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 individual listener. 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 standard dBf, or dB re 10^-15W, femtowatt. This is abbreviated to dBf, and the relationship between the dBf ratings and the former microvolt ratings is shown in the accompanying graph.

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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 ratings between 15 and 20 dB in mono, and about 35 dB in stereo. This Is the input power that achieves 50 dB quieting sensitivity ratings between 15 and 20 dB in mono, and about 35 dB in stereo. This Is the input power that achieves 50 dB quieting sensitivity ratings between 15 and 20 dB in mono, and about 35 dB in stereo. This Is the input power that achieves 50 dB quieting sensitivity ratings between 15 and 20 dB in mono, and about 35 dB in stereo. This Is the input power that achieves 50 dB quieting sensitivity ratings between 15 and 20 dB in mono, and about 35 dB in stereo. This Is the input power that achieves 50 dB quieting sensitivity ratings between 15 and 20 dB in mono, and about 35 dB in stereo. This Is the input power that achieves 50 dB quieting sensitivity ratings between 15 and 20 dB in mono, and about 35 dB in stereo. This Is the input power that achieves 50 dB quieting sensitivity ratings between 15 and 20 dB in mono, and about 35 dB in stereo. This Is the input power that achieves 50 dB quieting sensitivity ratings between 15 and 20 dB in mono, and about 35 dB in stereo. This Is the input power that achieves 50 dB quieting sensitivity ratings between 15 and 20 dB in mono, and about 35 dB in stereo. This Is the input power that achieves 50 dB quieting sensitivity ratings between 15 and 20 dB in mono, and about 35 dB in stereo. This Is the input power that achieves 50 dB quieting sensitivity ratings between 15 and 20 dB in mono, and about 35 dB in stereo. This Is the input power that achieves 50 dB quieting sensitivity ratings between 15 and 20 dB in mono, and about 35 dB in stereo. This Is the input power that achieves 50 dB quieting sensitivity ratings between 15 and 20 dB in mono, and about 35 dB in stereo. This Is the input power that achieves 50 dB quieting sensitivity ratings between 15 and 20 dB in mono, and about 35 dB in stereo. This Is the input power that achieves 50 dB quieting sensitivity ratings between 15 and 20 dB in mono, and about 35 dB in stereo. This Is the input power that achieves 50 dB quieting sensitivity ratings between 15 and 20 dB in mono, and about 35 dB in stereo. This Is the input power that achieves 50 dB quieting sensitivity ratings between 15 and 20 dB in mono, and about 35 dB in stereo. This Is the input power that achieves 50 dB quieting sensitivity ratings between 15 and 20 dB in mono, and about 35 dB in stereo. This Is the input power that achieves 50 dB quieting sensitivity ratings between 15 and 20 dB in mono, and about 35 dB in stereo. This Is the input power that achieves 50 dB quieting sensitivity ratings between 15 and 20 dB in mono, and about 35 dB in stereo. This Is the input power that achieves 50 dB quieting sensitivity ratings between 15 and 20 dB in mono, and about 35 dB in stereo. This Is the input power that achieves 50 dB quieting sensitivity ratings between 15 and 20 dB in mono, and about 35 dB in stereo. This Is the input power that achieves 50 dB quieting sensitivity ratings between 15 and 20 dB in mono, and about 35 dB in stereo. This Is the input power that achieves 50 dB quieting sensitivity ratings between 15 and 20 dB in mono, and about 35 dB in stereo. This Is the input power that achieves 50 dB quieting sensitivity ratings between 15 and 20 dB in mono, and about 35 dB in stereo. This Is the input power that achieves 50 dB quieting sensitivity ratings between 15 and 20 dB in mono, and about 35 dB in stereo. This Is the input power that achieves 50 dB quieting sensitivity ratings between 15 and 20 dB in mono, and about 35 dB in stereo. This Is the input power that achieves 50 dB quieting sensitivity ratings between 15 and 20 dB in mono, and about 35 dB in stereo. This Is the input power that achieves 50 dB quieting sensitivity ratings between 15 and 20 dB in mono, and about 35 dB in stereo. This Is the input power that achieves 50 dB quieting sensitivity ratings between 15 and 20 dB in mono, and about 35 dB in stereo. This Is the input power that achieves 50 dB quieting sensitivity ratings between 15 and 20 dB in mono, and about 35 dB in stereo. This Is the input power that achieves 50 dB quieting sensitivity ratings between 15 and 20 dB in mono, and about 35 dB in stereo.

The only four-channel FM broadcasts at present use one of the matrix systems (SQ or DS), 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.

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.

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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 Wch into 4 ohms, 75 W into 16 ohms); response 20-20,000 Hz +0.2 dB, -0.2 dB; 5-90,000 kHz +0 dB, -3 dB; hum & noise 100 dB below rated output. 6" H x 17" W x 14" D.
  - Input: 0.1% THD. 50 kHz, 100 kHz, 1 MHz. 
  - Output: 0.05% THD at full output at 100 W rms/ch. Input: 0.1% THD, 50 kHz, 100 kHz, 1 MHz. 
  - Frequency response 20-20,000 Hz ±0.5 dB (5-100,000 Hz). Hum & noise 85 dB below 0.5 V input; output voltage 15,000 ohm load; output load 15,000 ohms min. 
  - Master power, tape-monitor, selector, phono, stereo/mono; input: RIAA phono, FM, Aux. 1, Aux. 2. 
  - Product code: $850.00.

- **C-200 Stereo Preamplifier**
  - Response (high-level input) 20-20,000 Hz +0 dB, -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; aux. 200 mV; has high- & low-cut filters; built-in headphone amplifier, tape monitor/copy facilities; mike inputs on front panel. 6" H x 18" W x 14" D.
  - Product code: $700.00.

- **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 8 ohms); hum & noise 100 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 1/4" H.
  - Product code: $240.25.

**ACOUSTIQUE 3a**

- **Alphans 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 as; separate power supply per channel; 19" x 12" x 6".
  - Product code: $1099.00.

**Arpege 300 Stereo Preamp**

- Stereo preamp; 1.5 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 tuning switch; 19" x 12" x 6".
  - Product code: $1099.00.

**AUDIO INTERNATIONAL**

- **CM912a Stereo Power Amplifier**
  - 100 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 (SMPIE 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, 220, or 240 V, 50/60 Hz (internally adjustable); bronze anodized aluminum finish, 19" (rack mount) x 17 1/2" D (15 1/2" behind panel) x 5 7/8" H.
  - Product code: $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 (SMPIE 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 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 1/2" H.
  - Product code: $399.00.
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; 5 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; separate phono inputs, two tape recorder inputs.

PZ3-II Stereo Power Amp

100 W rms/ch (20-20,000 Hz) into 8 ohms with both channels driven against 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; 17½ V (rack mount) x 17" D (15½" behind panel) x 5½ H ... $449.00

AUDIONICS

PZ3-HP. Same as above but with input level controls and peak-reading VU meters ... $529.00

SP-7 1 Stereo Preamp

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 & controls, 15½ x 5½ x 12½ D ... $795.00

D150 Basic Power Amp

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 1½ W x 16½ D ... $2685.00

D76A. Similar to D150 except 75 Wch at 1.0 THD; IM dist. 0.5% at rated power. 19" (rack mount) x 7" x 12½ D ... $1195.00

BGW

1000 Stereo Power Amplifier

250 Wch continuous power into 8 ohms with

booth channels driven (500 Wch into 4 ohms; 750 Wch 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 Wch. 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" x 17" D ... $1499.00

500D Stereo Power Amplifier

200 Wch 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 million Hz ±3.72 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 frequencies 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" x 12" D ... $879.00

4X250 Four-Channel Amplifier

Provides complete 4-channel and matrix capability. Features four independent channels of preamplification; low-noise phono preamp circuit, 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 13½ D ... $599.00

SQ matrix decoder with full logic ... $74.95

BOZAK

929 Audio Power Amplifier

150 Wch 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 µf 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. [safety 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, etc —20dB Audio filtering are controlled by convenient front panel switches.

**Operational Flexibility:** The HP 2000 can accommodate two turntables [ Phon 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 ["On" position 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.

**SHERWOOD**

Everything you hear is true.

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

two power meters, matte black front panel; walnut veneer enclosure optional extra. 7" H x 17" 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 173/4" W x 103/8" D. $797.00

949 Integrated Amplifier
Preamp section same as 909, power amp section same as 939; preamp output/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 ±0.2 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

990 Preamplifier
Features plug-in circuits; all-silicon circuitry; active filter; switchable tape outputs: flat or equalized; inputs: phono #1 & #2, tuner, aux.; separate bass, mid-range, and treble controls for each channel; drive circuitry; brushed aluminum finish with blackout display panel. 19" W (rack mount) x 8" H x 11½" D. $1200.00

A-1800M Stereo Power Amplifier
225 W rms/ch into 8 ohms with both channels driven (350 Wch into 4 ohms); all other specifications identical to A-3000. $700.00

CROWN INTERNATIONAL

DC-300A Power Amplifier
155 Wch minimum rms (both channels operating) into 8 ohm load (1-20,000 Hz) at rated HD. 0.5% response d.c.—20,000 Hz ±0.1 dB at 1 W; IM 0.05% at rated output; sensitivity: 0.9 V at ±2% at rated output. 7½" H x 19" W x 9½" D. $799.00

D-150A Power Amplifier
80 Wch 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: 1.7 V ±2% at rated output. 7½" H x 19" W x 9½" D. $550.00

D-60 Power Amplifier
32 Wch minimum rms (both channels operating) into 8 ohms load (20-20,000 Hz) at rated harmonic dist. of 0.05%; response 20-20,000 Hz ±0.1 dB at 1 W; IM 0.05% at rated output; sensitivity: 0.75 V ±2% at rated output with front-panel adjustments; stereo headphone output. 14½" H x 17" W x 8½" D. $489.00

IC-150A Preamplifier
IM 0.002% at rated output with IHF load; THD 0.0003% 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 µV; 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 (8½" behind panel); x 5½" H. $399.00

Dreadnaught 1000 Power Amp
250 W continuous power/ch into 8 ohms with both channels driven from 20-20,000 Hz at

IC-150A Preamplifier
IM 0.002% at rated output with IHF load; THD 0.0003% 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 µV; 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 (8½" behind panel); x 5½" 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, (high level) 100 pF, high level 3000 pF, 1000 ohms; controls: selector, balance, volume, low cut, high cut, tape monitor (includes "mute" position); requires separate regulated power supply; 8½" x 3⅞" x 7½". $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); 6⅛" x 3¼" x 4½". $75.00

DB-3. Solid walnut case for DB-1. $29.95

DB-4 Pre-Pream
Low-distortion pre-pream 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

0.25% distortion; 500 Wch into 4 ohms; input sensitivity 1.75 V rms for full output; output imp. 100,000 ohms; hum & noise 100 ohms 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-pot. meter-range switching. Features professional

STEREO DIRECTORY & BUYING GUIDE

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.
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 3/4" H x 12" D.
Genuine bulk-veneer cabinet $40.00

Stereo 200 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 pre-conditioning. Frequency response (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 V for rated output. 4V. 19" W x 7" H x 12" D.
Genuine walnut-veneer cabinet $1250.00

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 40 -1 dB at 1 W into 8 ohms; inputs: phono jacks; outputs: color-coded 3-way binding posts with standard 3/8" spacing; comes with walnut veneer end panels. 19" W x 15" H x 7" D.
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 1/2" H.
Kit $425.00
Assembled $459.00

Stereo 400 Power Amplifier
200 W/ch continuous power at 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 1/2" x 6 1/4" 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. 4V. 19" W x 7" H x 12" D.
Uncased rack mount $1500.00

SCA-80Q Stereo Power Amplifier
Combines a two-channel amplifier (Model 80) with Quadaptor decoding circuitry for recovering 4-channel information from 2 channels.

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 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

CIRCLE NO. 19 ON READER SERVICE CARD
Stereo 70 Power Amplifier
Vacuum-tube stereo amplifier. 20 W/ch continuous power output at 4, 8, or 16 ohms from 60-20,000 Hz. THD 0.05% at rated output. Sensitivity: 1.3 V for rated output. 6/3" H x 9 3/4" W x 9 7/8" 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 preconditioning. IM 0.1% at rated output. Sensitivity: 1.2 V for rated output. 4 1/8" H x 13 1/2" W x 9" D. ... Kit $149.00

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: map: 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, 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 compliment of controls. 13 3/8" W x 4 1/8" H x 11 1/2" D. ... Kit $239.00

PAS-3X Preamplifier
Vacuum-tube preamp with loudness compensation, independent tone controls, a stereo blend, control, and tape monitoring facilities. 4 1/8" H x 13 1/8" 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, independent tone controls, front panel input & output. 600 ohm output. 4 1/8" H x 13 1/8" W x 9" D. ... Kit $139.00

QSA-300 4-Ch Power Amplifier
75 W continuous power into 8 ohms (20-20,000 Hz) at 0.25% both channels driven, with FTC preconditioning; circuitry d.c.-coupled after input; fully complementary output stage. MC-3 output meter accessory kit available. Supplied with walnut veneer end panels. 18 1/8" x 15 1/8" x 8 3/4" H. ... $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, 10,000,000 Hz ±0.5 dB, 10-180,000 Hz ±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 1/8" W x 12 3/8" D x 7 3/4" H (19" rack mount kit available). ... $649.00

ESS
Eclipse 500 Power Amplifier
250 W rms continuous power with both channels driven into an 8-ohm load at 0.25% THD from 1/2 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 7/4" H. ... $998.00

1004A. Fan package conversion of 500A. 500 W continuous power, both channels driven, into 4-ohm load at 0.25% THD from 19" W x 15 1/2" D x 7 1/4" 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 amplifier/preamp separation; direct-coupled complementary push-pull main amp stages; features switchable hi/lo filters & audio muting; loudness contour control; clickstop volume, bass & treble controls (2-dB steps); dual phono & tape inputs; 5-position mode switch; 5(pos.) function selector; dual phono inputs; bi-directional tape dubbing; 16 1/8" W x 13 1/8" D x 5 3/4" H. ... $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; 5-pos. program selector; front-mounted headphone jack. ... $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 amplifiers; 13 1/8" W x 11 1/4" 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 0.06% 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. 1000 ohms; one RCA-type input terminal RCA-type output terminal; 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, 9 1/4" H x 19" W x 14" D complete with metal cage. ... $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 (6 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.

LUX Audio of America, Ltd.
200 Aerial Way, Syosset, New York 11791
In Canada: White Electronics Development Corp., Ontario
### Amplifiers

- **Citation 11 Stereo Preamp**
  - Response 1-250,000 Hz ±0.5 dB. HD & IM less than 0.1%. 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 ±0.1 dB; damping factor 30; multi-speaker operation; connections include walnut-stained veneer end panels. 3¼" H x 12¼" W x 12" D. Kit $109.95

- **HEAT**
  - 1-channel, 2-channel, 4-channel, & multi-channel power amplifiers with various features and specifications.

- **HITACHI HA-1100 Integrated Stereo Amplifier**
  - 100 W/channel 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 ±0.5 dB (phonos), ±1 dB (aux); OCL pure complementary circuit, 15 W/channel min.; frequency response 10-70,000 Hz ±1 dB, HD & IM dist. ±0.2% (aux), ±0.02% (phonos); input sensitivity: phono #1 2 mV/50 k, phono #2 1.6 mV/65 k, tuner, aux, tape 100 mV/100 k, main input 1.0 V/70 k; input level: tape 100 mV/1 k, tape (DIN) 30 mV/80 k; preamp output -1 dB, 5-100,000 Hz -3 dB; DM 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'/" H x 18" D. (kit) $439.95

- **HITACHI AA-2005A Four-Channel Amplifier**
  - 15 W/ch min. rms into 8 ohms at 0.5% THD from 20-20,000 Hz; frequency response 7-50,000 Hz ±1 dB at 1 W, 5-70,000 Hz ±3 dB, IM 0.5% with 15 W output, 0.25% at 1 W output. Has built-in decoder optimized for SQ systems 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. 4¼" H x 10" D. Walnut-stained veneer end panels. Kit $139.95

- **HITACHI AA-1670 Stereo Power Amplifier**
  - 40 W rms/ch into 8 ohms (20-20,000 Hz) at 0.2% THD; frequency response 20-20,000 Hz; response 10-70,000 Hz ±0.5 dB, 1-230,000 Hz ±1 dB; negative-feedback tone controls; -20 dB audio muting; headphone; main input 1.0 V/70 k; min. load imp. 10 k; power output 7 V into 10 k; d.c. 160 V min./240 V; 19" W x 15" H x 10" D. (kit) $179.95

- **HITACHI AA-1505 Stereo Power Amplifier**
  - 40 W rms/ch into 8 ohms (20-20,000 Hz) at 0.1% THD; frequency response 20-20,000 Hz; response 10-70,000 Hz ±0.5 dB, IM 0.05% with 15 W output, 0.03% at 1 W output; power bandwidth 6-50,000 Hz; frequency response 6-60,000 Hz ±0.5 dB (phonos), ±1 dB (aux); OCL pure complementary circuit, 15 W/channel min.; frequency response 10-70,000 Hz ±1 dB, HD & IM dist. ±0.2% (aux), ±0.02% (phonos); input sensitivity: phono #1 2 mV/50 k, phono #2 1.6 mV/65 k, tuner, aux, tape 100 mV/100 k, main input 1.0 V/70 k; input level: tape 100 mV/1 k, tape (DIN) 30 mV/80 k; preamp output -1 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, 100 k/330); 100, 0.05%; tuner, aux, tape play 180 mV (50 k); output level: tape rec. 180 mV, DIN rec 30 mV, S/N 65 dB (phonos), 85 dB (aux); 85 dB (tape play); inputs: phono #1 & 2, tuner, aux & tape play #1 & 2; outputs: tape rec. #1 & 2, speaker #1 & 2, headphone, pre out; indepen- dent tape dubbing, tone defeat & loudness, subsonic/high filters; -20 dB audio muting; negative-feedback tone controls; 10½" W x 15½" D x 6½" H. $399.95

- **KEYBOARD VK-1000F Power Amplifier**
  - 500 W rms/ch into 8 ohms (20-20,000 Hz) at 0.1% THD; frequency response 10-70,000 Hz +0, -1 dB; direct-coupled pure complementary OCL power circuit; preamp section: input sensitivity 2.5 mV (47 k), tuner, aux, tape play 160 mV (50 k); output level 160 mV (tape rec.); S/N 65 dB phonos, 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/ phonos aux selector; phones jack, 15½" W x 13½" D x 5½" H. $249.95

- **JVC VN-5101 4-Channel Power Amplifier**
  - 40 W rms/ch into 8 ohms (20-20,000 Hz) at 0.2% THD; frequency response 20-50,000 Hz; response 10-70,000 Hz ±0, -1 dB; direct-coupled pure complementary OCL power circuit; preamp section: input sensitivity 2.5 mV (47 k), tuner, aux, tape play 160 mV (50 k); output level 160 mV (tape rec.); S/N 65 dB phonos, 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/phonos aux selector; phones jack, 15½" W x 13½" D x 5½" H. $399.95

- **JVC JD-S101 Integrated Stereo Amplifier**
  - 150 W rms/ch into 8 ohms (20-20,000 Hz) at 0.05% THD; frequency response 20-20,000 Hz; response 10-70,000 Hz ±0, -1 dB; direct-coupled pure complementary OCL power circuit; preamp section: input sensitivity 2.5 mV (47 k), tuner, aux, tape play 160 mV (50 k); output level 160 mV (tape rec.); S/N 65 dB phonos, 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/phonos aux selector; phones jack, 15½" W x 13½" D x 5½" H. $399.95

- **KENWOOD K700 MA Power Amplifier**
  - 170 W rms/ch into 8 ohms (20-20,000 Hz) at 0.05% THD; frequency response 20-20,000 Hz; response 10-70,000 Hz ±0, -1 dB; direct-coupled pure complementary OCL power circuit; preamp section: input sensitivity 2.5 mV (47 k), tuner, aux, tape play 160 mV (50 k); output level 160 mV (tape rec.); S/N 65 dB phonos, 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/phonos aux selector; phones jack, 15½" W x 13½" D x 5½" H. $129.95
0.1% THD; S/N 120 db (IHF); input sensitivity/impedance 1 V/50,000 ohms; damping factor 40 at 8 ohms; impedance 4-16 ohms; response 20-20,000 Hz at 0 dB, -0.4 dB, subsonic filter 12 dB/octave at 18 Hz. Features direct-coupled amplifier with output stage powered by dual positive/negative supply; three Darlington stages/ch; relay-activated protective 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. 17"x x 7½" x 14½"h... $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; 4-pos. 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 speakers/system; 500. Same as 600 except 100 W rms/ch. 22"x x 7½" x 14½"d. $599.95

LA-1050 Integrated Stereo Amplifier
22 W rms/ch with both channels driven at 8 ohms (20-20,000 Hz) at 0.5% THD; hum & noise; tuner, aux. 1, aux. 2 -75 dB; phono -65 dB; features concentric bass & treble tone controls; master left/right balance & volume; inputs for phono, tuner, two aux. sources; switched & unswitched outputs on rear panel; front-panel tape output, stereo headphone jack; walnut-finished wood end panels, brushed aluminum front panel. 13"x x 3½" x 9½"d... $149.95

LA-475 Integrated Stereo Amplifier
10 W rms/ch with both channels driven at 8 ohms (40-20,000 Hz) at 0.25% THD; hum & noise: aux. & tuner -75 dB, ceramic phono -55 dB, magnetic phono -60 dB; features bass, treble, left-right balance controls plus master volume control; stereo/mono, high filter, and loudness pushbuttons; speaker selector; front-panel stereo headphone jack; inputs and outputs for adding stereo tape deck; walnut-finished wood end panels, brushed aluminum front panel. 12¼"x x 4¼"x x 10½"d... $99.95

4-CHANNEL LA-84 4-Channel Amplifier
Features full-logic wave-matching plus vari-blend SQ decoder and complete circuitry for 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, 4- & 4-ch tape play 500 mV; hum & noise: aux. -75 dB, phono -60 dB, tape-play -80 dB, tuner -75 dB; channel separation 65 dB, 15½"W x 4½"H x 12½"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 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. 17½"x x 5¼" W x 11¼" D... $649.95

LAFAYETTE
2100 Integrated Amplifier
Solid-state integrated stereo amplifier. 35 WCh 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 individual monitoring facilities. 16.3" W x 12.5" D x 5.3" H... $495.00

LUXMAN
M-600 Stereo Power Amplifier
300 Whc min. continuous power output in 8-ohm loads from 20-20,000 Hz at 0.05% THD; rated IM 0.05% (at 8 ohms, 300 Wch, 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 110 W/ch into 8 ohms from 20-20,000 Hz; crosstalk -70 dB at 20,000 Hz; features VU meters; peak output power LED indicator; input level setter; quadrapole protection circuitry; safety switch: remote controllable power on-off switch; 22½"x W x 8½"H x 16½"D. $2995.00

M-4000. Similar to M-600 except 180 WCh continuous power output over 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. 19½" W x 6½"H x 15½" D... $1495.00

M-2000. Similar to M-600 except 120 WCh; input sensitivity 1.5; residual hum & noise =100 db; VU meter for power indication... $995.00

L-100 Integrated Stereo Amplifier
110 WCh 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 WCh 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...
...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 µV); selectivity better than 60 dB (at 400 kHz). TU 9900: sensitivity, 8.8 dBf (1.5 µV); 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.

Buy Sansui.
Amplifiers

Hz -1 dB; input sensitivity: phono #1 & #2 2.5 V, tuner, aux #1 & #2 200 mV; input imp. 50k; S/N 62 dB phone, 84 dB tuner, aux.; NF tone control with six roll off points: 150, 300, 600, 1500, 3000, 6000 Hz; has high & low filters, loudness & low-bust circuit, attenuator, linear equalizer, tape dubbing circuit, tape monitor circuit, input level setter for tuner; 177V x 12W x 6", 695.00

M-1500 Stereo Power Amplifier
75 Wch ionic power output into 8 ohms with both channels driven at 1.03% HD or IM; features ground-swinging relay, subsonic filter; rolling off below 30 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 20-40,000 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; 14.5" x 9/" x 7/"; 699.95

L-80V Integrated Stereo Amplifier
80 Wch ionic power output 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 V, 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 & loudness switch, tape monitor circuit, tape dubbing switch, tape connector (DIN), mode selector switch, speaker selector switch, headphone jack, a.c. outlet (1 switched); 177V x 111/4" x 6/4" x 14/"; $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 impedances; facilities for switching two pairs of speakers; headphone operation; 133/4" x 9/" x 5/"; $499.95

CL35/11 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 phone, 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; wood cabinet with silver smoked front panel; 19/" x 11" x 7/"; $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 midrange; 100-000 ohms in three steps; negative-feed back 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

510 Power Amplifier
256 W/ch continuous power into 8 ohms with both channels driven (20-20,000 Hz ±0.1 dB; IM & THD 0.1% at rated output; hum & noise -110 dB; input sensitivity: 2 V for rated output; inputs: 25,000 V rms at 20 kHz; two tape decks; 15/4" x 14/" x 9/"; $499.95

1150 Integrated Amplifier
75 Wch 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, midrange, high & low filters, tape monitor circuitry for two decks, 15/4" x 14/" x 9/"; $397.95

11500. Same except includes Dolby noise-reduction circuitry. $499.95

1060 Integrated Amplifier
30 Wch rms at 8 ohms. Power bandwidth 15-40,000 Hz, response 15-40,000 Hz ±2 dB; HD & IM 0.5% at rated output; hum & noise -67 dB at phono input. Sensitivity: mag. phono 1.8 mV; aux. 180 mV; tuner 180 V. Has high-cut & low-cut filter, loudness compensation switch, damped 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/" x 14/" x 12/"; $239.95

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

1030 Integrated Amplifier
15 Wch rms at 8 ohms. Power bandwidth 15-40,000 Hz; response 20-40,000 Hz ±2 dB; HD & IM 0.5% at rated output; hum & noise -64 dB at phono input. Sensitivity: mag. phono 1.8 mV; aux. 180 mV. Has high-cut filter, loudness compensation switch, stepped tone controls, multiple speaker switching, headphone output, tape monitoring facilities, and mike input on front panel. Damping factor 50. 4/" x 14/" x 12/"; $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 ±0.25 dB; THD 0.1% at rated output; output level 3 V; impedance 150 ohms. $499.95

3800. Same as Model 3600 except includes Dolby noise-reduction circuit; tape EQ switch. $599.95

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

4-CHANNEL

1140 4-Channel Integrated Amplifier
Has complete 2- or 4-channel capability, 25 Wch continuous power into 8 ohms and at 0.3% THD with all four channels driven (70 Wch 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; 15/4" x 5/4" x 14/" 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 S.O. decoder, and remote-control. 15 Wch continuous power with all channels operating, 35 Wch 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, channel headphone jacks, 14 3/4" x 4 3/4" x 12" D. $389.95

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 rearchannel 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. $299.95

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

FET-5 MK II Stereo Preamplifier
Major rebuild of Dyna-PAT-5 preamp; distortion off scale (less than 0.003%) on H-R 3580A analyzer. Features use of four 8-ohm speakers in parallel per channel for total of 8 speakers; 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. $100.00

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%, 0.006% at 1 kHz; 0.008% at 2 kHz, 0.004% at 8 kHz, 0.002% at 20 kHz; frequency response 5-100,000 Hz ±0.5 dB; S/N 117 dB (IHF-A); features Class-B operation with "teta-linear differential amplifier" circuitry; combines preamp & power transistor protection; peak indicating lamps with selectable "on" points; 15 3/4" W x 9 1/2" D x 6 1/8" H. $600.00

PHASE LINEAR
700B Power Amplifier
345 W rms/ch into 8 ohms (20-20,000 Hz) at 0.25% THD. Response 0.05-300 MHz at 1 W with direct-coupled inputs. HD 0.25% (typical), THD 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

400 Power Amplifier
201 W rms/ch into 8 ohms (20-20,000 Hz) at 0.25% THD. Response 0.025 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 1/4" W x 7" D x 10 1/2" H. $499.00

4000 Stereo Preamplifier
Features single-pass noise-reduction and dynamic-range-recovery systems capable of increasing dynamic range and reducing noise from records, tapes and FM without pre-emphasis. 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 unlim threshold control. Has two monitor switches permitting any input source to be recorded on either of two tape machines, play back selection of any input source to be recorded on either of two tape machines, play back selection of any input source to be recorded on either of two tape machines, play back selection of any input source to be recorded on either of two tape machines, play back selection of any input source to be recorded on either of two tape machines, play back selection of any input source to be recorded on either of two tape machines, play back selection of any input source to be recorded on either of two tape machines, play back selection of any input source to be recorded on either of two tape machines, play back selection of any input source to be recorded on either of two tape machines, play back selection of any input source to be recorded on either of two tape machines, play back selection of any input source to be recorded on either of two tape machines, play back selection of any input source to be recorded on either of two tape machines, play back selection of any input source to be recorded on either of two tape machines, play back selection of any input source to be recorded on either of two tape machines, play back selection of any input source to be recorded on either of two tape machines, play back selection of any input source to be recorded on either of two tape machines, play back selection of any input source to be recorded on either of two tape machines, play back selection of any input source to be recorded on either of two tape machines, play back selection of any input source to be recorded on either of two tape machines, play back selection of any input source to be recorded on either of two tape machines, play back selection of any input source to be recorded on either of two tape machines, play back selection of any input source to be recorded on either of two tape machines, play back selection of any input source to be recorded on either of two tape machines, play back selection of any input source to be recorded on either of two tape machines, play back selection of any input source to be recorded on either of two tape machines, play back selection of any input source to be recorded on either of two tape machines, play back selection of any input source to be recorded on either of two tape machines, play back selection of any input source to be recorded on either of two tape machines, play back selection of any input source to be recorded on either of two tape machines, play back selection of any input source to be recorded on either of two tape machines, play back selection of any input source to be recorded on either of two tape machines, play back selection of any input source to be recorded on either of two tape machines, play back selection of any input source to be recorded on either of two tape machines, play back selection of any input source to be recorded on either of two tape machines, play back selection of any input source to be recorded on either of two tape machines, play back selection of any input source to be recorded on either of two tape machines, play back selection of any input source to be recorded on either of two tape machines, play back selection of any input source to be recorded on either of two tape machines, play back selection of any input source to be recorded on either of two tape machines, play back selection of any input source to be recorded on either of two tape machines, play back selection of any input source to be recorded on either of two tape machines, play back selection of any input source to be recorded on either of two tape machines, play back selection of any input source to be recorded on either of two tape machines, play back selection of any input source to be recorded on either of two tape machines, play back selection of any input source to be recorded on either of two tape machines, play back selection of any input source to be recorded on either of two tape machines, play back selection of any input source to be recorded on either of two tape machines, play back selection of any input source to be recorded on either of two tape machines, play back selection of any input source to be recorded on either of two tape machines, play back selection of any input source to be recorded on either of two tape machines, play back selection of any input source to be recorded on either of two tape machines, play back selection of any input source to be recorded on either of two tape machines, play back selection of any input source to be recorded on either of two tape machines, play back selection of any input source to be recorded on either of two tape machines, play back selection of any input source to be recorded on either of two tape machi...
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 and preamps accessible by removing rear-panel jumpers, dual-concentric bass & treble controls; 5-position input selector (two mono, one stereo); push-button 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; remote controls and inputs/outputs; cabinet included; walnut veneer wood enclosure.

PIONEER

SPEC-2 Stereo Power Amplifier
25 W rms/ch into 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 1/4" W x 6 1/4" H x 13 3/4" 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: phone #1, #2 2.5 mV, microphone 6-24 mV/85,000 ohms; tuner, aux. #1, #2, tape PB #1, #2 150 mV/50,000 ohms; frequency response: phone (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 1/2" W x 6 3/4" H x 15 1/4" D .... $750.00

SPEC-1 Stereo Preamplifier
Input sensitivity/impedance: phone #1, #2 2.5 mV, microphone 6-24 mV/85,000 ohms; tuner, aux. #1, #2, tape PB #1, #2 150 mV/100,000 ohms; THD 0.05% (20-20,000 Hz) at 2 W 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 amp. selector. 18 1/4" W x 6 1/4" H x 16 1/4" 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: phone #1, #2 2.5 mV, microphone 6-24 mV/85,000 ohms; tuner, aux. #1, tape PB #1, #2 150 mV, 50,000 ohms; frequency response: phone (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 tone controls, filters, mixing facilities, level control and input amp. selector. 18 1/4" W x 6 1/4" H x 16 1/4" D .... $500.00

SA-8500. Similar to SA-7500 except 60 W rms/ch at 0.1% THD; response: tuner, aux., tape PB 7-50,000 Hz ±0 dB; walnut case optional extra .... $300.00

SA-9500. Similar to SA-8500 except 80 W rms/ch at 0.1% THD 16 1/4" W x 6 1/4" H x 15 1/4" D .... $400.00

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 1/4" D x 5 1/4" 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/7 k; high-level input 100 mV/100 k; preamp output 1.0 V/1 k; walnut veneer cabinet, polymeric grille; 19 1/4" W x 14 1/4" D x 6 1/4" H .... $399.95

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 20-70,000 Hz ±2 dB at 1 W; S/N 60 dB (phono), 75 dB (aux); phono sensitivity 3 mV; phono overload capability 160 mV; tuner, aux. two mag. phono, two aux; cabinet included, walnut veneer, two stereo speakers; headphone output on front panel.

RADIO SHACK

SAE-9900 Integrated Stereo Amp
110 W rms/ch 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-D 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 1/2" W x 17" D x 7 1/2" H ... $780.00

SA-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 1/4" 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 1/4" W x 9 1/4" D x 4 1/4" H .... $200.00

SAE-312 Integrated Amplifier
18 W rms/ch continuous power into 8 ohms (20-20,000 Hz) at 1% THD; low & high filters; loudness control; two phono inputs for magnetic & crystal cartridge inputs; has full complement of inputs/outputs and controls, cabinet included; 15 1/4" W x 9 1/4" D x 4 1/4" 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

STEREO DIRECTORY & BUYING GUIDE
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-pole tuning cap., Dual MOSFET front-end, Linear Phase IF filters with 7 stage limiter and PLL MPX, IHF Sens.-1.6uV, Stereo Sens.-85dB-30uV, mono THD-less than 0.1%, 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-110mV ref.-75dB, Aux. S/N-95dB.

**2200 STEREO POWER AMPLIFIER**—Fully complementary circuitry, LED Power Display, Relay Protection, 130 WATTS RMS/CHANNEL (both channels driven) from 20Hz to 20kHz at less than 0.05% Total Harmonic Distortion.

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

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".

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**SAE Scientific Audio Electronics, Inc.**
P.O. Box 60271, Terminal Annex
LA, Angeles, CA, 90060

Please send more information on the Mark VIII, Mark IXB, and 2200.

NAME __________________________
ADDRESS __________________________
CITY __________________________ STATE ______ ZIP ________
Mark 2600. Same as Mark 2500 except 400 W rms/ch into 8 ohms, 600 W rms/ch into 4 ohms.

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; voltamp limiter; complementary double differential inputs and full complementary series-connected output stages; feedback level controls; 17" H 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. Loudspeaker 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" H x 5 3/4" x 13 1/2". LED display. Walnut cabinet...

Mark 2100 Stereo Preamplifier
Combines preamp circuitry with parametric & dynamic equalizer; frequency range 6-100,000 Hz -0.02 dB; adjustable phone 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 Preampl-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; (phone inputs) 20-20,000 Hz +0.5 dB. Equalizers have dual range +8 dB or -16 dB with 12 dB/octave slope. Features include stepped volume control, EQ level control, output level control, manual crossover control, manual crossover input level control, manual crossover output level control. $650.00

Mark IBX 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 20,000 Hz ±0.5 dB. Equalizers have dual range ±8 dB or ±16 dB with 12 dB/octave slope. Outputs include: low-level inputs; high-level inputs; 12 V output; maximum output 18 V into high impedance. Overall size 17" x 7" x 5.75" H...

Mark XXX Stereo Preamp
Response 10-100,000 Hz +0.25 dB (high-level inputs), 20-20,000 Hz +1 dB (phone 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 (phone), 90 dB below rated output (high-level). Gain: phone 57 dB at 1 kHz; high-level 15 dB. Maximum output 9 V into 100,000 ohms. 15" W x 4 1/4" H x 8" D...

Mark XXX Stereo Preamp
Response 10-100,000 Hz +0.25 dB (high-level inputs), 20-20,000 Hz +1 dB (phone 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 (phone), 90 dB below rated output (high-level). Gain: phone 57 dB at 1 kHz; high-level 15 dB. Maximum output 9 V into 100,000 ohms. 15" W x 4 1/4" H x 8" D...

Mark 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" 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" W x 7" H x 15 1/2" 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 8-20,000 Hz at 0.01% THD. Minimum rms power output & THD; channel separation: phone #1 & #2 55 dB; tuner & aux. 60 dB; hum & noise: phone #1 & #2 70 dB; tuner & aux. 75 dB...

$700.00

AU20000 Integrated Stereo Amplifier
170 W rms/ch into 8 ohms both channels driven (20-20,000 Hz) at 0.05% THD; power bandwidth 8-20,000 Hz at 0.01% THD. Minimum rms power output & THD; channel separation: phone #1 & #2 55 dB; tuner & aux. 60 dB; hum & noise: phone #1 & #2 70 dB; tuner & aux. 80 dB; features dual-amp 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-stage audio muting switch; 2-stage low/high filters; mode switch; meter sensitivity switch; illuminated level meters. 18 1/4" W x 7 1/2" H x 15 1/2" D...

$1000.00

AU11000. Similar to AU20000 except 110 W rms/ch; frequency response (at 45 Hz) 10-50,000 Hz ±0 dB, -1 dB...

$600.00

AU9700. Same as AU11000 except 80 W rms/ch; frequency response (at 1 W) 10-50,000 Hz ±0 dB, -1 dB...

$500.00

AU7900. Same as AU9700 except 45 W rms/ch; loudness & audio muting switches; 16 1/4" W x 12 1/4" D x 5 1/4" H...

$260.00

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 1/4" W x 7 1/4" H x 14 1/4" D...

$700.00

Scott H. H.
A436 Integrated Stereo Amplifier
42 W rms/ch into 8 ohms (20-20,000 Hz) at 0.05% THD; 10-40,000 Hz +0.5 dB, -1.5 dB, 19" W x 9 1/4" D x 4 1/4" H...

$200.00

SCOTT H. H.
A436 Integrated Stereo Amplifier
42 W rms/ch into 8 ohms (20-20,000 Hz) at 0.05% THD; 10-40,000 Hz +0.5 dB, -1.5 dB, 19" W x 9 1/4" D x 4 1/4" H...

$200.00
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 calibrated in % of full output; electronic protection circuitry; 16½" W x 13" D x 5½" H ... $299.95

A426 Integrated Stereo Amplifier
30 W rms/ch into 8 ohms (20,000,000 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/ampl bridge jacks for outboard accessory use; switched and unswitched power outlets on rear panel; rack-type handles; 16½" W x 13" D x 5½" H ... $249.95

A416 Integrated Stereo Amplifier
20 W rms/ch into 8 ohms (20,000,000 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; 14½” W x 12" D x 5" H ... $199.95

A406 Integrated Stereo Amplifier
15 W rms/ch into 8 ohms (20,000,000 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; 14½” W x 12" D x 5" H ... $149.95

SHERWOOD
HP-2000 Integrated Stereo Amplifier
120 W rms/ch into 8 ohms (20,000,000 Hz) at 0.08% THD; IM dist. 0.08%; S/N 63 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 (20,000,000 Hz) at 0.1% THD; has full complement of inputs & outputs ... $300.00

1977 EDITION

TA-2650 Integrated Stereo Amplifier
45 W rms/ch into 8 ohms (20,000,000 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 (20,000,000 Hz) at 0.1% THD; features vertical FET output amplifier stage with complementary parallel push-pull circuit ... $450.00

TA-320F Stereo Power Amplifier
100 W rms/ch into 8 ohms with both channels driven (20,000,000 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 for each 5%/H x15%/W x 12%/D ... $400.00

SPECTRO ACOUSTICS
202 Power Amplifier
Stereo power amp rated at 100 W rms/ch into 8 ohms with both channels driven (20,000,000 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 A/B design ... $375.00

1019 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 input/output 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 input, 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; (5 + N)/N; 81 db phono, 95 db high-level, dynamic range 95 db phono, 108 db high-level. 15" W x 7" D x 6½" H ... $335.00

217 Preamp Amplifier
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 6½" D x 3½" H ... $250.00

STAX
DA-300 Stereo Power Amplifier
150 W continuous power (20,000,000 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 for d.c. input and output, input and output overload, thermal; class-A amplification; d.c. coupling; dual VU meters ... $3600.00

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 (20,000,000 Hz) at 0.05% THD into 4 or 8 ohms; IM dist. 0.01%; damping factor 100; hum & noise 69 dB; sensitivity 1 V rms; features volt-amp & fuse protection plus overload thermostat; output meter on front panel; perforated metal cover. 4½" W x 5½" 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 (20,000,000 Hz) at 0.05% THD; IM dist. 0.03%; damping factor 100; hum & noise 85 dB; output power for each 4½" W x 4½" D x 13 D ... $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 (20,000,000 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. 4½" W x 5½" H x 15" D (four will fit standard 19" relay rack) ... $64.25

2-75. 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
Preamplifier 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 beyond 20 kHz; THD 0.01% from 20-20,000 Hz; IM 0.03% 60 & 7000 Hz mixed 4:1; (5 + N)/N; 81 db phono, 95 db high-level, dynamic range 95 db phono, 108 db high-level. 15" W x 7" D x 6½" H ... $335.00

TECHNICS BY PANASONIC
SU-9600P Stereo Control Center
Features fixed and variable phono input sensitivity; switchable phono input impedance; 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 deck b-mails; 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
Amplifiers

**SU-8600 Integrated Amplifier**

- Frequency response: 20-150,000 Hz +0/-1 dB at 1 W; power bandwidth 5-50,000 Hz; peak reading meters calibrated in dB and watts output; inputs: #1, #2; outputs: A, B.
- $799.95

**B-1 Basic Power Amplifier**

- Frequency response: 5-100,000 Hz +0/-1 dB. 6" H x 17'/2" W x 14" D.
- $799.95

**B-2 Power Amplifier**

- Frequency response: 20-15,000 Hz +3 dB; S/N 110 dB; damping factor 1 to 100, in four steps; input sensitivity/impedance; 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 #1, #2; rec-out #1, #2; headphones.
- $1800.00

**SU-8600 Integrated Amplifier**

- Frequency response: 5-150,000 Hz +0/-3 dB; THD & IM dist. 0.02%; S/N 69-76 dB (phono) RIAA curve.
- $1800.00

**T-101 FM Stereo Tuner**

- FM sensitivity 2.0 µV; capture ratio 1.5 dB; S/N 75 dB; THD 0.1% at 1000 Hz; stereo separation 45 dB at 1000 Hz; response -50 dB r.f. bandwidth +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%; audio output 1 V rms 5000 ohms, +2 dbm 600 ohm optional; tuning meter; 110/220 V, 67.5 W; X 10" D x 5.5" H.
- $750.00

**CA1000 Integrated Stereo Amplifier**

- Frequency response: 5-50,000 Hz; power bandwidth 5-50,000 Hz; IM 0.08%; power bandwidth 5-50,000 Hz; IM dist. at rated power 0.3%; 180 W rms/ch at 1000 Hz; IM dist. at rated power 0.1%; frequency response 5-150,000 Hz +0, -3 dB; THD 0.1% at 1000 Hz; stereo separation 45 dB at 1000 Hz; response -50 dB r.f. bandwidth +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%; audio output 1 V rms 5000 ohms, +2 dbm 600 ohm optional; tuning meter; 110/220 V, 67.5 W; X 10" D x 5.5" H.
- $500.00

**SU-8600 Integrated Amplifier**

- Frequency response: 5-150,000 Hz +0/-3 dB; THD & IM dist. 0.02%; S/N 69-76 dB (phono) RIAA curve.
- $1800.00

**MX 113**

**FM/FM STEREO - AM TUNER AND PREAMPLIFIER**

- McIntosh Laboratory, Inc.
- East Side Station P.O. Box 96
- Binghamton, N.Y. 13904
- Dept. SDBG
- $349.95

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**DYMEK**

**AM7 International AM Tuner**

- AM-only (150-300 kHz & 540-1600 kHz) solid-state tuner; sensitivity: 3 µV medium-wave, 6 µV long-wave at 10 dB S + N/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, 67.5 W; X 10" D x 5.5" H.
- $320.00

**AM5 AM Tuner**

- AM-only (150-300 kHz & 540-1600 kHz) solid-state tuner; sensitivity: 3 µV for 10 dB S/N; bandwidth -6 dB r.f. narrow mode
- $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 dB.

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CIRCLE NO. 25 ON READER SERVICE CARD 37
UF-5 FM-AF Stereo Tuner

The UF-5 is a compact, high-performance FM tuner designed for use with the UF-50 AM-FM Stereo Tuner. It features single-knob tuning, automatic frequency locking, and a wide range of tunable frequencies. The UF-5 is compatible with the UF-50 and provides clear and stable reception of FM broadcasts. It is a great addition to any home entertainment system.

The UF-5 is designed for use with the UF-50 AM-FM Stereo Tuner. It can be easily mounted on a wall or shelf, and its compact size makes it a convenient addition to any home entertainment setup. The UF-5 is a great choice for anyone looking for a reliable and high-quality FM tuner.
10.5 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 1/4" D x 5 ½" H. ... $379.95

KT-7300 AM-FM Stereo Tuner
FM sensitivity 10.3 dB (1.8 µV at 75 ohms); 50 dB quieting sensitivity 16.8 dB (3.8 µV at 75 ohms) mono, 38.3 dB (45 µV) stereo; S/N at 65 dB 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 1/4" D x 5 ½" H. ... $259.95

KT-5300 AM-FM Stereo Tuner
FM sensitivity 10.8 dB (1.9 µV at 75 ohms), 50 dB quieting sensitivity 19.2 dB (5.0 µV 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 ½" W x 11 5/8" D x 5 ½" H. ... $129.95

LAFAYETTE
LT-D10 AM-FM Stereo Tuner
FM sensitivity (IHF) 1.65 µV; 1.5 dB capture ratio; selectivity 60 dB; (S+N)/N 70 dB, Has Dolby noise reduction circuitry; front and rear panel tape output jacks; function mode indicator lights for Dolby, FM, stereo, MPX filter, 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 ½" x 11 5/8" x 4 ½" (less knobs). ... $269.95

LT-825 AM-FM Stereo Tuner
FM sensitivity (IHF) 2.2 µV; capture ratio 2.5 dB; S/N 65 dB; 0.25% THD; stereo separation 35 dB; features slide-rule tuning; signal-strength meter; stereo light; front-panel tape outputs; FM mute and MPX filter push-buttons; vinyl-covered metal case, walnut-finish wood end panels. 12" x 3 3/4" x 9 ¼". ... $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 ±1.5 dB; sensitivity for 30 dB S/N 1.6 µV; 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); tear finish; 16 3/4" x 12 ½" x 5 ½" H. ... $495.00

LUXMAN
T-110 FM Stereo Tuner
FM sensitivity 1.6 µV (9.3 dB) 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 (discriminator) 10-70,000 Hz ±0.5 dB; sensitivity: 95 dB; alternate channel attenuation 80 dB; THD 0.25% stereo; S/N 66 dB stereo; features stereo beacon, center-channel meter, center-of-channel meter, 4-position muting control, 25 µsec Dolby de-emphasis switch. ... $399.95

112 AM-FM Stereo Tuner
FM usability sensitivity 2.2 µV (IHF); 40 dB stereo separation at 1000 Hz; 1.5 dB capture ratio; THD 0.3% stereo; S/N 64 dB stereo; features stereo beacon, center-channel meter, inter-station muting, 25 µsec Dolby de-emphasis switch. 4 ½" H x 14 ¼" W x 12" D. ... $219.95

104 AM-FM Stereo Tuner
FM sensitivity 3.0 µV for 30 dB quieting; capture ratio 3 dB; image rejection -50 dB; features inter-station muting, signal-strength tuning meter. 14 ½" W x 4 ½" H x 12 ½ D. ... $169.95

NIKKO
FAM-800 AM-FM Stereo Tuner
FM sensitivity (IHF) 1.8 µV; selectivity 80 dB; image rejection 95 dB; capture ratio 1 dB; spurious rejection (audio) ±0.5 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. ... $259.95

FAM-500 AM-FM Stereo Tuner
FM sensitivity (IHF) 2.0 µV; image rejection 80 dB; (S + N)/N 60 dB; capture ratio 2 dB; distortion 0.5% at 1000 Hz; stereo separation 38 dB at 1000 Hz; Features FM muting, signal-strength and center-tuning meters, terminals for 4-channel adapter, tape output jack, and overload protection circuits. 15" W x 12 ½" D x 8 ¼" H. Has blackout linear-scale dial and needle illumination. ... $179.95

ONKYO
T-4055 AM-FM Stereo Tuner
FM sensitivity 1.7 µV, frequency 20-15,000 Hz +/-0.2 dB; stereo separation 40 dB at 400 Hz. Has a 4-channel terminal on rear panel for reception of discrete 4-ch broadcasts, illuminated signal-strength and center-tuning meters, lighted dial and pointer on the linear scale. Image rejection 90 dB; i.f. rejection 95 dB; alternate channel attenuation 80 dB; capture ratio 1.2 dB; HD 0.5% stereo. Outputs include two oscilloscope jacks for FM antenna multipath orientation. Front-panel controls include mode selector, tuning, on-off, FM muting, noise filter, output level control, and audible switch for FM antenna orientation. Walnut-grained vinyl over Lauan plywood cabinet. 16 ½" W x 14 ½" x 5 ½" 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 ±0.5 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, -20 dB at 10,000 Hz; audio output voltage 1 V rms; 105/125 or 210/250 V a.c. 50/60 Hz. ... $955.00

1977 EDITION
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 µV; 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
Frequency 65 dB. Response 20-15,000 Hz ±1 dB. Dist. 0.5%; (S + N)/N 65 dB; capture ratio 1.5 dB. Image rejection –80 dB. Features FM interstation muting, and a center-channel tuning meter. Walnut veneer wood cabinet. 15" W x 5½" H x 11½" D. $199.90

PIONEER

TX-9500 AM-FM Stereo Tuner
Frequency 1.5 µV for 30 dB quieting. Response 30-15,000 Hz -1 dB; capture ratio 1 dB. Distortion 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. 16½" W x 5½" H x 14½" D. $1665.00

TX-7500 AM-FM Stereo Tuner
Frequency 1.9 µV (IHIF), S/N 68 db stereo; THD 0.3% (100 & 1000 Hz), 0.5% (10,000 Hz), capture ratio 1.0 dB; selectivity 85 dB (+400 kHz); response 20-15,000 Hz ±0.2 dB, -1.5 dB, separation 40 dB (1 kHz); image, i.f., and spurious rejection 110 dB; subcarrier suppression 65 dB; antenna input 300 ohms balanced. 75 ohms unbalanced; built-in recording signal-level check, signal-strength and center-channel meters. 16½" W x 5½" H x 14½" D. $400.00

TX-6500 AM-FM Stereo Tuner
Frequency 1.9 µV (IHIF), S/N 68 db stereo; THD (stereo, at 65 dB) 0.3% at 1 kHz, 0.4% at 6 kHz; capture ratio 1 dB; selectivity 60 dB, response 30-15,000 Hz ±0.2 -1.5%; separation 40 dB (1 kHz); image rejection 60 dB; i.f. rejection; 90 dB; spurious rejection 65 dB; antenna input 300 ohms balanced, 75 ohms unbalanced; center-channel tuning & signal-strength/center-channel tuning meter. 16½" W x 5½" H x 14½" D. $250.00

TX-1000 AM-FM Stereo Tuner
Features dual-gate FET front end; three ceramic filters; four low-noise IC's; "Auto-Magic" tuning system fine-tunes station electronically; FM sensitivity 2 µV, selectivity 65 dB; capture ratio 2 dB, image rejection 50 dB; stereo separation 35 dB at 100 Hz; S/N 65 dB, has black-out dial, lighted AM-FM meter. Walnut veneer wood case. 4½" x 15½" x 11½". $159.95

REVOX

A720 Digital FM Tuner/Preamp
Features step-type channel tuning and pre-set push-button tuning; volume & balance controls are controlled by sliding-type faders, stepped independent tone controls for bass, presence, treble; two headphone outputs on front panel; interconnect facilities for two tape recorders; additional tape output on front panel; two stereo phono & one stereo aux. input; high & low pass filters effective on all inputs; two switchable stereo outputs; FM capture ratio 1 dB at ±40 kHz deviation; response 30-15,000 Hz ±1 dB; distortion 0.2% at 1000 Hz & ±40 kHz deviation; quartz stabilized frequency synthesizer; five-digit frequency display; signal-strength & center-channel tuning meters; remote-control facility. $1250.00

A76 FM Stereo Tuner
Sensitivity 1 µV for 30 dB quieting. Response 30-15,000 Hz -1 dB; capture ratio 1 dB. Distortion 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. 16½" W x 6½" H x 9½" D. $750.00

ROTEL

RT-1024 Dolbyzed AM-FM Stereo Tuner
Features digital readout (four Nixie tubes) frequency display, display of tuning & audio signal-strength. 17" W x 5.75" H x 10.5" D. $650.00

RT-724 AM-FM Stereo Tuner
Frequency 1.9 µV (IHIF), S/N 65 db stereo; THD 0.35% stereo; stereo separation 40 dB (50 and 10,000 Hz), 50 dB (1000 Hz); frequency response 30-15,000 Hz ±0.5 dB, -0.8 dB; S/N 76 db (stereo); spurious rejection 100 dB (98 MHz). 18½" W x 6½" H x 12½" D. $450.00

RT-7900 AM-FM Stereo Tuner
Frequency 9.8 dB (1.7 µV), 50 db quieting sensitivity 35 db (stereo), THD 0.35% 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-µs de-emphasis plus back panel terminals for connecting Dolby unit to decode FM broadcasts; a.c. outlet; 16½" W x 9½" D x 5½" H. $300.00

SAE

Mark Vib FM Digital Tuner
Features digital readout (four Nixie tubes) frequency display, display of tuning & audio signals on a 3" rectangular scope. Has "Stereo Only" position which mutes all except stereo transmissions. Sensitivity 1.6 µV for 30 dB quieting. Capture ratio 1.9 dB. Response 20-15,000 Hz ±0.5 dB. A 14-pole Butterworth-type toroid phase-linear i.f. filter provides 75 db selectivity. 17" W x 10½" x 5¼". $1250.00

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

SANSUI

TU-9900 AM-FM Stereo Tuner
Frequency 1.9 µV, THD 0.08% (stereo wide), 0.8% (stereo narrow) both at 1000 Hz,

TU-9900 AM-FM Stereo Tuner
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-µs de-emphasis plus back panel terminals for connecting Dolby unit to decode FM broadcasts; a.c. outlet; 16½" W x 9½" D x 5½" H. $300.00

TU-5900 AM-FM Stereo Tuner
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-µs de-emphasis plus back panel terminals for connecting Dolby unit to decode FM broadcasts; a.c. outlet; 16½" W x 9½" D x 5½" H. $300.00

TU-3900 Similar to TU-5900 except FM sensitivity 11.2 dB (2.0 µV), THD 0.4% stereo; S/N

STEREO DIRECTORY & BUYING GUIDE
70 dB mono, signal-strength & center-of-channel meters, antenna attenuator button, 15V x 9.5 x 4.5 H. $160.00

SCOTT, H. H
T33S Digital FM Stereo Tuner
Sensitivity 1.8 µV for 30 dB quieting. Response 20-15,000 Hz. Stereo separation 40 dB; capture ratio 1.2 dB; HD 0.25%; S/N 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 17.5 W x 13 D...... $499.50

TS26 AM-FM Stereo Tuner
FM sensitivity 3.5 µV; 10 dBf for 50 dB S/N; response 30-15,000 Hz ±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; multiplexer switchable filter, AM noise suppression circuitry, front-panel Dolby de-
emphasis switch; 16½ W x 12 D x 5½ H...... $249.95

T516. Similar to TS26 except does not include switchable filter, center-channel tuning meter, or Dolby de-emphasis switch; 14½ 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 ant-
tenna; signal as tuned; internal vector separa-
tion; 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; 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 µV) stereo; 50 dB quieting; sensitivity 3.5 dBf (34.0 µV); S/N at 65 dBf (977 µV) 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, 36 dB at 10 kHz; 15 W x 14½ 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 3½ H. $1600.00

SHERWOOD
Micro/Phase 100 AM FM Stereo Tuner
FM sensitivity 1.7 V/µ for 30 dB S/N; stereo dis-
tortion 0.15% at 100% mod.; spurious rejection 120 dB; stereo separation 50 dB (1000 Hz); digitally synthesized tuner controlled by MPU with a wide and narrow i.f. system; 6-section varactor front end; advance digital detection system; PLL multiplex; digital data on 10 V output for computer; LED call-letber readout; auto scan and memory tuning...... $2000.00
HP-5500 AM-FM Stereo Tuner
FM sensitivity 1.7 V/µ for 30 dB; distortion (stereo) 0.2% at 100% mod.; separation 50 dB at 1000 Hz; capture ratio 1 dB; digital detection system; PLL multiplex; switchable de-emphasis; walnut end panels included...... $400.00
HP-5000 AM-FM Stereo Tuner
FM sensitivity 1.7 V/µ 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; "uni-
phase" i.f. filters for improved selectivity and lower distortion; balanced dual FET mixer cir-
cuit with buffered local oscillator; MOSFET r.f. amplifier...... $450.00
ST-3950SD AM-FM Stereo Tuner
Built-in Dolby noise-reduction system; full comple-
ment of tuning & control facilities...... $300.00
ST-2950AM-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 µV (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);...... $1200.00
ST-7600 AM-FM Stereo Tuner
FM sensitivity (IHF) 1.9 µV (10.8 dBf); response 15-20,000 Hz ±1.0/0.5 dB; image rejection 83 dB (98 MHz); selectivity 75 dB; 75 & 300 ohm antenna inputs; output- 1.5 V fixed; 0-1.5 V variable; fea-
tures crystal-controlled PLL frequency-synthe-
sing system; PLL multiplex; switchable de-emphasis; walnut cabinet. 17½ W x 12½ D...... $600.00
ST-910 FM Digital Sythesizer Tuner
FM sensitivity 1.7 µV; capture ratio 1.0 dB; selectivity 45 dB (400 Hz), 35 dB (50-10,000 Hz); frequency response 50-10,000 Hz...... $400.00
ST-8600 AM-FM Stereo Tuner
FM sensitivity 1.9 µV (10.8 dBf); THD 0.25% (stereo); S/N 75 dB; selectivity; image rejection 50 dB (98 MHz);...... $400.00
ST-5950SD AM-FM Stereo Tuner
Built-in Dolby noise-reduction system; PLL FM multiplex decoder; full complement of controls...... $220.00

TOSHIBA
ST-910 FM Digital Synthesizer Tuner
FM sensitivity 1.5 µV for 30 dB S/N; stereo dis-
tortion 0.1% at 100% mod.; spurious rejection 120 dB; stereo separation 50 dB (1000 Hz);...... $370.00
ST-8600 AM-FM Stereo Tuner
FM sensitivity 1.9 µV (10.8 dBf); response...... $270.00
ST-400 AM-FM Stereo Tuner
FM sensitivity 5.0 µV (IHF); FET front-end; THD 0.5% stereo; image rejection 55 dB; spurious response rejection 75 dB, selectivity 75 dB (stereo) 45 dB (400 Hz), 35 dB (50-10,000 Hz);...... $1200.00

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 de-
coder; two meters (three functions); automatic high-bend circuit; OTL headphone amp (20-
20,000 Hz at 0.3% dist.); frequency linear dial scale...... $1200.00
CT7000B. Same as CT7000 except black metal finish...... $1200.00

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301-340-7707
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Our new Powerhouse receivers outpower the competition.

Lafayette's new Powerhouse receivers have the power, the features and the performance you want. And the competition only promises.

Just check our spec chart. We deliver. With no gimmicks or technical tricks.

Besides incredible specs our new Powerhouse receivers have some features you've never had on any receiver before. Stop in at any of the Lafayette stores or dealers coast to coast and hear what Dolby® FM noise reduction, mike mixing and detent controls can do to give you clean, distortion-free sound.

Lafayette performance goes far beyond sound. We back you up with warranties, in-store service and people who can talk stereo in plain, simple language.

Our new line of Powerhouse receivers was built with power and backed up with consumer services to outpower the competition. Now where does the competition stand?

### Specifications

<table>
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<tr>
<th></th>
<th>LR-9090</th>
<th>LR-5555</th>
<th>LR-3030</th>
<th>LR-2020</th>
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<td>21.0 dBf (1.8 ( \mu )V)**</td>
<td>23.0 dBf (2.0 ( \mu )V)**</td>
<td>23.0 dBf (2.0 ( \mu )V)**</td>
<td>25.0 dBf (2.2 ( \mu )V)**</td>
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* @ 40-20,000 Hz  **IHF ('58) Sensitivity (Mono)

For more information and a free catalog please write: Lafayette Radio Electronics, Box 155, 111 Jericho Tpke., Syosset, N.Y. 11791

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CIRCLE NO. 39 ON READER SERVICE CARD

Stereo Directory & Buying Guide
**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 high-fidelity 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 µV; frequency response 20-20,000 Hz; power bandwidth 40-20,000 Hz; 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 1/4" W x 9" D (plus 1 1/4" for knob clearance) x 3 1/2" 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 µV; 80 dB FM selectivity; 1.0 dB capture ratio; variable FM muting; two each inputs for tape and phono, one aux. input; stereo headphone output; tape dubbing capability; multiple-speaker selection; three a.c. convenience outlets. | $450.00 |
| **AKAI AA-1030 AM-FM Stereo Receiver** | 30 W/ch minimum rms at 8 ohms imp 20-20,000 Hz at 0.3% THD; IHF FM sensitivity 1.9 µV; 70 dB FM selectivity; 1 dB capture ratio; features variable FM muting; two each inputs for tape and phono, one aux. input; stereo headphone output; tape dubbing capability; convenience a.c. outlet.. | $350.00 |
| **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 ±0.3 dB (phono); 10-70,000 Hz ±0.1 dB (aux., tape # & #2, DIN); damping factor 50; controls: bass, treble, loudness; FM tuner sensitivity 1.8 µV (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.i.c.; rumble filter; signal & tuning meters; 120-V, 60 Hz operation; 17 1/2" W x 14 1/4" D x 6 3/4" H. | $199.95 |
| **AIWA AA-1010 AM-FM Stereo Receiver** | 14 Wch 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 µV; FM selectivity 60 dB at 98 MHz; FM stereo separation 40 dB at 1000 Hz; S/N 65 dB; 17.3" W x 10.4" D x 4.9" H. | $200.00 |
| **AIWA AA-810 AM-FM Stereo Receiver** | 10 W/ch minimum rms at 8 ohms imp 20-20,000 Hz at 0.8% THD continuous power output; power bandwidth (IHF) 20-40,000 Hz at 8 ohms (both channels fully driven); frequency response 20-65,000 Hz ±0 dB, -3 dB, S/N (IHF) phono 75 dB, aux. 80 dB; channel separation 75 dB (phono, at rated output); IHF FM sensitivity 2 µV, HD 0.8% stereo; S/N 70 dB; full complement of controls. 20.8" W x 4.2" H x 11.7" D. | $199.95 |

---

**4-CHANNEL**

| **AIWA AS-1080DB Four-Channel Receiver** | 40 W/ch (80 W/ch, stereo) minimum rms at 8 | $249.95 |
CR-210 AM-FM Stereo Receiver
9.6 Wich continuous output at 8 ohms, 40-20,000 Hz, THD 1%; response 22-40,000 Hz at 1 W output; IHF usable sensitivity 2.9 µV; image rejection 51 dB, i.f. rejection 83 dB; capture ratio 1.5 dB; S/N 65 dB, HD 0.5%; stereo separation 37 dB; selectivity 46 dB. Features fine-turning control for FM; duo-glo indicator, AM-FM tuning meter; electronic circuit breaker; full complement of controls and inputs. Walnut wood-grain vinyl cabinet. 18 7/8" W x 5 1/4" H x 13 1/2" D. $269.95

CR-110 AM-FM Stereo Receiver
5.5 WICH continuous output at 8 ohms, 40-20,000 Hz, THD 2%; response 28-25,000 Hz at 1 W output; IHF usable sensitivity 3.0 µV; image rejection 49 dB, i.f. rejection 80 dB; capture ratio 3.0 dB; S/N 55 dB, HD 0.8%; stereo separation 35 dB, selectivity 50 dB. Features black-out dial; AM-FM tuning meter; duo-glo indicator to indicate stereo or mono broadcasts; full complement of controls and inputs. Walnut wood-grained vinyl cabinet with champagne-colored brushed aluminum panel. 15 1/2" W x 5" H x 11 3/4" D. $164.95

AM8 AM Receiver
AM-only solid-state receiver (540-1600 Hz), 10 dB S + N/N sensitivity 3 µV; -6 dB r.f. bandwidth ±1 kHz; frequency response ±100 Hz, ±10 dB at 1000 Hz; 30 dB at 1 kHz, ±10 dB at 10,000 Hz; image rejection 70 dB; HB 0.1%; stereo separation 50 dB; selectivity 40 dB. Features edge-lighted dial, AM-FM tuning meter; full complement of controls and inputs. Walnut-finished vinyl cabinet. 16 1/8" W x 4 3/4" H x 11" D. $129.95

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; FM usable sensitivity 12 dBf (2.2 µV); 30 dB at 50 Hz & 10,000 Hz; input sensitivity: tape & aux. 150 mV; phono 2.5 mV; output level: tape 150 mV, pre-amp 1.5 V, FM usable sensitivity 10.3 dBf (1.8 µV); 50 dB quieting sensitivity 14.8 dBf (3.0 µV); 50 dB quieting sensitivity 14.8 dBf (3.0 µV); S/N (100% mod.) 70 dB; capture ratio 1.5 dB; limiting (1 dB) 6.8 dB (1.2 µV); 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 1/8" W x 15 1/2" D x 6 1/2" H. $529.95

2600 AM-FM Stere0 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-
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 uf 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 [17µV]. 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 Sub-sonic 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 [25µsec. and 75µsec.], 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.
2 Receivers

0.1% THD; power bandwidth 10-40,000 Hz into 8 ohms with both channels driven simultane-
ously at 20 W/ch at 0.1% THD; frequency re-

aru 31300,000 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 phone; FM Sensitivity 1.9 µV;
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 output terminals & two tape re-
corders, headphones, two circuits for turntable/
changer, 8 pairs receptacles on back panel;
preamp/main amp separable for insertion of
cartridges and other accessories; 17"W x 141/2"
D x 51/4" H ........................................ $419.95

330c AM-FM Stereo Receiver
20 W rms/ch into 8 ohms (20-20,000 Hz) at
0.5% THD; frequency response 4-140,000 Hz
into 8 ohms with both channels driven
at 1 W/ch; IM 0.12% at rated power out-
put; hum & noise 65 dB below rated output
(unweighted); damping factor 40; FM sensitiv-
ity 1.9 µV, S/N 77 dB; capture ratio 1.7 dB;
image rejection 60 dB, spurious response re-
jection 82 dB; alternate channel selectivity
50 dB; stereo separation 39 dB. 17"W x 51/2" H
x 14/4" D ........................................ $319.95

HEATH

AR-1500A AM-FM Stereo Receiver
60 Wic h min. rms into 8 ohms at 0.25% THD
from 20-20,000 Hz, IM 0.11% at full power.
Response 51200,000 Hz ±0.3 dB at 1 W. Input
sensitivity: mag. phono 1.8 mV, tape, aux. tape
monitor 140 mV. FM sensitivity 1.8 µV for 30 dB
quieting. Capture ratio 1.5 dB. 18½" x 5½" x
13½" D ....................... $399.95
Kit AR-1500-1 Walnut-stained veneer case........ $24.95

AR-29 AM-FM Stereo Receiver
35 Wic h 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 76000,000 Hz ±1 dB
at 1 W output. Input sensitivity: mag. phono
2.2 mV, aux. 25 mV/47 k phono; FM: 0.5 µV
for 30 dB quieting. Capture ratio 1.5 dB. Has
field-strength and center-of-channel tuning
meters, main/remote speaker capability or center-
channel output. FET tuning unit assembled and
pre-mounted. 117/230 V, 50-60 Hz operation.16½"x
5½" x 14½" D ....................... $329.95
Pecan-stained veneer case ................................ $21.95

AR-1302 AM-FM Stereo Receiver
20 Wic h min. rms into 8 ohms at 0.25% THD
front 20-20,000 Hz, response平坦; 20-20,000 Hz ±1 dB.
Input sensitivity: mag. phono 2.4 mV, aux.
180 mV. FM sensitivity 1.6 µV for 30 dB quiet-
ing. Capture ratio 2.5 dB (IHF). Features signal-
strength and center of channel (0.3 dB/µV), main/
remote speaker selection or center-channel
output. FM front-end pre-assembled and
aligned. 117/230 V, 50-60 Hz operation.16½" x
5½" x 14½" D ....................... $279.95
Pecan-stained veneer case ................................ $21.95

AR-1214 AM-FM Stereo Receiver
15 Wic h min. rms into 8 ohms at 0.5% THD
from 20-20,000 Hz. Frequency response 7-
100,000 Hz ±1 dB. FM response 20-15,000 Hz
±1 dB, channel separation 40 dB typical, 35
dB minimum, 19 and 38 kHz suppression 55
dB, SCA suppression 55 dB; 2 µV sensitivity;
2 db capture ratio. Features pre-assembled FM
tuning section; Black Magic panel lighting; fly-
wheel tuning; stereo indicator light; headphone
jack; speaker "on-off" buttons; complete tape
monitoring facilities. Has full complement of in-
puts and outputs. 3¾" H x 17" W x 13" D. In-
cludes walnut-stained veneer end panels. Kit
....................... $199.95

AC-1118 AM-FM Stereo Receiver
4½ Wic h min. rms into 8 ohms at 1.0% THD
from 50-15,000 Hz. FM tuner sensitivity 5 µV
(selectivity 60 dB, 30 dB stereo separation;
inputs for ceramic: phono and aux., bass & treble
controls; headphone jack; speaker on/off switch;
front end static rejection 75 dB; complete tape
monitor section, has: 4 source (4 positions), and mode (4 positions)
switches. Outputs: 4 speaker, headphones (1 pr.
each front & back); one tape feed, 4-channel
tape. Tuner section 2 µV (IHF) FM sensitivity,
capture ratio 2 dB, HD 0.5%, channel separa-
tion at midband 35 dB min. antenna inputs 300
and 75 ohms. Features modular circuit-board
construction, phase-locked loop multiplex
modulator. Has 2-ch. mag. phono & aux.
inputs; 4-ch. tape & aux. inputs. 4¾" H x 19¾"
W x 14" D. Walnut-stained veneer end panels
includes....................................... $269.95

HITACHI
SR/903 Series "E" Stereo Receiver
AM-FM stereo receiver; FM usable sensitivity
28 dB (14 µV); 50 µV quieting sensitivity 36

dB (34 µV); S/N 68 dB (at 65 dB); frequency
response 30-15,000 Hz ±1 dB; capture ratio
1.0; alternate channel rejection 80 dB; spurious
response ratio 100 dB; image rejection 85 dB;
stereo separation 45 dB; 75 Wch continuous power into 8 ohms (20-
20,000 Hz) at 0.3% THD; HF 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,
mute, balance, controls, tape monitor, speaker
switch; two tuning meters; two sets of speaker
connectors for multi-speaker arrangements; 19½"W x 15"D x 5½" H.............. $499.95
SR/803 Similar to SR/903 except 20 Wch
continuous power at 0.4% THD; frequency
response 10-40,000 Hz ±0.5 dB; power band-
width 10-40,000 Hz; full complement of inputs/
outputs & controls ................................ $399.95
SR/703 Similar to SR/803 except 40 Wch con-
tinuous power at 0.5% THD; frequency re-
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 Wch
continuous power at 0.8% THD; power band-
width 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; 17½" W x 13½" D x
5½" H ........................................ $249.95
SR/302R Similar to SR/502R except 15 Wch
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 Wch 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 cen-
ter frequencies 40, 250, 1000, 5000 & 15,000
H. S.E.A. control range ±12 dB, FM tuner sec-
tion: usable sensitivity 1.7 µV (9.8 dBf), 50 dB
quieting sensitivity, 35 µV (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 mut-
ing, two speaker terminals; dubbing switch,
monitor/playback controls; two a.c. outlets;
22½" W x 17 D x 6½" H ........................................ $749.95
JR-S400 AM/FM/Stereo Receiver
70 W rms/ch into 8 ohms (20-20,000 Hz) at
STEREO DIRECTORY & BUYING GUIDE
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.
4VR-5446 4-Channel AM-FM Receiver
Has same circuit options as 4VR-5436 except 21-Wch continuous rms into 8 ohms with all four channels driven (26 W/ch rms power at 1 kHz). IHF power bandwidth 20-20,000 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. Sensitivity 1.8 µV; FM capture ratio 1.5 dB; image rejection 90 dB; stereo separation 38 dB. Has 7-position speaker selector switch. $739.95

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 dB (1.7 µV at 1 kHz). $349.95

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 dB (1.8 µV at 75 Hz); 50 W quieting; 14.8 dB (3.0 µV) mono, 36.6 dB (37 µV) 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 µs de-emphasis switch; 20% W x 14" D x 6" H. $329.95

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

KR-3600 AM-FM Stere o Receiver
22 W rms/ch into 8 ohms (20-20,000 Hz) at 0.8% THD; FM sensitivity 12.5 dB (2.3 µV at 75 Hz); 50 W quieting; 17.3 dB (4.0 µV) mono, 38.7 dB (47 µV) 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; 19½" W x 11½" D x 5½" 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 dB (2.5 µV at 75 Hz); 50 W quieting 18.3 dB (4.5 µV) mono, 40 dB (50 µV) stereo; S/N 70 dB mono, 64 dB stereo; capture ratio 2.5 dB; alternate channel selectivity 50 dB; stereo separation (50-10,000 Hz) 35 dB; 19½" W x 11½" D x 5½" 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 de-
modulator, and RM decoder; "Tape-Through" circuit for dubbing through unit's dual 4 chan-
el tape system while playing any other program source; impedance 4 to 16 ohms; FM sensitivity (IHF) 1.8 µV; S/N 65 dB (1 mV input); capture ratio 3 dB; selectivity (IHF) 50 dB, stereo separation 40 dB at 1000 Hz, 20 dB at 10,000 Hz; HD stereo 0.8% (400 Hz, 100% modulation); image rejection 60 dB; has ful complement of inputs & outputs, filters, and tone controls. $799.95

KLH

Fifty-Two/A AM-FM-Stereo Receiver
32 W rms/ch into 8 ohms (25-20,000 Hz) at 1.0% THD; response 15-22,500 Hz ±2 dB at 1 W. FM usable sensitivity 1.8 µV for 30 dB quieting. Sensitivity: mag. phono 3.5 mV; aux. & tape monitor 500 mV; FM capture ratio 2.0 dB. Has signal-strength & center-of-channel tuning meters and ceramic filters in i.f. stages. 18½" W x 5½" H x 11½" D. Walnut grained cabinet. $349.95

Fifty-Five/A AM-FM-Stereo Receiver
13 W rms/ch into 8 ohms (45-15,000 Hz) at 1.0% THD; response 15-22,500 Hz ±2 dB at 1 W. FM usable sensitivity 2.0 µV for 30 dB quieting; capture ratio 2.5 dB. Input sensitivity: mag. phono 2.5 mV; aux. & tape monitor 330 mV. has four-stage i.f. with two ceramic filters. 16½" W x 5½" H x 12½" D. Walnut grained cabinet. $299.95

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 (h), 5.0 mV (low); aux. 150 mV; tape play A & B 150 mV; mic ≤ 26 mV, FM usable sensitivity 1.8 µV, FM capture ratio 2.5 dB; FM quieting 40 dB at 1 kHz; FM frequency response 30-15,000 Hz ±0.5 dB, -1.5 dB; stereo separation 40 dB at 1 kHz; FM dist. 0.1% 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 1.8% THD; has built-in circuitry for all 4-chan-

nel formats including SQ decoder with wave matching and variable blend logic. CD-4 de-
modulator, and RM decoder; "Tape-Through" circuit for dubbing through unit's dual 4 chan-
el tape system while playing any other program source; impedance 4 to 16 ohms; FM sensitivity (IHF) 1.8 µV; S/N 65 dB (1 mV input); capture ratio 3 dB; selectivity (IHF) 50 dB, stereo separation 40 dB at 1000 Hz, 20 dB at 10,000 Hz; HD stereo 0.8% (400 Hz, 100% modulation); image rejection 60 dB; has ful complement of inputs & outputs, filters, and tone controls. 21½" W x 6½" H x 14½" D. $794.95
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LEAK

2000 AM-FM Stereo Receiver

30 W RMS into 8 ohms at 0.5% THD 20-20,000 Hz. Features full logic wave matching; vari-blend SQ decoder and other decoder circuitry to play back SQ, RM, and all 4-ch sources; optional CD-4 decoder built-in (or can be installed later); 15 W RMS into 8 ohms at 0.8% THD 20-20,000 Hz with all channels driven; 25 W RMS into 8 ohms at 0.5% THD. FM sensitivity 1.9 µV for 30 dB quieting; capture ratio 1.5 dB; stereo separation 40 dB at 1 kHz; provisions for magnetic phono, two tape decks, phones. Features bass, treble, and mid-range tone controls; 25 µsec Dolby de-emphasis switch.

$399.95

4-CHANNEL

4400 4-Ch AM-FM Receiver

40 W RMS into 8 ohms with all four channels driven; 0.15% THD & IM 0.15% frequency response 20-20,000 Hz. Dolby B circuit for simultaneous recording and playback with any tape machine and decoding of Dolby-encoded FM broadcasts. Has phase lock loop multiplex decoder and an FM Quadradial output jack. Separate tuner-preamp section permits use with additional external power amps. Has Vari-Matrix for stereo program enhancement. 4-ch ready for addition of SQ decoder and 4-channel decoder. FM sensitivity 1.9 µV (THD 0.3% stereo; capture ratio 1.5 dB; spurious rejection 95 dB; Amp response 20-20,000 ±0.25 dB (high-level input); power bandwidth 7-70,000 Hz. $799.95

4270. Similar to Model 4300 but with 25 W RMS into 8 ohms at 0.3% THD & IM 0.3%; Dolby B circuit for simultaneous recording and playback with any tape machine and decoding of Dolby-encoded FM broadcasts. $649.95

4240. Similar to Model 4300 but with 17 W RMS into 8 ohms at 0.7% THD & IM. Response 20-20,000 Hz ±1.0 dB; power bandwidth 10-60,000 Hz. $649.95

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 any under-chassis slot of company’s Quadradial 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

STEREO DIRECTORY & BUYING GUIDE
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 µV) 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.

Sansui Model 9090 delivers 110 watts per channel into 8 ohms, min. RMS, from 20 Hz to 20 kHz with not more than 0.2% total harmonic distortion. All of this power is protected by a special protection circuit with Sansui's unique LED visual indicator. The 9090 is a superior value at less than $750.00.* Similar features are available in many of the other models in this series, all leaders in their respective price class. The Model 8080 at under $650.00,* 7070 at under $520.00,* 6060 at under $420.00,* 5050 at under $320.00.* Model 9090 cabinet in walnut veneer, all other cabinets in simulated walnut grain.

Listen to any of these Sansui receivers at the nearest Sansui franchised dealers in your neighborhood. It is a whole new world of beautiful music.

*The value shown is for informational purposes only. The actual resale price will be set by the individual Sansui dealer at his option.

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CIRCLE NO. 59 ON READER SERVICE CARD
**2 Receivers**

**MIIDA**

3140 AM-FM Stereo Receiver
43 W rms/ch into 8 ohms; THD & TM 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; auxiliary, 200 mV; FM sensitivity 1.8 µV; AM suppression 40 dB; AM capture ratio 3 dB; channel separation 30 dB at 400 Hz. $299.95

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 µV; 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" x 14" x 5½" H. $349.95

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; 19½" W x 13½" D x 5½" H. $329.95

3100 Similar to 3120 except 8 W rms/ch into 8 ohms (40-20,000 Hz) at 0.9% THD. Walnut veneer cabinet. 6" H x 19" W x 15½" D. $179.95

**MX**

1561 AM-FM Stereo Receiver
28 W rms/ch into 8 ohms (20-20,000 Hz) at 0.3% THD; IM dist. 0.5% frequency response 20-20,000 Hz; 2500 Hz ±2 dB; FM sensitivity 1.8 µV; selectivity 75 dB; capture ratio 1.7 dB; stereo separation 45 dB (1000 Hz), 35 dB (10,000 Hz); image rejection 97 dB; spurious rejection 94 dB; has full complement of controls. Walnut veneer cabinet. 6" H x 19" W x 15½" 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 µV; selectivity 58 dB; capture ratio 1.7 dB; 8 ohms (20-20,000 Hz); AM sensitivity 1.5 µV. $299.95

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

**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 dB (5 µV); selectivity 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. $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 dB (5 µV); selectivity 1.5 dB; image rejection 45 dB; S/N 65 dB; HD 0.4% stereo; frequency response 30-15,000 Hz +0.5/-2 dB; features linear FM-dial scale. $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 2.2 µV; selectivity 58 dB; capture ratio 2.1 dB; FM 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 signal synthesizer, miniature mixing circuit, full complement of inputs & outputs. Walnut-grained vinyl over Lauan plywood. 19½" W x 16½" D x 6½" H. $291.95

**5 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 de-modulators or multiple sound systems. Feature selector permits any mix of 4-channel or stereo discs or tapes; 20 W rms/ch into 8 ohms (20-20,000 Hz) at 1% THD; frequency response 20-30,000 Hz ±1 dB; FM sensitivity 1.8 µV (HF); selectivity 65 dB; capture ratio 2 dB; image rejection 70 dB; S/N 70 dB; stereo separation 40 dB at 400 Hz; frequency response 15,000 Hz; 4-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 Stereo receiver except it has greater power output: 65 W rms/ch into 8 ohms (20-20,000 Hz) at 0.4% THD. Features 4-1/4" woofer and two tuning meters. With cabinet. 18½" W x 6½" H x 17½" 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 amp/preamp accessible by removing rear hinges, has linear FM-dial scale, "Pilotone" automatic stereo tuning indicator, automatic stereo indicator, AM-FM tuning meter, function lights; FM sensitivity 1.8 µV (HF); selectivity 75 dB; capture ratio 1.5 dB; 75/300 ohm antenna input; features FM muting, tape monitoring, high filter, loudness, main/remote speaker switches; front-panel jacks for headphones, tape, two phone inputs, two a.c. receptacles, separate power switch. $419.90

253 AM-FM Stereo Receiver
35 W rms/ch into 8 ohms (20-20,000 Hz) at 0.5% THD; 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 251 stereo tuner. With walnut wood cabinet. 18" x 5½" x 13½" 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 woofers and horns; phase lock & AM-FM tuning meter; automatic stereo light; phase lock loop multiplexer; FM sensitivity 2.2 µV; selectivity 65 dB (HF); 20 W rms/ch into 8 ohms; FM muting, quartz locked tuning system, Accutracch control for optimum FM tuning. $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 dB; complementary symmetry, fused outputs, separate dual-concentric woofers and horns; phase lock & AM-FM tuning meter; automatic stereo light; phase lock loop multiplexer; FM sensitivity 2.2 µV; selectivity 65 dB (HF); 20 W rms/ch into 8 ohms; FM muting, quartz locked tuning system, Accutracch control for optimum FM tuning, 4-channel signal synthesizer, miniature mixing circuit, full complement of inputs & outputs. Walnut-grained vinyl cabinet....... $349.90

366 4-Channel AM-FM Receiver
30 W rms/ch into 8 ohms with all four channels driven & at 0.5% THD; response 20-20,000 Hz; response 15-25,000 Hz ±1 dB. Input sensitivity: mag. phono 2.5 to 4.5 mV, aux. 250 mV, mike 1 mV; tape output 250 mV. FM sensitivity 1.8 µV for 30 dB (S + N)/N; capture ratio 1.5 dB. Features main/remote 4-channel speaker switch, mike mixing, tape monitor, "Pilotone" for balancing speakers. Has 5-position mode switch for discrete, CBS "5Q", "Q", "4Q", "4Q", "4Q" decodes stereo (double power), and mono operation. With walnut veneer cabinet. 18½" W x 7" W x 17½" D. $579.90

STEREO DIRECTORY & BUYING GUIDE
The Miida Stereo System

It delivers everything we promise.

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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.

Ask your dealer to show you a Miida Stereo System. It delivers everything we promise...and that's a fact.

For more information write to: Miida Electronics Inc., a subsidiary of Marubeni Corp., 205 Chubb Avenue, Lyndhurst, New Jersey 07071, (201) 933-9300.

Miida 3140—AM/FM Stereo Receiver
Phase locked loop multiplex, IF 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, 15/4" 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 ± 5 dB, Impedance: 8 ohms, Built-in crossover: 750Hz-1KHz, 7.5kHz, 12kHz; Power handling capability: 55 watts maximum music power.

Miida...the stereo specialist.
### Receivers

<table>
<thead>
<tr>
<th>Model</th>
<th>Description</th>
<th>Frequency Response</th>
<th>THD</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>SX-1250</td>
<td>AM-FM Stereo Receiver</td>
<td>16 W rms/channel into 8 ohms (20-20,000 Hz)</td>
<td>THD &amp; IM dist. 0.1%</td>
<td>$900.00</td>
</tr>
<tr>
<td>SX-1050</td>
<td>AM-FM Stereo Receiver</td>
<td>120 W rms/channel into 8 ohms (20-20,000 Hz)</td>
<td>THD &amp; IM dist. 0.1%</td>
<td>$750.00</td>
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<tr>
<td>SX-950</td>
<td>AM-FM Stereo Receiver</td>
<td>85 W rms/channel into 8 ohms (20-20,000 Hz)</td>
<td>THD &amp; IM dist. 0.1%</td>
<td>$700.00</td>
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<tr>
<td>SX-750</td>
<td>AM-FM Stereo Receiver</td>
<td>35 W rms/channel into 8 ohms (20-20,000 Hz)</td>
<td>THD &amp; IM dist. 0.1%</td>
<td>$500.00</td>
</tr>
<tr>
<td>SX-650</td>
<td>AM-FM Stereo Receiver</td>
<td>35 W rms/channel into 8 ohms (20-20,000 Hz)</td>
<td>THD &amp; IM dist. 0.3%</td>
<td>$400.00</td>
</tr>
<tr>
<td>STA-90</td>
<td>AM-FM Stereo Receiver</td>
<td>45 W rms/channel into 8 ohms (20-20,000 Hz)</td>
<td>0.5% THD; response frequency 20-20,000 Hz</td>
<td>$359.95</td>
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<tr>
<td>STA-84</td>
<td>AM-FM Stereo Receiver</td>
<td>25 W rms/channel into 8 ohms (20-20,000 Hz)</td>
<td>0.7% THD; power bandwidth 15-45,000 Hz</td>
<td>$299.95</td>
</tr>
<tr>
<td>STA-77A</td>
<td>AM-FM Stereo Receiver</td>
<td>16 W rms/channel into 8 ohms (20-20,000 Hz)</td>
<td>0.8% THD; frequency response 15-30,000 Hz</td>
<td>$299.95</td>
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<tr>
<td>STA-52</td>
<td>AM-FM Stereo Receiver</td>
<td>18 W rms/channel into 8 ohms (20-20,000 Hz)</td>
<td>0.3% THD; frequency response 15-30,000 Hz</td>
<td>$159.95</td>
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<tr>
<td>STA-18</td>
<td>AM-FM Stereo Receiver</td>
<td>3.5 W rms/channel into 8 ohms (20-20,000 Hz)</td>
<td>0.5% THD; power bandwidth 15-45,000 Hz</td>
<td>$119.95</td>
</tr>
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</table>

### 4-CHANNEL

<table>
<thead>
<tr>
<th>Model</th>
<th>Description</th>
<th>Frequency Response</th>
<th>THD</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>QA-949A</td>
<td>4-Channel Stereo Receiver</td>
<td>Includes built-in CD-4 demodulator and decoders</td>
<td>0.3% THD; power bandwidth 15-45,000 Hz</td>
<td>$750.00</td>
</tr>
<tr>
<td>SR2100</td>
<td>AM-FM Stereo Receiver</td>
<td>65 W/channel continuous power outputs into 8 ohms (20-20,000 Hz)</td>
<td>0.5% THD, built-in 4-channel stereo matrixing</td>
<td>$529.95</td>
</tr>
<tr>
<td>SR2040</td>
<td>AM-FM Stereo Receiver</td>
<td>22 W/channel continuous power outputs into 8 ohms (20-20,000 Hz)</td>
<td>0.5% THD, built-in 4-channel matrixing</td>
<td>$269.95</td>
</tr>
</tbody>
</table>

### RADIO SHACK

<table>
<thead>
<tr>
<th>Model</th>
<th>Description</th>
<th>Frequency Response</th>
<th>THD</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>STA-2000</td>
<td>AM-FM Stereo Receiver</td>
<td>75 W rms/channel into 8 ohms (20-20,000 Hz)</td>
<td>0.25% THD; frequency response 15-25,000 Hz</td>
<td>$399.95</td>
</tr>
</tbody>
</table>

### ROTEI

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-602. 35 W rms/ch into 8 ohms (20-20,000 Hz) at 0.5% THD; phase lock loop circuit; direct-coupled output; split power supply; signal-stereo; center-tuning meters; two phone & 2 aux. inputs; tape monitor; tape dubbing; FM & audio muting; tone-control defeat; hi-filter, loudness, loudness control. $360.00

RX-402. 25 W rms/ch into 8 ohms (20-20,000 Hz) at 0.5% THD; phase lock loop circuitry; split power supply; direct-coupled output circuit; control centers; stereo headphone jack; metal cabinet. $230.00

RX-202 Mk II. 20 W rms/ch into 8 ohms (40-20,000 Hz) at 1% THD; FM sensitivity 2.5 µV; 2-stage direct-coupled negative-feedback circuit; tape monitor; tape dubbing; hi-filter; loudness controls; 4-channel simulation; speaker system switching 1 & 2, 1 + 2. $200.00

RX-152 Mk II. 15 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-channel receiver. 10W rms/ch into 8 ohms (20-20,000 Hz) at 1% THD (4 ch); 18 W rms/ch (2 ch); and 0.5% THD. Power bandwidth 30-30,000 Hz. FM sensitivity 4 µV for 30 dB quieting; capture ratio 8 dB. Will play 4-channel discrete sources, 4-channel SQ matrixed discs or tapes, and will synthesize regular 2-channel stereo sources. Has 4-channel headphone jack; 17 3/4" x 5 1/8" x 12 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 ±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 µV; THD 0.3% stereo. Power bandwidth 30-30,000 Hz; stereo separation 40 Hz at 1000 Hz; frequency response 30-15,000 Hz ±0.5, -2 dB; features triple tone controls; center-tuning meters; two phone & 2 aux. inputs; center-tuning meter; 7-pos. tape monitor; Dolby adapter 4/4-8 channel adapter circuit with switch; FM muting; 25 µs de-emphasis circuit; separable preamp & power amp; two stereo headphone jacks; twin power meters; a.c. outlets (one switched); 21 ¹/₄" x 15 ¹/₄" x 6 3/₄" H... $750.00

8080. Similar to 9090 except 8 W rms/ch. $650.00

7970. Similar to 8080 except 60 W rms/ch at 0.3% THD; frequency response 20-30,000 Hz ±1 dB; FM sensitivity 1.8 µV; IM dist. 0.4% at 14° D & 6°X 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 ±1.5 dB; controls: bass/treble, low/high filter, loudness; FM sensitivity 1.9 µV; THD 0.5% stereo; capture ratio 2.2 dB; stereo separation 40 Hz at 1000 Hz; tape monitor circuit; speaker selector; two stereo headphone jacks; record/source selector; feed-forward circuitry; mic mixing facilities; 18 V x 11.5, 0 x 5.8 H. $420.00

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

551 AM-FM Stereo Receiver

16 W rms/ch into 8 ohms with both channels driven (20-20,000 Hz); IM dist. 0.8%; power bandwidth 25-30,000 Hz; FM sensitivity 2.5 µV (IHF); capture ratio 2.5 dB; S/N 65 dB; THD 0.7% stereo; has signal-strength meter; full complement of controls, inputs, and outputs. $260.00

331 AM-FM Stereo Receiver

12 W rms/ch into 8 ohms with both channels driven (40-20,000 Hz) at 1% THD; power bandwidth 20-40,000 Hz; frequency response 25-30,000 Hz ±0.2 dB, -3.0 dB at 1 kHz; complete input/output facilities for tape recording & playback; FM sensitivity (IHF) 2.5 µV; stereo separation 35 dB at 1000 Hz; frequency response 30-12,000 Hz ±1 dB; IM dist. 0.8%; power bandwidth 25-30,000 Hz; IM dist. 0.7% stereo; selectivity 52 dB; S/N 68 dB; FM sensitivity 1.8 µV (IHF), THD 0.5% stereo. $200.00

221. Similar to 331 except 4 W rms/ch. $180.00

4-CHANNEL

The company has three different AM-FM 2- and 4-channel receivers, including decoder, synthesize, amplifier, center control. Each can decode all matrixed 4-channel recordings and broadcasts, simulate 2 rear channels of ambient signals from conventional recordings and broadcasts, synthesize 2 rear channels of ambient signals from conventional recordings and broadcasts, simulate 2 rear channels of ambient signals from conventional recordings and broadcasts, simulate 2 rear... $399.95

R236. Similar to R316 except 30 W rms/ch; includes separate signal-strength and center-channel tuning meter; built-in CD-4 demodulator; 113-channel switching; metal cabinet with low filter; $349.95

R336. Similar to R236 except 42 W rms/ch. $299.95

SHERWOOD

S-5910 AM-FM Stereo Receiver

100 W rms/ch into 8 ohms (20-20,000 Hz) at 0.1% THD; Vari-Matrix decoder for QS and SQ and CDQ-Demodulator for CD or Quadratic records; 1-channel tape inputs & outputs; 4-channel headphone jacks; metal cabinet with wood-grained finish. 21 ¹/₄" W x 15 ¹/₄" D x 5 ¹/₄" H... $700.00

S-7910 AM-FM Stereo Receiver

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

S-3710A AM-FM Stereo/Dynaquad
40 W rms/ch into 8 ohms (30-20,000 Hz) at 0.3% THD; IM dist. 0.3% at 8 ohms at rated output (0.15% at 10 W); FM tuner sensitivity 1.8 µV; S/N 70 dB; capture ratio 1.2 dB; stereo separation 40 dB at 1000 Hz; features built-in ARS 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; $500.00. Same as S-7910 except FM-stereo only $475.00

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% at 8 ohms at rated output (0.2% at 10 W); direct-coupled power amplifier; FM tuner sensitivity 1.9 µV; S/N 70 dB; capture ratio 1.4 dB; hum & noise 85 dB; features signal-strength meter; PLL multiplex; flywheel-assisted tuning; FM muting; output for future 4-channel broadcasts; 4-channel adapter; outputs for two sets of speakers; provision for front-panel dubbing jack; comes with case. 17 1/4" W x 8 1/4" H x 13 1/4" D. $400.00

S-7110B AM Stereo Receiver
20 W rms/ch into 8 ohms (20-20,000 Hz) at 0.7% THD; IM dist. 0.7% at 8 ohms at rated output (0.2% at 10 W); direct-coupled amplifier; FM sensitivity 2.0 µV; S/N 70 dB; capture ratio 1.5 dB; stereo separation 40 dB at 1000 Hz; features switchable FM muting; signal-strength meter; PLL multiplex; provision for switching two sets of speakers; front-panel dubbing jack; built-in ARS 4-channel circuit; wide-range detented bass & treble controls; comes with case. 17 1/2" W x 5 1/4" H x 13 1/2" D. $300.00

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% at 8 ohms at rated output (0.35% at 5 W), FM sensitivity 2.5 µV; S/N 65 dB; capture ratio 4.0 dB; stereo separation 35 dB at 1000 Hz; features switchable FM muting; signal-strength meter; PLL multiplex; provision for switching two sets of speakers; tape monitor; wide-range bass & treble controls, balance control; mode switch; comes with case. 17 1/2" W x 5 1/4" H x 15 1/2" D. $239.95

S-7000A FM Stereo Receiver
30 W rms/ch into 8 ohms (25-20,000 Hz) at 0.2% THD; features tone-balance and bass 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; $500.00. Same as STR-6800SD except 55 W rms/ch at 0.5% THD; features tone-balance and bass control; mode switch; comes with case. 17 1/2" W x 4" H x 14" D. $465.00

SOUNDCRAFTSMEN

300B 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 ±3 dB; input sensitivity: mag. phono 2.4 mV/60 k, aux & tape monitor 120 mV/40 k; FM section: sensitivity 1.5 µV; S/N 67 dB; capture ratio 1.3 dB; THD stereo 0.4%; stereo separation 35 dB (1000 Hz); Walnut-grained vinyl cabinet. 18" W x 9 3/4" H x 13 1/4" D. $479.95

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 ±3 dB; input sensitivity: mag. phono 2.4 mV/60 k, aux & tape monitor 120 mV/40 k; FM section: sensitivity 1.9 µV; 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 µs. $329.50

SUPERSCOPE

R-1270 AM-FM Stereo Receiver
35 Wch continuous power into 8 ohms (40-20,000 Hz) at 1% THD, illuminated signal-strength/tuning meter; Quadraphase 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...

R-1240. Similar to R-1270 except 20 Wch...

R-1220. Similar to R-1270 except 10 Wch...

SYLVANIA

RS4744 AM-FM Stereo Receiver
60 W rms/ch into 8 ohms with both channels driven (20-20,000 Hz) at 0.25% THD; power bandwidth 5-30,000 Hz, frequency response 7-70,000 Hz (tape input ±1 dB); FM sensitivity 1.8 µV; S/N 67 dB; capture ratio 1.5 dB; THD stereo 0.4%; stereo separation 40 dB (1000 Hz), 30 dB (10,000 Hz), has full complement of inputs, outputs, controls and switches. Walnut-grained vinyl cabinet. 6" H x 17 3/4" W x 15" D. $479.95

RS4754 AM-FM Stereo Receiver
20 W rms/ch into 4 to 8 ohms (20-20,000 Hz) at 0.5% THD; frequency response 20-20,000 Hz (aux. input ±1 dB); FM sensitivity 1.9 µV; S/N 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 9 3/4" H x 13 1/4" D. $279.95

RS4741 AM-FM Stereo Receiver
10 W rms/ch into 4 to 8 ohms (40-20,000 Hz) at 0.5% THD, frequency response 40-20,000 Hz (aux. input ±2 dB); FM sensitivity 1.9 µV; S/N 72 dB; capture ratio 1.3 dB; THD stereo 0.4%; stereo separation 35 dB (1000 Hz), 25 dB (10,000 Hz); Walnut-grained vinyl cabinet. 18" W x 9 3/4" H x 13 1/4" D...

4-CHANNEL

RQ4748 4-Channel Receiver
50 Wch continuous power (four channels) into 8 ohms from 20-20,000 Hz. 125 Wch 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 connects to without rewiring). Other specifications same as RQ4747. Walnut veneer cabinet with extruded aluminum control panel. 6 1/4" H x 21 1/4" W x 15" D. $699.95

RQ4747 4-Channel Receiver
25 Wch continuous power (four channels) into 8 ohms from 20-20,000 Hz at less than 0.5% THD. 60 Wch continuous power in special stereo bridge mode. Includes an SQ matrix IC, two SQ positions for image placement control (standard SQ and SQ blend), plus CD-4 discrete phono demodulator. Has master volume plus three separate balance controls for front left-right, rear left-right, and front-to-rear. Features dual FM tuning meters for center tune and S/N ratio, frequency response at tape input 20-30,000 Hz ±1.5 dB, FM 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. (5 + n)N below
1977 EDITION

TECHNICS BY PANASONIC

SA-5760 AM-FM Stereo Receiver
165 W rms/ch into 8 ohms (20,000 Hz) at 0.08% THD, IM dist. 0.1%; FM sensitivity (IHF) 1.8 µV (10.3 dBf); FM THD 0.1% (mono), 0.15% (stereo); capture ratio 1.0 dB; features automatic selection and carrier-level adjust adapts cartridge characteristics automatically; BTL amplifier design; 4-channel capability; 18'/6" W x 6'/6" D x 6'/6" H. $599.00

SA-5560 AM-FM Stereo Receiver
85 W rms/ch into 8 ohms (20,000 Hz) at 0.1%; THD; 90 W rms/ch into 4 ohms; IM dist. 0.1%; FM sensitivity (IHF) 1.8 µV (10.3 dBf); FM THD 0.15% (mono), 0.25% (stereo); capture ratio 1.0 dB. $799.95

SA-620 AM-FM Stereo Receiver
50 W rms/ch into 8 ohms (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 µV (11.2 dBf); FM THD 0.1% (mono), 0.3% (stereo); capture ratio 1.0 dB; features phase-locked loop in FM stereo, automatic protection circuit, click-stop tone controls, high & low cut filters, phono preamp; click-stop tone controls; hi & lo filters, for 4-channel capability; 18'/6" W x 17'/6" D x 6'/6" 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 (20,000 Hz) at 0.4% THD; frequency response 20-15,000 Hz; S/N 70 dB phono, 90 dB aux.; FM sensitivity 1.8 µV (11.2 dBf); FM THD 0.1% (mono), 0.3% (stereo); capture ratio 1.0 dB; selectivity 60 dB, FM muting; loudness control; high & low filters, phono, aux. & two tape inputs; 20'/6" W x 17'/6" D x 6'/6" H. $349.95

SA-220C. Similar to SA-320 except 7 W rms/ch at 0.8% THD; high filter only; one tape input. $179.95

SA-420 AM-FM Stereo/4-CH Receiver
15 W rms/ch into 8 ohms (20,000 Hz) with all channels driven at 0.4% THD; built-in CD demodulator; 40 W rms/ch BTL mode, FM muting, loudness control, phono preamp; phono cartridge equalizer built in; two phono, aux. & two tape inputs; 19'/6" W x 15 D 5/8" H. $599.95

YAMAHA

CR-1000 AM-FM Stereo Receiver
70 W rms/ch into 8 ohms (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); FM sensitivity 1.7 µV (9.9 dBf); capture ratio 1.0 dB; selectivity 80 dB, S/N 72 dB; frequency response 50-10,000 Hz ±0.5 dB, 20-15,000 Hz ±1.5 dB; stereo separation 45 dB; features separable preamp/power amp, will handle two pairs of speakers; four a.c. convenience outlets; headphone jack; f.i. output for 4-channel capability; multipath output; full range of inputs & outputs, switches & controls. 20" W x 19'/6" H x 13'/6" D. $850.00

CR-800 AM-FM Stereo Receiver
45 W rms/ch into 8 ohms (20,000 Hz) at 0.1% THD at rated power; frequency response (amp) 10-100,000 Hz ±0.5 dB; channel separation 60 dB (rated power, 1000 Hz); FM sensitivity 1.7 µV (9.9 dBf); capture ratio 1.0 dB; selectivity 80 dB, S/N 72 dB; frequency response 50-10,000 Hz ±0.5 dB, 20-15,000 Hz ±1.5 dB; two switched, two unswitched a.c. outlets; separate preamp/ power amp, two phono input circuits; f.i. output for 4-channel capability; 18'/6" W x 6'/6" H x 11'/6" D. $580.00

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

CR-450 AM-FM Stereo Receiver
25 W rms/ch into 8 ohms (20,000 Hz) at 0.1% THD, response 20-20,000 Hz ±0.5/-1 dB, channel separation 60 dB (rated power, 1000 Hz); FM sensitivity 2.0 µV (11.2 dBf); FM THD 0.2% stereo; capture ratio 1.5 dB; selectivity 60 dB, S/N 66 dB; stereo separation 40 dB, response 50,000 Hz ±0.5 dB, 20-15,000 Hz ±1.5 dB; one tape input, switched a.c. outlets; separate preamp/power amp; will handle two pairs of speakers; four a.c. convenience outlets; headphone jack; f.i. output for 4-channel capability; 18'/6" W x 6'/6" D x 6'/6" H. $390.00

CR-400 AM-FM Stereo Receiver
16 W rms/ch into 8 ohms (20,000 Hz) at 0.5% THD; response 20-50,000 Hz ±0.5/-3 dB; channel separation 50 dB (rated power, 1000 Hz); FM sensitivity 2.0 µV (11.2 dBf); FM THD 0.5% stereo; capture ratio 2.0 dB, selectivity 65 dB, S/N 66 dB; stereo separation 40 dB, response 50,000 Hz ±1.0 dB, 20-15,000 Hz ±1.5 dB; two switched a.c. outlets; 18'/6" W x 11'/6" D x 6'/6" 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 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 used 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 1/3 or 45 rpm, controlled by electronic circuits.

The platter rests directly on the motor 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 may impart a harsh, muddly quality to the reproduced sound. If the flutter occurs at a low frequency, it may be heard as a warbling 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 rumble, 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 a combination of circuitry and software to maintain constant motor speed in spite of variations in power-line voltage or frequency. A vernier speed adjustment allows the turntable 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 strobescope 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, and within 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 stylus, thus 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 "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 wear and distortion of 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 effectiveness (the actual skating force is somewhat unpredictable. being a function of tracking force, stylus dimensions, record material, and record 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 drive mechanism 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 record on the platter, start the player, 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 1/3 or 45 rpm, controlled by electronic circuits. The platter rests directly on the motor 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 may impart a harsh, muddly quality to the reproduced sound. If the flutter occurs at a low frequency, it may be heard as a warbling 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 rumble, 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 a combination of circuitry and software to maintain constant motor speed in spite of variations in power-line voltage or frequency. A vernier speed adjustment allows the turntable 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 strobescope 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, and within 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 stylus, thus offsetting the cartridge at an angle to 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.

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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 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 on 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 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 record oval modulation) is typically 0.2 to 0.3 mil. The elliptical 3-mil styli are 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 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-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-amp" to boost it to a level suitable for ordinary phone preamplifier inputs. Also, the stylus of a moving-coil cartridge is rarely user-replaceable.

Magnetic cartridges of all types are velocity-sensitive devices, whose output voltage is proportional to the velocity with which the stylus moves as it follows the groove modulation. High-end phono preamplifiers are designed to equalize the output of a magnetic cartridge to deliver a "flat" response from records recorded to commercial standards. Some of these are preamplifiers at standard preamplifiers, but some are not suitable for direct connection to most amplifier phone 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 convert their voltage output and frequency response to the equivalent of a magnetic cartridge. They employ elec-tret 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 eloctret 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 styli 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 mc-centimeters per dyne, with 30 being a typical value for most high-rankin-g 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 imparts 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 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 1½ 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 windings inductance than typical stereo cartridges, and should be terminated in a load of 1000 ohms or less than 20 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.

\[ ...this is nothing short of incredible. ...\]

- LEN FELDMAN

**MODEL AT-706**
electret condenser headphones
20 to 22,000 Hz ± 2 dB

Mr. Feldman, reporting in *Tape Deck Quarterly*, Spring, 1975 noted that the AT-706 response varied no more than 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.

AUDIO-TECHNICA U.S., INC., Dept. 106SG 33 Shiawassee Ave., Fairlawn, Ohio 44313
Available in Canada from Superior Electronics, Inc.
Introducing an evolutionary idea.
The New Empire 698 Turntable

Great ideas never change radically. Instead, they are constantly being refined to become more relevant with time.

So it has been with Empire turntables. Our latest model, 698, is no exception. Basically, it's still the uncomplicated, belt-driven turntable we've been making for 15 years. A classic.

What we're introducing is improved performance. The lower mass tone arm, electronic cueing, quieting circuitry and automatic arm lift are all very new.

The Tonearm
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 0.01% 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 ARIA.

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.

The Tonearm
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.

The Empire 698 Turntable
Suggested retail price $400.00

For more information write:
EMPIRE SCIENTIFIC CORP.
Garden City, New York, 11530.

CIRCLE NO. 99 ON READER SERVICE CARD
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" x 16" x 5½" 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 motor, belt drive, 4-lb platter, viscous damped cueing, and removable cartridge shell. Comes complete with base, dust cover, and tonearm. 12½" x 16½" x 5½" walnut-grained vinyl finish $145.00

AR-XB-91 Same as AR-XB but with Shure M91ED cartridge 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; 18½" W x 17½" D x 6½" 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 ±0.035% rumble (DIN un-weighted) 42 dB, 62 dB (weighted); tracking error 0.126'/in.; 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

1000 Electronic Changer/Single Play
Record changing turntable with belt drive; two motors: 24-pole, 300 rpm, synchronous drives

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 ±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 50 gr or perpendicular force and 0.0625" of travel to operate. Anti-skating and stylus pressure functions handled by tandem controls operating along a single scale. Knob control for cueing rate adjustment (continuously varied between 1 and 3 sec.); plug-in male/female pin connectors for attaching cartridge head to tonearm; gimbaled tonearm with needle bearings, 15" tracking adjustment for stack of records, 12" cast single-piece platter, die-cast isolated tonearm counterweight; 10-spoke turntable mat. Same except without electronic speed control and variable pitch feature. 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. $199.95

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

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; 10½" platter $79.95

BSR MCDONALD

200BAX Changer/Single-Play
Two-speed (33 & 45 rpm) automatic record...
Every Dual turntable, from the 225 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, 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.

Dual
United Audio Products, 120 Sc. Columbus Ave. Mt. Vernon N.Y. 10553

There have never been so many ways to enjoy Dual precision.
True, four-point gimbal centers and pivots the tonearm mass at 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 then exactly parallels the record with any size cartridge. Result: accurate vertical tracking without the added mass of cartridge spacers.


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.
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 8½" tonearm; servo-controlled motor; auto return and shut-off; pitch control; strobe indicator; friction-hinged dust cover. 17½" W x 14" D x 17½" 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 8½" tonearm; auto play; auto return and shut-off; auto repeat; viscous-damped cueing; anti-skate feature; low-mass cartridge head; vibration isolation; friction-hinged dust cover. 17¼" W x 14" D x 7½" 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 8½" tonearm; auto return and shut-off; viscous-damped cueing; anti-skate feature; low-mass cartridge head; vibration isolation; friction-hinged dust cover. 17¼" W x 14" D x 7½" 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 8½" tonearm; gimbal arm suspension; counterweighted tonearm; no stylus wear indicator. Comes with ADC VLM Mk II induced magnetic cartridge, walnut-grained base, hinged dust cover, hydraulic lift and lowering of tonearm; cueing system damped; anti-skate feature; low-mass cartridge head; vibration isolation; friction-hinged dust cover. 17¼" W x 14" D x 7½" H ............................................. $99.95

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 stylus; 6½ pitch control for both speeds (33 & 45); automatic and manual operation in both single- and multiple-play modes; interchange-able 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. 3½ lb platter. 12½" x 10½". 5" above and 2½" below mounting board. ............................................. $139.95

1226 Single/Multi-Play Turntable
Additional features include: tracking as low as 4 lb. 4 lb one-piece die-cast platter. Rotating single-play spindle. 12½" x 10½". 5" above and 2½" below mounting board. ............................................. $169.95

1228 Single/Multi-Play Turntable
Additional features include: four-point gyroscopic gimbal tonearm suspension. Tracking angle selector for single- and multiple-play. Tracking down to ½ gram. Damped counterbalance with coarse and fine adjustments. Synchronous/hi-torque motor. 4 lb one-piece die-cast platter; illuminated strobe. 13" x 10½" plus 1½" at rear and right for tonearm overhang. 5½" above and 2½" 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-5. 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 creates tonearm within four-point gyroscopic gimbal. Tonearm tracks down to ½ 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. 14½" x 12½" plus 1½" at rear and right for tonearm overhang. 5½" above, 3½" 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 lift at end of play and motor shuts off. Less base ............................................. $199.95

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: 33½ 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) 5.7 lbs. Gimbal-mounted 8½" tonearm. Vertical tonearm control varies height over 8 mm range; parallel 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 0.05%. 15'/8" x 14'/4" x 5'/8" H 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'/2" g ±0.1 g. Mounting clearance 5'/8" above board, 2'/1' below. Has hysteresis motor and anti-skating device, cueing lever, and built-in lighted stroboscope. 14'/8" W x 12'/1" D x 12'/2" H. 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 to 6'/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'/8" W x 12'/1" D x 6'/8" H above motorboard, 2'/1" 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 stylus; viscous-damped up and down cue and anti-skate 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 1/2 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'/8" W x 15'/4" D x 8'/8" 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 degenerating rare-earth material; self-regulating anti-feedback servo-controlled motor; 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'/8" W x 14'/1" D x 4'/1" above motorboard, 1'/4" 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 stylus; 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'/8" W x 14'/1" D x 6'/4" H $229.95

993B 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'/8"
**3 Record Players**

W x 14⅛" D x 4⅜" above motorboard, 2⅛" below...

BD30. Base...

D30. Dust cover...

LRS100. 45 rpm automatic spindle...

**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 "S" tubular aluminum tonearm; adjustable counterweight; calibrated spring for CD-4/eliptical anti-skating adjustment; viscous-damped cue control; will handle 6 records; fixed single-play spindle, 16" W x 15" D x 8½" H including base & cover; comes with Shure M93E magnetic cartridge...

**125B 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/eliptical calibration; viscous-damped control; comes with base & dust cover, 14½" W x 12½" D...

**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 tone-arm; swing stylus-force adjust; viscous-damped cue control; will handle stack of six records; fixed single-play spindle; comes with low-capacitance CD-4 cables; Pickering V15/ATE-4 cartridge; base; dust cover. 16½" W x 8½" D (base)x 15" D...

**440C.** Same as 440M except supplied with ceramic cartridge...

**400.** Same as 440C except does not have cartridge...

**F45.** 45 rpm spindle for either model...

**GLENBURN**

**2160B Changer/Single-Play**

Three-speed (33, 45 & 78 rpm) multi-play unit for 7", 10" & 12" records, multi-pole synchronous motor; covered weighted tonearm; viscous-damped cue/pace control; dual-range anti-skate control; swing-away control arm for manual play; single-play tone-arm head, comes with ADC K7E elliptical magnetic cartridge, walnut-grained base, dust cover...

**2110B Changer/Single-Play**

Three-speed (33, 45 & 78 rpm) multi-play unit for 7", 10" & 12" records, 4-pole motor; cue/pace control; anti-skate control; swing-away control arm for manual play; comes with ADC KB magnetic cartridge, walnut-grained base, dust cover...

**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 ~16½" W x 16½" D x 6½" H (inc. dust cover)...

**4VC-5244 4-Channel Record Changer**

CD-4 design with built-in 4-channel demodulator. Has 4-pole outer motor; Response 20-16,000 Hz. Output 300 mv at 5000 ohms. Semi-adjustable separation control. 7½" x 15¼" x 17½". D...

**4-CHANNEL**

**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; 18½" W x 14½" D x 6½" H...

**PS/38.** Similar to PS/48 except manual operation; wow & flutter 0.04% W rms; tonearm with anti-skate, direct-readout of stylus pressure; strobe and neon lamp; detachable dustcover...

**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. 18½" W x 14½" D x 6½" H...

**PS/10.** Similar to PS/15 except wow & flutter 0.1%; tracking force range 0-4 g; cartridge weight 4-12 g; 18½" W x 14½" D x 7½" H...

**ELPHIAN**

**JVC**

JL-F35 Single-Play/Automatic

Four-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; motor with precision ground belt; tracking error ±2.5%; 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, 19¾" x 16½" x 7" H...

**LENCO**

**L-90 Single-Play/Automatic**

Two-speed (33 & 45 rpm); electronic belt-drive mechanism; 16-pole synchronous motor; illuminated strobe; spring anti-skating device; fine speed adj. ±4%, -3%; IC controls automatic switch-off, electronic friction-type lifting of tonearm, and speed adj features; wow & flutter 0.08%; rumble ~63 db (DIN); viscous damped tonearm lift; comes with base & friction hinge dust cover...

**L-94.** Similar to L-90 but with cartridge lift; comes with base & friction hinge dust cover; 18½" x 14½" x 6½"...

**STEREO DIRECTORY & BUYING GUIDE**
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 & Olufsene of America, Inc., Dept. 12E, 515 Busse Road, Elk Grove Village, Illinois 60007

CIRCLE NO. 12 ON READER SERVICE CARD
3 Record Players

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. Rm 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 8/5 platter. Anti-skating device. 14 3/8 W x 11 3/8 H x 5 1/4 D. $175.75
B-52. Same as B-55 but without base and cover. $119.50

LINN SONDEV

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 Afromosia base; hinged dust cover; comes with base and cover but less arm. $395.00

LUXMAN

P-121 Single-Play/Manual
Direct-drive unit; two-speed (33 & 45 rpm); vernier controls for fine-tuning speed over range ±4%; illuminated strobe markings; rumble 70 dB; wow & flutter 0.03% 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 ±3%; rumble (RRLL Wtd) -55 dB; (DIN Wtd) -60 dB; has opt-coupled automatic lift & shutoff mechanism; comes with S-shaped tonearm, base & dust cover. 17 3/8 W x 14 1/8 H x 14 1/2 D. $269.95
6300. 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 ±3%; electronic speed control with strobe; total wiring capacitance less than 100 pF; comes with Audio-Technica AT14S cartridge. 17 3/8 W x 8 H x 14 1/2 D. $129.95

6100 Single-Play/Manual
Two-speed (33 & 45 rpm); belt-driven a.c. synchronous motor; wow & flutter 0.05% W rms; rumble -60 dB (DIN); features automatic arm return; cue control; comes with S-shaped tonearm, base & dust cover. $199.50

6000 Single-Play/Automatic
Two-speed (33 & 45 rpm) automatic turntable; two-speed induction motor, removable umbrella spindle with automatic sensing for last record shutoff; two stub spindles for single play, automatic tonearm unlocking device; viscous-damped cueing and pause control; calibrated stylus pressure adjust (0-5 gr); adjustable anti-skate mechanism; comes with base, dust cover, and Audio-Technica AT11 magnetic cartridge. 17 3/8 W x 8 H x 14 1/2 D. $69.95

Model I 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 3/8 W x 8 H x 14 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 3/8 W x 8 H x 14 1/2 D. $49.95

Model III. Same as Model II except with adjustable counterweight; Audio-Technica AT11E magnetic cartridge. 17 3/8 W x 8 H x 14 1/2 D. $89.95

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 AT10 magnetic cartridge and Shibata nude stylus, low-capacitance audio cables, base, and dust cover. 17 3/8 W x 8 H x 14 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 rubber & copper 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

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 2/5 W x 10 1/4 D x 6 1/4 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 mVrms); 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 1/5 W x 14 1/2 D x 7 1/4 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 1/4" W x 13 1/4" D x 5 1/4" 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-skip locking device; oil-damped cueing lever; cue control; Audio-Technica AT-14S cartridge. 18 1/4" W x 14 1/2" D x 8 H. $149.95

STEREO DIRECTORY & BUYING GUIDE
skating adjustment; viscous damped cueing control; stylus pressure adjustment and gauge; Piecerk—V-I/AT2-NP cartridge. 17.8" W x 14V/ D x 7/8" H $99.95

PHILIPS

GA209 "Electronic" Turntable
Two-speed (33 & 45 rpm) fully automated, electronically controlled turntable; three motors

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 (±3%). Drift 0.2%; wow & flutter 0.07%; rumble —43 db (DIN A); stylus force 0.75-3 g; adjustable; anti-skating force adjustable for spherical & elliptical stylus; turntable drive 9 V d.c. generator, dual range switch-off system. 6'/8" H x 17'/2" W x 12'/4" D $299.50

GA427 Single-Play/Manual
Single-play, two-speed (33 & 45 rpm) unit; features damped cueing; tracking force adjustable; anti-skating adjustable; 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-turntable with brushless d.c. servo motor; electronic speed change; speed control range ±2%; wow & flutter 0.05% W rms; S/N 60 db; 12'/2" aluminum alloy die-cast platter; statically balanced S-shaped tonearm; cartridge weight 4 to 14.5 g; anti-skating; viscous-damped cueing device; stylus pressure direct-readout counterweight, lateral balance; arm height adjustable; plug-in headshell. 17'/4" W x 14'/8" D x 7'/4" H $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 ±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 balance; strobe-lighting (on platter rim); plug-in headshell. 17'/8" W x 14' D x 6'/8" H $250.00

PL-510 Single-Play/Manual
Two-speed (33 & 45 rpm), belt-drive system; brushless d.c. servo motor; speed control range ±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 balance; strobe-lighting (on platter rim); plug-in headshell. 17'/4" W x 14' D x 6'/8" H $215.00

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; statically balanced S-shaped tonearm; usable cartridge weight 4 to 10 g; anti-skating; viscous-damped cueing device; lateral balance; plug-in headshell. 17'/8" W x 14' D x 6'/8" H $212.50

PL-112D Similar to PL-117D except without automatic 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 ±5.5%); brushless d.c. (Hall Effect) motor with precision-ground belt, tracking error, skating force, vertical friction, lateral friction all 0; rumble (DIN B) —68 db; wow & flutter (NAB weighted) 0.04%; (DIN B) 0.09%; hum —76 db; speed constancy ±0.3%; viscous-damped cueing control, tonearm mass 6 gr.; comes with straight-line tracking arm; dust cover 6'/8" H (with dust cover)x 16'/8" W x 16'/8" 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; 11'/8" cast platter; balanced S-shaped tonearm; elliptical stylus pressure adjustable 0.4 g; vibration-isolation feature; walnut -grained vinyl veneer base; 17'/8" W x 14' D x 7'/2" H $159.95

Realistic LAB-100 Single-Play/Manual
Belt-driven turntable; play/stoptopcycle 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 —56 db (DIN B), 7'/8" x 16'/x 14'/8" (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'/2" x 16'/8" x 14'/2" Smoke -tint dust cover $6.95

SANUSI

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%; fine-speed deviation 0.002%; fine-speed adj. ±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; 19'/8" W x 15" D x 6'/2" 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%; illuminated strob; statically balanced S-shaped tonearm; min. tracking force setting 0.5 g; cartridge weight 1-10 g; comes with removable cover, low-capacitance output cables; 18'/8" W x 14'/8" D x 6'/4" 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 strob markings; statically balanced S-shaped tonearm; min. tracking force 0.5 g; cartridge weight 4-11 g; 18'/8" W x 14'/8" D x 5'/8" H. $230.00

SR323 Single-Play/Manual
Two-speed turntable; 4-pole synchronous motor; wow & flutter 0.00%; 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; 18'/8" W x 14'/8" D x 5'/8" H. $160.00

FR-1080 Single-Play/Manual
Two-speed belt-driven turntable, 4-pole syn-
3 Record Players

8004-IV. With TT780 four-channel discrete cartridge; frequency response 10-50,000 Hz; channel separation 0.23 dB; output 0.6 mV/cm/sec at 2.2 g tracking; Quadraphenalyst. .................................................. $224.95

8004-II. With TT680EE stereo cartridge; frequency response 10-20,000 Hz; channel separation 35 dB; output 0.2 mV/cm/sec at 2 g tracking; 12 dB at 0.7 mV eliptical stylus. .................................................. $199.95

8004-IIA. With TT680EE stereo cartridge; frequency response 20-20,000 Hz; channel separation 35 dB; output 0.1 mV/cm/sec at 2 g tracking; 0.3 x 0.7 mil eliptical stylus. .................................................. $172.50

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 54 dB; rumble —60 dB; S-shaped tonearm; min. tracking force 0.8 g; cartridge weight 4-10 g; 17 3/4" W x 14 3/4" D x 5 1/2" 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 3/4" W x 14 3/4" D x 5 1/2" H ................. $115.00

SONY

PS-3750 Single-Play/Manual
Direct-drive system with brushless & slotless d.c. servo-controlled motor; built-in strob; resonance-reducing undercoating on platter; air-damped record mat ........................................ $230.00

PS-3300. Similar to PS-2750 except automatic tonearm lift & motor shutoff; 12" non-magnetic platter; wow & flutter 0.05% W rms; rumble —70 dB (DIN B); solenoid controls (including remote); 14 3/8" W x 3 1/32" H x 14 3/4" 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, ±5%, independently adjustable for each speed. Dynamically balanced turntable has 13 1/2" platter, weighs 4.4 lbs. Wow & flutter 0.03% W rms; rumble —70 dB (DIN B). Build-up time within 1/2 rotation. Tonearm is static-balanced low-mass tubular with 9 1/4 pivot-to-stylus distance. Direct-reading tracking force adjustment from 0 to 5 g. Anti-skating, low-capacitance cables. 17 3/4" W x 6 1/2" H x 14 3/4" D ........................................... $200.00

8004. With TT780 four-channel discrete cartridge; frequency response 10-50,000 Hz; channel separation 0.23 dB; output 0.6 mV/cm/sec at 2 g tracking; Quadraphenalyst. .................................................. $224.95

SL-1200 Single-Play/Manual
Similar to SL-1100A except has 13 diecast aluminum platter weighing 3.86 lbs and a 8 1/4" tonearm. Has hinged, removable plexiglass dust cover; low-capacitance cables. ........................................... $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; stroke markings on tipped stylus; 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 3/4" W x 5 1/2" H x 14 3/4" D ........................................... $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 3/4" W x 5 1/2" H x 14 3/4" D ........................................... $199.95

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 1/3 rpm; stop time (magnetic brake) within 30 degree rotation (0.3 sec); long-term speed stability ±0.002% (within ±36 ms over 30-min. period, less than ¾ sec. in 10 hours); wow & flutter 0.025% W rms; rumble —70 dB; solenoid controls (including remote); 14 3/4" W x 3 1/8" H x 14 7/8" 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, ±5%, independently adjustable for each speed. Dynamically balanced turntable has 13 1/2" platter, weighs 4.4 lbs. Wow & flutter 0.03% W rms; rumble —70 dB (DIN B). Build-up time within 1/2 rotation. Tonearm is static-balanced low-mass tubular with 9 1/4 pivot-to-stylus distance. Direct-reading tracking force adjustment from 0 to 5 g. Anti-skating, low-capacitance cables. 17 3/4" W x 6 1/2" H x 14 3/4" D ........................................... $200.00

STANTON

8004 "Gyropose" Single-Play/Manual
Two-speed (33 & 45 rpm ±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 to 5, tracking force 1.7 degrees; max. adjustable anti-skate with separate scales for all types of stylus. Comes with dust cover, walnut base, cartridge, low-capacity tonearm, extension cord cables. 13" x 14 3/4" x 7 1/4" D. ........................................... $369.95

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-Record" permits repeat play of record up to five times before shut-off or indefinite repeat; gimbal-suspended tonearm (9/4 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, wide-range (0.5 to 50,000 Hz); rumble —70 dB (DIN B); 5 3/4" W x 17" H x 14" D. ........................................... $299.95

SL-1300. Similar to SL-1300 except can play stack up to six records 7", 10", or 12"; "Memo-Record" selector programs change function or repeat/play selection; includes manual and changer spindles for regular & 45 rpm records, wow & flutter 0.04% weighted; —70 db (DIN B); 17 3/4" W x 7 3/4" H x 14 3/4" D. ........................................... $349.95

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 shutter; 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-15 tonearm, multi-position dustcover, deluxe walnut base; 19.8" D x 15.5" W x 6.8" H. ........................................... $550.00

TD-145C Single-Play/Automatic
Two-speed (33 & 45 rpm) transcription turntable; features exclusive electronic sensing system for automatic tonearm lift & power shutter off; wow & flutter 0.06% (DIN 45 507) weighted; rumble (DIN 45 539) —43 dB unweighted, —65 dB weighted. 17 L x 13 1/2" W x 7 1/4" 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, 12" S-shaped tonearm; anti-skate (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; push-pull motor drive amplifier; solid-state DTL switching; motor-driven cue control for precision control; electronic sensor for automatic tonearm lift & motor shutter; 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-15 tonearm, multi-position dustcover, deluxe walnut base; 19.8" D x 15.5" W x 6.8" H. ........................................... $550.00

STEREO DIRECTORY & BUYING GUIDE

70
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.
A stereo sale in your living room?

That's right — it comes right to your door! Just open our new catalog and you'll discover all the latest stereo components and complete music systems at remarkable savings. No hype. No pressure. We simply pick the best stuff available from ALL major brands and offer it at shamefully low prices. For five years we've been the fast-delivering alternative to high-priced retail stores, with over 100,000 customers! Find out why ... write or call today!

P.S. Send along $1 for postage and we'll also zip you the new "How to Hi-Fi Guide" — it's a good source book explaining all the basic components and how to get the most out of your music system, plus a glossary of terms.

WAREHOUSE SOUND CO.
Box S, San Luis Obispo, CA 93405 805/544-9700

Free catalog

name

address

city state zip

Enclosed is $1 for your hot new catalog and the "How to Hi-Fi Guide" sent via PRIORITY FIRST CLASS MAIL.

Just zip me your free catalog via THIRD CLASS MAIL.

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.

CIRCLE NO. 72 ON READER SERVICE CARD

STEREO DIRECTORY & BUYING GUIDE
If you can see a difference, imagine what you’ll hear.

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 Guard preservative played 100 times display the same full amplitude at all frequencies and the same absence of surface noise and harmonic 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 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, in a kit complete with a non-aerosol pump sprayer and velvet buffing pad, is available in audio and record outlets.

Sound Guard keeps your good sounds sounding good.

*Sound Guard is Ball Corporation’s trademark for its record preservative. Copyright © Ball Corporation, 1976.

CIRCLE NO. 11 ON READER SERVICE CARD
WKLS, Atlanta, broadcasts 100% disc-to-air. That’s why it uses Stanton’s 681 series... exclusively.

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 tracking 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.
ADC

XLM MKII Phono Cartridge
Sensitivity 0.9 mV/cm/sec; response 15-20,000 Hz ±1.5 dB; tracking force 3.5 g. Channel separation 28 dB; elliptical 0.0007" x 0.0003" elliptical 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" x 0.0003" elliptical 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" x 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 ½-1½ g; output 5.5 mV at 5.5 cm/sec; channel separation 26 dB; 0.0007" x 0.0003" elliptical stylus tip; replacement stylus RQLM-36 $45.95

K Series Stereo Cartridges
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" x 0.0003" elliptical stylus $14.95
K8. 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; elliptical 0.0007" x 0.0003" elliptical stylus $19.95
K8E. 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; elliptical 0.0007" x 0.0003" elliptical stylus $29.95
K5E. Output 5 mV; tracking force range ½-2½ g; response 15-20,000 Hz ±3 dB; channel separation 24 dB; 0.0007" x 0.0003" elliptical stylus $34.95
K7E. Output 5 mV; tracking force range 1-2 g; response 15-20,000 Hz ±3 dB; channel separation 24 dB; elliptical 0.0007" x 0.0003" elliptical 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; price $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" x 0.0003" elliptical tip $29.95

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 3½-4½ g; frequency response 15-50,000 Hz ±2 dB; channel separation 28 dB $145.00

AKG

P6E stereo Cartridge
Features patented transversal stylus suspension; output 3.75 mV at 5 cm/sec; response 10-28,000 Hz; 0.0005" x 0.0007" elliptical stylus; tracking force range 0.75-1.25 g; optimum tracking force 1 g; compliance 35 x 10⁻⁴ cm/dyne; channel separation 30 dB (1 kHz), 25 dB (10 kHz); channel balance 1 dB, input 50 ohms/280 mV; optimum load 47,000 ohms/470 pF; standard ½" mounting; 4 terminals; weight 5.86 g; supplied with individual response curve $115.00
P8E. Similar to P6E 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" x 0.0007" elliptical stylus; tracking force range 1.25-2.50 g; optimum tracking force 1.5 g; compliance 25 x 10⁻⁴ cm/dyne; channel separation 25 dB (1 kHz), 18 dB (10 kHz); channel balance 2 dB, input 860 ohms/280 mV; optimum load 47,000 ohms/470 pF; standard ½" 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" x 0.0008" elliptical stylus; tracking force range 1.5-3.0 g; optimum tracking force 2.5 g; compliance 20 x 10⁻⁴ cm/dyne; channel separation 25 dB (1 kHz), 15 dB (10 kHz), input 860 ohms/280 mV; optimum load 47,000 ohms/470 pF; standard ½" mounting; 4 terminals; weight 5.86 g $75.00
P6R. Similar to P6E except spherical 0.0007" elliptical 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 2½-4 g; vertical tracking angle 20°. Has slip-on stylus guard $44.95
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 x 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 x 0.7 mil elliptical stylus; tracking force 1½-2 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 x 0.7 mil 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
NeNe: 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 counter-weight; 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-5. Plug-in shell $7.95
AT-2. 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-
**Phono Cartridges**

Indian lever control; special low-mass plug-in shell, sliding counterweight, channel separation, separate micro-adjust for precise balance; precision lever and dial scale for anti-skating adjustment; arm height ±0.009 mm adjustment with separate micro-adjust lever; stylus force gauge with sliding ringweight calibrated to 0.1 g. **ATD-Plug-in shell** $119.95

4-CHANNEL

<table>
<thead>
<tr>
<th>Cartridge</th>
<th>Description</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>AT115A Dual-Magnet Cartridge</td>
<td>Universal reference-standard cartridge for use on all types of LP discs (stereo, mono, matrixed, and discrete CD-4 four-channel). Frequencies 3-45,000 Hz; tracking force 0.75 - 1.75 g; comes with square-shank Shibata stylus mounted on low-mass tapered stylus tube; rigid die-cast body with styli 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°.</td>
<td>$100.00</td>
</tr>
</tbody>
</table>

**AT205La**

- 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
- **AT145A.** Similar to AT155A except does not include die-cast body or individually run frequency response curves. $75.00
- **AT125.** Similar to AT144A except uses bonded square-shank Shibata stylus; frequency response 15-45,000 Hz; slip-on styli guard $64.95
- Models AT144A, AT155A, and AT205La have grain-oriented square-shank nude Shibata diamond styli for precise tip orientation and longer stylus life.

**BANG & OLUFSEN**

MMC Series Phono Cartridges

<table>
<thead>
<tr>
<th>Cartridge</th>
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<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>MMC 6000.</td>
<td>Output 0.6 mV/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 x 10^-6 cm/dyne; effective tip mass 0.22 mg; load 100,000 ohms/100 pF; stylus pressure 1.0 g.</td>
<td>$125.00</td>
</tr>
<tr>
<td>MMC 5000.</td>
<td>Similar to 6000 except response 20-15,000 Hz ±2 dB, effective tip mass 0.4 mg; load 100,000 ohms/200 pF; stylus pressure 1.2 g; spherical diamond stylus.</td>
<td>$100.00</td>
</tr>
<tr>
<td>MMC 4000.</td>
<td>Similar to 5000 except response 20-25,000 Hz ±1.5 dB, stylus pressure 1.0 g; elliptical naked diamond stylus.</td>
<td>$75.00</td>
</tr>
<tr>
<td>MMC 3000.</td>
<td>Similar to 5000 except response 20-25,000 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.</td>
<td>$50.00</td>
</tr>
<tr>
<td>MMC 1000.</td>
<td>Similar to 5000 except response 20-25,000 Hz ±1.5 dB, 20-16,000 Hz ±2.5 dB, channel separation 20 dB at 1000 Hz, 15 dB at 400-10,000 Hz; spherical diamond stylus.</td>
<td>$30.00</td>
</tr>
</tbody>
</table>

**EMPIRE**

2000 Series Stereo Cartridges

All 2000 Series cartridges are engineered for stereo and matrix 4-channel (SQ, QS, RM play-back.

**2000Z**

- Frequency response 20-20,000 Hz ±1 db; tracking force 1 to 3 g; convex jade stylus; effective length 228 mm.
- Frequency response 20-20,000 Hz ±1 db; tracking force 1 to 3 g; convex jade stylus; effective length 228 mm.
- Frequency response 20-20,000 Hz ±1 db; tracking force 1.5 g; spherical diamond stylus; 0.0005 g at headshell; effective mass (as seen by stylus) 4.50 g nominal and variable; hardened steel needle pivot in concave jewel rounded 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 +½ mm overhang adjust; accepts all cartridges weighing 3-10 g with +½ fixed centers; supplied with low capacitance coax cable, instruction manual, mounting template, alignment protractor, silicon fluid, hardware, and arm rest. | $139.50 |

**2000 Series**

<table>
<thead>
<tr>
<th>Cartridge</th>
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<tbody>
<tr>
<td>2000E/11</td>
<td>Frequency response 20-20,000 Hz ±1 dB; tracking force 1.5 g; output 5 mV at 1000 Hz; channel balance within ±1/2 dB; compliance 100 pF/ch; output at 3.54 cm/sec 3 mV/ch; stylus 0.7 mil elliptical stylus; effective tip mass 0.2 milligram.</td>
<td>$100.00</td>
</tr>
<tr>
<td>2000E/II</td>
<td>Similar to 2000E except response ±2 dB; tracking force range ½ - 1 ½ g; separation 20 dB, 28 dB, 20 dB; IM 0.1%; effective tip mass 0.6 mg; compliance 20 x 10^-4 cm/dyne; channel balance within ±1/2 ½ dB; output 4.5 mV/ch; total capacitance 400-500 pF/ch; clear stylus.</td>
<td>$70.00</td>
</tr>
<tr>
<td>2000E/III</td>
<td>Same as 2000E/II except separation ±3 dB; tracking force 1.2 g; separation 18 dB, 23 dB, 15 dB; IM 0.2%; compliance 17 x 10^-4 cm/dyne; tracking ability 23 cm/sec at 1000 Hz at 1½ g; blue stylus.</td>
<td>$55.00</td>
</tr>
<tr>
<td>2000E/IV</td>
<td>Similar to 2000E/III except response ±4 dB; tracking force 1.5 g; separation 18 dB, 23 dB, 15 dB, 20 dB; IM 0.3%; compliance 15 x 10^-4 cm/dyne; tracking ability 25 cm/sec at 1000 Hz at 1½ g; channel balance within ±1½ g at channel output 100 mV/sec; green stylus.</td>
<td>$45.00</td>
</tr>
<tr>
<td>2000E/V</td>
<td>Similar to 2000E/IV except tracking force 1½-2½ g; stylus 0.2 x 0.7 mil elliptical, effective tip mass 0.6 mg; compliance 16 x 10^-4 cm/dyne; red stylus.</td>
<td>$40.00</td>
</tr>
<tr>
<td>2000F</td>
<td>Similar to 2000E except tracking force 1½-3 g; stereo separation 16 dB, 21 DB, 13 dB; stylus 0.7 mil spherical; effective tip mass 1 mg; compliance 14 x 10^-4 cm/dyne; smoke stylus.</td>
<td>$30.00</td>
</tr>
</tbody>
</table>

**Super Flux-Bridger.** Designed for use with high-gain preamps or against loudspeaker transformers (RV-347) $300.00

**FORMULA 4**

PLS4/D Tonearm

- For mono, stereo, or 4-channel operation; effective length 224 mm, height adj. 45 mm, rear clearance required: 15 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 rounded 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 +½ mm overhang adjust; accepts all cartridges weighing 3-10 g with +½ fixed centers; supplied with low capacitance coax cable, instruction manual, mounting template, alignment protractor, silicon fluid, hardware, and arm rest. | $139.50 |

**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 adjustment and alignment vernier tracking force adjust; single-hole mounting; overall length 114/0, height 1.70" to 3.9", 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 Cartridge**

Available in three groups for varied applications. All series feature delicate tracking and thus tonarm and 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 gms; for use with record changers and tonearms which will not track 1 gram.

- **FTE+ Spherical diamond stylus** $9.95
- **FTE+ Elliptical diamond stylus** $19.95
- **FCR+ Specially selected unit with spherical diamond stylus** $25.00
- **FCR+ Specially selected unit with spherical diamond stylus** $35.00

**Flux-Bridger.** Uses uniformly different generator system from Professional Series. Tip mass-reduction results in frequency response beyond 50 kHz and tracking force from 1-2 gms. For use in tonearms and changers with 2-gr tracking capability.

- **FTE+ Elliptical diamond stylus** $13.00
- **FCE-1 Specially selected unit with elliptical diamond stylus** $37.50
- **Super Flux-Bridger.** Designed for use with high-gain preamplifiers. Tracking force +½-2 gr.

- **FCE+ Elliptical diamond stylus** $49.50
- **F2+ Elliptical diamond stylus** $60.00
- **F1+ Grado diamond stylus** $75.00

**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 (BVT-347) $300.00

**STEREO DIRECTORY & BUYING GUIDE**
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 stylus 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.


The AT15Sa. Very possibly the last phono cartridge you'll ever need.

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**Phono Cartridges**

**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 permanently laminated core; Shibata stylus; double-layer push/pull damper; mounted into SME-type shell; tracking force 1.8±0.3 g; separation 27 dB at 1 kHz; frequency response 15-65,000 Hz; impedance 3.5 ohms; compliance 16.0 x 10^-4 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 impedance 47,000 ohms; input impedance 2 ohms; load and 100 pF); output 3.3 mV±2 dB; channel separation 35 dB; inductance each channel 290 mH; resistance each channel 675 ohms; comes with "Quadrahedral" diamond stylus assembly... $125.00

**ORTOFON**

SL-15EMKII Moving Coil Cartridge
Total cartridge weight 7 grams. Features elliptical, diamond stylus; tracking force range 1½-2 g; Response 10-50,000 Hz; Output impedance 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 range 0.75-1.5 g. Output voltage 0.8 mV/1 kHz at 1 kHz per cm/sec... $90.00

M-15 Super. Same as M-15E except with spherical stylus... $80.00

MVS-20L. 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 slightly less critical as to tonearm requirements... $40.00

**PICKERING**

XSV/3000 Phono Cartridge
Output 5.0 mV at 55.5 cm/sec. Response 10-30,000 Hz has "Stereohedron" stylus tip; tracking force 1¼-1½ g; channel separation 35 dB; features Dustomatic brush... $29.95

XV-15/1200E Phono Cartridge
Output 4.4 mV at 55.5 cm/sec. Response 10-30,000 Hz. Has 0.2 x 0.7 mil elliptical stylus; tracking force 1½-1½ g; channel separation 35 dB; Features Dustomatic brush... $99.95

**V-15 Micro IV AC Phono Cartridge**
Output 8.0 mV at 5.5 cm/sec. Response 20-17,000 Hz. Has 0.4 x 0.7 mil elliptical stylus; tracking force 2 g±1/2 g; frequency response 10-50,000 Hz (when terminated by 100k ohm load and 100 pf); output 3.3 mV±2 dB; channel separation 35 dB; inductance each channel 290 mH; resistance each channel 675 ohms; comes with "Quadrahedral" diamond stylus assembly... $125.00

**UV-15/2400-Q Cartridge**
For discrete 4-channel playback; tracking force with Dustomatic brush 3 g±1/2 g (resulting in tracking force 2 g±1/2 g); frequency response 10-50,000 Hz... $69.90

**XUV/4500-Q Cartridge**
For stereo, 4-channel matrix (SQ and QS), and discrete 4-channel playback at 1 g (or less) tracking force, setting with brush: 2 g±1/2 g (resulting in tracking force 1 g±1/2 g); frequency response 10-50,000 Hz; output 3.4 mV nominal (ref. 5.5 cm/sec recorded velocity); channel balance: 1 dB maximum difference; channel separation 35 dB nominal at 1 kHz, 25 dB nominal at 30 kHz; comes with "Quadrahedral" stylus with "Quadrahedrom" tip... $139.95

**PIONEER**

PC-01 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 g... $70.00

**SATIN**

M-117X Stereo Cartridge
Moving-coil type; preamp not required, stylus can be replaced by user; output 2.5 mV±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 impedance 500 ohms; compliance 15 x 10^-4 cm/dyne; 0.1 x 2.5 mil Shibata line-contact stylus... $150.00

M-117E. Similar to M-117X except output voltage 3.0 mV; frequency response 10-20,000 Hz... $190.00
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).

For further information write to:
Pickering & Co., Inc. Dept. SDB
101 Sunnyside Blvd., Plainview, New York 11803

"for those who can hear the difference"
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 with more attention, more relaxation, and far more pleasure than ever before, the music comes through with an effortless clarity and definition, as you listen with a new, increased awareness of the recorded performance.

The SHURE V-15 Type III Phono Cartridge is a moving-magnet type. Output 3.5 mV at 5 cm/sec. Response 10-25,000 Hz. Has 0.2 x 0.7 mil elliptical stylus. Tracking force 4/5 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 4/5-4 1/2 g; 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

M95EJ Same except tracking force 1 1/3-3 g Replacement stylus $N95EJ $49.45

M75ED Type 2 Phono Cartridge

Tracking force 4/5 to 1 1/4 g. Response 20-20,000 Hz. Output 5.0 mV/ch at 1000 Hz and 5 cm/sec peak velocity. With biradial 0.2 x 0.7 mil elliptical stylus. Replacement stylus $N75ED $59.95

Model M75E 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 x 0.7 mil elliptical stylus. Tracking force 1/2 to 1 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 M91ED. Same except with 0.6-mil spherical stylus. Replacement stylus $N91ED $49.45

M93E Phono Cartridge

Moving-magnet type. Output 6.2 mV at 5 cm/sec. Response 20-20,000 Hz. Has 0.4 x 0.7 mil elliptical stylus. Tracking force 1/10 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 1/3 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 x 0.7 mil elliptical stylus. Replacement stylus $N70EJ $39.95

M798. 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 1/8 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 x 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 x 0.7 mil elliptical stylus. Tracking force 4/5 to 2 g; channel separation 25 dB at 1000 Hz. Compliance 25 x 10^-4 cm/dyne. Replacement stylus $N55E $34.95

M44E Phono Cartridge

Moving-magnet type. Output 1.8 mV/ch/sec. Response 20-20,000 Hz. Has 0.4 x 0.7 mil elliptical stylus. Tracking force 1/4 to 4 g; channel separation better than 25 dB at 1000 Hz. Compliance 15 x 10^-4 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 adjustable 3 to 6 g. Replacement stylus $N3D $17.95

SME3009 Series II Tonearm

Features non-detachable shell for reduced weight; low-friction pivots with ball races for uninterrupted tracking. Has good trackability at 1 1/2 to 3 g. Designed for moderately priced equipment. Response 20-20,000 Hz. Output 5 mV/ch at 1000 Hz and 5 cm/sec.

SME3009/S2. Same with detachable shell...

$174.00

SME3009/S2. Same with detachable shell...

$174.00

S24H 4-Channel Cartridge

Wide-range cartridge for stereo, 4-channel matrix (SQ and QS), and discrete 4-channel playback at tracking force of 1 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

S72H Blue Label Cartridge

Voltage output 0.8 ± 2 dB at 1 kHz/cm/sec; frequency response 5-20,000 Hz ± 1±2 db. Response 20,000-45,000 Hz ± 6 dB; compliance 50 cm/dyne x 10^-4; stylus force range 1 1/2-5 g; channel separation ± 2 dB; channel balance ± 2 dB (at 1000 Hz). 25 dB (overall); resistance 300 ohms/ch; load imp. per channel 147,000 ohms in parallel with 400 pf (250 pf with CD-4 records); cartridge weight 5 1/2 g; 0.003 x 0.0003 "Patey-max" diamond tip...

$125.00

SONUS

Blue Label Cartridge

Voltage output 0.8 ± 2 dB at 1 kHz/cm/sec; frequency response 5-20,000 Hz ± 1±2 db. Response 20,000-45,000 Hz ± 6 dB; compliance 50 cm/dyne x 10^-4; stylus force range 1 1/2-5 g; channel separation ± 2 dB; channel balance ± 2 dB (at 1000 Hz). 25 dB (overall); resistance 300 ohms/ch; load imp. per channel 147,000 ohms in parallel with 400 pf (250 pf with CD-4 records); cartridge weight 5 1/2 g; 0.003 x 0.0003 "Patey-max" diamond tip...

$125.00

STEREO DIRECTORY & BUYING GUIDE
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!

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

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

#### Red Label
Similar to Blue Label except response 5-20,000 Hz +2, -1 dB; 0.0007" x 0.0003" elliptical diamond stylus; trading force 2-5 g. Channel separation 35 db, 0.7-mil spherical stylus; response 0-50,000 Hz; company claims IM and HD 10 dB lower at 45,000 Hz. Uses parabolic-shaped tip (Shibata-type) to minimize record wear. Response extended to 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 round-trip equalization. 1000 ohms pure resistance; non-capacitive, non-inductive character. matches preamp input circuit; rated output voltage 1 kHz; lateral 4 mA; separation 20 db 1000 Hz, 15 dB at 30,000 Hz; imp. 1000 ohms pure resistance; compliance 10 x 10^-14; tracking force 1.5-2.5 g. Weight 3.2 g. 64.95

#### Green Label
Similar to Red Label except response 5-20,000 Hz ±2 db; 0.0006" spherical stylus; tracking force 2-5 g. Channel separation 28 db. Replacement stylus D5107A... $30.00

#### Silver Label
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 x 10^14; stylus force range 3/4 x 15/4; channel balance ±2 db; channel separation (1 kHz) 30 dB, 25 dB (overall). Stylus weight 5 1/2 g.

### 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 x 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 x 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. D607A replacement stylus... $45.00

### 600E Phono Cartridge
Same except 0.4 x 0.7 mil elliptical stylus; tracking force 1 1/2 - 3 g. D6004E replacement stylus... $50.00

### 600EE Phono Cartridge
Same except 0.3 x 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 x 0.7-mil elliptical stylus; tracking force 2-5 g. Channel separation 30 db. Replacement stylus D6800EL (single stylus); D68006EL (3-styli disco pack); price includes spare stylus... $90.00

### 680E Phono Cartridge
Output 0.82 mV/cm/sec ±2 db; response 20-20,000 Hz. Has 0.3 x 0.7-mil elliptical stylus; tracking force 1 1/2 - 3 g. Channel separation 35 db. Replacement stylus D6800... $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 1 1/2 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 ±2 db. Response 10-20,000 Hz. Has 0.2 x 0.7-mil elliptical stylus; tracking force 2 to 4 g. Channel separation 35 db. Unit individually calibrated at factory. Replacement stylus D6800E... $66.00

### 780/4D0 Four-Channel Cartridge
Designed to play the new discrete 4-channel records as well as standard stereo disc or 4-ch matrix-derived compatible records. Response 10-50,000 Hz (when terminated in recommended load of 100 kohms and 100 pf). Tracking force 1 3 g; channel separation 35 db. Output: 0.7 mV/cm/sec ±2 db. Inductance & resistance (each channel): 350 mH; 750 ohms Features new "Quadrahedral" stylus... $125.00

### 780QPhono Cartridge
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 1000 Hz, 15 dB at 30,000 Hz; imp. 1000 ohms pure resistance; compliance 10 x 10^-14; 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

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**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
Bang & Olufsen of America, Inc., Dept. 12E
515 Busse Road, Elk Grove Village 60007

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 ¾-inch-wide tape, usually in 7-inch reels holding 1200 to 2400 feet, depending on tape thickness. A growing number of tape machines can handle 10½-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 3½ and 7½ inches per second (ips) with the latter providing the highest fidelity. A number of manufacturers offer a professional speed of 15 ips, which either replaces or supplements the 3½ ips speed, and a few recorders also have a 1½ 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 ¾-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 or 2 and 4, and 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 is recorded on two parallel tracks, 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 original magnetic tape 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 dxb 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-sounds, but 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.

Cassettes: 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) equalization. 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 in tape recording 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 tapes, 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 originally made by manufacturers who believed that a single recording head for each direction was too narrow. Ingenious designers have managed to squeeze separate heads for the two functions into the available space, and there are several three-head machines currently 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 in early systems, which are difficult to monitor while making the recording.

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 function 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 cassette, and uses standard ¾-inch-wide tape, and operates at 3¾ ips. In use, the tape is pulled out of the cassette and passes over a head assembly much like that of an open-reel machine, with essentially the same recording 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 player turns on the player's 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 passes over a 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 density 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 path. When the tape 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 playback system, so that there has been little incentive to bring cartridges up to the level of cassette machines.

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 available as four-channel tape. It is also possible to play 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 playback system, so that there has been little incentive to bring cartridges up to the level of cassette machines.

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 the high-priced units, known by various names such as "Si-mul-Sync," "Multi-Sync," and similar terms. 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 the recording to be built up, track by track, by adding new parts in exact sequence, which is more compatible with the recording and playback functions, which can be switched 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.

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THREE WAYS TO IMPROVE YOUR HEARING.


NEW TANDBERG 10XD. The world's first and only 10½" 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, 7½, 3½ ips. 3 motors, Hall-effect capstan motor. 3 heads, plus separate bias head. Electronic servo control. Electronic logic mode controls. 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!
### TAPE MACHINES

#### OPEN-REEL

**AKAI**

**GX-650D Stereo Tape Deck**
- Three-speed (15, 7½, & 3½ ips), four-track, two-channel stereo/mono system; will handle up to 10½ reels; features closed-loop double capstan mechanism; three motors with a.c. servo-controlled capstan drive; glass & crystal ferrite heads; response 30-30,000 Hz ±3 dB at 15 ips, 30-26,000 Hz ±3 dB at 7½ ips (both with LN-150 tape); dist. 0.4% at 15 & 7½ ips (1000 Hz 0 VU); has line/mike mixing; sound-on-sound recording facilities; dual-monitoring system; remote control (with optional RC-17 accessory); automatic stop; pause lever switch; cue switch; individual line/output volume control; tape selector switch (low noise/width-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 (7½ & 3½ ips), four-track, two-channel stereo/mono system, will handle up to 10½ reels; features direct capstan-drive a.c. servo motor; three-motor tape transport; glass & crystal ferrite heads; response 30-30,000 Hz ±3 dB (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**

**GX-265D Stereo Tape Deck**
- Two-speed (7½ & 3½ 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 (7½ & 3½ 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 (3½ & 7½ ips), 4-track, 2-channel stereo. Wow & flutter 0.07% at 7½ ips. Response 30-26,000 Hz ±3 dB ±7½ ips. THD 1.5%. (S + N)/N: –50 dB. Bias frequency 100 kHz. Has separate record, play, and erase heads. Line output 1.23 V. Inputs: mike (0.8 mV) & line (60 mV). Features selector switch for regular or low-noise tape; sound-on-sound; sound-with-sound; mixing; automatic stop-off; pause control; tape speed: 15 & 7½ ips.  
- **$499.95**

### 4-CHANNEL

**GX-630DS 4-Channel Tape Deck**
- Four-channel stereo and record playback; features four GX glass & single crystal heads; A-B monitoring; in either mode, two-speed (7½ & 3½ ips); full-logic function controls; "Quadrasonic" recording, pitch control for record/playback (±5%); line output control; mic/line mixing; automatic shut-off, two VU meters, pause control with lock; will handle up to 10½ reels.  
- **$995.00**

**GX-270DS 4-Channel Tape Deck**
- 4-track, & 2 channel record/play deck; will handle 7" reels, a.c. servo direct-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; "Quadrasonic" recording, pitch control for record/playback (±5%); line output control; mic/line mixing; automatic stop-off; tape speed: 7½ & 3½ ips; wow & flutter 0.07% rms (7½ ips); SN 54 dB (measured via tape with peak recording level of ±6 V); 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**

**1730DS 4-Channel Tape Deck**
- Two-speed, 4 & 2 channel tape play and record. Features automatic shut-off, pause control, and two speeds (7½, 3½ ips). Response 30-22,000 Hz ±3 dB, wow & flutter 0.12% rms, dist. 1.5%, all at 7½ ips. Has mic (0.4 mV) and line (40 mV) inputs plus line (1.23 V) output.  
- **$479.95**

### TAPE DECKS

**CX822 Tape Recorder**
- Three-speed (15, 7½, & 3½ ips), 2-track, 3-motor design. Will handle up to 10½ reels. Response 30-30,000 Hz ±2 dB. Wow & flutter 0.09% at 7½ ips. Features automatic shut-off, two VU meters, pause control, and optional counter.  
- **$1995.00**

**CX724**. Same except 4-track version; response 30-25,000 Hz ±2 dB.  
- **$1995.00**

**SX724 Tape Recorder**
- Two-speed (7½, & 3½ ips), 2-channel, 1/4-track, 3-motor design. Will handle up to 10½ reels. Response 20-25,000 Hz ±2 dB. Wow & flutter 0.09% at 7½ ips. Features automatic shut-off, two VU meters, pause control, and optional counter.  
- **$1195.00**

**SX724-P4C**. 2- and 4-track version; plays 4-channel in-line.  
- **$1495.00**

### 4-CHANNEL

**CX844 Tape Recorder**
- Three-speed (15, 7½, & 3½ ips), 4-channel, 3-track, 3-motor design. Will handle up to 10½ reels. Has 3 heads. Response 20-25,000 Hz ±2 dB. Wow & flutter 0.09% at 7½ ips. Features automatic shut-off, two VU meters, remote record, and automatic photocell shutoff.  
- **$1995.00**

**SX744 Tape Recorder**
- Two-speed (7½, & 3½ ips), 4-channel, 3-motor design. Will handle up to 10½ reels. Has 3 heads. Response 20-25,000 Hz ±2 dB. Wow & flutter 0.09% at 7½ ips. Features automatic shut-off, two VU meters, remote record, and automatic photocell shutoff.  
- **$2995.00**

### DOKORDER

**1120 Stereo Tape Deck**
- Two-speed (7½ & 3½ ips), three-motor deck, will handle 10½ reels. Can be used as 4-track, 3-track, or 2-channel.  
- **$1995.00**

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**DOKORDER**

**1120 Stereo Tape Deck**
- Two-speed (7½ & 3½ ips), three-motor deck, will handle 10½ reels. Can be used as 4-track, 3-track, or 2-channel.  
- **$1995.00**
5 Open-Reel Tape Machines

2-channel deck or can be converted to a 2-channel, record/play deck; provides built-in circuitry for synthetic echo, sound-on-tape, sound-with-tape, and locking pause control for editing tape while recording or during playback. Wow & flutter 0.06%, S/N 60 dB, crosstalk 58 dB at 1 kHz, response 25-24,000 Hz, all at 7½ ips. $649.94

7100 Reel-to-Reel Tape Deck
Two-speed (7½ & 3⅛ 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-tape; source monitor. Wow & flutter 0.08%, W rms at 7½ ips. (S + N)/N 55 dB. Response 40-21,000 Hz at 7½ ips. $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 & 7½ ips speeds. Features separate playback controls to balance 4-channel output for listening or mix-down dubbing; 4 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 25-24,000 Hz (30-23,000 Hz ±3 dB) at 15 ips; 25-24,000 Hz (30-20,000 Hz ±3 dB) at 7½ ips; S/N 60 dB; crosstalk 58 dB; wow & flutter 0.04% at 15 ips, 0.06% at 7½ ips. 17¾ W x 15½ 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 7½ 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; 4 VU meters; 2- and 4-channel output controls; electronic echo, sound-on-sound, and sound-with-sound facilities. $749.95

7140 2¼ 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 7½ & 3¾ ips; wow & flutter 0.08% max. at 7½ ips. Will handle 5½ & 7½ 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 7½ ips; (S + N)/N 55 dB at 7½ ips; crosstalk 55 dB at 1000 Hz; stereo channel separation 45 dB at 1000 Hz. Includes Multi-Sync function which permits recording of separate tracks individually and re-recording of any individual track in perfect sync with other three tracks. Built-in two-speed hysteresis synchronous motor (capstan drive) and 4-pole inner-motor induction motor (reel drive) on 40-20,000 Hz ±3 dB at 15 ips; 40-20,000 Hz ±3 dB at 7½ ips; wow & flutter 0.04% W rms at 15 ips; (S + N)/N 57 dB; stereo channel separation 53 dB at 1000 Hz; 125 kHz bias frequency. Features 3-step bias selector; 4-step EQ selector; dual-scale level meters; recording peak indicator; lockable electronic controls (including pause); pairs of line inputs; full complement of inputs and outputs. 120 V, 60-Hz operation. 18¾ W x 17¾ H x 9¾ D. $700.00

RT-1011L Stereo Tape Deck
Four-track, two-speed (7½ & 3⅛ ips), three-motor, three-head stereo deck. Has 4/8 pole, two-speed hysteresis synchronous motor (capstan drive) and 6-pole inner-motor induction motor (reel drive) on 40-20,000 Hz ±3 dB at 15 ips; 40-20,000 Hz ±3 dB at 7½ ips; wow & flutter 0.04% W rms at 15 ips; (S + N)/N 57 dB; stereo channel separation 53 dB at 1000 Hz; 125 kHz bias frequency. Features 3-step bias selector; 4-step EQ selector; dual-scale level meters; recording peak indicator; lockable electronic controls (including pause); pairs of line inputs; full complement of inputs and outputs. 120 V, 60-Hz operation. 18¾ W x 17¾ H x 9¾ D. $700.00

OTARI

MX-5050-2SH Tape Deck
Two-speed (15 & 7½ ips); two-channel, four-track (two-track erase, record and playback, four-track playback); three motors (hysteresis synchronous), will handle up to 10½" reels; pushbutton, remote controllable transport with full logic circuitry and motion sensing; edit & cue facilities; built-in splicing block on head cover; response 35-20,000 Hz; wow & flutter 0.05% peak weighted (both at 15 ips); S/N 68 dB; output level 0 VU into 600 ohms balanced line; features Built-in adjustable bias and two-speed equalization; built-in test oscillator; standard reference level calibration switch; VU meter adjust; "SEL/REP" for recording two tracks or overdub; built-in motorized tracks; built-in 4-channel transport for overdubbing and mix-down, has separate mike/line level controls; source/tape monitor switch; stereo headphone jack; four-digit resettable tape counter; tape joghoyagi case with carrying handles. $1450.00

MX-5050-25H. 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 ±10% variable speed. $1600.00

4-CHANNEL

RT-2044 Four-Channel Tape Deck
Same as RT-2022 stereo deck except with two TAU-11 amplifier units; 37½ W x 18½ W x 10½ D. $1600.00

RT-1020L Tape Deck
Three-motor, three-head stereo deck with 4-channel reproduction capability. Has 4/8 pole...

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.

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.

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 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.

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. DYNAVOX (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)
two-speed hysteresis synchronous motor (capstan drive) and 6-pole inner-rotor induction motor (reel drive). Operates at 7½ & 3¼ ips. Wow & flutter: wow 0.08% (W) at 7½ ips; (S+N)/N 55 dB; distinct less than 1%. Response 40-20,000 Hz ±3 dB at 7½ ips. Cross-talk 60 dB, stereo channel separation 50 dB both at 7½ & 10½ ips. 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 tone, lockable pause level, 4-digit tape counter, independent left/right recording mode selectors, 4-ch front, rear motor mode selector, independent mike & line recording level controls, output level controls. Will accept up to 10½ ips. reels. 17½" X 17" X 8½" D. 

$650.00

A700 Stereo Tape Recorder
Three-motor, three-speed (15, 7½, 3¼) ips. records. Features computer-type digital control with memory circuits; quartz-crystal speed-control reference; frequency and phase servo system; solid-state speed control; two-tape tension sensors governing servo-controlled reel motors. Has logic-controlled tape tension which is automatically maintained even with mixed reel aspect, solid 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 option. 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 halfspeeds 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 (1½/3, 3½/7) or 7½/15 ips), 2-track, 3-motor, 3-head deck. Will handle up to 10½ ips. reels. Response 30-20,000 Hz ±2.5 dB at 7½ ips. Wow & flutter: 0.08% peak at 7½ ips. (S+N)/N 61 dB at 7½ ips. Has a servo braking system, Vu meters, automatic shut-off, relay and solenoid operation, full remote control, and off-the-tape monitoring. Options include plug-in power amplifiers, a suitcase version with built-in speakers, metal cage for rack or custom mounting. 16½" X 14½" X 14½" D. 

$959.00

A77 MkIV 1102. A 4-track version of Model 1102. Same options available. 

$959.00

SONY from SUPERSCOPE

TC-756 Stereo Tape Deck
Two-speed (15 & 7½ ips) stereo deck; will handle up to 10½ ips. reels; response 30-20,000 Hz ±3 dB at 7½ ips; DIN 50 mv; (S+N)/N 50 dB. Standard tape, 30-25,000 Hz ±3 dB at 7½ ips, both at 7½ ips; features 4-digit counter; illuminated pause control with lock; illuminated Vu meters; full complement of inputs & outputs; F & F heads; walnut base. 17½" X 17½" X 8½" D. 

$999.95

TC-765 Stereo Tape Deck
Two-speed (15 & 7½ ips) stereo deck; will handle up to 10½ ips. reels; response 30-20,000 Hz ±3 dB at 7½ ips; DIN 50 mv; (S+N)/N 50 dB. Standard tape, 30-25,000 Hz ±3 dB at 7½ ips, both at 7½ ips; features 4-digit tape counter; illuminated pause control with lock; illuminated Vu meters; full complement of inputs & outputs; F & F heads; walnut base. 17½" X 17½" X 8½" D. 

$999.95

TC-645 Stereo Tape Deck
Three-motor, three-head deck. 7½ & 3¾ ips; will handle up to 7½ ips. reels; response 30-20,000 Hz ±3 dB (standard tape), 30-25,000 Hz (SLH-180 tape), both at 7½ ips; features 4-digit tape counter; illuminated Vu meters; full complement of inputs & outputs; wow & flutter 0.07% at 7½ ips, 0.11% at 3¼ ips; comes with two RK-74 tape lockers, 7" plastic reel and head cleaning ribbon. Overall size 17½" X 17½" X 8½" D. 

$899.95

TC-270 Stereo Tape Recorder
Economy design featuring quarter-track stereo/mono play & record, three speeds (7½, 3¾, & 1¼ ips), straight-line record & playback level controls, two Vu meters, automatic end-of-tape shutoff, and sound-on-sound. 5 Wch continuous power. Response 30-18,000 Hz ±3 dB at 7½ ips. (S+N)/N 50 dB; wow & flutter 0.12% at 7½ ips (rms (NAB) weighted). Has aux. (0.06 V sensitivity) & mike (-72 dB sensitivity) inputs & line output 0.12% at 7½ ips (rms (NAB) weighted). Crossfield heads; mike & line mixing facilities; built-in speaker. Response 40-16,000 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; full complement of inputs, outputs, controls; peak reading meters; crossfield heads; mike & line mixing facilities; logic circuit with memory: 45 cm x 45 cm x 16.5 cm. Comes with 10½ ips. NAB adapter, optional input connection cord. Remote control, pitch control kit, and rack mounting kit available as optional extras. 

$1399.00

Series 10XD Stereo Tape Deck
Three-speed (15, 7½, 3¼) ips. three-motor deck with Dolby noise-reduction system; will handle up to 10½ ips. reels; standard tape, 30-25,000 Hz ±3 dB (SLH-180 tape), both at 15 ips; features 4-digit tape counter; illuminated Vu meters; full complement of inputs & outputs; wow & flutter 0.12% at 7½ ips (rms (NAB) weighted). Features twin pot on-off switch; full complement of inputs & outputs; comes with two RAD-10 reel hub adapters, 10½" empty reel, four RK-74 audio cables, head-cleaning ribbon; walnut base. 17½" X 22" X 8½" D. 

$1399.95

TC-388-4 Quadradial Tape Deck
Open reel, 2-speed (7½ & 3¾) ips. 4-channel recorder. Response 20-25,000 Hz ±3 dB (standard tape) and 20-25,000 Hz ±3 dB (SLH-180 tape) at 7½ & 3¾ ips; features 4-digit tape counter; illuminated Vu meters; full complement of inputs & outputs; comes with two RAD-10 reel hub adapters, 10½" empty reel, four RK-74 audio cables, head-cleaning ribbon; walnut base. 17½" X 22" X 8½" D. 

$679.95

TC-277-4 Quadradial Tape Deck
Reel-to-reel, 3-speed (7½, 3¾, 1¼) ips. 4-channel, in-line design. Response 50-16,000 Hz ±3 dB at 7½ ips; S/N 50 dB; wow & flutter 0.12% at 7½ ips. Has two heads (4-channel erase & record/play), four inputs, and four line outputs (1/ch.). Input sensitivity 0.06 V, 15½" W X 7½" D X 15½" H. 

$469.95

TANDBERG

Series 11 Tape Recorder
Portable (15 V, ten 1½-V cells), mono design. Three speeds (7½, 3¼, 1¼) ips. and has three heads. Will handle up to 7½ ips. reels. Has automatic level-input controls, mike & line mixing, and built-in speaker. Response 40-16,000 Hz ±2 dB at 7½ ips, wow 0.1% at 7½ ips. (S+N)/N 50 dB. Includes user input base for vertical or horizontal operation. Sound-on-sound capability with the MX-6S mixer. 16½" X 8½" X 15½" D. 

$399.95

Model 11-1, Full-track 

$1199.00

Model 11-2, Two-track 

$1199.00

A.C. power supply 

$99.50

STEREO DIRECTORY & BUYING GUIDE
9200XD Dolbyized Stereo Deck
Three-speed (7 1/2, 3 1/2, & 1 1/4 ips), Dolbyized
deck, Max. wow 0.06% W rms at 7 1/2 ips;
response 25-24,000 Hz ±3 dB, 30-22,000 Hz
±2 dB at 7 1/2 ips; crosstalk 50 dB stereo at 1000
Hz; max. tape dist. at 0 dB record level 2%.

A-3000S Dolbyized Stereo Deck
Two-speed (7 1/2 & 3 1/2 ips), 1 1/2-track, stereo deck; features threeheaded
channel deck; has 0.75 V
Hz ±2 dB at 7 1/2 ips, wow & flutter 0.05% at 7 1/2 ips, (S + N)/

A-7300 Stereo Tape Deck
Two-speed (7 1/2 & 3 1/2 ips), 1/2-track, stereo deck. Features threeheaded
capstan/servo control motor; two a.c. reel motors; built-in mixer to blend up to 4
issues; separate master input level control for all
features company's noise-reduction sys-

A-6100 Stereo Tape Deck
Two-speed (15 & 7 1/2 ips), 1/2-track, stereo deck; two-channel
channel deck; three heads; will handle

A-6300 Auto-Reverse Stereo Deck
Two-speed (7 1/2 & 3 1/2 ips), 1/2-track, stereo deck with automatic reverse;
with Dolby noise-reduction circuitry and lights. Has three

A-4000SX Auto-Reverse Stereo Deck
Two speed (7 1/2 & 3 1/2 ips), 1/2-track, stereo deck; dual-speed hysteresis
synchronous capstan motor; two eddy-current

A-2300S Dolbyized Stereo Deck
Two-speed (7 1/2 & 3 1/2 ips), 1 1/2-track, stereo deck; features push-button transport
control with logic circuitry; dual VU meters; separate bias/equalization switches; record/playback
circuit; Dolby noise-reduction circuitry and lights. Has three

A-3300S Dolbyized Stereo Deck
Three-speed (7 1/2, 3 1/2, & 1 1/4 ips), Dolbyized stereo deck; features push-button transport
control with logic circuitry; dual VU meters; separate bias/equalization switches; record/playback
features Dolby noise-reduction circuitry and lights. Has three

Series 15 Tape Recorder
Mono design with built-in 4 x 7" speaker. Three
speeds (7 1/2, 3 1/2, & 1 1/4 ips). Response 40-16,000
Hz ±2 dB at 7 1/2 ips, wow 0.1% at 7 1/2 ips, (S + N)/
N at max. record level 55 dB. With continuous
output with both channels driven. Has 0.75 V
preamp outputs, low-Z mikes & high-and low-
level inputs. 13.3"W x 11 1/2"D x 6 1/2"H.
Model 1541. Four-track............ $500.00
Model 1541F With foot remote control............ $600.00

500 Stereo Auto-Reverse Stereo Deck
Two-speed (7 1/2 & 3 1/2 ips), 1/2-track, stereo deck with automatic reverse-playback.
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 step; a four-digit resettable tape counter,
memory marker level guides. Response 40-24,000
Hz, wow & flutter 0.06% both at 7 1/2 ips, (S + N)/
N 65 dB (WTD at 3% THD)........... $1100.00

4070G Bi-Directional Stereo Deck
Two-speed (7 1/2 & 3 1/2 ips), 1/2-track, stereo
deck design; bi-directional record/playback;
will handle up to 7" reels. Response 20-30,000
Hz ±3 dB, wow & flutter 0.06% at 7 1/2 ips, (S + N)/
N 65 dB (WTD at 3% THD)........... $900.00

4070G Bi-Directional Stereo Deck
Two-speed (7 1/2 & 3 1/2 ips), 1/2-track, stereo
deck design; bi-directional record/playback;
will handle up to 7" reels. Response 20-30,000
Hz ±3 dB, wow & flutter 0.06% at 7 1/2 ips, (S + N)/
N 65 dB (WTD at 3% THD)........... $900.00

4070G Bi-Directional Stereo Deck
Two-speed (7 1/2 & 3 1/2 ips), 1/2-track, stereo
deck design; bi-directional record/playback;
will handle up to 7" reels. Response 20-30,000
Hz ±3 dB, wow & flutter 0.06% at 7 1/2 ips, (S + N)/
N 65 dB (WTD at 3% THD)........... $900.00
OPEN-REEL TAPE MACHINES

5

A-2340SX Multichannel Tape Deck

Two-speed (7½ & 3⅞ ips), 4-track with "Simul-Sync," one dual-speed hysteresis synchronous capstan motor; two eddy-current induction reel motors; three heads; will handle 7 & 5½ reels; wow & flutter 0.08% at 7½ ips; S/N 55 dB; frequency response 30-20,000 Hz at 7½ ips; THD 1.0% at 1 kHz; independent source/tape output selector; one 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/mix and line/mix; for each for four channels; record indicator lights for each channel; digital tape counter; two-channel/4-channel playback selector; 18½ W × 17½" H × 8¾" D $900.00

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 7½ or 3⅞ ips; will accept up to 7½ reels; wow & flutter 0.08% at 7½ ips; response 40-18,000 Hz at 7½ ips; S/N 65 dB (WTD at 3% THD). 17¼" W × 20" H × 8½" D $1200.00

LAB SERIES 2001 Tape Deck

Two-speed (7¼, 3⅞ ips), 4-track, 3-head, 2-motor stereo deck. Will handle up to 8¼ reels. Response 45-18,000 Hz ± 2 dB, wow & flutter 0.18% at 7¼ ips; (S + N)/N 52 dB. Has VU meters, automatic shut-off, pause control, counter, solenoid operation, and monitoring facilities. 14½" × 19½" × 8½" D $725.00

TELEX

Lab Series 2002 Tape Deck

Two-speed (7½, 3⅞ ips), 4-track, 3-head, 2-motor stereo design. Will handle up to 8½ reels. Response 45-18,000 Hz ± 2 dB, wow & flutter 0.18% at 7½ ips; (S + N)/N 52 dB. Has VU meters, automatic shut-off, pause control, counter, solenoid operation, and monitoring facilities. 14½" × 19½" × 8½" D $725.00

2002W. Similar to 2001 except half-track, 3-motor design; solid-state preamps; walnut base.$725.00

DISTINCT SOUND INC.

2316 RHODE ISLAND AVENUE, N.E.
Washington, D.C. 20018
(202) 832-1900

CIRCLE NO. 24 ON READER SERVICE CARD
ADVENT

201 Dolbydized Cassette Deck
Play/record stereo design. Response 35-14,500 Hz at ±2 dB. THD less than 1⅓% with chromo-

um-dioxide tape; wow & flutter less than 0.15%; (S + N)/N 54 dB (Dolby off). Has VU meter, caps- 
tion switches; oil-damped cassette carriage; wow & flutter less than 0.08%. S/N 60 dB (Dolby on, 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; 16½" W x 11½" D x 6½" H ........................................ $340.00

AIWA

AD-1800 Stereo Cassette Deck
Features built-in Dolby and DNL noise-reduction systems; wow & flutter 0.07% S/N 65 dB (Dolby on, FeCr tape); frequency response 30-14,000 Hz (LH tape), 30-17,000 Hz (CrO, 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; 16½" W x 11½" D x 6½" H ........................................... $450.00

AD-1600 Dolbydized Cassette Deck
Dolby noise-reduction system; interlocked Dolby-MPX filter switch; memory rewind; 3-step tape selector switch; hysteresis synchronous motor; ferrite head guard; full automatic stop; LED tape-run indicator; quick review/cue control; oil-damped cassette ejection; wow & flutter 0.06% rms; S/N 62 dB (Dolby on; FeCr tape), frequency response 30-14,000 Hz (LH tape), 30-17,000 Hz (CrO, and FeCr tape); fast-forward & rewind 90 sec (C-60 tape); 120-V, 60-Hz operation; 16½" W x 11½" D x 6½" H ........................................... $360.00

AD-6300 Dolbydized 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 (FeCr tape); permalloy head; fast-forward & rewind 85 sec (C-60 tape); 16½" W x 11½" D x 6½" D .................................................. $250.00

AD-1250 Dolbydized 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 (CrO, 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 0.75 V/50,000 ohms (Dolby), 1.0 Vrms (Dolby); headphone 1 mW/600 ohms; 15½" W x 10½" D x 5½" H ........................................................ $230.00

AKAI

GXC-5700 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 (+5%); meters switchable from VU to peak level, memory re-
wind; mic/line mixing; detent-type input/output controls, remote-control operation (with op-
tional 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 11.8 D x 5.6 H ........................................ $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% W rms; 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 mo-
tor; two VU meters. Has full complement of con-
trols. 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 dual capstan, a.c. servo, control; capstan playback heads; ADR (automatic distortion reduction) system; memory rewind; includes line/mic mixing; peak-level indicator; one-touch tape select switches for all types of tapes; oil-damped cassette carriage; wow & flutter 0.07% Wrms; distortion 1.5% (1000 Hz); 10 dB improvement (Dolby on) above 5000 Hz; 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; direct-function change controls; ADR; memory rewind; tape selector switch; peak-level lamp; tape illumina-
tion and tape-run indicator lamp; multiplex filter switch; full release automatic stop; line-
output and pause controls; two VU meters; vertical enclosure; wow & flutter 0.07% 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); horizontal controls; ADR; memory rewind; tape select switches; oil-damped cassette carriage; joystick; wow & flutter 0.8% 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) ........................................ $375.00

GXC-39D 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 switches; 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) ........................................ $249.95

GXC-30D Stereo Cassette Deck
Features Dolby noise-reduction circuitry; mem-
ory rewind; limiter circuit; peak-level indicator lamp; glass & single crystal 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 9.9 ........................................ $249.95

CS-34D Stereo Cassette Deck
Features Dolby noise-reduction circuitry; limit-
er circuit; full-release auto stop; tape selector; pause control; 3-digit tape counter; response 40-13,000 Hz (low-noise), 30-15,000 Hz (chrome) both at ±3 dB; 14.9 W x 4.3 H x 8.9 D ........................................ $199.95

DOKORDER

MK-50 Dolbydized Cassette Deck
Features molybdenum record/playback head; re-
sponse 30-18,000 Hz (with CrO, tape, Dolby
**Cassette Tape Machines**

- **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 adjust Dolby system; bias & equalizing switch for chromium dioxide or standard tapes; VU meters and record 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)...

- **DUAL**
  - **C919 Cassette Deck**
    - Separate mic & line-level controls for mixing; 20 detent stop positions; VU meter check light and battery checker switch; 4" monitor speaker; built-in power supply...

- **Dolbyized Cassette Deck**
  - 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 k (mic), 50 mV/100 k (line); output level 0.5 V; “Sen-Alloy” head; stereo/full-logic output (2), headphones, DIN; solenoid-operated auto-stop/auto-play memory counter; 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; hysteresis relay; 161/2" W x 121/2" D x 53/4" H...

- **HITACHI**
  - **D-800 Dolbyized Cassette Deck**
    - Three-head, front-loading stereo deck; 4-track, 2-channel record/playback; 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 servo motor; inputs: mike (2), line in (2), DIN; outputs: line out (2), DIN, headphones; 161/2" W x 113/4" D x 61/2" H...

**STEREO DIRECTORY & BUYING GUIDE**
monoferrite 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 on); 0.08% NAB (weighted); S/N 61 dB; frequency response 30-15,000 Hz (chrome); 30-12,000 Hz (standard); (S + N)/N 65 dB; channel separation 35 dB at 1 kHz; wow & flutter 0.09% NAB (weighted); S/N 58 dB (Dolby on); 0.07% NAB (weighted); S/N 50 dB (Dolby off); has two left & two right channel line inputs; two left & two right channel mic inputs; mic/mic/mic level control; 3-digit tape counter with memory; total shut-off; peak LED indicators; Dolby noise-reduction system; built-in adjustable stand; 171/4" W x 12" D x 61/2" H. $429.95

5400. Same as 5420 except without Dolby circuitry. $349.95

5420 Stereo Cassette Deck

Ferrite heads: d.c. servo motor; wow & flutter 0.08% NAB (weighted); response 30-15,000 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); left & right channel line and mic inputs; mic/mic mixing; master level control; 3-digit tape counter with memory; total shut-off; peak overload indicator; front-load design; 15x2/4" W x 121/4" D x 51/4" H. $369.95

5200. Same as 5220 except without Dolby circuitry. $299.95

5220 Stereo Cassette Deck

Ferrite heads: d.c. servo motor; wow & flutter 0.09% NAB (weighted); response 35-15,000 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); left & right channel line and mic inputs; mic/mic mixing; master level control; 3-digit tape counter with memory; total shut-off; peak overload indicator; front-load design; 141/4" W x 121/2" D x 51/4" H. $329.95

1000 3-Head Cassette Deck

Stereo record/play deck has response of 35-20,000 Hz ±3 dB (CrO$_3$) 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 shut-off, memory rewind, and automatic rewind; variable pitch control, 3-point sound pickup for live recording; peak limiter; optional remote control. Inputs: mike 0.5 mV, 600 ohms; bened mike 0.5 mV, 600 ohms; line 100 mV, 100,000 ohms. Outputs: line 1.2 V (max.) variable; headphones 3 mW, 0 dB. 11x41/4" W x 20" D x 8 1/2" H. $1300.00

700 3-Head Cassette Deck

Same as the Model 1000 except does not have automatic rewind or DNL. 10x4 1/4" W x 20" D. $850.00
You're looking at our attitude about cassette decks. The HK2000.

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 subsonic 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.

*Dolby is a registered trademark of Dolby Laboratories, Inc
6 Cassette Tape Machines

DS-170 Digital Timer

Designed for unattended record/play with Nakamichi 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-Track Cassette Console

Stereo/record/playback; 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 0.13%. Inputs: line 580 mV (400 Hz, 0 db); 15/s W x 9/10 D x 6/10 H. $500.00

500 2-Head Cassette Deck

Four-track, 2-channel stereo model response 40-17,000 Hz ±3 db; wow & flutter 0.13%. HOME W x 4/2 D x 10 D. $400.00

550 Similar to Model 500 except S/N 60 dB (CrO tape with Dolby); 35-15,000 Hz ±3 db; wow & flutter 0.12%. W x 4/2 H x 10 D. $400.00

50. Similar to Model 500 except S/N 60 dB (CrO 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/s W x 3/2 H x 13/4 D; 11/4 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 shut-off; 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); 9/10 W x 3/2 H x 3/2 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: 10/3 W x 9/10 H x 3/2 D x 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 shut-off; 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, 9/10 W x 3/2 H x 3/2 W $275.00 With a.c. power pack $300.00

Remote Control Box

Electronic touch control (duplicating control system on the 1000 & 7000). 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 (ferrochromie with Dolby on); 55 dB (chrome), 53 dB (ferrochromie 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, 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 precise

CT-F9191 Dolbyized Cassette Deck

Front-loading cassette deck; ferrite erase heads; electronically controlled 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; 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. 15/s W x 7/8 H x 12/s 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; 15/s W x 13/sD. $400.00

CT-F7227 Dolbyized Cassette Deck

Front-loading cassette deck with Dolby noise-reduction system; automatic chrome detection; memory stop; fast wind, within 65 seconds for C-60; frequency response 20-16,000 Hz (standard tape), 30-17,000 Hz (chromium-dioxide tape), 30-16,000 Hz (ferri-chrome tape); wow & flutter ±0.2% (DN); 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/s W x 13/sD x 6/8 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 precision 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 x 3/4 H x 9/16 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; mic 0.5 mV. Line output 0.775 V; 120 V, 60 Hz operation, 15/s W x 3/4 H x 9/16 D. $250.00

CT-F2121 Dolbyized Cassette Deck

Front-loading cassette deck; Parnmaloy 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 circuitry; automatic stop in all modes; comes with stereo connecting cords, head cleaning kit, operating instructions. Overall size: 13/s W x 5/8 H x 11/s D. $200.00

STEREO DIRECTORY & BUYING GUIDE
<table>
<thead>
<tr>
<th>Model</th>
<th>Description</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>SCT-9 Dolbyzied Cassette Deck</td>
<td>Pushbutton control, Dolby noise-reduction circuitry; bid switch (chromium-dioxide or standard tapes); automatic memory counter; illuminated function indicators; standardized dual VU meters; separate left &amp; right record-level controls, adjustable output level control; mike, aux &amp; headphone jacks; digital counter; pause control; response 30-15,000 Hz ±2 dB, wow &amp; flutter 0.28%; S/N 54 dB, crosstalk -55 db; oil-ed walnut veneer end panels with brushed aluminum trim. 4⅛&quot; H x 14¼&quot; W x 9¾&quot; D.</td>
<td>$199.95</td>
</tr>
<tr>
<td>SCT-10 Stereo Cassette Deck</td>
<td>Pushbutton control of all functions including on/off, pause &amp; rewind, stop/eject; hysteresis synchronization response (with &quot;Super-tape&quot;) 20-10,000 Hz ±2 db; wow &amp; flutter 0.25% rms; S/N 48 dB; features dual lighted VU meters; left &amp; right channel record-level controls, 3-digit instant reset counter, stereo headphone jack; walnut-grained vinyl veneer end panels with brushed aluminum trim. 4⅛&quot; H x 14¼&quot; W x 8¾&quot; D.</td>
<td>$99.95</td>
</tr>
<tr>
<td>RS-5800 Dolbyzied Cassette Deck</td>
<td>Vertical stereo cassette deck; Dolby noise-reduction circuit, d.c. servo motor (play &amp; record), d.c. mechanical governor motor (fast-forward &amp; rewind); frequency response 40-15,000 Hz (chrome tape); wow &amp; flutter 0.2% rms; distortion 1.5%; S/N 55 dB (Dolby on), cross talk 55 db; rewind 85 sec (D-60); features eject button, memory stop, auto play, auto repeat, timer record &amp; play, tape selector buttons, mic level volume &amp; input level volume control, head counter, peak indicator lamp, stereo headphone jack; 220/240 117 V, 50/60 Hz; 470 mm W x 320 mm D x 135 mm H.</td>
<td>$300.00</td>
</tr>
<tr>
<td>RS-5700 Dolbyzied Cassette Deck</td>
<td>Dolbyzied stereo deck; frequency response 40-12,000 Hz ±3 db; wow &amp; 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 &amp; controls; 240/220 117 V, 50/60 Hz a.c., 395 mm W x 250 mm D x 95 mm H.</td>
<td>$200.00</td>
</tr>
<tr>
<td>STD-1510 Dolbyzied Cassette Deck</td>
<td>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 &amp; rewind. 15⅛&quot; W x 3⅛&quot; H x 10¼&quot; D.</td>
<td>$199.95</td>
</tr>
<tr>
<td>STD-1410 Dolbyzied Cassette Deck</td>
<td>Features Dolby noise-reduction circuitry; total automatic shut-off; twin VU meters; manual chrome tape switch; index counter; pause switch; fast-forward &amp; rewind.</td>
<td>$169.95</td>
</tr>
<tr>
<td>SC-3000 Stereo Cassette Deck</td>
<td>Front-loading stereo deck with fail-safe insertion device; 4-track/2-channel record/playback; Permalloy recording/play head, ferrite erase head; electronically controlled d.c. motor; direct-change mode lever; auto-shut-off; memory rewind; IC Dolby circuitry; selectable equalization circuit; LED peak-level indicators; two VU meters; wow &amp; 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).</td>
<td>$380.00</td>
</tr>
<tr>
<td>SC-3003 Same except 17½&quot; W x 11¼&quot; D x 6⅛&quot; H.</td>
<td>$370.00</td>
<td></td>
</tr>
<tr>
<td>SC-2000. Similar to SC-3000 except wow &amp; flutter 0.1% W rms; frequency response 35-12,000 Hz ±3 dB (chrome); S/N 310.00.</td>
<td>$300.00</td>
<td></td>
</tr>
<tr>
<td>SC-636 Cassette Recorder Deck</td>
<td>Stereo design with built-in Dolby circuits; provisions for chromium-dioxide tape, MC ferrite heads; constant and peak-reading VU meters, three input devices. Response 30-13,000 Hz, (regular tape); 30-16,000 Hz (CrO₂), (S/N) 50 dB; Dolby out, but with chromium-dioxide tape. 16½&quot; W x 4⅛&quot; H x 11¾&quot; D.</td>
<td>$280.00</td>
</tr>
<tr>
<td>RT-2500 Dolbyzied Cassette Deck</td>
<td>Frequency response 45-12,000 Hz (regular tape); 45-14,000 Hz (chromium-dioxide); S/N 52 dB (Dolby out), 58 dB (Dolby on).</td>
<td>$259.95</td>
</tr>
<tr>
<td>RT-2000 Dolbyzied Cassette Deck</td>
<td>Frequency response 60-8000 Hz (regular tape); 60-10,000 Hz (chromium-dioxide), S/N 50 dB (Dolby off); 55 dB (Dolby on).</td>
<td>$199.95</td>
</tr>
<tr>
<td>RT-1155 Dolbyzied Cassette Deck</td>
<td>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.</td>
<td>$179.95</td>
</tr>
<tr>
<td>C500 Dolbyzied Cassette Deck</td>
<td>Dolbyzied stereo deck with built-in Dolby noise-reduction circuitry, automatic total mechanism shut-off; response 30-15,000 Hz (standard); 30-16,000 Hz (chromium-dioxide) tapes; wow &amp; flutter 0.13% (weighted); S/N 51 dB (Dolby out), 58 dB (Dolby in) with standard tape; 53 db.</td>
<td>$169.95</td>
</tr>
<tr>
<td>SC-3000 Stereo Cassette Deck</td>
<td>Frequency response 45-15,000 Hz (chromium-dioxide); S/N 52 dB (Dolby off), 58 dB (Dolby on).</td>
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<td>$300.00</td>
<td></td>
</tr>
<tr>
<td>SC-636 Cassette Recorder Deck</td>
<td>Stereo design with built-in Dolby circuits; provisions for chromium-dioxide tape, MC ferrite heads; constant and peak-reading VU meters, three input devices. Response 30-13,000 Hz, (regular tape); 30-16,000 Hz (CrO₂), (S/N) 50 dB; Dolby out, but with chromium-dioxide tape. 16½&quot; W x 4⅛&quot; H x 11¾&quot; D.</td>
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<td>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.</td>
<td>$179.95</td>
</tr>
<tr>
<td>C500 Dolbyzied Cassette Deck</td>
<td>Dolbyzied stereo deck with built-in Dolby noise-reduction circuitry, automatic total mechanism shut-off; response 30-15,000 Hz (standard); 30-16,000 Hz (chromium-dioxide) tapes; wow &amp; flutter 0.13% (weighted); S/N 51 dB (Dolby out), 58 dB (Dolby in) with standard tape; 53 db.</td>
<td>$169.95</td>
</tr>
<tr>
<td>SONY from SUPERSCOPE</td>
<td>TC-177SD Stereo Cassette Deck</td>
<td>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 (Dolby out), 435 Hz (Dolby in); d.b. output: 15&quot; W x 6¾&quot; H x 12¾&quot; D.</td>
</tr>
<tr>
<td>TC-209SD Dolbyzied Cassette Deck</td>
<td>Front-load stereo cassette deck; Dolby noise-reduction circuit, ferrite &amp; ferrite head, FeCr</td>
<td>$399.00</td>
</tr>
</tbody>
</table>
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TC-186SD Stereo Cassette Deck
- Phase recording capability; Dolby FM; Dolby reduction system; ferrite & ferrite head; Symphase recording capability; 3-pos. tape counter; memory tape counter; automatic total mechanism shutoff; mic & aux. inputs; two a.c. convenience outlets; Dolby indicator; front-panel level trim; comes with two RK-74 patchcords, head cleaning tips, FeCr-60 cassette; 17½" W x 12¾" D x 6¼" H; weight 11 lbs, 5 ounces. $399.95

TC-138SD Dolbyzed 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; two calibrated VU meters, peak limiter; pushbutton operation; 3-digit tape counter; automatic total mechanism shutoff; microphone input; two a.c. convenience outlets; Dolby indicator; recording level adjustment; 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 patchcards, head cleaning tips, FeCr cassette; 15¼" W x 9¾" D x 5¾" H. $299.95

TC-1355SD Portable Cassette Deck
- Stereo cassette deck; Dolby noise-reduction system; ferrite & ferrite head; FeCr equalization; Symphase recording capability; d.c. servo-controlled motor, Dolby FM & Dolby controls; multiplex filter; 3-pos. tape select switch; automatic bias adj.; for CRo, tape; two calibrated 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 30-10,000 Hz ±15 db (standard), 30-15,000 Hz ±15 db (FeCr), 50,14,000 Hz ±3 db (chrome), comes with two RK-74 patchcards; head cleaning tips, FeCr cassette; 15¼" W x 9¾" D x 4½" H. $229.95

SUPERSCOPE

CD-302A Stereo Cassette Deck
Similar to CD-301A except includes the Dolby noise reduction system. (S+N)/N = -48 dB; Dolby monitor jack; left and right mike inputs and record-level controls; record mode light, 3-digit tape counter; interlocked piano-key type controls; locking pause control. Comes with walnut base and two audio patchcords. Overall size 12½" W x 3½" H x 8½" 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 electronic controls; full complement of inputs & outputs, supplied with metal carrying handle; 13" W x 8½" H x 3¼" D. 7 lbs, 5 ounces. $109.95

TANDBERG

TC-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 recording/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. 18½" W x 9½" D x 4¼" H. $999.00

TC-310 Cassette Recorder Deck
Features Dolby noise-reduction system; three motors, two peak-reading record meters; chrome-dioxide/low-noise, high-output tape switch; automatic endstop. Wow & flutter 0.15% (W rms). Response 50-12,000 Hz ±2 dB. Has mike (0.1 mV), radio (5 mV), and line (40 mV) inputs. Output 0.775 V. Walnut cabinet. 19" x 4½" x 9½" 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 (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/0 db; 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 tape functions so unit can decode any external Dolby-encoded source for monitoring while re-
The A-400.

"It should start designers at other companies rethinking many of the truisms of their craft."*

We went to a front-loading design for the A-400 not to make it pretty, but to make it more functional. *High Fidelity* Magazine called it “…the most thoroughly satisfactory front-loading well design we have yet tested: practical, easy to use, unencumbered by ‘extra’ mechanisms that are potential troublemakers.” *

Proven reliability. And typically TEAC performance. Whether you want the twang of a country guitar or the smoothness of a slap bass, the mellow sound of a ballad or the thrilling power of an opera, audition the A-400. You’ll agree with the critics. It is something to think about.

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TEAC®
The leader. Always has been.

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In Canada TEAC is distributed by White Electronic Development Corporation (1989 Ltd.)
### Cassette Tape Machines

- **A-450 Dolbyzed Stereo Cassette Deck**
  - Features Dolby-B type noise-reduction system.
  - Has switchable controls for bias and equalization for various tape types; mikeline 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: line 0.25 mV; output: 0.3 V. 7 Hz x 17 Hz x 10 Hz. 550.00

- **A-400 Dolbyzed Stereo Deck**
  - Features Dolby noise-reduction system; twin rotating 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 Dolbyzed Cassette Deck**
  - Vertical front-load deck; two heads; d.c. servomotor; 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 Hz (with Dolby); frequency response 30-16,000 Hz (chrome & FeCr tapes); two VU-type loudness meters; LED peak-reading indicators; two line 60 mV/50 k; two line 0.25 mV/72 dB (600 ohms or more); outputs; two line 0.775 V/50 k; one 8-ohm rotary lever tape counter; 3-pos. bias & equalization selectors; switchable timer function; 17 Hz x 11.4 Hz x 6 Hz. 500.00

- **A-170 Dolbyzed 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; 16 Hz x 11.4 Hz x 6 Hz. 250.00

- **A-100 Stereo Cassette Deck**
  - Front-load deck; d.c. servomotor; 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; 16 Hz x 11.4 Hz x 6 Hz. 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 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 at 1 kHz (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 0/15/30 dB; B type noise-reduction system. 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); 11 Hz x 9 Hz x 3 Hz. 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 broadcast); 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 balance; digital counter; memory re- wind 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. 17 Hz x 13 Hz x 5 Hz. 499.95
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; high-precision ferrite head; motor 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, CrO, tape); 17½ W x 13” x 5½” H. $399.95

RS-640US Cassette Recorder Deck
Horizontal design with Dolby circuit; standard and chromium-dioxide tape selection; high precision 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, CrO, tape); 17½ W x 11¼” x 9½” H. $349.95

RS-625US Cassette Recorder Deck
Dolby-dized design with patented HPF (hot-pressed ferrite) head; ferrite record/playback head; frequency response +3, -5 dB at 40 Hz to -3 dB at 12,000 Hz (CrO, tape); S/N 49 dB (Dolby out, standard tape), 57 dB (Dolby in, standard tape); 30-16,000 Hz (Dolby in, CrO, tape); +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 11,000 Hz (CrO, tape). $595.00

RS-630US Cassette Recorder Deck
Front-loading design with front-panel controls, features Dolby circuit; chromium-dioxide/standard tape selection; 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, CrO, tape); 17½ W x 12½” x 5½” H. $249.95

RS-623AUS Cassette Recorder Deck
Dolby-dized design with standard tape & chromium-dioxide tape selection; watts output: 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 9½” D. $199.95

RC-6030 “Feather-Touch” Deck
Duel-capstan design; PLL controlled d.c. servo motor for capstan, d.c. bridge servo motor for reel drive; “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 cueing, automatic timer. $750.00

PC-5060 Dolbyized Cassette Deck
Front-loading; electronically controlled servo motor; tape selector with independently switchable bias and equalization; chrome tape auto selector, editing switch; limit switch, tape selector switches; frequency response 40-15,000 Hz (chrome); S/N 58 dB (Dolby off); wow & flutter 0.08% W rms; dist. 1.5% $199.95

PC-4030 Dolbyized Cassette Deck
Electrically controlled bridge servo d.c. motor, tape selector; chrome tape auto selector, auto-play; cue & review; input/output level 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. 2% $229.95

PC-3060 Dolbyized Cassette Deck
Front-loading deck; d.c. servo drive motor; two Premalloy heads; Dolby & FM Dolby circuitry; frequency response 40-12,000 Hz (standard tape), 40-15,000 Hz (Dolby in, CrO, tape); 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

RS-263AUS Cassette Recorder Deck
For use in conjunction with a timing on-off switch; chrome tape & Dolby in; extra output of +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 11,000 Hz (CrO) tape. Frequency response 30-16,000 Hz (CrO, tape); +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 11,000 Hz (CrO) tape. $69.95

RS-3060 Dolbyized Cassette Deck
Premalloy head; meter display from -20 dB to +3 dB. $310.00

RS-320 Stereo Cassette Recorder
PC-800G Dolbyized Cassette Deck
Designed to operate from a.c.-d.c. and 12-volt battery; Super Permalloy record/playback deck; 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; 107dB; built-in headphone amplifier; fully automatic shut-off; wow & flutter 0.06% W rms; speed fluctuation 1%, fast-forward & rewind; response 30-13,000 Hz (standard), 30-15,000 Hz (chromium-dioxide); Dolby noise-reduction circuit. 12½” W x 3¼” H x 12¼” D. $390.00

TC-600B
Same as TC-600GL, except a c. operation only; meter display from -20 dB to +3 dB. $260.00

TC-51S Cassette Deck with Dolby
Front-loading stereo record/playback 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 (CrO, + FeCr), 30-15,000 Hz (standard tape); 30-15,000 Hz (chromium-dioxide tape). $199.95

TC-51S Cassette Deck
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 (CrO, + FeCr), 30-15,000 Hz (standard tape); 30-15,000 Hz (chromium-dioxide tape). $199.95

TOSHIBA

PC-6030 “Feather-Touch” Deck
Duel-capstan design; PLL controlled d.c. servo motor for capstan, d.c. bridge servo motor for reel drive; “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 cueing, automatic timer. $750.00

YAMAHA

TC-320 Stereo Cassette Recorder
Two-motor stereo/compatible mono record/play unit; self-contained stereo power supply; built-in condenser mic; self-contained power supply; automatic bias/switching for chromium-dioxide tape; automatic bias/equalizer switching for chromium-dioxide tape; digital circuit; digital tape counter, auto-stop, tape-flow control, input mixing & 3-pos. relay 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 ½ W, 4 ohms for driving motional feedback speaker. $106.95

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 controls; automatic record/arm/stop 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 2½” 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; automatic motorized level control with on/off switch; DNL system; automatic bias/equalizer 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 0.15% W rms; S/N 60 dB (chrome with DNL in), 16” W x 11” D x 4½” H. $585.00

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 ½ W, 4 ohms for driving motional feedback speakers. $106.95

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CIRCLE NO. 32 ON READER SERVICE CARD
# 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; 60-14,000 Hz ±3 dB. (low-noise tape); dist. 2% at 3 1/2 ips; $99.95

**ED-1240 8-Track Tape Deck**
Record/play stereo design. Response 30-15,000 Hz (40-12,000 Hz ±3 dB); S/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 1/4" H x 13 1/2" W x 8 3/4" D $249.95

**HD-830 8-Track Play/Record Deck**
Response 40-13,000 Hz; wow & flutter 0.15% Wrms (playback), 0.25% Wrms (record/playback); S/N 47 dB; walnut vinyl covered wood cabinet; 16 1/2" W x 18 1/8" D x 4 1/4" H $399.95

## 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 1/2" W x 8 3/8" H x 3 1/2" 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 1/2" D x 4 1/4" H $99.95

## 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. $169.95

**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 3/4" W x 5 3/4" H x 8 1/4" D $54.95

## 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; 2 mike & 2 line input jacks; two line & headphone output jacks; DIN jack. 4 1/4" W x 15 5/16" H x 9 1/2" D $220.00

**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 1/2" W x 18 1/8" D x 4 1/4" H $139.95

## Meriton

**RK-885 8-Track Record/Playback Deck**
Record/play deck designed to be used with any stereo receiver or amplifier with tape input 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 1/4" H x 8 3/4" D $119.95

## Lafayette

**HD-830 8-Track Play/Record Deck**
Response 40-13,000 Hz; wow & flutter 0.15% Wrms (playback), 0.25% Wrms (record/playback); S/N 47 dB; walnut side panels. 12" W x 33 1/2" H x 9 1/4" D $199.95

## 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 1/4" x 16 1/2" x 10" $149.95

## Stereo Directory & Buying Guide

102
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. 3½" x 13½" x 8½"... $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. 4½" H x 8½" W x 1¾" D... $79.95

SANYO
RDB020 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.; 12½" W x 10" H x 5" D. $99.95

RT-820 8-Track Record/Play Deck
Frequency response 50-12,000 Hz, S/N 45 dB; automatic/manual program changeover; separate record VU meters; slide-rule recording-level controls. 15½" W x 4½" H x 9½" 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 switcher, 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 recording-level controls, frequency response 50-10,000 Hz, S/N 45 dB; 15½" W x 4½" H x 9½" 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 repeat buttons, fast-forward button, program indicating light, automatic track switching. 120-V, 60-Hz operation. 8¼" x 4½" H x 9½" D... $89.95

TR-228 8-Track Recorder Deck
Stereo design. Response 30-13,000 Hz; (S+N) N 45 dB. Bias frequency 9 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. 14¾" x 4½" x 8½" D... $199.95

4-CHANNEL

TC-258 Quadradial 8-Track Deck
Playback of 4-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%; 8½" W x 4½" H x 9½" 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 program 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. 7¾" W x 4½" H x 9¾" 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 indicators; fast-forward, pause, and program selector push switches; walnut wood-grained cabinet. Response 50-10,000 Hz; (S+N)/N -48 dB; 7½" x 4½" H x 9½" D... $149.95

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 4½" H x 15½" W x 8½" D... $179.95

TELEC

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. 18½" x 9" H x 16½" D. $319.95

TELEX

PE-1150 8-Track Stereo Deck
Plays/records-2-ch stereo cartridges; automatic play operation; records from phono, radio, or mike; response 100-10,000 Hz; S/N 40 dB; wow & flutter 0.3% rms; headphone & mike jacks; two VU meters; rotary-type controls operate left and right recording-level channels; full complement of controls; walnut veneer cabinet; 15¾" W x 4½" H x 10½" D... $149.95

TOSHIBA

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%. 8¼" x 21¼" x 11½"... $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. 18½" x 9" H x 16½" D. $319.95

48-D. Same as 48-D but without power amplifier. $269.95

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CIRCLE NO. 67 ON READER SERVICE CARD
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 unilized design of the system, make the compact an attractive means of bringing reasonably good sound to the home at minimum 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 KHL 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 quadraphonic 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 µV (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 1/2" W x 12 1/4" D x 6 1/2" H.

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 SEP/O TL circuit; FM sensitivity 2.0 µV (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; automatic tonearm return; S/N 60 dB; stereo separation 35 dB; direct-coupled amplifier with 4.5 W rms min/ch output into 8 ohms; IM 0.6% at all power levels; S/N 75 dB (1000 Hz, 40 kHz mod., 100 V); stereo channel separation 40 dB at 1000 Hz; automatic two-speed turntable; activates 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 1/2" D x 5 1/2" H.

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 0.5% 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 µV (IHF); frequency response 20-15,000 Hz ±1.5 dB; S/N 70 dB (1000 Hz, 40 kHz mod., 100 V); stereo channel separation 40 dB at 1000 Hz; automatic slide-rule tuning dial, two VU meters, a.f.c.; overall frequency response 40-18,000 Hz; BSR C-132R2 record changer with diamond/sapphire stylus, ceramic cartridge, sleep switch, cartridge features automatic latching, pause control, digital counter; speakers have 8" woofer & 2" tweeter, in 23" H x 13" W x 8" D enclosures, wool-grain vinyl cabinet, charcoal brown matte grille cloth; full complement of inputs/outputs; control center 23" W x 15 1/2" D x 8 1/2" H.

SDT/8600H. Similar to SDT/8700H except overall frequency response 50-15,000 Hz; speaker has 8" woofer with whizzer cone (200 W x 12" W x 7 1/2" D), control center 32" H x 15 1/2" D x 8 1/2" H.

SDP/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.

SDP/8400H. Same as 8600H except with 8-track record/playback deck.

SDP/8500H. Same as 8700H except with 8-track record/playback deck.

SDT/8400H. Same as 8600H except with 8-track record/playback deck.

SDP/8300H. Same as 8400H except 6 1/2" woofer with whizzer (18" H x 11" W x 8 1/2" D), control center 18" H x 15 1/2" D x 8 1/2" H; matte black grille cloth.

SDP/8100H. Same as 8200H but without tape player.

JULIETTE

C952-172 Home Entertainment System

STereo DIRECTORY & BUYING GUIDE
Combines stereo cassette recorder/player, AM-FM stereo receiver, built-in automatic record changer, diamond stylus & hinged dust cover, 4-way air-suspension speaker systems, and two dynamic microphones; features automatic system shuffle 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 record-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'/2" W x 15'/2" D x 10' H; speakers 19' H x 11' W x 6'/2" D. $275.00

SE-2560. Same as SE-2650 except with 8-track recorder/player; automatic record level control; control center 21'/2" W x 14'/2" D x 9'/2" H; speakers 19' H x 11' W x 6'/2" D. $220.00

**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 µV for 30 dB quieting; S/N 50 dB; AM 1.0% stereo, response 20-15,000 Hz ±6 dB at 1 W; features back-lit tuning dial; aux tape input and output jacks; phono input for ceramic cartridges; automatic/manual track-switching of cartridges; built-in loudness compensator, 6'/2" full-range speaker in each simulated walnut-veneer cabinet (18'/2" H x 11'/2" W x 5'/2" D); control center simulated walnut-veneer cabinet. 5'/2" H x 18'/2" W x 13" D. $159.95

**PANASONIC**

**SE-2650 Cassette/Radio/Phono** AM-FM stereo recorder 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'/2" woofer, 6'/2" passive radiator and 2'/2" tweeter. $349.95

**SE-2880.** Same as SE-2650 except with 8-track recorder/player; automatic record-level control; comes with two speaker systems, each with 6'/2" full-range and 6'/2" passive radiator. $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'/2" full-range and 6'/2" passive radiator. $279.95

**RE-3196** Similar to RE-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'/2" full-range and 6'/2" passive radiator. $229.95

**RE-8126 8-Track/Radio/Phono** AM-FM stereo receiver with built-in 8-track recorder/player; cueing lever; tuning meter; auto-stop in record mode; automatic record-level control; locking fast forward; comes with two speaker systems, each with 6'/2" full-range and 6'/2" passive radiator. $199.95

**RE-8126.** Similar to RE-8126 except with cueing control, automatic shut-off. $199.95

**RE-8176 8-Track/Radio/Phono** AM-FM stereo receiver with built-in 8-track recorder/player and record changer; cueing lever; lighted program indicator; comes with two speaker systems, each with 6'/2" full-range and 6'/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'/2" full-range and 6'/2" passive radiator. $179.95

**SANYO**

**DXT5251 Compact Stereo System** Combines 8-track/record/play deck, cassette recorder/player, AM-FM stereo receiver, 3-speed automatic record changer, and pair of matched three-way acoustic-suspension speaker systems; features built-in APSS (auto program search system) that locates music cue on cassette; pause control; three-speed changer with cueing control, automatic shut-off; air-suspension speakers each with 8'/2" woofer & 3" tweeter. $269.95

**SG-142.** 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'/2" woofer & 3" tweeter. $269.95

**SG-141 8-Track/Phono/Receiver** Combines AM-FM stereo receiver with 8-track tape recorder, automatic record changer, and two speaker systems; features 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'/2" full-range. $219.95

**SR-130.** Same as SG-141 except without record changer. $149.95
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 1/8" H x 9 1/4" 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 1/8" H x 14 1/2" 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...

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NEED MORE INFORMATION?
Write direct to the manufacturer or distributor. A list of names and addresses starts on page 16.

Sylvania

CST7535W Phono/8-Track/Receiver
Features full-size BSR automatic turntable. AM-FM stereo receiver, 8-track play/record deck, pair of air-suspension speaker systems; has built-in Phase Q4 matrix; front-panel headphone jack; cut/boost bass & treble controls; 5 W rms/ch into 8 ohms (60-20,000 Hz) at 1% THD, FM sensitivity 4 µV, S/N 60 dB. Walnut-grained vinyl. Control center 9 1/2" H x 25 1/2" W x 15 1/4" D; speakers 16 1/4" H x 10 1/4" W x 6 1/4" D ........................................... $329.95

CST720W. Same as CST7535W except B-track tape player; control center 9 1/2" H x 18' W x 16 1/2" D; speakers 15 1/4" H x 9 1/4" W x 7 1/2" D ........................................... $229.95

Teclex

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' D). Control center 4 1/2" H x 22 3/4" 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; 14 1/2" H x 22 3/4" W x 14 3/4" D ........................................... $239.95

TXC R1200. Same as TXC 1200 but with 8-track recorder/player ........................................... $254.95

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" H x 15" 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 3000 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" woofer & 3" tweeter; response 60-15,000 Hz; 8 ohms; control unit 25 1/4" W x 15 1/4" D x 9 1/2" H; speakers 18" H x 10 1/2" W x 7 1/4" D ........................................... $420.00

For specifications and details write or call:

Marjen Company, Inc.
PO Box 251
South Kent, Connecticut 06785
(203) 354-3857

CIRCLE NO. 43 ON READER SERVICE CARD

STEREO DIRECTORY & BUYING GUIDE
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 interface 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, ranging from ten to eleven controls to cover the entire audio band. Normally, separate adjustments are provided for each channel, which can be made for a formidable array of controls. However, they are usually set only once, so equalization can be retained for a loudspeaker system 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 playback 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 tuners 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 OS 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 directional 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 four-channel equalizer. A simple matrix decoder can be used with phonograph records encoded with the SQ system to give a reasonably good four-channel effect or to enhance the sound of stereo broadcasts. Dolby devices merely prevent noise from being added to a program during recording or broadcast, but cannot remove noise from 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.

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**Equalizers, Expanders & Noise-Reduction Units**

- **DYNACO**
  - Stereo Octave Equalizer
  - Provides 12 dB boost or cut at octave intervals from 30-15,000 Hz, 10 separate slider adjustments for each channel; separate level adjust.
  - Switches for tone flat, tape monitor; solid walnut end panels. 17 3/4" W x 8" D x 4 3/4" H
  - $119.95 (kit)

- **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 1/2" x 7 3/4" x 10 D
  - $129.95

- **JVC**
  - **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, external low and solid walnut calibration tapes. 3 1/4" x 13 3/4" x 7 1/2" D
  - $149.95

- **MXR**
  - Stereo Equalizer
  - Dynamic range 110 dB; control range ±12 dB; gain: unity ±1 dB (controls centered); max output 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 adjustment, 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

**108**

- **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 preamplifier to reduce 10 db noise reduction, 7.5 dB of increased dynamic range; adjustable dynamic low filter for reducing rumble and hum. Total distortion less than $199.95

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**Genuine walnut veneer cabinet**

- **10 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 1000 Hz, octave control above, 19" track mount) x 7 3/4" D (inc. knobs) x 5 1/2" H
  - $470.00

**DAHLQUIS2**

- **DO-LPI Variable Filter/Bass Equalizer**
  - Low-pass electronic crossover for bi-amp bass speaker applications; fully adjustable 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 x 5 1/2" D x 2 3/4" H
  - $250.00

- **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 Dynamic Range Enhancer**
  - 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; provides 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 professional models and with single-end 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 3/4" H x 9" W x 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

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**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 preamplifier to reduce 10 db noise reduction, 7.5 dB of increased dynamic range; adjustable dynamic low filter for reducing rumble and hum. Total distortion less than

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**Stereo Directory & Buying Guide**
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/µs for +6 dB peak unlim 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.

**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% 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 µV; S/N 100 dB (1 kHz, dynamic expansion 14 dB); twin meters. 13 11/32" W x 12 19/32" D x 5 11/32" H. $300.00

**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 ±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 1/4" H. $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 un-equalized output, low and/or high shelfings: 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, Incorporated**, 296 Newton Street
Waltham, Massachusetts 02154 • (617) 899-8909
CIRCLE NO. 22 ON READER SERVICE CARD

1977 EDITION
You want power, performance and flexibility in a top-notch 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 preamplifier 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 preamplifier 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 equalizer. The 202 power amplifier uses an unusual input and mode selection. Circuits, with deck to deck dubbing, line or tape setting. There will probably be one or two of our most electrostatics. Next time you go out and boogie, check out the sound system.

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.

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The 101B preamplifier 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 most electrostatics. Next time you go out and boogie, check out the sound system. Will there be a couple ever to be matched out of ProCom 205C's putting out those good times.

SPECIFICATIONS

101B Stereo Preamplifier/Equalizer
Frequency Response: 20Hz - 20kHz ± 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 86 db below full output,
Std. "A" weighting
202 Stereo Power Amplifier:
Power Output: No less than 100 watts, RMS con-
tinuous, 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

210 Ten-Band Stereo Equalizer
Provides 10 bands of equalization with ±15 dB boost or cut in each of the 10 audible octaves; uses gyror synthesized inductors; features full band 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. $299.50

TECHNICS BY PANASONIC

SH-9090P Frequency Equalizer
Single-channel octave equalizer with 12 bands covering 10 to 32,000 Hz, 12-db boost or cut at each frequency point, center frequency of each band variable by one octave.

SWTP

EO-1 Stereo Octave Equalizer
Has nine independent controls/channel; octave response per control; provides up to ±12 dB correction; controls for each channel operate independently; designed to be connected between preamplifier 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. A multiplex filter prevents recording interference from pilot tone frequencies or unsuppressed carrier signals, providing unity gain compensation; walnut-grained wood case. 17½" x 20" x 11½" D. $299.50

AN-80 Outboard Dolby System
Less elaborate version of AN-180. Input mixing feature omitted and only one Dolby circuit per channel. Circuit operates for recording, then playback, but not together. Increased (S + N)/N 10 dB at 10,000 Hz. $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 a multiplex filter. Response 20-20,000 Hz ±0.15 dB. 6½" H x 16½" W x 10½". $450.00

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.

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, BIC 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, BIC 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 BICONEXT™ 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 BIC 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 BIC 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 sensitivity 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 BIC 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, BIC 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.

BIC VENTURI SPEAKER SYSTEMS
TOMORROW'S TECHNOLOGY TODAY

BIC VENTURI
Westbury, N.Y. 11590.
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CIRCLE NO. 15 ON READER SERVICE CARD

STEREO DIRECTORY & BUYING GUIDE
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. In turn, it creates 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 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 efficiency, 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, 3 dB down at 44 Hz and 23,000 Hz; crossovers 650 Hz & 5000 Hz; midrange & high range level controls; imp. 8 ohms; min. driving power 25 W 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 12" W x 7" D) 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 overemphasized or underemphasized. 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, 3.5" dome midrange, four 11/2" domes 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 1/2" W x 20 1/2" H x 9 1/2" 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. 8 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 1/2" 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 & 23,000 Hz; crossovers 650 Hz & 5000 Hz; midrange & high-range level controls; imp. 4 ohms; min. driving power 25 W 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 1/2" dome hemispherical mid-range, 1/2" soft-dome hemispherical 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; two-position high-range level control; 8 ohm imp. min. driving power 25 W for 100 dB SPL in 3000-cu-ft room; max. 100 W rms/ch for speech and music; oiled-walnut cabinet; 19" 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" H x 9 1/2" W x 6 1/4" D $75.00

AR Advanced Development Div.

AR-10 Three-Way System
Three-way system with 12" acoustic-suspension woofer, 1 1/2" dome hemispherical mid-range, 1/2" soft-dome hemispherical 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; oiled-walnut cabinet; 19" H x 12" W x 7" D $99.00
Speaker Systems

**ACOUSTIC-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 ±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. $279.95

**Phase II Three-Way System**
Three-way dynamic bass-reflex system; 10" woofer, 5" midrange, 1" Mylar dome tweeter; response 38-20,000 Hz ±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; 25 1/4" H x 14 1/4" W x 12" D. $199.95

**Phase Monitor Two-Way System**
Two-way dynamic bass-reflex system, 12" woofer & 1" Mylar dome tweeter; response 40-20,000 Hz ±3 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; 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 ±3 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; 21 1/4" H x 12 1/4" W x 10 1/2" D. $119.95

**Microphone Two-Way System**
Two-way dynamic bass-reflex system, 6 1/2" woofer & 1" Mylar dome tweeter; frequency response 40-20,000 Hz ±4.5 dB; crossover 1600 Hz; imp. 4-8 ohms; min. amp power 5 W rms, 30 W rms max.; sensitivity 32 Hz, 9" H x 10 1/2" W x 8 1/4" D. $79.95

**Phase Master Three-Way System**
Three-way dynamic bass-reflex system, 12" woofer, two 13-cm midrange & horn-loaded super tweeter; frequency response 30-20,000 Hz ±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 walnut 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 2 1/2" x 2 1/2"; crossovers 250 & 5000 Hz; frequency response 25-40,000 Hz ±3 dB; efficiency 90 dB SPL 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 in all sides including back & baffle; removable black grille; optional swivel stand; 33 1/2" H x 19" W x 15 1/2" D. $129.00

**Andante Master Control System**
Three-way acoustic-pressure feedback speaker system; 10" woofer, 2" dome midrange, horn tweeter; crossovers 300 & 5000 Hz; frequency response 25-40,000 Hz ±3 dB; power required to produce 90 dB SPL at 4 feet on axis 1 1/4 W; 8 ohms; max. power handling 60 W rms; 125 W built-in servo amplifier, distortion 0.7% at 10 W min., 180 W max. $1000.00

**Arioso Monitor Speaker System**
Three-way bass-reflex with internal controlled damping; 1 1/2" dome midrange, horn tweeter; crossover 300 Hz & 5000 Hz; frequency response 40-20,000 Hz ±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; 8" woofer, 3" dome midrange, 1/2" dome tweeter; crossovers 300 Hz & 4000 Hz; frequency response 30-30,000 Hz ±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, 2½" dome midrange, ½" dome tweeter; crossovers 400 Hz & 4000 Hz; frequency response 35-30,000 Hz ±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; crossovers 2000 Hz & 4000 Hz; frequency response 40-18,000 Hz ±3 dB; max. power handling 60 W rms; 8 ohms; 42" x 12" x 11". $389.00

**Allegro Bass-Reflex System**
Three-way bass-reflex system with internal controlled damping; 10" woofer, 4" x 8" horn mid-range, horn tweeter; crossover 2000 Hz & 10,000 Hz; frequency response 50-18,000 Hz ±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, ¾" dome tweeter; crossover 3500 Hz, frequency response 50-30,000 Hz ±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 2½" dome tweeter. Response 37-20,000 Hz ±3 dB (average living room); 1500 Hz crossover frequency; 3 dB change mid-range and tweeter level controls. 8 ohms impedance. Walnut-grained vinyl air-tight cabinet. 23 ¾" H x 13" W x 11 ¾" D. $129.00

**ADS**

**910 Three-Way Speaker System**
Three-way system with optional tri-amplification, frequency response 28-20,000 Hz ±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; 33 1/2" H x 19" W x 15 1/2" D. $550.00

**810 Three-Way Speaker System**
Efficient acousticsuspension design; response 35-20,000 Hz (±3 dB), minimum recommended amplifier power 15 W rms; crossovers 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 rms at 1 meter, selected natural walnut finish; removable black grille; 25½" H x 14" W x 11 ¾" D. $340.00

**710 Three-Way Speaker System**
Efficient acousticsuspension design; response 40-20,000 Hz (±3 dB), minimum recommended amplifier power 15 W rms; crossovers 550 & 4000 Hz at 12 dB/octave; 1" soft-dome tweeter, 2" soft-dome mid-range, two 7" long excursion, high-compliance woofers; efficiency 93 dB SPL at 1 W rms at 1 meter, selected natural walnut finish; removable black grille. 21½" H x 12½" W x 10½" D. $249.00

**500 Two-Way Speaker System**
Efficient acousticsuspension design; response 45-20,000 Hz (±3 dB), minimum recommended amplifier power 10 W rms, crossover 1500 Hz.

STEREO DIRECTORY & BUYING GUIDE
(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.
10 Speaker Systems

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 3/4" H x 11 1/2" W x 9 1/2" D. $135.00

700. Same as 500 except has two 7" long excursion, high-compliance woofers; 21 3/4" H x 12 1/4" W x 10 3/4" 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 5/8" H x 4 1/4" W x 4 1/2" 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 in; cut at 1 meter; selected natural walnut finish; removable black grille; 17 3/4" H x 10" W x 8 1/4" 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 3/4" H x 25 3/4" 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 3/4" H x 20" W x 9 3/4" 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" x 9 1/4" x 6 3/4" 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 1/2" 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 1/8" 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 1/4" W x 26 3/8" H x 10 1/2" D. $189.95

S-122 Two-Way Speaker System

Two-way system with 12" rolled-edge woofer and 1 1/8" 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 1/4" W x 26 3/8" H x 10 1/2" D. $129.95

S-102 Two-Way Speaker System

Two-way system with 10" rolled-edge woofer and 1 1/8" 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 1/2" W x 9 1/2" 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; 11 1/2" W x 19 3/4" H x 6 5/8" 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 non-polarized 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" 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 1/4" 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 reverbant SPL; resonance freq. ±5 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 1/2 x 15 1/2 x 10" W x 10" front-to-back (occupies 10 1/2" wall space). $250.00

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-veneer high-density particle board, oiled finish; 19 3/8" W x 11" H x 10 1/2" 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; 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 10 to 350 W; long-term broadband max. power 65 W; dispersion 40 degrees (vertical) & 90 degrees (horizontal), both at -6 dB; hand-rubbed oiled-walnut or oak finish; acoustically transparent knit fabric grille mounted on removable frame; 40" H x 26 1/4 W x 18 1/2 D. $565.00

"Voice of the Theatre" Systems

Features 15" bass driver plus compression driver mounted on 511B sectoral horn; crossover over 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; dispersion 40 degrees (vertical) & 90 degrees (horizontal) both at -6 dB; hand-rubbed oiled-oak finish; acoustically transparent knit fabric grille mounted on removable frame, 40" H x 26 W x 18" D. $565.00

STEREO DIRECTORY & BUYING GUIDE
The Prestige of High Fidelity

The Professional Loudspeaker for the Audiophile.

A.P.F.* speakers

1. ANDANTE "Master Control" the reference
25-40,000 Hz ±3dB
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 ±3dB
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 ±3dB
100 watt R.M.S. power handling
15" woofer controlled by A.P.F. through a 125 watt built-in servo 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 ±3dB
80 watts 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 16" 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

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.

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 Montée de Liesse, ST. LAURENT, MTL. P.O. tel: (514) 735-6116 IN U.S.A. - 172 Madison Av. Room 602, N.Y. 10016

1977 EDITION

CIRCLE NO. 3 ON READER SERVICE CARD

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Speaker Systems

Stonehenge II Speaker System

Three-way floor-standing system with 12" bass driver, 5½" cone mid-range, and 5" cone tweeter; crossovers 500 & 5000 Hz; frequency response 35-20,000 Hz; dispersion 130 degrees vertical, & horizontal at ~6 dB; power 50 W, operational power range 20 to 250 W; hand-rubbed oiled-oak cabinet, brown knit fabric grille mounted on removable panel; 27" H x 22" W x 15½" D.

$359.00

Santana II Speaker System

Two-way floor-standing system with vented enclosure with 12" bass driver & 5½" cone mid-range; crossover 250 Hz; frequency response 40-20,000 Hz; max power 45 W; operational power range 15 to 200 W; long-term max. acoustic power 100 W; max. power input 200 W; dispersion 180 degrees; 25½" H x 14½" W x 12½" D.

$359.00

Model Seven Bookshelf Speaker

Three-way system with 12" bass driver, 5½" cone mid-range & 4½" cone tweeter; crossovers 850 & 3000 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. 25½" H x 16" W x 14½" D.

$299.00

Model Nine. Similar to Model Seven but with 5½" cone tweeter; crossovers 800 & 7000 Hz; response 45-20,000 Hz; max. power 60 W; operational power range 12 to 250 W; hand-rubbed oiled-oak veneer cabinet; same grille choices. 26½" H x 17½" W x 15½" D.

$299.00

Model One Bookshelf Speaker

Two-way system with 8" bass driver & 4½" 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. 21½" H x 11½" W x 10½" 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. 29½" H x 12½" W x 11½" D.

$119.00

Model Five. Similar to Model Three except 12½" bass driver and two 4½" cone tweeters; response 45-20,000 Hz; max. power 45 W; operational power range 12 to 150 W; hand-rubbed oiled-walnut veneer cabinet; 25½" H x 14½" W x 12" D.

$169.00

A-200X Four-Way Speaker System

Floor-standing system with 12" high-compliance woofer, 5½" mid-range in separate sub-woofer, 2" tweeter, two 1½" wide-dispersion angle-mounted super-tweeters. Response 30-20,000 Hz ±3 dB; system resonance 46 Hz; crossover frequencies at 800, 2000 & 7500 Hz. Maximum power input 100 W; impedance 8 ohms; dispersion 180 degrees. Has mid-range and tweeter level switches. Walnut vinyl cabinet with removable white grille cloth.

$279.00

A-100X Three-Way Bookshelf System

Has 10 high-compliance woofer, 2½" cone midrange, 1½" wide dispersion tweeter. Response 40-20,000 Hz ±3 dB. Dispersion 160 degrees. Max. power input 100 W. Impedance 8 ohms. Crossover (LC) 800, 2000 & 7500 Hz. Has mid-range and tweeter level switches. Walnut vinyl cabinet with removable white grille cloth.

$159.00

A-100C Bookshelf System

Three-way bookshelf speaker; 10" woofer, 2½" midrange, 1½" tweeter; crossovers 2200 Hz & 8500 Hz; frequency response 44,200,000 Hz ±3 dB (decrease in free field); system resonance 52 Hz. Has sine-wave power input (400 Hz) 40 W for 5 min.; single switch for midrange & tweeter level control; sealed walnut-venyl enclosure; removable white fabric grille; 21½" H x 12½" W x 10½" D.

$138.00

A-76X Two-Way Speaker System

Acoustic-suspension design with 10" woofer, 2½" cone tweeter. Response 44,180,000 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. 21½" H x 12½" W x 11½" D.

$119.00

CM15b Speaker System

Four-way speaker system; 15" woofer, 6" mid-range, two phenolic-ringed 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, 500 & 2000 Hz. Has seven variable tweeter & midrange level controls; three-position room-gain control; dual-enclosure of hand-rubbed walnut, black mica top; comes with 25 ft. extension cable. 22 W x 13 H x 12 D.

$499.00

CM25. 25-ft extension cable.

$15.00

CM662. Feedback speaker coupler for universal amplifier hookup

$75.00

CM15SW Servo-Feedback Sub-Woofef

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 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; 17½" H x 17½" W x 17½" D.

$299.00

Same accessories as for CM15b & CM10

AUDIONICS

TLM200 Tower Speaker System

Four-way dynamic system with 9" x 12" foiled-stressed piston sub-woofer, 8" Bextrene cone midrange, 5" Bextrene cone midrange, and 1½" 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; 70 W rms music power, 70 W rms power, will handle 250 W instantaneous peaks; 8 ohms; dispersion 60 degrees vertical, 120 horizontal; rosewood-grain laminate cabinet with sculptured black grille; 50½" H x 16½" W x 25½" 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, 1½" dome tweeter; crossovers 250 & 3500 Hz; frequency response 34-20,000 Hz ±3.5 dB on-axis nearfield 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 scultured black grille; 30½" H x 18½" W x 15½" D.

$409.00

TL30C Two-Way Speaker System

Two-way dynamic system with 8" woofer & 2½" 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 scultured black grille

$239.00

TL51. Same as TL30C except heavier duty woofer for higher power inputs, improves performance below 50 Hz; 46½" H x 12½" W x 12½" D.

$329.00

M32B Two-Way Speaker System

Two-way dynamic bookshelf speaker; 8" woofer

STEREO DIRECTORY & BUYING GUIDE
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, Analog & Digital Systems
64 Industrial Way, Wilmington, MA 01887
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 4½" heavy-duty driver, response 50-15,000 Hz; 8 ohms impedance; power handling 3 to 30 watts (10 watts rms). Has two-screw binding strip. 6 1/4" x 6 1/4" x 5 1/2" 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

101 Two-Way Speaker System Two-way air-suspension speaker system with 10" high-compliance woofer and 1" dome tweeter; crossover 2200 Hz. Response 35,000 Hz = ±5 dB. Will handle 100 W, 15 W min. amplifier power. 8 ohms imp. Frequency response 35,000 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 1/4" D. A 1½ 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 35,000 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 1/4" D .......... $139.00

103 Three-Way Speaker System Uses matched high-compliance 10" woofer, 4½" air-suspension cone mid-range, and a 1" dome tweeter; crossovers at 500 & 3500 Hz. Will handle 150 W; 20 W min. amplifier power. 8 ohms imp. Frequency response 35,000 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 1/4" D. A 1½ high floor stand is included. 5-yr transferable warranty .......... $319.00

105 Three-Way Speaker System Floor-standing air-suspension system with 12" high-compliance woofer, basketless mid-range
Acome with sea sounds and sunlight
the senses are freely touched.
And whatever touches the senses
touches the soul.
removable grille; 29 1/2" H x 12 3/4" W x 12 3/4" D .......................... $149.00

100 Two-Way Speaker System
Air-suspension system with 8" high-compliance woofer and 1 3/4" wide-distribution cone tweeter; crossover 2500 Hz. Will handle 75 W; 15 W min. amplifier power. 8 ohms impedance. Response 38-20,000 Hz; 4-8 ohm imp.; min. amp power 15 W rms; max. power handling 200 W music & speech. 5 yr. transferable warranty.

Beovox Phase-Link S-30 System
Two-way pressure-chamber speaker with 6 3/4" woofer & 1" dome tweeter; max. load 30 W rms or 50 W music power. Frequency response 40-20,000 Hz; 4-8 ohm imp.; dispersion 120 degrees; 8 3/16" x 16 3/16" x 5 1/4". $100.00

P-30. Same specs as S-30 but panel type enclosure; 11 1/4" x 21 1/4" x 3 5/8" 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 dia-

D60. Same as D75 except crossovers 800 & 10,000 Hz; frequency response 38-20,000 Hz at 92 dB SPL; high- and mid-frequency controls; 8 ohms; min. amp power 15 W.

D75 Three-Way Speaker System
Pulsating plane diaphragm activated by electro-

amp power 25 W rms; max. power handling 200 W music & speech (75 W rms at 400 Hz), 1200 sq. ft. radiating surface; 5 1/2" H x 22 1/2" W x 3 3/4" D. $599.00

D120. Same as D110 except frequency re-

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 1/2" H x 20 7/8" W x 3 1/4" D. $549.00

The Avid 103.
Few people would expect more in a loudspeaker.

For most people, the Avid Model 103 really is the ultimate speaker.

Not that you can't pay more for a speaker. You can. A lot more.

But, for most audio enthusiasts any difference between the Avid 103 and more expensive speakers just isn't going to justify the added cost. As it is, the 103 clearly outperforms speakers costing up to twice their price.

The Avid 103
You owe it to yourself to find out why it is rapidly becoming the popular new reference standard for 3-way systems. For your nearest Avid dealer, please write:

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Sound products for Avid listeners.

CIRCLE NO. 10 ON READER SERVICE CARD

STEREO DIRECTORY & BUYING GUIDE
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:

TELEDYNE ACOUSTIC RESEARCH
10 American Drive, Norwood, Massachusetts 02062
B+\text{C} \text{ VENTURI}

Formula 7 Monitor Speaker

Utilizes Venturi principle plus "T-Slot" horn assembly; three-way system; 12" heavy-duty woofer, B+\text{C} horn/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 to indicator to specific characteristics and power rating of amplifier being used; circuit breakers that trigger over-load indicator lights; dynamic tonal balance compensation which changes frequency response to compensate for 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; 41\frac{1}{2}" H x 16 W x 13\frac{1}{2}" D. (pair) $445.00

Formula 2 Speaker System

Utilizes Venturi principle (operates as an acoustic transformer in bass range) with B+\text{C}

10 \text{ 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; 21\frac{1}{2}" H x 14" W x 3\frac{1}{4}" 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 at 47,000 ohms; response 40-15,000 Hz ±2 dB. Oiled walnut cabinet; 6 1/4 ft. H x 2 ft W x 11" side D; 16" center D. $219.95

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, 25\frac{1}{4}" H x 14\frac{1}{4}" W x 12\frac{1}{4}" 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. 16\frac{1}{4}" x 10\frac{1}{4}" x 10" D. $74.95

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 14" W x 14\frac{1}{2}" 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. 12\frac{1}{2}" H x 20\frac{1}{4}" W x 12\frac{1}{4}" D. Pair including equalizer . . . $598.00

301 Bookshelf Speaker System

Ported, asymmetrical design, Direct/Reflecting speakers utilizing wall reflections, 8 high-efficiency woofers in ported enclosure; dual-frequency, crossover network with woofer transition 3000 Hz; tweeter transition 1200 Hz (one inductor, two resistors, one Mylar film capacitor). Response 45-20,000 Hz; 8 ohms; will handle up to 60 W rms. 10" woofers, 14° x 10\frac{1}{2}" H x 9\frac{1}{2}" D. May be operated vertically or horizontally. Supplied in mirror-image pairs only . . . $96.00 ea.

STEREO DIRECTORY & BUYING GUIDE

BOAZK

B-31OB 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 28,000 Hz; 8-ohm imp.; will handle 150 W max., 60 W min. input power. Matte walnut enclosure. 36 W x 5.2" H x 19" D. $550.00

B-410. Same except Classic cabinet . . . $120.00

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, 6\frac{1}{2}" 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. 26" W x 44" H x 15\frac{1}{2}" D . . $669.50

B=4000A. Same except Classic styling . . . $799.50

B=4000A. Same except Moorish styling . . . $789.50

B-4005. Same as B-4000A except low-boy enclosure; 36 W x 27\frac{1}{4}" 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" tweble 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. 18\frac{1}{2}" x 40\frac{1}{4}" H x 15" D . . . . $529.50

Concerto VII B-501 Speaker System

Three-way floor-standing system with 12" high-compliance bass driver. 6\frac{1}{2}" mid-range, 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 watts program; 30" H x 20\frac{1}{2}" W x 16" D . . . . $379.50

Rhapsody B-401 Speaker System

Three-way compact speaker system with 12" high-compliance bass driver, 6\frac{1}{2}" 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 25\frac{1}{4}" H x 13\frac{1}{4}" 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, 4\frac{1}{2}" 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. 14\frac{1}{2}" W x 24\frac{1}{4}" H x 11\frac{1}{2}" W . . . . $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 4000 Hz at 6 db/octave; 8 ohms impedance. Will handle 60 watts program. 11" W x 20\frac{1}{2}" x 10" D. Sculptured foam grille . . . . $104.50

B-1000 Bard Outdoor Speaker

All-weather speaker with B-800 wide-range
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.
**CELESTION**

**Diton 66 Studio Monitor**
Three-way system with 12" woofe r, 12" ABR, 2¾" dome midrange, ¾" dome tweeter; response 16-40,000 Hz; crossovers 2500 & 9000 Hz; min. driving power 10 W; max. power handling 60 W; imp. 4.8-ohms; walnut cabinet; 32" x 14½ x 11" D. $479.50

**Diton 25 Speaker System**
Three-way system with 12" woofe r, 12" ABR, two 1.5" pressure midrange, ¾" 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; 30" x 14¼ x 9½" D. $325.50

**Diton 44 Speaker System**
Three-way system with 12" woofe r, 6" cone midrange, ¾" 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; 24" x 14" x 10½" W. $269.50

**Diton 15 Speaker System**
Two-way system with 8" woofe r, 8" passive ABR, 1.5" pressure tweeter; response 30-15,000 Hz; crossover 2500 Hz; min. driving power 10 W; max. power handling 40 W; imp. 4.8-ohms; walnut cabinet; 21 x 9½ x 9½" D. $149.50

**UL10 Speaker System**
Three-way system with 10" woofe r, 2" dome tweeter; response 20-40,000 Hz; crossovers 700 & 500 Hz; min. driving power 40 W; max. power handling 100 W; walnut cabinet; 27½ x 12½ x 15" D. $349.50

**UL8 Speaker System**
Two-way system with 8" woofe r, 8" ABR passive radiat ion, 1" dome tweeter; response 35-28,000 Hz; crossover 2500 Hz; min. driving power 20 W; max. power handling 50 W; walnut cabinet; 23" x 11½ x 9½" D. $219.50

**UL6 Speaker System**
Two-way system with 6" woofe r, 6" ABR passive radiat ion, 1" dome tweeter; response 35-28,000 Hz; crossover 2500 Hz; min. driving power 20 W; max. power handling 40 W; walnut cabinet; 11½ x 16 W x 8½" D. $169.50

All quoted prices are slightly higher on the West Coast.

**S-2 Three-Way Speaker System**
250 W rms power capacity; 15" low-frequency driver, 8" midrange, horn tweeter; frequency response 18-170,000 Hz ±3 dB; efficiency 100 dB/W/m; acoustic output 127 dB SPL/1 m; crossovers 200 & 4000 Hz; floor-standing enclosure. $1. Bookshelf version, 200 W rms power capacity; 12" woofer, 6" midrange, horn 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 midrange speakers; designed to be used with standard or four-channel amplifiers. 320MT. Has special 12" mid-bass speaker, HF-91 mid-range/high-frequency horn driver assembly, two horn tweeters; frequency range 125-25,000 Hz; crossovers 125, 1500, 5000 & 12,000 Hz; direct-radiating with side reflecting upper mid-range; 100 W rms max. power input; 8 ohms. Oiled walnut. 14½" H x 6" D x 18½" W (back), 16½" W (front). $385.00

320B. Omnidirectional vertical conical tweeter 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

320. 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" Superhorn tweeter, crossover 150 & 3500 Hz; 150 W continuous power; frequency response 30-20,000 Hz ±2 dB; max. sound level 120 dB at 1 m; imp. 4-8-ohms; oiled walnut cabinet, 40" H x 16½" W x 16½" D. $600.00

**36R Speaker System**
Three-system, 12" woofer, 5" midrange, 2½" horn tweeter, 75 W continuous program; frequency response 35-20,000 Hz ±3½ 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 13½" W x 13½" D. $299.50

**217(R) Three-Way Speaker System**
Three-way system; floor-facing woofer, 8" midrange, 5" dome tweeter, frequency response 35-20,000 Hz ±3½ 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 13½" W x 13½" D. $299.50

**211R. Bookshelf version; 200 W rms power capacity; 12" woofer & horn tweeter; frequency response 25-25,000 Hz; crossover 2500 Hz; dispersion 100 degrees; dynamic range 78 dB in 40 dB noise field. Oiled walnut. 26½" H x 15½" W x 15½" D. $199.50

211R. Same as Model 211 except direct-radiating with controllable upper mid reflection; HF-91 horn driver assembly; crossovers 1500 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. 26½" H x 15½" W x 15½" D. $199.50

**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" woofe r & 2½" horn 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. 26½" H x 15½" W x 15½" D. $199.50

Genesee Loudspeakers: Where to Find Them

**ARIZONA** - Jerry's Audio Exchange - Phoenix, Tempe.
**ARKANSAS** - Custom Audio - Little Rock
**Tucson**
**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
**MASSACHUSETTS** - Audio Design - Pittsfield, Minuteman Radio - Cambridge, Lawrence, Nantucket Sound - Hyannis, North Dartmouth, Swansea, Waltham-Camera - Waltham
**MICHIGAN** - Audiolab - 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 - St. Louis
**MISSISSIPPI** - Audioland - 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 - St. Louis
**NEW HAMPSHIRE** - Audio Lab - Keene, Audophile Studios - N. Hampton, The Inner Ear - Laconia
**NEW JERSEY** - Audio Lab - New Brunswick, High Fidelity House - Cherry Hill, Sonex - Rocky Hill
**NEW MEXICO** - Stereo Depot - Albuquerque
**NORTH CAROLINA** - Vicker's Audio - Durham, Chapel Hill, Audio Systems - Charlotte, Atkinson Electronics - Greensboro
**OHIO** - Hi Fi Audio - Cincinnati Audio Arts - Youngstown
**OKLAHOMA** - The Gramaphone, Ltd. - Tulsa, Norman, Southwestern Music Co. - Altus
**TEXAS** - Hi Fi Audio - Dallas
**VERMONT** - Audio Den - Burlington
**VIRGINIA** - Audio Associates - Springfield, Arlington, McLean, Myer-Emco - Falls Church, Audio Center - Roanoke, Sound World, Ltd. - Virginia Beach
**WASHINGTON** - Echo Communications - Appleton, Cedarburg, Fond du Lac, Janesville, West Bend, Mid-West Hi-Fi, Madison

**Stere o Directory & Buy ing Guide**
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

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.

STEREO REVIEW
June 1976

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.
24 Two-Way Speaker System
Direct-radiating, two-way system with 12" woofer & 2 1/2" dome tweeter; crossover 2500 Hz; frequency range 30-25,000 Hz; dynamic range 68 db; 4 ohms; dispersion 100 degrees; impedance 4-8 ohms; 40 W rms max. power input, 80 W peak. Oiled walnut. 25" H x 14 1/4" W x 12" D...

$149.50

26. Same as model 24 except: wood veneer enclosure; 60 W rms, 120 W peak...

$169.50

R-123 Speaker System
Three-way system, 50 W rms power capacity (100 W/Evacuator); 12" woofer, 5" midrange, 1" dome tweeter; crossover 2500 Hz; dispersion 90 degrees; impedance 4-8 ohms; 40 W rms max. power input, 80 W peak. Oiled walnut. 25" H x 14 1/4" W x 12" D...

$299.50

R-12. Two-way system; crossover 2000 Hz; acoustic output 115 dB SPL/1 m...

$229.00

R-10. Two-way system; 40 W rms (80 W/Evacuator); 10" woofer, 1 1/2" dome tweeter; crossover over 1200 Hz...

$149.00

CIZEK

Two-way system
Two-way system; 10" woofer & 1" hemispherical dome tweeter; crossover 15-18,000 Hz + 1 1/2 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 W and 1 m with 1 W input into 4 ohms; high-frequency level & contour controls: walnut veneer; 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 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; coca brown or camel nylon flight straps. 23" H x 14" W x 10 1/2" 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 radius corners in oiled walnut and walnut veneer; black decorator grille cloth. 42" H x 26" W x 13 1/2"...

$275.00

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; Stops fast-acting solid-state protective circuit plus thermal breakers; satin-rubbed walnut finish with black decoder grille cloth. 42" H x 26" W x 16" D...

$600.00

DAHQuist

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 midrange, 1/2" dome tweeter, and piezoelectric ceramic super tweeter, crossovers 400, 1000, 3000, 6000 & 12,000 Hz. Nominal impedance 8 ohms. Response 37-27,000 Hz ±2 db. Recommended power input 60-200 W. Features low-distortion, time-delay correction; continuously variable treble-slope control for boost or cut. Grille cloth is black with solid walnut trim; 30" 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; 26" 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 super tweeters; 30 W rms min. power, 250 W rms max.; continuously variable midrange & brilliance control; output 125 dB at 4 feet at 100 W; circuit breaker protection; 65 1/2" H x 30" D x 24" W...

$1295.00

M16 PA Speaker System
Two heavy-duty 10" woofers, one 27 midrange, three piezoelectric super tweeters; 10 W rms min. power, 100 W rms max.; variable mid/high controls; circuit breaker protection; output 118 dB at 4 feet at 100 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, three piezoelectric super tweeters, 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 1/2" D...

$499.00

STERO DIRECTORY & BUYING GUIDE
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
A "noteworthy example of intelligent engineering" that "transcends the commonplace" and "is, simply, a great speaker system."

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 1.5 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.
input to amplifier; equalizer designed to be connected to tape monitor jacks on most components or used between preamp & power amps. It has two channels of equalization for use in stereo systems. 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 9½" D. Sold as pair of speakers including equalizer ..................$325.00

EVS-16B Speaker System
Three-way acoustic-suspension system with response 30-20,000 Hz; crossovers at 700 & 3000 Hz; 8 ohms imp., can handle 70 W peak, has 12" woofer, 5" mid-range, shallow-profile 2" tweeter; continuously variable level control for tweeter. Walnut-grain vinyl cabinet. 14½" x 25½" x 13½" D ..................$167.95
EVS-158. Three-way system with 10" woofer, 5" mid-range & 2" tweeter; response 40-20,000 Hz; 13½" x 24" x 11½" D ..................$146.95
EVS-14B. Two-way system with 10" woofer & 2" tweeter; response 40-18,000 Hz; crossover 1500 Hz ..................$125.95
EVS-138. Two-way system with 8" woofer & 2" tweeter, response 50-18,000 Hz; 1500 Hz crossover; 10" x 19" x 8½" ..................$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, 21½" H x 21½" W x 8½" D ..................$120.00
Musicaster II A: 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. 24¼" H x 18" diameter. Walnut finish 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 39-125 W, has treble control switch; 36½" x 15½" x 13¼" ..................$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 15½" 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. 25½" x 16½" 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 ±3 dB; recommended rms power range 25-80 W; imp. 4 ohms, 8 ohms nominal; 25" x 15½" x 12½" ..................$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. 21½" x 11½" x 9½" ...............$89.95

70 Speaker System
Two-way system with 6" woofer & 1" air-spring tweeter; crossover 1800 Hz; response 60-20,000 Hz ±3 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 retained 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 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.
10 Speaker Systems

1" air-spring tweeters; transducers matched to within ±3 dB of frequency response from 20-20,000 Hz; 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

FISHER

ST600 Speaker System
Three-way system with 12" passive radiator, 10" woofer, 6½" 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 level switch; walnut-grained vinyl cabinet; sculpted grille; 29½" H x 18½" W x 12" D...
$249.95

ST640. Similar to ST600 except frequency response 42-20,000 Hz; 10" passive radiator; 5" midrange backfiring; 26½" H x 16½" 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 & midrange controls; oiled-walnut veneer on fiberboard; black fabric grille; 55" x 30" x 18"...
$1200.00

Mark VI-A
Four-way system with 12" woofer, 8" midrange, compression horn, and piezoelectric super horn; high-frequency and mid-range compensators on front panel; oiled-walnut veneer on particle board; grille; 29½" H x 25½" 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 sculpted foam grille (available in brown, black, or burnt orange); oiled-walnut veneer on particle board; 29½" x 18½" x 12½"...
$399.95

Mark V System
Three-way system with 12" woofer, two 4" full-range; piezoelectric tweeter; 800 Hz & 3000 Hz crossovers, 8 ohm imp.; variable high-frequency compensator on front panel; acoustically transparent, removable sculpted foam grille (available in brown, black, or burnt orange); oiled-walnut veneer over particle board; 25½" 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 sculpted foam grille (available in black, brown, or burnt orange); oiled-walnut veneer over particle board; 25½" x 14" x 12"...
$299.95

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 sculpted foam grille (available in black, brown, or burnt orange); 21½" x 16" x 16½"...
$179.95

Super Monte Carlo
Heavy-duty 8" 1½" driver; direct-coupled piezo-electric superhorn; 20 W continuous rms power handling; 8 ohm imp.; 4000 Hz crossover; oiled-walnut veneer over particle board; brown fabric grille; 19½" x 10½" x 12"...
$124.95

Super Midget System
Bookshelf system; 4" wide-exursion speaker, power handling capacity 10 W continuous rms, 8 ohm imp.; oiled-walnut veneer on particle board; brown fabric grille; 15½" x 6½" x 9½"...
$59.95

GALE

GS401A Three-Way Speaker System
Three-way, four-speaker bookshelf system with two 6" woofers mounted with sealed enclosure and acoustically coupled, 4" sealed mid-range, ½" 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 midrange & tweeter; enclosure acoustically inert at high power levels; floor construction; dark high-density chipboard with six internal struts; matte black and chrome finish; 13" x 23½" x 10½" 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; 8 Wch max. power handling capability, may be used with amps up to 80 W; min. amp. driving power 10 Wch; frequency response 40,18,000 Hz ±4 dB at 90 dB SPL; 21½" H x 12" W x 8¼" D...
$94.00
Oak veneer finish...
$114.00
Dark grille available at slight 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, 300 & 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; crossovers 200, 300 & 7000 Hz crossovers. 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 kickback 30" H x 24½" W x 14" D. Walnut veneer...
$355.00

Holton A Speaker System
Infinite baffle, 3-way system with 10½" full-range and 1½" dome tweeter; 2000 & 5000 Hz crossovers. 8 ohms impedance. 100 W maximum input power. 34½" H x 24 W x 14½ D. Oiled walnut veneer...
$340.00

STereo DIRECTORY & BUYING GUIDE
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

CIRCLE NO. 20 ON READER SERVICE CARD
Zodiac 300 Speaker System
Infinite baffle, 2-way floor model with two 10" woofers crossing at 2000 Hz into 1" dome tweeter. Response 30-25,000 Hz, 4 ohms impedance; for use with 10 W min. amplifiers. 25½" H x 23½" W x 11⅝" D. Walnut veneer. $225.00

Zodiac 76 Speaker System
Infinite baffle, 2-way bookshelf or floor-standing system with 10" woofer; crossover into 1" dome tweeter. Response 20-35,000 Hz, 8 ohms impedance. For use with amplifiers of 10-50 W. 30" x 15" x 12". Oiled walnut veneer. $140.00

Zodiac 1 Speaker System
Same specifications as the Zodiac 76 except response 35-25,000 Hz. 8 ohms impedance. For use with amplifiers of 10-50 W. 30" x 15" x 12". Oiled walnut veneer. $100.00

AS-101 2-Way Speaker System
Bass-reflex, 2-way floor-standing system with 15" woofer; crossover into 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. 29½" H x 27½" W x 19¼" D. Kit. $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. 14½" H x 23½" W x 12" D. Kit. $249.95

AS-103A 3-Way Speaker System
Sealed-enclosure, 3-way bookshelf system with AR drivers: 12½" H x 15½" W x 11¾" D. 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, 4½" mid-range, 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 amplifiers from 100 to 200 W, walnut veneer cabinet with foam grille; 26½" H x 14½" W x 12¼" D. Kit. $149.95

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 power). 0±3 dB tweeter level control; walnut polyvinyl finish cabinet; brown removable grille cloth; 26½" H x 14¼" W x 11¾" D. Kit. $199.95

HS/332 Two-Way Speaker System
Damped bass-reflex two-way design with 8" woofer & horn-tweeter type. Capacity 20 W. Response 40-20,000 Hz; walnut veneer cabinet with black or brown foam grille. $119.95

HEATH

AS-1352 2-Way Speaker System
10" acoustic-suspension woofer & 1½" 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 13½" W x 11⅝" D. Kit. $99.95

AS-1332 2-Way Speaker System
8" acoustic-suspension woofer & 1½" phenolic ring tweeter; frequency response 50-18,000 Hz ±3 dB; min. amp power 10 W, max. 50 W; imp. 8 ohms; tweeter level control; individually fused drivers; 19½" H x 10½" W x 8" D. Kit. $59.95

AS-105 2-Way Speaker System
Full-range speaker, will handle any 4 to 20 W amplifier; response 70-16,000 Hz; sealed acoustically-suspension/infinite-baffle cabinet with fiber glass sound-damping material. Walnut veneer cabinet measures 12½" H x 7½" W x 6½" D. Kit. $26.95

AS-1140 Speaker System
Efficient speaker system designed for use with Heathkit AT-1124, AC-1210, AC-122, and AC-1114 or other equipment with 2-10 watt/ channel output; 8 ohms imp.; 4½" driver; response 100-16,000 Hz ±3.5 dB; 1400 Hz crossover; 108 db SPL (8 ohms, 1 W output). Walnut wood finish. 40" x 18" x 16" D. $600.00

HEGEMAN

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 degrees dispersion; walnut veneer cabinet. 25½" H x 14½" W x 10¼" D. $109.50

V-12. Same as V-10 but with 12" woofer; crossover 2500 Hz; power input 25 W rms, 25½" H x 14½" 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 rms recommended. 8 ohms imp. 11½" H x 8½" x 26". Walnut with black grille. $450.00 pr.

H-1AV. Same except Corinthian walnut vinyl finish. $390.00 pr.

H-2V Speaker System
Similar to H-1AW but with 10" full-range high-compliance driver and 2½" super-tweeter. Response 25-25,000 Hz ±2.5 dB, 3500 Hz crossover. Will handle 30 W rms continuous, 20 W rms recommended. 8 ohms imp. Walnut with black grille. $756.00 pr.

HED

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 ohms imp. Walnut with black or brown foam grille. 17½" x 11½" 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 50 W rms continuous; 15½" x 12¼" x 10½" D. $228.00 pr.

HB-120V. Similar to HB-80V except 12" driver & 2½" cone tweeters; crossover 40-40,000 Hz ±2.5 dB, will handle 30 W rms continuous; 25½" x 14½" x 11½" D. $300.00 pr.

HWS Sub-Woofers
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 18½" x 16½ D. $600.00

INFINITY

Monitor 11A Speaker System
Four-way system; 12" Infinity/Watkins dual-drive woofers (180-220 Hz), mid-bass coupler (200-600 Hz), 8½" dome mid-frequency driver (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, max. 200 W; min. speaker input power 4 W; max. speaker input power 250 W; minimum amplifier power 45 W rms/ch; oiled-walnut veneer enclosure; black grille cloth; (one black cloth, one walnut veneer) interchangeable. 41½" H x 15" W x 13" D. $449.00

Monitor IIA Speaker System
Four-way system with four different drive systems; a 12" woofer housed in a 2½-cu ft tapered-transmission line enclosure; a specially designed 1½" dome mid-frequency system; 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 100 W/8 ohms; 4500.00 D. $100.00

Quantum Electronics

HS/332 Two-Way Speaker System
Damped bass-reflex two-way design with 8" woofer & horn-tweeter type. Capacity 20 W. Response 40-20,000 Hz; walnut veneer cabinet with black or brown foam grille. 17½" H x 11½" W x 14½" D. $450.00

Servo-Statik 1A Speaker System
Three-enclosure system. Floor-standing with 18" woofer in a decorator-styled cube with feedback sensor, electronic crossover, and 150 W rms d.c. servo amplifier; each screen contains electrostatic mid-range modules and tweeter modules with their own built-in power supplies. Frequency response 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 5 V rms; features servo-controlled 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 cabinets; black acoustically-transparent front grilles. Bass cube 19½" H x 22" x 22"; screens 5½" H x 35½" W x 8½ D. $4500.00

STEREO DIRECTORY & BUYING GUIDE
IZ-244a Speaker System
Two-way loudspeaker system with 10\" woofer and two electrostatic elements (32 sq. in.), response 35-20,000 Hz ±3 dB, 8 ohms; frequency 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-412hp 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;...

$530.00

ZL-410ah Speaker System
Two-way acoustic-suspension design with 10\" woofer & 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;...

$250.00

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, 600 & 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 10'4" W x 24" D...

$3510.00

L300 Summit Speaker System
Audophile 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/ch. Oiled walnut finish, smoked glass top, fabric grille in blue, black, brown or camel. 32" H x 23" W x 22" D...

$960.00

$753.00

120 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

$753.00
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 1.4" high-frequency components; crossovers 1000 & 6500 Hz with mid-range and h.f. level controls behind grille; power capacity 75 W continuous program; recommended amp power 10-150 W rms/ch; 8 ohms impedance. Oiled walnut finish with smoked glass top, stretch fabric grille available in blue, brown, or red. 24" H 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 12" W 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 variable level control 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, 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, 0.3% at 100 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. Black or 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" H x 11" W x 8" D... $75.00

Model 22. Similar to Model 21 except with 10" woofer, frequency range 32-20,000 Hz; max. power 45 W. 22½" H x 12½" W x 10½" D... $99.00

Model 23 Speaker System
Two-way system with 10" woofer & 1½" dome tweeter; frequency range 25,000 Hz; crossover 1000 Hz; 8 ohms imp.; 100-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... $125.00

Model 24 Speaker System
Three-way system with 12" woofer, 3" mid-range, and 1½" dome tweeter; frequency range 25-25,000 Hz; crossovers 1000 & 5000 Hz; 8 ohms imp.; front-mounted mid-range & tweeter controls; push-type binding posts; removable two-tone double-knit acoustic grille; wood-grained vinyl veneer on wood products; max. power 75 W; min. power 10 W. 26" H x 15" W x 13" D... $185.00

Model 25 Speaker System
Three-way system with 15" woofer, two 3" mid-range, and 1½" dome tweeter; frequency range 20-25,000 Hz; 8 ohm 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 18½" W x 15¼" D... $249.00

Spectrum 550 System
Three-way system; 15" Flexair woofer, two 3" cone midrange in tuned isolation chambers, 1½" 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; use in any application; maple & walnut veneers on wood products; 31" H (with base) x 19½" W x 15½" D... $299.95

S40. Similar to S50 except with 12" Flexair woofer; frequency range 25-25,000 Hz; amp power 10 W min, 75 W max; 26½" H x 16" W x 13½" D... $239.95

530. Similar to 540 except with 10" Flexair woofer, one 3" cone midrange, 1½" dome tweeter; frequency range 27-25,000 Hz; amp power 10 W min, 60 W max; 24½" 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 150 degrees; front-mounted tweeter control; amp power 10 W min, 45 W max; 22½" H x 12½" W x 10½" D... $129.95

JVC
SX-3 Speaker System
Directio-directional two-way speaker system with 10" woofer & 2" soft dome tweeter, response 35-20,000 Hz; 20 W rms/ch min. input power. 25 W rms max.; crossover 2000 Hz; 8 ohms. Walnut or spruce enclosure. 20½" H x 12½" W x 11¼" D... $159.95

KENWOOD
Model 7 Four-Way Speaker System
Four-way system with 14" woofer (under 400 Hz), 4½" mid-range (400-4000 Hz), 1½" high-frequency drivers. Frequency range 4000-8000 Hz; 1/4" super tweeter (8000-35,000 Hz), new diaphragm material strong enough to withstand 93-g accelerations; baffle board of beechn core laminated with crosswise and lengthwise oak veneer, will handle 150 W; efficiency 94 dB, 8 ohms, dist. 0.5% dispersion 30 degrees 0 dB, 60 degrees -3 dB. 18½" W x 37" H x 15" D... $1350.00

LS-Series Speakers
Three high-efficiency speaker systems featuring the new Daphne diaphragm and lumen-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 25½" H x 12½" D... $149.95

LS-405. 10" woofer, 1" dome tweeter; response 58-20,000 Hz; imp. 8 ohms, SPL 103 dB; crossover 3500 Hz, 12½" W x 23½" H x 11½" D... $119.95

LS-403. 8" woofer, 1½" dome tweeter; response 65-20,000 Hz; imp. 8 ohms, SPL 101 dB; crossover 2000 Hz, 11½" W x 17½" H x 8½" 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...
The new Jensen Spectrum Series has achieved a new plane of sound reproduction. Remarkable clarity. Admirable quality. And fullness of sound from the deepest lows to the top-of-the-scale highs.

Beautifully finished natural hardwood walnut veneer cabinets accommodate a family of advanced sound systems and features. Foam woofer suspension for clearer, more accurate bass response. Powerful ceramic magnets for lower distortion, high power handling, greater clarity. And a precise crossover design that sends sharply defined high and low signals to sensitive tweeters and powerful woofers.

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.
drivers or one tweeter and one 8” tweeter); frequency response 20-18,000 Hz ±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); 8 ohms; crossovers 200 V & 5000 Hz with 12 dB/octave cut-off; angularly mounted bass drivers; horizontal distribution axis of each satellite at 10-degree angle toward common bass enclosure; contemporary or classical style cabinets in walnut, oak, or birch wood; Earth American, uninstalled walnut, or Mediterranean finishes; custom-built hutch to be placed on top of common bass unit available extra; bass unit 52.5” L x 31” H x 25” D; satellite 10” W x 43” H x 19.5” D $1,995.00 Unfinished birch without cabinet for custom installation $1,495.00

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 35-5000 Hz ±4 dB, efficiency 98 dB with 1 W input (pink noise 1 meter from source); crossovers 200 V & 5000 Hz; 8 ohms; 10 W rms min. power, 100 W rms max.; fuse protected; optional satellite attenuator available extra; 3-pos. tweeter control switch; amp power 20 W rms/ch min., 200 W rms/ch max.; oiled-walnut cabinet; walnut grille cloth with removable grille; 38” H x 15” W x 13½” D $450.00

Research Ten Line
SCX3A Three-Way Speaker System
Three-way speaker system; 12” Megaflux woofers, one 44-mm dome midrange, one 1” dome tweeter, two DVR tweeters; frequency response 25-32,000 Hz ±4 dB; continuously variable mid & high-frequency controls; amp power 40 W rms/ch min., 200 W rms/ch max.; oiled-walnut cabinet; brown grille grille cloth with removable grille; 38” H x 15” W x 13½” D $298.00

SCX-A Three-Way Speaker System
Three-way speaker system; 12” Megaflux woofers, ¾” cone midrange, 1” dome tweeter, 1 DVR driver; frequency response 35-30,000 Hz ±5.5 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 grille grille cloth with removable grille; 34” H x 14” W x 12½” D $198.00

CL-4 Three-Way Speaker System
Three-way speaker system; 10” Megaflux wofefer, ¾” cone midrange, 1” dome tweeter; frequency response 35-20,000 Hz ±3.5 dB; 6 ohm imp.; continuously variable mid & high-frequency controls; amp power 20 W rms/ch min., 200 W rms/ch max.; oiled-walnut cabinet; walnut grille cloth; 26½” H x 14” W x 12½” D $140.00

CB-10 Two-Way Speaker System
Two-way system with 10” “Megaflux” woofer & 2½” cone tweeter; response 40-18,000 Hz ±4 dB; has high-frequency control switch; min. power capacity 10 W rms/ch; max. 100 W rms/ch; 8 ohm imp.; phase-line crossover at 1700 Hz with 6 dB/octave slope. hand-rubbed oak veneer cabinet with vinyl baffle and back panel. 3” H x 1½” W x 9” D $1,100.00

CB-8. Same except 8” Megaflux woofer; response 47-18,000 Hz; min. power capacity 8 W rms/ch; 10½” H x 1½” W x 7½” D $89.00

CB-6 Two-Way Speaker System
Two-way speaker system; 6” wofefer & 2½” cone tweeter; frequency response 55-18,000 Hz ±5 dB; 8 ohm imp.; amp power 10 W rms/ch min., 200 W rms/ch max.; walnut veneer on high-density particle board; frequency response 100 Hz-20,000 Hz ±4 dB; has high-frequency control switch; amp power 20 W rms/ch min., 200 W rms/ch max.; 10” woofer & 2½” cone tweeter; frequency response 25-32,000 Hz ±4dB; continuously variable mid & high-frequency controls; amp power 40 W rms/ch min., 200 W rms/ch max.; oiled-walnut cabinet; walnut grille grille cloth with removable grille; 38” H x 15” W x 13½” D $450.00

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; 25½” H x 14” W x 12½” D $395.00

354 Three-Way Speaker System
Three-way acoustic-suspension system; 12” wofefer, 4½” midrange, 2½” 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 12½” D $249.00

353. Same as 354 except wood-grained vinyl cabinet; 2½” cone tweeter; 26” H x 14” W x 12½” D $219.95

364 Three-Way Speaker System
Three-way acoustic-suspension system; 12” woofer, 5½” midrange, 2½” 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 12½” D $199.95

373. Same as 374 except only one midrange speaker; wood-grain vinyl cabinet $179.95

317 Two-Way Speaker System
Two-way high efficiency acoustic-suspension system; 10” woofer & 2½” cone tweeter; frequency response 45-18,000 Hz; 3-pos. tweeter 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 9½” D $119.95

331 Two-Way Speaker System
Two-way ported system; 8” woofer & 2½” tweeter, frequency response 18-18,000 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 8½” D $159.95 pr.

KLEIN & HUMMEL

KOY Monitor Speaker
Imported from west Germany. It is a wall-mounted, or built-in 30 W (rms) continuous sine wave into (4 ohms) solid-state amplifiers. Response 40-16,000 Hz ±2.5 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-pass and high-frequency equalizer circuits. Input impedance 4700 ohms balanced & floating. Walnut finish. 19” x 12” x 9” D $775.00

KHL

Nine Speaker System
Electrostatic, floor-standing, full-range speaker system. 16 ohms impedance. Requires 40 W (HFP) driving power. 70” H x 23½” W x 2½” D. Mahogany or walnut. Should be used in pairs. Each $149.00

Five 3-Way Speaker System
Sealed, 3-way bookshelf system with 12” wofer, two 3” mid-range, and 1½” tweeter; 2500 & 7000 Hz crossovers. Has mid-range and tweeter controls. 8 ohms impedance. 13½” H x 26” W x 11½” D. Oiled walnut. $225.00

Six 2-Way Speaker System
Sealed, 2-way bookshelf system with 12” wofer & 1½” tweeter. Has tweeter control. 8 ohms impedance. 12½” H x 23½” W x 11½” D. Walnut. $149.95

Walnut vinyl. $129.95

Seventeen 2-Way Speaker System
Sealed, 2-way bookshelf system with 10” wofer & 1½” tweeter. Has tweeter control. 11½” H x 23½” W x 8½” D. $89.95

Thirty-Two Speaker System
Sealed, 2-way bookshelf system with 8” wofer & 1½” tweeter. 8 ohms impedance. 19½” H x 10½” W x 7½” D. Oiled walnut. Sold in pairs only (2 per carton) $125.00 pr.

KLIPTSCH

Klipschorn Speaker System
Folded corner horn, 3-way floor-standing system with 15” woofer, horn-loaded mid-range, and horn-type tweeter. Response 35-17,000 Hz ±5 dB; crossovers 400 & 6000 Hz. 8 ohms impedance. Recommended max. amp: 105 W average sine wave. 52” H x 31½” W x 28½” D. Furniture finishes. $10,400.00

Cornwall II Speaker System
Tuned ducted-ported, 3-way floor-standing system with 15” woofer, horn-loaded mid-range, and horn-type tweeter. Response 38-17,000 Hz ±5 dB; crossovers 600 & 6000 Hz. 8 ohms impedance. Recommended max. amp: 105 W average sine wave 24V. $325.00 pr.

LaScala Speaker System
Folded horn, 3-way floor-standing system with 15” woofer, horn-loaded mid-range, and horn-type tweeter. Response 45-17,000 Hz ±5 dB; crossovers 400 & 6000 Hz. 8 ohms impedance. Recommended max. amp: 105 W average sine wave. 35½” x 23½” x 24½” D. Raw or theater black finish. $525.00
Heresy® Loudspeaker Offers Klipsch Quality When You Don’t Have Room For Klipschorns®

Has the widest range with least distortion of any speaker its size. The tweeter and mid-range, as on the KLIPSCHORN, are horn loaded. The woofer, a low compliance direct radiator mounted in a total enclosure, puts out far more bass than you’d expect. And everything you hear is clean honest sound. None of the distortion inherent in acoustic suspension systems. The HERESY is the nearest thing to a KLIPSCHORN you’ll find in a small speaker. This coupon will bring you the name of your nearest dealer and information on all Klipsch loudspeakers.

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In Canada: Superior Electronics, Inc.
LAFFAYETTE

Criterion 2005 Speaker System
Features Heil air-motion transformer midrange/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 response 15 µ" 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 13/4" W x 12 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 midrange, 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 ¾" high-density particle board, sculptured cabinet brown polyester knit removable grille. 25" x 13 1/3" x 13 8/16". $399.95

Criterion 2002. Similar to 2001 except 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 ¾" solid base; removed forming front grille. 11 1/4" x 18 3/8" x 6 3/8". $39.95

310. Similar to 28 except 10" woofer, 5" midrange 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; ¾" thick, fiber-glass-filled cabinet. Response 30 W rms program. 12 x 22 x 9 ½ D. $79.95

KNOSS

Model One Electrostatic Speaker
Full-range electrostatic speaker; response 30-20,000 Hz (3 dB down points); bandpass configuration (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 10-5000 Hz. max. recommended room size for 75 W rms/ch. 1600-6000 Hz; tweeter 2500 cubic feet, 300 W rms. 5000 Hz; frequency range 20-44,000 Hz; max. power input 1000 W, min. power requirement 5 W rms; 1 W sensitivity 112 dB (measured 1 meter on-axis); max. sound level 122 dB, dispersion 100 degrees. 8 ohms imp. 25 x 36 x 21". $475.00

Concerto 5000 Speaker System
Four-way speaker system; 15" woofer, 10" mid-range, 2" x 6" high-efficiency horn tweeter, 3½" piezoelectric tweeter Cros; cross-over frequencies adjustable; frequency range 20-44,000 Hz; max. power input (peaks) 1000 W, min. power requirement 3 W rms; 1 W sensitivity 102 dB (measured 1 meter on-axis); max. sound level 122 dB; dispersion 180 degrees; 8 ohms imp. 28 x 19 ½" x 22". $300.00

Encore 1000 Speaker System
Three-way speaker system; 15" woofer, 5" midrange, 2½" piezoelectric tweeter, 2½" piezoelectric tweeter, crossovers 250, 5000 & 9000 Hz; frequency range 20-44,000 Hz; max. power input (peaks) 250 W, min. power requirement 4 W rms, 1 W sensitivity 105 dB (measured 1 meter on-axis); max. sound level 115 dB; dispersion 60 degrees; 8 ohms imp. 18" x 9 x 12 ½". $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 (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

310. 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

2070. 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 15-mm chipboard; removable Declon grille; 42 1/2" x 15 6/8" x 15 6/8" D. $1150.00 pr.

MAGTRAN

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/clip-on grilles in 13 different decorative motifs. 29 ½ W X 23 ½ W X 2 D. $39.95

D5-60P. 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 1/8" thick; two-way full range, midrange/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; neo-powdered minimum power 15-25 W (background), 50-100 W (other); medium to low efficiency, 1.5 W rms at 100 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 ½" x 2" mounted on 22" x 14" black base. 40 lbs each speaker. Sold in matched pairs. $625.00
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Right now you may be thinking about buying speaker systems. If you are, you know the best way to make a decision is to listen to them for yourself. After all, beauty is in the ear of the beholder.

And that's why we offer the Utah Challenge. We want you to listen and compare our speakers to others you may be thinking about buying. That's right. We welcome head-to-head competition. It's the only way you'll find out about our most important feature — value.

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You can dock our pre-amplifier (model DA-P10) to our 100 w/ch power amplifier (model DA-A10) or to our 150 w/ch power amplifier (model DA-A15). Does NASA give you a choice?
As soon as Apollo docked with Soyuz in outer space, our engineers got itchy.

Why not design a pre-amp that docks with an amplifier? Or a power meter that docks with an amp?

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Now Mitsubishi introduces a whole new series of components that dock — pre-amp, power amplifier and power level meter.

Plus an electronically-controlled turntable with integrated logic design, universal head shell, and an arm that knows exactly the size of the record you’re playing.

As for purity of sound, Mitsubishi handled that with dual-monaural construction. Our one amp is actually two separate amplifiers built on one chassis. Our docking pre-amp is built the same way.

That’s how we give you a great signal-to-noise ratio. And separation that really separates.

And everything’s designed with a sturdy military look.

There’s only one problem with stealing this neat idea from NASA.

Soon everybody else will be trying to steal it from us.

MITSUBISHI AUDIO SYSTEMS

For more information write Melco Sales, Inc., 3030 East Victoria Street, Compton, California 90221.
Feast your ears

We give you: audio gourmets. Even ordinary ears into technical features will turn MAGNEPLANARS. Our sound, it's time to move up to CIRCLE NO. 42 ON READER SERVICE CARD.

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. We give you:

- **HD-88 Speaker System**: Four-way floor-standing system with 12" woofer, 4½" mid-range, 1½" dome tweeter, two 1" dome super tweeters; has controls for mid-range, tweeter, and super tweeters; response 25-25,000 Hz; 3 dB; 500, 3000 & 8000 Hz crossovers; 8-ohm imp.; power handling capacity 300 W integrated program material. 43½° H x 15" W x 12" D. $399.95
- **HD-77 Speaker System**: Four-way bookshelf system with 12" woofer, 4½" mid-range, 1½" dome tweeter, 1" dome super tweeter; has mid-range tweeter/super tweeter controls; response 30-23,000 Hz; 3 dB; crossovers 500, 3000 & 8000 Hz; 8-ohm imp.; power handling capacity 250 W integrated program material. 25½° H x 14½" W x 12½" D. $259.95
- **Imperial 7 Speaker System**: Three-way bookshelf system with 12" woofer, 3½" mid-range, 1½" tweeter. Has 3-position HF level & 3-position mid-range level selector switches. Response 35-20,000 Hz; 3 dB; continuous power input; 100 W integrated program material; 8 ohms imp. 25½° H x 14½" W x 11½" D. $199.95
- **HD-66 Speaker System**: Three-way, sealed or ported bookshelf system with 10" woofer, 4½" mid-range, 1½" dome tweeter, response 35-20,000 Hz; ±3 dB; crossovers 1000 & 4000 Hz; 8-ohm imp.; power handling capacity 150 W integrated program material. 24½° H x 14½" W x 11½" D. $179.95
- **HD-55 Speaker System**: Three-way, sealed-enclosure bookshelf system with 8" woofer, 4½" mid-range, 1½" dome tweeter; response 40-20,000 Hz; ±3 dB; crossovers 1200 & 4000 Hz; 8-ohm imp.; power handling capacity 100 W integrated program material. 23½° H x 12" W x 9½" D. $129.95
- **HD-44 Speaker System**: Three-way, sealed-enclosure bookshelf system with 8" woofer, 3½" 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. 19½° H x 11½" W x 8½" D. $99.95
- **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. 10½° H x 18½" W x 7½" D. Walnut. $59.95

**MAGNEPLANAR® PRODUCTS**

**HD-1500 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 finish. $799.95

**Magnificat 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. 26" H x 18" W x 14" D. $399.95

**Gamma 1500 Speaker System**: 3-way, floor-standing sealed infinite baffle system with 12" woofer, 3½" mid-range, and wide-dispersion 2½" tweeter. Response 30-18,000 Hz; mid-range and tweeter level controls. 8 ohms impedance. Walnut finish. 14½" H x 25½" W x 12" D. $249.95

**Super Spectrum Speaker System**: 3-way, sealed infinite baffle system with two 8" woofers, 3½" mid-range, and wide-dispersion 2½" tweeter. Response 30-18,000 Hz; mid-range and tweeter level controls. 8 ohms impedance. 60 watts (dynamic) maximum input power. Walnut finish. 12½" H x 21½" W x 10" D. $219.95

**Gamma 310 Speaker System**: 3-way, sealed infinite baffle system with 10" woofer, 3½" mid-range, and wide-dispersion 2½" tweeter. Response 35-18,000 Hz; mid-range and tweeter level controls. 8 ohms impedance. 50 watts (dynamic) maximum input power. Walnut finish. 12½" H x 21½" W x 10" D. $169.95

**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 finish. 10" H x 18½" W x 9½" D. $89.95

**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; 5 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 knoll grille (black or natural); 19" x 11" x 10½". $169.00

**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; 5 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 knoll grille (black or natural); 19" x 11" x 10½". $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 finish. 52" H x 16½" W x 7½" D. $419.00

**Gamma 412 Speaker System**: 3-way, sealed infinite baffle system with 12" woofers, 3½" mid-range, and wide-dispersion 2½" tweeter. Response 30-18,000 Hz; mid-range and tweeter level controls. 8 ohms impedance. Walnut finish. 14½" H x 25½" W x 12" D. $249.95

**Super Spectrum Speaker System**: 3-way, sealed infinite baffle system with two 8" woofers, 3½" mid-range, and wide-dispersion 2½" tweeter. Response 35-18,000 Hz; mid-range and tweeter level controls. 8 ohms impedance. 60 watts (dynamic) maximum input power. Walnut finish. 12½" H x 21½" W x 10" D. $219.00

**Gamma 310 Speaker System**: 3-way, sealed infinite baffle system with 10" woofer, 3½" mid-range, and wide-dispersion 2½" tweeter. Response 35-18,000 Hz; mid-range and tweeter level controls. 8 ohms impedance. 50 watts (dynamic) maximum input power. Walnut finish. 12½" H x 21½" 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 finish. 10" H x 18½" W x 9½" D. $89.95

**MICRO/AcouSTICS**

**FRM-1A Speaker System**: Two-way speaker system; acoustic suspension woofer; five 1½" 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; frequency response 40-16,000 Hz ±4 dB; LC crossover 2500 Hz; power requirement 10 W rms min, 60 W rms max; 8 ohms; high-frequency level control; walnut vinyl enclosure; brown foam grille; 23½" H x 15¼" W x 12¼" D $199.00

FRM-2A Speaker System
Two-way speaker system; 10" acoustic-suspension woofer; three 3½" 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; 25½" H x 15¼" W x 12¼" D $155.00

FRM-3 Speaker System
Two-way speaker system, 8' woofer & one 1½" 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 9½" 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. 3½" H x 9¾" W x 5¼" D. Walnut $58.50

MICROTOWER
MTI Speaker System
Spherical-sound design; suitable for front, rear, or four-channel use; has organ pipe low-frequency driver & two 4½" cone mid-range speakers; crossover 200 Hz; 8 ohms; 5 W min., 50 W max. power handling capacity; response 50-12,000 Hz ±3 dB. White or walnut finish. 32½" H x 8½" x 8½" $69.95

MT2 Speaker System
Drivers are mounted on all sides for uniform response; uses two 1" wide-dispersion tweeters, two 4½" mid-range, and organ pipe for response below 200 Hz; crossovers 200 & 3000 Hz; 8 ohms; will handle from 15-70 W, tweeter control. Walnut finish. 34" x 8½" x 8½" $129.95

MT3 Speaker System
Features organ-pipe low-frequency driver, four 4½" mid-range & two linear air-spring tweeters; response 35-18,000 Hz ±3 dB; will handle 30-80 W rms. $199.95

MIDA
3150 4-Way Speaker System
Four-way system with 12" woofer, 4½" cone midrange, two 2¼" 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 10¾" D $200.00 pr. 3140. Similar to 3150 except 3-way system; single 2¼" tweeter, crossovers 750, 1800 & 7500 Hz; frequency response 30-20,000 Hz; 24" H x 15¼" W x 10¾" D $160.00 pr.

3130. Similar to 3140 except 2-way system with 10" woofer & 2½" tweeter; frequency response 40-18,000 Hz, crossover 1800 Hz; 18½" H x 11¼" W x 9¼" D $120.00 pr.

MITSUBISHI
DS-303 Four-Way Speaker System
Four-way, acoustic air-suspension bookshelf system; 12" woofer, 2½" dome mid-range, 1" dome tweeter, 5½" dome super tweeter; response 30-35,000 Hz; crossovers 1200, 5000, 10,000 Hz; metalized polyester film capacitors above 10,000 Hz; 8 ohms; output acoustic pressure 90 dB/W at 1 meter; will handle 100 W peak. 14¼" W x 24½" H x 19¾" D $580.00

DS-360 Three-Way Speaker System
Three-way, hermetically sealed system; 12" woofer, 5" mid-range, 1½" dome tweeter; response 30-20,000 Hz; crossovers 600 & 5000 Hz; 8 ohms; output acoustic pressure 93 dB/W at 1 meter; will handle 60 W peak. 15¼" W x 26½" H x 11¾" D $300.00

DS-28B Three-Way Speaker System
Three-way, hermetically sealed system; 10" woofer, 4" cone mid-range, 1½" dome tweeter; response 40-20,000 Hz; crossovers 800 & 5000 Hz; 8 ohms; output acoustic pressure 91 dB/W at 1 meter. 13¼" W x 23½" H x 10¾" D $200.00

DS-251 MKII Two-/Three-Way System
Switchable two- and three-way bookshelf system; 10" woofer, 2" cone tweeter, 1½" cone $155.00

THE ANTHEM ARRAY
The first loudspeaker with uniform polar response

The Uniform 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 1800 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.

The Uniform 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.


Audioanalyst Inc., P.O. Box 262, Brookfield, Conn. 06804
Distributed in Canada by Superior Electronics, Inc.

1977 EDITION
Speaker Systems

**NORDMENDE**

804 Three-Way System
Three-way system; frequency range 30-20,000 Hz. tw/2" woofers, 1½" dome tweeter; sensitivity 96 dB (W/m, 1 m); power handling capacity 90 W; walnut veneer finish on wood; 13¾" H x 20¾" W x 9½" D. $199.00

803 Three-Way System
Three-way system; 8½" woofer, 3½" midrange, 1½" dome tweeter; frequency range 35-20,000 Hz; sensitivity 96 dB (W/m, 1 m); power handling capacity 50 W; walnut veneer finish on wood; 17¾" H x 11½" W x 9" D. $124.95

802 Two-Way Speaker System
Two-way system; 8½" woofer & 1½" dome tweeter; frequency range 40-20,000 Hz; sensitivity 2.8 W (96 dB/1 m); power handling capacity 35 W; imp. 4.8 ohms; walnut veneer finish on wood; 17¾" H x 11½" W x 6¼" D. **$99.95**

**OMH 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; 55 W rms min. power required; max. power handling 150 W rms; frequency range 30-19,000 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.; walnut veneer finish; 9½" H x 12½" W x 12 D. **$299.95**

Model H Speaker System
Three-way system with 8½" woofer, 2" midrange, and 1½" dome tweeter; vented (4th order Butterworth filter design with 12" 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 250 W rms continuous; 18 to 6/4.3 ohm imp.; walnut veneer finish; 35" H x 12½" W x 11½" D. **$350.00**

**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 40,000 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.

Model C2 Speaker System
Three-way system with 10" woofer, 2" tweeter, and 1" super tweeter; vented (quasi 3rd order Butterworth filter design); response 37-19,000 Hz (-4 dB); crossovers at 3200, 9000, 14,000 Hz; maximum power input 40 W; 8 ohms max. power; simulated wood cabinet... **$199.95 pr.**

Model D2 Speaker System
Three-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; oil-wood finish on 1½" stock including baffleboard; black Formica back. 25½" x 14½" x 9½" D. **$200.00**

Model D Speaker System
Two-way sealed system with 8" woofer, 2½" tweeter; 1700 Hz crossover (series network); response 33-20,000 Hz; 12 W rms min. power required; continuously variable tweeter-level control; 5½" stock, walnut-finished vinyl. 21½" x 11½" x 7½" D. **$90.00**

**ONKYO**

30 Speaker System
Three-way, line-source design with 12" woofer, horn-type (10¾" x 3½") mid-range, and 2½" 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 x 12¾" H x 18½" D. **$299.95**

25A Speaker System
Three-way, line-source design with 14" woofer, 2½" hemispheric dome mid-range, and 1½" hemispheric dome tweeter. Capacity 60 W. Response 30-20,000 Hz; crossovers at 700 & 7000 Hz. Has mid-range & tweeter level control. 8 ohms. 10" W x 15½" H x 12½" D. **$249.95**

**PANASONIC**

SB-1600 Speaker System
Two-way passive-driver system with 10" woofer, 2½" tweeter; passive-driver/tapered passive filter frequency 25 Hz; crossover 5000 Hz; maximum power input 30 W; 8 ohms; simulated wood cabinet... **$199.95 pr.**

SB-1100 Speaker System
Two-way passive-driver system with 8" woofer & 2½" cone-type tweeter; response 35-20,000 Hz; maximum power capacity 30 W; 8 ohms imp.; crossover 6000 Hz. 11½" W x 21½" H x 9½" D. **$89.95**

**PEACETIME COMMUNICATIONS**

L1101 Four-Way Speaker System
Bass equalized system; four 12" woofers, four 5" midrange (in array), six dome 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 required; 36½" W x 32½" H x 18½" D. **$1450.00**

L101. 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 A circuit breaker; 20 W rms min. power, 150 W rms max.; 32½" H x 18½" D x 18½" W. **$650.00**

Stereoscopic Audio Guide
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.

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.

PIONEER

HPM-200 Speaker System
Four-way acoustic-suspension system with two 10" woofers, 2½" soft-dome midrange, 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/lwmeter, continuous music power input 100 W, max. music powe-

input power. 28½" H x 18½" W x 13½" D. Oiled walnut...

CS-99A Speaker System
Sealed, 5-way floor-standing enclosure with 15" woofer, 5½" mid-range, horn-tweeter, cone tweeter, and dome-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 11½" D. Walnut...

CS-700G Speaker System
Sealed, 3-way floor-standing enclosure with 12" woofer, 4½" 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 12½" D. Walnut...

CS-500G Speaker System
Sealed, 3-way bookshelf enclosure with 10" woofer, 5" mid-range, and 3½" tweeter. Response 40-20,000 Hz; 800 & 6000 Hz crossovers. Has tweeter control. 8 ohms impedance. 50 W (dynamic) maximum input power. 12½" H x 12½" D. Walnut...

CS-66G Speaker System
Sealed, 3-way bookshelf enclosure with 10" woofer, 6½" mid-range, and cone-tweeter. Response 35-20,000 Hz. Has tweeter control. 8 ohms impedance. 40 W (dynamic) maximum input power. 12½" H x 22½" W x 11½" D...

Project 100 Speaker System
Three-way bass-reflex system with 10" woofer, 1½" soft-dome midrange, 2½" cone-tweeter; frequency range 40-20,000 Hz; crossovers...
POLK AUDIO

Ten Three-Way Speaker System
Three-way floor-standing system; 10" sub-bass radiators, midrange, 1" soft-dome high-frequency radiator, fourth-order Butterworth tuned fluid coupler; frequency response 22-25,000 Hz; 30-20,000 Hz ±2 dB; crossovers 60 & 3000 Hz; system resonance 30 Hz; max. output level 112 dB; 10 W rms/ch min. power, 100 W max.; walnut wood-grained finish; 28 1/2" 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, 4" dome midrange, 1" soft-dome radiator; 15" W x 6 1/2" x 5" D ... $79.95

Mini-Monitor System
Designed primarily for car, van, and other applications where space is limited; 4 x ½ fluid-coupled low-bass radiator, 4½" bass/midrange, 1" soft-dome radiator; 15" W x 6 1/2" x 5" D ... $129.00

PRESCAN

5 Three-Way Speaker System
Three-way speaker system; 10" "Piston Bass" passive radiator, 3" dome tweeter, 1½" cone-type tweeter, frequency response 30-25,000 Hz; 20-25,000 Hz ±2 dB; min. power 10 W/ch, max. power 50 W, 8 ohm imp.; system resonance 30 Hz; max. output level 105 dB; 24" H x 14" W x 9½" D ... $129.00

9 Two-Way Speaker System
Two-way speaker system; 10" long-exursion woofer & 1½" phenolic-ring tweeter, frequency response 35-18,000 Hz ±4 dB; crossover: 1900 Hz, impedance 8 ohms; recommended power 25 W rms/ch, 100 W rms max.; frequency response 30-20,000 Hz; 4500 & 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 12½" D ... $329.00

15 Two-Way Speaker System
Two-way speaker system, 8" woofer & 2½" phenolic-ring tweeter; frequency response 19,000 Hz x 64 dB (-3 dB at 17,000 Hz), frequency response 60-19,000 Hz; 4500 & 3500 Hz; 12 dB octave slope; cross over 1300 Hz; imp. 8 ohms; can be driven by amps as low as 10 W rms; oak or walnut cabinet; 21½" H x 14" W x 11" D ... $175.00

RADIO SHACK

Realistic Mach One System
Three-way floor-standing system; woofer, multi-cell mid-range horn, high-frequency tweeter horn; inductive/capacitive crossover network; response 20-25,000 Hz; 8 ohms, acoustically transparent grille cloth; genuine walnut veneer cabinet; 28½" H x 17½" W x 12" D ... $199.50

Realistic Optimus T-100 Tower
Tower speaker system; two 8" woofers & 3½" tweeter; 75 W peak-program power handling; frequency response 55-18,000 Hz ±3 dB; crossover 3500 Hz; 3-way L-pad adjusted treble response, phono jacks & screw terminals recessed on bottom of enclosure; oiled-walnut veneer cabinet (finished all four sides); 35½" H x 13" W x 12½" D ... $139.95

Nova 7B Speaker System
Sealed, 2-way bookshelf system with 10" woofer and two 3½" tweeters. Response 20-20,000 Hz; 8 ohms impedance. 60 W rms maximum input power. 12½" H x 22½" W x 11¼" D; Oiled walnut ... $119.50

Optimus 5B Speaker System
Sealed, 2-way floor-standing system with 12" woofer, two mid-range, and a 3½" tweeter. Response 20-25,000 Hz; 8 ohms impedance. 25½" H x 14" W x 11½" D; Oiled walnut ... $119.50

Optimus 1B Speaker System
Sealed, 2-way bookshelf system. Response 20-25,000 Hz; 1000 Hz crossover. Has tweeter control. 8 ohms impedance. 12½" H x 23 W x 11½" D; Walnut ... $89.95

Realistic MC-1500 Speaker System
Two-floor or bookshelf system; 8 acoustic-suspension radiators, 8" woofer, 7½" upper midrange/tweeter; response 40-20,000 Hz; walnut veneer enclosure with removable waffle grille; phono jack & screw terminal connections; 8 ohms. 23½" H x 13½ W x 8¼" D; $125.00

Three-Way Speaker System
Similar to RA3 but response 50-20,000 Hz; 8 ohms (min) to 20 ohms (max.) impedance. 3500 Hz high-pass at 24 dB/octave, low-pass at 12 dB/octave; modified Butterworth filters; power handling 30 W peak program, 20 W rms; 8 ohms (min); max. power 22.5 ohms (max); sensitivity: 10 W pink noise for 90 dB at 1 meter; teak or walnut veneer enclosure; fretwork grille. 15½" H x 10½" W x 9¼" D ... $125.25

RA8 Two-Way Speaker System
Two-way floor or bookshelf system; two 8" woofers and three 3½" tweeters. Frequency response 30-20,000 Hz; 5 ohms (min) to 20 ohms (max); 18½" H x 11½" W x 9¾" D; $247.95

RA82L Two-Way Speaker System
High-power labyrinth speaker system; 8" woofers & 3¼" wide-diffusion dome tweeter, ten-element crossover network with two filters and compensating network; woofer loaded by labyrinth-type transformer; frequency response 40,200,000 Hz ±3 dB (steady-state sine wave); 5 ohm (min) to 20 ohm (max), will handle 70 W program, 45 W rms; six-position level-control adjust in steps of 4000 Hz, 3500 Hz high-pass at 24 dB/octave, low-pass at 12 dB/octave; teak or walnut veneer enclosure. 28½" H x 13½ W x 11½" D ... $247.95

RA82 Two-Way Speaker System
Two-way floor or bookshelf system with 8" "Bextrene" cone bass unit & 2¼" wide-diffusion 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; 8 ohms (min); max. power 22.5 ohms (max); sensitivity: 10 W pink noise for 90 dB at 1 meter; teak or walnut veneer enclosure; fretwork grille. 15½" H x 10½" W x 9¼" D... $125.25

RA12 Two-Way Speaker System
Similar to RA4 but response 60-20,000 Hz; 6 ohms (min); six-position level-control adjust in steps of 15 W; 5 ohms (min) to 20 ohms (max.) impedance 3500 Hz high-pass at 24 dB/octave, low-pass at 12 dB/octave; 18½" H x 11½" W x 9¾" D; $247.95

ROYAL SOUND

SP-55 Speaker System
Three-way system with 10" external bass driver, 15" internal active compound driver, 5" midrange (with Sym-Pulse), and 1½" 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 1½" dome tweeter; "Air Flow" resistance-loaded ports; response 40-20,000 Hz; crossover 1500 Hz; 8 ohm imp.; max. power 80 W rms, 19" H x 12¼ W x 10 D" ... $76.50

PRO-350. Same as 250 except response 30-20,000 Hz; power 100 W rms; 21½" H x 12½ 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 2½" slot-loaded mid-range, eighteen 2½" slot-loaded tweeters; frequency response 15-18,500 Hz; crossovers 500 & 7500 Hz; imp. 8 ohms; recommended amp. power 25-150 W rms/ch; features multi-position 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 ... $1295.00

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; 49½" H x 16½ W x 16½ D ... $1050.00

280DR Three-Way Speaker System
Features four 10" woofers, five 2½" slot-loaded mid-range, eighteen 2½" slot-loaded tweeters; frequency response 15-18,500 Hz; crossovers 500 & 7500 Hz; imp. 8 ohms; recommended amp. power 25-150 W rms/ch; features multi-position 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 ... $1295.00

STEREO DIRECTORY & BUYING GUIDE
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.

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 woof, 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

1977 EDITION
CIRCLE NO. 54 ON READER SERVICE CARD
149
<table>
<thead>
<tr>
<th>Model</th>
<th>Description</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>HPR-12 Magnum Speaker System</td>
<td>Designed for use with low-power amps; 12&quot; passive radiator, 10&quot; woofers, 3&quot; midrange; crossover 1000 Hz; 8 ohms nominal</td>
<td>$389.95</td>
</tr>
<tr>
<td>180D Two-Way Speaker System</td>
<td>Features 3&quot; woofers and 3&quot; tweeters; crossover 3000 Hz; impedance 8 ohms nominal; recommended amp power 20 to 80 W</td>
<td>$298.95</td>
</tr>
<tr>
<td>240D Column Speaker System</td>
<td>Two-way speaker with 10&quot; woofers, 8&quot; woofers; crossover 240 Hz; 8 ohms</td>
<td>$199.95</td>
</tr>
<tr>
<td>ESR-6 Electrostatic Speaker System</td>
<td>Electrostatic add-on tweeter with built-in crossover and level controls for both tweeter &amp; woofers; response 1500-30,000 Hz; 8 ohms</td>
<td>$199.95</td>
</tr>
<tr>
<td>EXP-10 Speaker System</td>
<td>Two-way bookshelf system with 10&quot; woofers &amp; 3&quot; tweeter</td>
<td>$329.95</td>
</tr>
<tr>
<td>EXP-8 Speaker System</td>
<td>Two-way bookshelf system with 8&quot; woofers &amp; 3&quot; tweeter</td>
<td>$129.95</td>
</tr>
<tr>
<td>SANSUI SP-2000 Speaker System</td>
<td>Three-way speaker system; 10&quot; cone woofer, 10&quot; passive radiator, 3&quot; midrange; crossover 1000 Hz; 8 ohms</td>
<td>$780.00 ea.</td>
</tr>
<tr>
<td>SANSUI SP-7500X Speaker System</td>
<td>Four-way speaker system with 16&quot; woofer, 8&quot; midrange, 6&quot; x 2&quot; tweeters, 10&quot; cone woofer</td>
<td>$399.95</td>
</tr>
<tr>
<td>SANSUI LM110 Speaker System</td>
<td>Similar to LM220 except 6&quot; cone woofer; frequency range 38-20,000 Hz; power rating 35 W (peak); 9/16&quot; W x 21/2&quot; H x 7 1/2&quot; D</td>
<td>$250.00 pr.</td>
</tr>
<tr>
<td>SCOTT PRO-100 Speaker System</td>
<td>Sealed, 3-way full-range floor-standing speaker system with high-compliance, long-throw 15&quot; woofer; crossover 500 Hz; 4 ohm mid-range units, and two 1&quot; dome tweeters</td>
<td>$399.95</td>
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<tr>
<td>SANSUI S-196 Speaker System</td>
<td>Sealed, 3-way full-range floor-standing speaker system with 12&quot; high-compliance long-throw woofer, 4½&quot; cone midrange, and two 1&quot; dome tweeters; response 35-20,000 Hz; crossover 800 &amp; 4000 Hz; separate 3-pos. midrange &amp; tweeter level switches</td>
<td>$299.95</td>
</tr>
<tr>
<td>SANSUI S-177 Speaker System</td>
<td>Sealed, 3-way full-range floor-standing system with large bookshelf system; 12&quot; high-compliance long-throw woofer, 4½&quot; cone midrange, and 2&quot; dome tweeter; crossover 7000 Hz; 8 ohms; separate 3-pos. midrange &amp; tweeter level switches; 19 W min. amp power, 75 W program max; 24½&quot; H x 14½&quot; W x 12¼&quot; D</td>
<td>$139.95</td>
</tr>
<tr>
<td>SONAB OA2212 Speaker System</td>
<td>Three-way system with two woofers in bass-reflex cabinet; two midrange in closed volume, twelve tweeters; frequency response 30-30,000 Hz; 8 ohms; crossover 450 &amp; 2000 Hz; attenuation: 6 dB/octave, 12 dB/octave; response 25-20,000 Hz; 15 W min. amp power, 100 W program max; 24½&quot; H x 14½&quot; W x 12¼&quot; D</td>
<td>$780.00 ea.</td>
</tr>
<tr>
<td>SANSUI OA116 Speaker System</td>
<td>Three-way system with bass element in bass-reflex enclosure; one mid-range element, six dynamic tweeters; employs Carlsson &quot;Ortho Acoustic&quot; principle for pinpointing sound off walls and ceilings; frequency response 25-15,000 Hz; 8 ohms; crossover 450-18,000 Hz; attenuation: 6 dB/octave, 12 dB/octave; response 25-20,000 Hz; 15 W min. amp power, 100 W program max; 24½&quot; H x 14½&quot; W x 12¼&quot; D</td>
<td>$780.00 ea.</td>
</tr>
</tbody>
</table>
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 amp. 8 ohms, min. power ½ W, max. ½ 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. 8½" x 10½" x 8½" .... $95.00 ea.

SC-200. Same as SC-100 but with double capacity for larger sound; 10'/2" x 16V2" x 8'/2"

SC -7. Similar to SC -9 except 12" woofer, 5" midrange, oiled-walnut veneer and solids cabinet; controls; multi-radiational frequency response 20-20,000 Hz; crossovers woofer, 5" midrange, two 1" dome tweeters; innovation design; 12" woofer, 5" midrange, 144-sq in acoustic-suspension tower enclosure. 27" H x 15'/2" W x 13" D... $139.00

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; 25½" H x 15½" W x 11½" D. $229.50

Lancer SC-4 Three-Way System
Dynamic acoustic-suspension system; 12" woofer, 5" midrange, 2½" 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; 23½" H x 15" W x 12½" D ... $169.50

SC-10A. Similar to SC-4 except two-way system with 10" woofer & 2½" tweeter; crossover 2500 Hz; high-frequency control; 20½" H x 12½" W x 10" D ... $119.50

Lancer 9535-2 Two-Way System
Dynamic bass-reflex design; 12" woofer, 2½" 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; 25½" H x 14½" W x 11½" D. .... $95.50

9534X. Similar to 9535-2 except 8" woofer, 3" tweeter; min. amp power 5 W, 30 W max.; frequency response 40-18,000 Hz; 23½" H x 11½" W x 11½" 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; 20½" H x 10" W x 9½" 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. 27½" H x 15½" W x 13½" 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. 25½" H x 14½" W x 10½" 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; constant voltage/constant impedance with high-frequency compensation components; imp. 8 ohms; will handle 75 W; laminated simulated walnut enclosure. 25½" H x 14½" W x 10½" D ... $109.00

We're the fastest selling speaker you've never heard of

Acousti-phase
A Tribute to Sound

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 anonyielding 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.
Two-Way Speaker System
Acoustic-suspension speaker system; 12" woofer; 5" cone midrange; 4 1/2" x 1 1/2" horn tweeter; crossover 700 & 6500 Hz; imp. 8 ohms; 15 W min amp power; midrange & tweeter level controls; oiled-walnut finish; brown grille cloth; 28" W x 16 1/2" D x 11 1/2" H. $389.00

Four Three-Way Speaker System
Acoustic-suspension speaker system; 12" woofer; 5" cone midrange; 4 1/2" x 1 1/2" horn tweeter; crossover 700 & 6500 Hz; imp. 8 ohms; 15 W min amp power; midrange & tweeter level controls; oiled-walnut finish; brown grille cloth; 28" W x 16 1/2" D x 11 1/2" H. $279.00

Three-Way Speaker System
Same as Model Four except 1/2" dome tweeter. $219.00

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; 18" W x 11 1/4" D x 9 1/2" H. $190.00

One Two-Way Speaker System
Acoustic-suspension speaker system; 8" woofer & 1 1/2" dome tweeter; crossover 2500 Hz; 5 W min amp power; tweeter level control; 4 ohm imp.; oiled-walnut finish; brown grille cloth. $89.00

SYLVANIA

GTE-412 Speaker System
Sealed air-suspension design with 12" woofer; 4 1/2" mid-range, 1 1/8" Mylar dome tweeter, and 3 1/2" 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" H x 18 3/4" W x 12 1/4" D. $529.95

GTE-312. Same as GTE-412 except without 1 1/8" tweeter; crossover at 500, 3500 Hz. $199.95

GTE 210 Speaker System
Sealed air-suspension design with 10" woofer, 1 1/4" dome mid/tweeter; crossover 1500 Hz; response 30-25,000 Hz; 3.5 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 x 15 3/4" W x 11 1/4" D. $119.95

AS5712 Speaker System
Sealed air-suspension design with 12" woofer, 4" mid-range, and 1 1/4" dome tweeter. Response 25-20,000 Hz, crossovers at 1500 & 6000 Hz. 8 ohms. Capacity 50 W continuous. 25" x 16 1/4" x 11 1/2" W. Walnut-grained vinyl. $229.95

AS710 Speaker System
Sealed air-suspension design with 10" woofer, 3" mid-range, and 2 1/2" dome tweeter. Response 30-18,000 Hz. 8 ohms. Capacity 50 W continuous. 22" x 14 1/4" x 11 1/4" D. Walnut-grained vinyl. $159.95

SYNERGISTICS

S-72 Four-Way Speaker System
Acoustic-suspension four-way speaker system; tweeter level controls; imp. 8 ohms; min. amp power 6 W rms, max. 200 W rms; usable audio range 26-24,000 Hz. $495.00

S-62 Tower Speaker System
Acoustic-suspension four-way speaker system; one 12" high-compliance woofers, 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; 150 W rms; power requirement 3 W rms min., 25 W rms max.; walnut-grained finish; Reverse-A-Foam grille. $119.95

S-52 Tower Speaker System
Two-way speaker system; two 8" high-compliance woofers & three extended-range tweeters; crossover 750 & 5000 Hz; midrange & tweeter level controls; 8 ohms; min. amp power 8 W rms, max. 150 W rms; usable audio range 28-20,000 Hz. $375.00

S-51 Three-Way Speaker System
Three-way acoustic-suspension speaker system; 12" high-compliance woofers, 4 1/2" midrange, 2 1/2" extended-range tweeter, crossover 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. $300.00

S-42 Three-Way Speaker System
Two-way acoustic-suspension speaker system; 10" high-compliance woofers & 2 1/2" extended range tweeter; crossover 2500 Hz; tweeter level control; 8 ohms; min. amp power 10 W rms, max. 80 W rms; usable audio range 28-20,000 Hz. $225.00

S-32 Two-Way Speaker System
Two-way acoustic-suspension system; 10" high-compliance woofers, 1 1/4" dome tweeter; crossover 2500 Hz; tweeter level control; 8 ohms; min. amp power 10 W rms, max. 80 W rms; usable audio range 28-20,000 Hz. $150.00

T-400 Four-Way Floor System
Response 38-20,000 Hz; 3 db, two 10" woofers, 5" mid-range, two 1 1/4" tweeters, two 2 1/4" super tweeters; crossovers 600, 2000 & 8000 Hz, has tweeter, mid-range levels 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; re- movable base. 29" H x 18 1/4" W x 14 1/4" D (inc. base). $429.95

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 port. $279.95

STEREO DIRECTORY & BUYING GUIDE
Footprints in the sounds of time.

The sound of Cizek. A brave new world in loudspeaker technology.

But mere change was not enough. At Cizek Audio Systems, we found it necessary to go beyond refinement to institute change.

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 ±1dB.

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.
UTAH

HS10C Three-Way Speaker System
Three-way system; 15" woofer, horn midrange, two 1¼" tweeters; frequency response 25-20,000 Hz; crossovers 8000 & 3500 Hz; 8 ohms; midrange & tweeter controls; will handle 80 W rms min, 60 W rms max.; walnut-grained finish; acoustic-foam grille (available in choice of three colors). 24¼" H x 14½" W x 12" D $189.95

DX100A Three-Way Speaker System
Three-way system; 10" woofer, midrange & tweeter controls; will handle 80 W rms.

203B Three-Way Speaker System
Air-suspension design with 12" woofer, 5" sealed mid-range, 2" super-tweeter; frequency response 28,000-0 Hz; crossovers 1500 & 4000 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; 25½" x 15¼" x 11¼" $169.96

DX100A Three-Way Speaker System
Three-way system; 10" woofer, midrange, 3" tweeter, frequency response 40-20,000 Hz; response 28-20,000 Hz; crossovers at 1500 Hz & 4000 Hz; sealed mid-range, 2" super-tweeter; response 40-20,000 Hz; crossovers 2000 & 5000 Hz; will handle 60 W rms; 253/8" x 153/4" x 111/4" $179.00

VIDEOTON

D-258-A Speaker System
Four-way system with 10" woofer, 5½ midrange, 1½ dome midrange, and 1½ dome tweeter; crossovers 600, 2000 & 7000 Hz; 12-element crossover network; tweeter control; 8 ohms; max. power handling: 10 W rms min, 60 W rms max.

D-402A Supermax Speaker System
Two-way, six-driver system with two 8" woofers, two 4" tweeters, two 1½" hemispherical dome tweeters; continuous power capacity 60 W, music power capacity 50 W; response 30-22,000 Hz; frequency response 40-20,000 Hz; power handling capacity 15 W; music power capacity 10 W; 24½" H x 13½" D x 12½" W $249.00

D-300SL Two-Way Speaker System
Two-way acoustic suspension speaker system; 8" woofer & 1" dome tweeter; RC crossovers 500 & 2000 Hz; frequency response 28,000-0 Hz; 10 W rms min, 35 W rms max power handling; enclosure 45# density pine particle board with genuine white oak veneer; grille: brown knit grille; 24½" H x 13½" D x 12½" W $179.00

NS-1000 Speaker System
Three-way speaker system featuring vapor-deposition beryllium-dome drivers, ribbon-type voice coils; 11½" woofer, 3.46" mid-range, 1.18" tweeter; frequency response 40-20,000 Hz; crossovers 500 & 6000 Hz; 3-way, 12 dB/octave crossover network; imp. 8 ohms; resonance frequency 40 Hz; max. input capacity 100 W; mid-range & treble level controls; SPL 90 dB/ W/m. Ebony enclosure with polyurethane finish. 15½" W x 28" H x 14½" 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, 14¼" W x 26½" H x 12½" D. $980.00 pr.

NS-500 Two-Way Speaker System
Two-way system with 10½" woofer, 1½ 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 24½" H x 13½" W x 13½" 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.
Press comment:

"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, and that we know of on a consumer audio product. The document begins: 'Allison Acoustics warrants that each of our loudspeaker 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

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10 Speaker Systems

NS-690 Three-Way Speaker System
Three-way system with 12" woofer, 3" midrange, and 1¼" tweeter; crossovers at 80 & 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, midrange & tweeter; to permit use of multi-amp system. Walnut. 24½" H x 13½" W x 11½" D. $560.00 pr.

NS-670 Three-Way Speaker System
Three-way system with 10" woofer, 2½" midrange, and 1¼" tweeter; crossovers at 80 & 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. 22½" H x 12⅝" W x 10¾" D. $460.00 pr.

NS-3 Three-Way Speaker System
Three-way system with 10" woofer, 1½" soft-dome mid-range, and soft-dome 1" tweeter; frequency response 40-20,000 Hz; power handling 50 W; min. input 15 W; 600 & 1200 Hz crossovers; imp. 8 ohms; Corinthian walnut-grained finish with black foam detachable grille. 24½" H x 13½" W x 10¾" D. $360.00 pr.

NS-2, Similar to NS-3 except two-way system; response 40-18,500 Hz; power handling 40 W; crossover 1200 Hz, 24½" H x 11⅜" W x 11" D. $260.00 pr.

ZENITH

Allegro 300 Speaker System
Two-way system with 10" woofer, 3½" treble horn; RLC crossover; frequency response 40-15,000 Hz; imp. 8 ohms; grained walnut-colored cabinet with formed grille; 24½" H x 15¼" W x 10" D. $170.00 pr.

Allegro 2000. Similar to 3000 except 8" woofer; frequency response 50-15,000 Hz; 20½" H x 13" W x 10" D. $140.00 pr.

Allegro 1000. Similar to 3000 except 6½" woofer, 3" tweeter; response 60-15,000 Hz; 18½" H x 10¾" W x 7½" D. $110.00 pr.

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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.

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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 advance from the current state-of-the-art, a step closer to being 'at the performance.' Write for details.

ZENITH

Allegro 300 Speaker System
Two-way system with 10" woofer, 3½" treble horn; RLC crossover; frequency response 40-15,000 Hz; imp. 8 ohms; grained walnut-colored cabinet with formed grille; 24½" H x 15¼" W x 10" D. $170.00 pr.

Allegro 2000. Similar to 3000 except 8" woofer; frequency response 50-15,000 Hz; 20½" H x 13" W x 10" D. $140.00 pr.

Allegro 1000. Similar to 3000 except 6½" woofer, 3" tweeter; response 60-15,000 Hz; 18½" H x 10¾" W x 7½" D. $110.00 pr.

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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.
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. Eines 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

from the people who invented Stereophones.


CIRCLE NO. 38 ON READER SERVICE CARD
AKG
K-140 "Supra-Aural" Headphones
Frequency response 20-20,000 Hz; Imp. 600 ohms ±20%; each channel over band; sensitivity 15µbar/V (approx. 97.5 dB SPL; continuous power level 240 mW at 1% THD (100 Hz); comes with 4-cond. cable, 3-cond. 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, cooperator platinum aluminum wire voice coil for minimum mass; response 30-20,000 Hz; impedance 4 to 16 ohms; sensitivity 97 dB SPL at 1000 Hz. Comes with coiled cord. Ear pads may be removed for replacement. 9 ounces $39.95
AT-702. Same as AT-701 except response 25-20,000 Hz; sensitivity 97 dB/SPL at 1000 Hz $49.95
AT-703. Same as AT-701 except response 20-20,000 Hz; sensitivity 94 dB/SPL at 1000 Hz $69.95

AT-706 Electret Condenser Phones
Condenser-type drivers with permanently charged diaphragm in push-pull configuration, diaphragm 58 mm dia. x 3 microns thick, accessory adapter matches high impedance of condenser element to any standard amplifier output, and includes headphone/speaker switch; response 20-20,000 Hz ±2 dB, impedance 4-16 ohms; 94 dB SPL at 1000 Hz. THD 0.1% 10.8 ounces impedance matching adapter 3/16" H x 3/16" W x 81/2" 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

DT-48 Dynamic Headphones
Moving-coil type. Originally designed as an audiometry instrument for measuring human hearing in lab research. Range 16-20,000 Hz ±2 dB. Response virtually flat. Comes with 10-ft cord $140.00
DT48-K. Same as DT-48 except with plug-in coated cable $145.00

DT480 Dynamic Headphones
Moving-coil type. Response 20-18,000 Hz. Sensitivity 1 mW at 400 Hz produces 15 dB (re 2 x 10^-6 µbar), 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

BEYER/DYNAMIC

DT101 Dynamic Headphones
Moving-coil type. Response 30-18,000 Hz. Sensitivity 1 mW at 400 Hz produces 110 dB (re 2 x 10^-6 µbar), 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^-6 µbar), 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. power level 240 mW.
<table>
<thead>
<tr>
<th>Headphones</th>
<th>Description</th>
<th>Features</th>
<th>Price</th>
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<tbody>
<tr>
<td><strong>PM-2C &quot;Promuff&quot;</strong></td>
<td>Stereo audio monitor with audio energizer for direct connection to speaker output terminals of audio amplifier; 24 dynamic audio driving elements, black vinyl cover with fabric insert for audio frequency transparency.</td>
<td>10-ft coiled cord plus 25-ft extension cord; frequency response 20-20,000 Hz; THD unmeasurable at 95 dB SPL.</td>
<td>$75.00</td>
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<tr>
<td><strong>PM-4C &quot;Promuff&quot;</strong></td>
<td>Stereo headphones with variable-frequency-response controls, slide-type controls at base</td>
<td>2- or 4-channel design. Response 20,000 Hz. THD 0.5% at 1 mV. Has a built-in phase changeover switch.</td>
<td>$49.95</td>
</tr>
<tr>
<td><strong>JVC 5944 4-Channel Headphones</strong></td>
<td>Stereo headphones with variable-frequency-response controls, slide-type controls at base</td>
<td>2- or 4-channel design. Response 20,000 Hz. THD 0.5% at 1 mV. Has a built-in phase changeover switch.</td>
<td>$49.95</td>
</tr>
<tr>
<td><strong>K/J/145 Dynamic Stereophones</strong></td>
<td>Features 1-in polyester driver; frequency response 20-20,000 Hz; 90 ohms at 1 kHz; level controls.</td>
<td>Pneumalite earcushions; padded simulated leather earcups; adjustable brushed stainless steel yokes &amp; 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) 15 ounces.</td>
<td>$45.00</td>
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<tr>
<td><strong>Easy Listener Stereophones</strong></td>
<td>Frequency response 15-16,000 Hz at 0.1 mV. Sensitivity 80 dB SPL (reference 0.0002 dyn/cm²). Distortion less than 0.2% at 110 dB SPL.</td>
<td>4 to 16 ohms impedance. 10-ft coiled cord.19 ounces. Black Pneumalite earcushions for ambient noise isolation. Designed for critical studio monitoring.</td>
<td>$175.00</td>
</tr>
<tr>
<td><strong>KO/772B Dynamic Headphones</strong></td>
<td>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.</td>
<td>Black.</td>
<td>$34.95</td>
</tr>
<tr>
<td><strong>K/J/6C Dynamic Headphones</strong></td>
<td>Frequency response 10,000 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.</td>
<td>Model K/J. Same except without volume controls.</td>
<td>$29.95</td>
</tr>
<tr>
<td><strong>K/7 Stereo Headphones</strong></td>
<td>Lightweight dynamic stereo headphones; features shockproof, polypropylene construction; one-piece flexible headband; foam-filled vinyl ear cushions; will operate from outputs with stainless steel headband with self-adjusting pivoting yokes.</td>
<td>22 ounces.</td>
<td>$75.00</td>
</tr>
<tr>
<td><strong>K/6C Dynamic Headphones</strong></td>
<td>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.</td>
<td>Model K/J. Same except without volume controls.</td>
<td>$29.95</td>
</tr>
<tr>
<td><strong>K/6C Dynamic Headphones</strong></td>
<td>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.</td>
<td>Model K/J. Same except without volume controls.</td>
<td>$29.95</td>
</tr>
<tr>
<td><strong>JENSEN 230 Stereo Headphones</strong></td>
<td>Frequency response 15-22,000 Hz; 0.8% HD at 1 kHz; 100 dB SPL; max. input power 50 mW;</td>
<td>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.</td>
<td>$97.00</td>
</tr>
</tbody>
</table>

**HEAR-MUFFS**

| **PM-4000 "Supermuffs"** | Frequency response 20-20,000 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 |
| **HV/1A Stereophones** | Features low-mass "Decilevite" driver elements for coverage 15-20,000 Hz; 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 Stereophones** | Same except response 20-20,000 Hz; volume/balance control per earcup. 10.75 ounces. | $54.95 |
| **HV/1 Dynamic Headphone** | 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 |
| **PRO/4AA Dynamic Headphones** | Same as PRO/4A except nominally 600 ohms voice-coil impedance for matching audio transmission lines. 600 ohms characteristic impedance. Available on special order. | $70.00 |

**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 ≤2 dB; THD 0.3% at 100 dB SPL; sensitivity: 98 dB SPL 12 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; Polyurethan diaphragms; adjustable headband; 98-in headphone cord; adapter size 5"xWx3 Hx7". D. | 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 |

**KOSS ESP-9B Electrostatic Headphones** | Frequency response 15-16,000 Hz ±2 dB; Sensitivity 80 dB SPL (reference 0.0002 dyne/cm²). Distortion less than 0.2% at 110 dB SPL. 4 to 16 ohms impedance. 10-ft coiled cord.19 ounces. Black Pneumalite earcushions for ambient noise isolation. Designed for critical studio monitoring. | $175.00 |

**KOSS/327B Dynamic Headphones** | Frequency response 15-20,000 Hz; THD 0.3% 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 |

**KOSS/327B Dynamic Headphones** | Frequency response 15-20,000 Hz; will operate from outputs of 3.2 to 600 ohms, dist. 1% at 100 dB SPL; 100 dB SPL 2 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/5000A 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 |

**PRO/6000A 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 |

**KOSS/327B Dynamic Headphones** | Frequency response 15-20,000 Hz; will operate from outputs of 3.2 to 600 ohms, dist. 1% at 100 dB SPL; 100 dB SPL 2 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 ambiences expander on right earcup; comparator switch on left earcup; extendible stainless steel headband with self-adjusting pivoting yokes. 22 ounces. | $75.00 |

**PRO/5000A 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 |
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 stereophone 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 drive 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 ear cushions; 16 oz .......................... $145.00

K/6LCO 4-Ch. Quadraphones
Can be used for either 2- or 4-channel operation; dual 1½" dynamic drivers in each earpiece; 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 .................................. $30.00

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 200 dB SPL; Mylar diaphragm dynamic transducers; soft ear cushions; 16 oz .......................... $39.95

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, 6½-ft cable with plug .......................... $49.95

F-700 Lightweight Headphones
Features ultra-thin diaphragm with rare-earth magnet transducers; response 18-22,000 Hz; adjustable vinyl leatherette headband; foam-padded earcups; max. input 100 mW; imp. 4-150 ohms; 6½-ft cord with plug. .................................. $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 1½" speakers, each in its own acoustically isolated chamber, deliver 4-channel sound from 4-channel amplifiers and receivers. Exclusive, patented bat 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 9½-ft cable, connectors .......................... $44.95

MARANTZ

SE-1S Electrostatic Headphones
Response 20-20,000 Hz; fit 0.5% 40-20,000 Hz at 100 dB SPL, 1.5% at 20 Hz; impedance 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 CORPORATION
177 Cantiague Road. Westbury. N.Y. 11590

CIRCLE NO. 49 ON READER SERVICE CARD
Headphones

MIIDA

HX-140 Dynamic Headphones
Electrostatic stereo headphones; frequency response 20-25,000 Hz; S/N 96 dB; 10 V rms; max. output pressure 115 dB re:1 mW, 0.05% distortion; max. power input 500 mW each channel.

HX-130 Dynamic Headphones
Lightweight dynamic stereo headphones; imp. 8 ohms; frequency response 80-20,000 Hz; sensitivity 90 dB (1 mW); max. power input 3 W rms; distortion 0.1% at 1 kHz; comes with 6-ft cord; weight 11.2 oz. $129.00

SP - 205 Dynamic Headphones
Features high-polymer driver elements; frequency response 20-20,000 Hz; sensitivity 100 dB SPL; max. power input 0.2 W rms; sensitivity 100 dB SPL at 0.10 V input; response 20-20,000 Hz; max. power input 0.2 Wrms/ch; 8 ohms imp.; 10-ft coiled cord. $22.95

SP - 504 Dynamic Headphones
Stereo headphones; 3" dynamic speakers; separate slide-type volume & tone controls; stereo/mono switch; frequency response 20-18,000 Hz, 8 ohms; padded headband, vinyl-covered earcups, 10-ft coiled cord with plug. $39.95

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, 8 ohms; padded headband, vinyl-covered earcups, 10-ft coiled cord with plug. $39.95

SP - 305 Dynamic Headphones
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 "Z" 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. $99.95

SE - 700 Stereo Headphones
Features high-polymer driver elements; frequency range 20-20,000 Hz, matching impedance 4 to 16 ohms; sensitivity 100 dB/3 V. Monitor 10 Stereo Headphones
Dynamic type covering a frequency range of 20-20,000 Hz, with 2V. Mylar cone speakers; foam ear cushions; adjustable headband and clickstops for easy adjusting headband. With 16-ft coiled cord $80.00

SE - 710 Stereo Headphones
Noise 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

SE - 205 Stereo Headphones
Dynamic type. Covered with 2" free-edge polypropylene film cone speakers in each earcup; sensitivity 100 dB; 0.5% dist. at 1000 Hz; max. output power 300 mW; 30-19,000 Hz; 10 V input; comes with 10-ft coiled cord. $22.95

SE - 505 Headphones
Two-way stereo dynamic design with a woofer & tweeter in each earcup; 8 ohms each channel. Response 20-20,000 Hz; sensitivity 108 dB/3 V. Features both volume & tone 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/3 V; max. input power 30 W/ch; resistant to temperature/humidity changes; plugs directly into headphone jack of any amplifier or receiver. $75.00

SE - 105 Stereo Headphones
Dynamic type covering a frequency range of 20-20,000 Hz; 8 ohms impedance. 10-ft coiled cord for 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-ft coiled cord. $45.00

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

ST31 Stereo Headphones
Frequency response 50-19,000 Hz; 3" speakers; separate volume control with stereo/mono switch; 8 ohms; foam-filled headband & ear cushions; 10-ft coiled cord. $36.95

ST26 Stereo Headphones
Frequency response 20-21,000 Hz; 2½" Mylar speakers; foam ear cushions; adjustable padded headband; separate slide volume controls; stereo/mono switch; 8 ohms; 10-ft coiled cord. $31.95

ST18 Stereo Headphones
Frequency response 25-18,000 Hz; 2½" 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, 1/4" thick at earcups. $75.00

SANSUI

SS100 Stereo Headphones
STEREO DIRECTORY & BUYING GUIDE
Omni-dynamic driver full-range speaker in each earpiece; matching amp. 4 ohms; 4-channel; response 20-20,000 Hz. Normal power input 100 mW; sensitivity 98 dB for 1 mW/ch. Max. output power 250 mW; distortion less than 1%. 100 Hz; 8 ohms impedence; 1/2% at 200 Hz. 4-channel.

SS-50 Stereo Headphones
Two-way, 4-speaker dynamic phones; 3" cone-type woofer & 1½" dome tweeter in each ear piece; 1/4" input jack; frequency range 20-20,000 Hz; max. input power 500 mW; sensitivity 90 dB for 1 mW; weight 1 oz. $29.75

SH-15 Stereo Headphones
Non-isolating headband headphones; 1/4" input plug; frequency range 20-18,000 Hz; sensitivity 88 dB for 1 mW. 6 oz. $60.00

SS-10 Stereo Headphones
Mechanical 2-way speaker in each ear piece; max. input power 400 mW; 3/4" input jack; frequency range 20-20,000 Hz; separate volume controls; 9.8-ft coiled cord, Y-shaped extension cord; 2 oz. $40.00

SS-2 Stereo Headphones
Dynamic stereo phones; 2" cone-type tweeter in each ear piece; sensitivity 105 dB; 8-ft coiled cord, 6'/2" extension cord; 27.4 oz. $80.00

HD44 Headphone
Lightweight stereo headphone (1.2 ounces without cable). Patented dynamic "open-air" design, 300 ohms/ch. Response 50-10,000 Hz. Normal power input 1 mW/ch (1.41 V). Sennheiser Headphones deliver such vastly improved sound from most amplifiers and receivers, there's an economical alternative to a more expensive system.

Dyanaphase Sixty Headphones
Dynamic design, two-way system—woofer & tweeter with individual LC crossover. Response 40-15,000 Hz ±3 dB. Sensitivity 95 dB for 1 mW at 1000 Hz. Impedance 8 ohms; Power input 0.5 W rms max. per phone. 10-ft. coiled cord; 2 oz. Blue-black finish. $64.95

Dynaphase Forty Headphones
Dynamic design. Response 60-10,000 Hz ±3 dB. Distortion 1% at 115 dB SPL. Impedance 8 ohms. Power input 0.5 W rms max. per phone. 10-ft. coiled cord; 2 oz. Blue-black/white finish. $46.95

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%. 100 dB SPL; 10-ft coiled cord; weight 11 ounces. $27.95

HD44 Headphone
Lightweight stereo headphone (1.2 ounces without cable). Patented dynamic "open-air" design, 300 ohms/ch. Response 50-10,000 Hz. Normal power input 1 mW/ch (1.41 V). Sennheiser Headphones deliver such vastly improved sound from most amplifiers and receivers, there's an economical alternative to a more expensive system.

Dyanaphase Sixty-Five Four C
Two-way, 4-speaker dynamic phones; 3" cone-type woofer & 1½" dome tweeter in each ear piece; sensitivity 88 dB for 1 mW. 2 oz. $49.75

Sennheiser Headphones
The least expensive alternative to a more expensive system.
Headphones

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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-fomc 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 phone; cordovan-colored shells; 10-ft coiled cord. 15 ounces $40.00

927 Headphones
Woofertweeter headphone. Response 25-19,000 Hz. Dynamic woofer, ceramic tweeter, L-R crossover. Fully adjustable stainless 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-fomc 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

Stereos

PEP-81 Electrostatic Headphones
System consists of PEP-81 stereophones and CC81 control console; frequency response 1518,000 Hz; 25 dB; 10,220,000 Hz +5 dB; dist. 0.2%; imp. matched to CC81 console for 4-16 ohms; isolation-type design; fully adjustable headband, expanded vinyl-covered foam cushions, 15-ft coiled cord; control console has level controls for both channels (20 dB range); will accommodate two sets of stereophones; dual polarization (a.c. and self); self-protecting circuits to prevent headphone damage; decora tor-designed walnut-veneer enclosure, 11" x 3¼ x 6½". Headphones 8½ 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 +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 x 2¼ H x 4 D. $90.00 STEX-15-P. 15-ft extension cord for PEP-74 $9.95

PEP-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

SRY-III Earspeakers
Electrostatic push-pull type; response 20-

27,000 Hz; 1 dB; 95 Hz at 100 V rms input; maximum level 115 dB; weight 370 g including cord. Comes with SRY-7 energizer, a polarizing supply and source; response 10-30,000 Hz +2 dB; distortion 0.02% at 1 W, 1000 Hz; 2⅜" x 4¼". H x 8 D. $230.00

SR-5 Earspeakers
Electrostatic push-pull type; response 30-

25,000 Hz; 1 dB; 95 Hz at 50 V rms input; maximum level 115 dB, weight 432 g including cord. Comes with SRY-6 energizer, a polarizing supply and source; response 20-20,000 Hz +1 dB, dist. 0.1% at 1 W, 1000 Hz. Overall size 2⅜" W x 2⅛ H x 6½ D. $130.00

SRA-12S Headphone Preamp/Amp
Input sensitivity: phone 2.0 mV, tuner, tape, aux. 250 mV; phone overload 100 mV; hum & noise: phone 58 dB, tuner, aux. 80 dB; frequency response 10-60,000 Hz +1.5 dB, THD 0.05%; DIN output jacks; preamp can be used separately; designed specifically for use with Stax Earspeakers. $500.00

Superex

SRA-12S Headphone Preamp/Amp
Input sensitivity: phone 2.0 mV, tuner, tape, aux. 250 mV; phone overload 100 mV; hum & noise: phone 58 dB, tuner, aux. 80 dB; frequency response 10-60,000 Hz +1.5 dB, THD 0.05%; DIN output jacks; preamp can be used separately; designed specifically for use with Stax Earspeakers. $500.00

4-Channel

QT-4B "Quad-Tette" Headphones
Has four identical reproducers (two to an ear-cup) with frequency response of 25-17,000 Hz, 15-ft coiled cord. Cordovan, ivory or transparent $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. 5-ft, 7-in coiled cord plus 6-

7-ft 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 1½ 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 0.64 lb with cord. $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

**AUDIOTEX**

839-100E 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

**AVENT**

MDC-1 Microphones

**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 lavaliier, dust filter or windscreen, 30-ft. cable, and chrome finish. Connector not included. $58.00

D-120E Dynamic Microphone
Sensitivity -54 dB ASA. Response 50-19,000 Hz ±2.5 dB. 200 ohms impedance; use for on-stage requirements; will handle up to 128 dB with less than 1% distortion. 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 x 1¾" dia. 6.2 oz. $150.00

D-140E Dynamic Microphone
Sensitivity -51 dB, 0.23 mw/µbar; response 30-17,000 Hz ±2.5 dB; cardioid pattern; 200 ohms impedance; use for tape recording; comes with snap-in stand adapter, built-in windscreen; chrome finish; XLR connector. $50.00

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, 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 pattern; 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 windscreen, integral suspension and wire mesh screen plus preamp; CE-10 miniature lavaliier attachment with integrated FET preamp. SE-5E. Powering module $60.00

CE-1. Same except without SE-5E $45.00

CE-2. With SE-5E $45.00

CE-5. SE-5E powering module; SA-1/1 stand adapter, W-3 windscreen. $120.00

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-505E. For omnidirectional operation; consists of CE-2 capsule, SE-5E powering module, SA-11/1 stand adapter, W-3 windscreen. $124.00

CE-510E. For lavaliier operation; consists of CE-10 lavaliier element and SE-5E powering module. $145.00

**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 lavaliier attachment with integrated FET preamp.

SE-5E. Powering module $60.00

CE-1. Same but without SE-5E $45.00

CE-2. With SE-5E $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 lavaliier operation; consists of CE-10 lavaliier element and SE-5E powering module. $145.00

**Electret Condenser Microphone**
Unidirectional pattern to minimize pickup from rear and sides; on-off slide switch; frequency response 50-16,000 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

**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 60-13,000 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
11 Microphones

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; 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 microphones mono or two mikes to each stereo channel; separate control for each mike; on-off switch; stereo/mono selector switch; on-off switch; stereo/mono plug. Makes four stereo/mono channels from four mikes mono or two mikes to each stereo channel. 30-2300 $19.95
30-2304. Same except equipped with 5-pin and 3-pin DIN plugs. $27.95

Microphone Boom Fits all standard mike floor stands. Has adjustable counterweight; movable clamp and hinges for any desired position. Standard 1/2" phone jack inputs, phone pin jack outputs. 30-2320 $27.95

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 1/2" phone jack. 30-2360 $19.95

Folding Microphone Stand Folds and unfolds in seconds; weight 31/2 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 ±2.5 dB. Sensitivity: -152 dB (EIA); 200 ohms impedance. Low sensitivity at distance from source. Suitable for stereo recording. Cannon XLR termination... $230.00

M-88 Moving-Coil Microphone Super-cardioid dynamic type. Response 30-20,000 Hz ±2.5 dB. Sensitivity: -144 dB (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 dB (EIA); 200 ohms impedance. 6" × 1/4" XLR Cannon XLR termination. Comes with clamp and presentation case... $165.00

M-500 Dynamic Ribbon Microphone Super-cardioid; response 40-18,000 Hz ±2.5 dB. Sensitivity: -153 dB (EIA); 200 ohms impedance. 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 ±2.5 dB. Sensitivity: -148 dB (EIA); 200 ohms impedance. Special transducer mounting minimizes handling noise. Has built-in "on-off" bass-cut switch. 71/2" × 3" × 11/4". Cannon XLR termination... $130.00

M-260 Dynamic Ribbon Microphone Super-cardioid design. Response 50-18,000 Hz ±2.5 dB. Sensitivity: -153 dB (EIA). High-energy ribbon. 200 ohms impedance. Suitable for speech, music, or vocals; 1/2" 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 dB (EIA); 200 ohms impedance. Withstands pressures associated with modern music (modulated voltages up to 2V). Low-handling noise. 41/2" × 1/4". Cannon XLR termination... $127.50

M-69 Moving-Coil Microphone Dynamic cardioid design. Response 50-16,000 Hz ±2.5 dB. Sensitivity: -144 dB (EIA); 200 ohms impedance. For indoor/outdoor applications; un-affect ed 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 ±3 dB. Sensitivity: -146 dB (EIA); 200 ohms impedance. 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 dB (EIA). 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. Sensitivity: -148 dB (EIA). Suits all impedances. Designed for tape recording. 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 car- plate 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-unit 8.4 V mercury battery; A3-type professional connectors... $48.00

635A Dynamic Microphone Sensitivity: -149 dB EIA. Response 80-13,000 Hz at 1.3 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 "Acousti-foam" 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


RE10 Dynamic Microphone Response 90-13,000 Hz. Super-cardioid polar pattern. 150 ohms impedance. Output — 56 dB (0 dB = 1 mV/10 dynes/cm²). Sensitivity: -150 dB EIA. Has 18-ft cable, 61/4" x 11/2", 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, 101/2" x 11/2" 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-frequen-

STEREO DIRECTORY & BUYING GUIDE
660 Dynamic Microphone
$75.00
661. Same as Model 660 except stud-mounted and with "on-off" switch. 
$78.00

631A Dynamic Microphone
$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 mic 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 mikes; 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 butt-socket 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. 
$39.95

P700 Horn Pickup Mike
Universal instrument pickup electret condenser element housed in protective foam windscreen; 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

IC power supply with professional KLR 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 selectable high or low impedance; hand-held with Switchcraft connector to body; "on/off" switch; shock-mounted transducer and Mylar diaphragm for rugged 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; ±56 dB output, for use where feedback or background noise is not a problem. 
$39.95

Electret Condenser Microphone
Unidirectional cardiod 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

Cardiod Dynamic Microphone
Dual-impedance, general-purpose microphone, unidirectional pickup; response 100-10,000 Hz, output level ±57 dB; dual impedance switch; "on/off" switch; chrome finish; precision wind-screen, 20-ft detachable cable; stand swivel adapter. 8" long x 1" dia. 
$24.50

Deluxe Ball Dynamic Microphone
$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.; 1/4 x 1/2 dia.; comes with "AA" battery, shielded cable, phone plug. 
$19.50

MERITON

CMN-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 VU bar at 1 kHz); imp. 600 ohms; comes with stand adapter, 16-ft, 5-in cable, 1/4" dia. plug. 1/4" dia. x 6 1/4" H. 
$79.95

CMN-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. 1/4" dia. x 6 1/4" H. 
$99.95

DMN-40 Dynamic Microphone
Unidirectional dynamic unit; features three windscreens, switchable cardioid, supercardiod, 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. 1/4" dia. x 6 1/4" H. 
$39.95

DMN-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. 1/4" dia. x 5 1/2" H. 
$14.95

DMN-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 stand, windscreen, mini plug. 1" dia. x 4" H. 
$19.95

DMN-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. x 4" 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 100 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; sensitivity –71 dB at 1000 Hz (0 dB 1 VU / µ bar), removable windscreen; comes with 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); sensitivity –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 omnidirectional 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.
11 Microphones

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 omnidirectional; CP-4 super-directional (shotgun); built-in 10 dB attenuating pad; "no-cut" proximity effect compensator; response 30,180 Hz (CP-1), 20,180 Hz (CP-3), 30,20,000 Hz (CP-4). All at ±3.5 dB; impedance 200 pFs; covering a wide pattern; double-casing & foam suspension reduces surface and mechanical noise; reusable headband & mag. fields, frequency response 30-20,000 Hz ±3.5 dB; sensitivity —76 dB at 1 kHz (0 dB = 1 V/µbar); 250 ohms; Cannon-type XLR-3 connector; anodized matte black finish; 10.4 ounces. $200.00

CM-300 x 3 Tri-Microphone. Three CM-300 microphones with special carrying case with space for headphones, cables, recording system; comes with special carrying case and fast-on mount that fits on floor stand or accessory table stand MZT-441. Windscreen for MD441. 1.3" H x 1.4" W x 9.6" long. $275.00

MD-211 Dynamic Microphone
Omnidirectional unit. Response 40-20,000 Hz. Sensitivity —58 dBm ±3 dB. Has extremely wide, flat response unusual in a moving-coil microphone. 45⁄8" x 1" dia. fitted with Cannon XLR connector and cable. $214.50

MD421 Dynamic Microphone
Cardioid, 200-ohm impedance design. Response 30-17,000 Hz ±5 dB. Sensitivity 0.2 mV/µbar ±3 dB at 1 kHz. EIA rating —145.8 dB. Output level —53 dBm (1 mW/10 dynes/cm²). Has front-to-back ratio 18 dB, —2 dB and a variable bass attenuator. Fitted with XLR connector and cable. 7" x 1" x 1⁄4" dia. $193.00

MD416 Dynamic Microphone
Cardioid type especially designed for close miking. Response 50-15,000 Hz; sensitivity 0.13 mV/µbar ±3 dB; impedance 200 ohms; Cannon XLR connector. Has built-in isolation system to eliminate handling noise, built-in pop filter, outdoor pop filter, threaded stand mount with quick-release clip and cable. $180.50

MD211N Dynamic Microphone
Omnidirectional, 200-ohm impedance design. Response 50-15,000 Hz; sensitivity 0.2 mV/µbar at 1000 Hz. EIA rating —145.8 dB. Output level —53 dBm (1 mW/10 dynes/cm²). Fitted with small Tuchel connector. Has balanced output. 10 ounces. 43⁄4" x Ph," x 113⁄16" $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

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/Laterally mounted ribbon $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

POINER
CM-1 Electret Microphone
High molecular diaphragm electret condenser element; selectable omni or unidirectional pattern; response 40-20,000 Hz (unl), 20-20,000 Hz (omni); output impedance 600 ohms unbalanced; sensitivity —69 dB (omni) —74 dB (omni) (both 0 dB = 1 V/µbar); 1262 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-25 Electret Microphone
Dual-element electret condenser unit; hyper-cardioid pattern; response 20-20,000 Hz; output impedance 1000 ohms; sensitivity —68 dB at 1145 kHz; Cardioid (CP-4), —74 dB ±2 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

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/µbar ±3 dB. Has variable 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 accessory table stand MZT-441. Windscreen for microphone is Model MZW441. 1.3” H x 1.4” W x 9.6” long. $275.00

MD-111 Dynamic Microphone
Omnidirectional unit. Response 40-20,000 Hz. Sensitivity —58 dBm ±2.5 dB. Has extremely wide, flat response unusual in a moving-coil microphone. 45⁄8” x 1” dia. Fitted with Cannon XLR connector and cable. $214.50

MD421 Dynamic Microphone
Cardioid, 200-ohm impedance design. Response 30-17,000 Hz ±5 dB. Sensitivity 0.2 mV/µbar ±3 dB at 1 kHz. EIA rating —145.8 dB. Output level —53 dBm (1 mW/10 dynes/cm²). Has front-to-back ratio 18 dB, —2 dB and a variable bass attenuator. Fitted with XLR connector and cable. 7” x 1” x 1⁄4” dia. $193.00

MD416 Dynamic Microphone
Cardioid type especially designed for close miking. Response 50-15,000 Hz; sensitivity 0.13 mV/µbar ±3 dB; impedance 200 ohms; Cannon XLR connector. Has built-in isolation system to eliminate handling noise, built-in pop filter, outdoor pop filter, threaded stand mount with quick-release clip and cable. $180.50

MD211N Dynamic Microphone
Omnidirectional, 200-ohm impedance design. Response 50-15,000 Hz; sensitivity 0.2 mV/µbar at 1000 Hz. EIA rating —145.8 dB. Output level —53 dBm (1 mW/10 dynes/cm²). Fitted with small Tuchel connector. Has balanced output. 10 ounces. 43⁄4” x Ph,” x 113⁄16” $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

546 "Unidyne III" Microphone

548SD "Unidyne IV" Microphone

565 "Unisphere I" Microphone

STEREO DIRECTORY & BUYING GUIDE
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. 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.

SONY FROM SUPERSCOPE

ECM-270 Condenser Microphone
Sensitivity -56 dB. Response 40,16,000 Hz. Low impedance. Unidirectional pattern. Use for recording live musical performances. Light-weight for stage, nightclub, and other situations where performer holds mike. Comes with accessory windscreen, microphone holder, and cable.

ECM-170 Condenser Microphone

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.

ECM-220 Condenser Microphone

ECM-99 Condenser Microphone

ECM-16 Tie Clasp/Lapel Mike
Sensitivity -57.8 dB (0 dB = 1 V/10 µBar). Response 50-12,000 Hz. Low impedance, omnidirectional pattern. Lapel-type for speech and tape recording. Supplied with mini connector. Internal battery operation. 6-ft. cable. 7/8" dia. x 1½" long. Silver.

TEAC

MC-201 Microphone

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 switch attachment, two wind screens, 15-ft. cable.

ME-80. Same except response 50-16,000 Hz.

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, lapel clip. Use for speech and tape recording. Does not include connector but does have "on-off" switch and 12-ft. cable. Black.

45 Cardioid Microphone

Model 515SA. Same except low impedance version.

1977 EDITION
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.

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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-reality 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 classical music.

The Stereo Review Binaural Demonstration Record is the ultimate in sound reproduction. It has been made without compromise. $5.98


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Outsider U.S.A. RECORDS AND CASSETTES ARE $8 EACH Mail orders to: RECORDS, CONSUMER SERVICE DIVISION, 595 BROADWAY, NEW YORK, N.Y. 10012.
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, 3.5-mil tape was 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 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 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 “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 so 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 dust, and preserve their grooves against damage and wear. Other accessories include speaker and headphone 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-in tape that cleans heads. In lots of six, comes with free optional storage album.

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</tr>
</thead>
<tbody>
<tr>
<td>C-60</td>
<td>60</td>
<td>$3.39</td>
</tr>
<tr>
<td>C-90</td>
<td>90</td>
<td>$4.99</td>
</tr>
<tr>
<td>C-120</td>
<td>120</td>
<td>$6.49</td>
</tr>
</tbody>
</table>

**AmpeX**

364 Series 20/20+ Cassettes

<table>
<thead>
<tr>
<th>Model</th>
<th>Min.</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>364-C45 45</td>
<td>45</td>
<td>$3.89</td>
</tr>
<tr>
<td>364-C60 60</td>
<td>60</td>
<td>$3.39</td>
</tr>
<tr>
<td>364-C90 90</td>
<td>90</td>
<td>$4.99</td>
</tr>
<tr>
<td>364-C120 120</td>
<td>120</td>
<td>$6.49</td>
</tr>
</tbody>
</table>

1977 Edition

363 Series Chromium-Dioxide Cassettes

<table>
<thead>
<tr>
<th>Model</th>
<th>Min.</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>363-C60 60</td>
<td>60</td>
<td>$3.39</td>
</tr>
<tr>
<td>363-C90 90</td>
<td>90</td>
<td>$4.99</td>
</tr>
</tbody>
</table>

370 Series Cassettes

Low-noise/high-output type.

<table>
<thead>
<tr>
<th>Model</th>
<th>Min.</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>370-C45 45</td>
<td>45</td>
<td>$1.79</td>
</tr>
<tr>
<td>370-C60 60</td>
<td>60</td>
<td>$1.89</td>
</tr>
<tr>
<td>370-C90 90</td>
<td>90</td>
<td>$2.89</td>
</tr>
<tr>
<td>370-C120 120</td>
<td>120</td>
<td>$3.99</td>
</tr>
</tbody>
</table>

350 Series “Super” Cassettes

<table>
<thead>
<tr>
<th>Model</th>
<th>Min.</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>350-C45 45</td>
<td>45</td>
<td>$1.09</td>
</tr>
<tr>
<td>350-C60 60</td>
<td>60</td>
<td>$1.29</td>
</tr>
<tr>
<td>350-C90 90</td>
<td>90</td>
<td>$1.89</td>
</tr>
<tr>
<td>350-C120 120</td>
<td>120</td>
<td>$2.99</td>
</tr>
</tbody>
</table>

371 Plus Series Cassettes

Extended low-noise/high-output type.

<table>
<thead>
<tr>
<th>Model</th>
<th>Min.</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>371-C45 45</td>
<td>45</td>
<td>$2.19</td>
</tr>
<tr>
<td>371-C60 60</td>
<td>60</td>
<td>$2.49</td>
</tr>
<tr>
<td>371-C90 90</td>
<td>90</td>
<td>$3.59</td>
</tr>
<tr>
<td>371-C120 120</td>
<td>120</td>
<td>$4.99</td>
</tr>
</tbody>
</table>

381 Series 8-Track Cartridges

<table>
<thead>
<tr>
<th>Model</th>
<th>Min.</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>381-42E 42</td>
<td>42</td>
<td>$2.49</td>
</tr>
<tr>
<td>381-84E 84</td>
<td>84</td>
<td>$2.99</td>
</tr>
</tbody>
</table>

382 Plus Series Cartridges

Extended low-noise/high-output type.

<table>
<thead>
<tr>
<th>Model</th>
<th>Min.</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>382-45 45</td>
<td>45</td>
<td>$2.79</td>
</tr>
<tr>
<td>382-90 90</td>
<td>90</td>
<td>$3.29</td>
</tr>
</tbody>
</table>

398 Series 20/20+ Cartridges

<table>
<thead>
<tr>
<th>Model</th>
<th>Min.</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>398-45E 45</td>
<td>45</td>
<td>$3.29</td>
</tr>
<tr>
<td>398-90E 90</td>
<td>90</td>
<td>$3.89</td>
</tr>
</tbody>
</table>

20/20+ Series Open-Reel Tapes

Backcoated professional recording tape.

<table>
<thead>
<tr>
<th>Model</th>
<th>Min.</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>372-15 1200 ft</td>
<td>7&quot; reel</td>
<td>$7.49</td>
</tr>
<tr>
<td>373-15 1800 ft</td>
<td>7&quot; reel</td>
<td>$9.39</td>
</tr>
<tr>
<td>373-16 3600 ft</td>
<td>10½&quot; NAB reel</td>
<td>$25.39</td>
</tr>
</tbody>
</table>

Plus Series Open-Reel Tapes

Extended low-noise/high-output type.

<table>
<thead>
<tr>
<th>Model</th>
<th>Min.</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>332-15111 1200 ft</td>
<td>7&quot; reel</td>
<td>$5.69</td>
</tr>
<tr>
<td>342-15111 1800 ft</td>
<td>7&quot; reel</td>
<td>$7.49</td>
</tr>
</tbody>
</table>

PRT Series Open-Reel Tapes

High-frequency polyester.

<table>
<thead>
<tr>
<th>Model</th>
<th>Min.</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>331-13 600 ft</td>
<td>5&quot; reel</td>
<td>$2.89</td>
</tr>
<tr>
<td>341-13 900 ft</td>
<td>5&quot; reel</td>
<td>$3.89</td>
</tr>
<tr>
<td>331-15 1200 ft</td>
<td>7&quot; reel</td>
<td>$4.29</td>
</tr>
<tr>
<td>341-15 1800 ft</td>
<td>7&quot; reel</td>
<td>$6.59</td>
</tr>
<tr>
<td>351-15 2400 ft</td>
<td>7&quot; reel</td>
<td>$10.69</td>
</tr>
<tr>
<td>361-15 3600 ft</td>
<td>7&quot; reel</td>
<td>$11.59</td>
</tr>
</tbody>
</table>

Demagnetizer/Head Cleaner

E3220BL. For cassette players/recorders...
### Professional Series Reel-to-Reel
- 7" x 1800 ft $9.99
- 10 1/2" x 3600 ft $22.99

### Studio Series Cassettes
- 7" x 1800 ft $9.99
- 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
- 45 min $1.99
- 60 min $2.29
- 90 min $3.39
- 120 min $4.59

### Performance Series Cassettes
- 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

### 8-Track Tapes with "ConvertaQuad"
- 2CB-800040, 40 min $1.99
- 2CB-800060, 60 min $2.25
- 2CB-800090, 90 min $2.49
- 2CB-800120, 120 min $4.49
- 2CB-8000HC, Head cleaner $1.49

### COLUMBIA

#### Cassette Tapes
C-60-FL, 60 min/side $2.70
C-90-FL, 90 min/side $2.77
C-30, Three pack $3.38
C-60, Three pack $3.38
Cassette head cleaner $1.09
Cassette saver $2.19

#### 8-Track Tapes with "ConvertaQuad"
- 4CB-80412, 7" x 1200 ft, 1.5-mil polyester $2.24
- 4CB-80418, 7" x 1800 ft, 1.0-mil polyester $2.49
- 4CB-80424, 7" x 2400 ft, 0.5-mil polyester $4.49
- 4CB-80436, 7" x 3600 ft, 0.5-mil polyester $8.99

### FUJI

#### Chromium-Dioxide Cassettes
- C60-FC $3.90
- 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
- 8T45 $3.20
- 8T90 $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 changer. 1200-ft, 7" reel $8.50
1800-ft, 7" reel $11.00
3600-ft, 10" 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, 1/16-mil, polyester base, 1/4" $3.55
- 231-151, 1200 ft, 7" reel $5.90
- Extra-length, 1-mil, polyester base, 1/4" $3.95
- 241-151, 1800 ft, 7" reel $6.75
- 241-151, 1500 ft, 10 1/2" NAB aluminum reel $22.00
- 251-151, 2400 ft, 7" reel $8.90
- 0.5-mil, polyester tensilized base, 1/4" $10.95

### 270 Series Tape
Low-noise, high-output, back coated. 275-151, 1200 ft, 7" reel $8.25
275-151, 2500 ft, 10 1/2" NAB aluminum reel $13.60
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

### STEREO DIRECTORY & BUYING GUIDE
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.
Low-Noise Cassettes

- Low-Noise Cassettes (Normal Bias)
- Ultra-Dynamic 8-Track (High Bias)

Non-chrome, high-bias tape.

**UDXL Epitaxial Cassettes**

Packaged in poly box.

- Low-noise cassettes designed specifically for youth market.

**Fliptape Cassettes**

Packaged in Philips box.

**8-Track Cartridges**

Packaging: Fliptape, cartridge.

**Cassette Head Cleaner**

- Automatic head cleaner

**8-Track Low-Noise Cartridges**

<table>
<thead>
<tr>
<th>Model</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>8T-40</td>
<td>$2.25</td>
</tr>
<tr>
<td>8T-35</td>
<td>$2.98</td>
</tr>
<tr>
<td>8T-45</td>
<td>$3.98</td>
</tr>
<tr>
<td>8T-50</td>
<td>$4.79</td>
</tr>
</tbody>
</table>

**Criterion XHE Reel-to-Reel Tapes**

- Wide dynamic range with high-frequency response of 30-20,000 Hz. Gamma ferric oxide formulation. Hard, clear plastic storage box.

<table>
<thead>
<tr>
<th>Model</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>FL120</td>
<td>$21.49</td>
</tr>
<tr>
<td>FL90</td>
<td>$16.49</td>
</tr>
<tr>
<td>FL60</td>
<td>$12.35</td>
</tr>
<tr>
<td>FL45</td>
<td>$9.60</td>
</tr>
</tbody>
</table>

**Criterion XHE Series Cassettes**

8-Track Low-Noise Cartridges

- Standard play. 1.5-mil polyester.
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 7½ ips; 7” reel
2 hrs (2400’) at 7½ ips, 10½” reel  $13.60

No. 207. Polyester base, “Posi-Trak” backing, leader, and trailer, 1-mil 90 min at 7½ ips; 7” reel
3 hrs (3600’) at 7½ ips, 10½” reel  $19.10

Low-Noise/Dynarange
Provides high-fidelity recording even at 3½ ips. Multi-purpose tape providing full dynamic range throughout audible spectrum. S/N is 4 to 6 dB better than standard tapes.

No. 211. Polyester backing, white yellow trailers. 1.5-mil. 30 min at 7½ ips (5” reel); 60 min (7” reel)
30 min  $3.75
60 min  $5.60
2 hrs (2400’) at 7½ ips, 10½” reel  $10.75

No. 212. 1.0-mil. 45 min at 7½ ips (5” reel); 90 min (7” reel)
30 min  $4.35
90 min (7” reel)  $7.50
3 hrs (3600’) at 7½ ips, 10½” reel  $13.20

No. 213. 0.5-mil tensilized. 120 min at 7½ ips (7” reel)
45 min  $11.25
90 min (7” reel)  $23.50
3 hrs (3600’) at 7½ ips, 10½” reel  $45.00

No. 214. 0.5-mil tensilized. 90 min at 7½ ips (5” reel); 180 min (7” reel)
45 min  $7.50
90 min (7” reel)  $15.00

Highlander/Low-Noise
For all-purpose cassette use. Polyester base.

No. 228. 1-5 mil. 60 min at 7½ ips (7” reel)
45 min  $5.00

No. 229. 1-mil. 90 min at 7½ ips (7” reel)
45 min  $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.
“Classic” 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.
BTR-45 45 min $4.35
BTR-90 90 min $5.00

8-Track Cartridges
Features low-noise oxide coating on heavy-duty lubricated polyester backing. High-Output/No-Noise Full 2-db increase in output over premium tapes. Captures full balanced sound.
BTR-45HOLN 45 min $3.75
BTR-90HOLN 90 min $4.35
Low-Noise/Dynarange All-purpose cartridge BTR-45 45 min $3.10
BTR-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 manually winding cassette tape; six polyester tapes. Captures full balanced sound. Unusual split design allows entire length of tape to be viewed at once. Detailed instruction booklet.
Pre-Cut Tabs SPT-732-36. 36 pre-cut 1.01-mil polyester splicing tabs $1.25
SST-732-18. 18 pre-cut aluminized sensing tabs $1.25

Head Cleaners
S-3HC. Cassette head cleaner $1.85
S-8THC. 8-track head cleaner $3.00

“Classic” Tape Indexing System
1" x 8" x 8"; 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 1/2" 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 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 3.31 min/side $1.69
C-90 Plus 4.42 min/side $2.49
C-120 Plus 5.51 min/side $3.69

Ultra-High-Fidelity Cassette Tape
UHFC-60 Plus 2.31 min/side $2.69
UHFC-90 Plus 3.46 min/side $3.79
UHFC-120 Plus 5.61 min/side $4.99

Chromium-Dioxide Cassette
CRO-60 60 min $3.49
CRO-90 90 min $4.29

Ferri-Chrome Cassettes
FeC-60 Plus 3.61 min/side $3.99
FeC-90 Plus 5.42 min/side $4.99
FeC-120 Plus 8.11 min/side $6.99

8-Track Cartridges
BT-40 Plus 2.21 min/side $3.45
BT-60 Plus 3.31 min/side $3.99
BT-80 Plus 4.41 min/side $4.49

Ferri-Chrome Recording Tape
FeC-11. 3600 3600 ft $39.95

SOUNDCAST

Cassette Tapes
2SR-801 80 min $0.99
2SR-801A 80 min $0.99
2SR-801B 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
BTR-8030 30 min $1.69
BTR-803080 80 min $1.99
BTR-8030HC Head cleaner $1.39

Open-Reel Tapes
4SR-805 36. 7" x 3600 ft $4.99
4SR-80524. 7" x 2400 ft $3.99
4SR-80512. 7" x 1200 ft $2.99
8SR-80380. 80 min $4.29
8SR-80340. 40 min $3.79
8SR-80130. 30 min $1.25
8SR-80140. 40 min $3.79
8SR-80180. 80 min $4.79
8T-60 Plus 2.31 min/side $3.75
8T-90 Plus 3.45 min/side $4.79
FeCr-60 Plus 2.31 min/side $3.79
FeCr-90 Plus 4.42 min/side $4.79
FeCr-120 Plus 8.11 min/side $6.99

“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
L1800. 1800 ft, 7" reel $5.99
L3600P. Plastic reel $15.49
L3600M. 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" NAB metal reel $22.95

S Open-Reel Tape
Open-reel tape with reproduction characteristics of SD cassettes.
S-1200. 1200 ft, 7" reel $4.99
S-1800. 1800 ft, 7" reel $5.99
S-3600P. Plastic reel $13.99
S-3600M. Metal reel $17.49

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 ½" platform; 4-Hz resonance in both horizontal & vertical planes; said to improve isolation 20-40 dB, 16" x 3½" $15.00
19" x 13½" $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. 5¾" x 2¼" x 1" D $34.95

ALL-TEST

ATD-25 Phono Preamplifier
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.

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 1/2" 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 1800 ft, 7" reel $7.99
SLH-180-36. 3600 ft, 10 1/2" reel $22.95

SONY from SUPERSCOPE
Professional Recording Tape
Extra-heavy-formula Oxi-coat homogenized oxide coating; polyester back, "lubri-cushion" impregnated lubricant.
PR-150-3. 300 ft, 3 1/2" 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 1800 ft, 7" reel $7.99
SLH-180-36. 3600 ft, 10 1/2" reel $22.95

SONY from SUPERSCOPE
Professional Recording Tape
Extra-heavy-formula Oxi-coat homogenized oxide coating; polyester back, "lubri-cushion" impregnated lubricant.
PR-150-3. 300 ft, 3 1/2" 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 1800 ft, 7" reel $7.99
SLH-180-36. 3600 ft, 10 1/2" reel $22.95
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 brush 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 (AT606), and instructions. $5.95
AT6008. Similar to AT6010 except cleaner rotates on moving record; comes with holder, cleaning brush, applicator, fluid (AT608)... $9.95
AT606. Anti-static record-cleaning fluid... $1.95

**AT610 Cable Set**
Low-resistance cables for connecting turntable and CD-4 demodulator or amplifier; 4-ft shielded cable with molded pair phone plugs; each end, total capacitance 52 pF. Only one set needed per turntable... $6.95

**AUDIOTEK**
The company carries a complete line of tape accessories for use with open-reel, cassette, and VTR 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. "Blow-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 cleaner, 2-oz bottle... $1.25
30-636. Tape player care kit contains cleaner and head lubricant, two 6" brushes, 10 plastic pucks 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

**DISCWERSHER**

**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, silver-plated mirror magnifies stylus and cartridge for examination; cleaning & magnifying system retracts into walnut handle... $6.00

**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**

**DAS 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
0A7. 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 1/4" audio tape... $4.50

**KS-2 Editing Kit**
For 1/2" tape, includes a 4" x 4" x 1/2" 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 1/4" x 1" x 7/8")... $14.00

**ELECTROMEDIA DESIGN**

**Central One Switch**
Signal-activated control center for hi-fi component systems; shuts down system ten minutes after signal is lost, less than ten min-
Accessories

12

utes and time-constant is automatically reset; front-panel "on" switch turns system on; "off" switch can shut-off entire system; switching relay contact rating 550 V; can handle 1000 W systems. Matte black and walnut enclosure with satin aluminum panel. 12 3/4" W x 4 3/4" D x 2 3/4" 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 1/2 V. Gain is unity. Maximum input 4 V rms. Response 20-20,000 Hz ±1 dB. 2 3/4" x 8" x 7 1/2" D. ... $59.00

FERROGRAPH

RTS-2 Recorder Test Set
Will test wow & flutter, frequency response, (S + N)/N ratio, gain, distortion, crosstalk, ear- sure, input sensitivity, output power, and drift. Input required 35 mV to 5 V. Has output for oscilloscope. 17 3/4" x 10" x 5 3/4" H. ... $130.00

FIDELITONE

Fidelistat #3044
Plush record cleaner designed to reduce static and remove grit from records. $3.99

Disc Jockey #3045
Attaches to turntable; soft bristle brush removes dust; plush pad sweeps away dust, supplied with anti-static fluid. $5.99

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, inde- pendently 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 3/4" H x 18 3/4" W x 13 3/4" 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-electrostatic dipole design; high gain and (S + N)/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-52 coaxial cable and 300 ohm/75 ohm matching transformer); gold aloided aircraft aluminum construction.

LPL-FM10. Ten cell system for far fringe reception. Gain 9.9 dB ±0.6 dB; full-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". $62.16

LPL-FM8A. Eight cell system for fringe reception. Gain 8.7 dB; half-power beamwidth 46 degrees; v.s.w.r. median 1.6:1; front-to-back ratio median 18 dB; turning radius 72". $50.40

LPL-FM6A. Six cell system for near fringe reception. Gain 8.3 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". $48.85

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 1/2 dia.; comes with power supply, 10-ft coax, mounting hardware; can be installed in attic or on shelf, wall, or eaves. Optional outdoor mounting kit with 75-ft coax. ... $25.65

JVC

4DD-5 4-Channel Demodulator
Designed to be used with the CD-4 four-channel system. 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 1/2 dia.; comes with power supply, 10-ft coax, mounting hardware; can be installed in attic or on shelf, wall, or eaves. Optional outdoor mounting kit with 75-ft coax. ... $6.60

KIRSCHE

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 1/2" H. ... $129.95

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

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, phone jacks. 5 3/4" W x 4 1/2" D x 2 1/4" 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. 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 ±4% of an octave in ⅛ 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.
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 dBF! — of its isolation. The better your system, the more you may need Acousti-Mount.

Alternatively, you may have decided that the Interacoustics system is too elaborate for your needs. Netronics has simplified the Interacoustics design for small systems: the Acousti-Mount. This small platform is ideally suited for use with compact turntables, platters, and recording heads. The Acousti-Mount is 1” high and 7” square. The lower section of the Mount contains a two-fingered ear to support the turntable. The upper section contains a two-fingered mouth to support the platter. This design allows large, low-frequency forces to be transmitted to the floor even when the platter is empty. The platter is connected to the ear of the Mount by means of a resilient rubber hose and an adjustable spring. The spring is utilized to delay the response of the Mount to the platter, thus reducing feedback! The mount is designed to be used between the turntable and the platter. The platter is allowed to move independently of the Mount. The Acousti-Mount is available in two versions: a 4” x 4” x 1” Mount for use with a 9” turntable, and a 6” x 6” x 1” Mount for use with a 12” turntable. The Mount is available in two versions: a 4” x 4” x 1” Mount for use with a 9” turntable, and a 6” x 6” x 1” Mount for use with a 12” turntable.

MURAV

Muraadapet

Converts cassette into 8-track cartridge; cassette loads directly into unit, which then function as regular 8-track cartridge; includes fast-forward, reverse, and automatic "off".

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 dBF! — of its isolation. The better your system, the more you may need Acousti-Mount.

Julian Hare’s test report: “We doubt that any other $15 investment could make such an improvement in a record-playing system.”

Netronics R&D Ltd. Route 6, Bethel, Conn. 06893

CIRCLE NO. 52 ON READER SERVICE CARD

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 1/4” H x 9 1/4” W x 11 1/2” D.

NAKAMICHI

Head Demagnetizer

Slim-line, easy-to-use recorder head demagnetizer, specially designed for the company’s cassette decks.

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 µm gap spacer. For use with vacuum-tube or transistor circuits. No-mount type $111.20 #5602. Low imp., 90 mH, 100 µm gap spacer. For use with vacuum-tube or transistor circuits. No-mount type $111.20 #5603. Medium imp., 370 mH, 100 µm 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

PECETIME 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 9½” 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 replaceable after 1000 hours. Mounts on turntable under tonearm. 2½” 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 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
**Accessories**

- 12 faders: 15.1" W x 5.11" H x 10.3/8" D, $290.00

**SF-050 Electronic Crossover**

Provides ten crossover points (6 dB, 12 dB, 18 dB/octave), three channels (low, mid, high), input impedance 100,000 ohms (1 kHz), output impedance 1000 ohms; HD less than 0.2% at 1 kHz. 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

**SR-202W Reverberation Amp**

Double-scatter system blends direct signals from source with reverb effect. Reverb time 0.2-2.5 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-dying anti-static cleaning solution, needle brush in cleaning solution, super-soft nylon-pile cleaning roller...$13.99

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**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 4.2" H x 5.8" D...$249.95

**Sp. 1. Similar to QT-1 but two channel...**

**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 recorder or amplifier. Record or play any or all, at the same time, in any combination. Use for tape duplicating, editing, mixing, program production. 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...**

**MP-2 Speaker/Amplifier Control Center**

Feeds either of two amplifiers to up to four speakers with or without overloaded amplifier output stage. Separate constant-impedance L-pad for each set of speakers. Allows 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 impedance 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...**

**Sansui**

OSD-1 4-Ch Decoder/Synthesizer

Features three separate QS "Varo-Matrix" decoders; 20 dB separation between adjacent channels, 30 dB across diagonally opposite channels; QS synthesizer for deriving 4-channel 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 3/4" H x 12" D...$380.00

**QSD-2 Varo-Matrix Decoder**

Decoder/synthesizer adapter, permits any 4-channel receiver/amplifier to be used for Type AQS 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...$429.95
**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 (at 1000 Hz); input/output jacks; tape recording A & B, tape playback A & B; load imp. 110,000 ohms; simulated walnut-grain enclosure; 11¾"W x 10¼" D x 6¾" H

**Price:** $181.20

**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; S/N 65 dB at 300-mV output; reverb time 1.9-3.2 sec; adds echo effects during reverb. Frequency response: flat ±2 dB (20-20,000 Hz); phono ±2 dB of Standard RIAA curve, 40-15,000 Hz; tape ±2 dB at 50-15,000 Hz; Channel separation 50 dB or better at 1000 Hz. 5¾"W x 4½" D x 2½"H

**Price:** $150.00

**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 input-impedance. Frequency response: flat ±2 dB (30-20,000 Hz)

**Price:** $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.

**Price:** $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.

**Price:** $136.80

**M64 Stereophone-Cardioid Preamp**

Stereo preamp provides the voltage gain and equalization for stereo magnetic phonograph cartridges, and tape playback heads with audio amplifiers that have no equalization; may also be used without equalization for microphones or as a buffer amplifier. Slide switch for phone 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 at 50-15,000 Hz; Channel separation 50 dB or better at 1000 Hz. 5¾"W x 4½" D x 2½"H

**Price:** $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 0.8 ohms, 100 mV. 10¼"x 3¾" D x 3½" H

**Price:** $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 on lever arm; angled mirror helps see when balance is achieved.

**Price:** $7.55

**SONY**

**SFD2010 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 layer or demodulator or other high-level discrete sources; provides 4-channel effect even when playing stereo programs. 5¼"W x 15¾"H x 12¼"D

**Price:** $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/phone in 3 & 4; -20 dB mic attenuator (ea. ch.); two VU meters; stereo headphone jack; pan pot (chan-
60,61
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Electro-Voice, Inc.

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District Sound, Inc.

400 -Hz oscillator for input/output balancing. Connects either at speaker terminals or outputs of any preamp. $279.95

tracks, phase relationships. Connects either at speaker terminals or outputs of any preamp. $350.00

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 1/2" H X 13 1/4" W X 10 1/4" D.. $139.95

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

SH-3433 4-Channel Audio Scope
3-inch screen to view all 4-channel signal levels & phase relationships. Connects either at speaker terminals or outputs of any preamp. $129.95

TRACKER

Company carries a complete line of record and recorder care accessories.

LE-2006B. Gift pack containing LE-2008B record care brush; 8 oz. bottle record care solution; packed in cedar chest $19.95

LE-2008B. Record care brush with built-in fluid reservoir, spray applicator, rosewood, inlaid handle $14.95

Replacement brush insert $5.95

PRC-1. Professional record care kit containing 8 oz. bottle record care solution, pump spray applicator, "Preener" record brush, self-stand- ing storage case $12.95

RF-1. 8-oz. refill bottle record care solution $6.95

CRC-5. Record cleaner solution made along traditional water based lines for use in cleaning old classic records. Contains 2 1/2 oz. fluid; record preener brush; dust-proof case. $7.95

CRF-2. 8-oz. refill bottle of CRC-2 record fluid. $6.50

HG-1. Tape recorder care kit containing head cleaning solution; rubber renewing solution; 5" swabs; chassis wiping cloth; dust-proof case $5.95

WATTS, C. E.

Dust Bug Record Cleaner
An easy-mounting record cleaner which tracks over the grooves. Supplied with anti-static agent. $7.95

Record Care Equipment

PR Disc Preener $5.95
PA-MK4 Hi Fi (Paragon) $16.50
PA-MK11A Manual Parastat $19.95
NF Anti-Static Formula Fluid $3.00

Buy with confidence

THERE IS A DIFFERENCE IN MAIL ORDER. IT'S CALLED EXPERIENCE! WE HAVE 28 YEARS!
Marantz Stereo Cassette Decks...

3-1/2-inch professional VU meters with peak LED overload and lighted function indicators. Exceptionally large, readable VU panel features special Light Emitting Diodes that illuminate when recorder is overdriven by a high level signal. Illuminated function indicators tell you at a glance which function is in operation.

Marantz 5420 Top Loading Deck with Dolby
(The enclosures for these units are constructed of plywood, finished in real walnut veneer.)
the decks that live up to their name.

Built-in Dolby\textsuperscript{*} System that works with built-in mixing console; also permits external Dolby processing on other tape recorders. Instantly switches for external Dolby encoding on reel-to-reel decks. Has 25 microsecond de-emphasis switch for FM Dolby. Works in conjunction with built-in mixer for Dolbyizing multiple input sources.

One button each for Normal, Cr02 and FeCr tapes automatically selects both bias and EQ. Eliminates confusing combination adjustments of separate bias and EQ switches. Single control calibrates both bias and EQ automatically for best frequency response on any cassette tape.

Full 4-Input mixing console with pan pot and master gain control. Four inputs—any combination of mic and line—are operated by four individual slide potentiometers plus one master gain control for fade-in/fade-out. Two pan pot controls permit inputs 3 and 4 to be assigned to either left, center or right stage. Can operate as a separate mixing panel for master-quality recordings with external tape recorders.

Built-in adjustable stand that changes the angle of the control panel from flat to 20 degrees. Angles top loading decks for most suitable viewing and operation.

Marantz cassette decks have arrived. Performance and sophistication that surpasses every other deck on the market. Quality and technical excellence equalled only by Marantz receivers, components and speaker systems.

Top loading. Front loading. With Dolby. Without Dolby.\textsuperscript{*} The Marantz cassette deck line lets you select a model that exactly suits your needs. Five decks in all, with design features as exciting as their performance.

The Marantz 5420 top loading deck with Dolby for example, keeps wow and flutter down to 0.07%. Plus, it offers a wide frequency response (30 Hz to 17 kHz) and an exceptionally high signal-to-noise ratio (up to 60 dB). Other outstanding features include long-life ferrite heads, sophisticated DC servo drive systems with total shut-off and memory tape counters.

See the complete Marantz line at your local Marantz dealer. Send for a free catalog.
One Clean Investment Saves Many

Playing dirty records—even if they look clean—can permanently ruin your large investment.
So make a single, clean investment.
Discwasher, the Superior Record Cleaner, available worldwide.