



loudspeaker manual

IMPORTANT INFORMATION
DO NOT DISCARD



Acoustic Research

A TELEDYNE COMPANY

Loudspeaker manual

Before attempting to connect your AR loudspeaker systems, please take the time to read this brief informative brochure which we have prepared for your guidance. It is intended to help you get maximum results from your listening systems.

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CONNECTING THE LOUDSPEAKERS TO THE AMPLIFIER OR RECEIVER

When connecting the loudspeakers for a stereo system, the polarity of both speakers must be the same; that is, the "0" terminal of each channel of the amplifier should be connected to terminal 1 of both the left and right speakers, and the "hot" amplifier terminal should be connected to terminal 2 of both left and right speakers respectively. The use of color-coded wire will simplify this job. Ordinary flexible household wire (No. 18 gauge) is heavy enough for short runs up to fifty feet; however, for greater distances between amplifier and loudspeaker, heavy duty flexible wire is preferred (at least No. 16 gauge). *Take care to trim any loose strands of wire which might bridge the terminals of the amplifier or the loudspeaker since they represent a short-circuit and could damage the amplifier in use.*

PLACEMENT OF LOUDSPEAKERS

The AR acoustic suspension loudspeakers have been designed to be mounted close to a wall at a convenient distance above the floor. In a stereo system both speakers should ideally be at the same height and spaced at least 6 feet apart. The speakers may be mounted either vertically or horizontally. One of the most convenient methods of mounting the loudspeaker systems is to place them on book shelves. In the package are felt pads with pressure adhesive to attach to the bottom surface of the loudspeaker cabinet to prevent scratching when mounting on a shelf.

Another convenient and effective mounting method is to hang the loudspeakers on the wall with strap-type hangers. These flat strap hangers are available from hardware and art supply shops. Care should be taken to select hangers which are sufficiently large to carry the weight of the loudspeakers; the weight for your particular model loudspeaker is indicated in the enclosed specification chart.

TWEETER CONTROL

Your AR loudspeaker system has been equipped with a high frequency control to permit you to make allowances for the variations in the mid and high frequency absorption characteristics of the listening room. As a rule of thumb a room with few drapes and hard, uncarpeted floors will require less high frequency energy than one which is heavily draped and carpeted. For the low-absorption room the tweeter control would most likely be set to "decrease", while a heavily carpeted room having high absorption would require the "normal" or "increase" position.

Note: The AR-7 uses slightly different nomenclature. Use "Normal" for average conditions, "Flat" where more high frequency output is desired.

RECOMMENDED AMPLIFIER POWER

The AR Comparative Speaker Chart contained in this brochure has a recommended list of power amplifier requirements. While these requirements are for average program material, there are certain types of program material which will require greater amplifier capability. The values stated in the chart should be considered the minimum power requirement.

POWER HANDLING ABILITY AND FUSING INFORMATION FOR AR SPEAKER SYSTEMS

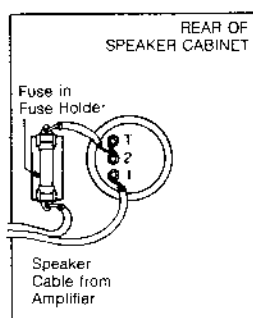
All AR systems can handle easily the output of any amplifier rated at 100 watts per channel or less on conventional music or speech input material. For such use there is no need to fuse the speaker system.

There are abnormal conditions under which your speakers may receive more average power than they can tolerate.

1. If the system is subjected to frequency response testing.
2. If the system is connected to a defective amplifier.
3. If the system is connected to the kind of tape machine which generates large amounts of ultrasonic power when shuttling tape in the "fast forward" or "rewind" modes.
4. If you try to use the system at "discotheque sound levels". Because such sound levels are 100 to 1,000 times greater in average power than symphonic music, an attempt to reproduce these sound levels can destroy high-fidelity speakers as well as damage your hearing. Special speakers designed for maximum output, NOT FIDELITY, are required to generate these sounds and reproduce them at the original intensity.

If you wish to protect the speaker system from thermal overload due to such abnormal inputs, the most appropriate type of fuses for the AR-2x, AR-2ax, AR-4x, AR-4xa, AR-6, AR-7 and AR-8 is Fusetron dual-element type FNM 6/10. For the AR-1x, AR-3, and AR-5, the most appropriate is Fusetron dual-element type FNM 8/10. For the AR-3a, the proper fuse is Fusetron dual-element type FNM 1¼. And for the AR/LST, FNM 3 fuses are recommended.

These fuses should be mounted in an open (not cartridge type) fuse holder, such as Fusetron type 4421, and connected in series with the leads from the amplifier (see sketch for typical hookup).



An AR/LST with the FNM 2 fuse will handle 180 watts input for 10 seconds, 64 watts for 30 seconds, and 23 watts long-term average, calculated on the basis of 4 ohms impedance. An AR-3a with the FNM 1¼ fuse will handle 67 watts input for 10 seconds; 22 watts input for 30 seconds; and 10 watts long-term average. An AR-5 with the FNM 8/10 fuse will handle 56 watts input for 10 seconds; 19 watts for 30 seconds; and 8 watts long-term average power. The other speaker systems with the recommended fuses will handle 29 watts input for 10 seconds; 11 watts for 30 seconds, and four to five watts long-term average power input. Any of these combinations is far more than adequate to reproduce, in a typical living room, live symphonic sound levels experienced in a typical concert hall.

This does not provide protection for very short-term peak inputs. It will not prevent damage to the woofer cone if the system is plugged into a wall outlet, for example. However, it will provide protection for the speaker for most other than normal power inputs.

These fuses and fuse blocks may not be available locally. If they are not, you may purchase them directly from us at our cost.

GUARANTEE

The workmanship and performance in normal use of this speaker is guaranteed for five years from the date of purchase. The guarantee covers parts, repair labor, and freight costs to and from our factory or nearest Authorized Repair Station. New packaging, if needed, is also free. There is no service charge, nor is anyone authorized to charge for in-guarantee service.

We would appreciate your returning the enclosed registration card within ten days of purchase date.

In Case of Difficulty Under no circumstances should you try to open the cabinet or remove the speakers. If a defect is suspected, the best way to ascertain whether the speaker is at fault (and not the amplifier, pickup cartridge, or some other part of the sound system) is to disconnect the wires from the speaker system and connect another speaker system, known to be operating properly, in its place. If the replacement speaker system sounds bad too, then both speakers are probably all right and the trouble is in some other component. If the replacement speaker system sounds good, then probably the first speaker is defective.

When you have established as best you can that a speaker system is defective, **WRITE TO US DIRECTLY**, describing the trouble symptoms and other information you think may be important. This may help us to suggest procedures which will prevent unnecessary inconvenience to you, and help us to expedite the repair.

At the same time:

1. Give us the serial number of the unit and state the symptoms clearly. This will help us to expedite the repair.
2. Let us know if you have kept all cardboard parts of the original shipping carton, or need a new one. AR speaker systems, which are very heavy for their size, must be shipped in cartons designed for them; otherwise, damage to the cabinet in shipment is possible.

WHAT TO DO IN CASE OF CONCEALED DAMAGE

Concealed damage is damage which does not become apparent until the carton has been opened. The contents of the carton may be damaged in transit due to rough or careless handling, even though the exterior appears undamaged.

This AR product was carefully inspected and packed, and left our factory in perfect condition. Any damage which occurred before it reached you must, in all probability, have been caused in transit. Responsibility for safe delivery was assumed by the carrier upon accepting the shipment. Any claims for damage must therefore be made by the receiver against the carrier.

IF THIS WAS DELIVERED BY A TRANSPORTATION COMPANY

Notify that company immediately, make a written request for an inspection, and hold the merchandise and its carton for the inspector. After a joint inspection report is made, file a claim with that company.

If the only damage is to the cabinet, you can save time and prevent needless complication by having the cabinet repaired locally, keeping the receipted bill as a basis for claim. If this is not possible, or if there has been functional damage as well, you may request an "Authorized Return" label from us, advising us of the circumstances. Upon receipt of the label, you should return the system to us *prepaid*, after packing it carefully. If you need a new carton, we will be glad to send one on request; the carton price is \$2.00. When we have made the repair, we will return the system to you collect, with an invoice for the repair charges. You may then use this invoice and the freight receipts as a basis for filing your claim.

IF THIS WAS PICKED UP FROM YOUR LOCAL DEALER

Notify the dealer immediately. He, in turn, should notify the transportation company who delivered it to him, request an inspection, and file a claim. Hold the merchandise and its carton for inspection.

	AR-7	AR-4xa	AR-6	AR-8	AR-2ax	AR-5	AR-3a
Size, height, width depth (inches)	15 $\frac{3}{4}$ x 9 $\frac{3}{4}$ x 6 $\frac{1}{4}$	10 x 19 x 9	12 x 19 $\frac{1}{2}$ x 7 $\frac{1}{2}$	13 $\frac{1}{2}$ x 24 x 11 $\frac{1}{2}$	13 $\frac{1}{2}$ x 24 x 11 $\frac{1}{2}$	13 $\frac{1}{2}$ x 24 x 11 $\frac{1}{2}$	14 x 25 x 11 $\frac{1}{2}$
Weight, pounds	11	18 $\frac{1}{2}$	20	32	36 $\frac{1}{2}$	39	53
Weight, kilograms	5	8.4	9.1	14.5	16.6	17.8	24
Recommended amplifier power (watts RMS/ channel)	15	15	20	15	20	20	25
Impedance	8	8	8	8	8	8	4
Speaker complement	woofer	8"	8"	10"	10"	10"	12"
	midrange	—	—	—	3 $\frac{1}{2}$ " cone	1 $\frac{1}{2}$ " dome	1 $\frac{1}{2}$ " dome
	tweeter	1 $\frac{1}{4}$ " cone	1 $\frac{1}{4}$ " cone	1 $\frac{1}{4}$ " cone	1 $\frac{1}{4}$ " cone	3 $\frac{1}{4}$ " dome	3 $\frac{1}{4}$ " dome
Crossover frequencies	2000	1600 Hz	1800 Hz	1800 Hz	1400 Hz 5000 Hz	550 Hz 5000 Hz	525 Hz 5000 Hz
Controls	High	High	High	High	High, Mid	High, Mid	High, Mid