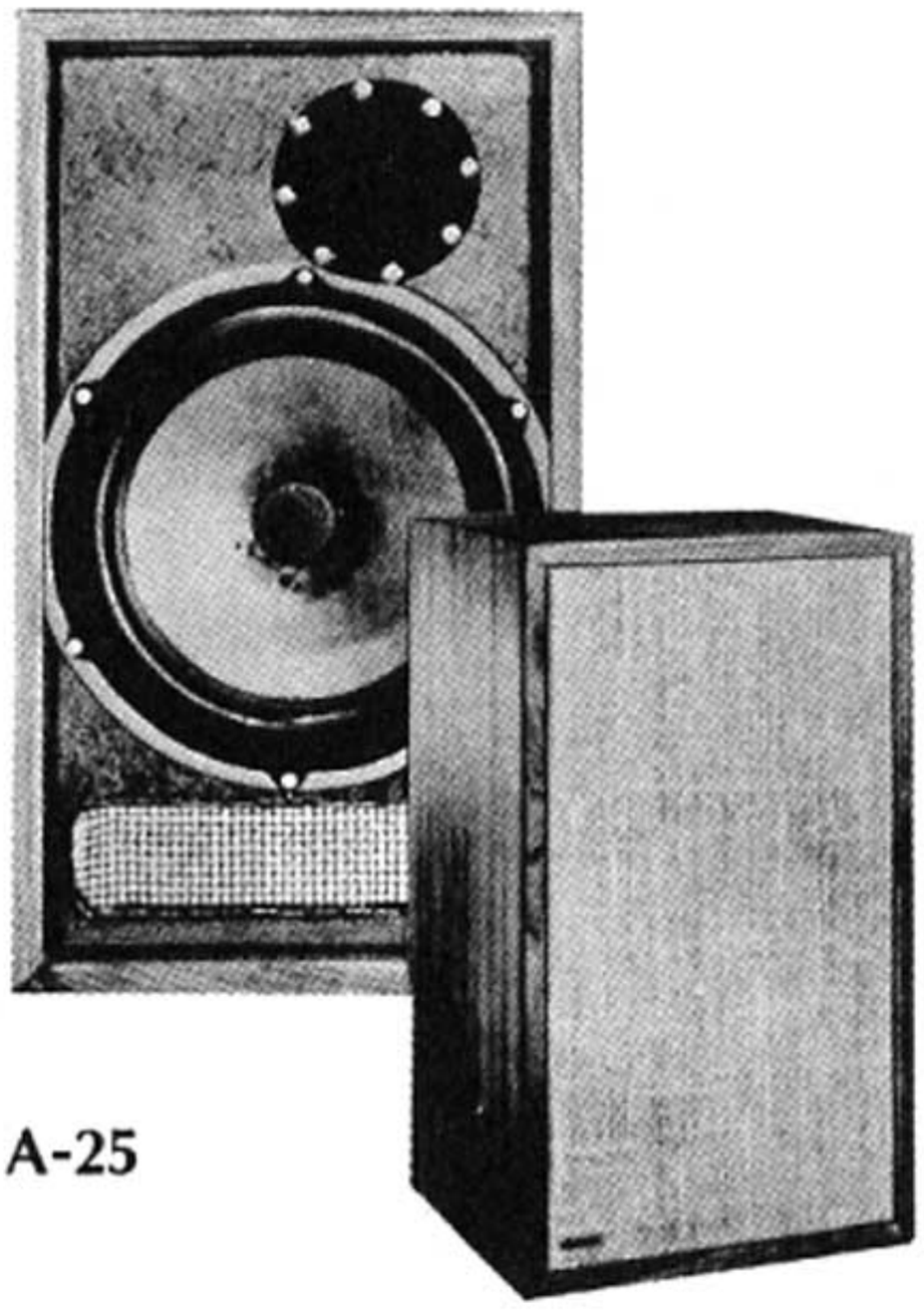


A-25

dynaco
APERIODIC LOUDSPEAKER SYSTEM

DESCRIPTION

The Dynaco A-25 *aperiodic* loudspeaker is a compact, high performance two way speaker system. A 10 inch extended excursion woofer is matched to a specially designed soft dome tweeter with a dual section high pass filter at 1500 Hz, in a cabinet design which achieves a uniquely non-resonant bass response.

The *aperiodic*, or non-resonant characteristic of the A-25 provides an unusually uniform impedance characteristic throughout the bass range of less than 2 to 1. This design utilizes an acoustic impedance system which provides variable volume action rather than the totally enclosed cabinet of the acoustic suspension principle or the tuned port of the bass reflex. The "Q" of the system is lowered through a high friction venting action, and the amplifier is now working into a more resistive—and more linear—load impedance. This enables higher power transfer with low distortion at low frequencies, and provides superior articulation or transient response in the bass range. This speaker does not exhibit the boomy or heavy bass of conventional compact loudspeakers which depend on resonance for extended lows, yet critical listening will confirm its truly impressive bass reproduction accuracy.

When measured in an anechoic chamber, the response of the A-25 drops only about 5 db at 50 Hz *even without the normal augmentation of response which a reflecting surface will add at low frequencies.* With normal room placement, response will be substantially uniform to below that frequency, with useful output at 30 Hz without doubling. At high frequencies, the dome tweeter gives smooth response beyond 15 kHz, and its excellent dispersion and high power handling capability contribute to its "big sound" and excellent stereo imaging.

Dynaco has designed the A-25 to take full advantage of the drive capabilities of both solid state and vacuum tube amplifiers. It may be used with amplifiers having continuous power ratings in excess of 60 watts RMS per channel, and yet it is efficient enough to be used effectively with amplifiers of more modest power, such as the Dynaco SCA-35 and Stereo 35. The A-25's nominal power rating for short duration sine wave signals is 35 watts.

INSPECT FOR CONCEALED DAMAGE

This loudspeaker system, including the wooden cabinet, was carefully tested and inspected before it was packed at the factory. If damage is evident, follow the recommendations at the end of these instructions. Any damage to the contents of an unopened carton as a result of rough handling in transit is the responsibility of the carrier. This may occur even though the outside of the carton appears intact. Therefore, any claims for damage must be placed immediately by the consignee against the carrier.

INSTALLATION

The most commonly used speaker connecting cable is #18 stranded two conductor lamp cord ("zip cord"). Do not use wire smaller than #18. If the speaker leads exceed 50 feet, it is recommended that heavier leads be used, such as #16 lamp cord, or #14 BWG cable.

The connecting terminals on the A-25 will accept standard "banana" plugs (including double ones with standard ¾" spacing), but it is easiest to wrap the lead around the terminal or to push the bared end through the hole in the side of the post, tightening it with the cap. Stranded wire should be twisted tightly before connecting it to the terminal so that loose ends do not touch the adjacent terminal. (It is a good idea to "tin" the twisted leads to avoid fraying, if a soldering iron is available.)

The nominal impedance of the A-25 is 8 ohms. Thus one wire is connected to the 8 ohm amplifier output terminal, and the other to the "common" or "ground" terminal.

Two A-25 speakers may be connected in parallel to the output of each channel of a transistorized amplifier without concern, because the speaker's impedance characteristic is very uniform, and remains substantially above its nominal value. If a tube amplifier provides a 4 ohm tap, this should be used for two speakers connected in parallel.

In stereo use it is necessary to have both speaker systems in phase. This means that the "sense" of the connections between corresponding terminals on the amplifier and speakers must be correctly maintained. Thus the red speaker terminal is normally connected to the 8 ohm or "hot" terminal on the amplifier, and the black speaker terminal is connected to the "common" or "ground" terminal on the amplifier. With lamp cord, phasing is easily maintained because one lead is coded, with a "tracer" thread wound around one of the wires under the insulation, or with a molded ridge on the outer insulation of one conductor, or with different color conductors.

To check the phasing, play a *mono* sound source, or set the amplifier controls to provide an A + B signal. If phasing is correct, the sound will be full bodied (more bass) and will appear to emanate from a point between the speakers. When moving back and forth between the speakers, you will find that the sound moves smoothly with you. Incorrect phasing will cause the sound to jump abruptly between the speakers as you move, and there will not be a well centered image when you are equidistant from the speakers. To change the phasing, only the connections between the amplifier and *one* of the two speakers should be interchanged.

In most rooms, the best placement for the speakers will usually be at ear level with respect to the listening position, against the wall, with the speakers separated by not more than 10 feet. Some listeners may prefer less bass output. This may be controlled by moving the speakers away from the wall. Those who favor heavier bass will prefer a location nearer the floor, or in a corner.

The high frequency level is raised or lowered by a screwdriver operated switch on the back panel. Each clockwise step is an increase of 3 db at 10 kHz. Choose the position that suits you. The center position is marked "Normal"

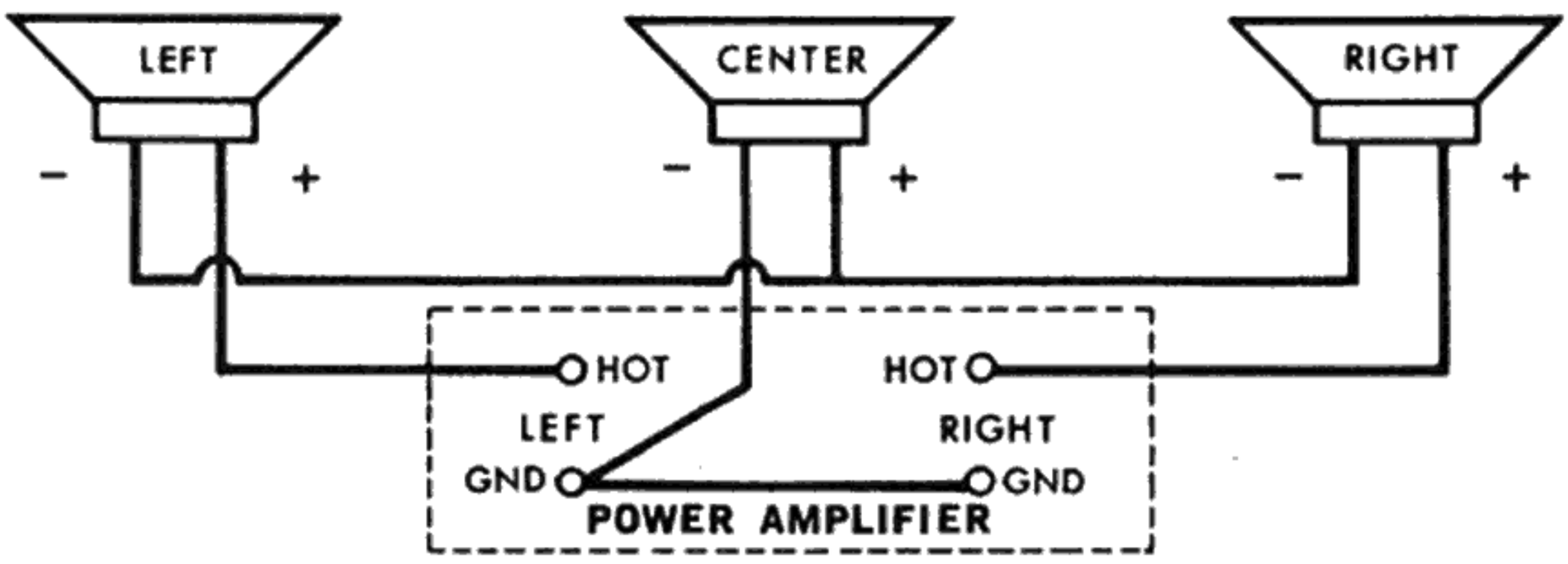
If you wish to hang the speaker flush on a wall, 2 brackets are provided which accept #6 round head screws (not supplied) projecting about ¼" from the wall, to engage keyhole slots. These brackets should be placed in the corners, over the depressions which accommodate the mounting screw heads. Self-adhesive felt feet are provided to protect adjacent surfaces. The Dynaco nameplate can be rotated if the speaker is placed horizontally.

Where the placement of two speakers in a normal stereo system will not yield accurate stereo imaging (as when the speakers are very widely separated), a third A-25 may be used for a center channel.

DYNACO CENTER CHANNEL SYSTEM FOR 3 SPEAKER STEREO

This method of deriving the center (third) channel of a stereo system is an exclusive Dynaco development which utilizes special circuitry in Dynaco PAS-3X and PAT-4 preamplifiers to provide the proper in-phase (A + B) signal without loss of stereo separation and without the need for an additional amplifier. It is useful where the left and right speakers must be widely separated, and it also enables the use of the third channel speaker as a monophonic system in another location.

It should be recognized, however, that a two channel system will have a wider apparent sound source than any system utilizing a center speaker in a derived third channel arrangement, if the spacing between the left and right channel speakers remains the same. In order to maintain equivalent spread of sound, somewhat greater spacing between the outside speakers is required in any 3 speaker system.



The connection of the 3 speakers is diagrammed above. The use of 3 *identical* speakers is essential to achieve the most natural sound throughout their range. In any event, all speakers must have the same efficiency, and the left and right speakers should be identical. Connection of dissimilar speakers will reduce separation and adversely affect spatial orientation. The individual high frequency level controls on the speakers should be set to your taste before the system is adjusted as described below. Be sure all speakers are correctly phased.

Adjusting the system is easy. Set the tone controls in their "flat" centered positions, switch off the loudness compensation and filter switches, and adjust the volume control for normal listening level. Switch the stereo-mono selector on the preamp to the 6 db blend position. Now use a *monophonic* source so that identical signals will be fed to both channels, and temporarily remove one of the wires (either one) to the center speaker. Adjust the balance control on the preamp for *minimum* sound output. If necessary, the balance control knob can be recentered so that the upright pointer indicates the position of precise balance. Then reconnect the speaker wire.

Now all program material, both stereo and mono, can be played with the preamp in the 6 db blend mode, and generally without any need to readjust the balance control. Monophonic programs will appear predominantly in the center speaker. Stereo programs will retain their separation, and when the listener changes position, the apparent distribution of sound will not shift, so that the stereo perspective will be less dependent on the listening position.

If you wish to turn off the center channel speaker, normal two channel stereo is obtained by shorting across the terminals of the center speaker, and switching the preamp back to full stereo.

If the third channel is to be used as a remote monophonic speaker, it is advisable to first install it as a center channel of the stereo system for proper balance adjustment. It then may be moved to another area.

WARRANTY

This A-25 carries an all-inclusive warranty against defects in material and workmanship for one year from date of purchase, provided it has not been subject to abuse, misuse or accident. This warranty includes factory authorized repairs and return freight within the USA from the factory or authorized agency to the purchaser. The warranty card enclosed must be returned promptly to validate this warranty. In addition, the woofer and tweeter are warranted against defects for a full 5 years from purchase date if they have not been abused.

If the A-25 is found defective in any way upon initial installation, a claim for damage should be filed with the carrier.

If a defect occurs within the warranty period, write to Dynaco, describe the symptoms and any tests you have performed, the serial number and purchase date, and your name and complete shipping address. We will reply with recommendations for repair and necessary packaging, or direct you to an authorized service facility. *Do not return the A-25 to Dynaco without prior authorization* unless cabinet replacement is required.

We recommend that you keep the complete original packaging. If necessary, new packaging is available on request for $2.00 postpaid. Please include your check or money order when ordering.

IN THE EVENT OF DAMAGE

If the sealed carton was picked up from a dealer, notify him at once of the damage, and follow his instructions regarding holding the speaker and its complete packaging for the carrier's inspection. The dealer must place a claim with the carrier who delivered it to him.

If the carton was delivered to you by a common carrier, notify the carrier immediately that you wish to file a damage claim, and hold the speaker and all its packaging for their inspector, who will want a copy of your bill of sale to establish its value. Always include the speaker's serial number in any claim.

Damage to the wooden cabinet requires its replacement at Dynaco, unless you wish to assume the responsibility for arranging locally for minor repairs to the finish. The replacement cost of the cabinet is $35 plus transportation to and from the factory. If there has been functional damage as well, you cannot yet quote a repair charge to the carrier. In either case, the speaker should be properly repacked in its carton and shipped to Dynaco *prepaid* and *insured*.

Do not use Parcel Post unless no other alternative is available. In this case the standard carton *must* be packed inside another carton with proper cushioning to withstand the abuses of Parcel Post handling. Payment of parcel post claims is generally slow.

When the loudspeaker has been repaired, it will be returned *collect* for repair charges and shipping. The invoice that you receive and your freight receipts may then be used to substantiate your claim against the carrier.

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