



DAHLQUIST

PHASED ARRAY™ MODEL DQ-10

I N S T R U C T I O N S

The Phased Array model DQ-10 is a five-way dynamic loudspeaker system. Its operation is based on patented acoustical techniques which provide very accurate reproduction of source material. In order to minimize undesirable effects from diffraction, each driver has been separately mounted on the smallest possible baffle, whose dimensions were determined by the frequency range of the passband. This is directly opposed to the standard practice of mounting the drivers on one relatively large baffle. The mounting method used in the Phased Array also makes it possible to incorporate time-delay correction through relative front-to-back positioning of each element.

PRELIMINARY

Save the carton and all internal supporting fillers and cushioning. Should it become necessary to transport or ship this loudspeaker, there will be much less likelihood of damage in transit if properly packed in the original carton.

Claims for damage in transit may be instituted only by the consignee. Inspect the loudspeaker and carton carefully. If there has been damage, save the carton for inspection by the carrier.

Be sure to remove the plastic bag containing three legs and mounting screws packed inside the top supporting filler. An envelope containing instructions and warranty material has been packed inside the carton. Fill out and mail the Warranty Registration Card promptly after receiving your unit.

ATTACHING LEGS FOR FLOOR PLACEMENT

The plastic bag packed in the top filler contains a left, right and back leg, together with mounting hardware. Lay the loudspeaker on its back, perhaps on a padded sturdy bench, with the bottom surface facing you. You will notice three pairs of predrilled pilot, or starting holes for the mounting screws. Attach the legs with a sufficiently large screwdriver, driving the screws in only until firmly seated. When properly installed, the front legs will extend forward and canted slightly outward to left or right. The back leg will extend rearward, protruding away from the enclosure.

NOTE: Do not attach legs if optional ST-10 stands are used. See "Room Placement" section below.

CONNECTIONS TO LOUDSPEAKER

For distances to 25 or 30 feet, use no smaller than #18 lamp cord ("zipcord"). For greater lengths, use #16, or larger. In general, it is preferred to use the heavier wire, even for short distances. Smaller wire may have enough electrical resistance to reduce the damping provided by the amplifier and affect low frequency transient response.

PHASING FOR STEREO

In stereo operation it is important that both loudspeaker systems be connected in correct phase, or polarity. The procedure following will provide correct polarity.

Close examination of two-conductor lamp cord will show that the insulation covering one conductor is smooth, and that the other is identified with a ridge or ridges extruded along its whole length. In preparing the wires for connection, one specific conductor in each cable should be coded at both ends, for positive identification, with a wrap of tape, a knot, etc. For example, each end of the "ridged" wires (in both cables) may be further coded with tape, and connected between the "8 ohm" input of the loudspeaker and the "Output" or "8 ohm" connector on the amplifier in each channel. The smooth leads may then attach to the "Common" or "Ground" connector at each end. When connected in this manner, both loudspeakers should move in unison rather than in opposition to each other.

POWER AND FUSING REQUIREMENTS

It is not generally realized that insufficient power can cause damage to speakers as easily as excessive power. The recommended power for use with the DQ-10 varies from a minimum of about 60 watts to a maximum of 200 watts, depending upon room size and listening level. As an example, a 60 watt amplifier will be inadequate to fill a large well upholstered room. On the other hand, it can have sufficient reserve power in an average small living room for fairly high listening levels without clipping. The important requisite is that there be enough *reserve* power to assure the amplifier will not operate in a continuously overloading condition at normally used sound levels. Under such drastic operating conditions an amplifier will feed *high frequency* distortion components to the speaker at its full rated power! Thus, a supposedly safe 40 watt amplifier may easily burn out a 10-watt-rated tweeter.

The DQ-10 is protected with a BUSS, type AGC-3 fuse. This fuse has the correct action time and amperage rating to protect the speaker against sustained high level passages that could cause overheating, yet still allow instantaneous music transients of over 200 watts without "blowing". The most delicate unit in the DQ-10 is the tweeter, which is separately fused with a BUSS, type AGC-0.8 unit mounted on the P. C. Crossover board.

Substitution of these fuses with units of the slow blow type, or with fuses of higher amperage ratings than specified will endanger the speaker, and subsequent damage through this abuse cannot be covered under warranty.

ROOM ACOUSTICS AND SPEAKER PLACEMENT

Speaker systems such as the DQ-10, and doublet or semi-doublet types, possess radiation characteristics which are inherently capable of producing realistic performance and very good depth imaging. These speakers will provide greater benefits through proper room placement than will conventional "box" type systems.

Optimum speaker location for a given room depends entirely on its acoustical properties. Size, proportions, furnishings, all affect tonal balance, imaging and bass characteristics. Solid walls provide a more solid bass; thin walls tend to absorb its impact. A good room will be slightly "live", with a discreet amount of sound absorption to break up echoey effects. Where two bare walls face each other, one can be "damped" by a window drape or wall hanging covering a part of the surface. Dead sounding rooms, excessively padded by heavy drapes, rugs and upholstery, will absorb a very substantial percentage of the speaker's sound output, especially with higher frequencies. The effect would be that of reduced output capability with excessive bass unbalance.

It is recommended that the owner experiment with position to obtain the best overall balance and openness. The best place is most often in front of an undraped long wall, angled slightly inward. Distance from the wall may be a foot or so, determined by listening for good depth imaging. In overly mellow sounding rooms, balance can be improved by raising the speaker 8" or 12" above the floor level. The optional ST-10 stands were designed for this purpose. Avoid a too-wide spread between speakers. Distance between the centers should not exceed the distance from the listening area, and would be better if it were slightly less.

TREBLE CONTROL

A unique single control on the rear input panel provides continuously variable high frequency boost or cut. Its action is similar to that of a treble tone control, with smoothly rising and descending curves starting at approximately 6000 Hz. With this control, adjustments can be made for acoustical conditions, or for personal preference.

SPECIFICATIONS

POWER REQUIREMENTS – 60 Watts minimum, 200 Watts maximum. The speaker must be properly fused as specified above.

NOMINAL IMPEDANCE – 8 ohms

NUMBER OF DRIVERS – Five

CROSSOVER FREQUENCIES – 400 Hz; 1000 Hz; 6000 Hz; 12,000 Hz.

FREQUENCY RESPONSE – 35 Hz to 27,000 Hz.

SHIPPING WEIGHT – 63 lbs. NET WEIGHT – 50 lbs.

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