



Electro-Voice®
a MARK IV company

Model XEQ-504A Cinema Systems Crossover/Equalizer

SPECIFICATIONS

Crossover Frequency, Nominal:
500 Hz

Load Impedance, Nominal,

Low Frequency:
4 ohms

High Frequency:
8 ohms

Attenuation Rate:
12 dB per octave

Insertion Loss, Low Frequency Section:
0.7 dB typical

Maximum Long-Term Average Power
Handling Capabilities:

300 watts shaped pink noise
per EIA Standard RS-426A

Maximum Input Voltage:
200 watts peak

Circuit Type (see Figure 3):
Second-order LC Linkwitz-Riley in the
crossover region
Special equalization circuit above this

Connectors:

.250 tab connectors to low-frequency
loudspeakers; screw-terminals on barrier
strip to high-frequency loudspeaker and
amplifier output

Construction:

Steel chassis, G-10 fiberglass circuit
board rigidly mounted to chassis via
steel standoffs

Maximum Wire Gauge,
Barrier Strip Terminals:
10 AWG

Dimensions:

27.7 cm (10.9 in.) height
22.6 cm (8.9 in.) width
8.6 cm (3.4 in.) depth

Net Weight:

2.41 kg (5.2 lb)

Shipping Weight:

3.0 kg (6.7 lb)

DESCRIPTION

The Electro-Voice XEQ-504A is a "dedicated" passive crossover/equalizer designed to be used with the TL606DW low-frequency loudspeaker system and the DH1A high-frequency reproducer, when mounted on the HP9040 and HP940 TransPlanar™ constant-directivity horns.

The XEQ-504A combines a passive high-level frequency-dividing network with a high-frequency equalization circuit. This combination provides essentially flat overall frequency response in two-way systems, utilizing the previously mentioned components. The equalization circuit is necessitated by the high-frequency response rolloff which is typical of any high-performance compression driver used with modern constant-directivity horns. The XEQ-504A has a nominal crossover frequency of 500 Hz with a 12-dB-per-octave attenuation and employs filters with Linkwitz-Riley characteristics for smoother overall frequency response in the crossover region.

Excellent performance and reliability are achieved through the use of highest-quality components. Air-core inductors are used throughout to avoid any harmonic or intermodulation distortion which otherwise can result from core hysteresis and saturation. Components are securely fastened to a thick-trace military-grade G-10 epoxy fiberglass printed circuit board and are well ventilated for low-thermal resistance, an advantage at high power levels. The entire crossover is mounted on a sturdy steel chassis which includes a six-contact barrier strip for all necessary external connections

High-current tap connectors make a reliable connection to the woofers inside the TL606DW cabinet.

The design concept of a "dedicated" or specialized crossover/equalizer has several advantages: Installation requires little time and avoids tedious, often-confusing adjustments using switches, knobs and taps. Crossover/equalizer characteristics are preset for intelligible, musical, well-balanced sound such as required in all professional sound reinforcement applications. Furthermore, the absence of switches and "pots" will ensure long, trouble-free life. Lastly, the simplicity of this construction provides a very cost-efficient unit by including only components which are utilized with the intended horn and driver combinations.

INSTALLATION WITH TL606DW

To mount the XEQ-504A, remove the TL606DW input panel via eight #10-24 screws and withdraw the panel plus the four (two black and two red) wires, which are connected to the woofers. Place the input panel on the top surface of the woofer cabinet with components facing upward. Disconnect the wires from the tab connectors on the input panel, using a firm tug on the connectors (note: not on the wires). A pair of pliers will make the job easier, gripping on the rear of the connectors. Holding the XEQ-504A in one hand, take the wires that have just been disconnected from the TL606DW input panel and connect to the appropriately marked tab connectors mounted on the XEQ-504A's circuit assembly board. This is accomplished by firmly pressing the connectors until they stop.

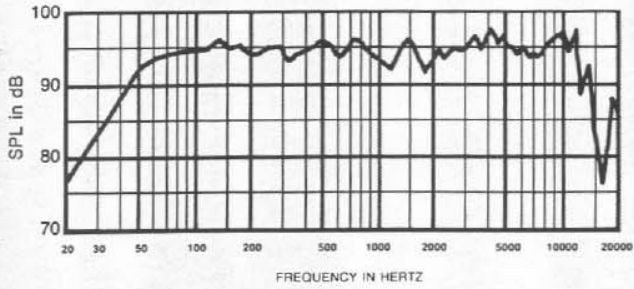


FIGURE 1
 Typical Anechoic Frequency Response
 of XEQ-504A, TL606DW and HP940/DH1A
 4 Volts/10 Feet

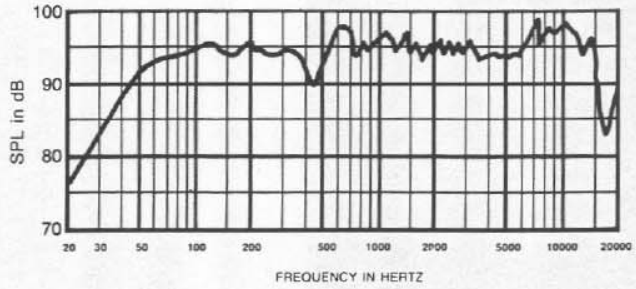


FIGURE 2
 Typical Anechoic Frequency Response
 of XEQ-504A, TL606DW and HP940/DH1A
 4 Volts/10 Feet

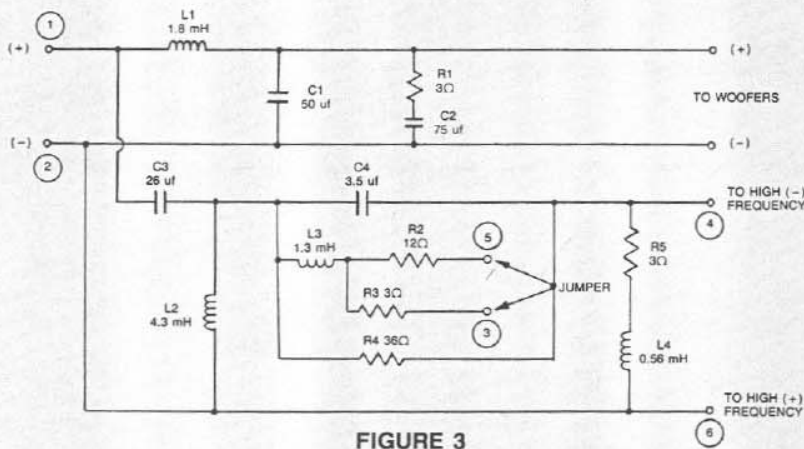


FIGURE 3
 Crossover Schematic

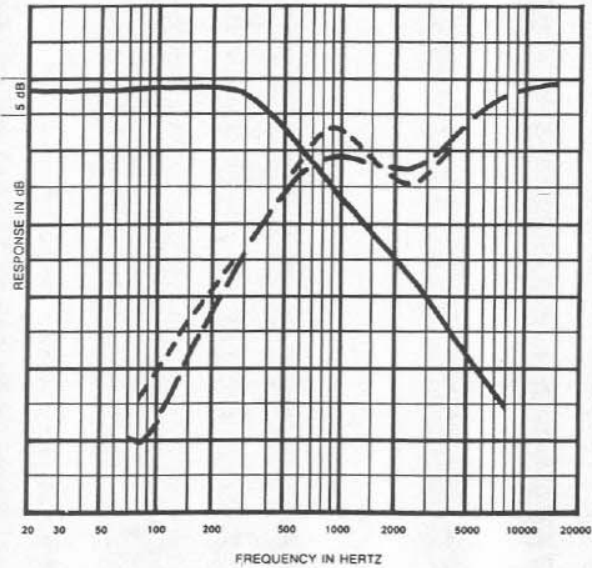


FIGURE 4
 Voltage Transfer

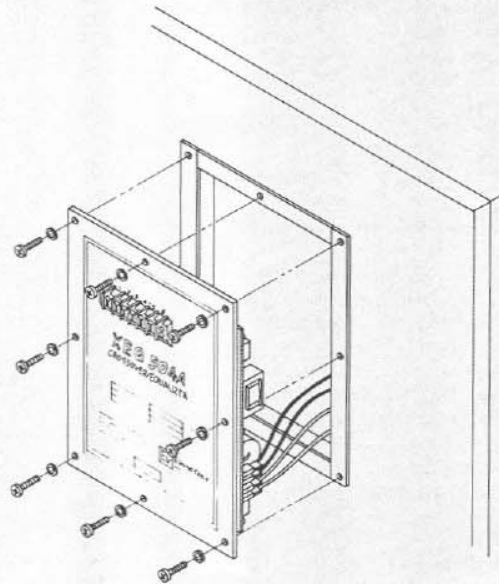


FIGURE 5 — Installation

When all four woofer wires have been connected to the XEQ-504A, mount the crossover in the space previously occupied by the input panel, making sure the woofer wires are fully inside the cabinet and not caught between the XEQ-504A and the cabinet. Then connect the provided wires from the high-frequency terminals on the barrier strip to those of the DH1A driver, red for (+) and black for (-). Lastly, connect the amplifier to the appropriate terminals on the barrier strip. If the HP9040 horn is used, pins 4 and 5 must be shorted on the barrier strip using the jumper provided; if the HP940 is used the jumper must be placed between pins 3 and 4 on the barrier strip. This is clearly marked on the crossover input panel.

INSTALLATION WITH OTHER CABINETS

Cut an opening in the desired mounting surface with appropriate dimensions to flush-mount the XEQ-504A crossover/equalizer. Mark the location of the mounting holes and drill pilot holes as marked. Crimp the insulated female spade lug connectors to woofer connection wires and attach to male lugs on the crossover board. NOTE: THE XEQ-504A SHOULD ONLY BE USED WITH 4-OHM BASS SYSTEMS (TWO PARALLEL 8-OHM WOOFERS). Make certain that there is sufficient crossover ventilation by not allowing fiberglass damping material to

contact XEQ-504A components. Other aspects of installation are the same as those for the TL606DW cabinet. However, when using the XEQ-504A with other-than-recommended components, additional equalization will be necessary as the response has been tailored for specific components.

ARCHITECTS' AND ENGINEERS' SPECIFICATIONS

The crossover shall be a high-level Linkwitz-Riley type filter with a crossover frequency of 500 Hz. The low-pass and high-pass attenuation shall be 12 dB/octave. The nominal load impedance shall be 4 ohms for the low-pass section and 8 ohms for the high-pass section. High-frequency equalization shall be provided for the Electro-Voice HP9040 and HP940 horns coupled to the Electro-Voice DH1A compression driver. Rated power handling capacity shall be at least 300 watts conforming to EIA specification RS-426A.

The crossover shall be constructed on a fiberglass-epoxy printed-circuit board mounted to a steel chassis. Overall dimensions shall be 27.7 cm (10.9 in.) high by 22.6 cm (8.9 in.) wide by 8.6 cm (3.4 in.) deep. The high-level passive crossover shall be the Electro-Voice XEQ-504A.

WARRANTY (Limited)

Electro-Voice Professional Sound Reinforcement Electronic Components are guaranteed for two years from date of original purchase against malfunction due to defects in workmanship and materials. If such malfunction occurs, unit will be repaired or replaced (at our option) without charge for materials or labor if delivered prepaid to the proper Electro-Voice service facility. Unit will be returned prepaid. Warranty does not extend to finish, appearance items or malfunction due to abuse or operation under other than specified conditions, nor does it extend to incidental or consequential damages. Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above exclusion may not apply to you. Repair by other than Electro-Voice or its authorized service agencies will void this guarantee. A list of authorized service centers is available from Electro-Voice, Inc., 600 Cecil Street, Buchanan, MI 49107 (AC/616-695-6831); Electro-Voice, Inc., 3810 148th Avenue N.E., Redmond, WA 98052 (AC/206-881-9555); and/or Electro-Voice West, 8234 Doe Avenue, Visalia, CA 93291 (AC/209-651-7777). This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

Service and repair address for this product: Electro-Voice, Inc., 600 Cecil Street, Buchanan, Michigan 49107.

Specifications subject to change without notice.