



WOLVERINE

by *Electro-Voice*



Wolverine Enclosures are designed to produce the finest sound possible from Wolverine loudspeakers. To obtain maximum performance, read these instructions thoroughly before you begin installation.

Each Wolverine enclosure is carefully inspected before leaving the factory, and must be equivalent to the laboratory standard in acoustical properties and appearance. Your Wolverine equipment installed properly and operated in accordance with the instructions given in this booklet will give you years of listening satisfaction.

GENERAL DESCRIPTION — The Wolverine Loraine is designed for corner use with the LS12 full-range loudspeaker, and contains pre-cut ports for the addition of HF1 and MF1 step-up kits. The Loraine will improve and extend the bass response of any 8 or 12-inch loudspeaker, but it is particularly effective when used with Wolverine components.

The Loraine enclosure is a direct radiator, back loaded corner horn. In use, the room corner becomes a unique design element, virtually multiplying the size of the enclosure. A system of slots in the rear cavity prevents excessive resonances and smooths the bass response curve. In addition, the bass response of the system is lowered well beneath the free-space cone resonance of the cone speaker. Low range efficiency is increased nearly 40%, reducing diaphragm excursion and providing proper speaker damping. These are long-established principles of corner enclosure design.

The Wolverine LS8 and LS12 loudspeakers are designed to operate effectively both as full-range speakers and as woofers in multiway systems. When used as full-range units, they provide optimum sound reproduction at a minimum cost.

Wolverine Step-Up Kits provide a simple method for increasing performance of your loudspeaker system in stride with the budget, by building from a single loudspeaker to a deluxe 3-way system with properly matched components, and without obsoleting existing components.

The Model HF1 High-Frequency Step-Up Kit should be the first addition to an LS8 or LS12 loudspeaker. This step-up kit will give greater efficiency from 3500 cps to beyond the limits of audibility, plus greater dispersion of the high frequencies in the listening area for good stereo. The result is silky, precise definition of all string and woodwind instruments, together with an even spread of sound, giving "front row" performance throughout the room. The HF1 package consists of a matched VHF driver (Model TW35) and crossover network (Model CR35) with built-in level control.

The final addition, recommended for the LS12 loudspeaker as the basic unit, is the MF1 Mid-Frequency Step-Up Kit. This allows the LS12 speaker to operate solely as a woofer, restricting its response to frequencies below 1000 cps. The mid-range horn utilizes the diffraction principle of high frequency sound dispersion through a solid 120° angle giving best stereo effect. The audio range is thus divided for more efficient reproduction of each frequency section, lowering both harmonic and intermodulation distortion. The MF1 Step-Up Kit increases the output of sound in the vital presence range and gives well defined "voice" response. The MF1 package consists of a matched treble driver (Model MR10) and crossover network (Model CR10) with built-in level control. All wiring is supplied with Wolverine Step-Up Kits for simple 5-minute installation.

SPECIFICATIONS

Size: 27" high x 20" wide x 14" deep
Shipping Weight: 42 lbs.

INSTALLATION OF COMPONENTS

SPEAKER INSTALLATION — All speaker components are installed through the back of the enclosure. Lay the cabinet face down on a padded surface, such as carpeting. Remove the four Phillips head screws holding the slotted back panel, then lift it up and out of the cabinet. To install a 12-inch speaker, remove the nuts and washers holding the 8-inch adapter board in place, remove the board, and carefully lower the 12-inch speaker over and down on the bolts. Extreme caution is urged in lining up the bolts with the holes in the speaker frame, to prevent accidentally tearing the cone. Replace the washers and tighten the nuts on the speaker frame

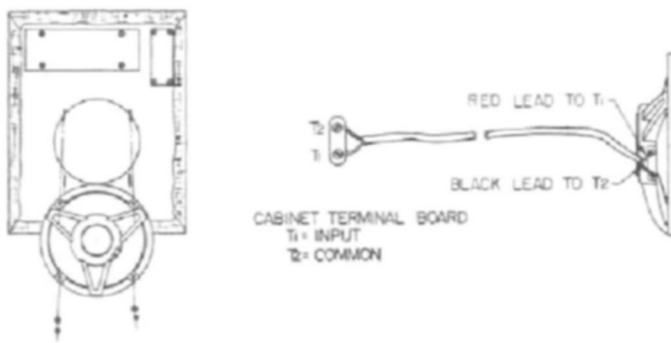


Figure 1 — Installation of Full-Range Speaker

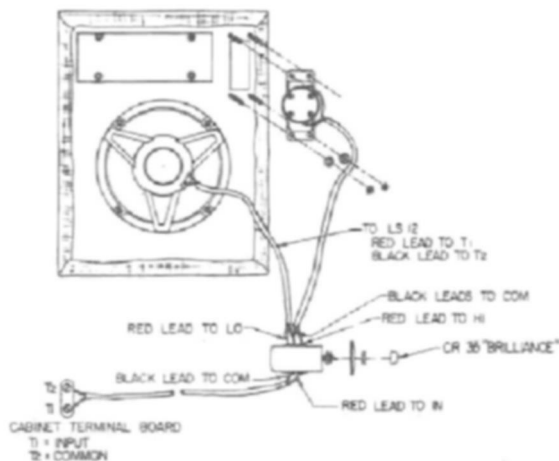


Figure 2 — Installation of HF1 Step-Up Kit

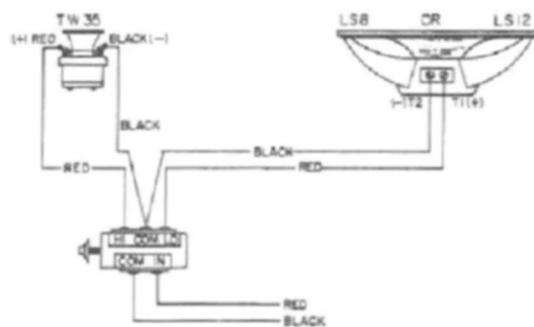


Figure 3 — Wiring Diagram, Two-Way System

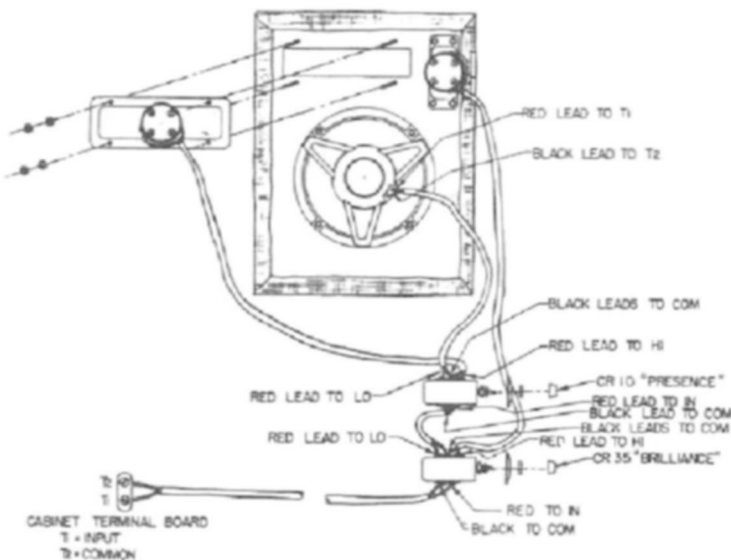


Figure 4 — Installation of MF1 Step-Up Kit

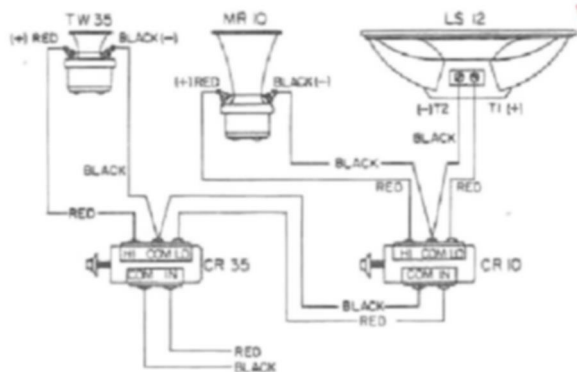


Figure 5 — Wiring Diagram, Three-Way System

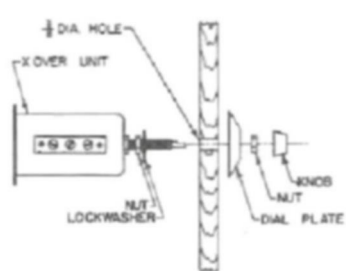


Figure 6 — CR35, CR10 Mounting Details

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evenly. Tighten only enough to hold the speaker firmly in place — too much pressure can warp the speaker frame. If an 8-inch speaker is installed, fasten it to the adapter board in the same manner. See Figure 1.

MODEL HF1 STEP-UP KIT — To install the Wolverine TW35 VHF driver, remove the cover on the small vertical port and place the driver in position, making certain it seats tightly. Tighten nuts down snugly. Mount the CR35 level control in position on the rear side panel, after removing the snap-in button marked Brilliance. Replace the level control dial plate, tighten down snugly, then replace the knob. See Figures 2 and 3.

MODEL MF1 STEP-UP KIT — To install the Wolverine Model MR10 mid-range driver, remove the long, horizontal port cover, and place the driver over the bolts. Tighten the nuts down snugly. Mount the CR10 level control on the rear side panel after removing the plug button marked Presence. Replace the level control dial plate on the outside of the enclosure, tighten snugly and replace the knob. Rotate the dial plate so that position one corresponds to the complete counter-clockwise position of the knob. See Figures 4, 5 and 6. **NOTE:** The easiest way to install the HF1 and MF1 step-up kits is to first connect the leads between the driver and crossover network, and then bolt the components into the cabinet.

WIRING — All Wolverine speakers are color coded to indicate polarity. A red marking or the code "T1" indicates positive polarity (the cone or diaphragm will move away from the magnet when a positive voltage is applied); black or "T2" indicates negative polarity. Note that all leads coded black connect to terminals marked "Common." If these wiring diagrams are followed, all speakers will be properly phased. The lead wires to the amplifier should be No. 18 fixture wire (common lamp cord) for lengths up to 20 to 30 feet; for longer lead lengths, use No. 16 two-conductor cable. If the speaker is connected to a Williamson type amplifier, use television twin-lead.

ASSOCIATED COMPONENTS — The quality of sound from your Wolverine speaker system will be limited only by the performance of the other components in your high-fidelity system. For the most realistic reproduction from your favorite records, Electro-Voice compatible stereophonic-monaural phonograph cartridges are recommended. These cartridges will not only give smooth, distortion-free reproduction from standard monaural records, but will also equip you for the new stereophonic records. A quality record changer or turntable should be used with your Wolverine components. The amplifier used with Wolverine speakers should produce less than 1% harmonic and intermodulation distortion. If the amplifier has a variable damping factor control, it should be set at maximum, although no qualitative difference will be observed past a setting of 10. Because of the high efficiency of Wolverine speakers, no more than 15 watts of amplifier power is actually required, although four times this amount may be used.

OPERATION

OPERATION OF LEVEL CONTROLS — Level controls are provided for adjusting the amount of energy fed to the MR10 mid-range driver (between 1000 and 3500 cps), and/or the TW35 VHF driver (above 3500 cps). Generally, because of the increased efficiency of these high-range drivers, the controls should be adjusted to a setting of 4. Exact positioning of these controls will depend upon room acoustics and should be adjusted for most pleasing reproduction. Rooms furnished with heavy rugs, drapes, and overstuffed furniture will require a more advanced setting of the VHF driver control than average. To achieve a "front row" effect, advance the mid-range driver control.

GENERAL INFORMATION

SHIPPING DAMAGE — Wolverine components are packed in accordance with all shipping requirements of the Interstate Commerce Commission plus extra protection. If shipping damage occurs, contact the carrier directly, requesting inspection and instructions. Use the serial number of the speaker in your correspondence.

SERIAL NUMBER — The serial number, noted on the front of this instruction sheet, and on the warranty registration card, indicates type, style and date of manufacture of the unit. Always use this number in your correspondence.

WARRANTY CARD — To register your Wolverine components, fill out the Warranty Registration Card and send it to the factory within ten days after your purchase. It is not necessary to fill in the Market Research Information, but it will help us in supplying you with more and consistently improved high-fidelity products. The Warranty Card will also put you on the Electro-Voice mailing list for future technical publications.

TECHNICAL SERVICE — Your Wolverine distributor knows thoroughly the application of Wolverine products and high-fidelity techniques. His advice on the installation of Wolverine components and on the selection of associated equipment will be invaluable. Technical problems which cannot be answered locally may be referred to:

Manager, Wolverine Division
Electro-Voice, Inc., Buchanan, Michigan

When writing, please list the manufacturer and model number of all components used in your high-fidelity system.