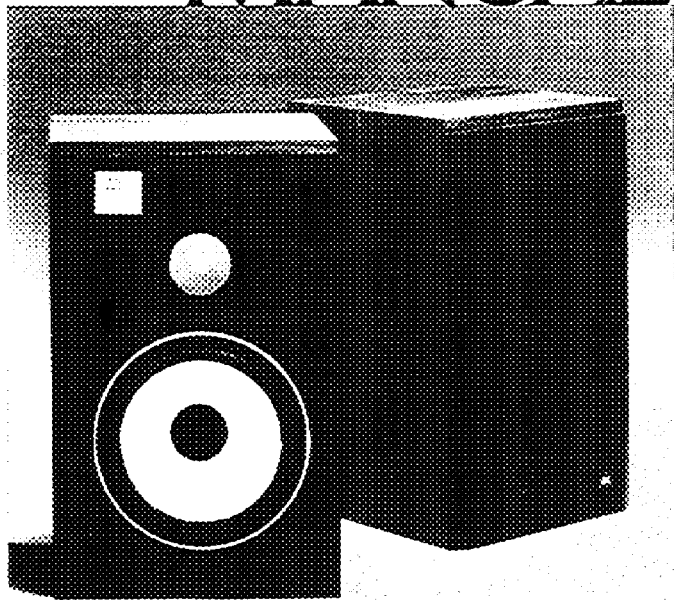
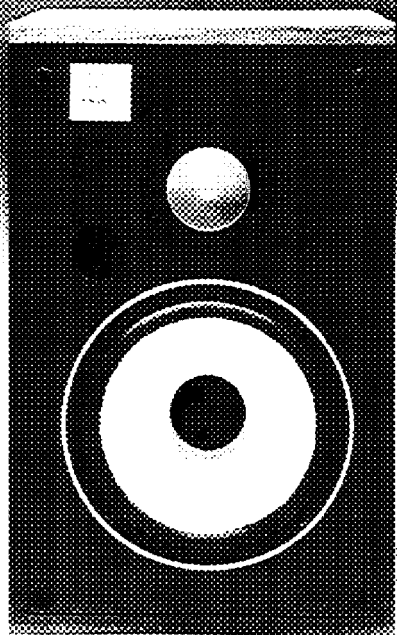


L56 INSTRUCTION MANUAL



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Offering smooth and accurate sound, the two-way L56 offers exceptional value and sound quality. It shares much of the technology incorporated in our renowned larger speakers, as well as a specially designed woofer and high frequency dome radiator, and an advanced frequency dividing network. The L56, like all JBL loudspeakers, offers an impressive array of performance characteristics: exceptional clarity, wide dynamic range, solid bass, and open high frequency reproduction.

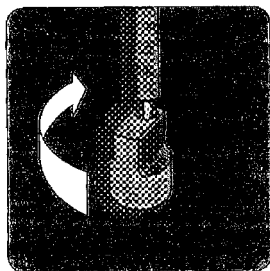
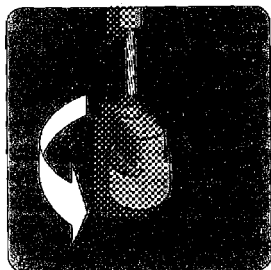
Handcrafted with the finest materials available, your JBL speakers deserve your care and respect. The few minutes required for proper installation of your L56 loudspeaker systems will be rewarded by many years of continued listening pleasure.

The amplifier or receiver should be turned off before making any loudspeaker connections.

To connect loudspeaker systems placed up to 50 ft (15 m) from the amplifier, #18 AWG (1 mm) insulated wire (ordinary household lamp cord) is the minimum size recommended. For greater distances, heavier wire is desirable: #16 AWG (1.3 mm) for distances up to 100 ft (30 m), and #14 AWG (1.6 mm) for distances up to 200 ft (60 m).

Connections to the loudspeaker system are made at the two terminals located on the back of the enclosure, near the bottom. The terminals will accept stranded or solid wire up to #12 AWG (2 mm).

For each loudspeaker system, connect the wire from the black terminal to the amplifier output terminal labeled "common," "ground," (—), or colored black, and the wire from the red terminal to the amplifier terminal labeled "8 ohms," "8 Ω," (+), or colored red. If lamp cord is used, the wires can be distinguished from one another by noting that one insulating jacket is smooth, while the other has a distinct ridge. Connecting both systems as described will ensure in-phase operation; i.e., their diaphragms will respond to a monophonic signal by moving simultaneously in the same direction, and not opposite to each other. (Note: Some amplifiers have a chassis grounding terminal, which is usually isolated from the other connectors. This should not be confused with the "ground" designation sometimes used to describe one of the terminals in each set of loudspeaker connections.)

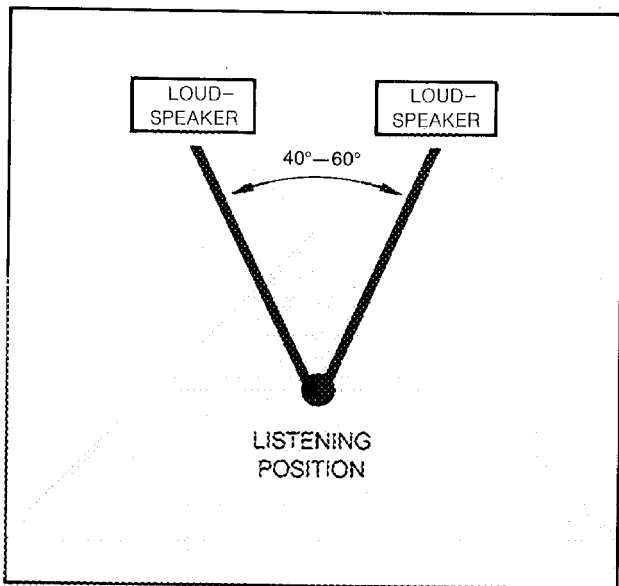


1. Strip approximately 20 mm ($\frac{3}{4}$ in) of the insulation from the end of the wire. Twist the wire strands together.

2. Turn the terminal fully counterclockwise, insert the wire, then turn the terminal clockwise until the wire is secured. Rotate the terminal by hand—do not force it.

The performance of any loudspeaker is affected by room placement. For example, bass response will be augmented if the enclosures are placed near adjoining room surfaces (i.e., in a corner, or near a wall). If possible, experiment with placement before deciding on a final arrangement.

For the best possible stereo performance, the systems should be arranged symmetrically in front of the listener. As a general rule, a person sitting in the usual listening position should be at the apex of a 40° to 60° angle to the two systems. The distances between the systems should be determined by their distance from the listener and by the listening angle.



40°-60° Listening Angle

Sound energy from the loudspeaker systems blend to form a stereo "image." This image will be more stable and the area of the best stereo perception increased if the two systems are turned slightly toward the preferred listening position.

JBL loudspeaker systems are unique in combining high efficiency with the ability to handle large amounts of power. The L56 produces sound at comfortable listening levels when driven by an amplifier having an output of as little as 10 watts continuous sine wave per channel.* However, for reproduction of the full dynamic range of contemporary recordings at high volume, an amplifier delivering up to 150 watts continuous sine wave per channel will provide optimum performance. Such an amplifier has the reserve power necessary for accurate reproduction of transients, which can reach momentary peaks equivalent to ten times the average power level. In any case, an amplifier should be chosen with an output power rating that is greater than that required to produce the loudest output desired. The margin of reserve power will help ensure that the amplifier will not attempt to deliver more power than its design allows. When overdriven, most amplifiers will clip signal waveforms, a condition of severe distortion which may damage the high frequency radiators in the systems.

If distortion is heard, at least one of the sound system components is operating beyond its capacity (assuming each component is properly adjusted), and the overall volume level of the sound system should be reduced. In almost all cases, the acoustic level generated by the JBL L56 will become noticeably objectionable to the ear before the loudspeaker can become damaged by excessive power from the amplifier. There is virtually no danger of damaging the JBL L56 if it is operated within the following guidelines: 1) the signal from the amplifier, regardless of its rated power, is not distorted; 2) the amplifier is not driven into clipping; and 3) audio connectors are not inserted or unplugged while the amplifier is operating.

However, a powerful wide-range amplifier can accidentally damage any loudspeaker under certain conditions. For example, fast winding a tape recorder with the playback volume turned up can generate "squeals" powerful enough to burn out the high frequency driver. Similarly, powerful low frequency pulses extending down into the subsonic range can eventually damage the low frequency loudspeaker. If the phonograph pickup is accidentally dropped with the volume control at maximum, or if the system is played very loudly with excessive bass boost, nearly the full rated power of the amplifier can be channeled into dangerous subsonic energy.

*The continuous sine wave rating of amplifier power is the most stringent method currently used in the audio industry. Many amplifier manufacturers use the term "watts rms" as a direct equivalent to the more meaningful "watts continuous sine wave."

Each component of the JBL L56 loudspeaker system is designed and produced by JBL to meet the most rigorous standards in the industry. The loudspeaker frames are massive cast structures, produced to exacting tolerances. Magnetic assemblies are precisely manufactured of low-reluctance iron, energized by large, high-grade magnets. Cones are designed for the best possible combination of stiffness, density, and weight. Each component, the enclosure, and finally the system as a whole withstand a series of stringent quality control tests and inspections during assembly.

LOW FREQUENCY LOUDSPEAKER—Designed specifically for an enclosure of compact size, the 10 inch (250 mm) low frequency loudspeaker exhibits unusually smooth frequency response, wide dynamic range, superior transient reproduction, and low distortion. It utilizes a cast aluminum frame, 1½ inch (38 mm) diameter voice coil, and 3 lb (1.3 kg) low-loss magnetic assembly energized by a powerful magnet. Mass and compliance of the integrally stiffened cone have been carefully controlled to ensure optimum low frequency bandwidth and definition while reducing distortion. Additionally, JBL's unique SFG (Symmetrical Field Geometry) magnetic structure creates a symmetrical field around the voice coil gap and stabilizes flux variations within the magnetic structure. This reduces second harmonic distortion to about one-tenth the level found in drivers with conventional magnetic structures. The result is a woofer that provides maximum power handling capacity, efficiency, and bandwidth, and at the same time avoids many of the compromises generally associated with smaller loudspeaker systems.

HIGH FREQUENCY LOUDSPEAKER—A 1 inch (25 mm) high frequency dome radiator gives the L56 its exceptional clarity, excellent transient response, superb dispersion, and open high frequency reproduction. A product of our laser interferometry, the dome offers very smooth, extended response. The 1 inch (25 mm) copper voice coil is powered by a 1½ inch (0.68 kg) magnetic assembly. The voice coil drives the dome over its full circumference for low-distortion response across its entire operating range. The tweeter is mounted in a vertical array with the woofer, so that a pair of L56s produce an uncannily accurate stereo image.

FREQUENCY DIVIDING NETWORK—The signal from the amplifier encompasses a wide range of frequencies. The frequency dividing network allocates each portion of the audio spectrum to the appropriate component of the loudspeaker system. The drivers of the L56 have inherently excellent transient response. To take advantage of this fact, JBL engineers designed a high resolution dividing network that allows the drivers to achieve their potential. The networks make use of bypass capacitors typically found only in active high frequency electronics. Wired in parallel with

the network's larger high-power capacitors, the bypass capacitors reduce the hysteresis effects (modifications of waveforms) of the large capacitors without affecting their power capacity. The result is better resolution of complex transient waveforms, and therefore clearer, more accurate sound.

The network of the L56 also controls the drivers through their full operating ranges, rather than only at the crossover frequencies. The design avoids the midrange "hole" common in many two-way systems and gives the speakers a very coherent sound. The crossover frequency of the L56 is 2200 Hz.

SERVICE

Should your JBL L56 require service, return it to the JBL dealer from whom it was purchased. If this is not possible, write directly to the JBL Customer Service Department, describing the problem as fully as possible. Products returned to the factory must be sent prepaid to JBL Customer Service Department, P.O. Box 2200, 8500 Balboa Boulevard, Northridge, California 91329 U.S.A.

COMPONENT REMOVAL

If it becomes necessary to remove the loudspeaker system components for testing or repair, turn off the power at the amplifier or receiver, disconnect the loudspeaker system, and follow the described procedures:

GRILLE—The grille is secured to the enclosure by dowel pins located near the corners of the grille. To remove the grille, grasp it by the top or bottom corners and pull gently. To replace the grille, reposition it on the enclosure and press lightly to reseal the pins in their sockets.

LOW FREQUENCY LOUDSPEAKER—The low frequency loudspeaker is mounted from the front of the baffle panel and held in place by four Phillips-head screws threaded into T-nuts on the back of the panel. Place the enclosure on its back on a clean, padded surface, and unscrew the machine screws. Be careful not to apply pressure that might dislodge the T-nuts. Then gently lift the edge of the loudspeaker frame from the baffle panel, disconnect the wires at the tab connectors, and remove the loudspeaker from the enclosure.

HIGH FREQUENCY LOUDSPEAKER—First remove the low frequency loudspeaker. The high frequency loudspeaker is secured to the baffle panel by three Phillips-head screws threaded into T-nuts. Carefully remove the screws. Lift the assembly from the enclosure by reaching through the woofer opening and pushing the high frequency assembly from behind. Disconnect the two leads from the dividing network at the tab connectors on the back of the frame.

DIVIDING NETWORK—If you think that the dividing network is malfunctioning, do not attempt to remove it. Instead, we recommend that you return the entire speaker unit to your JBL dealer.

REPLACEMENT—Reverse the removal procedure to replace the loudspeaker components. Mounting screws should be tightened evenly to avoid the possibility of frame warpage and to prevent air leaks between components and the enclosure. **Although JBL loudspeakers are extremely rugged, the cone and other moving parts are subject to accidental damage. Exercise caution when using a screwdriver or other tools in their immediate vicinity.**

ENCLOSURE

The L56 enclosure panels are made of dense compressed wood (also known as particle board), superior to solid wood in its acoustic properties. For maximum strength and resistance to vibration, all panels are cut from 19 mm ($\frac{3}{4}$ in) stock, the structure is extensively braced, and all joints are hand-fitted.

The finish veneer is American black walnut, treated with an oil/wax preparation and hand rubbed to a rich, lustrous finish enhancing the natural beauty of individual grain structure and color. Detail work is obvious; materials are carefully selected and skillfully prepared; joints are expertly closed; scratches, dents, gluelines, and other defects are nonexistent. Acoustic damping material is used liberally to attenuate standing waves within the enclosures.

Occasional dusting with a clean, soft cloth will maintain the original beauty of the walnut finish. Since moisture cannot penetrate the oiled surface, most household stains can be removed with a damp cloth. The surface should be treated only with wax specifically formulated for use on oiled finishes. Conventional furniture waxes, polishes, or cleaners are not recommended.

As the oil penetrates deeply into the walnut, the finish may appear to be drying out. Many owners find it desirable to re-oil the enclosure surface from time to time. With each application, the beauty of the finish will become more apparent and a warm, rich patina will eventually be obtained.

To re-oil a JBL finish, use any one of the several clear oil finishing preparations available through furniture or hardware outlets. Apply a liberal amount of the preparation over the entire finished surface of the enclosure. In ten to fifteen minutes wipe off the remaining oil with a soft, clean, dry cloth. Small surface scratches can usually be removed by gently rubbing them out with very fine steel wool (4/0 grade) and applying oil to the entire panel. When using steel wool, apply light pressure and rub only in the direction of the grain. Very deep scratches, dents, or other serious damage should be repaired only by a qualified furniture refinisher.

The grille cloth can be cleaned by gentle dusting with a vacuum cleaner. Stains can be removed by using a soft bristle

brush moistened with mild soap and water. Do not use any cleaning fluids or solvents of any kind, as they could damage the grille.

FOR ADDITIONAL
INFORMATION

If you have difficulty in achieving the fine performance of which your JBL loudspeaker system is capable, consult the franchised JBL dealer from whom the system was purchased. He is equipped with knowledge required to provide expert advice and assistance. If for some reason the JBL dealer is unable to assist you, write directly to the JBL Technical Services Department, explaining the difficulty in detail.

SPECIFICATIONS

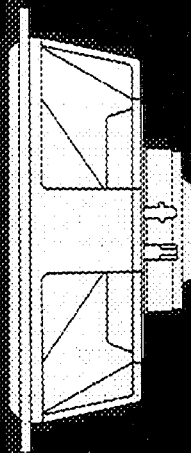
System	L56
Minimum Recommended Amplifier Power	10 watts per channel
Maximum Recommended Amplifier Power	150 watts per channel
Nominal Impedance	8 ohms
Crossover Frequency	2.2 kHz
System Sensitivity	90 dB SPL, 1 W, 1 m (3.3 ft)
Low Frequency Loudspeaker	
Nominal Diameter	10 in (250 mm)
Voice Coil	1½ in (38 mm) copper
Magnetic Assembly Weight	3 lb (1.3 kg)
Flux Density	0.95 tesla (9500 gauss)
Sensitivity ¹	90 dB SPL, 1 W, 1 m (3.3 ft)
High Frequency Dome Radiator	
Nominal Diameter	1 in (25 mm)
Voice Coil	1 in (25 mm) copper
Magnetic Assembly Weight	1½ lb (0.68 kg)
Flux Density	1.4 tesla (14,000 gauss)
Sensitivity ²	89 dB SPL, 1 W, 1 m (3.3 ft)
General	
Finish	Oiled walnut
Grille Color	Brown
Dimensions	22¼ in x 14 in x 11¾ in deep 565 mm x 356 mm x 298 mm deep
Shipping Weight	44 lb (20 kg)

1. Averaged from 100 Hz to 500 Hz, within 1 dB.

2. Averaged above 3kHz, within 1 dB.

LOW FREQUENCY

HIGH FREQUENCY

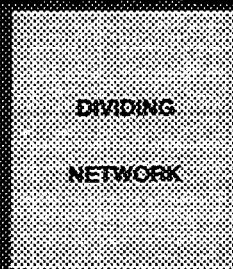


GREEN/BLACK

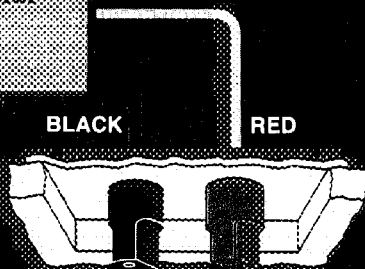
GREEN

YELLOW/BLACK

YELLOW



DIVIDING NETWORK



BLACK

RED

**INPUT TERMINALS
(REAR OF ENCLOSURE)**