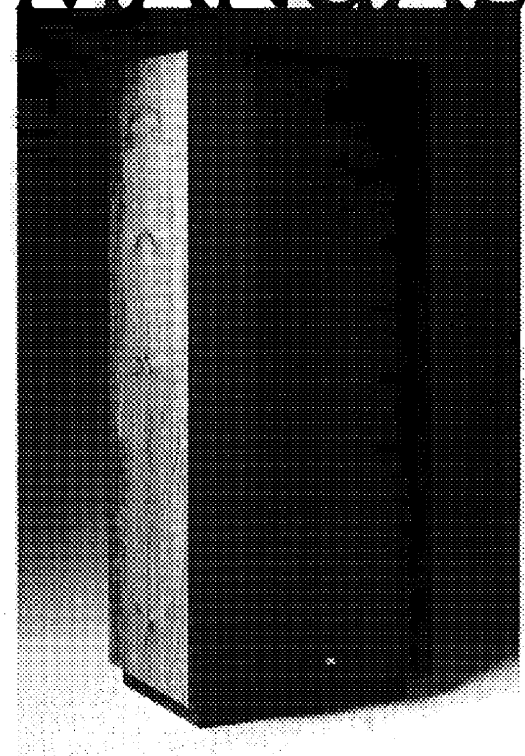


**L150A
INSTRUCTION
MANUAL**



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The L150A is a floor-standing loudspeaker system that exhibits exceptional accuracy and outstanding deep bass performance. Each component is designed to provide extended power-flat frequency response, controlled dispersion, wide bandwidth, and high efficiency. Technical highlights of the L150A include the unique design of the low frequency magnetic structure, a design that dramatically reduces distortion; a high frequency dome radiator with exceptionally smooth frequency response; and a high resolution dividing network that offers improved transient definition. The impressive sound of the JBL L150A belies its modest size; the slim, columnar design occupies little floor space and will fit comfortably into any home environment.

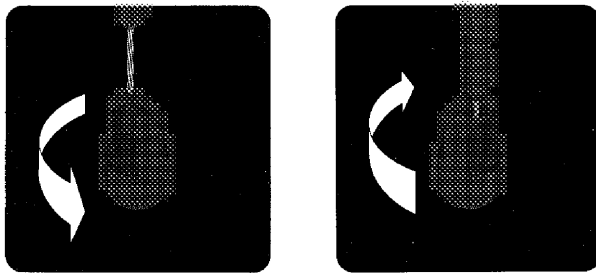
The amplifier or receiver should be turned off before making any loudspeaker connections.

CONNECTING THE L150A

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

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 2 mm (#12 AWG).

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.)

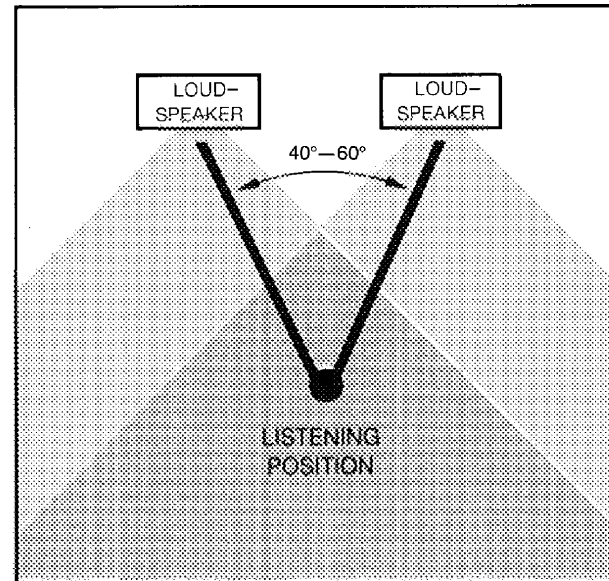


1. Strip approximately 20 mm (3/4 in) of the insulation from the end of the wire. Twist the wire strands together.
2. Turn the terminal fully counterclockwise, insert the wire, then turn the terminal clockwise until the wire is secured. Rotate the terminal by hand—do not force it.

PLACEMENT

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.



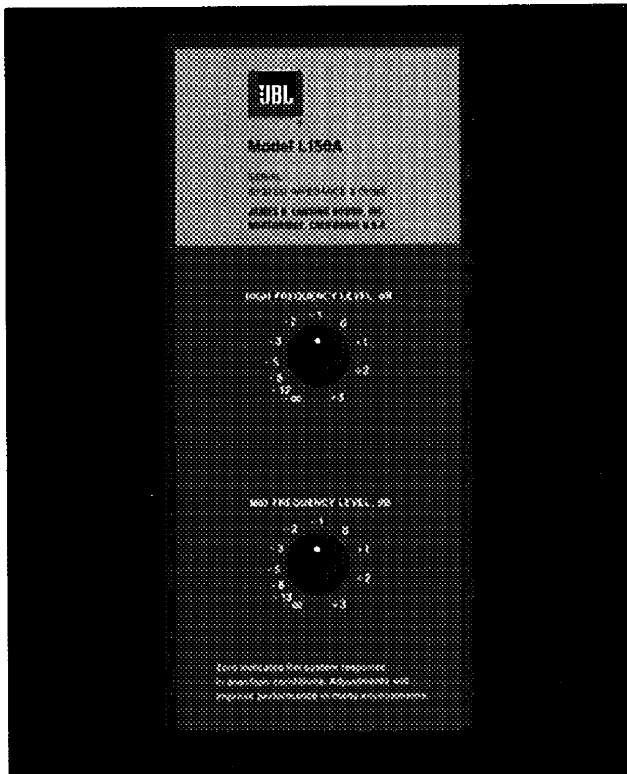
40°-60° Listening Angle

Sound energy from the loudspeaker systems blends 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.

To accommodate personal preferences or specific room acoustics, the L150A has adjustable level controls for the midrange and high frequency drivers, located on the front panel behind the removable grille. The controls are calibrated in decibels (dB); the "0" setting corresponds to flat system response in an anechoic environment. Listening rooms are not anechoic, and adjusting the level controls may improve the performance in your room. Don't hesitate to experiment. Evaluations should be made while seated in your normal listening location.

Once you have decided on the exact placement of the speakers and the proper level control settings, further compensation for differences in individual recordings should be made with the tone controls on the amplifier. NOTE: The best stereo imaging will usually result when the level control settings on one loudspeaker system match those on the other.

ADJUSTING THE LEVEL CONTROLS



High Frequency and Mid Frequency level controls are located on the front panel of the enclosure, behind the removable grille.

POWER CAPACITY

JBL loudspeaker systems are unique in combining high efficiency with the ability to handle large amounts of power. The L150A 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 300 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

*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."

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 L150A 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 L150A 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.

COMPONENTS

Each component of the JBL L150A 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. Voice coils are held to within one turn of design specifications. 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**—A newly developed 300 mm (12 in) driver provides deep, powerful bass reproduction. The 4.7 kg (10¼ lb) magnetic assembly features the first ferrite magnet to be used in a large JBL driver. JBL engineers spent over two years developing this loudspeaker, and its unique design results in substantially lower levels of second harmonic distortion than are present in drivers using conventional ferrite assemblies. The cone is coated with a precisely con-



Loudspeaker System Components
 25 mm (1 in) High Frequency Dome Radiator
 300 mm (12 in) Passive Radiator
 130 mm (5 in) Midrange Loudspeaker
 300 mm (12 in) Low Frequency Loudspeaker

trolled amount of a specially formulated material that provides optimum mass and also better damping, for smooth performance at the upper end of the driver's range. A 76 mm (3 in) edgewound copper voice coil helps produce the high efficiency and remarkable transient response of the driver.

A 300 mm (12 in) passive radiator extends reproduction to the lowest portion of the frequency spectrum. The radiator is capable of high amplitude excursions generating high volume velocity—that is, it can move a lot of air very quickly. This provides extremely low-distortion response even at very high acoustic levels.

MIDRANGE—The 130 mm (5 in) midrange loudspeaker, housed within an isolated subchamber to prevent interaction with the low frequency loudspeaker, also delivers undistorted reproduction even at extreme volume levels. Its 22 mm (7/8 in) copper voice coil is large for a loudspeaker of this size, yielding exceptional transient response and efficiency. A very stiff cone reduces the possibility of cone breakup at very high power levels.

HIGH FREQUENCY—The new 25 mm (1 in) high frequency dome radiator accurately reproduces the highest harmonics, yet cleanly handles the largest musical peaks with authority. The dome is formed of a lightweight phenolic material, coated with aluminum by means of a vapor deposition process. It has the optimum combination of strength, mass, and rigidity; the copper voice coil drives the full circumference for smooth, low-distortion response across its entire operating range.

FREQUENCY DIVIDING NETWORK—A new frequency dividing network gives the L150A superior transient response, so that music retains the full clarity and total impact of the original source. This performance was achieved through the creative application of a principle typically found only in active high frequency electronics, a principle that greatly improves the resolution of complex musical waveforms. Additionally, the sophisticated L150A network controls each driver throughout its operating range, so that the output of the individual drivers is smoothly blended with no perceptible shift from one driver to the next. The network is mounted on a heavy-duty printed circuit board to assure reliability. Level controls adjust the output of the midrange and high frequency drivers to compensate for listening room acoustics.

SERVICE

Should your JBL L150A 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, 8500 Balboa Boulevard, Northridge, California 91329, U.S.A.

COMPONENT REMOVAL

Should it become 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 along the edges of the baffle panel. To remove the grille, grasp it by both top or both bottom corners and pull gently. To replace it, reposition it on the dowel pins and press lightly.

The low frequency and midrange drivers are held in place by Phillips-head screws threaded into T-nuts. When removing or installing these screws, be careful not to apply excessive pressure that could dislodge the T-nuts.

LOW FREQUENCY—Before removing the low frequency loudspeaker, place the enclosure on its back on a clean, padded surface. Carefully remove the screws, grasp the loudspeaker by the edge of its frame, lift it away from the baffle panel, disconnect the wires at the binding posts, and remove the loudspeaker.

PASSIVE RADIATOR—Because of its inherent simplicity, the passive radiator is unlikely to require service. However, if removal is necessary, the procedure is the same as for the low frequency loudspeaker, except that there are no wires to disconnect.

MIDRANGE—The midrange loudspeaker is held in place by screws at each corner of its frame. Remove the screws, lift the unit from its enclosure, and disconnect the leads at the tab connectors.

HIGH FREQUENCY—First remove the low frequency loudspeaker. The high frequency loudspeaker is mounted on the inside surface of the main baffle panel, but the screws must be removed from the front. Support the driver with one hand as you remove the screws. Disconnect the wire leads and lift the driver out through the low frequency driver opening.

DIVIDING NETWORK—Remove the low frequency loudspeaker and disconnect the wire leads at all the loudspeakers. Pull the wire leads from the midrange subchamber so that they fall into the enclosure. Before removing the network, disconnect the leads from the level controls at the tab connectors on the network. The network is mounted to the rear panel of the enclosure and held in place by Phillips-head screws. Support the network as you remove the screws and lift it out through the low frequency loudspeaker opening.

Note that it is not necessary to remove the level control assembly in order to remove the network. If, for any reason, it becomes necessary to remove the level controls, carefully peel the serialized foil nameplate from the baffle panel, remove the three mounting screws, and lower the assembly out through the low frequency loudspeaker opening. (Because the nameplate is generally destroyed during removal, it is not recommended that the level control assembly be removed simply for inspection. If the assembly must be returned for service, enclose the original nameplate; a new serialized nameplate will be provided.)

REPLACEMENT—Reverse the removal procedure to replace the loudspeaker components. Mounting screws should be tightened evenly to avoid the possibility of frame warpage and just enough 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 L150A 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 (¾ 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.

Occasionally 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.

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 the 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.

FOR ADDITIONAL
INFORMATION

Low Frequency Loudspeaker

Nominal Diameter	300 mm	12 in
Voice Coil	76 mm (3 in) copper	
Magnetic Assembly Weight	4.7 kg	10¼ lb
Flux Density	1.05 tesla (10,500 gauss)	
Sensitivity ¹	90 dB SPL, 1 W, 1 m (3.3 ft)	

Midrange Loudspeaker

Nominal Diameter	130 mm	5 in
Voice Coil	22 mm (7/8 in) copper	
Magnetic Assembly Weight	0.74 kg	1½ lb
Flux Density	1.4 tesla (14,000 gauss)	
Sensitivity ²	91 dB SPL, 1 W, 1 m (3.3 ft)	

High Frequency Dome Radiator

Nominal Diameter	25 mm	1 in
Voice Coil	25 mm (1 in) copper	
Magnetic Assembly Weight	0.9 kg	2 lb
Flux Density	1.4 tesla (14,000 gauss)	
Sensitivity ³	89 dB SPL, 1 W, 1 m (3.3 ft)	

System

Maximum Recommended Amplifier Power	300 watts per channel	
Nominal Impedance	8 ohms	
Crossover Frequencies	1.1 kHz, 3.7 kHz	
System Sensitivity	89 dB SPL, 1 W, 1 m (3.3 ft)	

General

Finish	Oiled walnut	
Grille Colors	Brown, rust, or tan	
Dimensions	1054 mm x 432 mm x 330 mm deep 41½ in x 17 in x 13 in deep	
Net Weight	36.4 kg	80 lb
Shipping Weight	41 kg	90 lb

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

2. Averaged from 1 kHz to 3 kHz, within 1 dB.

3. Averaged above 5 kHz, within 1 dB.

