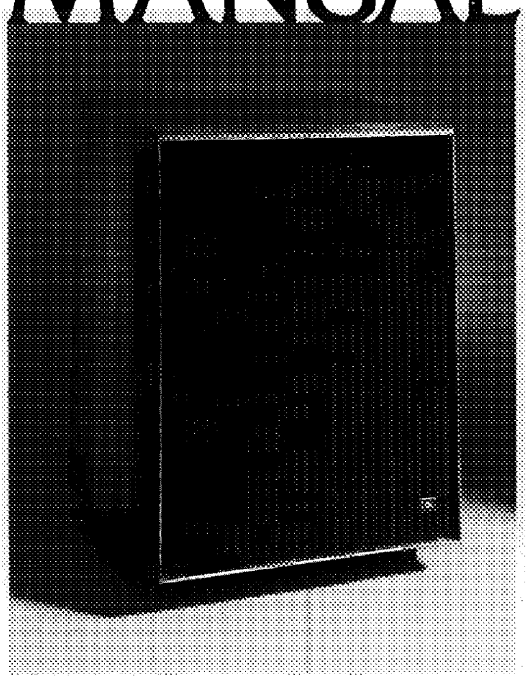
L200B INSTRUCTION MANUAL



Excellence is an elusive quality. It's so easy to recognize yet so difficult to attain.

JBL craftsmen have been involved in the art of sound for more than a generation—signal and source, wood and fabric, transducers and acoustics—all of it.

Today these craftsmen continue to perform to the most rigid standards any craftsmen can submit to: those they impose upon themselves.

JBL loudspeakers are carefully engineered instruments, painstakingly crafted and assembled to watchmakers' standards. JBL enclosures express the excitement of creative design; they are elegant, solid and flawlessly finished. JBL transducers and electronics offer what has been characterized by devoted music listeners as "the incomparable JBL sound."

By following the few simple suggestions contained in this booklet, you can look forward to superb high fidelity reproduction that will retain its clarity and realism year after year.

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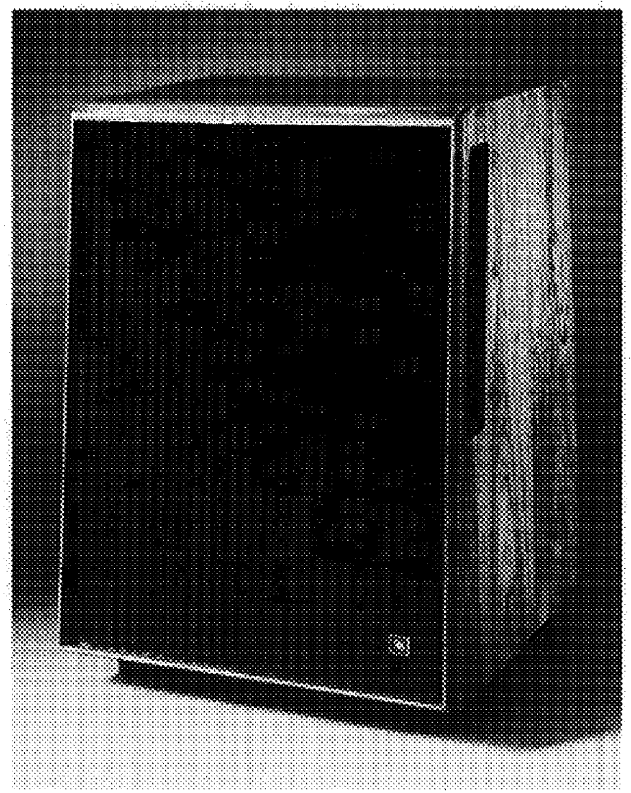


The most demanding requirement for excellence in loudspeaker performance comes from recording studios. The monitor loudspeaker is the standard by which recordings are judged—from initial microphone placement through mixing, dubdown and on to final mastering.

JBL's reputation for building the ultimate in accurate monitor loudspeakers—characterized by unprecedented power handling capacity, high acoustic output, uniform spatial distribution and smooth frequency response through the entire audio spectrum—prompted the introduction of a comparable unit provocatively styled for the home environment.

Based on a professional studio monitor, the L200B brings the incomparable JBL sound to the home in a striking enclosure with a unique Sculptured Air foam grille.

PERFORMANCE CHARACTERISTICS

The L200B produces the full, rich performance typical of JBL professional series studio monitors. Low frequency reproduction is solid and well defined, avoiding unnatural accentuation; midrange performance is characterized by the incredible crispness and presence which have long been JBL hallmarks; high frequency information is delineated with utter clarity and transparency. Clear transient reproduction and lack of distortion virtually eliminate aural fatigue, even after listening to the system for many hours. Like all studio monitors, the efficiency and power handling capacity of the L200B are responsible for its ability to perform at high volume levels for extended time periods without fear of damage.

To accurately test the loudspeaker system, a set of evaluation parameters was developed, and specifications derived using standard test techniques. The L200B was mounted in the measured center of a large flat baffle in a reverberation-free environment, a calibrated condenser microphone was suspended at a specified distance from the sound source, and all electronic equipment was checked and calibrated before tests were run.

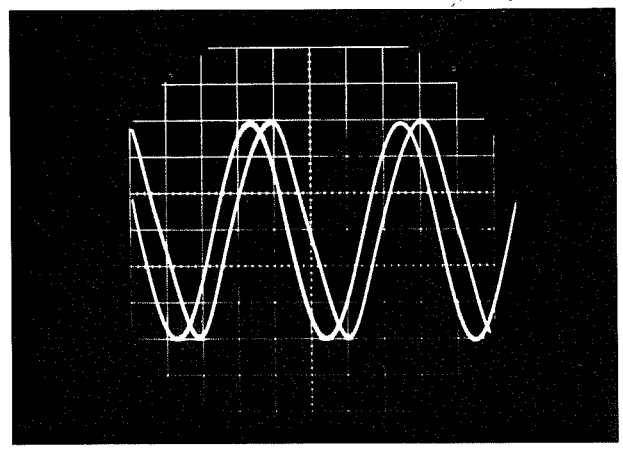
Due to the wide-angle dispersion of the L200B loudspeaker system, frequency response measured up to 60° off-axis horizontally does not deviate more than 6 dB from on-axis response.

A dual-trace oscilloscope was utilized to compare a 75-Watt RMS input at 30 Hz directly with the acoustic output of the system. A laboratory microphone was connected directly to the oscilloscope and the display photographed. The left trace, representing the generated low frequency input, is identical to the output trace, demonstrating the verbatim signal reproduction of the L200B.

Sustained performance at this intensity would not be encountered during normal use. A 75-Watt RMS test signal is far more difficult for a speaker to reproduce than its rated capacity of 100 Watts program material, particularly in the lowest frequency range. Nevertheless, it can be seen that the L200B produces a virtually perfect replica of the input signal.

A number of loudspeaker systems can handle large amounts of power; others are highly efficient. JBL products are unique in their ability to combine both attributes. The L200B, for example, will convert a 1-Watt input of "white noise"[1] into a sound pressure level of 80 dB at a distance of 15 feet[2] This is approximately twice as loud as ordinary conversation and represents a comfortable listening level, demonstrating that the L200B delivers substantial output from very little input power.

Specifications only indicate the impressive performance characteristics of the L200B, yet they cannot convey the full impact of an extensive listening experience. The powerful bass fundamentals and lifelike voice projection exhibited by the L200B are qualities found in few loudspeaker systems, regardless of size and price.



Comparison of input and output signals.

1. "White noise" is a rigorous test simulating average musical program material under laboratory conditions. It provides a controlled means of energizing all the transducers of a loudspeaker system simultaneously. "White noise" encompasses all audible frequencies just as white light includes all the colors of the visible spectrum. Produced in the laboratory by a signal generator, "white noise" sounds very much like the hiss heard between FM radio stations.

2. A decibel (dB), in this context, is a unit expressing relative loudness of sound. Three dB is approximately equal to the smallest change in loudness of program material ordinarily detectable by the human ear.

SPECIFICATIONS

Rather than repeat the ambiguity of most technical specifications, JBL has traditionally refrained from listing data for which no widely accepted test procedure has been established. In the absence of such standards any well equipped laboratory can legitimately produce a variety of frequency response curves for a loudspeaker, depending on the conditions selected. At JBL the final analyses are comprised of extensive listening sessions. Although laboratory data are an integral part of the process, the trained ear is the ultimate criterion. The success of this philosophy is reflected in the enthusiastic acceptance of JBL systems by recording studio engineers, producers and performers—professionals whose artistic achievements are closely related to the equipment they use.

Power Capacity[1]	150 Watts continuous program
Nominal Impedance	8 ohms
Dispersion	120° horizontal, 40° vertical
Crossover Frequency	800 Hz
System Sensitivity	1 Watt input produces 80 dB Sound Pressure Level at a distance of 15′ *(Note: 75-80 dB is a comfortable listening level.)*
Low Frequency Loudspeaker	
Nominal Diameter	15 inches 38 cm
Voice Coil	4-inch (10.2 cm) edgewound copper ribbon
Magnetic Assembly Weight	12 pounds 5.4 kg
Flux Density	12,000 gauss
Sensitivity[2]	44 dB SPL
High Frequency Compression Driver	
Throat Diameter	1 inch 2.5 cm
Voice Coil	1¾-inch (4.4 cm) edgewound aluminum ribbon
Magnetic Assembly Weight	10 pounds 4.5 kg
Flux Density	19,000 gauss
Sensitivity[3]	59 dB SPL
General	
Finish	Oiled Walnut
Grille	Crenelex pattern foam
Grille Color Options	Gray, Black, Blue or Burgundy
Dimensions	32¾″ x 23⅞″ x 21¼″ deep 83.2 x 60.6 x 54.0 cm deep
Shipping Weight	131 lbs 59 kg

1. Based on a laboratory test signal. See Power Capacity section for amplifier power recommendation.
2. Since the major portion of the energy reproduced by the low frequency loudspeaker lies below 800 Hz, this specification has been developed using a test signal swept from 100 to 500 Hz, rather than the 1-kHz sine wave test signal on which the conventional EIA sensitivity is based.
3. Averaged sensitivity above 1 kHz, within 1 dB, measured at 30 feet (9.1 m) with a 1-milliwatt input.

CONNECTING THE L200B

IMPORTANT: When connecting or disconnecting loudspeakers from an amplifier, the amplifier must be turned off. Making connections while the amplifier is operating could seriously damage the loudspeaker system and void the warranty.

Eighteen-gauge insulated wire (ordinary household lampcord) is the minimum size recommended for loudspeaker connections up to 50 feet. Beyond this distance, heavier gauge insulated wire is recommended; 16-gauge from 50 to 100 feet and 14-gauge from 100 to 200 feet. If lampcord is used, wires can be differentiated by noting that one of the insulating jackets is smooth, while the other has a distinct ridge. By considering the ridged jacket "red" and smooth jacket "black," wiring connections can be made as if using color-coded wire.

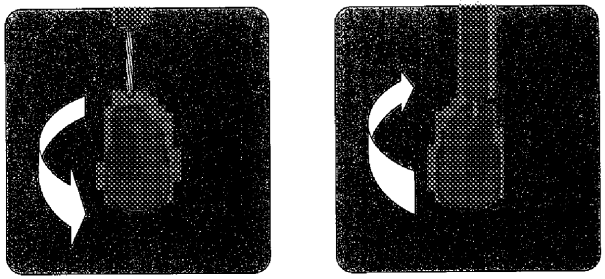
Connections to the loudspeaker system are made at the two terminals located on the back of the enclosure. The terminals will accept either stranded or solid wire up to 12 gauge (AWG). Two wires, up to 16 gauge (AWG), can be accepted simultaneously if they are first twisted together into a single wire and then inserted as illustrated.

Locate the loudspeaker output terminals on the back of the receiver or power amplifier. For each loudspeaker system, connect the wire from the black terminal to the amplifier output terminal labeled "common," "ground" or (−), and the wire from the red terminal to the remaining 8-ohm speaker output.[3]

Note that many 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 two of the terminals in each set of loudspeaker connections.

The specified 8-ohm impedance rating is a nominal figure which suggests a connection giving the most efficient power transfer between amplifier and loudspeaker system. However, 4- or 16-ohm amplifier terminals can be used without danger.

3. Connecting both speakers as described will insure proper "in phase" operation; i.e., their cones will respond to a monophonic signal by moving simultaneously in the same direction, and not opposite to each other. Inadvertent out-of-phase operation (which occurs when one set of speaker wires is reversed with respect to the other) will not harm the system, but may cause some acoustical "cancellation" which will have the audible effect of reducing low frequency response.



1. Strip approximately 3/4 inch (19 mm) of the insulation from the end of the wire. Twist the wire strands together, as shown. (Soldering is not required.)

2. Rotate the terminal fully counter-clockwise to the open position. Insert the wire, then rotate the terminal clockwise until the wire is secured. Rotate the terminal by hand—extreme force is not required.

LISTENING ROOM ACOUSTICS

In addition to placement, the sound reflecting or sound absorbing qualities of the listening room will affect sound quality. Room acoustics can be tested by listening to the echo of a sharp sound, such as hand clapping.

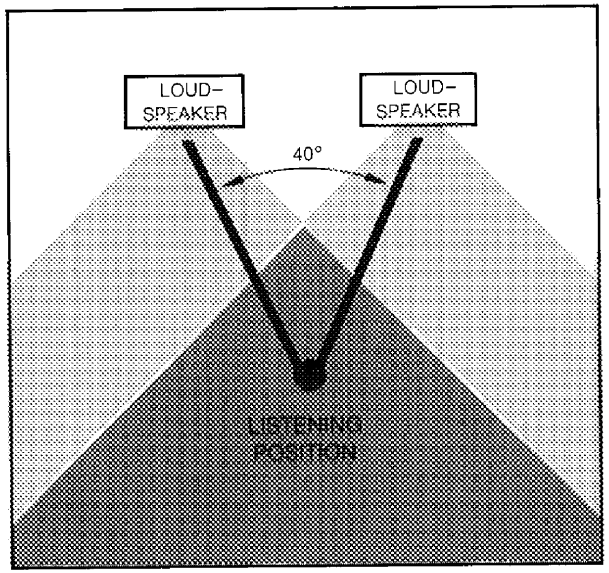
A room having large windows, paneled walls and a hardwood floor or ceiling will be acoustically "live" and will echo noticeably. A room containing overstuffed furniture, carpeted floors or draped windows will be acoustically "dead" and will echo very little or not at all.

Ideally, there should be a reasonable balance between absorptive material and sound reflecting surfaces. If there are two large reflecting surfaces facing each other, the "bounce" between them will make sounds run together and the music will lack definition. Large, flat wall surfaces should be broken up with bookshelves, drapes, screens, or tapestries.

PLACEMENT

Although JBL loudspeakers have a wide sound dispersion pattern, the final sound of the completed installation is affected by the location of the enclosure within the listening environment. If possible, experiment with placement of each loudspeaker system before deciding on a final arrangement.

For the best possible stereo performance, the two loudspeaker systems should be arranged symmetrically on each side of the listener. As a general rule, a person sitting in the usual listening position should see an angle of about 40° between the two sound sources. The distance from one loudspeaker enclosure to the other is determined by their distance from the listener and by the 40° "listening angle." Bass response will be augmented if the enclosures are placed near adjacent room surfaces, such as in a corner.



40° "Listening Angle"
Sound energy from each loudspeaker blends to form a stereo "wall of sound." The stereo image will be intensified and the area of best stereo perception increased if the two systems are rotated slightly toward the preferred listening position.

ADJUSTING THE SYSTEM

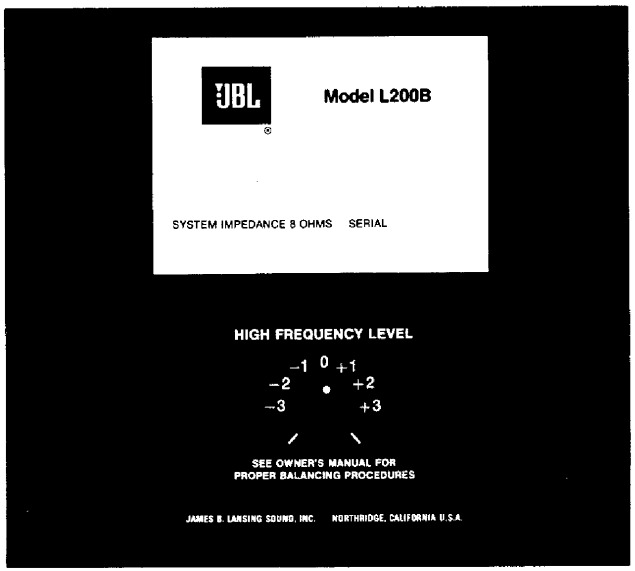
The L200B is provided with a continuously variable High Frequency Level control, located on the front of the enclosure, behind the removable grille. The control adjusts the relative loudness of the high frequency compression driver to achieve realistic tonal balance in a variety of room conditions. The control is calibrated in terms of a reference level, indicated by a "0" on the instruction plate. When the control is at the reference level, the loudspeaker system will be adjusted for balanced performance characteristics in a reverberation-free environment. Since most listening rooms possess varying degrees of high frequency absorption and reflection, an alternate setting of the control may be preferred.

The loudspeaker system should be adjusted while reproducing normal program material with the amplifier tone controls set at the middle (generally referred to as "flat") position. Begin by placing the High Frequency Level control at "0" and listening to a variety of program material long enough to become accustomed to the overall balance of the system.

After the ear has become attuned to the "0" setting, evaluate the relative brilliance of the loudspeaker system's performance. The most valid evaluation will be obtained by listening to the loudspeaker played monaurally. (This can be accomplished in stereo or quadraphonic installations by setting the amplifier mode control for monaural reproduction and using the balance control to select the individual loudspeaker system to be adjusted.) The evaluation should be made while seated in the normal listening position.

If high frequency material—such as violin overtones, bells, triangles or chimes—does not seem loud enough, use a coin or screwdriver to rotate the control to the right, which will increase high frequency output of the loudspeaker system. Conversely, if high frequency material seems too prominent, rotating the control counter-clockwise will reduce the relative loudness of the high frequency unit.

After each adjustment, again listen to a variety of program material until the ear becomes attuned to the new sound and can compare it to the previous performance of the system. Experimentation with positioning of the loudspeakers, as outlined, will also be beneficial. Once loudspeaker positioning and the High Frequency Level control have been set for optimum balance in the listening environment, compensation for differences in individual recordings should be made with the tone controls on the audio power source.



The High Frequency Level control is located on the front of the enclosure, behind the removable grille assembly.

The specified power capacity indicates the continuous program power level that can be accepted by a JBL loudspeaker system without damage. Its peak power capacity is considerably greater than the continuous rated value, as indicated by the remarkable transient response of JBL loudspeaker system components. The L200B will reproduce clean sound at comfortable listening levels when driven by an amplifier having an output of as little as 10 Watts RMS per channel.[4] However, for reproduction of the full dynamic range of contemporary recordings at high volume, a quality amplifier delivering up to 150 Watts RMS 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. Of course, an amplifier intended for normal high fidelity applications, regardless of its power output, should never be operated with its volume control at the maximum position; even an amplifier of the highest quality can produce severe distortion under such extreme conditions.

If distortion is heard, one or more 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 a JBL loudspeaker will become noticeably discomforting to the ear before the loudspeaker can become damaged by excessive power from the amplifier. There is virtually no danger of damaging a JBL loudspeaker 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 (another form of distortion which occurs when the power output limitations of the amplifier circuitry are exceeded); and 3) the power cord or 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, rewinding a tape recorder with the playback volume turned up can generate "squeals" powerful enough to burn out the high frequency unit. Similarly, powerful low frequency pulses extending down into the subsonic range can eventually damage the

4. The RMS (root mean square) rating of amplifier power is the most stringent method currently used in the audio industry. An amplifier rated at 60 Watts RMS per channel, for example, is generally considered to be a high-powered unit. The same output expressed in terms of "Music Power" would be 160 Watts.

low frequency loudspeaker. If the phonograph pickup is accidentally dropped with the volume control full up, 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.

SYSTEM COMPONENTS

Each component of every JBL loudspeaker system is designed and produced by JBL personnel to the most rigorous standards in the industry. JBL 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. Stamped frames and mass-produced voice coils would be less expensive; however, the resultant loss of structural integrity, magnetic force and acoustic efficiency would tend to degrade low-distortion performance and transient response – qualities that have become JBL hallmarks.

Do not move the cone by hand. The clearance between the voice coil and magnetic assembly is so small that any attempt to move the cone manually can easily force it out of alignment.

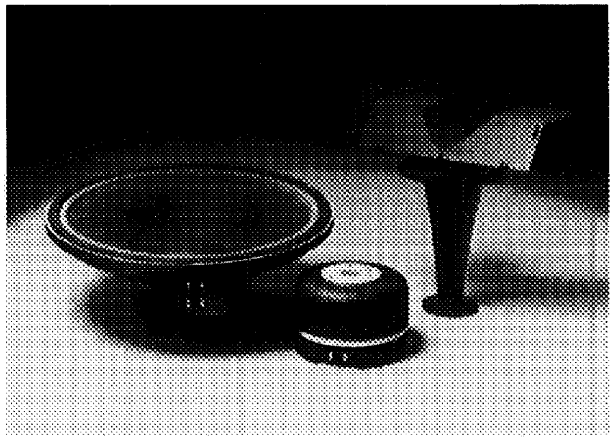
LOW FREQUENCY – Bass performance that is clean, crisp and effortless is provided by a 15-inch loudspeaker driven by a 12-pound low-loss magnetic assembly and 4-inch diameter voice coil. The foam ring termination absorbs extraneous sound waves traveling within the cone material and allows long excursion with perfect linearity. An exclusive die cast mass-controlling ring, located at the top of the voice coil assembly, behind the center dome, provides just the right amount of mass for optimum bass characteristics. The ring also adds mechanical strength and minimizes breakup at the apex of the cone, contributing to the loudspeaker's smoothness of response near the upper limits of its range, as it approaches and operates through the crossover region.

The voice coil, centered within an intense magnetic field, is fabricated of copper wire milled to a flat ribbon and wound on the narrow edge by hand. This edgewinding process places more coil material in the magnetic field by eliminating the spaces present between the turns of a conventional coil. Edgewinding along with the large diameter of the voice coil allows maximum interaction of the input signal with the magnetic field for efficiency and precise control of the loudspeaker cone. Careful machining of each individual part and the closed configuration of the magnetic assembly concentrate all of the magnetomotive energy, provided by a powerful Alnico V magnet, in the one place where it contributes to loudspeaker performance – the voice coil gap.

HIGH FREQUENCY – The high frequency compression driver operates smoothly through a range greater than 4 octaves. The diaphragm is pneumatically drawn to shape from aluminum alloy foil held to a tolerance of ±0.00015 of an inch, and is driven by a 1¾-inch edgewound aluminum ribbon voice coil, operating in an intense magnetic field generated by an Alnico V magnet. A pure silver impedance-controlling ring counteracts voice coil inductance, resulting in greatly improved efficiency through the highest audible frequencies. Energy from the diaphragm is directed to the horn through the precisely engineered concentric channels of a phasing plug which insures that the sound waves are conducted to the horn throat in perfect phase relationship.

HORN/LENS – The high frequency compression driver is coupled to a heavy cast aluminum exponential horn having a slant-plate acoustic lens. This sophisticated device is designed according to advanced sound wave propagation theory and acts exactly as a divergent optical lens. Its precise hyperbolic curvature spreads sound evenly over a 120° horizontal arc, restricting vertical dispersion to approximately 40°. Vertical coverage is directed toward listener ear level by the inclined baffle panel of the enclosure.

DIVIDING NETWORK – Smooth, imperceptible transition between components is controlled by a computer-designed dividing network carefully engineered and tested to complement the specific characteristics of the system. The function of a precision dividing network is



Loudspeaker System Components
15-inch Low Frequency Loudspeaker
Horn-Loaded High Frequency Compression Driver
Acoustic Lens

considerably more complex than merely feeding low frequencies and high frequencies to their respective transducers. Vitally important to the total sound of a JBL loudspeaker system is the way the network distributes electrical energy for optimum control of the components through transition frequencies. A continuously variable control, located behind the removable grille, allows balancing the intensity of the high frequency compression driver to listening room acoustics and personal preference.

COMPONENT REMOVAL

If it should be necessary to remove the loudspeaker system components for testing or repair, disconnect the amplifier and proceed as follows:

GRILLE—Place the enclosure on its back on a clean, padded surface to remove the grille assembly. The grille material is mounted on an aluminum frame which provides physical support and assures optimum acoustical transparency. The grille frame is secured to the enclosure by strips of mounting tape. Grasp a small portion of the grille material at both upper or both lower corners, (where the assembly is anchored) and gently draw the grille directly away from the enclosure. A "ripping" sound will be heard, indicating the normal disengagement of the mounting tape. This procedure may be repeated many hundreds of times without damage.

LOW FREQUENCY—The low frequency loudspeaker is held in place by eight Phillips screws threaded into T-nut fasteners attached to the back of the baffle panel. Carefully unscrew these machine screws without applying pressure that might dislodge the T-nuts. When the mounting screws have been removed, gently lift the edge of the loudspeaker frame out of the baffle panel, disconnect the wires at the binding posts and remove the loudspeaker from the enclosure.

ACOUSTIC LENS—The acoustic lens is secured with mounting tape. Remove the lens by firmly lifting it from the tape. The lens can be replaced by lightly pressing it back into its original position.

HIGH FREQUENCY—The high frequency compression driver and horn are removed as an assembly. Reach into the enclosure through the low frequency loudspeaker opening, depress the push button terminals to disconnect the lead wires at the compression driver and remove the two self-tapping screws securing the support bracket to the brace at the rear of the enclosure. While supporting the compression driver/horn assembly with one hand, remove the four Phillips screws that extend from the front of the enclosure through the baffle panel to hold the horn in place. Finally, rotate the complete assembly (to clear the brace at the rear of the enclosure) and lift it from the enclosure.

After removal, the horn and support bracket can be disassembled from the compression driver by removing the three 7/16-inch cap screws at the rear flange of the horn. Save the white gasket on the mounting flange of the horn and the fiber gasket on the face of the compression driver for reinstallation.

Caution: To avoid the possibility of personal injury or component damage, be sure to properly support the driver/horn assembly while removing the mounting screws holding the horn to the baffle panel, since the assembly weighs approximately 15 pounds.

DIVIDING NETWORK—Remove the transducers as previously described and disconnect the input leads from the connectors at the back of the enclosure. The High Frequency Level control is mounted on an assembly secured to the back of the baffle panel by four screws. To gain access to the control, carefully peel the serialized foil nameplate from the baffle panel, remove the four mounting screws and lower the assembly into the enclosure. The network itself is mounted on the bottom panel and is held in place by four machine screws accessible from the exterior of the enclosure. After removing the mounting screws, the network and control assemblies can be lifted out through the low frequency loudspeaker opening. (Note: Malfunction of the network is highly unlikely. Since the nameplate is generally destroyed during removal, it is not recommended that the network be removed simply for the purpose of inspection. If the network 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 system components. Mounting screws should be tightened evenly to avoid the possibility of frame warpage, and just enough to prevent air leaks between the components and the enclosure. Avoid excessive force.

WIRING—When reconnecting the wire leads between the dividing network and the components, correct polarity will be maintained by following the color coding shown on page18. Proper polarity at the input terminals is assured by the shape-coded connectors.

Although JBL loudspeakers are extremely rugged, the cone and other moving parts are subject to accidental damage. Exercise extreme caution whenever using a screwdriver or other tools in their immediate vicinity. Whenever the horn is removed from the compression driver, the mouth of the driver should be covered with plastic tape. An intense magnetic field exists in the mouth of the driver, and it is extremely important that foreign objects such as iron chips, mounting hardware, tools or other metallic contaminants be kept from the area.

ENCLOSURE

The L200B, with its Crenelex pattern foam grille, represents a visual refinement of the classic JBL monitor enclosure found in many major recording studios. The grille material (reticulated, or "open pore," foam) is substantially the same as used for professional microphone windscreens. Available in four colors, it has proven to exhibit acoustical transmission properties equal to even the most transparent conventional grille materials without compromising sound quality.

The L200B enclosure, embodying the principles of fine furniture design and construction that have made JBL a leader in the industry, complements the acoustic characteristics of the loudspeaker system. It utilizes a ducted port extending through the baffle panel to provide proper loading for the loudspeaker cone and optimize power handling capacity. The enclosure panels are constructed of dense compressed wood. This material, also known as particle board, is preferred to solid wood for its acoustic properties. The molding on the leading edges of the enclosure and the finish veneer on the side and top panels are solid American Black Walnut. All walnut surfaces are 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 non-existent. Acoustic damping material is applied to interior surfaces of the side, top, bottom and back panels to attenuate standing waves within the enclosure. To achieve maximum strength and resistance to vibration, the side and back panels are securely braced; ¾-inch stock is used for all panels; and every joint is hand fitted, lock mitered and wood welded.

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 deeper and deeper 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.

Caution: Improper storage of wiping rags could result in spontaneous combustion. They should be thrown away or spread out to dry in a well-ventilated area before storage or disposal.

IN CASE OF TROUBLE

A JBL loudspeaker system responds with verbatim accuracy to the signal supplied by the audio power source; it will therefore produce extraneous noises just as accurately as it reproduces desired program material. Noise seldom originates in the loudspeaker system. Its presence usually indicates that one of the other components of the music system, or the program material itself, is faulty. In rare instances when something does go wrong with the loudspeaker system, one or more of the component loudspeakers will stop working altogether or a distinct rattling or scraping sound (indicating a rubbing voice coil) will be heard whenever the system is operating.

If one channel of a stereo installation is not operating, examine the loudspeaker wiring and check the balance control. If wiring instructions were followed correctly, if the connections are clean and tight, and if centering the balance control does not remedy the situation, reverse the right and left loudspeaker connections at the amplifier, taking care to turn the amplifier off before each connection or disconnection. If the previously non-functional loudspeaker system operates, the amplifier or one of the component program sources (tuner, phono, tape deck, etc.) is malfunctioning. In the event that the suspect loudspeaker system is still inoperative, it is probably defective.

To determine whether the defect lies in the amplifier or in one of the component program sources (after verifying that the loudspeaker systems are not defective) reverse the right and left cables from the program source at the amplifier. If the original channel is still inoperative, the amplifier is defective; if the previously inoperative channel functions, the program source is defective. If the amplifier is not faulty, alternately check each program source until the defective unit has been isolated. It is unlikely that more than one program source will be faulty at any given time.

Extraneous interference such as static or radio broadcast signals can be picked up by the component devices. When this occurs, the troublesome unit can be identified by disconnecting inputs from the receiver or amplifier until the interference stops. Again, if the interference persists with none of the input devices operating through the power source, the receiver or amplifier itself is probably defective. Shorting plugs, available from your JBL Audio Specialist, should be inserted in unused phono inputs to help eliminate stray hum or signal pickup.

Hum may be caused by locating a turntable or tape recorder directly over or underneath the amplifier or receiver. The farther the audio power source is located from the phonograph cartridge or tape heads, the less chance there will be of picking up hum. The AC leads and shielded cables should be as widely separated as possible; AC lines should never cross cables or speaker wiring. Power line interference can be further attenuated by using a heavy duty line interference filter between the audio power source and the AC wall outlet.

Fuzzy or indistinct high pitched sounds can usually be traced to the recording itself, a defective cartridge, a worn stylus or insufficient tracking force. Problems with low frequency reproduction are usually the result of room acoustics or placement of the speaker system. Excessive bass boost or incorrect loudness compensation tend to give a muddy or "boomy" quality to reproduced music. The music system can be checked for turntable rumble or other extraneous low frequency signals by removing the loudspeaker grille assembly and observing the motion of the low frequency cone while the system is playing at high volume. If the cone continually moves in and out more than ½-inch or so, excessive low frequency power is being fed to the loudspeaker system.

Acoustic feedback is the result of mechanical vibrations produced by excessive bass at very high volume levels. The loudspeaker system can produce enough energy to vibrate other objects in the room—including the record player and, by direct mechanical transmission, the stylus itself. These vibrations are reamplified again and again, producing very loud "rumble," or even sustained howl that increases in intensity as the volume or bass control is turned up. Possible solutions: 1) locate the speaker cabinets as far as possible from the turntable, 2)adjust or replace the turntable shock mountings, 3) place the turntable on a rubber or sponge mat to further absorb vibrations. If the low frequency tone is still audible, it is probably the result of inherent turntable rumble rather than acoustic feedback.

SERVICE

Should your JBL loudspeaker system require service, return it to the JBL dealer from whom it was purchased. If it is not possible to contact a dealer, write directly to the JBL Service Department describing the difficulty as fully as possible. Products returned to the factory must be sent prepaid to JBL Customer Service, 11340 Sherman Way, Sun Valley, California 91352.

SUMMARY

The L200B exemplifies JBL's reputation for leadership in acoustic and visual design. It is our sincere belief that the L200B—like all JBL products—will provide undiminished listening pleasure for many years to come.

FOR ADDITIONAL INFORMATION

If you have difficulty in achieving the fine performance of which your JBL loudspeaker system is capable, consult the JBL Audio Specialist 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 Information Department explaining the difficulty in detail.

LOUDSPEAKER SYSTEM WIRING