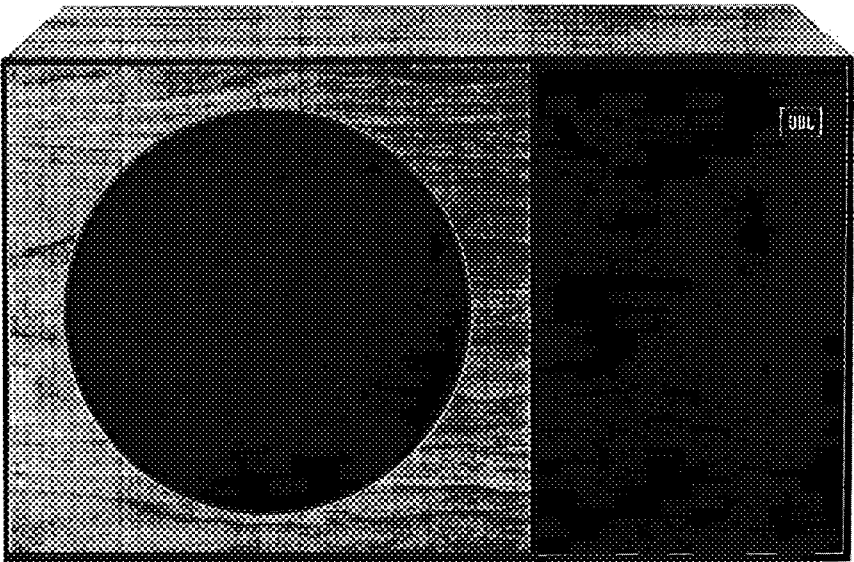


# **JBL 88 NOVA and L88-1 CORTINA**

**INSTALLATION, WIRING and OPERATION**



## **A WORD ABOUT THE JBL L88-1 CORTINA**

The JBL Cortina is identical to the JBL 88 Nova (except for the Cortina's attractive full-size charcoal brown front grille) and all instructions for installation and maintenance are likewise identical.

**JBL**

The JBL 88 is a true precision loudspeaker system whose bold, contemporary appearance and luxurious sound set it distinctly apart from other small loudspeakers. Like all JBL products, it has been crafted with the painstaking care and attention to detail lavished on fine musical instruments. And like a fine musical instrument, the JBL 88 will not deteriorate with age. By following the few simple instructions in this booklet, you can look forward to high fidelity reproduction that remains clean and fresh year after year.

## **WARRANTY**

This JBL product is covered by a two-year warranty. JBL will replace defective parts and make necessary repairs under this warranty if our examination reveals evidence of faulty original workmanship or material. Of course, the warranty does not cover damage caused by misuse, accident or neglect. JBL retains the exclusive right to make such determination on the basis of factory inspection.

*In addition to the established two-year warranty, JBL will, at its option, repair this product free of charge during its entire normal life if factory inspection discloses a manufacturing defect.*

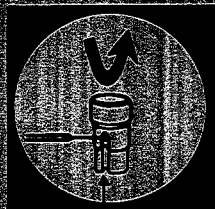
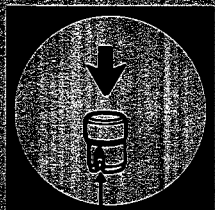
Should your JBL 88 ever require service, return it to the JBL dealer from whom it was purchased. If it is impossible to contact your dealer, please write directly to JBL describing the difficulty as fully as possible. Products returned to the factory must be sent prepaid, and will not be accepted unless written authorization has first been obtained.

To establish the warranty, be sure to fill out and mail the enclosed warranty card immediately.

## **CONNECTING THE JBL 88**

Connections are made to pushbutton terminals on the back of the enclosure. First, strip the insulation from the very end of each wire . . . only  $\frac{1}{8}$ -inch or so. Then push down the terminal cap, insert the bare end of the wire in the hole, and release. The black terminal connects to the amplifier "common" or "gnd" and the red terminal connects to the amplifier 8-ohm tap.

If your amplifier does not have an 8-ohm output, or if for any reason you should want to try a different impedance, you can connect the loudspeaker system to a 4-ohm or 16-ohm output. The specified



8-ohm rating of the JBL 88 is a nominal figure which merely suggests the connection which should give most efficient power transfer between the amplifier and the loudspeaker.

### WIRE SIZE

Eighteen gage insulated wire is the minimum size for speaker-amplifier connections up to 50 feet or so. Ordinary commercial lampcord is perfectly satisfactory for almost any connection likely to be made in a home installation. If you use plastic covered lampcord, you can keep track of which wire is which by noting that one of the plastic jackets is smooth while the other has a distinct ridge. By calling the ridged wire "red" and the smooth wire "black" you can make connections as if you were using color-coded wire.

### AMPLIFIER POWER

Your JBL 88 is not critical as to amplifier characteristics, and excellent performance can be expected from any high-quality unit. To enjoy the full dynamic range of modern recordings, you will want to use an amplifier having at least 30 watts of undistorted output (15 watts per stereo channel or more).

Some audiophiles feel that a great reserve of amplifier power is desirable for effortless reproduction of intense transients that sometimes occur in music. The JBL 88 can reproduce momentary transients whose peak power is equivalent to 150 watts or more. For this reason, the most powerful component high fidelity amplifiers may be used if desired, with little danger of overload.

You should remember however that powerful wide-range amplifiers can accidentally damage any loudspeaker under the right conditions. For example, re-winding your tape recorder with the playback volume turned up can generate "squeals" powerful enough to burn out the high frequency loudspeaker if the practice is continued for any length of time. Similarly, powerful low frequency pulses extending down into the subsonic range can eventually damage the low frequency loudspeaker. If the phonograph pick-up is accidentally dropped with the volume control full up, or if you play the system **very** loudly with excessive bass boost, almost the full rated power of the amplifier can be channeled into dangerous subsonic energy.

One easy way to check your system for turntable rumble or other extraneous low frequency signals is to remove the loudspeaker grille and observe 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 1/4-inch or so, excessive low frequency power is somehow being fed to the loudspeaker system.

## ADJUSTING THE JBL 88

Your JBL 88 has a rear panel control for adjusting the relative intensity of the high frequency transducer so that you can make the sound brighter or mellower to suit your personal listening taste and the particular acoustics of your listening room. Turning the knob clockwise gives greater emphasis to the treble range.

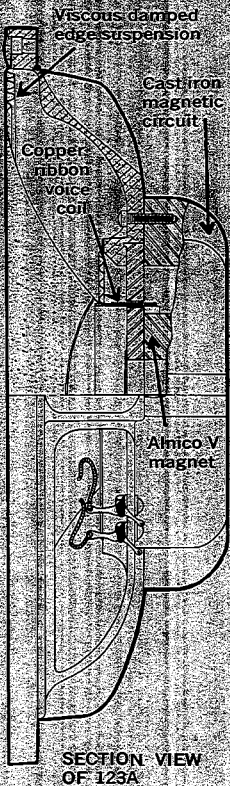
The proper setting should be determined while the system is reproducing normal program material, and with the tone controls on your amplifier set at their normal positions. Once the setting for best overall balance has been found, it should not be changed. The amplifier tone controls will allow you to compensate for differences in individual recordings.

## INTERNAL COMPONENTS OF THE JBL 88

The loudspeaker components installed in the JBL 88 are precision devices, individually crafted and tested. After each unit has been checked by JBL's Quality Assurance technicians, it is installed in the acoustical enclosure and the complete system is then inspected and tested again to make sure that its performance is exactly the same as every other JBL 88.

Low frequencies are reproduced by the 123A, a new 12-inch transducer designed especially for this system. A 3" edgewound copper ribbon voice coil operates in a magnetic field having a total flux of 160,000 maxwells, following the electrical signal with unerring accuracy. The voice coil drives a molded cone, carefully damped with an exclusive JBL formula to prevent spurious resonance or "hangover". The shallow curved cone gives uniform, wide-angle distribution of sound energy through the full frequency range covered by the 123A, and its mechanical suspension allows extremely long excursions without distortion.

Frequencies above 3,000 cps are reproduced by the

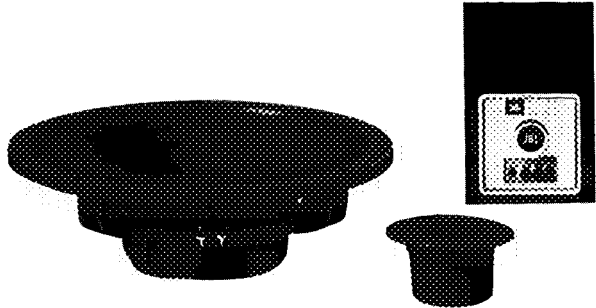
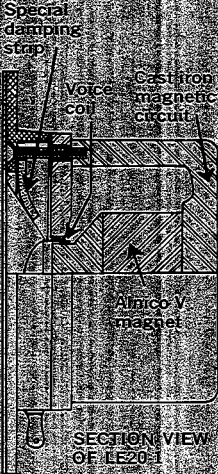


JBL LE20-1 high frequency transducer, the same unit found in the JBL Lancer 77 and Lancer 99. The LE20-1 is especially noted for the utter clarity with which it handles even the most complicated treble waveforms.

To achieve pure, silky high frequency reproduction, JBL engineers first built a heavy magnetic assembly capable of producing a field of more than 16,000 gauss in the voice coil gap! In this intense field, the small, light moving assembly responds with verbatim accuracy to delicate treble frequencies. Next, a shallow cone of small diameter (less than 2 inches) was designed. By approximating a "point source" of sound, high frequencies are distributed evenly through a wide angle so that each listener hears the same tonal balance and the same blend of direct and reverberant sound.

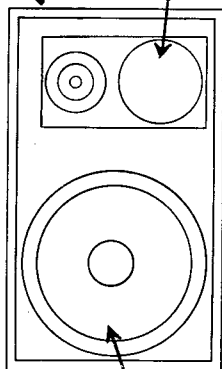
Finally, JBL experimented with countless cone materials and assembly methods to make sure that the LE20-1 reproduced all frequencies within its range with equal efficiency. After the optimum material, mass, density and stiffness were found, additional damping was added at three carefully controlled locations to prevent any stray resonances from occurring, even at peak loudness levels.

The frequency dividing network installed in the JBL 88 was designed to be used only with the 123A and LE20-1, and was developed through acoustic tests with these transducers. As with other JBL two-way loudspeaker systems, the goal was to achieve completely imperceptible transition between the low frequency and high frequency sound sources. Listening to the JBL 88, you are conscious only of a single, integrated source of sound. There is never an audible "jump" from one loudspeaker to the other.



LE20-1 High frequency transducer

Low frequency port tube



123A Low frequency loudspeaker

## IN CASE OF TROUBLE

The JBL 88 responds accurately to the electrical signal supplied from the power amplifier. It will reproduce extraneous noises such as hum, rattle or hiss just as accurately as the desired program material. Such noises do not originate in the loudspeaker system and indicate that one of the other components of the system, or the program source itself is at fault. In the rare instance that something does go wrong with the loudspeaker system, one of the transducers either will stop working altogether, or there will be a distinct rattling or scraping sound whenever the system is used.

If it should ever be necessary to remove loudspeaker components for testing or repair, proceed as follows:

- 1) Take off the grille. This is a single assembly held to the cabinet with friction clips. Carefully pull up the grille a little at a time, being very careful not to mar the finish of the enclosure.
- 2) To remove the 123A, simply take out the four Phillips-head screws around the edge of the frame. Then lift the speaker out of the enclosure until the terminals are accessible. Unsolder the wires.
- 3) To remove the LE20-1 you must first take off the decorative black ring that covers the mounting screws. The foil ring must be peeled off slowly and carefully. Then remove the three Phillips-head screws and lift out the LE20-1 so that the wires can be unsoldered from the terminals.
- 4) When resoldering wires, make sure to observe the following polarity for smoothest response through the crossover region:

**123A** — Green wire to red terminal, black wire to unmarked terminal.

**LE20-1** — Black wire to red terminal, red wire to unmarked terminal.

## PLACEMENT

You will find that the placement of the loudspeakers in your listening room has a definite effect upon reproduced sound. The accepted rule of placement for stereo speakers is that a person sitting in the usual listening area should see an angle of about 40 degrees between the two sound sources. Therefore, the distance between the speakers depends upon their relationship to the listening area. The loudspeakers may be located at any height above

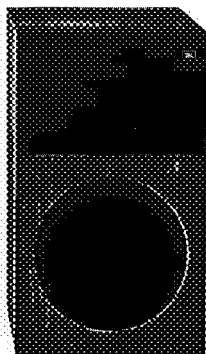
the floor, but somewhere near ear level usually gives the most realistic suggestion of a live performance. There should be no overstuffed furniture or other large obstructions between the loudspeakers and the listening area.

If possible, you should experiment with the placement of the loudspeaker systems before deciding on a final arrangement. In many cases, moving a loudspeaker only a few feet will make a dramatic difference in the smoothness of low bass reproduction.

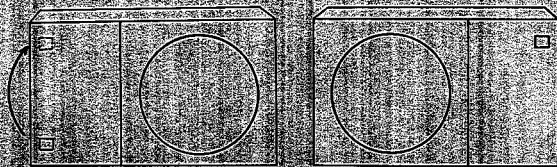
### HOW TO CHANGE THE POSITION OF THE JBL 88 NOVA MEDALLION

If you want to arrange a pair of JBL 88's symmetrically (as shown below, for example), you can follow these steps to change the position of one medallion:

- 1) **Remove the medallion from one enclosure.** Grasp the cast medallion at the edges and gently work it out of the grille.
- 2) **Find the alternate mounting hole.** A metal pin on the back of the medallion fits into a corresponding hole in the frame behind the grille fabric. There is a second hole provided, directly opposite the one from which the medallion was removed. Using a needle or an awl, gently probe until you find the hole.
- 3) **Insert the medallion.** Twist it back and forth, gradually working the metal pin into the mounting hole until the medallion is flush against the fabric.



JBL 88 is finished on all four sides for vertical or horizontal placement.



### FOR ADDITIONAL INFORMATION

If you have any difficulty in achieving the fine performance built into your JBL system, please consult the Audio Specialist from whom you purchased your components. He will be happy to supply expert advice and help. Or you may write directly to the JBL factory. Address your inquiry to the Technical Service Department.