



## Troubleshooting and Maintenance

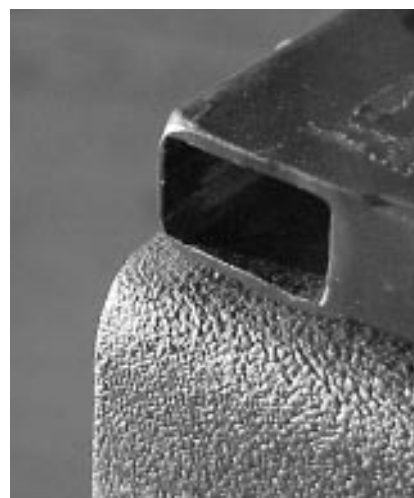
The JBL VERTEC system is designed to provide you with years of trouble-free use. Nonetheless, problems can and do arise, and the system design takes this into account based on JBL's years of real-world experience. Two spares kits, one mechanical, the other acoustical should provide most of the spare parts needed over time. It is prudent to have a minimum number of advance spare parts in your own inventory so that event deadlines and such are not hindered by a lack of them. The spares kits are model numbers VT4889-MSP (mechanical) and VT4889-ASP (acoustical).

*For information on ordering system components, part numbers and other items see Chapter 12, "Accessories and Support Resources".*

### The Suspension System

As noted in Chapter 6, the suspension system consists of flexible hardware parts designed for portable use in field conditions. Frequent and regular inspection is prudent and essential to continued safe product deployment. The fabric cover supplied with each enclosure was designed to protect the enclosure and the rigging frames. Use the cover.

- Check the square openings at the ends of the rigging frame tubes for deformation. If the opening is ever damaged from extreme stress, the hinge bars may be difficult to move in and out. It is important to frequently inspect the rigging frame tube opening.
- JBL recommends that you inspect the rigging frames and hinge bars on each enclosure prior to delivering them for a tour or other event, and the hinge bars should be checked visually each time they are unlocked from the array frame.



**The rigging frame opening should be free of dirt and other obstructions. Inspect it frequently.**



- Inspect all locking pins and lanyards frequently. Ensure that the lanyard is tightly secured to the rigging frame and/or to the array frame.



- Inspections should include tightening and/or replacing any loose or damaged hardware.
- Replacement parts are available as individual pieces or as part of an overall system mechanical spares kit. See the exploded-view drawings in the VT4889 Technical Manual for a complete parts list.

The hinge bars are an integral and important part of the suspension system. Inspect these frequently. The center hinge pins are both tempered and inserted cryogenically for additional strength. If the center pin looks like it has shifted, remove the hinge bar from service and inspect it more closely. Replace it if necessary. The hinge bar is part number: 336892-001 (front) and 336893-001 (rear). These can be ordered as a group through part number VT4889-RIG.

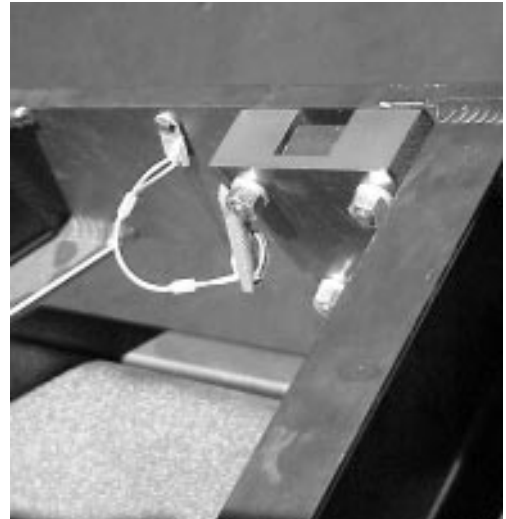


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Inspect the array frame receiver block. This is the unit on the Array Frame that accepts the hinge bar from the enclosure.

It includes a long pin and the restraining lanyard. The receiver block attaches to the array frame using Grade 8 load-rated hardware. Always ensure that this hardware is securely fastened.

For liability reasons, you should always use replacement hardware whose origins are traceable. It is best to purchase the replacement parts from your authorized JBL Distributor or Regional Representative.



***Warning!***

***The four receiver blocks carry the entire load of a suspended array making them critical pieces of the suspension system. Before and after using the array frame, inspect the receiver blocks for signs of deformation and/or damage. Ensure that all hardware is tight.***



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## Transducer Access and Testing

### Low Frequency

The two low frequency drivers can be tested individually without disassembly. Each driver connects separately to the NL8 connector on the rear panel. Arrows on the rear panel indicate which transducer is connected to which pins on the connector. The woofers are H-suffix (8-ohm), and their nominal DC resistance is 5 ohms each.

1. Position the enclosure on its back, with the speakers facing up.
2. Remove the screws from the metal grille screen. Remove the grille screen and set it aside.
3. Remove (8) 10-32 Phillips head machine screws located around the periphery of the woofer frame. Be careful. Don't slip and puncture the woofer's outer surround.
4. Reach inside the port tube to loosen the woofer from the recess.
5. Lift the woofer free of the enclosure. Disconnect the wires from the voice coil terminals.



**Front side of the VT4889 enclosure, showing the low frequency grille removed. An RBI has also been removed, showing the pair of mid frequency loudspeakers. The high frequency grille, normally held in place with both RBI's, is shown removed from the baffle.**



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### **Mid Frequency**

There are four mid frequency drivers. They are located behind each RBI, two per side. The drivers are H-suffix, (8-ohm), wired in series-parallel for 8-ohm total impedance. They can not be tested individually via the connector panel. However you can apply a test signal and listen to each driver individually from the front. The nominal DC resistance of each driver is 5-ohms.

1. Position the enclosure on its back with the speakers facing up.
2. Remove (8) Phillips head screws from the RBI (Radiation Boundary Integrator).
3. Lift the RBI clear of the enclosure. Be careful and watch the edge nearest the screen covering the exits of the HF Waveguides.
4. It may be necessary to remove the low frequency grille adjacent to the RBI and pry the RBI loose from the baffle, due to a tightly-fitting gasket. Place the pry tool between the cabinet and the gasket surface.
5. You can now lift the mid frequency drivers clear of the enclosure. Disconnect the wires from the voice coil terminals.
6. Inspect the sealing gasket at the rear of the 2250H driver. Replace it if necessary.



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### High Frequency

There are three high frequency drivers. One is mounted to the rear of each high frequency Waveguide. You access the HF drivers by removing the connector panel at the rear of the enclosure. The drivers are H suffix, (5.3-ohm impedance), wired in series for 16-ohm total impedance. The DC resistance is 4 ohms. They cannot be tested individually via the connector panel. However you can apply a test signal and listen to each driver individually from the front.

Since the drivers are connected in series, if one of them develops an open voice coil, none of them will function. However, if proper signal input and level management techniques are applied during system use, this should not be a frequent occurrence. They are very robust and not prone to failures.

Access the HF drivers by removing the connector panel from the rear of the enclosure.

1. Remove (10) Phillips head screws from the flange surrounding the connector panel at the rear of the speaker. Carefully pry the panel loose.
2. Lift the panel clear of the enclosure. Be careful of the wires connected to the panel.
3. You can now access the HF drivers.

The diaphragm assembly uses a precision-machined metal ring as its foundation. This ring fits into a matching groove in the driver's magnetic pole piece. Aside from a hex-head screwdriver, no other hand tools are needed. After cleaning the gap area using masking tape, follow instructions for refreshing the measured amount of ferrofluid. Drop the replacement diaphragm into place. The voice coil connections fit through holes in the driver's rear cap. Replace the four screws that secure the rear cap to the driver's body.



**2435H compression driver, showing a re-fitting of the back cover prior to replacing the mounting screws. Gold-plated knife-switch type contacts complete the wiring circuit, and couple the cover and magnet structure together when the keyed slot is properly aligned.**



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The diaphragms are made of beryllium. Any defective units (diaphragm assembly and any metal pieces) should be returned to JBL for failure-mode inspection, and proper disposal.

## Enclosure Finish

The DuraFlex finish on a VT4889 enclosure can be wiped clean with a water and soap-based mixture, or with mild household cleaners. When using a cloth or rag, it is best to use thick, non-fuzzy fabrics. Loose-knit cloths or paper towels may deteriorate and leave residue or smudged spots.

If the finish is scuffed or damaged to the point that paint is required, this can be done but first it will require careful cleaning.

### Instructions for painting:

- Prepare the enclosure surface by cleaning and wiping off dust and film with a damp cloth. It may be necessary to use a mild household cleaner to remove grease. Avoid using a cloth that will deteriorate over the textured surface.
- Apply as many coats of paint as is required. Application can be by rolling, brushing or spraying. Care must be taken when painting the grille. Avoid any paint or type of application that will clog the open cells in the foam of the front grilles. Depending on the type of paint, it may not be wise to spray the grille.
- For painting systems that are installed in environmentally-hostile locations, is recommended that an automotive paint should be used for maximum protection.

*Note: for systems that will be transported and handled on a regular basis, oil-based paints or Krylon-type spray paints will give better long-term results than water-based Latex type paints.*



