

## Model 151™ and 111™ ENVIRONMENTAL SPEAKER SYSTEM

### SPECIFICATIONS

**Transducer:**

1-4.5" (11.4 cm) full-range,  
environmental driver

**Nominal Impedance:**

4 Ohms

**IEC Power Rating:**

Min: 10 Watts Per Channel  
Max: 40 Watts Per Channel

**Cabinet:**

Black or white high-impact molded  
polypropylene

**Speaker Dimensions:**

6.1"H x 9.1"W x 5.9" D  
(15.4 H x 23.0 W x 15.0 D cm)

**Shipping Weight**

4.0 lbs. (1.8 kg) Per Speaker

## Test Procedures

**NOTES:** In each test procedure, it is necessary to remove the grille to access the driver. Refer to the **Grille Removal** procedure.

Polarities are not marked on the input terminals of the 151™ speaker. The red terminal is the positive (+) terminal and the black terminal is the negative (-) terminal. See **Figure 1**.

### 1. Rub and Tick Test

**A.** Connect a sine wave oscillator to a power amplifier. Adjust the frequency of the oscillator to **10 Hz** and the amplifier output to **6 Vrms**. Connect the amplifier output to the input terminals of the 151 speaker (see **Figure 1**). No extraneous noises such as rubbing, scraping or ticking should be heard.

**NOTE:** To distinguish between normal suspension noise and rubs or ticks, displace the cone on the driver slightly with your fingers. If the noise can be made to go away or get worse, it is a rub or a tick and the driver should be replaced. If the noise stays the same, it is normal suspension noise and the driver is fine. Suspension noises will not be heard with program material.

### 2. Sweep Test

**A.** Sweep the oscillator from **10 Hz** to **3 kHz** using the **6 Vrms** signal. There should not be any loud extraneous sounds. (**Note:** A "whooshing" noise from the port at approximately **80 Hz** is acceptable). If there are any loud buzzes or distortion, replace the driver. (See **Disassembly/Assembly Procedures** for instructions on replacing the driver).

**NOTE:** There should not be any buzzes or rattles from within the speaker cabinet. Redress any wire or component that buzzes.

**B.** Reduce the amplifier output to **3 Vrms** and continue sweeping from **3 kHz** to **15 kHz**. If there is any buzzing or distorting, replace the driver (see **Disassembly/Assembly Procedures** for instructions on replacing the driver).

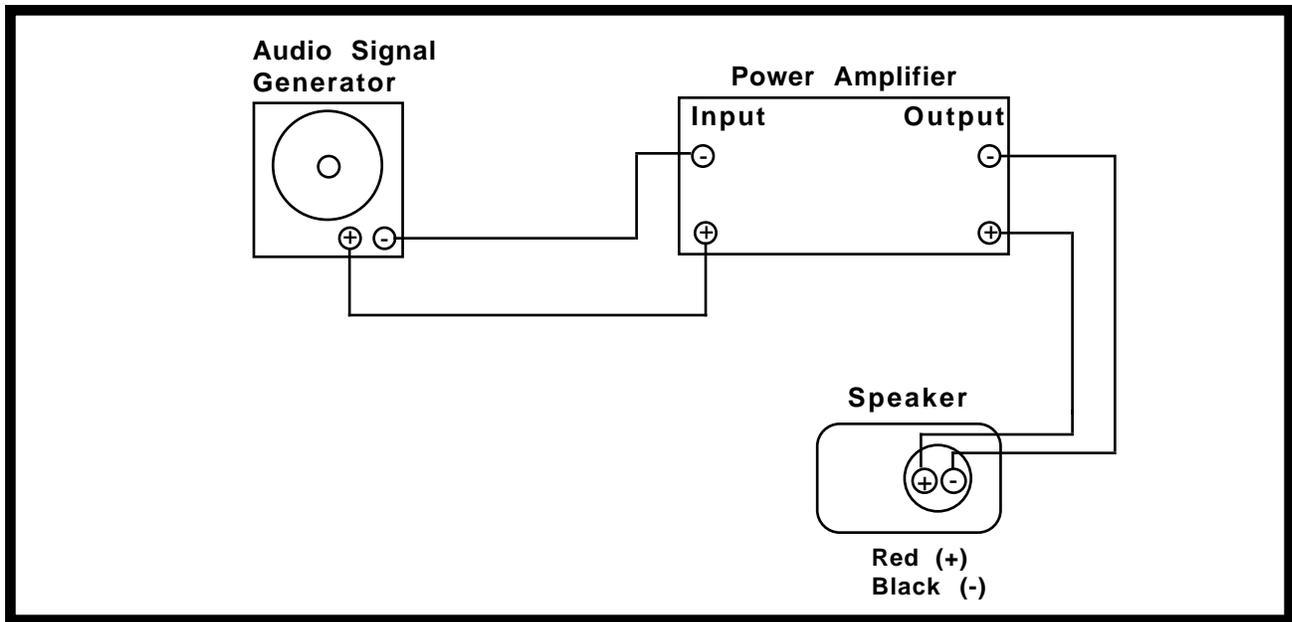


Figure 1. Test Connections 151™ Speaker

### 3. Air Leak Test

**A.** Using the **6 Vrms** signal, set the oscillator frequency to **10 Hz**. Block the ports. For at least **3 seconds**, listen for air leaks around the driver and baffle. If there is a "whooshing" noise around the driver, re-position the driver gasket behind the driver to make an airtight seal. If there are similar noises around the baffle, make sure that it is securely fastened to the speaker cabinet.

### 4. Phase Test

**NOTE:** Supply voltage should only be momentarily applied to the speaker input terminals to avoid possible damage to the speaker.

**A.** Set a **DC** power supply to **10 volts**. To ensure that the driver is connected in phase, connect the positive lead of the supply to the positive (+) speaker input terminal and the negative lead to the negative (-) input terminal. The driver should move outwards with the application of the supply voltage.

## Disassembly/Assembly Procedures

**NOTE:** Refer to **Figure 2** for an exploded view of the speaker assembly. Certain parts will be referred to in these procedures. The item number which corresponds to the part will be enclosed in parentheses-i.e.-grille **(1)**.

### 1. Grille Removal

**NOTE:** The grille is made entirely of **metal**. Do not try to remove the grille by pulling on the plastic (polypropylene) speaker enclosure.

**A.** Insert the tip of a scribe or nail through one of the perforations in the grille **(1)**. Hint: Insert at one of the corners. **Carefully** work the grille out of the retaining slot.

### 2. Grille Replacement

**A.** To install the grille **(1)**, make sure that it is oriented as shown in **Figure 2**.

**B.** Align the grille to the speaker enclosure and push in lightly.

### 3. Driver Removal

**A.** Remove 3 screws **(4)** which secure the driver **(3)** to the speaker baffle **(6)**.

**B.** Carefully lift the driver out of the enclosure and cut the wires as close to the driver terminals as possible.

### 4. Driver Replacement

**A.** Strip the wires and connect to the replacement driver **(3)**. Make sure that the **red** wire is connected to the **positive (+)** terminal and the **black** wire is connected to the **negative (-)** terminal of the driver. Make sure that the driver terminals are centered in the speaker enclosure. The correct orientation is shown in **Figure 2**.

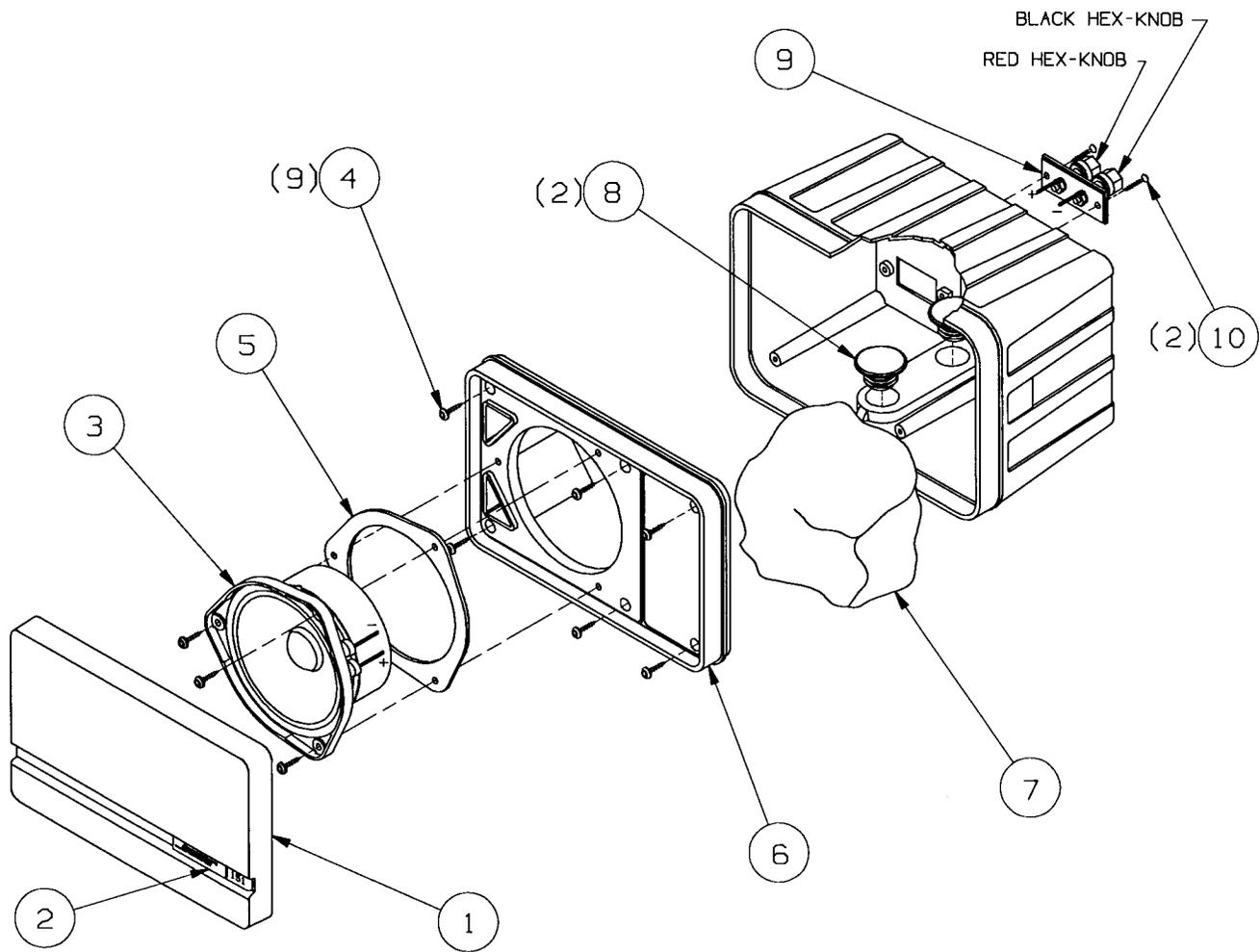
**B.** The gasket **(5)** must also be correctly positioned behind the driver to provide an airtight seal. Secure the driver **(3)** to the baffle **(6)** with 3 screws **(4)**. Repeat the driver test procedures.

## 5. Baffle Removal

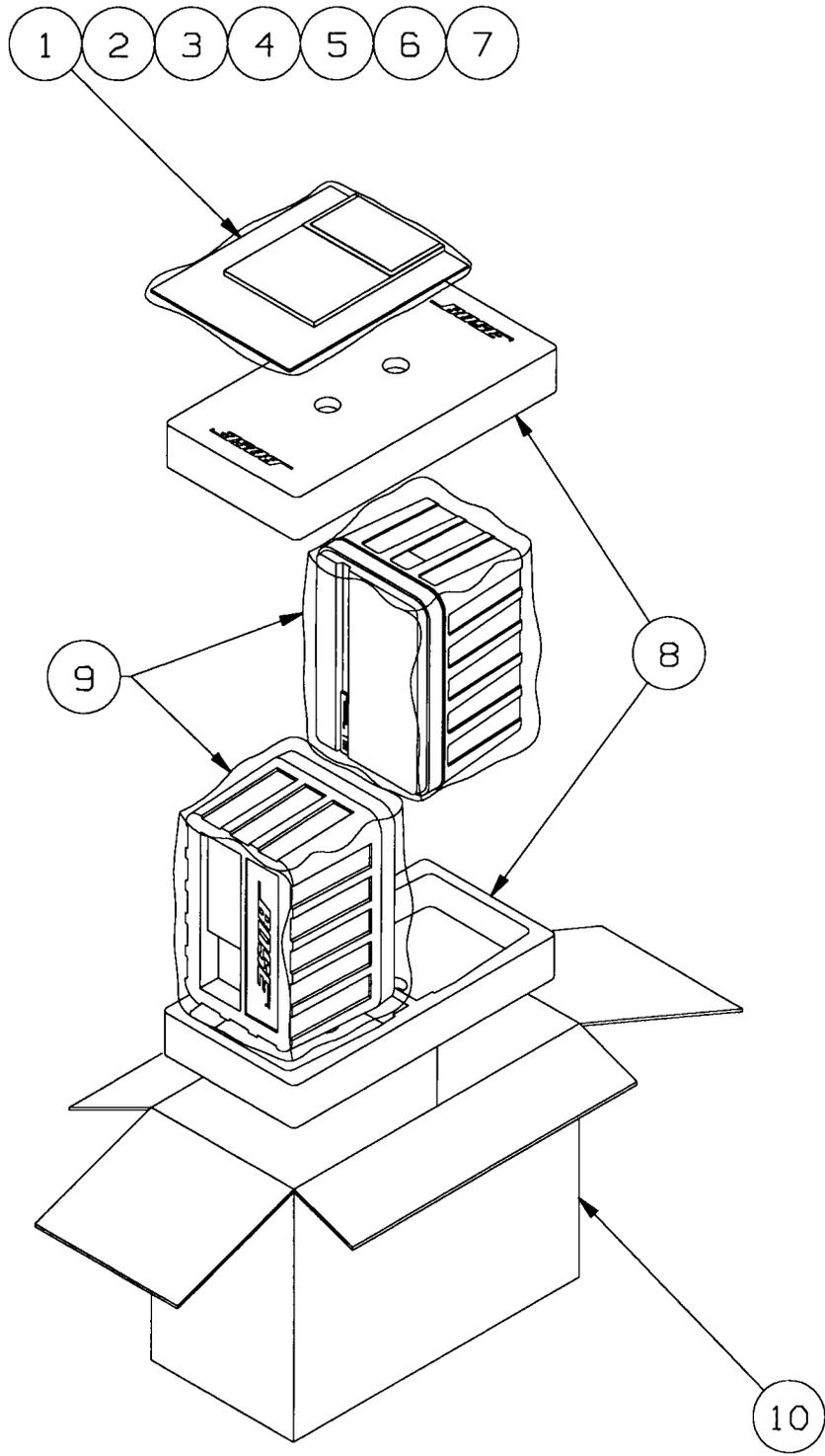
**A.** Remove 6 screws **(4)** that hold the baffle **(6)** in place. (Removing the driver is **not** necessary). Stick your fingers in the baffle ports and pull the baffle carefully away from the enclosure. It may take quite a bit of force to accomplish this task.

## 6. Baffle Replacement

**A.** Align the port side of the baffle **(6)** to the side of the enclosure that has the input terminals **(9)**. The baffle will only fit one way. Secure the baffle to the enclosure with 6 screws **(4)**. Repeat the air leak test.



**Figure 2. Speaker Assembly Exploded View**



**Figure 3. Packaging Exploded View**

## 151™ Speaker Assembly Parts List (Figure 2)

Item Number	Description	Part Number	Qty. Per Speaker Assy.	See Note
1	Grille -Metal, Black	179129-1	1	2
	Grille -Metal, Arctic White	179129-2	1	2
2	Nameplate-Logo, Black	171292-1	1	2
	Nameplate-Logo, White	171292-2	1	2
3	Driver	257948-001	1	
4	Screw-TAPP,8-11x3/4,PAN,XRC/SQ	173556-12	9	
5	Gasket-Driver, 4.5"	128407	1	
6	Baffle-Black	131741-01A	1	
	Baffle-White	131741-01B	1	
7	Batting-Polyester	116082	1	1
8	Threaded Insert	123991	2	
9	Connector-Terminal Strip	171295	1	
10	Screw-TAPP,6-13x.5,PAN,XREC/SQ	173555-08	2	

### NOTE

**1.** This part is not normally available from Customer Service. Approval from the Field Service Manager is required before ordering.

**2.** The nameplate is not easy to replace. If you need to replace the grille, you must also order a new nameplate. Re-attach the nameplate to the grille with an appropriate adhesive (i.e.-superglue) or by using a soldering iron. **CAUTION:** If you use a soldering iron, **CAREFULLY** melt the nameplate posts against the grille. Do not melt down the posts too much or the nameplate will be ruined. Also, the nameplate should be secured so that it does not vibrate.

### 151™ Packaging Parts List (Figure 3)

Item Number	Description	Part Number	Qty. Per Carton	See Note
1	Owner's Manual	171297	1	
2	Card-Warranty, Universal	149225	1	
3	Polybag (Literature Kit)	103351	1	
4	List-Warranty Service	122766	1	
5	Envelope-Warranty Registration	123001	1	
6	All Products Brochure	141478	1	
7	Express Music Catalog	145891	1	
8	Packing-Filler, Foam	124921	2	
9	Polybag (Speaker)	123831	2	
10	Carton	171298	N/A	

SPECIFICATIONS AND FEATURES SUBJECT TO CHANGE WITHOUT NOTICE

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