

301[®] SERIES III DIRECT/REFLECTING[®] SPEAKER SYSTEM

SPECIFICATIONS

Transducers:

1-8"(20 cm) woofer
2-3"(7.6 cm) tweeters

Nominal Impedance:

8 Ohms

IEC Power Rating:

Min: 10 Watts Per Channel
Max: 75 Watts Per Channel

Cabinet:

Black, white, or walnut-grained finish

Speaker Dimensions:

10.5"H x 17"W x 9.5" D
(27 H x 43 W x 24 D cm)

Shipping Weight

34 lbs. (15.5 kg) Per Pair

BOSE® 301™ SERIES III TECHNICAL DESCRIPTION

The **BOSE** 301 Series III System is an economical way to enjoy the legendary spatial realism of a Direct/Reflecting® system. This system creates a natural balance of reflected and direct sound that conventional speaker designs can't match. The result is lifelike spaciousness that approaches the realism of a live performance. Even sound distribution also enables the listener to sit or stand anywhere and still hear the same volume and blend of musical instruments.

This achievement is also aided by three high performance drivers in each cabinet: one 8" woofer and two 3" tweeters. The tweeters are arranged in a three-dimensional Free Space® Array which is mounted slightly away from the cabinet face. One tweeter is aimed inward toward the center of the listening area. The second tweeter is aimed outward so that its output is reflected off the side wall. This arrangement provides the excellent spatial characteristics of a Direct/Reflecting® system.

The 301 system employs the **BOSE** Dual Frequency™ crossover network. The crossover provides a smooth transition from low to high frequencies by sending sound to all the drivers over nearly a full octave. The result is a clear definition of each instrument and voice.

Additionally, the system incorporates slot-port technology which reduces port noise and produces cleaner, more natural bass. The sum of all these unique features makes the 301 Series III speaker capable of reproducing the wide dynamic range demanded by today's advanced recordings without strain or loss of clarity.

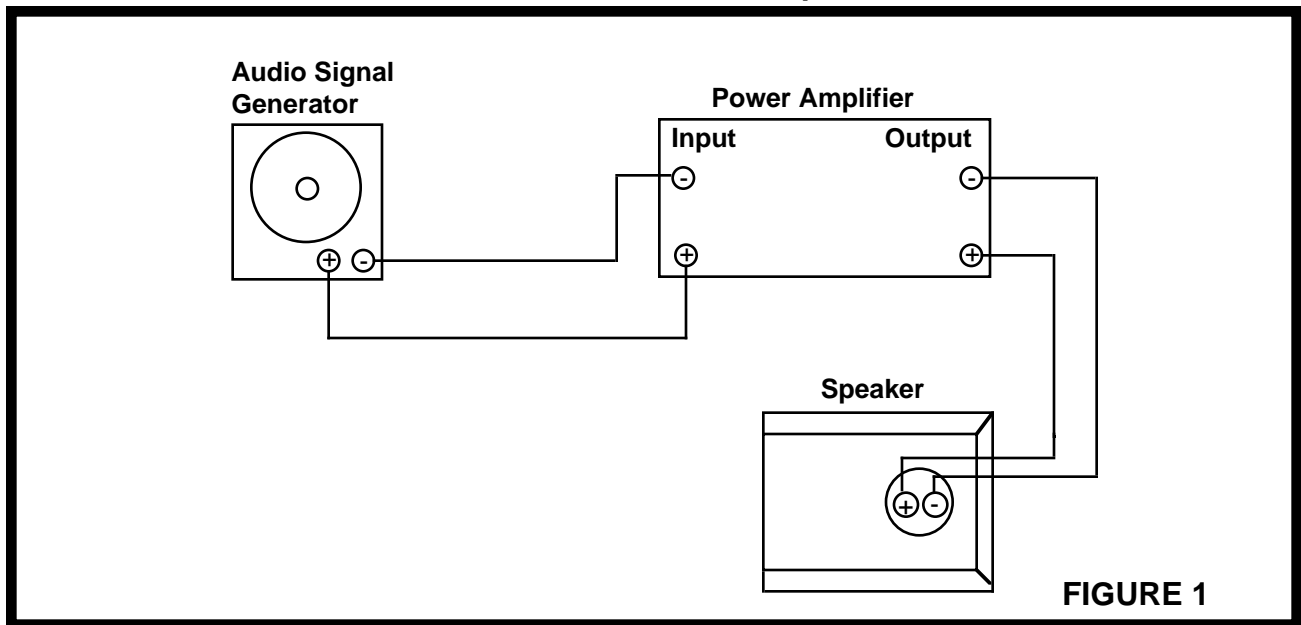
TEST PROCEDURES

NOTE: Before performing any tests, remove the grille assembly. Refer to the **Grille Assembly Removal** procedure.

1. Woofer 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 **8 Vrms**. Connect the amplifier output to the input terminals of the 301-III speaker (see **Figure 1**). No extraneous noises such as rubbing, scraping or ticking should be heard.

Test Connections 301 III Speaker



NOTE: To distinguish between normal suspension noise and rubs or ticks, displace the cone on the woofer 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 woofer should be replaced. If the noise stays the same, it is normal suspension noise and the woofer is fine. Suspension noises will not be heard with program material.

2. Woofer Sweep Test

A. Sweep the oscillator from **10 Hz** to **3 kHz** using the **8 Vrms** signal. There should not be any loud extraneous sounds. If there are any loud buzzes or distortion, replace the woofer.

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

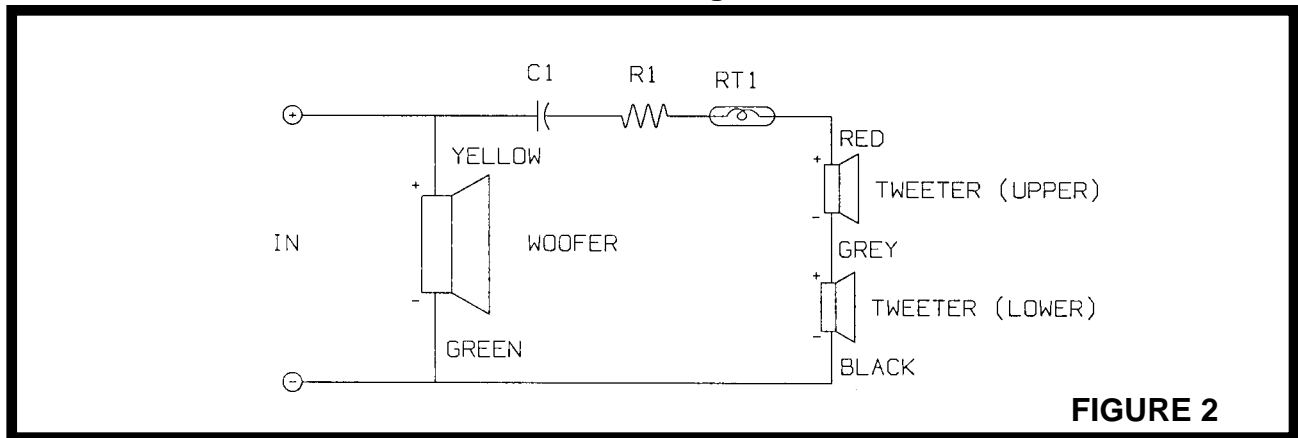
3. Tweeter Sweep Test

A. Reduce the amplifier output to **4.0 Vrms** and continue sweeping from **3 kHz** to **15 kHz**. If one of the tweeters is buzzing or distorting, replace it.

4. Air Leak Test

A. Using the **8 Vrms** signal, set the oscillator frequency to **45 Hz**. For at least **5 seconds**, listen for air leaks around the woofer, terminal cup and tweeter mounting brackets. If there is a "whooshing" noise around the woofer, re-position the woofer gasket behind the woofer to make an airtight seal. If there are any similar noises around either of the tweeter mounting brackets or the terminal cup, make sure that these items are securely fastened to the speaker assembly.

Schematic Diagram



5. Woofer 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 **8 volts**. To ensure that the woofer 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 woofer should move outwards with the application of the supply voltage. This ensures that the woofer and speaker input terminals are wired in phase. See **Schematic Diagram, Figure 2**.

6. Tweeter Phase Test

A. Remove 4 screws and lift the woofer carefully away from the speaker cabinet in order to access the terminal cup. Check the wiring on the terminal cup and on both sets of tweeter terminals against the schematic in **Figure 2**. This ensures that both tweeters are wired in phase.

REMOVING THE GRILLE ASSEMBLY

A. The grille assembly is held in place by 6 grille fasteners. To remove, **CAREFULLY** pull the assembly away from the speaker (it should lift away easily).

REPAIR PROCEDURES

1. Replacing the Woofer

A. Remove the 4 screws holding the woofer in place. (Refer to **Figure 3** for an exploded view of the speaker assembly). Lift the woofer out and cut the wires connected to the woofer terminals as close to the terminals as possible. Strip the wires and connect to the replacement woofer. Make sure that the yellow wire is connected to the positive (+) terminal and the green wire is connected to the negative (-) terminal of the woofer. Remount the woofer to the cabinet using the 4 screws. Repeat the woofer test procedure.

2. Replacing the Tweeters

NOTE: The positive terminal of each tweeter is marked with a red dot.

A. The upper and lower tweeters are mounted on brackets. Refer to **Figure 3**. Remove one (1) screw which secures either tweeter to its bracket. Lift the tweeter away from the bracket and cut the wires connected to the tweeter as close to the tweeter terminals as possible. Strip the wires and connect to the replacement tweeter. The tweeters should be wired as follows:

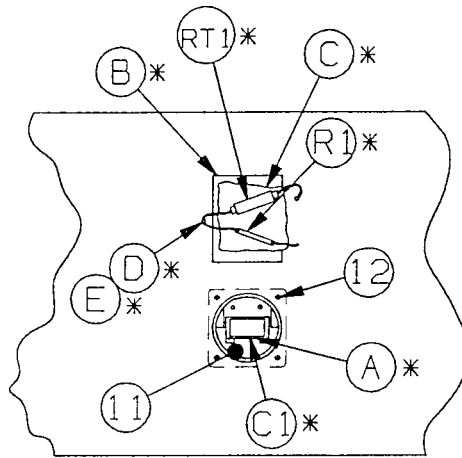
(1). Upper Tweeter-Make sure that the red wire is connected to the positive (+) terminal and the grey wire is connected to the negative (-) terminal.

(2). Lower Tweeter-Make sure that the grey wire is connected to the positive (+) terminal and the black wire is connected to the negative (-) terminal.

REMOUNTING THE GRILLE

A. The grille can only be remounted one way (see **Figure 3**). Align the grille feet with the 6 grille fasteners. Press in lightly until the grille feet are engaged by the grille fasteners. The grille assembly should be flush with the front and side of the cabinet. The nameplate should be located near the bottom side of the grille. See **Figure 3**.

Main Assembly Part Drawing



VIEW A-A

* = SEE CROSSOVER PARTS LIST

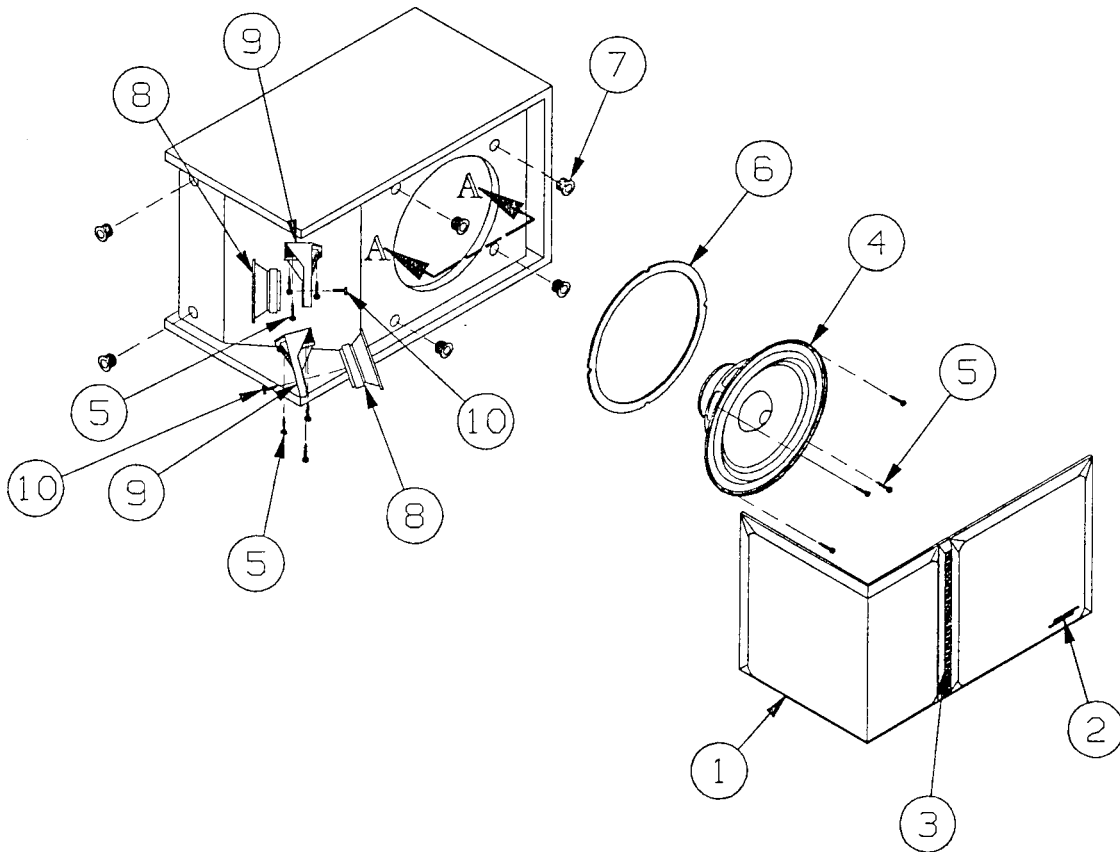


FIGURE 3

Carton Parts Drawing

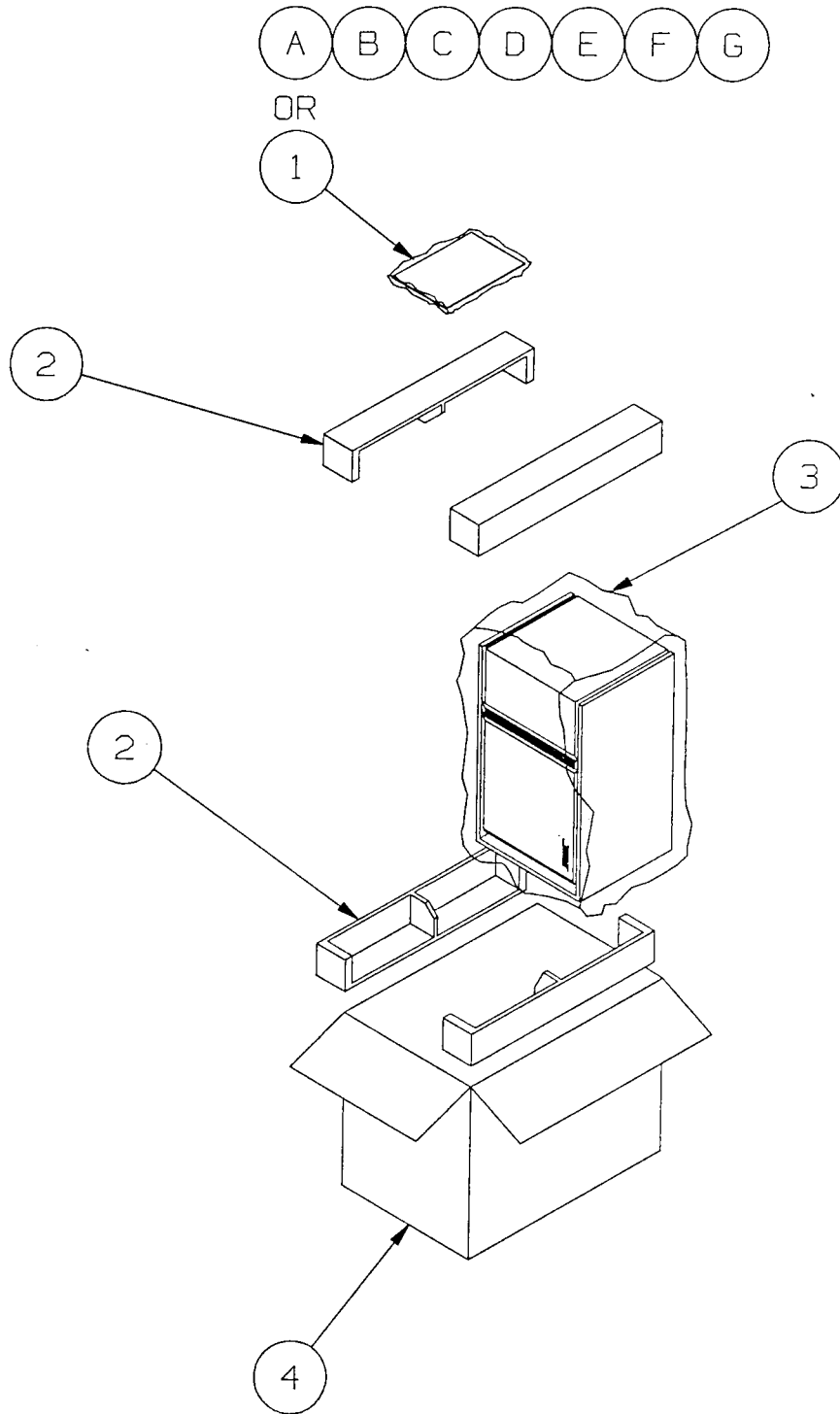


FIGURE 4

301 Series III Parts List (Figure 3)

Item Number	Description	Part Number	Qty. Per Speaker Assy.	See Note
1	Grille Assembly-Dark Brown Grille Assembly-Black Grille Assembly-White	143767-1 143767-3 143767-4	1 1 1	
2	Nameplate-Gold/Brown Bkgnd. Nameplate-Clear/Black Bkgnd.	132545-04 132545-01	1 1	
3	Trim Strip-Black Grille Clip (Not Illustrated)	143770-1 120716	1 2	
4	Woofers-8" or Woofers-8"	120713 181870-001	1 Replace in pairs	10/2002
5	Screw-HIRS,8-10x3/4,PAN,XRC/SQ	137527-12	10	
6	Woofers Gasket	120715	1	
7	Grille Fastener	117995	6	
8	Tweeter 3"	130714	2	Alt124618
9	Tweeter Mounting Bracket	128501	2	
10	Screw-Machine,8-32x1/2,Hex Washer Hd.	121441-08	2	
11	Terminal Cup Connector	120711	1	
12	Screw-6-10x1/2,PAN,XRC/SQ	138897-08	4	

Crossover Parts List (Figure 3)

Symbol or Item Number	Description	Part Number	Qty. Per Speaker Assy.	See Note
C1	Capacitor-Film,5%,50V,3.4 μ F	106825	1	1
R1	Resistor-WW,10%,5W,7.5 Ω	125605-7R5	1	1
C1	Capacitor-Film,5%,50V,3.7 μ F	107055	1	1
R1	Resistor-WW,10%,5W,6.2 Ω	125605-6R2	1	1
C1	Capacitor-Film,5%,50V,3.0 μ F	104130	1	1
R1	Resistor-WW,10%,5W,9.1 Ω	125605-9R1	1	1
C1	Capacitor-Film,5%,50V,2.4 μ F	104131	1	1
R1	Resistor-WW,10%,5W,13.0 Ω	125605-130	1	1
RT1	Mini-Lamp	117805	1	
A	Foam Tape	118223	N/A	
B	Foil Tape	103597	N/A	2
C	Glass Wool	103075	N/A	2
D	Connector,Terminal,Wirewrap	118008	3	
E	Screw-TAPP,8x3/8,HEXW,SLOT	103802-06	3	

NOTES

1. C1 and R1 must be used in the combinations shown above in order to achieve the proper frequency response of the loudspeakers.
2. This part is not normally stocked as a service part.

301 Series III Parts List (Figure 4)

Item Number	Description	Part Number	Qty. Per Carton	See Note
1	Literature Kit (N. America) Literature Kit (Europe)	143754-1 143754-2	1 1	
	which consists of:			
A	Owner's Manual	143755	1	
B	Polybag	103351	1	
C	Warranty Card (N. America) Warranty Card (Europe)	129287 132117	1 1	
D	Envelope (N. America) Envelope (Europe)	123001 128450	1 1	
E	All Products Brochure (N. America)	141478	1	
F	Warranty Service List (N. America)	122766	1	
G	Express Music Catalog (N. America)	145891	1	
2	Packing, EPS	129931	2	
3	Polybag (N. America) Polybag (Europe)	106595 114522	2 2	
4	Carton (Generic) Carton (Mexico) Carton (Europe)	143772 145375 143773	N/A N/A N/A	

NOTES FOR FUTURE REFERENCE

SPECIFICATIONS AND FEATURES SUBJECT TO CHANGE WITHOUT NOTICE

BOSE[®]
Better sound through research[®]

9/92: REV.0

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