

## 802<sup>®</sup> Series III Loudspeaker



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**WARRANTY:** 5 year limited warranty

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PURPOSE.

## SPECIFICATIONS

### External dimensions:

Single speaker: 13.5" H x 20.5" W x 13.0" D (34.3 x 52.1 x 33.0)cm  
Packed system: 14.4" H x 21.8" W x 18.3" D (36.6 x 55.4 x 46.4)cm

### Weight:

Single speaker: 29.3 lbs (13.29 kg)  
Packed system: 32 lbs (14.5 kg)

### Transducer:

Eight 4.5" environmental drivers per enclosure

**Internal cabinet volume:** 3,020.7 cu. In. (49.5 liters)

### Port:

Type: Two round ports located central to each four speaker pattern.  
Total port area: 6.0 sq. in. (38.9 sq. cm)  
Port length: 7.5" (19.0 cm)  
Resonance frequency: 50 Hz

**Impedance:** 8 ± 2 Ohm

**Power handling:** 240W continuous per IEC-268-5

**Sensitivity:** 91 dB SPL, 1W, 1m

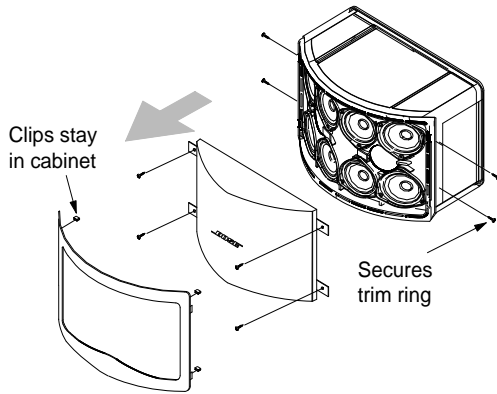
# DISASSEMBLY/ASSEMBLY PROCEDURES

**Note:** Numbers in parenthesis correspond to call-outs in figure 4.

## 1. Grille Removal

**1.1** Remove the four screws (16) securing the trim ring (8) to the cabinet. Pull off the trim ring leaving the four clips (17) in place on the cabinet.

**1.2** Remove the four screws (10) securing the grille (6) to the cabinet. Pull off the grille.



## 2. Grille Replacement

**2.1** Line up the grille (6) with the cabinet and secure it with four screws (10).

**2.2** Line up the trim ring (8) with the cabinet. Press the trim ring into the four clips (17) located in the corners of the cabinet.

**2.3** Replace the four screws (16) securing the trim ring to the cabinet.

## 3. Driver Removal

**3.1** Perform procedure 1.

**3.2** Remove the three screws (10) securing the driver (1) to the cabinet. Lift out the driver.

**3.3** Cut the wires as close as possible to the driver's wire terminal.

## 4. Driver Replacement

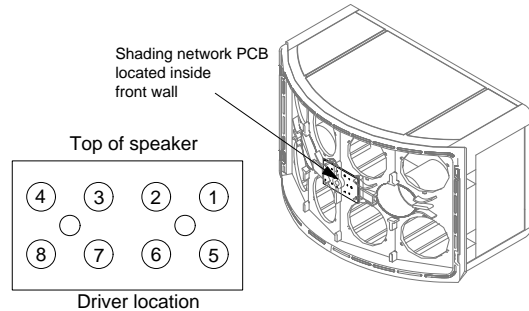
**4.1** Referring to figures 1, 2, and 3, attach the wires to the driver's (1) wire terminal.

**4.2** Line up the driver and gasket (2) to the cabinet and secure it with three screws (10).

## 5. Shading Network PCB Removal/Access

**5.1** Remove the position 2, 3, 6, and 7 drivers (1) from the cabinet using procedure 3.1-3.2.

**5.2** Using a short flat-blade screwdriver, remove the two screws securing the shading network PCB (3) to the inside wall of the cabinet. Remove wires as needed.



## 6. Shading Network PCB Replacement

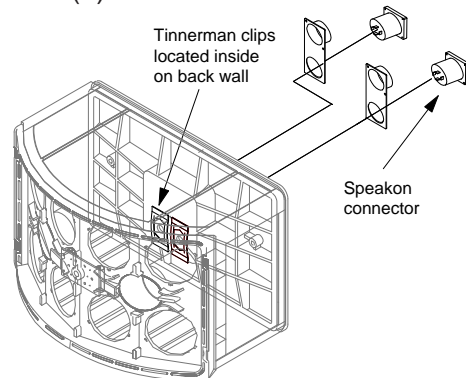
**6.1** Referring to figure 2, replace any wires that were removed.

**6.2** Replace the two screws securing the shading network PCB (3)

## 7. Speakon Connector Removal

**7.1** Perform procedure 3.1-3.2 to remove the position 2, 3, 6, and 7 drivers.

**7.2** Using a flat-blade screwdriver, pry out the tinnerman clip (5) securing the Speakon connector (4) to the cabinet.



**7.3** Pull out the Speakon connector and remove the wires.

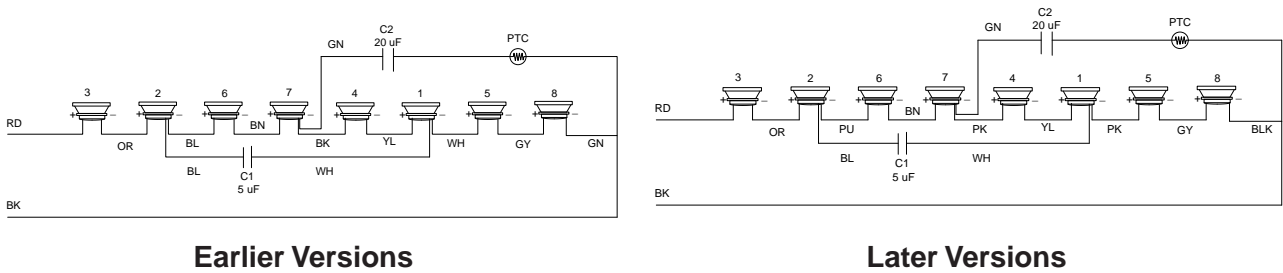
# DISASSEMBLY/ASSEMBLY PROCEDURES

## 8. Speakon Connector Replacement

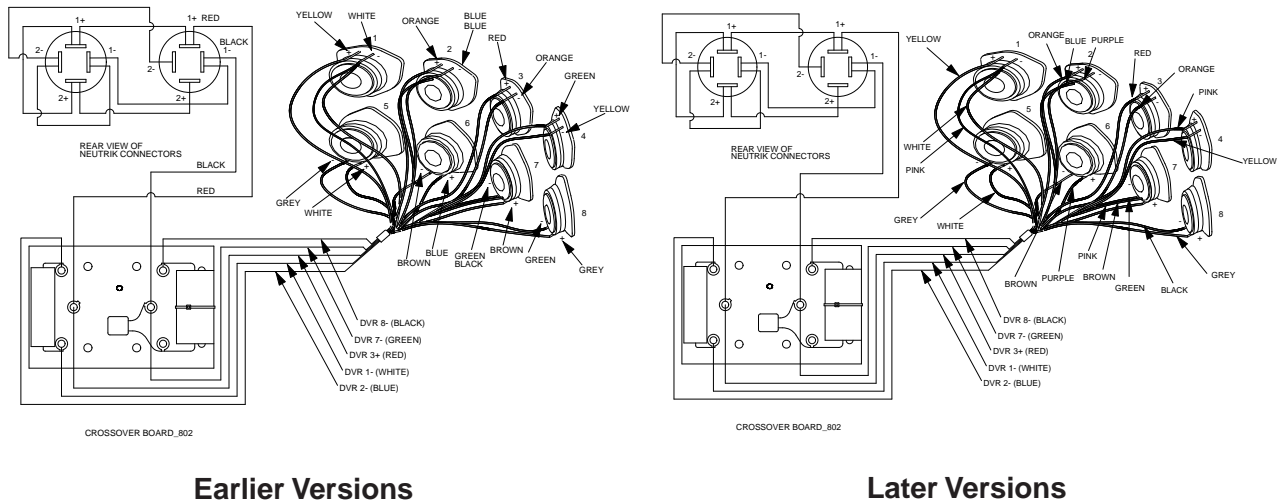
**8.1** Referring to the figure 2, attach the wires to the Speakon connector (4).

**8.2** Align the Speakon connector in the cabinet.

**8.3** Reshape the tinnerman clip (5) or use a new one. Place an appropriate size wood block between the Speakon connector (rear of speaker) and a hard surface. Using a flat-blade screwdriver (or similar tool) and a hammer, secure the tinnerman clip into place. Make sure the Speakon connector is securely fastened.

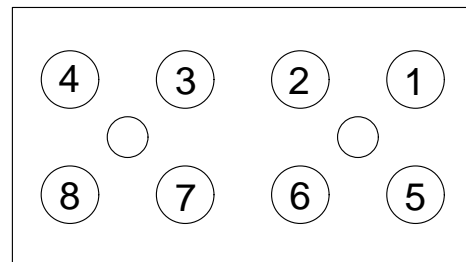


**Figure 1. Schematic Diagram**



**Figure 2. Wiring Diagram**

### Top of speaker



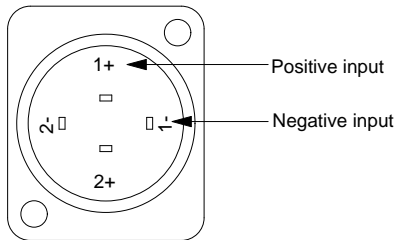
**Figure 3. Driver Location Diagram**

# TEST PROCEDURES

## 1. Phase Test

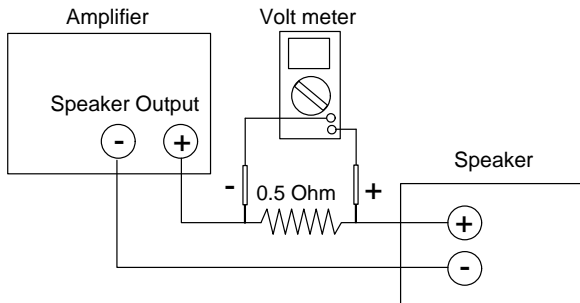
**1.1** Observing polarity, apply 9 VDC to the input connector. Refer to the figure below.

**1.2** All driver cones should move outward. Referring to figure 1, rewire any driver that moves inward.



## 2. Crossover Test

**2.1** Connect a 0.5 Ohm resistor and amplifier to the speaker input connector as shown in the diagram below.



**2.2** Apply a 2 Vrms signal to the speaker input connector at the frequencies listed in the table below.

**2.3** Measure the voltage across the 0.5 Ohm resistor comparing the results to the table below. If the voltage is out of range, check the crossover components and wiring.

Frequency	Min	Max
8 kHz	104 mVrms	141 mVrms
12 kHz	77 mVrms	120 mVrms

## 3. Rub and Tick Test

**3.1** Apply a 10 Vrms, 10 Hz signal to the speaker input connector.

**3.2** No extraneous noises such as rubbing, scraping or ticking should be heard.

**Note:** To distinguish between normal suspension noise and rubs or ticks, slightly displace the cone of the driver with your fingers. If the noise can be made to go away or get worse, it is a rub or 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.

## 4. Air Leak Test

**4.1** Apply a 15 Vrms, 65 Hz signal to the speaker input connector.

**4.2** Listen for air leaks around the drivers and cabinet seam. Reposition or replace any gasket found to leak. Repairs made to the cabinet seam should not be visible from the exterior of the speaker.

## 5. Sweep Test

**5.1** Apply a 10 Vrms, 10 Hz signal to the speaker input connector.

**5.2** Sweep the signal generator from 10 Hz to 500 Hz.

**5.3** Apply a 500 Hz, 5 Vrms signal to the speaker input connector.

**5.4** Sweep the signal generator from 500 Hz to 5 kHz.

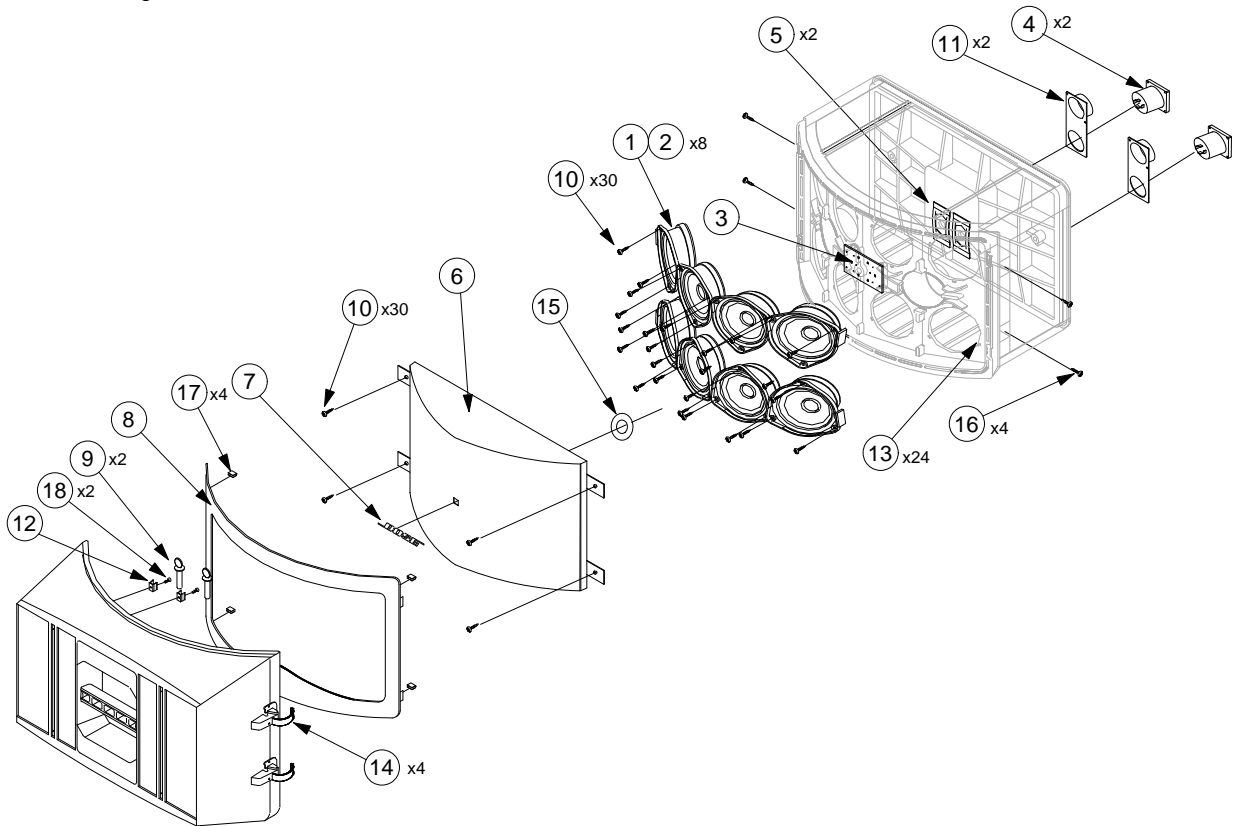
**5.5** Listen for buzzes, rattles or other noises. Redress any wire that buzzes; replace any driver that is found to be defective.

**Note:** A whooshing noise from the port at its resonance frequency of 50 Hz is acceptable.

# MAIN PART LIST

Item Number	Description	Part Number	Qty.	Note
1	DRIVER, 4.5"	290722-002	8	1
2	GASKET, 4.5"	259111	8	
3	NETWORK, SHADING	not available	1	
4	CONN, SPEAKON, PANEL MOUNT	254423	2	
5	CLIP, TINNERMAN	187943	2	
6	GRILLE, BLACK GRILLE, ARCTIC WHITE GRILLE, PRO GRAY	792240-0110 not available not available	1	
7	NAMEPLATE, LOGO, BLACK NAMEPLATE, LOGO, ARCTIC WHITE	254457-001 not available	1	
8	RING TRIM, BLACK RING TRIM, WHITE	256349-001 not available	1	
9	SCREW, THUMB, M8 x 1.25 x 25mm	137050	2	
10	SCREW, TAPP, 8-15, HEXW, SLOT	290290-12	30	
11	COVER, NEUTRIK, SEALING	252384	2	
12	CONN, FUSE CLIP, 1 POS, FEMALE	291366	2	
13	NUT, J-TYPE, 8-32	109481	24	
14	LATCH, SPRING	293290-001	4	
15	CLIP, PUSH-ON, DIA .375	252379	2	
16	SCREW, TAPP, 6-13x.5, PAN, XR	290294-08	4	
17	CLIP, PUSH-ON, U-TYPE	290295-01	4	
18	SCREW, TAPP, 6-20x.5, PAN, XR	290296-08	2	

**Note:** Item 2 gasket is included with item 1 Driver, 4.5".



**Figure 4. Exploded View**

# SHADING NETWORK PART LIST

Item Number	Description	Part Number	Qty.	Note
1	20uF, FILM, 75V, 10%	119026	1	
2	5.0uF, MYLAR, 100V, 10%	102770	1	
3	POLYSWITCH, 50V, 31mm	175233-2	1	

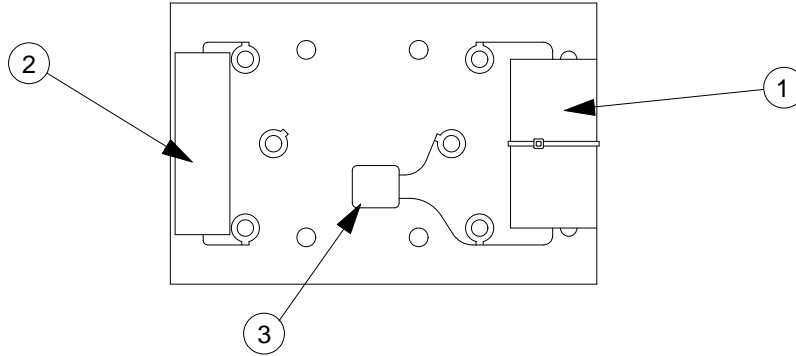


Figure 5. Shading Network Layout

# PACKAGING PART LIST

Item Number	Description	Part Number	Qty.	Note
1	CARTON, RSC	256592	1	
2	PACKING, PAD, DIE CUT	191669	2	
3	PACKING, CORNER BLOCK	191668	4	
4	MANUAL, OWNERS	256598	1	
5	BAG, POLY, 23 x 44 x 10.5 x 1.25	100652	1	
-	Aus/NZ Warranty Slip Sheet, 8.5" x 5.5"	355731-0010	1	

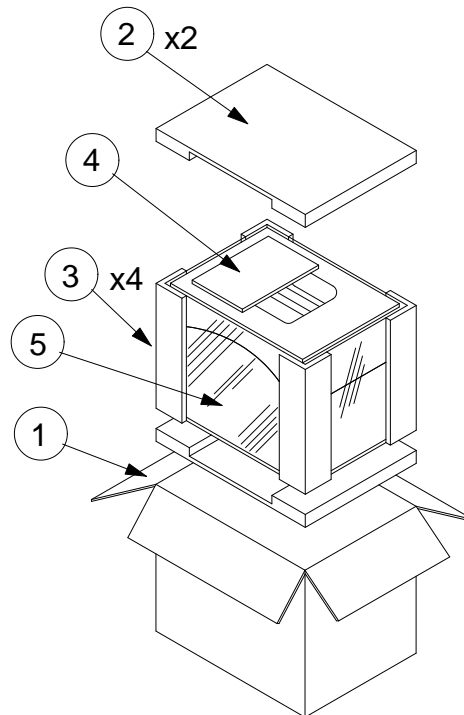


Figure 6. Packaging View

# SERVICE MANUAL REVISION HISTORY

<b>Date</b>	<b>Revision Level</b>	<b>Description of Change</b>	<b>Change Driven By</b>	<b>Pages Affected</b>
2/01	00	Document release revision 00	Service manual release	All
2/06	01	Added RoHS part numbers	This product is now built with RoHS compliant parts.	6
7/07	02	Added new schematic	ECN	4
12/12	03	New 4.5" driver part number. New Aus/NZ warranty slipsheet required.	ECN 53621	7



Specifications and Features Subject to Change Without Notice

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