SONANCE

PROFESSIONAL SERIES

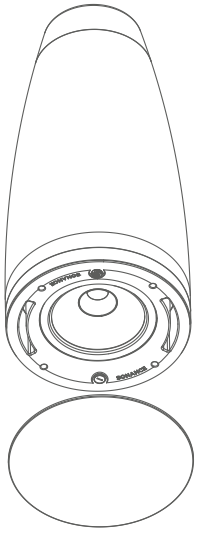
HIGH OUTPUT PENDANT LOUDSPEAKER

PS-P85T

MANUAL

PROFESSIONAL SERIES HIGH OUTPUT PENDANT SPEAKER

PS-P85T



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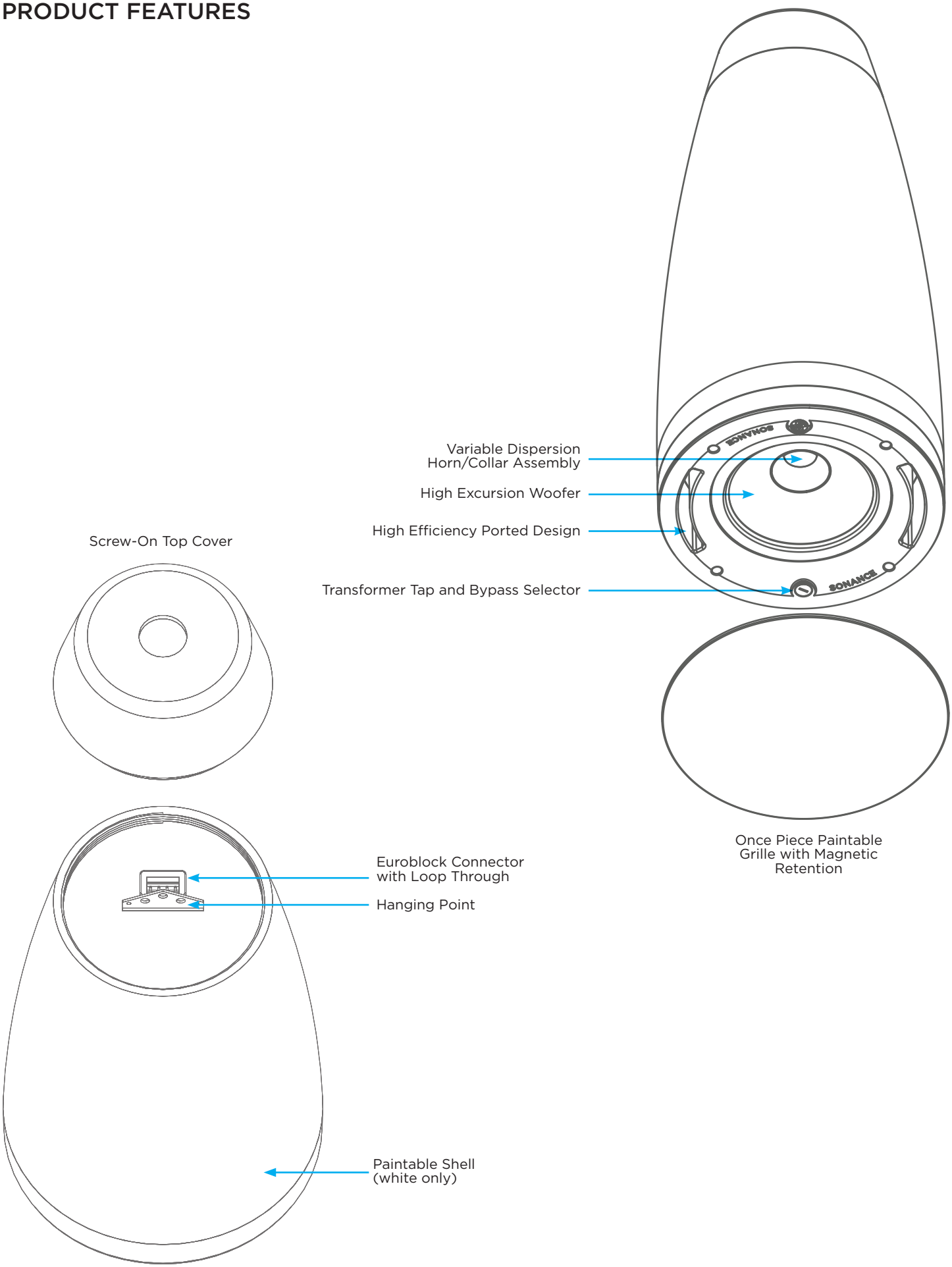
INTRODUCTION

Sonance Professional Series High Output is a range of 70V/100V impedance-selectable loudspeakers available as in-ceiling, surface mount, or pendant models. These High Output models achieve exceptional SPL playback with the ability to define each loudspeaker for wide or narrow directivity. Their shared voicing across form factors ensure seamless sonic integration when deployed together throughout commercial spaces. The Pendant speakers utilize a minimalistic design similar to pendant lighting to blend discretely into the environment, and take advantage of the same one-piece grille design as the In-Ceiling speakers to deliver consistent sight lines when installed in the same space. The integrated top cover hides the hanging hardware and wiring connector. Available in either black or white.

PRODUCT FEATURES



AMPLIFIER SELECTION

When choosing an amplifier the maximum number of speakers and the output level of each speaker must be known. The sum of the tap settings should never exceed 80% of the amplifier's rated output. For example, if there are five speakers and the taps are set at 15 watts, the load would be 75 watts (5 x 15 watts = 75 watts). To arrive at the needed power for this number of speakers, simply divide the total load by 0.8. In this case, 75/0.8 = 93.75 watts. Therefore, a standard 100 watt amp would safely drive this load. To calculate the amount of usable power an amp offers, simply multiply the rated output by 0.8, i.e., 100 watts x 0.8 = 80 watts.

WIRE GAUGE – 70V/100V SYSTEM

The most common wire used on commercial 70 volt systems is 18 AWG, 2 conductor, stranded, and jacketed without a shield. The wire starts at the amplifier location and is paralleled at each speaker location. Wire length using 18 AWG is appropriate up to 700ft with a 100 watt load. If you double the load (sum of your tap settings), you will reduce the footage by half, to 350ft. Conversely, if you halve the load, you may double the acceptable wire length, i.e., a 50 watt load is safe over 1,400ft of 18 AWG. Stepping up to 16 AWG wire extends the allowable run length by approximately 35%. For example, a 100 watt load can go 700ft on 18 AWG; the same load may be placed on 1,100ft of 16 AWG.

WIRE GAUGE – 8 OHM SYSTEM

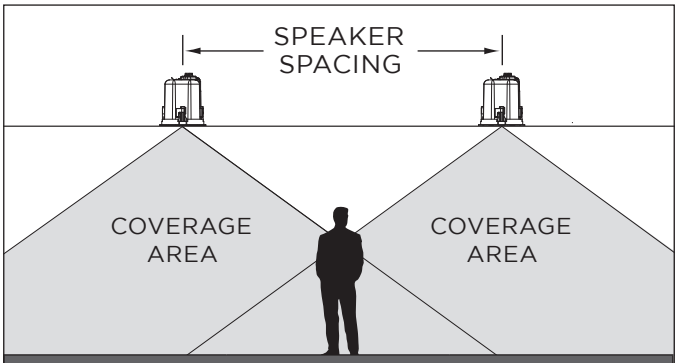
When using Sonance Professional Series loudspeakers in an 8 ohm system the total wire resistance should be less than 10% of the speaker impedance. The speakers are nominally 8 ohms impedance, so your total wire resistance should be no more than 8 ohms. In simple terms, the extra resistance from the wire will have a very negative affect on the sound quality of the speaker. The sound can be less dynamic, definition of bass frequencies can be reduced, and in extreme cases, the high frequencies can be attenuated. Amplifier power is also wasted in the wire, reducing the maximum output level of the system. Please refer to the following chart when deciding on the appropriate wire gauge for your installation (see Figure 1).

WIRE RESISTANCE IN OHMS VS. LENGTH OF CABLE RUN						
Distance in Feet	50'	100'	150'	200'	250'	300'
20 AWG	0.86	1.73	2.59	3.45	4.32	5.18
18 AWG	0.65	1.3	1.94	2.59	3.24	3.89
16 AWG	0.43	0.85	1.28	1.71	2.14	2.56
14 AWG	0.27	0.53	0.81	1.08	1.35	1.62
12 AWG	0.17	0.34	0.51	0.68	0.85	1.02

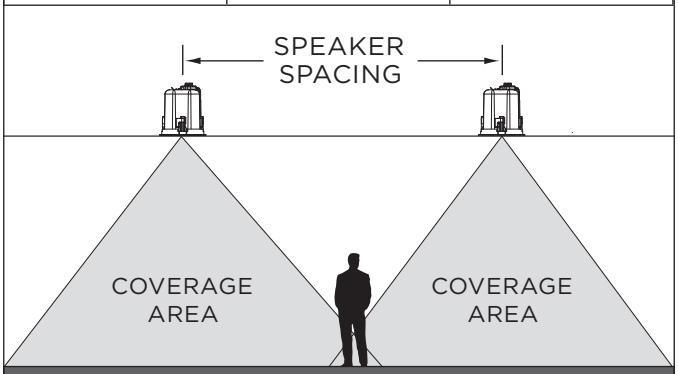
Figure 1: Wire Resistance

SPEAKER PLACEMENT

Sonance Professional Series speakers possess extremely smooth and predictable off-axis frequency response. The chart below shows how far apart the speakers can be placed in a distributed audio system (see Figure 2). The calculations are based on +/- 45 degrees of coverage from the speaker, and listener ear heights of 62" for standing and 40" for seated.



LOUDSPEAKER SPACING WHEN WIDE COLLAR IS INSTALLED/SELECTED FOR DISTRIBUTED AUDIO SYSTEM		
	Standing Listener	Seated Listener
8ft Ceiling	5.3ft (1.6m) Apart	9.3ft (2.8m) Apart
10ft Ceiling	9.3ft (2.8m) Apart	13.3ft (4m) Apart
12ft Ceiling	13.3ft (4m) Apart	17.3ft (5.3m) Apart
14ft Ceiling	17.3ft (5.3m) Apart	21.3ft (6.5m) Apart



LOUDSPEAKER SPACING WHEN NARROW HORN IS INSTALLED/SELECTED FOR DISTRIBUTED AUDIO SYSTEM		
	Standing Listener	Seated Listener
16ft Ceiling	17.9ft (5.5m) Apart	21.2ft (6.5m) Apart
20ft Ceiling	24.6ft (7.5m) Apart	28ft (8.5m) Apart
24ft Ceiling	31.3ft (9.5m) Apart	34.7ft (10.6m) Apart
28ft Ceiling	38ft (11.6m) Apart	41.4ft (12.6m) Apart

Figure 2

PAINTING THE GRILLES

1. Prime the grille with a metal primer/bonder in a spray can. Carefully follow the manufacturer's directions on the can.
2. We recommend using water-based latex paint on the grilles. Thin the paint with a proper thinning agent to a ratio of 1:1 paint-to-thinner, and strain it through a standard mesh strainer to remove any lumps.

3. Use a small touch-up gun or cap-spray gun with a #3 tip for painting.

- Set the nozzle with a medium to wide fan
- Set the pressure regulator to 60psi
- Lightly spray the front of the grille in three quick strokes from approximately 10” away
- Let the paint set for one minute, then turn the grille 90 degrees and lightly spray the grille again in three quick strokes. Repeat this step until all four sides of the grille have been evenly painted.

4. While the paint is still wet, inspect the grille and make sure that excess paint has not collected underneath the grille frame, and that none of the grille perforations are filled with paint. If any are, use compressed air to blow the paint out of the perforations. IMPORTANT: If you find any grille perforations that are plugged with paint after the paint has dried, use a straight pin or sewing needle to carefully remove the paint.
5. Once the paint has thoroughly dried, replace the scrim cloth on the back of the grille and mount the grille on the speaker.

PAINTING THE SPEAKER SHELL

Sonance Professional Series Pendant speakers feature a tough polypropylene enclosure that can be painted. Sonance recommends using a weather-resistant outdoor paint and a spray gun.

1. If they have already been installed, remove the grilles from the speakers.
2. To protect the speaker driver units during painting, place the grilles on a piece of cardboard and trace around their outlines. Then cut the cardboard just inside of the trace line and fit these “paint plugs” into the speakers’ baffles. Be careful not to damage the driver components while fitting the paint plugs.
3. Paint the speakers the desired color according to the paint manufacturer’s instructions. Remove the paint plugs after the paint has thoroughly dried.

INSTALLING THE SPEAKERS USING GRIPPLE SUSPENSION SYSTEM

CAUTION: Installation must be done by qualified persons using safe rigging standards. Use equipment only in accordance with manufacturer’s instructions. Do not alter or modify. Do not use equipment if the equipment is not functioning correctly or if the equipment is defective.

1. Thread Gripple onto cable. Pass over ceiling anchor point or through other secure anchor point of the building structure. Installer is responsible for ensuring that anchor point is secure to building structure see Figure 4).
2. Thread cable through top cover of speaker (see Figure 5).

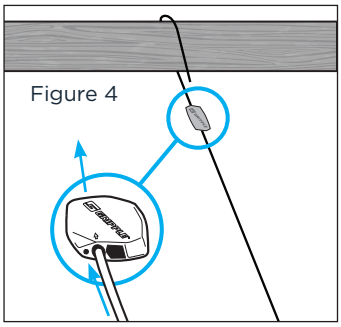


Figure 4

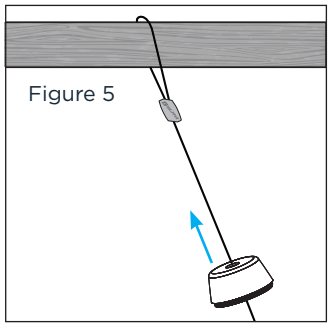


Figure 5

3. Pass tail end of cable through the other channel of the Gripple (see Figure 6).
4. With speaker supported, snap main support hook hanger onto the center hole in the top bracket of the speaker. Adjust to proper height by pulling cable through either end of Gripple (see Figure 7).

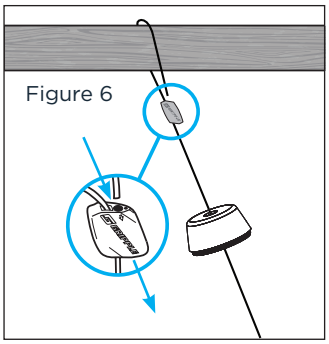


Figure 6

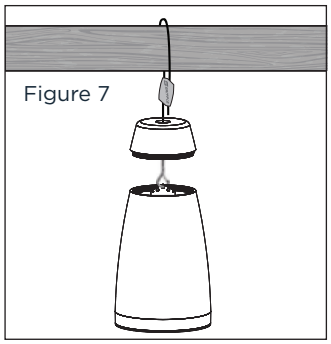


Figure 7

5. Snap secondary support safety cable hook hanger onto one of the side holes in the top bracket of the speaker, and attach the top to a different ceiling support point of the building structure, per steps 1 and 2 (see Figure 8).
6. After height adjustment is final, trim any extra cable tail wires with trimmer suitable for 2mm (0.077”) diameter stranded aircraft-type cable. Screw back on top cover of speaker after speaker wire is connected (see Figure 9).

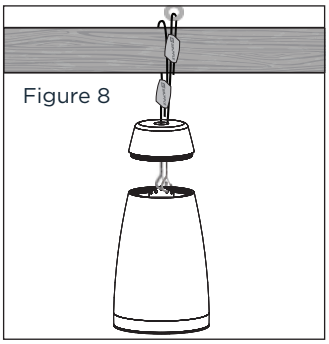


Figure 8

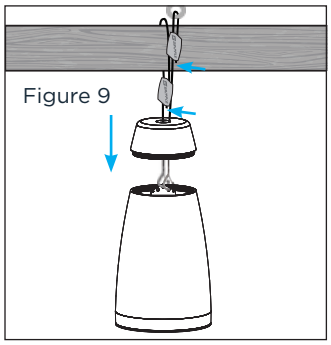


Figure 9

HOW TO USE RELEASE KEY TO ADJUST SPEAKER HEIGHT

7. Make sure the weight of the load is supported (see Figure 10).
8. Insert key into small hole at bottom of Gripple. Push in 0.25" (6.35mm) to release the cable (see Figure 11).

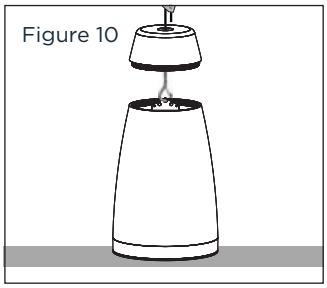


Figure 10

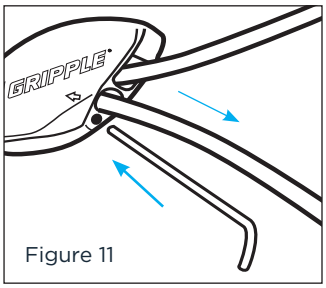


Figure 11

9. Adjust height (see Figure 12).
10. Remove key and re-secure the load (see Figure 13).

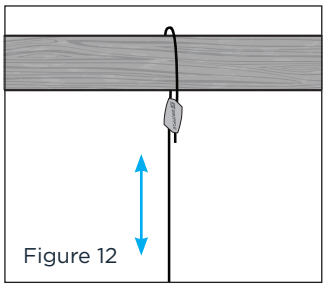


Figure 12

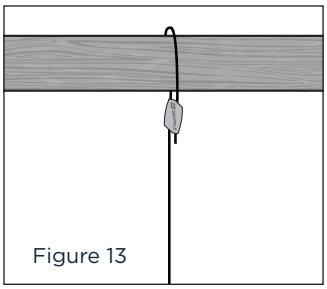


Figure 13

IMPORTANT: Speaker wire must have 12" (305mm) of extra length to act as a strain relief to prevent the Euroblock connector from becoming disconnected.

11. Connect the wires from your amplifier to the Euroblock connector (see Figure 14).
12. Feed speaker wire through the hole in the top of the screw-on top cover. Determine length of wire needed to the connector. Add 12" (305mm) extra for strain relief (see Figure 15).

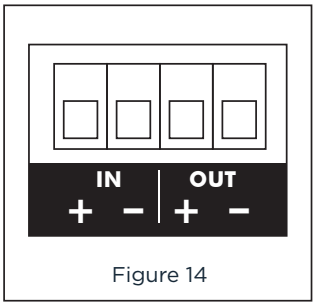


Figure 14

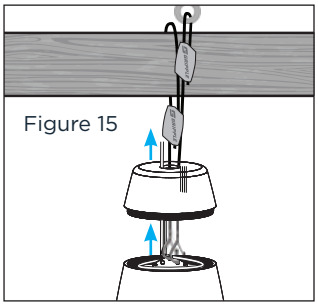


Figure 15

13. Strip approximately 0.1875" (5mm) of the insulation off each wire. Add the rubber guard onto the wire. Insert the wire into the correct square opening on the connector. Use a small flat head screwdriver to tighten the corresponding screw to secure the wire (see Figure 16).

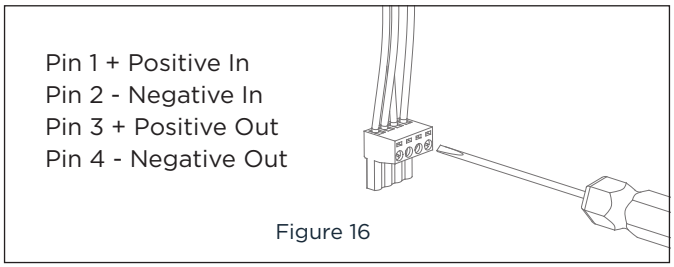


Figure 16

14. When using multiple speakers you can connect the speakers either in parallel or in the loop through method as shown below (see Figures 17 and 18).

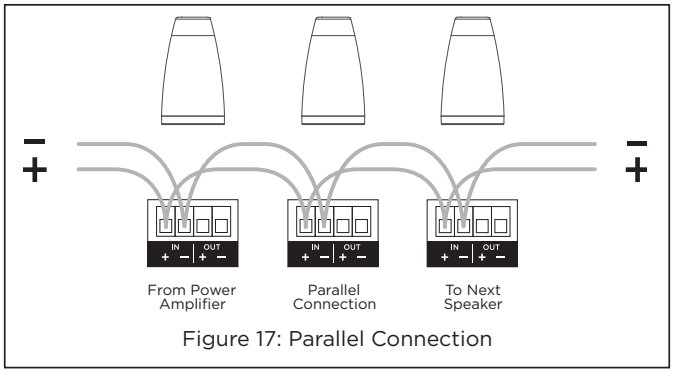


Figure 17: Parallel Connection

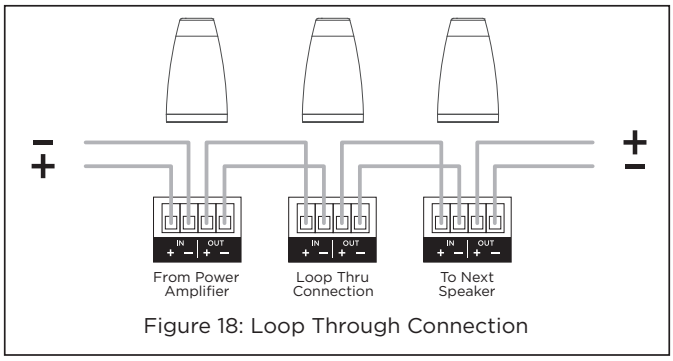


Figure 18: Loop Through Connection

15. Lay the extra wire slack in a coiled circle on the top of the speaker enclosure. Secure the top cover onto the speaker, covering the coiled wire. The extra wire will act as a strain relief (see Figure 19).
16. Install the appropriate dispersion assembly. Sonance Professional Series High Output loudspeakers feature a magnetic interchangeable collar/horn assembly that can be swapped out to achieve the desired coverage. For wide dispersion applications, leave the collar assembly in place (comes installed as default). For narrow dispersion applications, remove the collar and install the horn. The selector located on the baffle must be assigned to the appropriate position to match the installed assembly (see Figure 20).

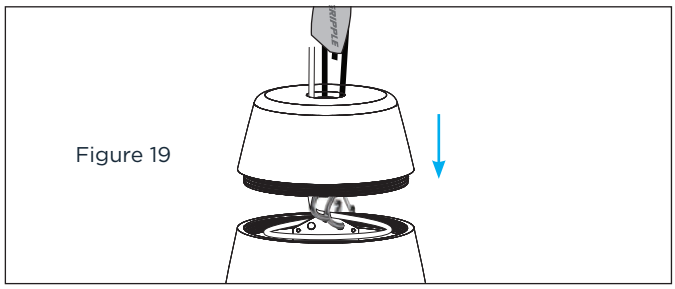


Figure 19

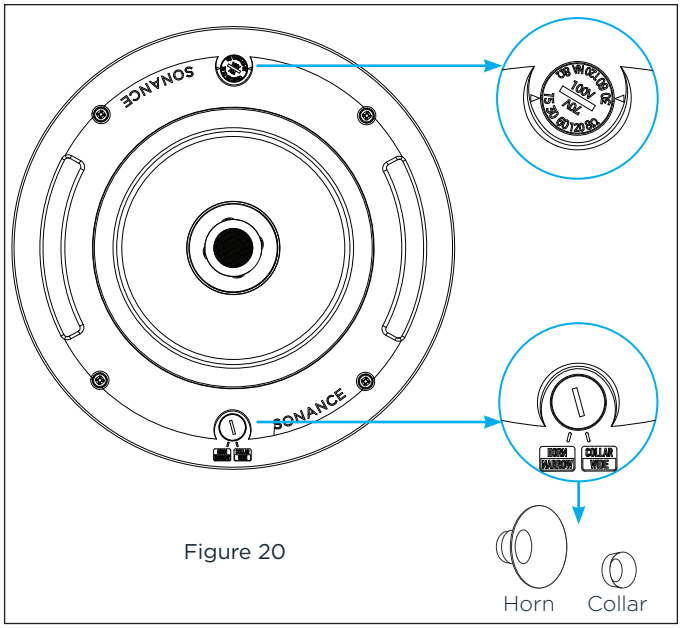


Figure 20

WIDE/COLLAR

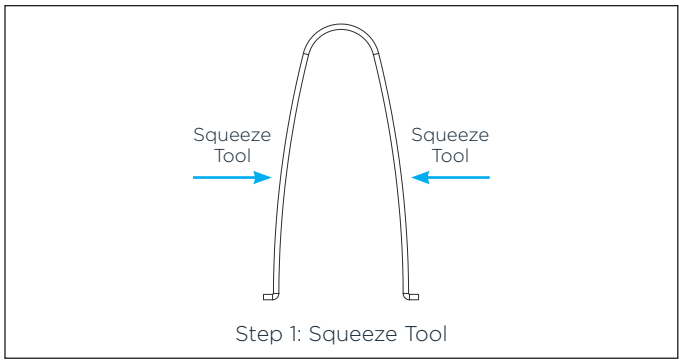
This Professional Series High Output loudspeaker ships with the collar installed.

- For applications requiring wide loudspeaker coverage, no assembly changes are needed.
- Ensure the selector on the front baffle is in the “WIDE/COLLAR” position.

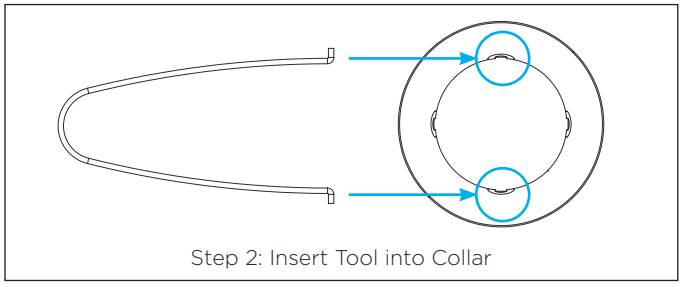
NARROW/HORN

For applications requiring narrow loudspeaker dispersion, the collar will need to be removed for the horn to be installed. Sonance includes a collar claw removal tool for easy collar removal.

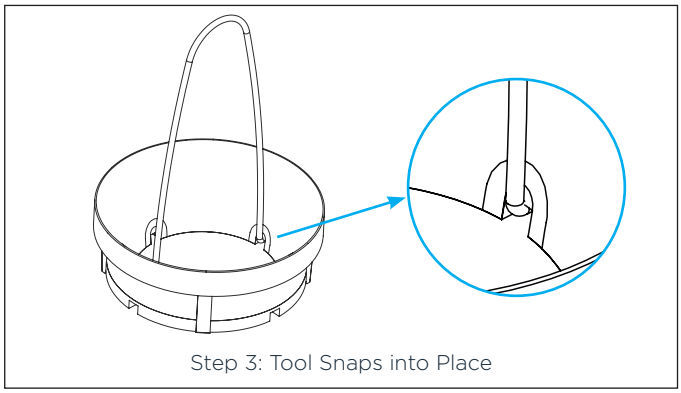
- Identify the four slots on the collar marked by blue rings.
- Align the collar removal tool with two of the slots and snap the claw into place.



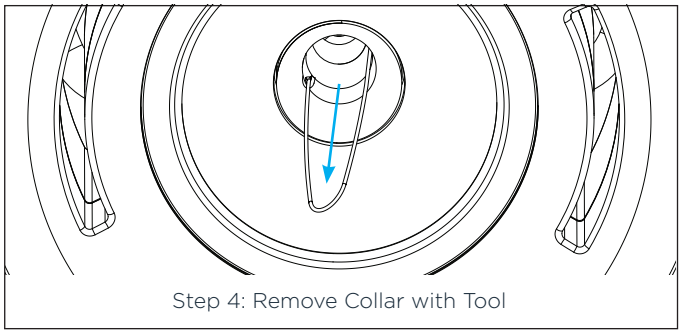
Step 1: Squeeze Tool



Step 2: Insert Tool into Collar



Step 3: Tool Snaps into Place



Step 4: Remove Collar with Tool

- Pull up to remove the collar. The collar can be discarded unless the installer plans to relocate the loudspeaker in the future, in which case the collar can be reserved.
- The horn attaches magnetically. Align the horn into position and it will snap into place.
- Switch the selector on the front baffle to the “NARROW/HORN” position.

NOTE: If removal of the horn is required, no tool is needed. The horn attaches magnetically and can be installed and removed by hand.

17. Adjust the transformer tap to the appropriate setting. Sonance Professional Series High Output loudspeakers are factory set for maximum output when used with a Sonance DSP 2-750 MKIII or another 70V/100V amplifier. No additional work is necessary if the loudspeakers are operating in 70V or 100V and can run at their full volume capacity.

Applications for changing the tap switch from factory default:

- Loudspeakers are to be installed in sensitive areas and need to be “tapped down” for lower volume.
- More loudspeakers are needed to be added to a 70V/100V amplifier already operating at full capacity.
- A small zone is to be driven by an 8 ohm amplifier.

18. Adjust the transformer tap to the appropriate setting. Sonance Professional Series High Output loudspeakers are factory set for maximum output when used with a Sonance DSP 2-750 MKIII or another 70V/100V amplifier. No additional work is necessary if the speakers are operating in 70V or 100V and can run at their full volume capacity.

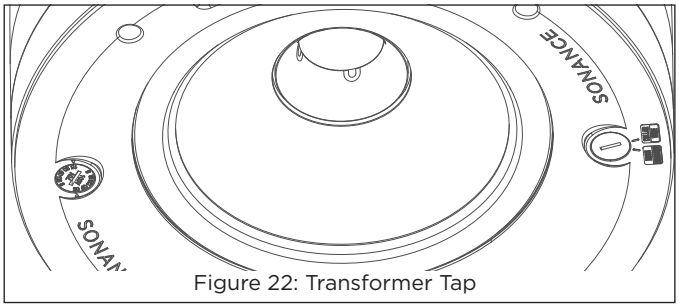


Figure 22: Transformer Tap

Applications for changing the tap switch from factory default:

- Speakers are to be installed in sensitive areas and need to be “tapped down” for lower volume.
- More speakers are needed to be added to a 70V/100V amplifier already operating at full capacity.
- A small zone is to be driven by an 8 ohm amplifier.

8 OHM TAP SETTINGS

Aligning the values on the dial with the arrow indicators on either side to the “8 ohm” bypasses the internal transformer for operation with low impedance amplifiers.

70V TAP SETTINGS

Align the arrow positioned with the 70V values to the desired wattage setting. Turning the dial one click stop in either direction increases or decreases the speaker’s input power.

100V TAP SETTINGS

Align the arrow positioned with the 100V values to the desired wattage setting. Turning the dial one click stop in either direction increases or decreases the speaker’s input power.

18. Fit the grille onto the speaker (see Figure 23).

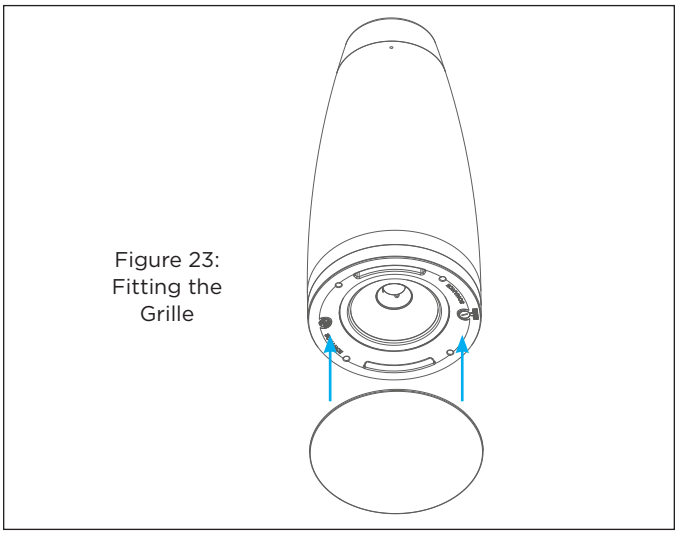


Figure 23: Fitting the Grille

PS-P85T TECHNICAL SPECIFICATIONS

SKU	40234 | Black | Each 40233 | White | Each
Transducers LF Drive	8” (203mm) Aluminum cone, Santoprene Surround, Ferrite Magnet, 60.55mm Voice Coil
Transducers HF Driver	1.4” (36mm) Aluminum Dome Compression Driver, Neodymium Magnet, 36mm Voice Coil, 1500Hz Crossover Frequency, 1mm Exit Size
Frequency Range (-10dB) *	36.6Hz - 25kHz
Frequency Range (+/-3dB) *	41.4Hz - 20kHz
Long Term Power Handling (IEC) ‡	150 Watts (600 Watts Peak), 100 Hours
Program Power	300 Watts (1200 Watts Peak), Two Hours
Sensitivity (2.83V/1M) §	88dB SPL
Long Term - Maximum SPL ‡	109dB (115dB Peak)
Program Power - Maximum SPL ‡	112dB (118dB Peak)
Rated Impedance	8 ohm Bypass
Transformer Taps (8 ohm Bypass)	70V: 120W, 60W, 30W, 15W | 100V: 120W, 60W, 30W
Collar Coverage Pattern 1kHz to 10kHz †	120 Degrees Axis Symmetric
Horn Coverage Pattern 1kHz to 10kHz †	80 Degrees Axis Symmetric
Collar Directivity Factor (Q)	5.7 (Average 1kHz to 16kHz)
Horn Directivity Factor (Q)	8.65 (Average 1kHz to 16kHz)
Collar Directivity Index (DI)	7.5dB (Average 1kHz to 16kHz)
Horn Directivity Index (DI)	9dB (Average 1kHz to 16kHz)
Operating Temperature Range	-40 F (-39.96 C) to 140 F (60 C)
Agency Listings	UL 1480A, CSA-C22.2 No.205
Conformity	NFPA70, NFPA 90A
Enclosure and Baffle Material	Polypropylene Plastic (UL94V-0)
Grille Material	Steel
Suspension Points	Back
Enclosure Cubic Volume	0.83 Cubic Feet (23.5 Cubic Liters)
Enclosure/Port Tuning	41.1Hz
Input Connector	Four Pin, Euroblock with Loop Output Connections
Round Trimless Grille (Dia)	11.17” (283.8mm)
Speaker (Dia x D)	11.17” x 24.69” (283.8mm x 627mm)
Product Weight (no Grille)	23.04 lbs. (10.45kg) EA
Product Weight (with Grille)	23.55 lbs. (10.68kg) EA
Shipping Weight	30.21 lbs. (13.7kg) PR

INCLUDED ACCESSORIES

- (1) Round Grille
- (1) Screw-On Top Cover
- (1) Euroblock Wire Connector
- (1) Variable Dispersion Horn
- (1) Collar Claw Removal Tool
- (1) Water-Resistant Terminal Boot

HANGING KITS CONTAINING

- (2) Stainless Steel Cables with Snap Hooks
- (2) Gripple® Hangers
- (1) Gripple® Adjustment Tools
- (1) Hanging Instructions

OPTIONAL ACCESSORIES

- Replacement Round Grille White (PR) | 40154
- Replacement Round Grille Black (PR) | 40157
- Replacement Hanging Hardware Kit | 40176

* In half space | † Average 1 kHz to 10 kHz | ‡ IEC 268-5 standard, with 6 dB crest factor | § Measured in half space, ave 100 Hz – 10 kHz | UL evaluated frequency range of 50-20kHz

CERTIFICATIONS

SAFETY AGENCY COMPLIANCE
Sonance Professional Series Pendant Loudspeaker model PS-P85T meets the following standards::

NFPA-70 National Electric Code 1996, article 300-22(c).

NFPA-90A Installation of Air Conditioning and Ventilation Systems, section 2-3.10.1 (a), exception 3.

UL-1480A

IMPEDANCE 8 OHMS
MAX RATED POWER 150 WATTS
SUITABLE FOR USE IN AIR HANDLING SPACES
LISTED GENERAL SIGNALING EQUIPMENT SPEAKER

TECHNICAL ASSISTANCE | SERVICE

The Technical Assistance Department at Sonance is available at (949) 492-7777 to answer any questions concerning the operation and installation of your speakers between the hours of 7:00 AM and 5:00 PM Pacific time, Monday through Friday, except holidays.

In the event your unit should need repair or service, you may return the unit to your authorized dealer or use the following guidelines:

PLEASE KEEP ORIGINAL PACKAGING WHEN POSSIBLE.

1. Be prepared to state the model number and/or serial number, date of purchase, and dealer name and address when calling.

2. Contact Sonance directly at (949) 492-7777 or at www.sonance.com

YOU MUST HAVE PRIOR AUTHORIZATION TO RETURN YOUR UNIT.

3. If you are returning the product directly to Sonance, call us to obtain a return authorization number before shipping.

4. Ship the product via United Parcel Service, Federal Express, or other package delivery service. Please do not use the U.S. Postal Service.

5. Write the return authorization number on the outside of the box.

6. Ship to:

Attn: Quality Assurance Department
Sonance
991 Calle Amanecer
San Clemente, CA 92673

LIMITED FIVE (5) YEAR WARRANTY

Sonance warrants to the first end-user purchaser that this Sonance-brand product ("Product"), when purchased from an authorized Sonance Dealer/Distributor, will be free from defective workmanship and materials for the period stated below. Sonance will at its option and expense during the warranty period, either repair the defect or replace the Product with a new or re-manufactured Product or a reasonable equivalent.

EXCLUSIONS

TO THE EXTENT PERMITTED BY LAW, THE WARRANTY SET FORTH ABOVE IS IN LIEU OF, AND EXCLUSIVE OF, ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, AND IS THE SOLE AND EXCLUSIVE WARRANTY PROVIDED BY SONANCE. ALL OTHER EXPRESS AND IMPLIED WARRANTIES, INCLUDING THE IMPLIED WARRANTIES OF MERCHANTABILITY, IMPLIED WARRANTY OF FITNESS FOR USE, AND IMPLIED WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE ARE SPECIFICALLY EXCLUDED.

No one is authorized to make or modify any warranties on behalf of Sonance. The warranty stated above is the sole and exclusive remedy and Sonance's performance shall constitute full and final satisfaction of all obligations, liabilities and claims with respect to the Product.

IN ANY EVENT, SONANCE SHALL NOT BE LIABLE FOR CONSEQUENTIAL, INCIDENTAL, ECONOMIC, PROPERTY, BODILY INJURY, OR PERSONAL INJURY DAMAGES ARISING FROM THE PRODUCT, ANY BREACH OF THIS WARRANTY OR OTHERWISE.

This warranty statement gives you specific legal rights, and you may have other rights which vary from state to state. Some states do not allow the exclusion of implied warranties or limitations of remedies, so the above exclusions and limitations may not apply. If your state does not allow disclaimer of implied warranties, the duration of such implied warranties is limited to period of Sonance's express warranty. Your Product Model and Description: PS-P85T. Warranty Period for this Product: Five (5) years from the date on the original sales receipt or invoice or other satisfactory proof of purchase. Additional Limitations and Exclusions from Warranty Coverage: The warranty described above is non-transferable, applies only to the initial installation of the Product, does not include installation of any repaired or replaced Product, does not include damage to allied or associated equipment which may result for any reason from use with this Product, and does not include labor or parts caused by accident, disaster, negligence, improper installation, misuse (e.g. overdriving the amplifier or loudspeaker, excessive heat, cold or humidity), or from service or repair which has not been authorized by Sonance. Obtaining Authorized Service: To qualify for the warranty, you must contact your authorized Sonance Dealer/Installer or call Sonance Customer Service at (949) 492-7777 within the warranty period, must obtain a return merchandise number (RMA), and must deliver the Product to Sonance shipping prepaid during the warranty period, together with the original sales receipt, or invoice or other satisfactory proof of purchase.

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