ORIGIN ACOUSTICS®

PROFESSIONAL COLLECTION
In-Ceiling Speakers

Installation Manual

PC50, PC60, PC80, PCSUB8

Table of Contents

Introduction

Thank you for purchasing the Professional Collection speaker. All of Origin Acoustics' speakers are designed to have excellent sound quality, longevity, and a simple installation process.

This instruction booklet covers the necessary information for a smooth installation, including: the tools you will need, step-by-step instructions for installation, troubleshooting tips for any errors that may occur, and all warranty information. If for any reason you experience problems or if you have installation questions please call us at (844) 674-4461. Hours of operation are 8:00am to 5:00pm (Pacific Time), Monday through Friday.

Certifications

SAFETY AGENCY COMPLIANCE

Origin Acoustics Professional Collection In-Ceiling speakers models PC50, PC60, PC80, PCSUB8 meet the following standards:

UL 1480A: Standard for Speakers for Commercial and Professional Use

NFPA 70: National Electric Code

NFPA 90A: Standard for Installation of Air Conditioning and Ventilation Systems

UL 2043: Standard for Fire Test for Heat and Visible Smoke Release for Discrete Products and their Accessories Installed in Air-Handling Spaces

What's Included

- Speaker
- Grille
- Cut-out Template
- Tile Bridge (Optional)
- Installation Manual

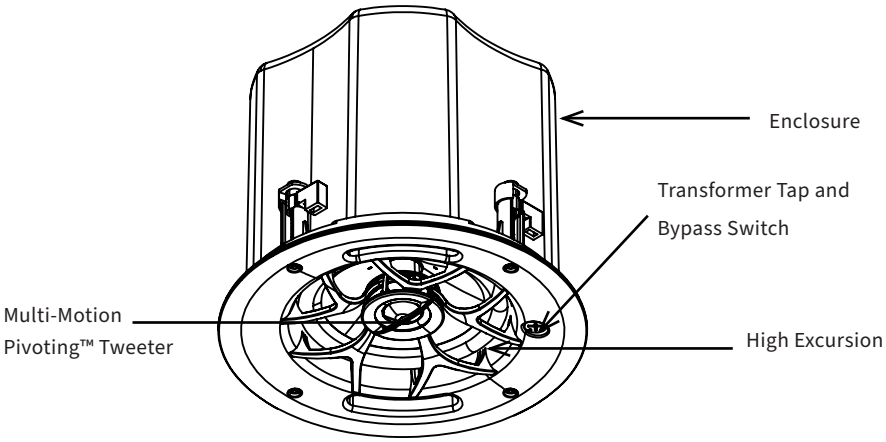
SPECIFICATIONS

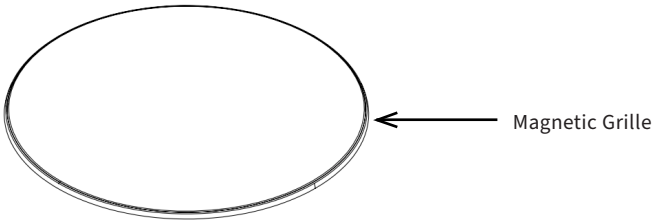
MODEL*	PC80	PC60	PC50
PART	SPC80000B, SPC80000W	SPC60000B, SPC60000W	SPC50000B, SPC50000W
Woofer	8" IMPP	6 ½" IMPP	5 ¼" IMPP
Tweeter	1" Silk DSPD™ MMP™	1" Silk DSPD™ MMP™	¾" Silk DSPD™ MMP™
Power Handling (Program Power)	120 Watts	80 Watts	60 Watts
Power Handling (Continuous Pink Noise)	60 Watts	40 Watts	30 Watts
Frequency Response (- 10dB)	41Hz-20kHz	50Hz-20kHz	54Hz-20kHz
Frequency Response (- 3dB)	60Hz-20kHz	64Hz-20kHz	80Hz-20kHz
Nominal Coverage Angle	100 Degree Conical Coverage	115 Degree Conical Coverage	120 Degree Conical Coverage
Sensitivity @1m	92dB	91dB	89dB
Rated Maximum SPL	112 dB	108 dB	106 dB
Rated Impedance	6 Ohm/70V/100V	6 Ohm/70V/100V	6 Ohm/70V/100V
Transformer Taps	70V - 60W, 30W, 15W, 7.5W 100V - 60W, 30W, 15W	70V - 60W, 30W, 15W, 7.5W 100V - 60W, 30W, 15W	70V - 30W, 15W, 7.5W, 3.75W 100V - 30W, 15W, 7.5W
Diameter	11 ¼" (286mm)	9 ⅝" (244mm)	8 ¼" (210mm)
Cutout Diameter	10 ½" (266mm)	8 13⁄16" (224mm)	7 ½" (190mm)
Grille Diameter	11 ⅝" (296mm)	10" (254mm)	8 11⁄16" (220mm)
Mounting Depth	9 ½" (242mm)	8" (202mm)	8" (202mm)
Feature 1	Metal Can, Zinc Plated	Metal Can, Zinc Plated	Metal Can, Zinc Plated

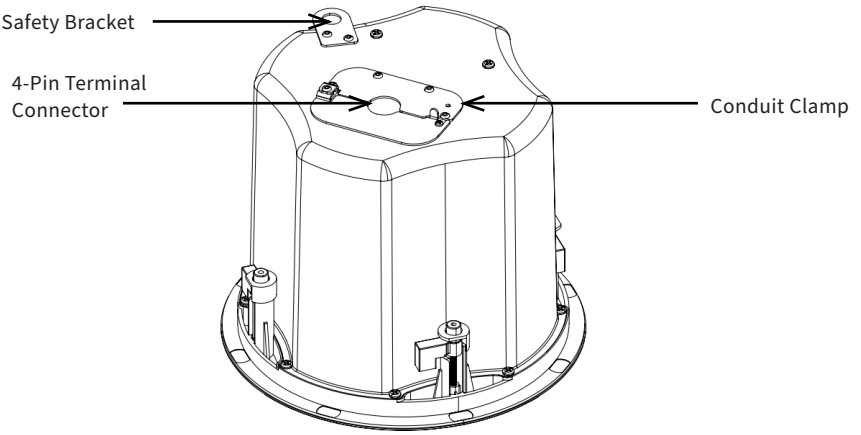
MODEL*	PCSUB8
PART	SPCSUB80B, SPCSUB80W
Woofer	8" IMPP
Power Handling (Program Power)	200 Watts
Power Handling (Continuous Pink Noise)	100 Watts
Frequency Response (- 10dB)	39Hz-250Hz
Frequency Response (- 3dB)	55Hz-250Hz
Nominal Coverage Angle	180 Degree Conical Coverage
Sensitivity @1m	91dB
Rated Maximum SPL	110dB
Rated Impedance	6 Ohm
Transformer Taps	70V -100W, 50W, 25W, 12.5W 100V - 100W, 50W, 25W
Diameter	11 ¼" (286mm)
Cutout Diameter	10 ½" (266mm)
Grille Diameter	11 ⅝" (296mm)
Mounting Depth	9 ½" (242mm)
Feature 1	Metal Can, Zinc Plated

* All models:
- UL 1480A, UL 2043 Certified

Product Features







***All product information is subject to change. Please refer to www.originacoustics.com for the latest information.**

70V/100V System

70/100-Volt systems are advantageous when the design calls for multiple speakers from the same amplifier and/or long-distance wire runs. The Origin Acoustics 70V/100V loudspeakers feature multiple taps off the transformer adjusted by a rotary switch at the front side of the speaker. The higher the wattage selected the more output will be generated by the speaker. Please note, 70V is common in the U.S. while 100V is the common voltage internationally, especially in Europe. A simple calculation is used to determine how many speakers can be driven on a single amplifier channel. First, for safety purposes, it is recommended to make the calculations based on 80% of the amplifiers rated power. For example, a 500-watt amplifier would safely deliver 400 watts of usable power (500 x 0.8 = 400). Now it is simply a matter of dividing 400 by the tap setting of the speakers. For example, if the speakers are set at a 15W tap, the amplifier would be capable of driving 26 speakers per channel. At a 30W tap that would be 13 speakers. At a 60W tap that would be 6 speakers and so on.

As you can see, if you need coverage over a wide area and it requires numerous speakers, a 70V/100V system presents a tremendous advantage. However, it should be noted that the higher the wattage tap the higher the fidelity and the greater SPL that can be delivered from each speaker. Therefore, it is best to determine the total number of speakers needed and set the taps as high as possible within the amplifier's power output rating. As mentioned, the rotary switch used to adjust the tap setting is located at the front side of the speaker. It is best to leave the grilles off until all of the tap settings have been properly adjusted.

The table below lists the power tap settings for each model. These same settings are reflected on the rotary switch on the front side of speaker (see image below). Note that there is an 8Ω setting for both voltages that bypasses the transformer entirely. Use caution to avoid this setting when connected to a 70V/100V amplifier as this can destroy the loudspeaker.

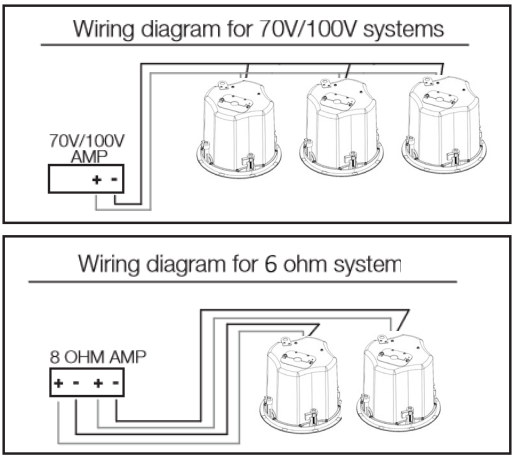
The tap setting determines how much wattage each speaker will draw from the amplifier. When daisy-chaining multiple speakers, add the combined wattages of all tap settings to determine the wattage draw on the amplifier. The combined total wattage should never exceed the wattage rating of the amplifier.

Model	Position	1	2	3	4	5	6
PC80 PC60	70V	60W	30W	15W	7.5W	OFF	-
	100V	-	60W	30W	15W		-
	6ohm	-	-	-	-		6 Ω
PC50	70V	30W	15W	7.5W	3.75W	OFF	-
	100V	-	30W	15W	7.5W		-
	6ohm	-	-	-	-		6 Ω
PCSUB8	70V	100W	50W	25W	12.5W	OFF	-
	100V	-	100W	50W	25W		-
	6ohm	-	-	-	-		6 Ω

WARNING: The 6 Ω position cannot be used with a 70/100V connection as it will damage or destroy the transformer.

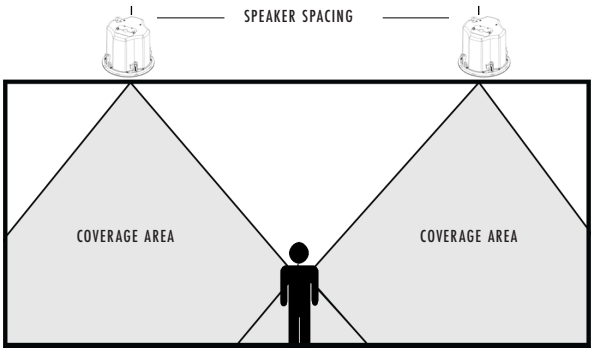
Should you be uncomfortable designing or installing a 70/100V system, or should you have any questions please contact Origin Acoustics Technical Support.

Wiring Diagram



Speaker Placement

Speaker placement is determined by several factors like desired SPL, coverage requirements, variance in SPL by location, etc. When the objective is to fill a large area with very little variance (+/- 2dB), then a larger number of speakers are required. Typically, once the number of speakers has been determined, placing them equidistant from the walls and from each other will deliver the best result. However, due to other factors this may not be possible. Also realize that the higher the ceiling the greater the conical dispersion and therefore the larger coverage area per speaker. The further the speaker is from the listener, the lower the SPL. As the speaker is placed closer to the wall, bass frequencies will be enhanced. This may or may not be the desired effect but certainly needs to be considered.



Speaker Spacing for a Distributed Audio System		
	Standing Listener	**Seated Listener**
8' Ceiling Height	6' (1.8m) Apart	10' (3m) Apart
10' Ceiling Height	10' (3m) Apart	14' (4.3m) Apart
12' Ceiling Height	14' (4.3m) Apart	18' (5.5m) Apart
14' Ceiling Height	18' (5.5m) Apart	22' (6.7m) Apart

Speaker Wire

The gauge of wire used can have an impact on the performance of your speakers. Generally, speaker wire is determined by the length of the run and wattage utilized. The longer your run is, the smaller the wire gauge must be.

On commercial 70 volt systems, 18 gauge, 2 conductor, stranded and jacketed without shield wire is commonly used.

Wire Length	Wire Gauge	System
0 -200' (0 - 60m)	18	70V / 100V
200-500' (60 -150m)	16	70V / 100V
Over 500' (150m)	14	70V / 100V

In residential systems, for relatively short runs (less than 50 feet) to 6 ohm speakers, 16 gauge wire will be usually suitable.

Wire Length	Wire Gauge	System
0 - 50' (0 - 15m)	16	6 Ohm
50 - 100' (15 - 45m)	14	6 Ohm
Over 100' (30m)	12	6 Ohm

Wire Routing

Plan how you will route the wire to the desired speaker location. There are several methods for routing the wire, and you may need to combine several of them.

Behind the Baseboard

The wire can be routed behind the baseboard by cutting a groove out of the back of the baseboard, or by buying special baseboard designed for concealing wires.

Through Walls

When running wires through a wall, be sure to avoid all obstacles such as AC wiring, pipes, and ducts.

Attic or Basement

When available, you can route the wire through an attic or crawlspace.

Under the Carpet

One option is to lift up the carpet and route "tape wire" under the carpet.

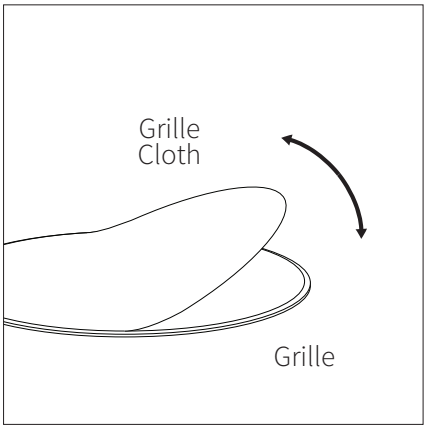
For New Construction

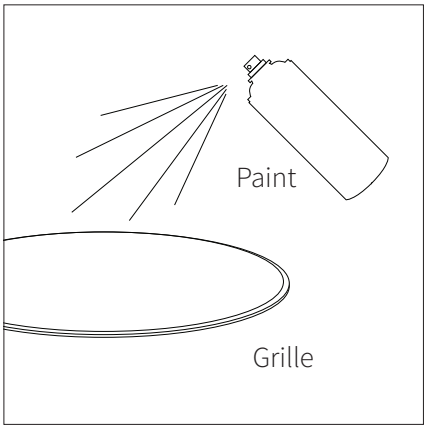
If these speakers are being installed in a new home during construction, the installation process will be a bit different (although much simpler). For these situations, it is recommended you purchase a bracket. Instructions on how to install the speakers are provided with the bracket, or can be found on our website. Visit www.originacoustics.com for more information.

Painting the Grille

In some situations the speakers may look better if the color matched the walls, ceiling, or trim in the room. This can be accomplished by painting the grille. The grille must be painted with spray paint, and most hardware stores will mix a can of paint to match whatever color you need. Before painting, carefully remove the thin cloth on the underside of the grille. Lightly spray the front of the grille with the paint from a distance, being careful not to plug any of the holes.

Diluting the paint with paint thinner will lessen the risk of filling any holes. If a hole gets plugged use a can of compressed air to open it. Once the paint is dry, put the cloth back on the grille.

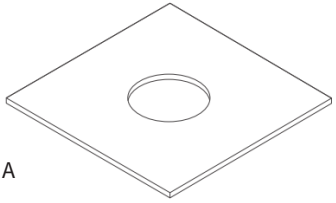




Installation

1. Cut a hole in the drywall using the supplied cutout template **(See figure A)**

Figure A



2. Connect the wires from your amplifier to the male terminal connector at the rear of speaker. Strip approximately 3⁄16" (5mm) of the insulation off each 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 B & C).**

Figure B

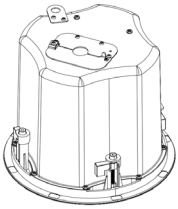
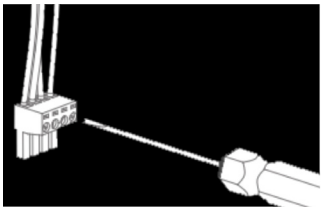


Figure C



3. When using multiple speakers you can connect the speakers either in parallel or in the loop through method as shown below **(See Figure D & E)**.

Figure D *Parallel Connection*

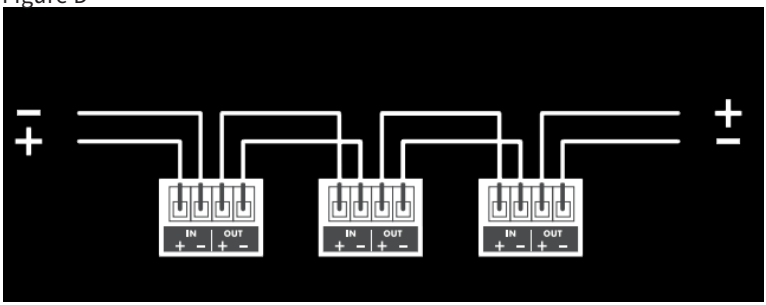
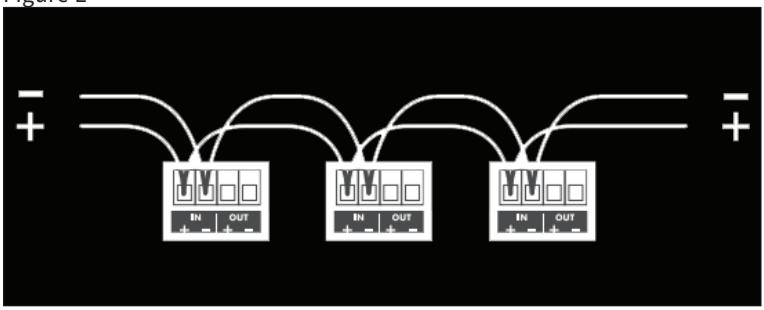
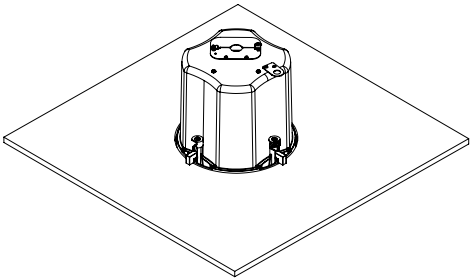


Figure E *Loop Through Connection*



4. Make sure all the dog leg (L-shaped) clamps on the speaker are in the upright position and facing to the side, not outwards. Insert the speaker into the hole. Turn the four screws so that the dog legs face outwards and continue turning until they clamp down on the ceiling. When you feel resistance, stop tightening the screws. If you need to remove the speaker, turn the screws in the opposite direction. **(See Figure F)**

Figure F

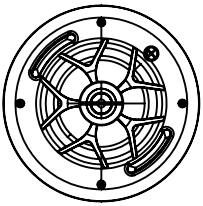


5. Determine the proper wattage setting for each speaker in the installation and set each speaker's transformer tap selector on the front of the speaker accordingly. **(See Figure G)**.

Figure G

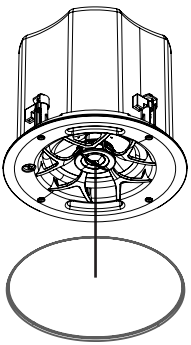
6. The speaker has a pivoting tweeter assembly, allowing the treble to be directed to the most suitable location if the speaker is installed off-axis. To pivot the drivers apply light pressure to the ring around the outside edge of the tweeter cone. Take care not to touch or apply pressure to the cone itself. **(See Figure H)**

Figure H



7. Fit the grille onto the speaker.
(See Figure I)

Figure I



Drop Ceiling Installation

The Tile Bridge, consisting of C-bracket and rails, should be used in suspended ceiling installations involving acoustic ceiling tile 2' x 2' or 2' x 4'. The Tile Bridge can also be used in installations when the speakers are mounted into material that will not support their weight.

Insert the two rails and C-bracket through the hole you have cut, mounting them as shown. Using the hardware that is supplied, fasten the C-bracket to the rails as shown **(See Figure J & K)**.

After the C-bracket and tile support rails are installed follow Step 2 through Step 7 in the standard installation instructions.

Figure J

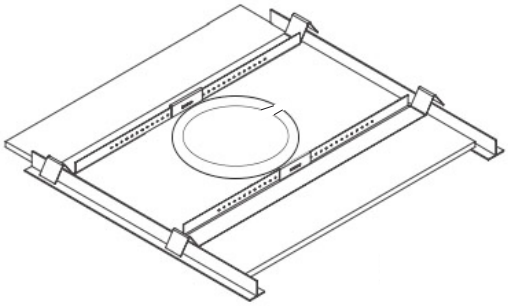
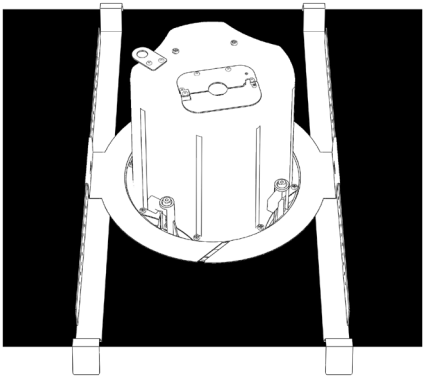


Figure K



Troubleshooting

If you have a problem, try isolating it first. For example, if you're playing a DVD and there is no sound, try replacing the DVD with another audio source to see if you get sound. If it does work, then the problem is with the television, DVD player, or the cables connecting them. If it doesn't work, the problem will be with the amplifier, speakers, or those cables.

Problem	Possible Cause
No Sound	The volume may be turned down or muted. Check the volume settings on both the amplifier and the television/computer/CD player/etc.
No Sound	Make sure the proper source is selected on the amplifier or receiver.
No Sound	Check the cord connecting the amplifier with the source. The cord may be damaged or plugged into the wrong input or output.
No Sound	Check the wires connecting the amplifier with the speakers. Make sure they're connected properly and not damaged in any way.
Poor Sound Quality	If you hear something like static, or the sound is cutting in and out, check the audio cables. If the problem increases when a cable is being moved, then the cable is most likely faulty or not connected properly.
Poor Sound Quality	Today's audio systems may have several places to adjust the volume, for example your MP3 player may have a volume control, and your amplifier may also have one. Check to be certain that the volume isn't turned up past 80% on any device.
Poor Sound Quality	Try changing sources to be certain that the selection you've chosen is a good quality recording.

Technical Assistance

If you have any questions or concerns about installing or using this product, you can reach us through one of the following methods:

Phone: (844) 674-4461

Hours of operation: 8:00am - 5:00pm (Pacific Time), Mon - Fri

Email: techsupport@originacoustics.com

If you are having technical trouble, please include the model number and briefly explain what steps you took to resolve the problem in your email, or be prepared to answer these questions over the phone. If you are considering returning the product, it's required that you contact Origin Acoustics prior to any return attempts. This way we can determine if the issue can be resolved without returning the product, or if needed we can provide instructions and support for the return process.

Limited 5-Year Warranty

Origin Acoustics warrants to the original retail purchaser only that this Origin Acoustics product will be free from defects in materials and workmanship, provided the speaker was purchased from an Origin Acoustics authorized dealer.

If the product is determined to be defective, it will be repaired or replaced at Origin Acoustics' discretion. If the product must be replaced yet it is no longer manufactured, it will be replaced with a model of equal to or greater value that is the most similar to the original. If this is the case, installing the replacement model may require mounting modifications; Origin Acoustics will not be responsible for any such related costs.

Requirements & Warranty Coverage

This warranty may not be valid if the product was purchased through an unauthorized dealer. This warranty only applies to the individual that made the original purchase, and it cannot be applied to other purchases. The purchaser must be prepared to provide proof of purchase (receipt). This warranty will not be valid if the identifying number or serial number has been removed, defaced, or altered.

Not Covered by Warranty

- Accidental damage
- Damage caused by abuse or misuse
- Damage caused by attempted repairs/modifications by anyone other than Origin Acoustics or an authorized dealer
- Damage caused by improper installation
- Normal wear, maintenance, and environmental issues
- Damage caused by voltage inputs in excess of the rated maximum of the unit
- Damage inflicted during the return shipment

All warranties and warranty conditions are subject to change. Please refer to the dealer portal for the latest information.

Return Process

Before making any return attempts, it is required that you first contact Origin Acoustics. Return product to Origin Acoustics or your dealer, either in person or by mail. It's preferable if the product is returned in the original packaging. If this is not possible, the customer is responsible for insuring the shipment for the full value of the product. This warranty is in lieu of all other expressed or implied warranties. Some states do not allow limitations on implied warranties, so this may not apply depending on the customer's location. (For more information, see Magnuson-Moss Warranty Act.)

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