IN-WALL SPEAKERS

Installation and Instruction Manual

Introduction

Congratulations on your purchase of RBH Sound in-wall speakers! Your speakers are the result of many years of research and development dedicated to producing high quality products for home audio and audio/video systems.

This manual is designed to give you, the installer or owner, basic information as to the speaker's installation and operation. We recommend you thoroughly read through the material contained in this manual before installing your speaker. This will ensure that you have an understanding of how to setup your speakers for optimum performance and allow for years of listening enjoyment.

Break In Period

Allow 10-15 hours of listening time to adequately break in the speakers. As the speaker breaks in, the driver suspension will loosen. The result of break-in will be an increase in low frequency response, improved definition, clarity and detail.

Features

RBH Sound in-wall speakers use either a swing out dog leg mounting system with pre-started screws or a pinch ring for fast and easy installation. All RBH Sound in-wall speakers feature directional swivel tweeters used to direct the sound to the main listening area. RBH Sound in-wall speakers feature polyswitch protection circuitry that is designed to protect the tweeter from being overdriven. This circuit will automatically reset itself once the volume is turned down or the problem causing the circuit to activate is removed.

Steep acoustic slope crossovers are used to integrate the drivers. The use of steep crossover slopes allows high power handling, minimized driver interaction anomalies, and maximizes the clarity with which each driver is able to produce its respective frequency band.

Painting the Speakers

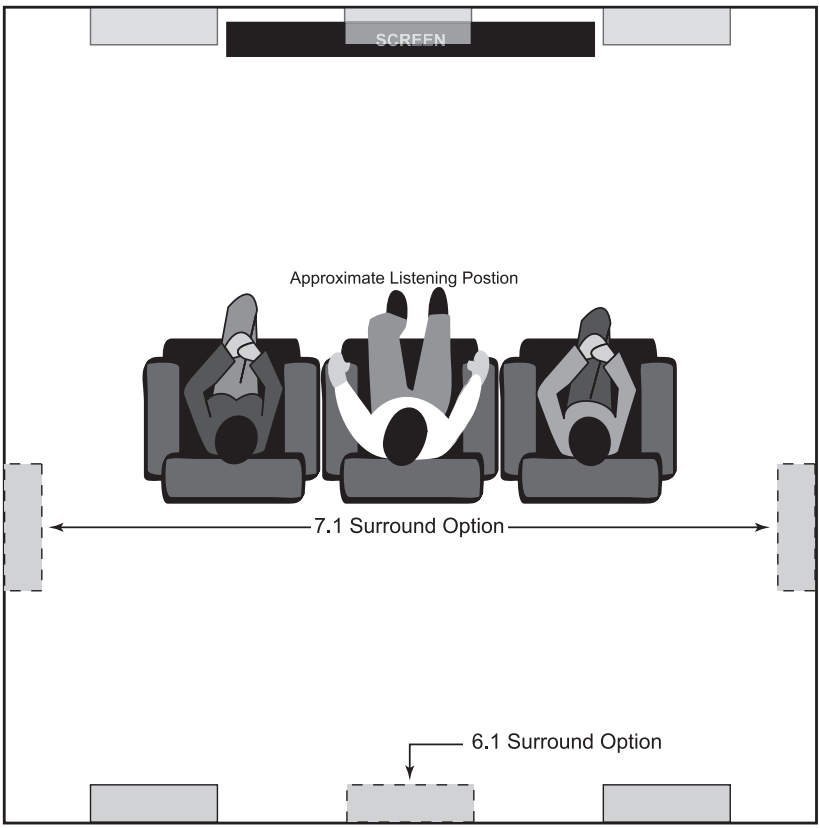
A paint shield is included with your speaker. This shield can be used to protect the speaker when painting the speaker rim (frame). If you plan to paint your speaker, we recommend that it be done prior to installation. If you decide to paint your speaker sometime in the future, it is best to remove it from the wall. When painting the speaker, the paint shield provided in the packaging must be installed in place of the grille. The grille can also be painted. Painting the speaker grille should be done with a paint sprayer set to fine. Remove the grille from the speaker, peel off the grille fabric on the back of the grille and set aside. Place the grille on a flat surface. Do not use a brush or roller on the speaker grille as it will clog the holes. This will greatly reduce the sound quality of the speakers. Do not paint the grille while attached to the speaker. Be sure to remove the paint shield from the speaker and replace the grille fabric to the back of the grille before reinstalling the grille and using the speakers.

Room Setup Suggestions

With nearly endless placement options, careful consideration for placement of the in-wall speaker needs to be considered, as installation requires cutting a hole in your wall! When using the speaker in home theater applications follow the guidelines illustrated below.

Swivel Tweeter Placement

The swivel tweeter allows sound to be directed toward or away from the listening area depending on the application. A tweeter aimed toward your listening position improves imaging and detail. When using a speaker with a swivel tweeter as front/main home theater speakers or as stereo speakers in a distributed audio system, aim the tweeter toward the main listening position. For rear/surround speakers aim the tweeter toward the nearest reflecting surface (an adjacent wall or ceiling) for a more diffuse sound field (for more direct sound, aim the tweeter at your listening position).



Speaker Installation

RBH Sound in-wall speakers are designed on an infinite baffle configuration. This means a back can is not required for the speaker to perform properly. However, using an RBH Sound back can will most likely improve the tightness and control the bass response. RBH Sound in-wall speakers have also been designed to make installation as easy as possible. Upon opening the speaker boxes you will notice that the screws are pre-started into the dog legs or a pinch ring. The basic idea behind in-wall speakers is the speaker is held in place by sandwiching the drywall. A frame around the speaker conceals the cutout in the drywall and presses against the front of the wall. Behind the wall, the speaker has a set of dog legs or a pinch ring that screw into the drywall.

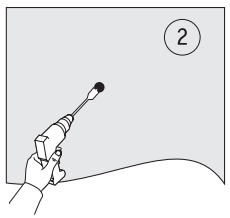
CAUTION: Be certain there are no electrical wires, water pipes, heating ducts or any other obstructions in the planned area of installation before starting to drill or cut into the wall. If there is an electrical outlet nearby, turn off the circuit breaker to avoid possible injury.

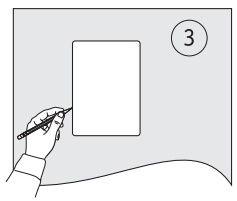
Installing WITH a New Construction Bracket:

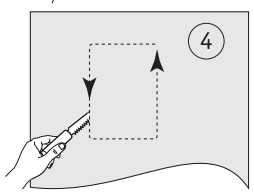
If using a new construction bracket cutting the drywall should not be necessary continue with *"Connecting the Speaker"* instructions on the next page.

Installing WITHOUT a New Construction Bracket:

Use the cutout template supplied with the speaker for guidance in cutting the drywall, following *"Using the Template"* instructions below.







Using the Template:

1. These speakers are designed to be mounted between the framing members. Use a stud finder to locate the position of studs. Make sure you have a 2-inch clearance from the outside of the cutout hole from studs.
2. Drill a 1/4-inch hole in the center of the area you plan to mount the speaker. Cut or bend a piece of wire (a coat hanger works well) to a 90-degree angle. Insert the wire into the pilot hole and fish around to make sure there are not obstructions which will interfere with the installation.

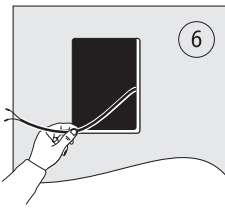
   NOTE: If you must choose another location the pilot hole can be easily patched.
3. Once a suitable location is found, use masking tape to temporarily place the supplied cutout template on the wall, centered over the pilot hole. Draw a circle around the inside edge of the template.
4. Carefully cut the hole with the appropriate cutting tool to remove the material inside the circle inscribed by the template.

NOTE: The frame will overlap the cutting edge by about a 1/4-inch which will mask any minor cutting inaccuracies.

5. Confirm the speaker easily fits into the hole, without any gaps.

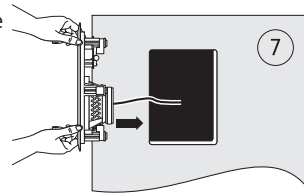
Connecting the Speaker:

6. Pull the speaker wire out of the hole and connect the speaker. Split the two conductors of the speaker wire apart about 3-inches so they form a "Y". Using wire strippers, remove about 1/2-inch of insulation from each of the two conductors of the wire to expose the bare metal and twist each of the conductors into a single unfrayed strand.



The speaker terminals will accommodate any speaker wire up to 14-gauge. Select an appropriate wire gauge from the following chart:

18 gauge for up to 50-feet
16 gauge for up to 100-feet
14 gauge for up to 200-feet



NOTE: When connecting a speaker it is very important to retain the correct polarity (improper polarity will cause reduced bass performance and unnatural imaging effects). To do this, be sure the wire attached to the positive terminal on the speaker (marked [+] or colored red) connects to the positive terminal on the amplifier. Similarly, the negative terminal (marked [-] or colored black must connect to the negative terminal on the amplifier.

Finishing the Installation

7. Slide the speaker into the pre-cut hole in drywall or new construction bracket keeping the speaker cable above and out of the way to prevent pinching it.
8. Tighten the screws. The dog legs will automatically swing out and tighten (pinch) themselves against the new construction bracket or the drywall with the turning of the screws and will hold the speaker solidly in place. Don't over tighten screws, if you over-tighten the screws the speaker frame may bend which will make it difficult for the grille to install properly.

   NOTE: If using a drill/driver set the clutch to a low setting to prevent over tightening and possible damage to the frame or dog legs. If using hand tools, tighten just until firm.
9. If the speaker has any tone controls or has a pivoting tweeter, leave the grille off until you can listen to the speaker. Once the speaker is adjusted install the grille.

   NOTE: Handle the grille carefully, as the grille pressure-fits into the installed speaker. If the grille does not slip in try loosening the mounting screws before resorting to forcing the grille into the speaker.

Speaker Accessories

Rear Enclosure

The rear enclosure is a rectangular pre-construction box for in-wall speakers. The BB-S can be mounted in-between standard 2x4 stud-frame construction and enhances the sound quality of in-wall speakers. It also prevents the sound from being transferred into rooms on the other side of the wall.

Rear Enclosure

Blank Plates

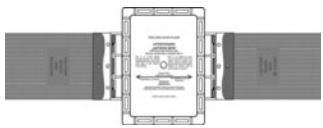
Blank plates are a very clean and efficient way to cover the holes left in drywall when a new construction bracket is used. Install blank plates when in-wall speakers will not be immediately installed after drywall is finished.

Blank Plates

New Construction Brackets

An excellent way to guarantee placement of in-wall and in-ceiling speakers prior to drywall, New Construction Brackets (NCB's) also make installation of in-wall speakers faster and easier by reducing time and mess. Once the drywall is installed, just connect the speaker to the speaker wire and install. New Construction Brackets eliminate the time and need to locate and cut drywall before speaker installation.

For more information on RBH Sound in-wall speaker accessories go to www.rbhsound.com.



New Construction Bracket

Specifications

Model:	A-610	A-414	MC-414
Series:	Architectural	Architectural	MC
System Type:	In-wall 2-way Speaker	In-wall 2-way Speaker	In-wall 2-way Speaker
Frequency Response:	55Hz-20kHz (±3dB)	60Hz-20kHz (±3dB)	55Hz-20kHz (±3dB)
Sensitivity:	90dB (2.83V @ 1 Meter)	90dB (2.83V @ 1 Meter)	91dB (2.83V @ 1 Meter)
Recommended/Rated Power:	10-80 Watts	10-100 Watts	15-150 Watts
Woofer(s):	(1) 6½" (165mm) Poly Graphite	(2) 4" (102mm) Poly Graphite	(2) 4" (102mm) Aluminum
Tweeter(s)	(1) 1" (25mm) Silk Dome	(1) 1" (25mm) Silk Dome	(1) 1" (25mm) Aluminum
Swivel Tweeter(s):	Yes	Yes	Yes
Tweeter Protection:	Yes	Yes	Yes
Crossover Frequency:	2,800 Hz	4,000 Hz	3,500 Hz
Crossover Slope:	12dB/Octave	12dB/Octave	12dB/Octave
Impedance:	8 Ohms	6 Ohms	6 Ohms
Cabinet/Color:	White Frame (Paintable)	White Frame (Paintable)	White Frame (Paintable)
Grille:	White Aluminum (Paintable)	White Aluminum (Paintable)	White Aluminum (Paintable)
Cutout Dimensions:	7-1/4" W x 11" H (184mm W x 279mm H)	6" W x 14-1/4" H (152mm W x 362mm H)	6" W x 14-1/4" H (152mm W x 362mm H)
Finished Dimensions:	8-1/2" 12" H x 3" D (216mm W x 305mm H x 76mm D)	7-3/16" W x 15-3/8" H x 2-7/8" D (183mm W x 391mm H x 73mm D)	7-3/16" W x 15-3/8" H x 2-7/8" D (183mm W x 391mm H x 73mm D)
Weight:	3.30 lbs. (1.50 kg)	5.85 lbs. (2.65 kg)	5.85 lbs. (2.65 kg)
Warranty:	25 Years	25 Years	25 Years
Rear Enclosure:	BB-S	BB-S	BB-S
Blank Plate:	BP-6	BP-414	BP-414
New Construction Bracket:	NCB-6	NCB-414	NCB-414

Specifications (continued)

Model:	MC-6	MC-6DB	MC-616
Series:	MC	MC	MC
System Type:	In-wall 2-way Speaker	In-wall 2-way Surround Speaker	In-wall 2-way Speaker
Frequency Response:	50Hz-20kHz (±3dB)	50Hz-20kHz (±3dB)	50Hz-20kHz (±3dB)
Sensitivity:*	86dB (2.83V @ 1 Meter)	88dB (2.83V @ 1 Meter)	91dB (2.83V @ 1 Meter)
Recommended/Rated Power:	15-120 Watts	15-120 Watts	15-180 Watts
Woofer(s):	(1) 6½" (165mm) Aluminum	(1) 6½" (165mm) Aluminum	(2) 6½" (165mm) Aluminum
Tweeter(s)	(1) 1" (25mm) Aluminum	(2) ¾" (19mm) Aluminum	(1) 1" (25mm) Aluminum
Swivel Tweeter(s):	Yes	Yes	Yes
Tweeter Protection:	Yes	Yes	Yes
Crossover Frequency:	3,000 Hz	3,000 Hz	3,000 Hz
Crossover Slope:	12dB/Octave	12dB/Octave	12dB/Octave
Impedance:	8 Ohms	8 Ohms	6 Ohms
Cabinet/Color:	White Frame (Paintable)	White Frame (Paintable)	White Frame (Paintable)
Grille:	White Aluminum (Paintable)	White Aluminum (Paintable)	White Aluminum (Paintable)
Cutout Dimensions:	7-1/4" W x 11" H (216mm W x 279mm H)	7-1/4" W x 11" H (216mm W x 279mm H)	7-3/4" W x 19" H (197mm W x 483mm H)
Finished Dimensions:	8-1/2" W x 12" H x 3-1/2" D (216mm W x 305mm H x 89mm D)	8-1/2" W x 12" H x 3-1/2" D (216mm W x 305mm H x 89mm D)	8-7/8" W x 20-1/4" H x 3-1/2" D (225mm W x 514mm H x 89mm D)
Weight:	4.9 lbs. (2.22 kg)	5.05 lbs. (2.43 kg)	7.1 lbs. (3.22 kg)
Warranty:	25 Years	25 Years	25 Years
Rear Enclosure:	BB-S	BB-S	BB-S
Blank Plate:	BP-6	BP-6	BP-616
New Construction Bracket:	NCB-6	NCB-6	NCB-616

Specifications (continued)

Model:	MC-553	MCS-88	TK-6
Series:	MC	MC	MC
System Type:	In-wall/LCR Dual 2-way Speaker	In-wall Subwoofer	In-wall 2-way Speaker
Frequency Response:	55Hz-20kHz (±3dB)	35Hz-100Hz (±3dB)	50Hz-20kHz (±3dB)
Sensitivity:	88dB Main, 87dB Center, and 90dB Combined (2.83V @ 1 Meter)	90dB (2.83V @ 1 Meter)	88dB (2.83V @ 1 Meter)
Recommended/Rated Power:	15-150 Watts Main, 15-100 Watts Center and 15-200 Watts Combined	100-200 Watts	15-100 Watts
Woofer(s):	(3) 5-1/4" (133mm) Aluminum	(2) 8" (203mm) Aluminum	(1) 6-1/2" (165mm) Fiberglass
Tweeter(s):	(2) 1" (25mm) Aluminum Dome	N/A	(1) 1" (25mm) Aluminum Dome
Swivel Tweeter(s)	Yes	N/A	Yes
Tweeter Protection:	Yes	N/A	Yes
Crossover Frequency:	3,000 Hz	100 Hz (Low Pass Defeatable)	3,000
Crossover Slope:	12dB/Octave	12dB/Octave	12dB/Octave
Impedance:	8 Ohms Main, 6 Ohms Center and 4 Ohms Combined	8 Ohms x2	8 Ohms
Cabinet/Color:	White Frame (Paintable)	White Frame (Paintable)	White Frame (Paintable)
Grille:	White Steel (Paintable)	White Aluminum (Paintable)	White Aluminum (Paintable)
Cutout Dimensions:	6-5/8" W x 26-3/4 " H (168mm W x 680mm H)	9" W x 17-1/2" H (229mm W x 445mm H)	7-1/4" W x 11" H (184mm W x 279mm H)
Finished Dimensions:	7-7/8" W x 28-1/8" H x 3-3/8" D (181mm W x 714mm H x 80mm D)	10-1/8" W x 18-3/4" H x 4" D (257mm W x 476mm H x 102mm D)	8-1/2" W x 12" H x 3-9/16" D (216mm W x 305mm H x 90mm D)
Weight:	9 lbs. (4.08 kg)	10.9 lbs. (4.94 kg)	4.55 lbs. (2.06 kg)
Warranty:	25 Years	25 Years	25 Years
Rear Enclosure:	N/A	N/A	BB-S
Blank Plate:	N/A	BP-88	BP-6
New Construction Bracket:	N/A	NCB-88	NCB-6

Discontinued Product–Specifications

Model:	A-810	A-616	A-509
Series:	Architectural	Architectural	Architectural
System Type:	In-ceiling 2-way Speaker	In-wall 2-way Speaker	In-wall 2-way Speaker
Frequency Response:	50Hz-20kHz (±3dB)	55Hz-20kHz (±3dB)	60Hz-20kHz (±3dB)
Sensitivity:	90dB (2.83V @ 1 Meter)	91dB (2.83V @ 1 Meter)	88dB (2.83V @ 1 Meter)
Recommended/Rated Power:	10-110 Watts	50-160 Watts	10-75 Watts
Woofer(s):	(1) 8" (203mm) Poly Graphite	(2) 6½" (102mm) Poly Graphite	(1) 5¼" (133mm) Poly Graphite
Tweeter(s):	(1) 1" (25mm) Silk Dome	(1) 1" (25mm) Silk Dome	(1) 1" (25mm) Mylar Dome
Swivel Tweeter(s)	Yes	Yes	No
Tweeter Protection:	Yes	Yes	No
Crossover Frequency:	2,500 Hz	3,000 Hz	3,000 Hz
Crossover Slope:	12dB/Octave	12dB/Octave	6dB/Octave
Impedance:	8 Ohms	6 Ohms	8 Ohms
Cabinet/Color:	White Frame (Paintable)	White Frame (Paintable)	White Frame (Paintable)
Grille:	White Aluminum (Paintable)	White Aluminum (Paintable)	White Aluminum (Paintable)
Cutout Dimensions:	9-3/4" W x 12-3/4" H (248mm W x 324mm H)	6" W x 14-1/4" H (152mm W x 362mm H)	6-1/2" W x 9-3/4" H (171mm W x 248mm H)
Finished Dimensions:	10-1/8" W x 14-1/8" H x 3-1/2" D (257mm W x 359mm H x 89mm D)	8-7/8" W x 20-1/4" H x 3-1/2" D (225mm W x 514mm H x 89mm D)	7-1/2" W x 11" H x 2-3/4" D (191mm W x 280mm H x 70mm D)
Weight:	4.95 lbs. (2.25 kg)	7.2 lbs. (3.27 kg)	3 lbs. (1.36 kg)
Warranty:	25 Years	25 Years	25 Years
Rear Enclosure:	N/A	BB-S	BB-S
Blank Plate:	BP-8	BP-6	BP-8
New Construction Bracket:	NCB-8	NCB-6	NCB-8
Discontinued:	July 2010	September 2007	September 2007

Discontinued Product–Specifications (continued)

Model:	MC-884	MC-83	MC-8
Series:	MC	MC	MC
System Type:	In-wall 3-way Speaker	In-wall 3-way Speaker	In-wall 2-way Speaker
Frequency Response:	40Hz-20kHz (±3dB)	45Hz-20kHz (±3dB)	50Hz-20kHz (±3dB)
Sensitivity:	89dB (2.83V @ 1 Meter)	86dB (2.83V @ 1 Meter)	86dB (2.83V @ 1 Meter)
Recommended/Rated Power:	15-200 Watts	15-150 Watts	15-120 Watts
Woofer(s):	(2) 8" (203mm) Aluminum	(1) 8" (203mm) Aluminum	(1) 8" (203mm) Aluminum
Tweeter(s):	(1) 2½" (64mm) Aluminum (1) 1" (25mm) Aluminum	(1) 2½" (64mm) Aluminum (1) 1" (25mm) Aluminum	(1) 1" (25mm) Swivel Aluminum
Swivel Tweeter(s)	Yes	Yes (1-inch only)	Yes
Tweeter Protection:	Yes	Yes	Yes
Crossover Frequency:	2,000 Hz, 8,000 Hz	2,500 Hz	2,500 Hz
Crossover Slope:	12dB/Octave	12dB/Octave	12dB/Octave
Impedance:	6 Ohms	8 Ohms	8 Ohms
Cabinet/Color:	White Frame (Paintable)	White Frame (Paintable)	White Frame (Paintable)
Grille:	White Aluminum (Paintable)	White Aluminum (Paintable)	White Aluminum (Paintable)
Cutout Dimensions:	9" W x 17-1/2" H (228mm W x 445mm H)	9" W x 12-3/4" H (299mm W x 324mm H)	9" W x 12-3/4" H (299mm W x 324mm H)
Finished Dimensions:	10-1/8" W x 18-3/4" H x 3-7/8" D (257mm W x 476mm H x 95mm D)	10-1/8" W x 14-1/8" H x 3-7/8" D (257mm W x 359mm H x 98mm D)	10-1/8" W x 14-1/8" H x 3-7/8" D (257mm W x 359mm H x 98mm D)
Weight:	11.45 lbs. (5.195 kg)	6.3 lbs. (2.86 kg)	5 lbs. (2.23 kg)
Warranty:	25 Years	25 Years	25 Years
Rear Enclosure:	N/A	BC-8	BC-8
Blank Plate:	BP-88	BP-8	BP-8
New Construction Bracket:	NCB-88	NCB-8	NCB-8
Discontinued:	September 2009	September 2005	September 2005

Discontinued Product–Specifications (continued)

Model:	**TK-8**		
Series:	TK		
System Type:	In-wall		
Frequency Response:	50Hz-20kHz (±3dB)		
Sensitivity:	90dB (2.83V @ 1 Meter)		
Recommended/Rated Power:	15-110 Watts		
Woofer(s):	(1) 8" (203mm) Fiberglass Matrix Cone		
Tweeter(s):	(1) 1" (25mm) Aluminum		
Swivel Tweeter(s)	Yes		
Tweeter Protection:	Yes		
Crossover Frequency:	2,500 Hz		
Crossover Slope:	12dB/Octave		
Impedance:	8 Ohms		
Cabinet/Color:	White Frame (Paintable)		
Grille:	White (Paintable)		
Cutout Dimensions:	10-1/8" W x 14-1/8" H x 3-7/8" D (257mm W x 359mm H x 98mm D)		
Finished Dimensions:	9" W x 12-3/4" H x 3-7/8" D (229mm W x 324mm H)		
Weight:	5-1/2 lbs. (2.49 kg)		
Warranty:	25 Years		
Rear Enclosure:	BC-8		
Blank Plate:	BP-8		
New Construction Bracket:	NCB-8		
Discontinued:	January 2007		

Troubleshooting

Situation	Probable Cause	Solution
No sound from speakers.	Speaker wire not connected.	Make sure wire is properly connecting to the speaker and the amplifier observing proper polarity.
	Speaker selector on amplifier is not on.	Activate proper speaker selector on amplifier.
No sound from one speaker.	Balance control on receiver or preamp is not centered.	Place balance control in the center.
	Speaker wire not completely connected.	Check all connections at amplifier and speakers.
Very little bass and/or imaging	Speakers are wired out of phase.	Check entire system for proper polarity and make adjustments as necessary.

Warranty

Your RBH Sound in-wall speaker is covered by a limited warranty against defects in materials and workmanship for a period of 25 years. This warranty is provided by the authorized RBH Sound dealer where the speaker was purchased. Warranty repair will be performed only when your purchase receipt is presented as proof of ownership and date of purchase. Defective parts will be repaired or replaced without charge by your dealer's store or the location designated by your dealer authorized to service RBH Sound products. Charges for unauthorized service and transportation cost are not reimbursable under this warranty. This warranty becomes void if the product has been damaged by alteration, misuse or neglect. RBH Sound assumes no liability for property damage or any other incidental or consequential damage whatsoever which may result from the failure of this product. Any and all warranties of merchantability and fitness implied by law are limited to the duration of this express warranty. Some states do not allow limitations on how long an implied warranty lasts, so the above limitations may not apply to you. Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation or exclusion may not apply to you.

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