PARASOUND

Custom Series In-Wall and Ceiling Loudspeakers

Congratulations on your purchase of the Custom Series In-Wall Loudspeaker system and thank you for your selection of Parasound. This speaker system is designed to provide you with high-fidelity reproduction in a wide variety applications. Please take a few minutes to read these instructions thoroughly to insure best performance of you Custom Series loudspeakers.

Precautions

If you have any doubts about your ability to properly install in-wall loudspeakers, you should consider the services of a custom installer. If you plan to install them yourself, always use good quality tools to save time and make the installation go more smoothly.

Allow proper clearance. All Custom Series loudspeakers mount into a standard 2" x 4" (or greater) stud depth walls. Locate the speakers between the studs and avoid cutting into the studs. Determine the final location of *both* left and right speakers before cutting any holes since changes to one speaker may affect the other either aesthetically or acoustically.

Look for pipes, wiring or any other conflicting material that might be damaged before beginning the installation.

Prewiring

Before you purchase speaker wire, check local building codes to make sure that the wire complies to applicable safety codes such as UL or CL-2 rating. Use stranded wire no thinner that 16 AWG. For runs longer than 100 feet, we recommend 14 AWG or thicker.

When pulling wire, take care not to pull the wire too fast to prevent stretching the wire or scorching the insulation from excess friction. Leave 2 to 3 feet of excess speaker wire at both ends; it is easier to cut excess wire than to splice additional wire. When securing the wire inside the walls, be careful not to pierce the insulation with nails or staples.

For best performance and easier troubleshooting, always "home run" wiring when installing multiple speakers rather than connecting speakers together or other methods. When connecting multiple speakers, make sure that the power amplifier is capable of adequately driving the combined impedance of the speakers. If not, you may need additional amplifiers or an impedance protection device that are usually built into speaker selection boxes.

Preparing the Wall or Ceiling Cutout

Confirm that there is at least 1 1/2" of clearance between the edges of the planned cutout and adjacent studs or joints. Cut out (if applicable) and fasten the supplied cardboard template to the wall or ceiling with tape or thumbtacks. Check again equal distance of both speakers from the ceiling or floor. Use a level to insure that the template is fastened correctly. Next, trace around the perimeter of the template. Before making the final cutout, make a small 4 inch "test cutout" in the center of the pencilled outline. Reach inside the test hole to verify that there are no obstructions in the way of your planned cutout.

To cut the actual hole, first score the drywall with a razor knife then use a keyhole saw to complete the cut. Remove remaining debris from the edge of the hole. Hold the speaker against the wall up to the cutout to make sure it fits easily without forcing.

You can add a "blanket" of sound absorbing material behind the woofer to reduce sound transmission into the adjoining room or reflections bouncing back against the woofer cone. To help isolate sound from the adjoining room and improve bass response, consider installing a separate speaker cabinet between the studs such as the Parasound WISE™ enclosures.

Secure the speaker wire to a stud near the cutout so its weight will not tug on the terminals of the speaker after it is connected. This will also keep the wire from dropping behind the wall. Before connecting the wire to the terminals, make sure the speaker wire runs through, not around, the speaker's metal mounting bracket.

Installing in Existing Walls and Ceilings-Square Framed Models

Remove the grille by gently pushing through one of the rear of the speaker frame's mounting holes with a small screwdriver or one of the mounting bolts. Set aside the grille for now.

Thread four bolts (out of the six included) through the four upper holes in the molded frame that are located. Don't insert the two lower screws near the woofer at this time. Start these bolts with a few turns into the four corresponding holes in the metal bracket, but do not tighten them yet.

Carefully slip bottom end of the metal bracket (the end where no bolts are attached yet) into the bottom of the cutout in the wall. Center the speaker in the cutout, level it and tighten the four bolts that were already inserted. This will pull the bracket up snug behind the wall, lining up the last two bolt holes below the woofer driver. Insert and tighten the last two bolts. Tighten all the bolts evenly; this securely clamps the wall between the speaker's molded frame in front and metal bracket behind. Avoid using excessive force to avoid deforming the drywall or cracking the frame.
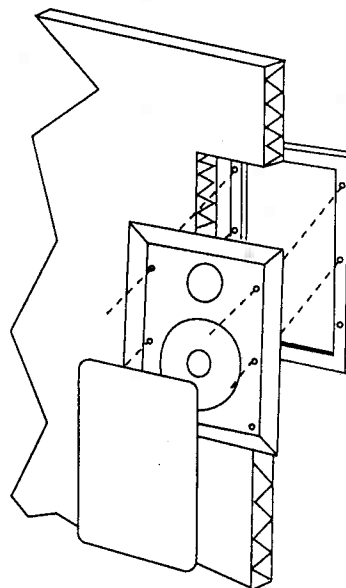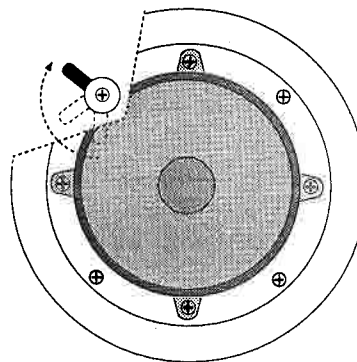
Any sound leakage from behind the molded frame can be blocked with foam weather-stripping directly behind the outer section of the plastic frame.

Installing in Existing Walls and Ceilings-Round Framed Models

Remove the grille gently pulling the inner ring of the grille frame away from the frame. Set the grille aside for now.

The C/ST-25R and C/SS-20R employ mounting "swing-arms" that will automatically swing out when the mounting screws are first turned clockwise (see drawing). After they swing out, the arms will then clamp against the drywall from behind the wall.

Tighten all the bolts evenly. This securely clamps the wall between the speaker's molded frame in front and metal bracket behind. Avoid using excessive force to avoid deforming the drywall or cracking the frame.

Any sound leakage from behind the molded frame can be blocked with

NC/K-M New Construction Rough-In Kits

You may order new construction rough-in kits for any Parasound Custom Series speaker. These sturdy brackets provide support for the speaker where the studs are in place but drywall has not yet been hung. There is a different rough-in kit for each size of Custom Series loud speaker. Refer to the specification section of this manual for the correct rough-in kit.

## Installation Instructions for NC/K-M Rough-In Kit

Note: Follow these instructions if you will cut the final hole for the speaker with a pin router.

1. Determine the final cut-out location of the Custom Series loudspeaker.
2. Install one of the 25" mounting bar horizontally between two studs with the groove facing up.
3. Use a level or carpenter's square before nailing or screwing the bar into the studs.
4. Slide the cut-out frame into the desired location with the 3/8" tabs *facing toward you.*
5. Place the other 25" horizontal bar onto the top of the cut-out frame and nail or screw into the studs.
6. Flatten the outer edge of the groove of the mounting bars against the studs with a hammer to keep the frame from sliding.
7. Once the drywall has been hung, use a pin router to cut out the hole against the outer edge of the cut-out frame.
8. Install the Custom Series speaker as shown above in *Installing in Existing Walls and Ceilings.*
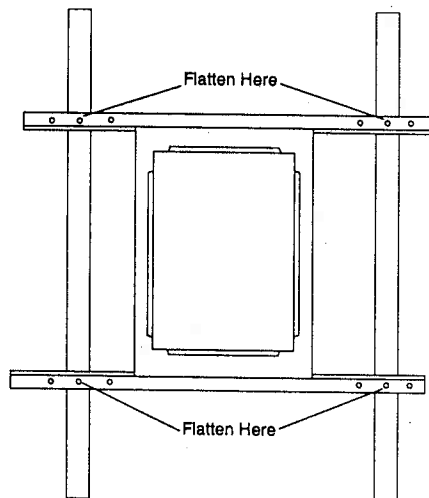
Note: *Follow these instructions if you will cut the final hole for the speaker with keyhole saw.*

1. Determine the final cut-out location of the Custom Series speaker.
2. Install one of the 25" mounting bar horizontally between two studs with the groove facing up.
3. Use a level or carpenter's square before nailing or screwing the bar into the studs.
4. Slide the cut-out frame into the desired location with the 3/8" tabs *facing toward the inside of the wall.*
5. Place the other 25" horizontal bar onto the top of the cut-out frame and nail or screw into the studs.
6. Flatten the outer edge of the groove of the mounting bars against the with a hammer studs to keep the frame from sliding.
7. Once the drywall has been hung, use keyhole or similar saw to cut out the hole to the inside edge of the cut-out frame.
8. Install the Custom Series speaker as shown above in *Installing in Existing Walls and Ceilings.* Make sure the Custom Series mounting bracket is installed on the speaker with the grooved side facing toward you and the flat side facing away from you. This allows the upper and lower sections of the mounting bracket to fit into the upper and lower tabs of the cut-out frame.
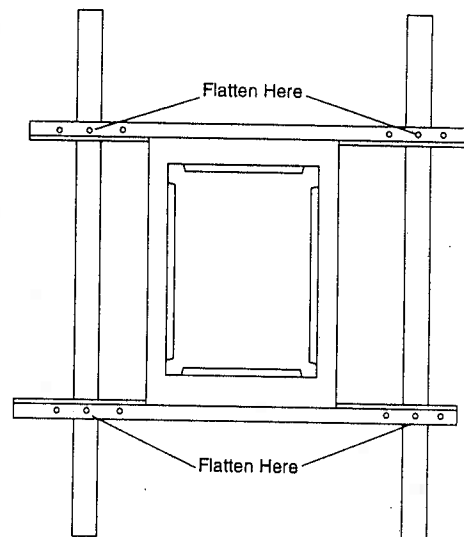
Custom Painting

Parasound Custom Series speakers include a sheet of acoustically transparent foam material. This may be inserted behind the metal grill so the holes do not reveal darkness.

You can paint the frame and grille of your Parasound Custom Series speakers. Follow these guidelines for best results:

Paint the speaker frame and grill separately before mounting them in the wall.

Before painting, mask the entire black recessed area including the groove for the grille. This protects the drivers and makes it easier to install the grill. Gently blow through the perforated holes in the grille to prevent the paint from clogging.

Parasound Limited Warranty (USA only)

Your Parasound Custom Series In-Wall Loudspeakers are covered by a limited warranty against defects in materials and workmanship for a period of two years from date of purchase. This warranty is provided by the Parasound dealer where the unit was purchased. Warranty repair will be performed only when your purchase receipt is presented to validate your ownership, date of purchase and authorized status of the selling dealer. Defective parts will be repaired or replaced without charge by your authorized dealer's store or the location designated by your dealer that is authorized to service Parasound equipment. Additional information is available by calling or writing to the Service Manager, Parasound Products, Inc. at the address below. Charges for unauthorized service and transportation costs are not reimbursable under this warranty. This warranty covers only audio and electrical performance. This warranty does not cover removal or reinstallation costs.

This warranty becomes void if the product has been damaged by alteration, misuse, accident or neglect. Alteration includes any removal, obscuring or defacement of a serial number. This warranty becomes void if the speaker has been connected or operated contrary to printed instructions. The warrantor 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 expressed 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. This warranty gives you specific legal rights and you may also have other rights which vary state by state.

PARASOUND

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Parasound Custom Series Specifications

	CS/T-280	CS/T-265	CS/T-255	CS/S-250
Frequency Response	36 Hz-22 kHz +/- 3 dB	42 Hz-22 kHz +/- 3 dB	54 Hz-22 kHz +/- 3 dB	70 Hz-20 kHz +/- 3 dB
Nominal Impedance	8 Ohms	8 Ohms	8 Ohms	8 Ohms
Minimum Impedance	6 Ohms	6 Ohms	6 Ohms	6 Ohms
Sensitivity 1 Watt/1 Meter	89 dB	88 dB	87 dB	86 dB
RMS Power Range	10-100 Watts	10-75 Watts	10-75 Watts	10-40 Watts
Woofer Size	8"	6.5"	5 1/4"	5 1/4"
Surround Material	Butyl Rubber	Butyl Rubber	Butyl Rubber	Poly Foam
Tweeter Size	1 " Titanium Dome	1 " Titanium Dome	1 " Titanium Dome	1" Cone
Crossover Frequency	2.4 kHz	2.4 kHz	2.6 kHz	2.2 kHz
Crossover Slope	12 dB per octave	12 dB per octave	12 dB per octave	6 dB per octave

Dimensions

	CS/T-280	CS/T-265	CS/T-255	CS/S-250
Hole Cut-Out	8 5/8" x 12 7/8"	7 3/8" x 10 3/4"	6 1/4" x 9 5/8"	6 1/4" x 9 5/8"
Outer Edge of Frame	10" x 14"	8 5/8" x 12"	7 1/2" x 11"	7 1/2" x 11"

Optional Accessories

	CS/T-280	CS/T-265	CS/T-255	CS/S-250
Rough-In Kits	NC/K-8M	NC/K-6M	NC/K-5M	NC/K-5M
WISE™ Enclosures	WISE™ 80	WISE™ 65	WISE™ 55	WISE™ 55

	CS/T-25R	CS/S-20R	CS/W-1002	CS/W-802
Frequency Response	36 Hz-22 kHz +/- 3 dB	54 Hz-22 kHz +/- 3 dB	26 Hz-180 Hz +/- 3 dB	29 Hz-180 Hz +/- 3 dB
Nominal Impedance	8 Ohms	8 Ohms	8 Ohms	8 Ohms
Minimum Impedance	6 Ohms	6 Ohms	6 Ohms	6 Ohms
Sensitivity 1 Watt/1 Meter	89 dB	89 dB	89 dB	88 dB
RMS Power Range	10-50 Watts	10-30 Watts	10-120 Watts	30-120 Watts
Woofer Size	5 1/4"	5 1/4"	10"	8"
Surround Material	Butyl Rubber	Poly Foam	Butyl Rubber	Butyl Rubber
Tweeter Size	1 " Pivoting Titanium	"Whizzer Cone"		
Crossover Frequency	2.6 kHz		140 Hz	150 Hz
Crossover Slope	12 dB/octave	Full Range	12 dB/octave Low Pass	12 dB/octave Low Pass
			6 dB/octave High Pass	6 dB/octave High Pass

Dimensions

	CS/T-25R	CS/S-20R	CS/W-1002	CS/W-802
Hole Cut-Out	6/12" Diameter	6/12" Diameter	10 3/4" x 10 3/4"	8 5/8" x 12 7/8"
Outer Edge of Frame	7 3/4" Diameter	7 3/4" Diameter	12" x 12"	10" x 14"

Optional Accessories

	CS/T-25R	CS/S-20R	CS/W-1002	CS/W-802
Rough-In Kits	NC/K-2M	NC/K-2M		NC/K-8M
WISE™ Speaker				WISE™ 80

Specifications subject to change without notice