# PARASOUND

## *Custom Series In-Wall and In-Ceiling Loudspeakers*

Congratulations on your purchase of Custom Series In-Wall loudspeaker system and thank you for your selection of Parasound. Custom Series loudspeakers are designed to provide you with high-fidelity audio reproduction in a wide variety of applications. Please take a few minutes to read these instructions thoroughly to make the installation easier and to insure the best performance of your new 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.

All Custom Series loudspeakers mount into a standard 2" x 4" (or greater) stud depth walls. 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 loudspeaker wire, check local building codes to make sure that the wire is rated to comply with applicable local safety codes such as UL or CL-2. Use only stranded wire no thinner than AWG 16. For runs longer than 100 feet, we recommend minimum of AWG 14 or AWG 12. 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 loudspeaker wire at both ends; it is easier to trim off 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 from one speaker to the next. 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 often built into loudspeaker selection boxes.

## Pre-Drilled Hole for Infrared Receivers for Models CS/T-255A, CS/T-265A, CS/T-280A

These models have a 1/2" hole in the bezel to accommodate an infrared receiver such as the popular Xantech Video Link model 490. The hole can be easily accessed by removing the rubber bushing from the rear of the bezel. If you plan on hiding an infrared receiver behind the loudspeaker grille, be sure to pre-wire a three conductor control wire along with the speaker wire.

## Preparing the Wall or Ceiling Cutout

Confirm that there is at least 1 1/2" of clearance between each edge of the planned cutout and adjacent studs or joints.  Fasten the supplied cardboard template to the wall or ceiling with tape or thumbtacks.  Check again for equal distance of both speakers from the ceiling or floor.  Use a level or the inwall template's self levelling feature to insure that the template is fastened correctly. Next, trace around the perimeter of the template.  Before making the final cutout, make a small 6 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.

Before cutting the hole, first score the drywall with a razor knife.  Next, use a keyhole saw to complete the cut.  Remove remaining debris from the edge of the hole.  Insert the loudspeaker without the mounting bracket into the cutout to make sure it fits easily without forcing.

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 you have a chance to connect it.  Before connecting the wire to the terminals, make sure the speaker wire runs through, not around, the speaker's metal mounting bracket.

We recommend that you add a "blanket" of sound absorbing material behind the woofer to reduce sound transmission into the adjoining room and to prevent reflections bouncing back against the woofer cone.  To further isolate sound from the adjoining room and improve bass response, you may consider installing a separate cabinet between the studs.
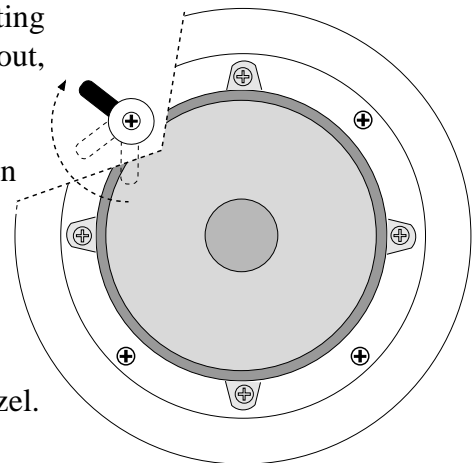
## Installing Custom Series Loudspeakers in Walls and Ceilings

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

Parasound Custom Series loudspeakers employ mounting "swing-arms" (mounting dogs) 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 prevent deforming the drywall or cracking the speaker's mounting frame.

Any sound leakage from behind the molded frame can be blocked with foam weather-stripping directly behind the plastic speaker bezel.
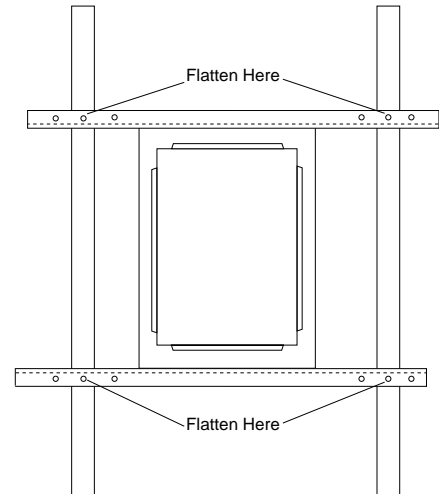
## Treble Adjustment for Models CS/T-255A, CS/T-265A, CS/T-280A

If you are installing your Custom Series loudspeakers in a "live" room or mounting them on-axis to the listening position, it may be desirable to adjust the output level of the tweeter to reduce brightness.  Certain Parasound Custom Series loudspeakers come equipped with a treble adjustment control that allows you to attenuate the tweeter level from 0 dB (flat) to -3 dB or - 6 dB.  Once you have installed the loudspeakers, use a slotted screwdriver or small coin to adjust the treble level as necessary.

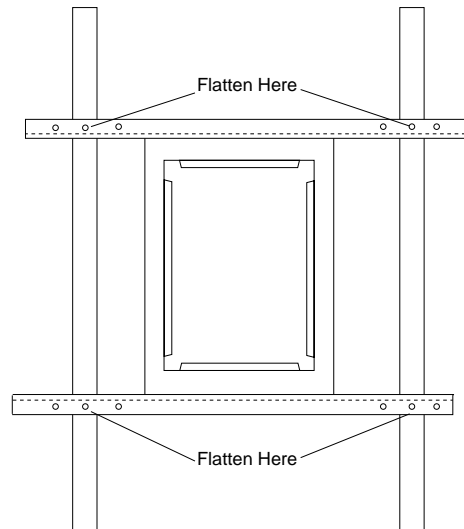## Installation Instructions for NC/K-M Rough-In Kits

*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 bars horizontally between two studs with the slot facing up and toward you.
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 it into the studs.
6. Flatten the outer edge of the slot 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 loudspeaker 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 loudspeaker.
2. Install one of the 25" mounting bar horizontally between two studs with the groove facing up and toward you.
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 the inside of the wall.*
5. Place the other 25" horizontal bar onto the top of the cut-out frame and nail or screw it into the studs.
6. Flatten the outer edge of the slot 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 loudspeaker as shown above in *Installing in Existing Walls and Ceilings.* Make sure the Custom Series mounting bracket is installed on the speaker with the slotted 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.

# Parasound Custom Series Specifications

| | CS/T-280A | CS/T-265A | CS/T-255A | CS/S-250A |
|---|---|---|---|---|
| Frequency Response | 36 Hz-22 kHz +/- 3 dB | 42 Hz-22 kHz +/- 3 dB | 52 Hz-22 kHz +/- 3 dB | 70 Hz-18 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/1Meter | 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 | Polyurethane | Polyurethane | Polyurethane | 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** | | | | |
| 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** | | | | |
| Rough-In Kits | NC/K-8M | NC/K-6M | NC/K-5M | NC/K-5M |

| | CS/S260A | CS/T-65R | CS/S-60R | CS/W-1002 |
|---|---|---|---|---|
| Frequency Response | 46 Hz-20 kHz +/- 3 dB | 58 Hz-20 kHz +/- 3 dB | 60 Hz-18 kHz +/- 3 dB | 26 Hz-150 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/1Meter | 88 dB | 88 dB | 87 dB | 87 dB |
| RMS Power Range | 10-65 Watts | 10-60 Watts | 10-40 Watts | 10-120 Watts |
| Woofer Size | 6 1/2" | 6 1/2" | 6 1/2" | 10" |
| Surround Material | Poly Foam | Polyurethane | Poly Foam | Polyurethane |
| Tweeter Size | 1" Soft Dome | 1 " Titanium Pivoting | | |
| Crossover Frequency | 2.6 kHz | 2.6 kHz | Full Range | 140 Hz |
| Crossover Slope | 12 dB/octave | 12 dB/octave | | 12 dB/octave Low Pass |
| **Dimensions** | | | | |
| Hole Cut-Out | 7 3/8" x 10 3/4" | 7 5/8" Diameter | 7 5/8" Diameter | 10 3/4" x 10 3/4" |
| Outer Edge of Frame | 8 5/8" x 12" | 9" Diameter | 9" Diameter | 12" x 12" |
| **Optional Accessories** | | | | |
| Rough-In Kits | NC/K-6M | NC/K-7M | NC/K-7M | NC/K-10M |

| | CS/T-25R | CS/S-20R | CS/T-80R |
|---|---|---|---|
| Frequency Response | 65 Hz-20 kHz +/- 3 dB | 70 Hz-17 kHz +/- 3 dB | 55 Hz-20 kHz +/- 3 dB |
| Nominal Impedance | 8 Ohms | 8 Ohms | 8 Ohms |
| Minimum Impedance | 6 Ohms | 6 Ohms | 6 Ohms |
| Sensitivity 1 Watt/1Meter | 87 dB | 86 dB | 88 dB |
| RMS Power Range | 10-50 Watts | 10-30 Watts | 10-70 Watts |
| Woofer Size | 5 1/4" | 5 1/4" | 8" |
| Surround Material | Butyl Rubber | Poly Foam | Butyl Rubber |
| Tweeter Size | 1 " Pivoting Titanium | "Whizzer Cone" | 1 " Pivoting Titanium |
| Crossover Frequency | 2.6 kHz | | 2.6 kHz |
| Crossover Slope | 12 dB/octave | Full Range | 12 dB/octave |
| **Dimensions** | | | |
| Hole Cut-Out | 6 1/2" Diameter | 6 1/2" Diameter | 9 3/8" Diameter |
| Outer Edge of Frame | 7 3/4" Diameter | 7 3/4" Diameter | 10 3/4" Diameter |
| **Optional Accessories** | | | |
| Rough-In Kits | NC/K-2M | NC/K-2M | NC/K-8M |

## Custom Painting with the Paint Shield

You can paint the frame and grille of Custom Series loudspeakers to match the decor of the room it is installed in. Simply insert the plastic paint shield into the grooves of the baffle and brush or spray paint the outer portion of the frame. You can paint the speaker frame either in or out of the wall, but the grille must be painted separately. The holes in the grille are very tightly spaced. Be sure the paint is thin enough not to clog the holes. If necessary, you can gently blow through the holes after the paint is first applied.

## 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.

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*affordable audio for the critical listener*