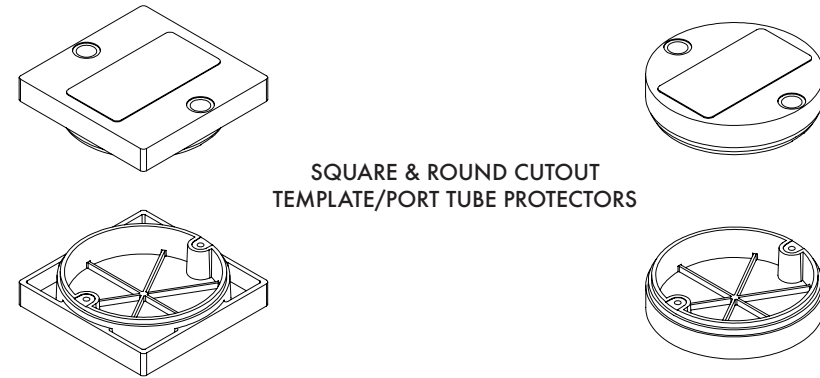


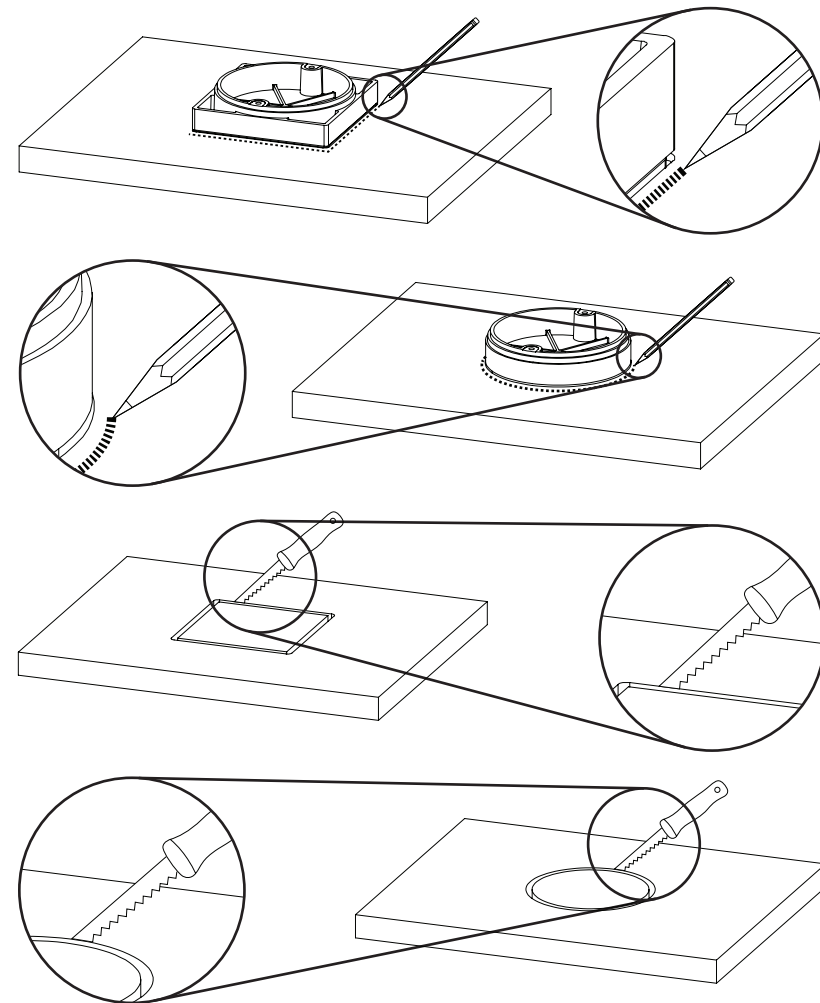
09 Cutting Out and Aligning The Port Opening

a. Both round and square trim options are included in the packaged trim kit accessory carton. Select the Cutout Template/Port Protector that corresponds to the desired trim ring shape.

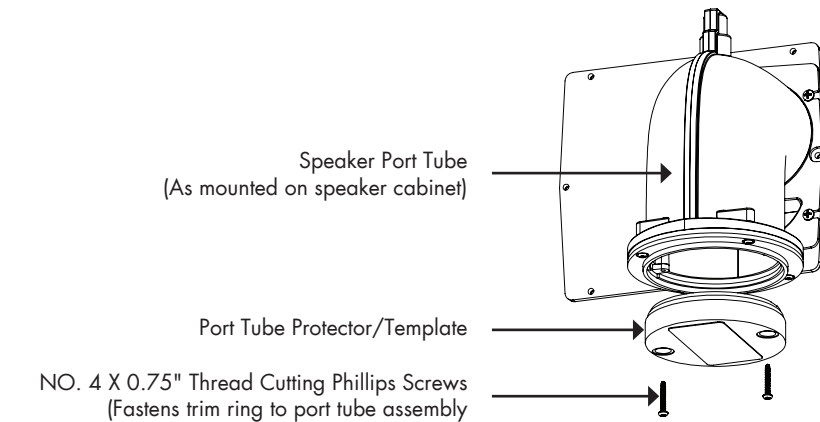
Drywall Cutout Sizing Chart		
Speaker & Sub	Round Trim Cutout Size	Square Trim Cutout Size
3" Trim Kits	Ø 3.27" (83mm)	3.27" x 3.27" (83mm x 83mm)
3.5" Trim Kits	Ø 3.77" (96mm)	3.77" x 3.77" (96mm x 96mm)
4" Trim Kits	Ø 4.27" (108mm)	4.27" x 4.27" (108mm x 108mm)



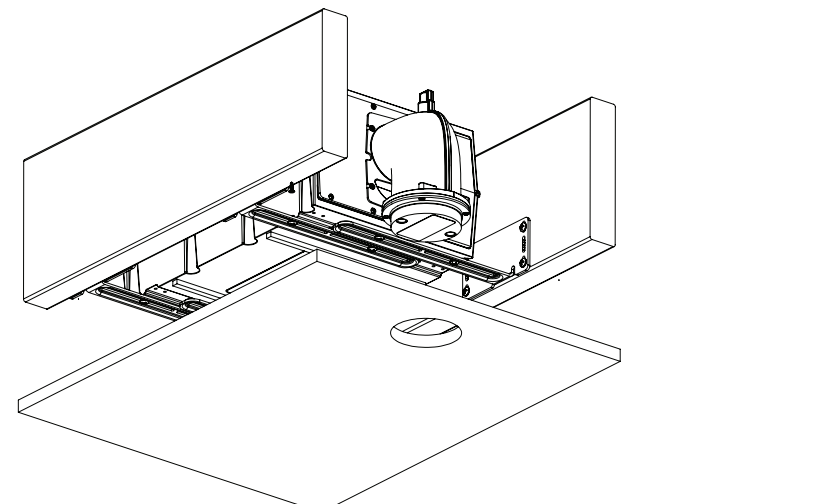
b. On a free piece of drywall, use the Cutout Template as a guide to trace out the opening for the port. Cut out the opening in the drywall according to the traced line. The Cutout Template can now be used to test fit the accuracy of the cut out.



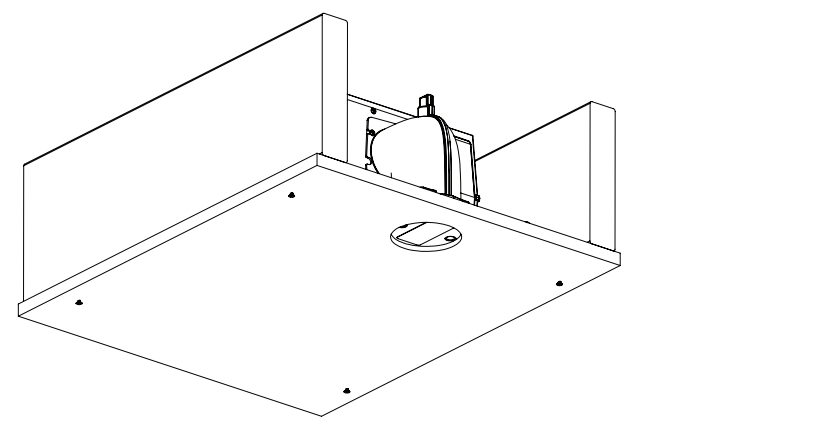
c. Once the opening has been cut out and confirmed as accurate, the Cutout Template can now be used as a temporary Port Protector, preventing debris or other foreign objects from entering the port during the installation of the ceiling. The Cutout Template, now Port Protector, fastens to the Port Tube via (2) No. 4 x 0.75" Phillips head screws found in the trim kit carton. Confirm the Port Protector is securely fastened.



d. Using the Port Protector as a locating guide, raise the drywall into place so the cut out is positioned directly over the Port Protector. Confirm the drywall cut out is correctly aligned with the Port Protector, and the drywall is adequately seated against the bottom faces of the joists. Confirm there are no obstructions or loose debris that will generate unwanted noise.



e. Fasten the drywall to the ceiling joists, ensuring the drywall panel is adequately seated and fully secured.



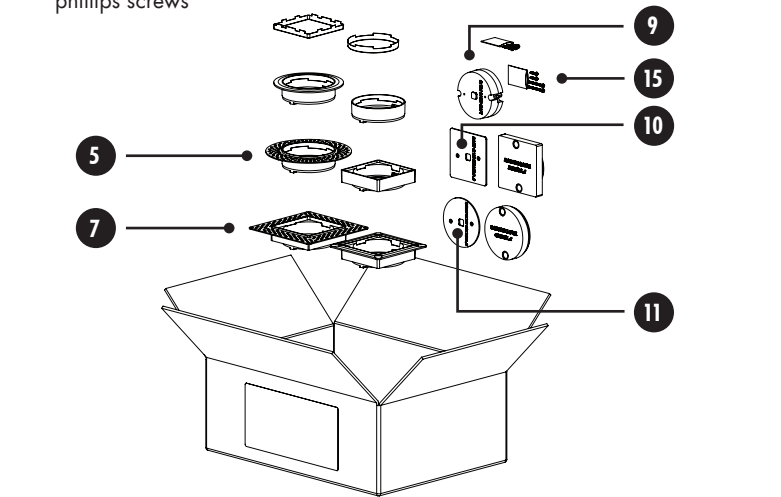
10 Trim Kit Installation: Final Trim

A The grille trim options are detailed in the part selection portion of this installation guide. The installation instructions for each grille trim option are below:

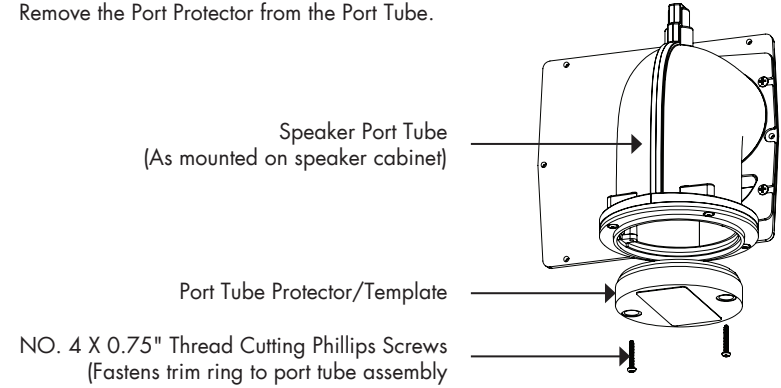
Seamless/Mudded Trim (Drywall Only):

i. Locate the following parts in the Grille Trim Kit:

5. Round Seamless/Mudded Trim Ring (chosen based on the desired grille shape)
7. Square Seamless/Mudded Trim Ring (chosen based on the desired grille shape)
9. Finishing Insert
10. Round Finishing Insert Cover (chosen based on the desired grille shape, must match the shape of the Trim Ring)
11. Square Finishing Insert Cover (chosen based on the desired grille shape, must match the shape of the Trim Ring)
15. Hardware Bag Containing: (2) No. 4 x 1/2" and (2) No. 4 x 1-1/4" panhead phillips screws

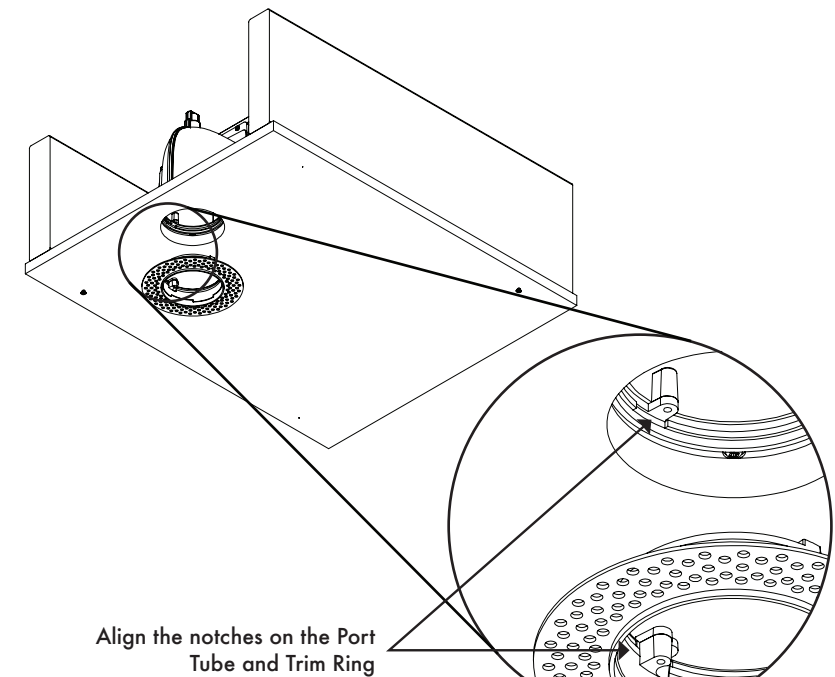


ii. Remove the Port Protector from the Port Tube.

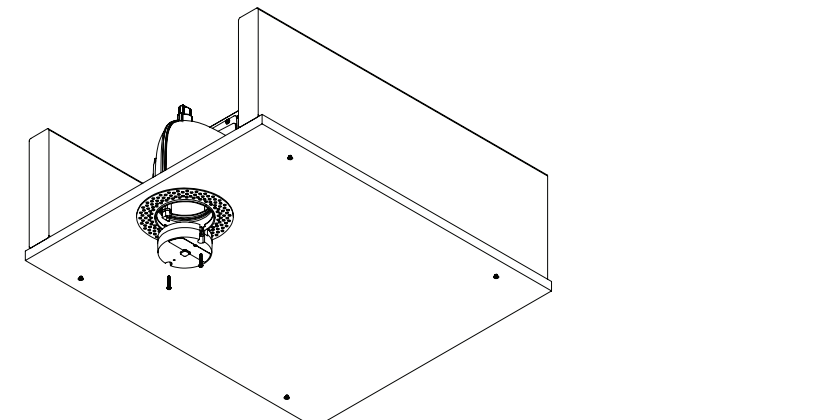


iii. Insert the Mudded Trim Ring into the port cutout in the ceiling, noting the alignment of the mounting tab features and asymmetrical notches in the Port Bottom Ring. The large mounting tab on the Trim Ring is to align with the large notch in the Port Bottom Ring.

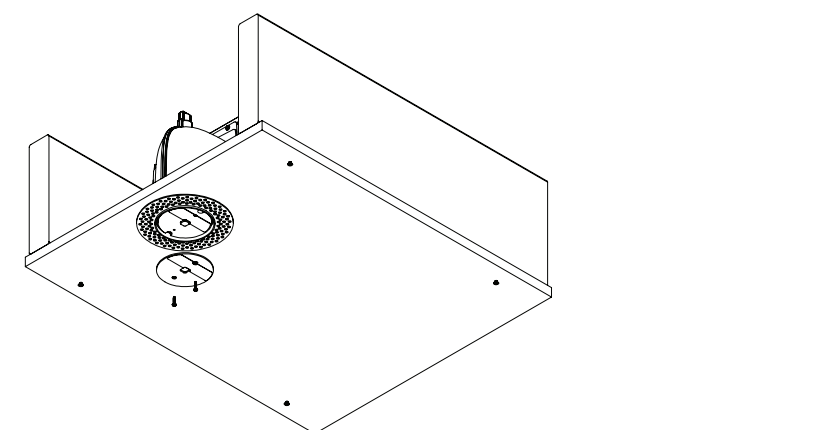
The Trim Ring will not fully seat against the face of the drywall if fastened to the Port Tube with the incorrect alignment. To confirm, rotate the Trim Ring 180° until the mounting holes are aligned, the Trim Ring should click into place and seat evenly against the face of the drywall.



iv. When the correct Trim Ring orientation is confirmed, put the Finishing Insert inside the Trim Ring and fasten both components to the Port Tube with (2) No. 4 x 1-1/4" panhead phillips screws, ensuring the rear face of the Trim Ring is fully seated against the drywall face.

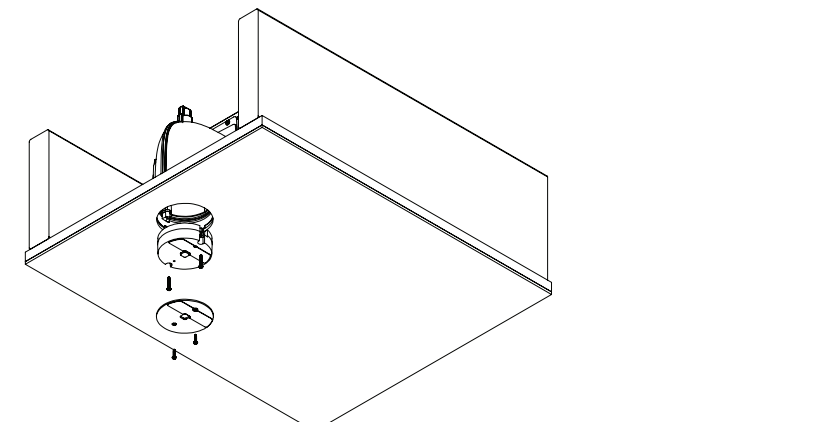


v. Fasten the corresponding Finishing Insert Cover onto the face of the Finishing Insert using (2) No. 4 x 1/2" panhead phillips screws. Confirm the front face of the Finishing Insert Cover is correctly aligned with the Trim Ring interior edges, and sits below the interior edge of the Trim Ring.



vii. Once the mudding and painting process is complete, the Finishing Insert Cover and Finishing Insert can be removed by removing the screws securing them in place. The interior faces of the Trim Ring can now be carefully cleaned of any remaining mud/point. Reinstall the screws that were removed to secure the trim ring to the Port Tube.

REQUIRED STEP FOR SUBWOOFER ONLY: After removing the Finishing Insert, install and secure the Subwoofer Port Flare by reusing the Finishing Insert screws that were just removed. (NO. 4 X 0.75" Thread Cutting Phillips Screws).



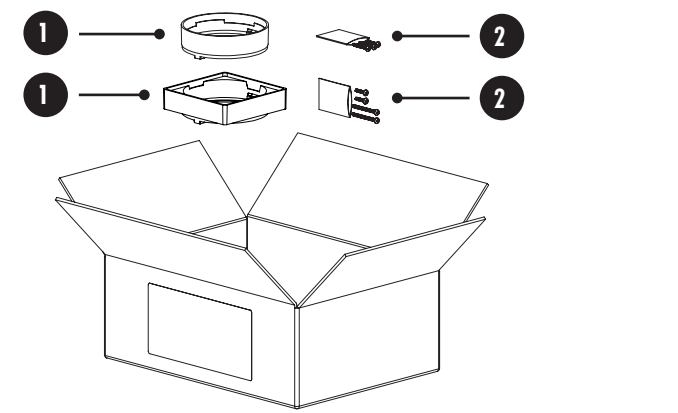
viii. **Speaker Only:** Not Applicable To Subwoofer. Proceed to Speaker Canister Installation.

B Minimal Trim Ring (All Ceiling Surfaces):

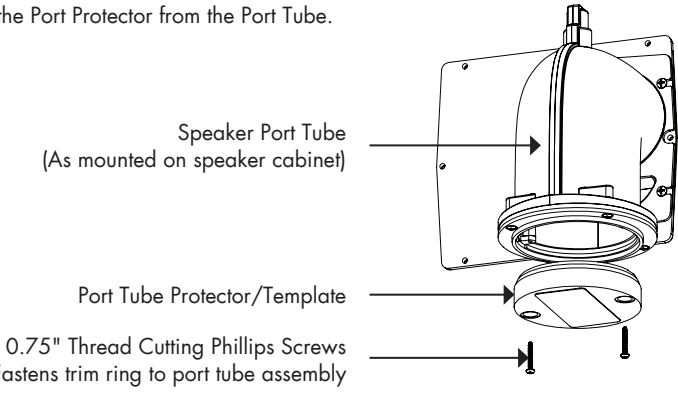
Note: Minimal Trim Ring to be installed once any mudding, painting, or finishing is complete.

i. Locate the following parts in the Grille Trim Kit:

1. Round or Square Minimal Trim Ring (chosen based on the desired grille shape)
2. Hardware Bag Containing: (2) No. 4 x 1/2" and (2) No. 4 x 3/4" panhead phillips screws

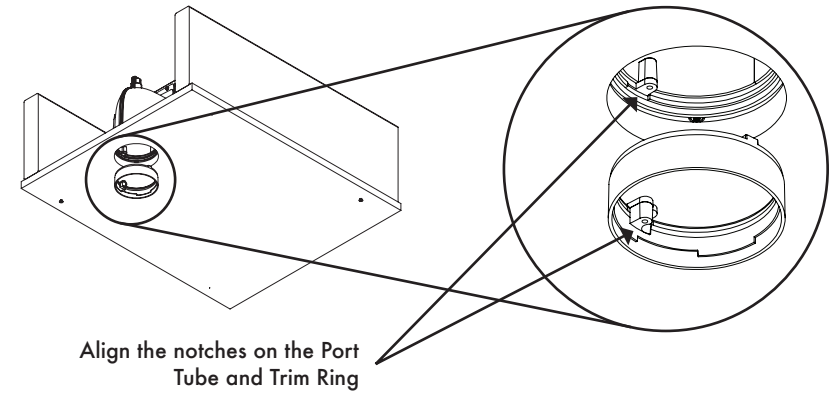


ii. Remove the Port Protector from the Port Tube.

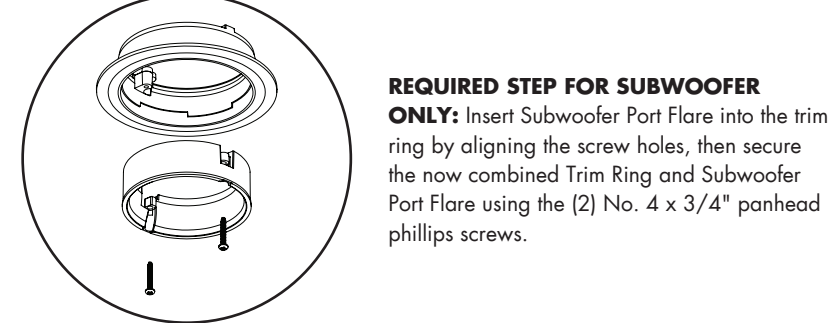
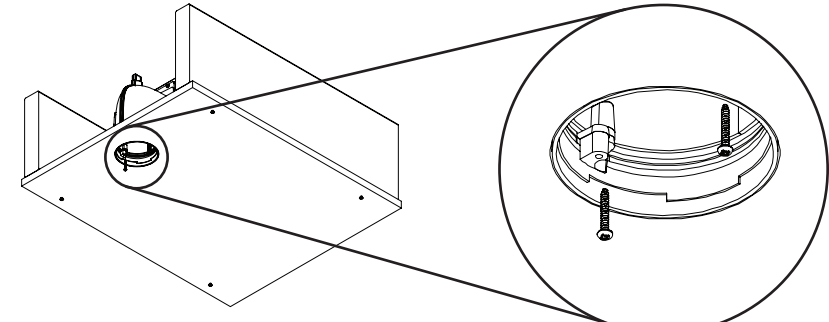


iii. Insert the Minimal Trim Ring into the port cutout in the ceiling, noting the alignment of the mounting tab features and asymmetrical notches in the Port Bottom Ring. The large mounting tab on the Trim Ring is to align with the large notch in the Port Bottom Ring.

The Trim Ring will not fully seat against the face of the drywall if fastened to the Port Tube with the incorrect alignment. To confirm, rotate the Trim Ring 180° until the mounting holes are aligned, the Trim Ring should click into place and seat evenly against the face of the drywall.



iv. When the correct Trim Ring orientation is confirmed, secure the Trim Ring to the Port Tube with (2) No. 4 x 3/4" panhead phillips screws, ensuring the edge of the Trim Ring is fully seated against the drywall face.



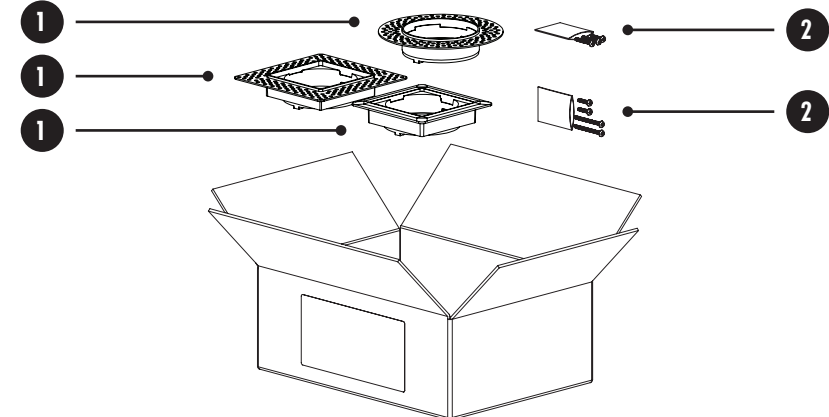
viii. **Speaker Only:** Not Applicable To Subwoofer. Proceed to Speaker Canister Installation.

C Wide Trim Ring (All Ceiling Surfaces):

Note: Wide Trim Ring to be installed once any mudding, painting, or finishing is complete.

i. Locate the following parts in the Grille Trim Kit:

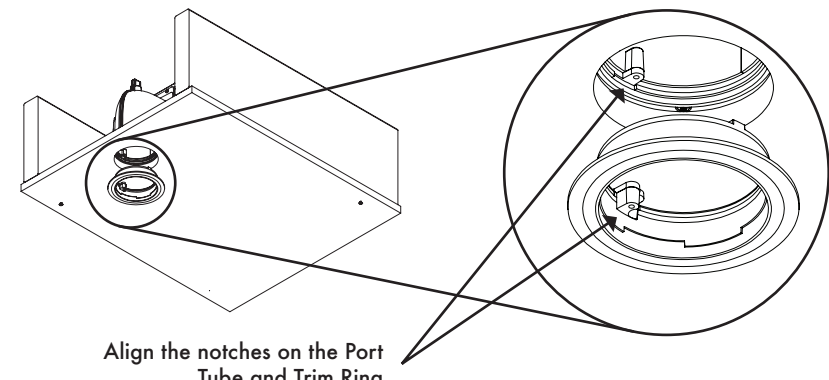
1. Round or Square Wide Trim Ring (chosen based on the desired grille shape).
2. Hardware Bag Containing: (2) No. 4 x 1/2" and (2) No. 4 x 3/4" panhead phillips screws.



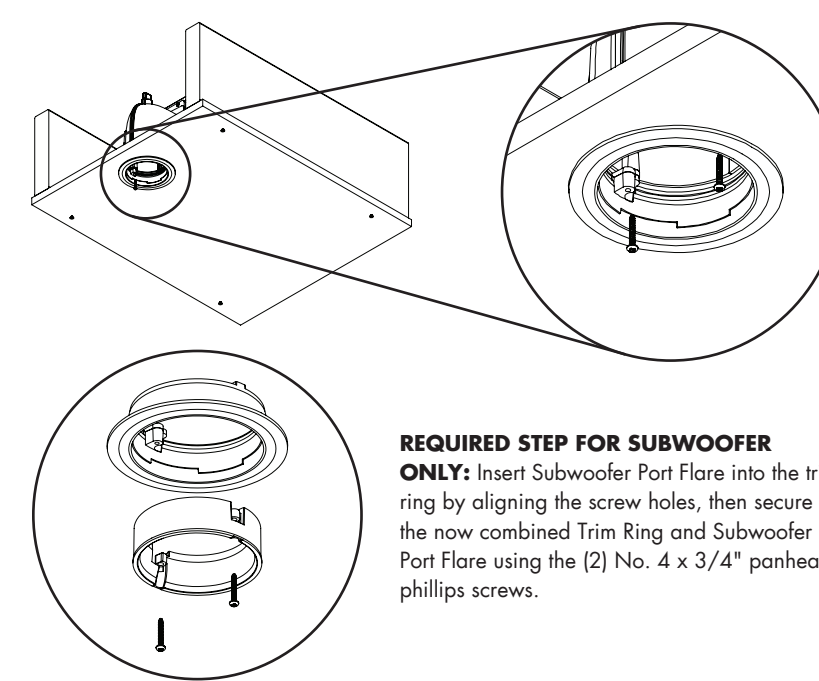
ii. Remove the Port Protector from the Port Tube.

iii. Insert the Wide Trim Ring into the port cutout in the ceiling, noting the alignment of the mounting tab features and asymmetrical notches in the Port Bottom Ring. The large mounting tab on the Trim Ring is to align with the large notch in the Port Bottom Ring.

The Trim Ring will not fully seat against the face of the drywall if fastened to the Port Tube with the incorrect alignment. To confirm, rotate the Trim Ring 180° until the mounting holes are aligned, the Trim Ring should click into place and seat evenly against the face of the drywall.



iv. When the correct Trim Ring orientation is confirmed, secure the Trim Ring to the Port Tube with (2) No. 4 x 3/4" panhead phillips screws, ensuring the edge of the Trim Ring is fully seated against the drywall face.



viii. **Speaker Only:** Not Applicable To Subwoofer. Proceed to Speaker Canister Installation.

11 Installing The Speaker Canister

NOTE: Only Applicable To Speaker Version. Skip to Step 12 if installing Subwoofer.

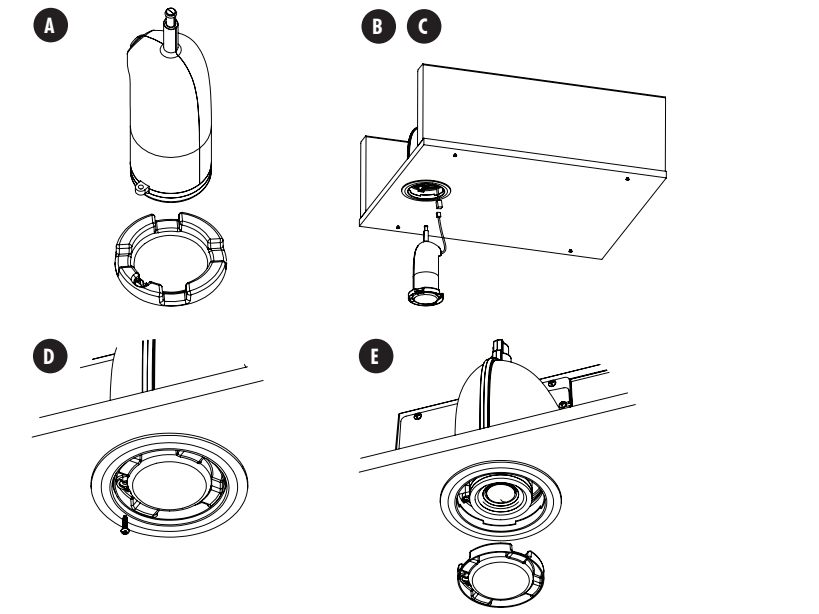
a. Place the clear Speaker Canister Protector against the Speaker Driver, orienting the small hole with the mounting tab/hole on the Speaker Canister.

b. Reach into the Port Tube and gently pull the wire harness out and firmly seat the wire harness connector to the connector on the Speaker Canister.

c. Align the mounting tab/hole on the Speaker Canister with the mounting tab/hole in the Port Tube and carefully guide the wire harness and Speaker Canister into the Port Tube taking care to prevent the harness from bunching up. Use the clear plastic Speaker Canister Protector to help push the Canister in place. The Canister Protector also helps to prevent accidental speaker driver damage during installation. **NOTE:** The Speaker Canister is not secure until it is screwed into the Port Tube. To avoid fall damage and/or damage to the Harness or Speaker Canister, keep it supported until it has been securely screwed in place.

d. Attach the Speaker Canister to the Port Tube by aligning the mounting tabs face to face and securing with the supplied No. 4 x 1/2" pan head phillips screw.

e. The Speaker Canister Protector can now be removed.

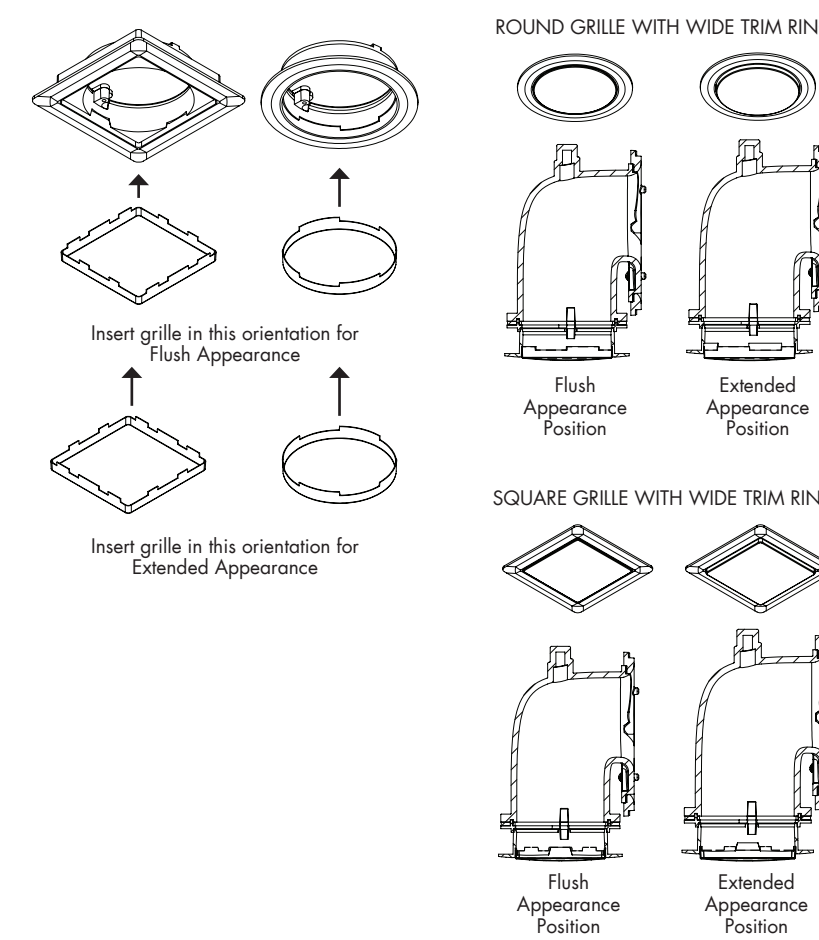


12 Installing The Grille

The grille can be installed in 2 different positions, flush with the grille trim, or set slightly extended into the room, below the grille trim surface. There are 2 sets of mounting points in the Trim Ring:

For a Flush Grille Appearance: Note the deeper set of mounting points in the Trim Ring and gently press the grille mounting tabs into these deep recessed mounting points. If the Grille does not sit flush, remove and rotate the grille 45 degrees (round grille) or 90 degrees (square grille).

For an Extended Grille Appearance: Note the shallower set of mounting points in the Trim Ring and gently press the grille mounting tabs into these shallow recessed mounting points. If the Grille does not sit extended, remove and rotate the grille 45 degrees (round grille) or 90 degrees (square grille).

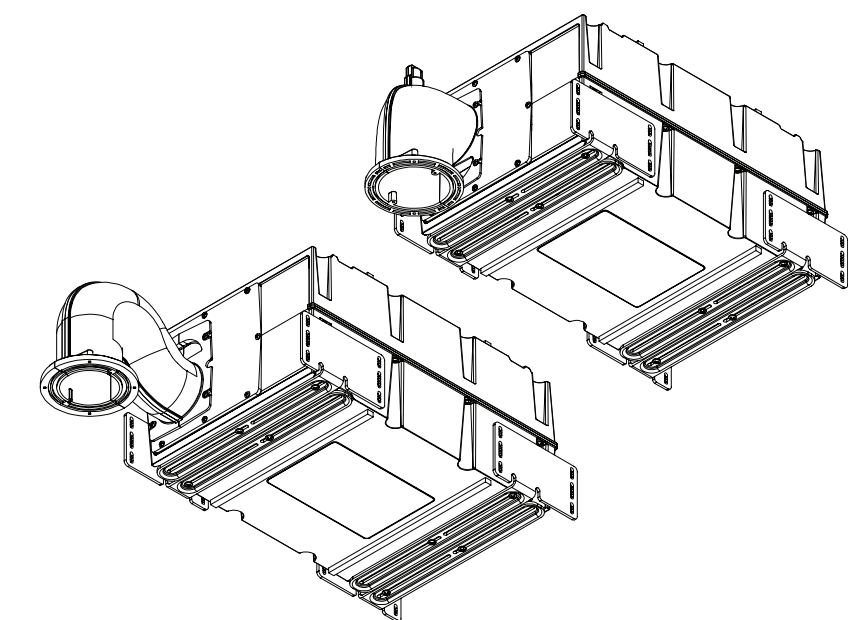


viii. **Speaker Only:** Not Applicable To Subwoofer. Proceed to Speaker Canister Installation.



Variable Aperture Speaker & Subwoofer

Installation Instructions

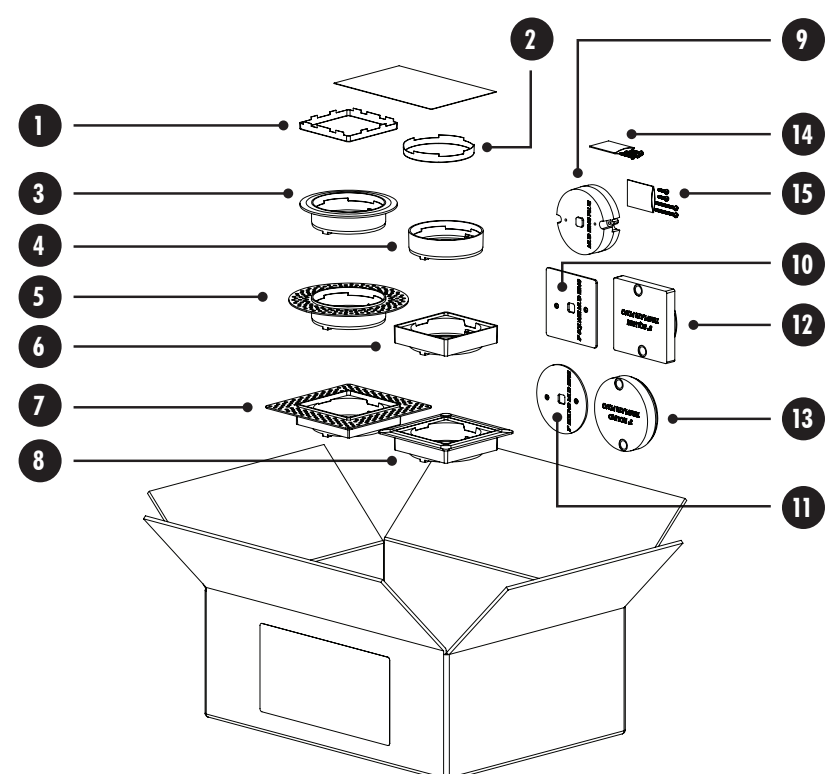


SCAN QR CODE FOR DIGITAL INSTALLATION RESOURCES



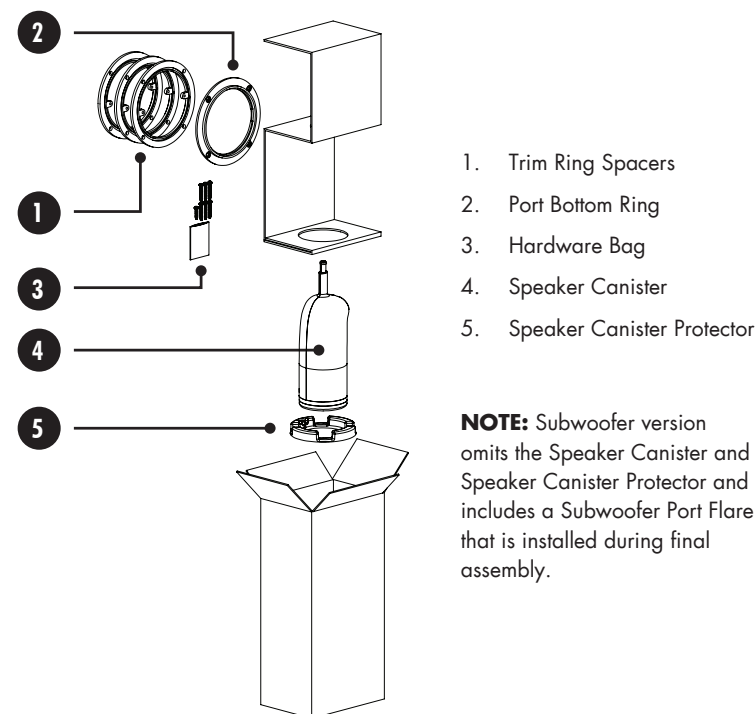
01 Parts List

GRILLE TRIM ACCESSORY KIT



- Square Grille
- Round Grille
- Wide Trim Ring (Round)
- Minimal Trim Ring (Round)
- Seamless/Mudded Trim Ring (Round)
- Minimal Trim Ring (Square)
- Seamless/Mudded Trim Ring (Square)
- Wide Trim Ring (Square)
- Finishing Insert
- Finishing Insert Cover (Round)
- Finishing Insert Cover (Square)
- Cutout Template/Port Protector (Round)
- Cutout Template/Port Protector (Square)
- Trim Ring Hardware Bag
- Port Cover Hardware Bag

SPEAKER CANISTER ACCESSORY CONTENTS LIST



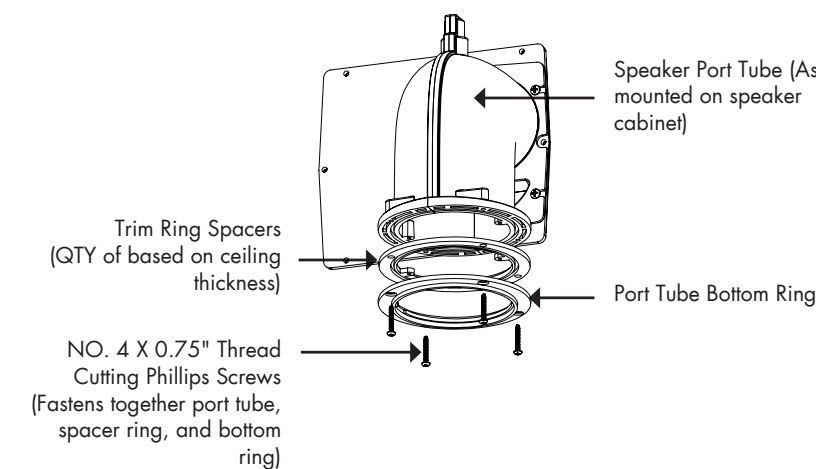
- Trim Ring Spacers
- Port Bottom Ring
- Hardware Bag
- Speaker Canister
- Speaker Canister Protector

NOTE: Subwoofer version omits the Speaker Canister and Speaker Canister Protector and includes a Subwoofer Port Flare that is installed during final assembly.

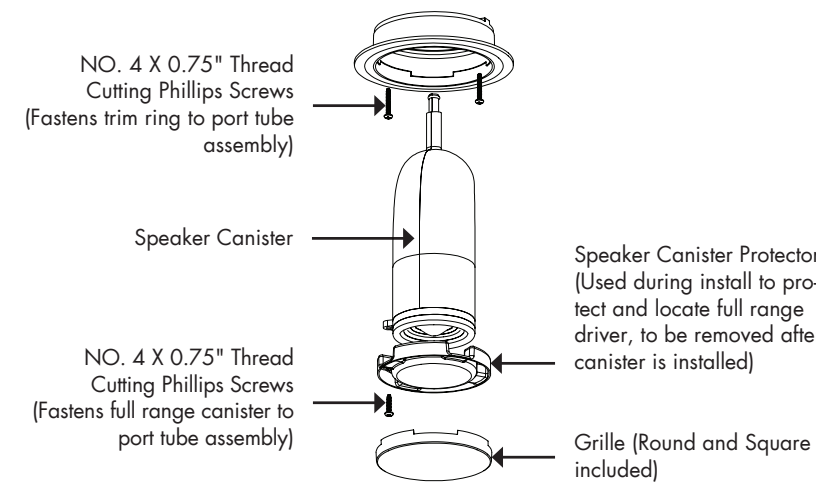
SPEAKER PORT TUBE ASSEMBLY

Speaker version used for illustration purposes only. Subwoofer Port Tube Assembly differs cosmetically.

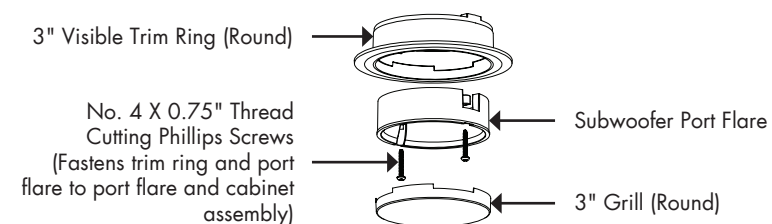
These components to be fastened together prior to mounting speaker to joists.



These components to be fastened to port tube assembly after speaker cabinet is installed and hole is cut in ceiling



NOTE: Subwoofer version uses the Subwoofer Port Flare instead of the Speaker Canister.



Required Trim Ring Spacers:

Ceiling Panel Thickness	Number of Trim Ring Spacers	Installation Notes
1/2"	None	Standard installation
5/8"	1	Standard installation
3/4"	2	Standard installation
7/8"	3	Standard installation
Less than 1/2"	None	Special Installation: Must be installed using shims between the bottom edge of the mounting brackets and the bottom face of the joists to establish the correct gap. These temporary shims will be removed once the speaker is securely mounted to the joists.

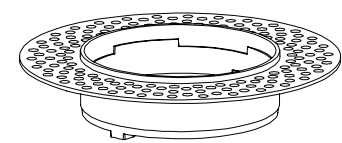
Shim/Gap Requirements for Thin Ceiling Panels:

- 3/8" ceiling panel thickness requires a 1/8" shim/gap.
- 1/4" ceiling panel thickness requires a 1/4" shim/gap.

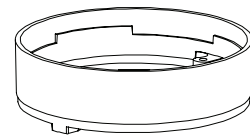
- Locate the accessory carton:
- Locate the quantity of required Trim Ring Spacers, the Port Bottom Ring, and the hardware bag containing (4) 3/4" No. 4 screws.
- The Trim Ring Spacers and Port Bottom Ring can now be fastened to the Port Tube opening at this time using the (4) included No. 4 x 3/4" screws. Note the orientation locating rib on the Trim Ring Spacers and Port Bottom Ring, ensuring all components are fully seated before fastening the assembly together.
- Save the remaining hardware and components for later use.

Grille Trim: Variable Aperture Series speakers have a choice of 3 different grille trim aesthetics and 2 adjustable grille heights:

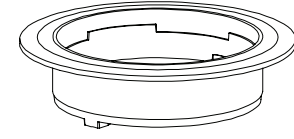
- Seamless/Mudded Trim (Drywall Only):** No Trim Ring surrounding the grille, ceiling surface is seamless with the grille. The grille can either sit flush with the ceiling surface, providing a seamless visual aesthetic or the grille can extend slightly below the ceiling surface, more closely matching the aesthetic of the other MartinLogan in-ceiling speakers.



- Minimal Trim Ring:** A thin trim ring surrounds the grille, providing a similar aesthetic to many commonly available can lights. The grille can either sit flush with the ceiling surface or extend slightly below the ceiling surface.



- Wide Trim Ring:** A wide trim ring surrounds the grille, providing a similar aesthetic to many commonly available can lights. The grille can either sit flush with the ceiling surface or extend slightly below the ceiling surface.



- Locate the trim components based on the desired shape and trim ring style.

- The remaining contents of the grille trim kit will not be used.

- Round and Square Trim Kits will contain (1) unused grille (matching the unused trim shape) and (5) unused trim rings.

For Round Trim, locate:

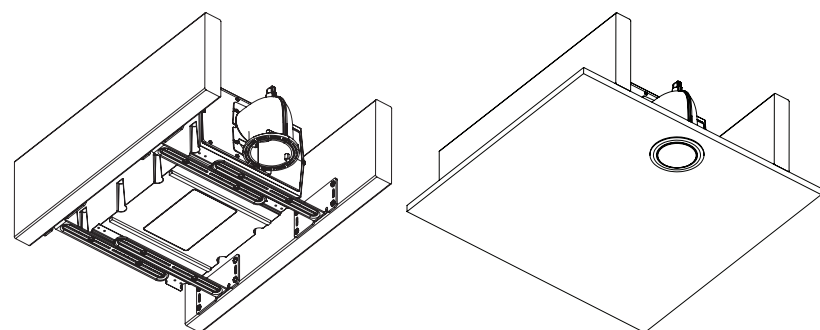
- (1) Round Trim Ring of desired style
- Round Grille
- Finishing Insert
- Round Finishing Insert Cover
- Round Cutout Template / Port Protector
- Hardware Bags

For Square Trim, locate:

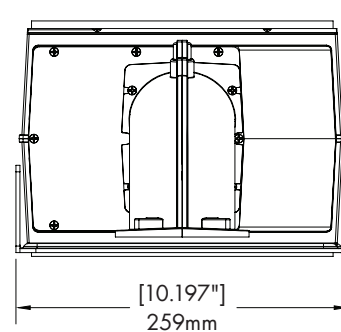
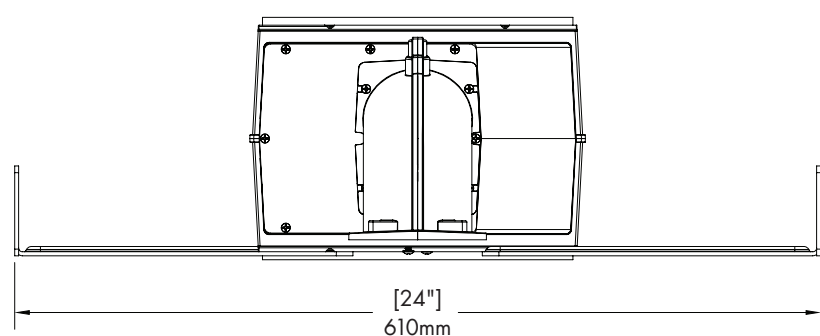
- (1) Square Trim Ring of desired style
- Square Grille
- Finishing Insert
- Square Finishing Insert Cover
- Square Cutout Template / Port Protector
- Hardware Bags

03 Installation Preparation: Speaker Placement and Port Tube Configuration

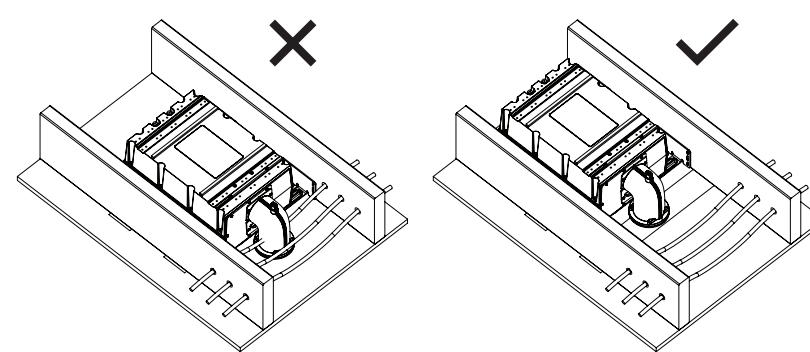
- The placement of the port tube attached to the speaker cabinet ultimately determines the location of the visible speaker grille once the ceiling surface is in place:



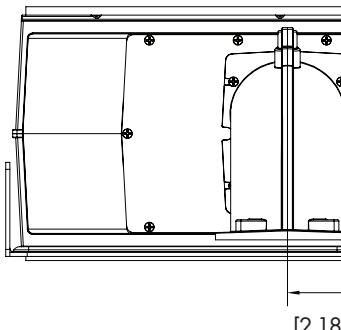
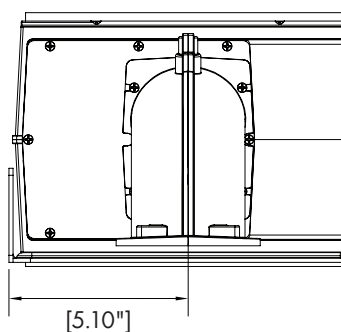
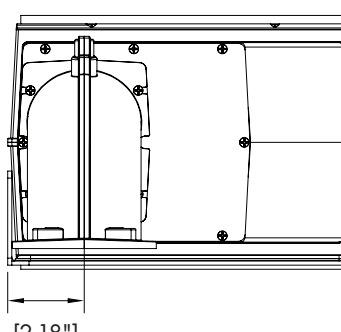
- Determine the desired location of the port tube between the ceiling joists or wall studs. Variable Aperture Speakers support joist spacing from 12" - 24" on center with an adjustable bracket width of 10.197" - 24". To accommodate wider joist spacing, additional wood blocking can be fastened to the existing joists to bridge the gap. **NOTE:** This speaker is not designed to fit in a standard 2x4 wall cavity and requires additional clearance. The overall speaker depth is 6.87" when oriented for in-wall use. For illustrative purposes, these instructions assume the speaker is being installed into a ceiling.



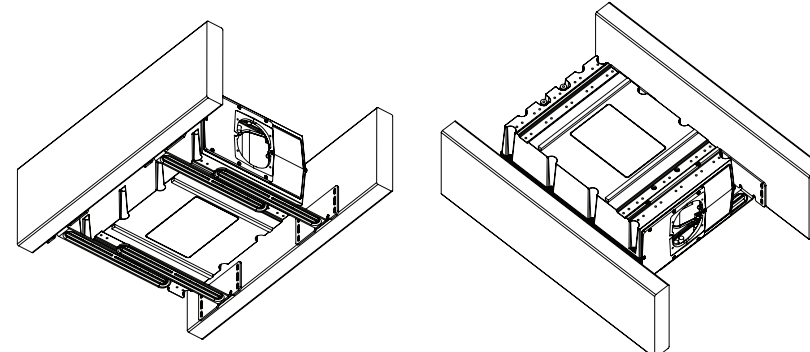
- Observe and note any existing obstructions or site conditions that may prevent the speaker cabinet from being installed in a particular direction.



- Now that the location of the speaker enclosure has been determined, the offset of the port tube can now be adjusted if needed. In the default configuration the port tube is centered, with an equal amount of cabinet width on either side. If required, the port can also be adjusted to exit near the left or right edge of the cabinet, providing closer placement to the adjacent joist.



- If the default centered port tube configuration works for your desired location, the port tube can be removed at this time to provide greater access to the mounting holes of the nearest mounting brackets.



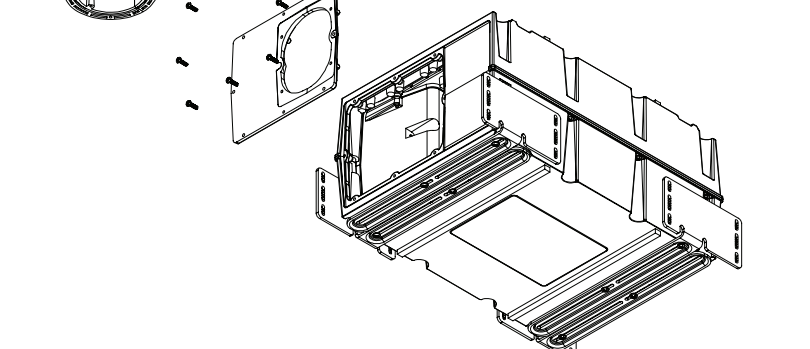
- If you want the port exiting closer to the left edge of the speaker (when facing the port side of the cabinet) the port tube and mounting plate can be adjusted.

- Remove and rotate the port mounting plate 180°, then reinstall the port mounting plate.

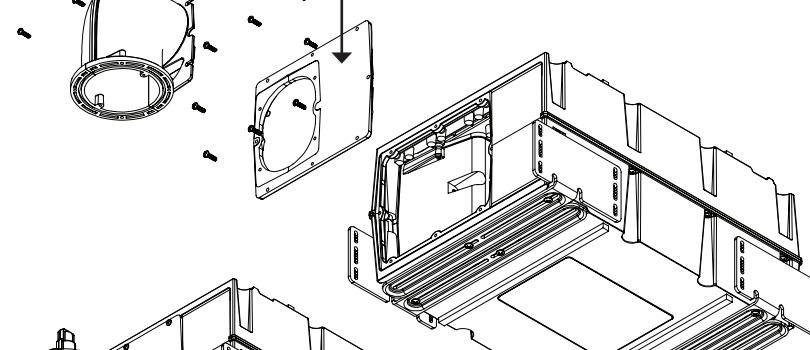
- For better access to the mounting brackets, we recommend waiting to install the port tube until the cabinet is mounted to the joists.

- If you want the port exiting closer to the right edge of the speaker (when facing the port side of the cabinet) the port tube and mounting plate can be adjusted.

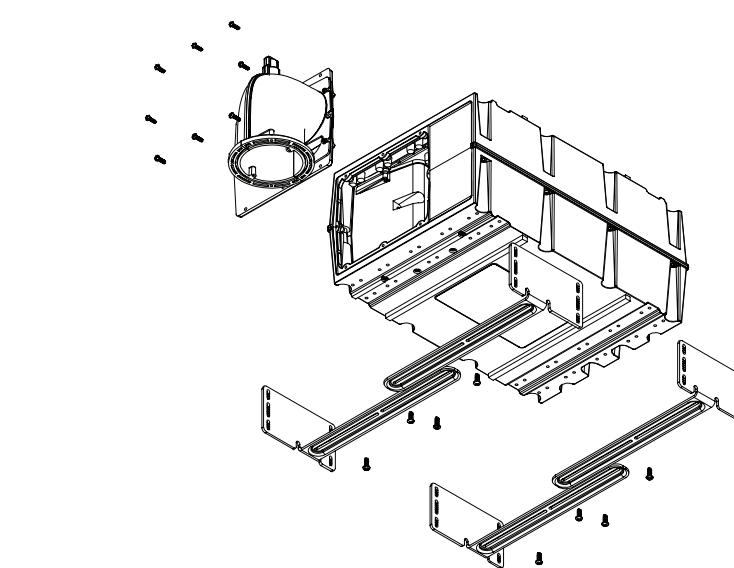
- Remove and reinstall the mounting brackets on the opposite side of the speaker cabinet. The cabinet should now be oriented 180° from the default configuration.



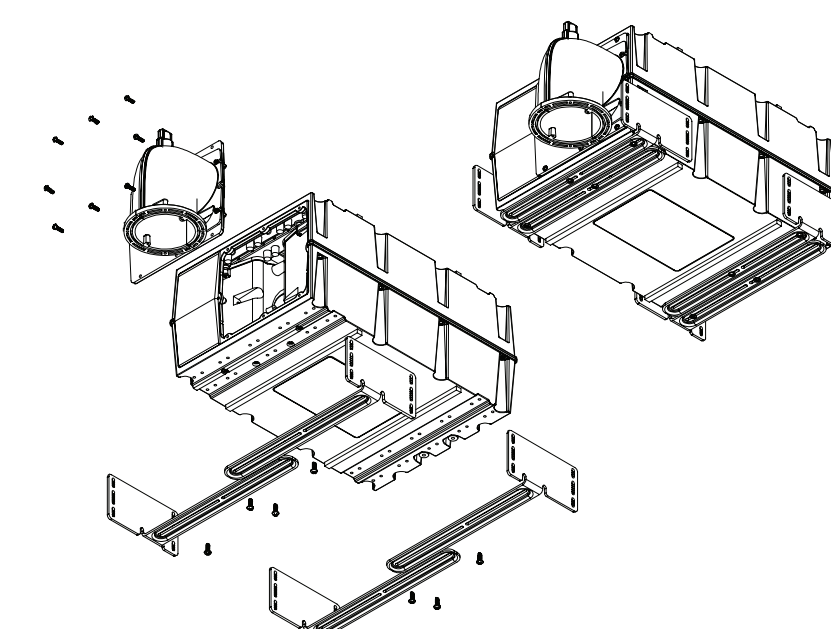
- Remove and rotate the port mounting plate 180°, then reinstall the port mounting plate.



- Remove and rotate the port mounting plate 180°, then reinstall the port mounting plate.

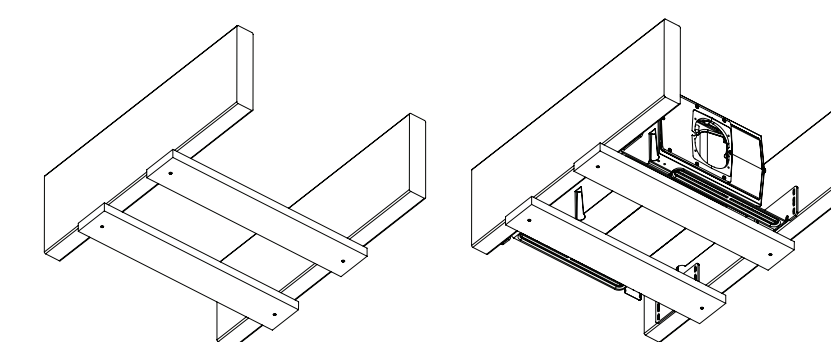


- For better access to the mounting brackets, we recommend waiting to reinstall the port tube until the cabinet is mounted to the joists.



04 Installation Preparation: Temporary Speaker Support

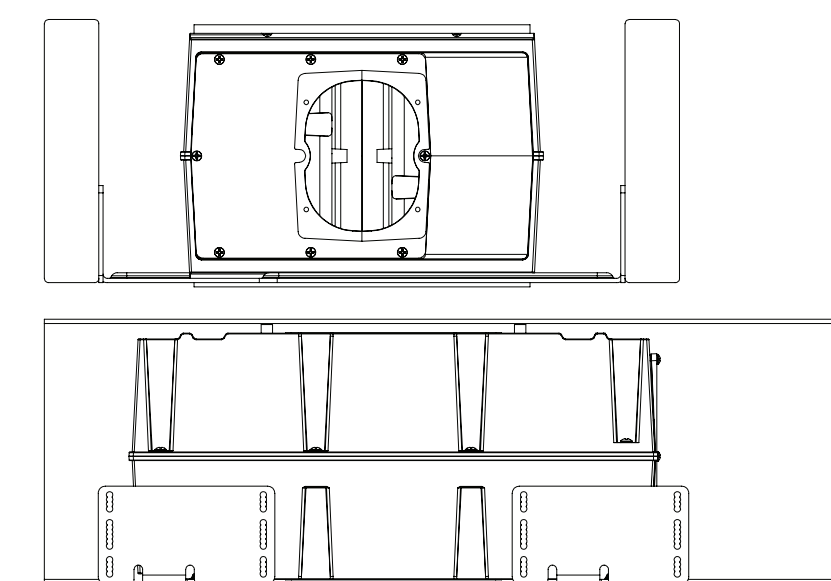
Temporarily fasten (2) pieces of scrap wood (EX: 2x4 or plywood) to the bottom faces of both adjacent joists at the approximate location where the speaker cabinet is to be installed. This will act as a temporary support for the speaker, making fastening the brackets to the joists easier. Since we recommend securing the outermost brackets to the joists first, then securing the innermost brackets, we recommend that these supports rest directly underneath the innermost brackets. This provides optimal access to the outermost brackets.



05 Putting The Speaker In Position

Raise the speaker cabinet up and ensure the cabinet is sufficiently resting on the support boards. Adjust the board placement if needed. Confirm the rough placement of the port hole is correct.

Confirm the bottom edges of the mounting brackets are aligned with the bottom of the joists. Ensure the bottom of the bracket does not extend down into the room beyond the bottom face of the floor joist.

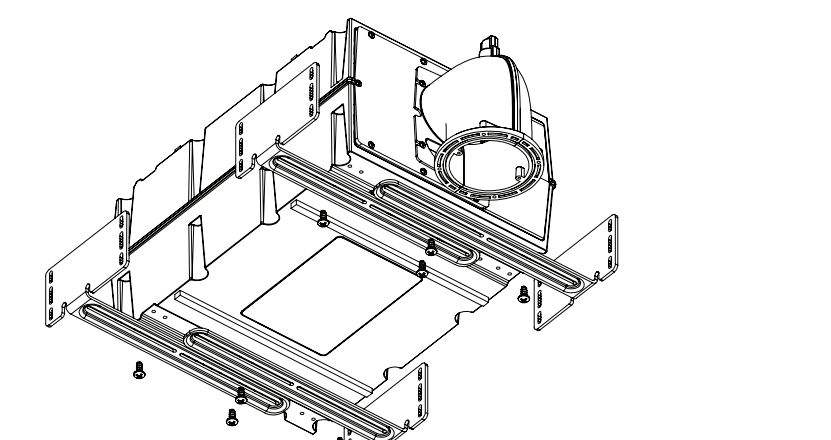


06 Securing The Mounting Brackets

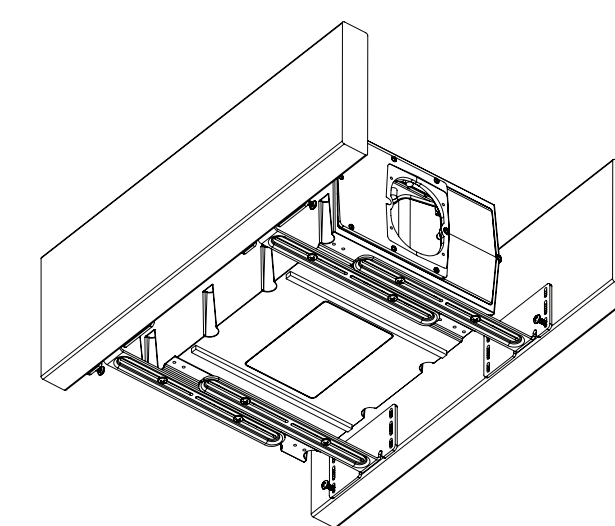
Confirm the bottom edges of the mounting brackets are aligned with the bottom of the joists. Ensure the bottom of the bracket does not extend down into the room beyond the bottom face of the floor joist.

Confirm the lateral placement (parallel with joists) of the speaker cabinet is correct. The cabinet placement will be determined by the desired location of the center point of the port.

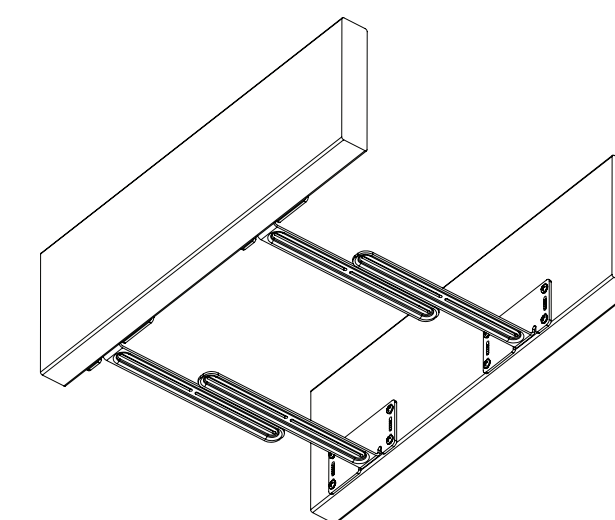
Adjust the spacing of the mounting brackets by loosening the screws fastening the brackets to the speaker cabinet. Extend the mounting brackets equally on each side of the cabinet so the distance between the brackets approximately matches the required joist spacing. Retighten the bracket screws 'finger tight' so that final adjustments can be made once the brackets are secured to the joists.



Once the lateral placement (parallel with joists) and vertical placement of the cabinet is determined to be correct, the mounting brackets can now be fastened to the joists. Note: If needed, the port tube can be removed at this time for improved access to the mounting bracket screw holes.



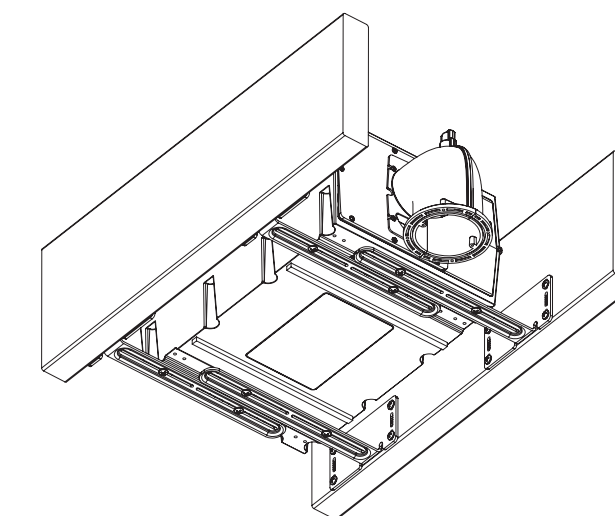
The vertical face of the mounting brackets should be fully contacting the adjacent joist face. Multiple screws can be used at either or both sets of the slotted mounting holes. We recommend using a minimum of (2) screws per bracket, placed as high and low as conditions permit, for a minimum total of (8) screws per speaker.



For better access to the innermost set of slotted mounting holes, the cabinet can be removed from the brackets temporarily via the mounting screws at the bottom of the cabinet. If removed, reinstall the cabinet once all brackets have been secured to the joists. We recommend leaving the cabinet screws finger tight at this stage to permit adjustment of the cabinet position.

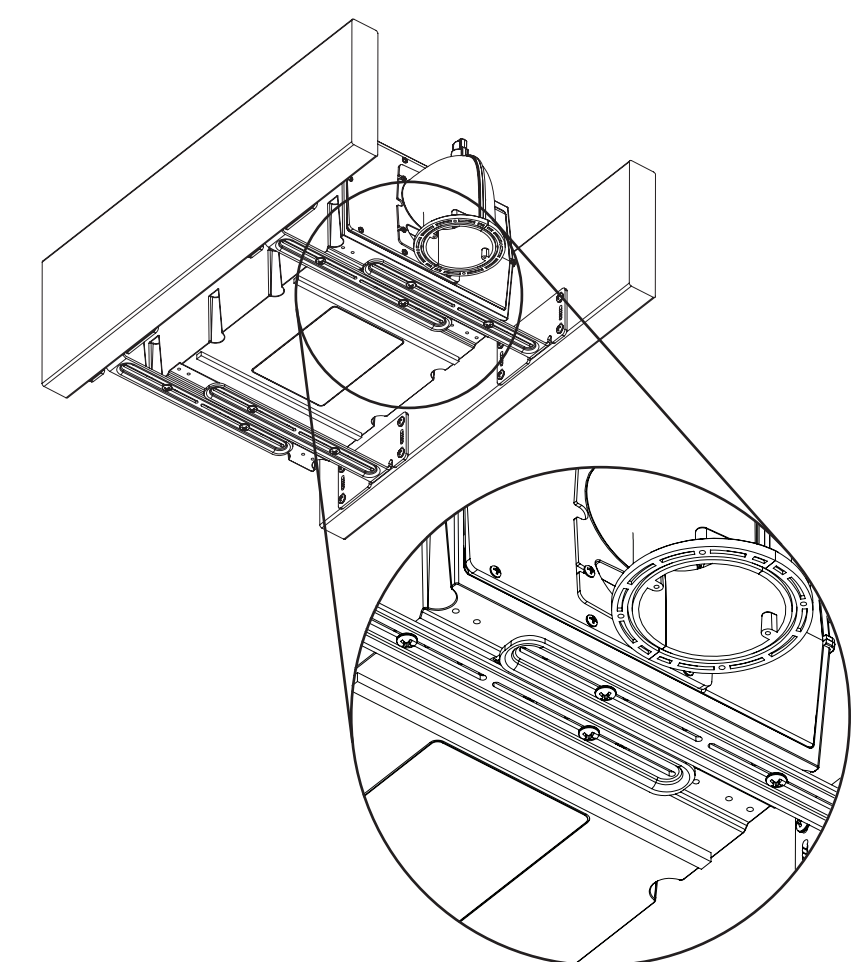
07 Final Speaker Positioning

Now that the mounting brackets are secured to the floor joists, remove the temporary support boards and reinstall the port tube by previously removed. Use a laser level to confirm alignment of the port with other speakers and/or ceiling elements such as lighting etc.



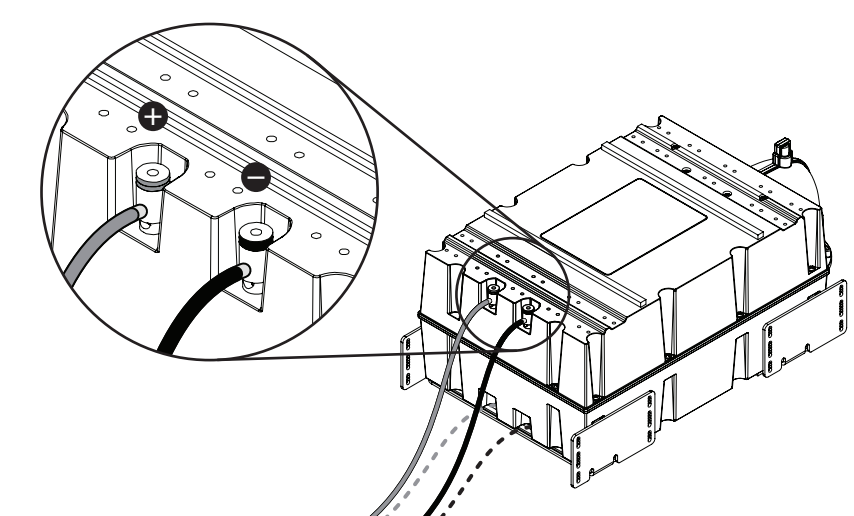
To adjust the port tube location, loosen the mounting bracket screws on the underside of the cabinet and move the cabinet/port tube location to the desired position.

Once the port has been placed in the desired location, fully tighten the mounting bracket screws on the underside of the speaker cabinet.



08 Wiring The Speaker

Connect the speaker wire via the push style binding posts on the enclosure. Based on the chosen port tube location, the binding posts may be above or below the center seam of the speaker cabinet. Ensure the (+) and (-) terminals are wired with the correct polarity, and confirm the connection is fully seated and secure before moving on. **NOTE:** The binding posts can accommodate up to 12ga wiring.



NOTE: Binding Posts may be on the top or bottom of the cabinet depending on the required cabinet orientation.

02 Installation Preparation: Part Selection

NOTE: Speaker version used for illustration purposes only. Subwoofer Port Tube Assembly differs cosmetically.

- Trim Ring Spacers:** Determine type and thickness of ceiling panels (drywall or other material):

The speaker is preconfigured for a 1/2" ceiling material thickness. Trim Ring Spacers are included to accommodate a variety of ceiling thicknesses. Use the chart below to determine the required number of spacers for your installation: