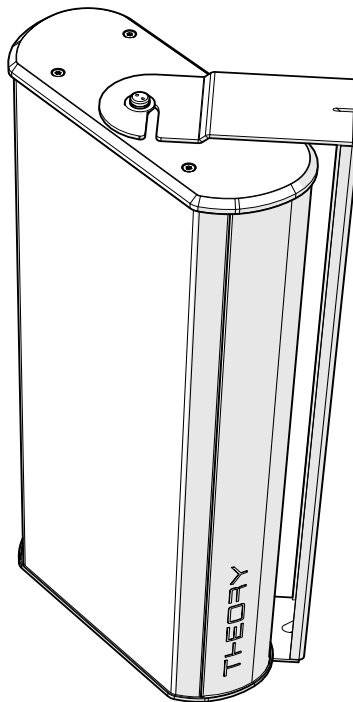# sb25aw
Multi-use Loudspeaker

QUICK START
INSTALLATION GUIDE

Rev A 230824

THEORY

THEORY AUDIO DESIGN

LIMITED WARRANTY

Disclaimer : THEORY AUDIO DESIGN, LLC is not liable for any damage to loudspeakers or any other equipment that is caused by negligence or improper use or installation of this product, including damage caused by connecting Theory loudspeakers and subwoofers to third party amplifiers.

THEORY AUDIO DESIGN, LLC 5-Year Limited Loudspeaker and Subwoofer Warranty

THEORY AUDIO DESIGN, LLC guarantees its loudspeaker and subwoofers products to be free from defective materials and/or workmanship for a period of five (5) years from the date of sale, and will replace defective parts and/or repair malfunctioning products under this warranty when the defect occurs under normal installation and use - provided that the unit is returned to our factory or one of our authorized service centers via prepaid transportation with a copy of proof of purchase (sales receipt). This warranty provides that the examination of the return must indicate, in our judgment, a manufacturing defect. This warranty does not extend to any product which has been subject to misuse, neglect, accident, improper installation or where the date code has been removed or defaced. THEORY shall not be liable for incidental and/or consequential damages. The warranty gives you specific legal rights. This limited warranty is not transferable. Customer may have rights which vary from state to state.

In the event that this product was manufactured for export and sale outside of the United States or its territories, then this limited warranty does not apply. Removal of the serial number on this product, or purchase of this product from an unauthorized dealer will void this limited warranty.

EXCLUSIONS

To the extent permitted by law, the warranty set forth above is in lieu of, and exclusive of, all other warranties, express or implied, and is the sole and exclusive warranty provided by Theory Audio Design, LLC. All other express and implied warranties, including the implied warranties of merchantability, implied warranty of fitness for use, and implied warranty of fitness for a particular purpose are specifically excluded.

Theory Audio Design, LLC shall not be liable for consequential, incidental, economic, property, bodily injury, or personal injury damages arising from the product, any breach of this warranty or otherwise.

This warranty statement gives you specific legal rights, and you may have other rights which vary from state to state. Some states do not allow the exclusion of implied warranties or limitations of remedies, so the above exclusions and limitations may not apply. If your state does not allow disclaimer of implied warranties, the duration of such implied warranties is limited to period of THEORY'S express warranty

Periodically this warranty is updated. To obtain the most recent version of THEORY'S warranty statement, please call +1-949-245-0505.

IMPORTANT SAFETY INSTRUCTIONS

1. Read all instructions.
2. Keep these instructions.
3. Heed all warnings.
4. Follow all instructions.
5. Clean only with a dry cloth.
6. Install in accordance with manufacturer's instructions.
7. Do not install near any heat sources such as radiators, heat registers, stoves or other apparatus that produce heat.
8. Use only attachments/accessories specified by THEORY AUDIO DESIGN, LLC.
9. Use only with hardware, brackets, stands, and components sold with the apparatus or supplied by THEORY AUDIO DESIGN, LLC.
10. Mount only to solid architectural walls.
11. USE SAFETY CABLE WHEN INSTALLING OVERHEAD.
12. Refer all servicing to qualified service personnel. Servicing is required when the apparatus is damaged in any way.
13. **Connect to Theory Amplified Loudspeaker Controllers ONLY. Do not connect to third-party amplifiers. Doing so will void the product warranty and potentially damage the loudspeaker.**
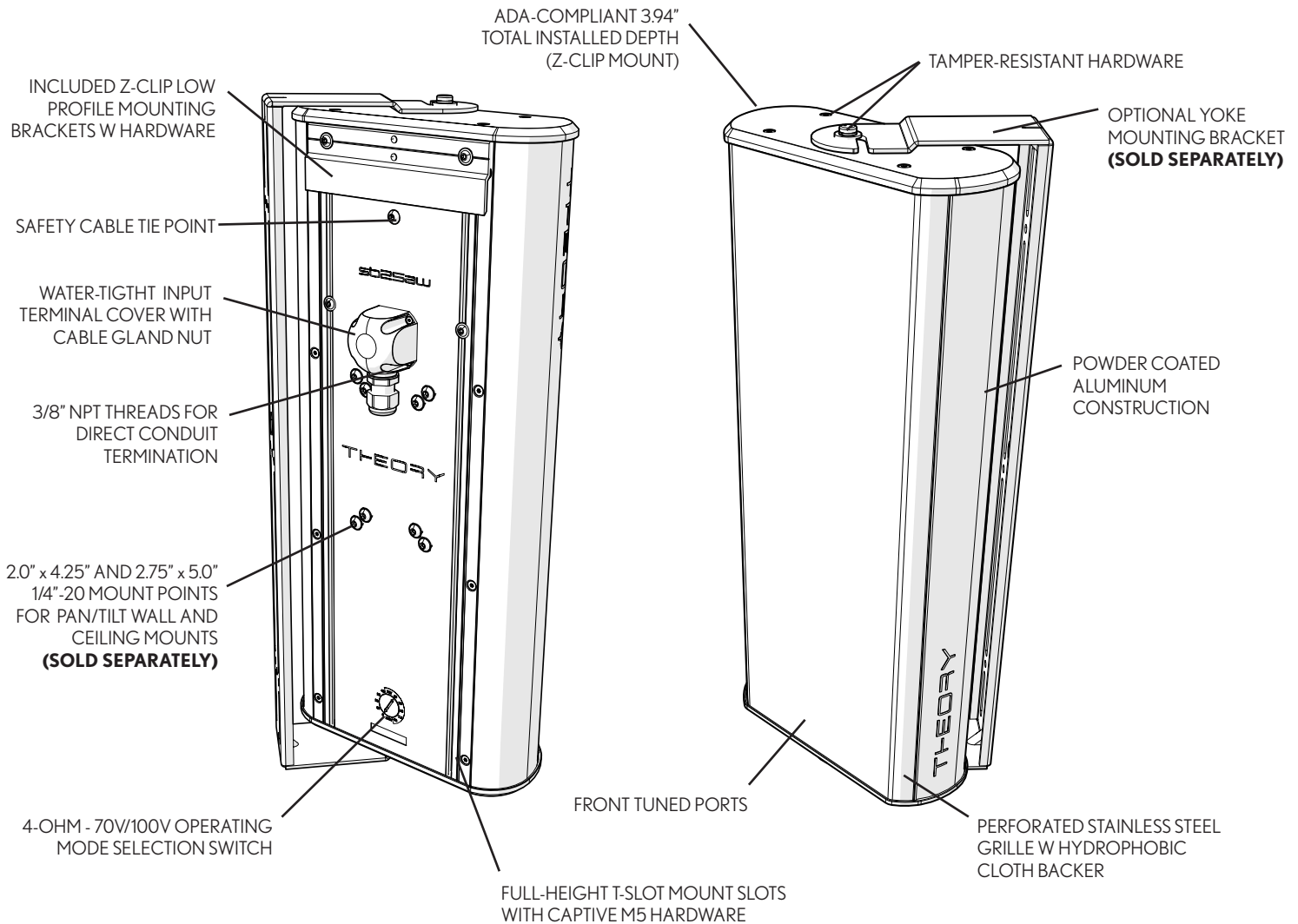
PARTS LEGEND
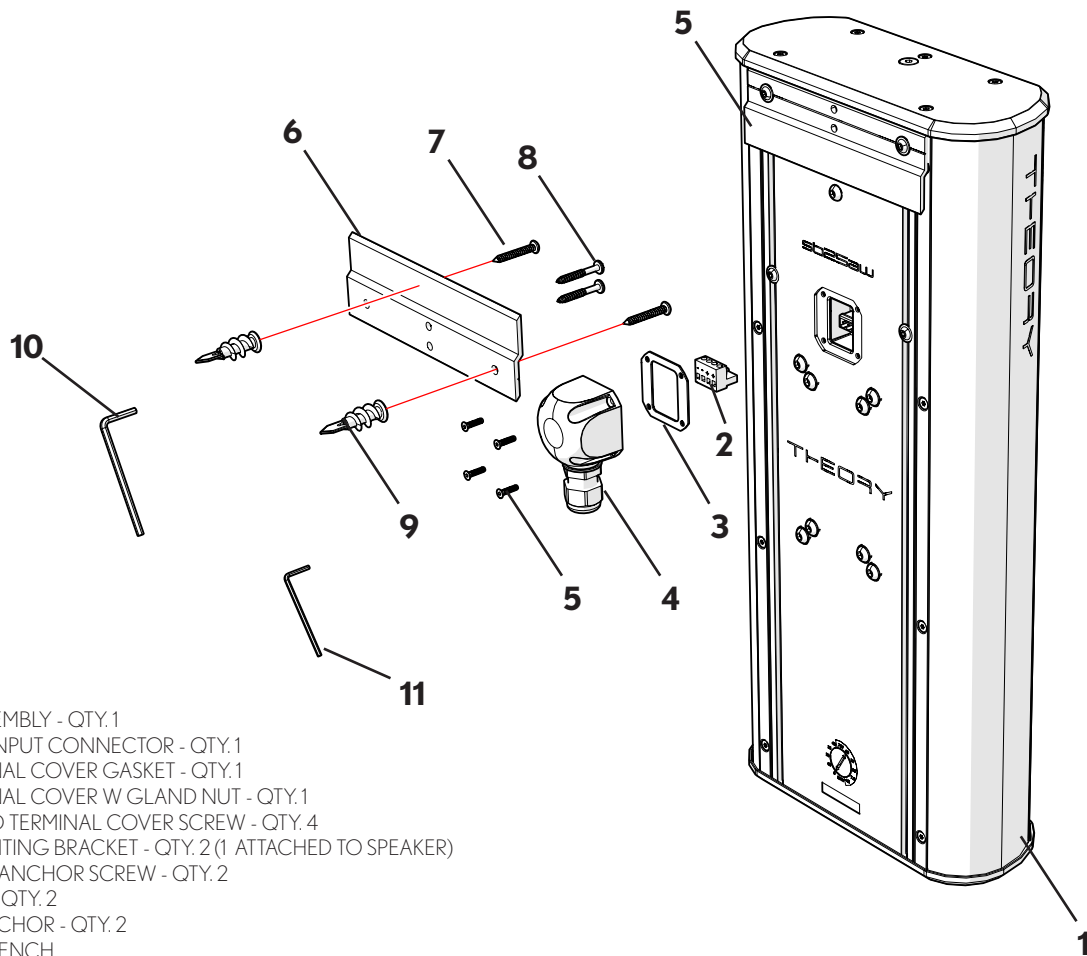
PARTS LIST - sb25aw

1. SPEAKER ASSEMBLY - QTY. 1
2. EURO PLUG INPUT CONNECTOR - QTY. 1
3. INPUT TERMINAL COVER GASKET - QTY. 1
4. INPUT TERMINAL COVER W GLAND NUT - QTY. 1
5. M3 FLAT HEAD TERMINAL COVER SCREW - QTY. 4
6. Z-CLIP MOUNTING BRACKET - QTY. 2 (1 ATTACHED TO SPEAKER)
7. #8 DRYWALL ANCHOR SCREW - QTY. 2
8. LAG SCREW - QTY. 2
9. DRYWALL ANCHOR - QTY. 2
10. 4MM HEX WRENCH
11. 2MM HEX WRENCH

PRODUCT FEATURES

ADA-COMPLIANT 3.94"
TOTAL INSTALLED DEPTH
(Z-CLIP MOUNT)

TAMPER-RESISTANT HARDWARE

INCLUDED Z-CLIP LOW
PROFILE MOUNTING
BRACKETS W HARDWARE

OPTIONAL YOKE
MOUNTING BRACKET
(SOLD SEPARATELY)

SAFETY CABLE TIE POINT

WATER-TIGTHT INPUT
TERMINAL COVER WITH
CABLE GLAND NUT

POWDER COATED
ALUMINUM
CONSTRUCTION

3/8" NPT THREADS FOR
DIRECT CONDUIT
TERMINATION

2.0" x 4.25" AND 2.75" x 5.0"
1/4"-20 MOUNT POINTS
FOR PAN/TILT WALL AND
CEILING MOUNTS
(SOLD SEPARATELY)

4-OHM - 70V/100V OPERATING
MODE SELECTION SWITCH

FRONT TUNED PORTS

PERFORATED STAINLESS STEEL
GRILLE W HYDROPHOBIC
CLOTH BACKER

FULL-HEIGHT T-SLOT MOUNT SLOTS
WITH CAPTIVE M5 HARDWARE

OPERATING MODES - SAFETY CONSIDERATIONS

OPERATING MODES - SAFETY CONSIDERATIONS - INDOOR/OUTDOOR INSTALLATIONS

Your Theory sb25aw loudspeaker can be used in LoZ (4-ohms) or HiZ (transformer) operating modes. Make sure you know the desired operation for your system prior to installing the loudspeakers as this will determine the wiring scheme required.

Your Theory sb25aw loudspeaker system may be installed onto ordinary architectural walls and ceilings, and other structural members. **If installed overhead, regardless of mounting method used, a safety cable must be used to tether the loudspeaker to a rigid structural element such as an architectural stud or joist.**

If installing outdoors, the included waterproof terminal cover must be used. Do not use outdoors without the terminal cover. The gland nut may be used to create a water-tight seal around the speaker cable, or it may be removed from the terminal cover revealing 3/8" NPT threads for direct conduit termination.

Your Theory sb25aw loudspeaker requires extensive signal processing and therefore must be driven by Theory Amplified Loudspeaker Controllers only. Theory loudspeakers and Loudspeaker Controllers work together as a system.

DO NOT CONNECT YOUR THEORY LOUDSPEAKER TO THIRD PARTY AMPLIFIERS AS DOING SO WILL VOID THE LOUDSPEAKER WARRANTY.

1 - INSTALLATION OPTIONS

FLAT, PAN-AND-TILT, YOKE, POLE

Your Theory sb25aw Multi-use loudspeaker can be installed in many different ways, making integration into even challenging interiors painless. Below is a list of installation options available. Before you begin your project, review the options and select the method that best suits your project.

1a. - WALL MOUNT - Z-CLIP BRACKET

(Z-CLIPS INCLUDED)

The sb25aw ships with Z-Clip mounting brackets to facilitate very low profile installation of the speaker directly to a wall surface in portrait or landscape orientation.

Even in this orientation the ultra-wide dispersion sb25aw provides uniform coverage to the entire listening area. It is not necessary to "aim" the sb25aw. It is designed to provide uniform and wide bandwidth coverage over an extremely wide area.

A SAFETY TETHER MUST BE USED IN CON-JUNCTION WITH Z-CLIP MOUNTING METH-OD.

3.94"
incl. z-clips
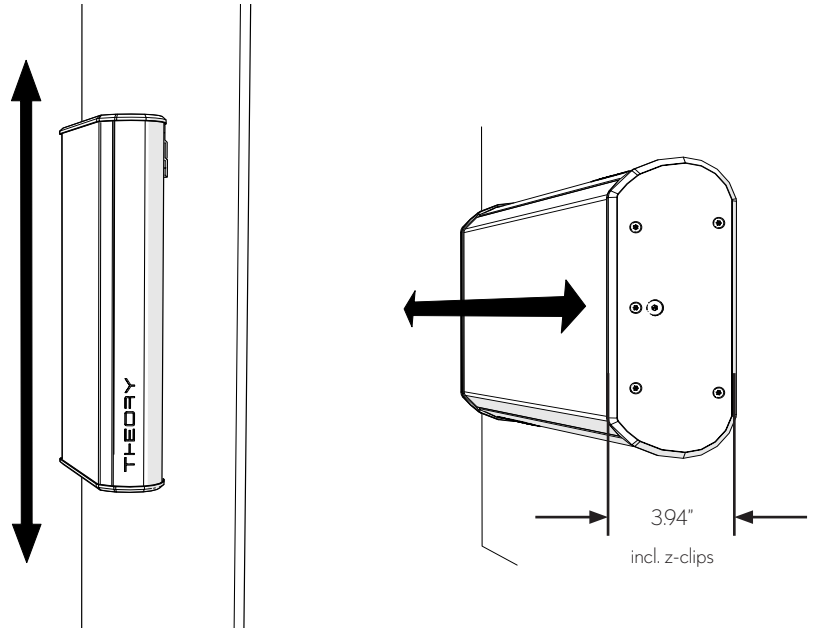
FIGURE 1a. The sb25aw loudspeaker can be mounted flat the a wall surface in portrait or landscape mode using included z-clip mounting brackets. The installation is ADA compliant.

1b. - WALL MOUNT - YOKE BRACKET

(YOKE SOLD SEPARATELY)

To anchor the sb25aw to a structural wall, the optiona sb25aw-YOKE mounting bracket can be anchored to the wall structural elements then the sb25aw loudpseaker can be attached to the Yoke.

REFER TO SECTION 5 OR THE BRACKET INSTALL MANUAL FOR BRACKET INSTALLATION INSTRUCTIONS.

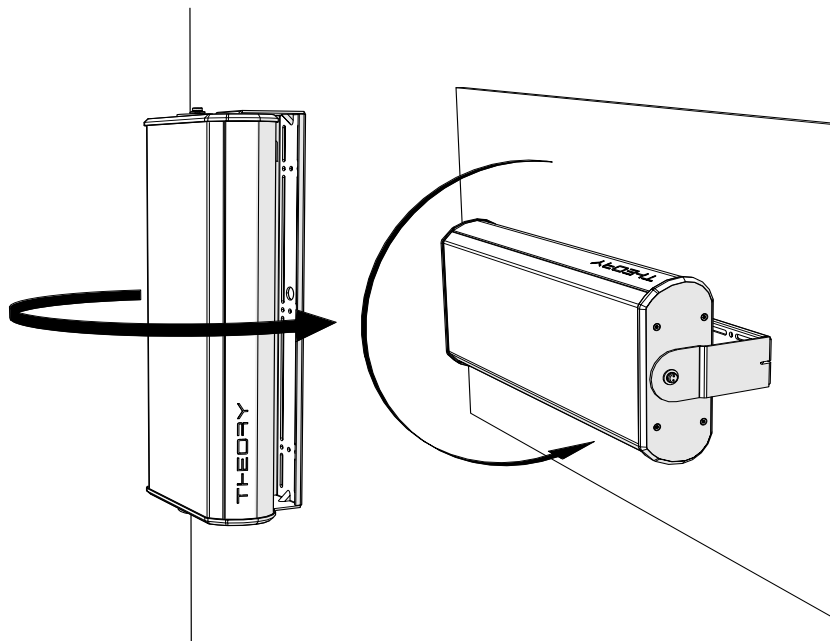**A SAFETY TETHER MUST BE USED IN CONJUNCTION WITH THE YOKE MOUNTING METHOD.**

FIGURE 1b. The sb25aw loudspeaker can be mounted to the wall and rotated for aiming using the available optional yoke bracket in portrait or landscape mode.

1 - INSTALLATION OPTIONS (cont'd)

1c. - WALL MOUNT - PAN AND TILT BRACKET

(BRACKET SOLD SEPARATELY)

The sb25aw has 2.0" x 4.25" and 2.75 x 5.0" #1/4-20 threaded mount holes on its rear panel to facilitate use of third party pan/tilt and pole mounting brackets.

Wall pan-and-tilt mount model MM-017 shown.

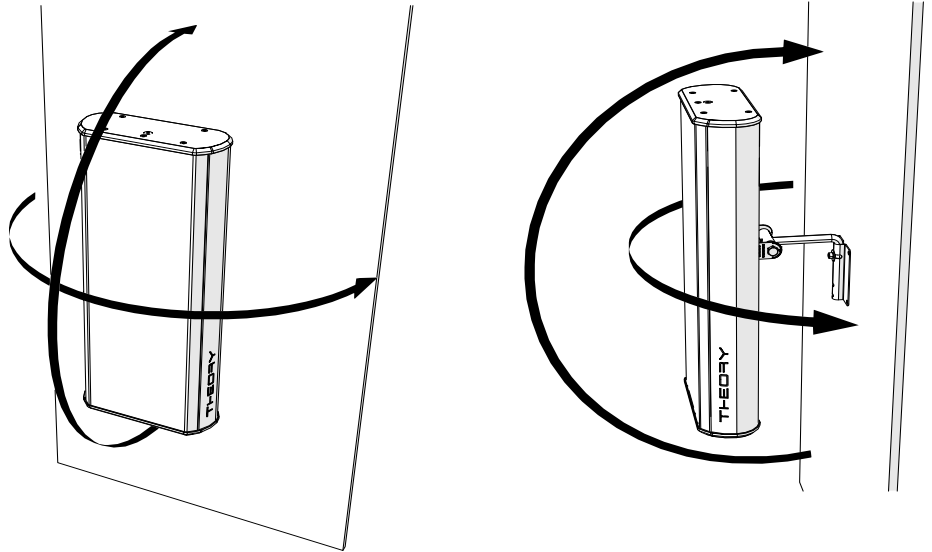**REFER TO BRACKET INSTALL MANUAL FOR BRACKET INSTALLATION INSTRUCTIONS.**

FIGURE 1c. The sb25aw loudspeaker can be mounted with a third party pan/tilt style mounting bracket.

1d. - POLE MOUNT - YOKE

(THEORY sb25aw-YOKE SOLD SEPARATELY)

The sb25aw may be mounted to a 1/2" rigid conduit pole using the optional sb25aw-YOKE mounting bracket, as shown. The speaker cable(s) and safety tether(s) may be routed through the conduit for a clean appearance.

A SAFETY TETHER MUST BE USED IN CONJUNCTION WITH THE YOKE MOUNTING METHOD.
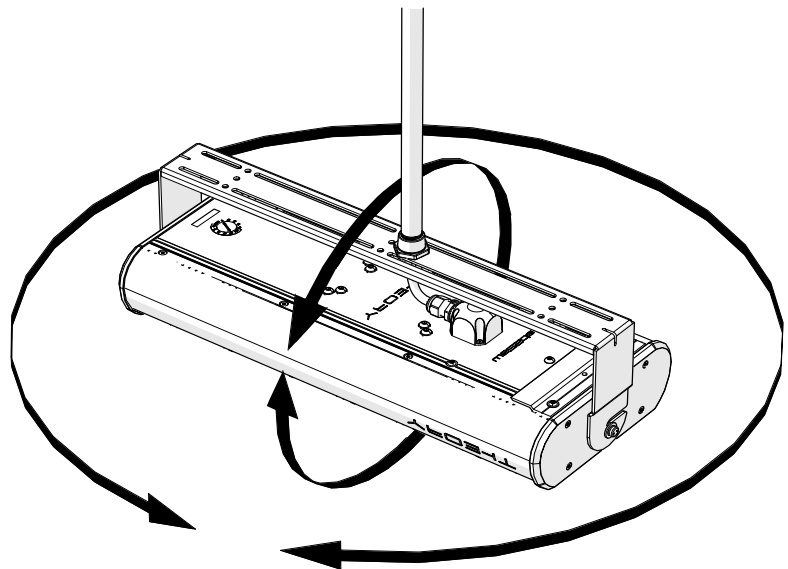
FIGURE 1d. The sb25aw loudspeaker can be hung from 1/2" rigid conduit and rotated for landscape-orientation aiming using the available optional yoke bracket.

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THEORY AUDIO DESIGN

1 - INSTALLATION OPTIONS (cont'd)

1e. - POLE MOUNT - PAN AND TILT BRACKET

(BRACKET SOLD SEPARATELY)

The sb25aw may be mounted to a 1/2" rigid conduit pole using the optional MM-018 mounting bracket, as shown.

Pole mount model MM-018 shown.

A SAFETY TETHER MUST BE USED IN CON-JUNCTION WITH POLE MOUNTING METHOD.

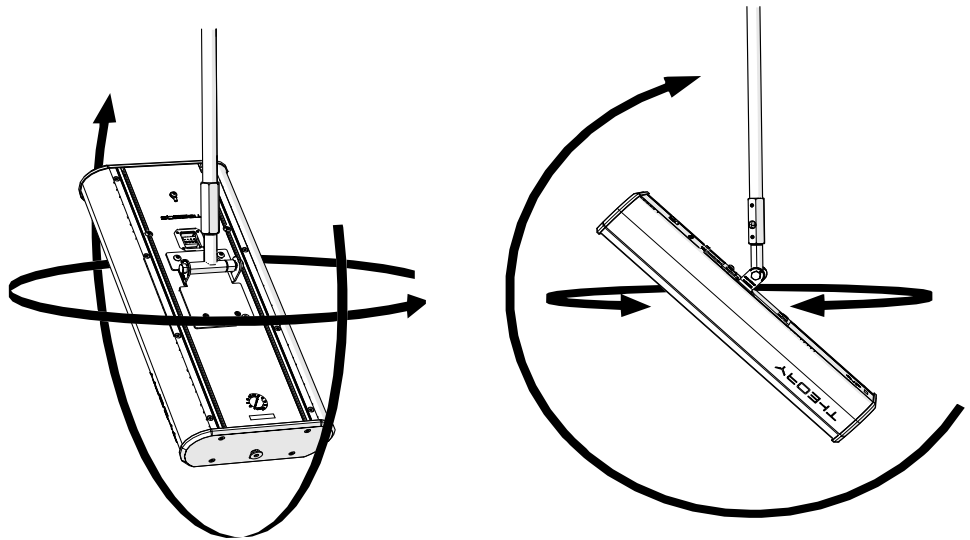**REFER TO BRACKET INSTALL MANUAL FOR BRACKET INSTALLATION INSTRUCTIONS.**

FIGURE 1e. The sb25aw loudspeaker can be mounted to 1/2" threaded conduit and hung from the ceiling facilitating portrait-orientation aiming.

2 - CONNECTIONS - 4-OHM AND 70V/100V OPERATION

2 - CONNECT WIRES TO EURO PLUG

To connect speaker wires to the Euro plug input connector, remove it from the socket on the rear of the sb25aw.

For LoZ or 4-ohm operation, connect a single "home run" two-conductor speaker wire from the ic loudspeaker to the Theory Loudspeaker Controller output. Only ONE sb25aw loudspeaker in 4-ohm operation may be wired to a single Loudspeaker Controller channel. Figure 2a.

For transformer "70V" or "70V/100V" operation, many sb25aw loudspeakers may be connected to a qualified Loudspeaker Controller output channel by connecting the ic speakers in parallel using the connector loop outputs. Figure 2b.

to next speaker NEG input

to next speaker POS input

to amp NEG output

To amp POS output
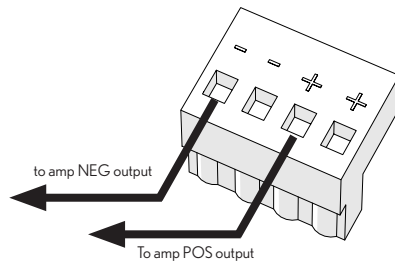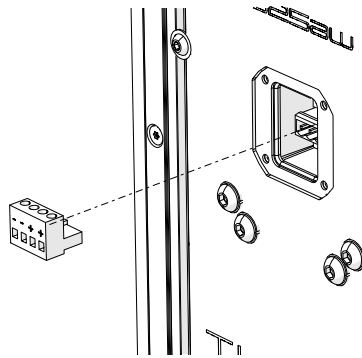
to amp NEG output

to amp POS output

FIGURE 2a. 4-ohm Operation. Connect Loudspeaker Controller negative output terminal to Euro block negative input. Positive Controller output to Euro block positive input.
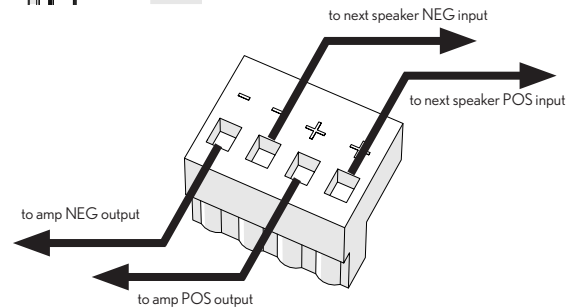
FIGURE 2b. 70V/100V Operation. Use connector loop outputs to connect to next loudspeaker.

3 - SAFETY TETHER TIE POINTS

3a. SAFETY TIE POINTS

On the rear of the sb25aw loudspeaker there are many connection points that can be used to connect a safety tether. Any of the screws highlighed red in Figure 3a. may be used.

Select the tie point that best suits your installation method. (Refer to sections 3b - 3d.)
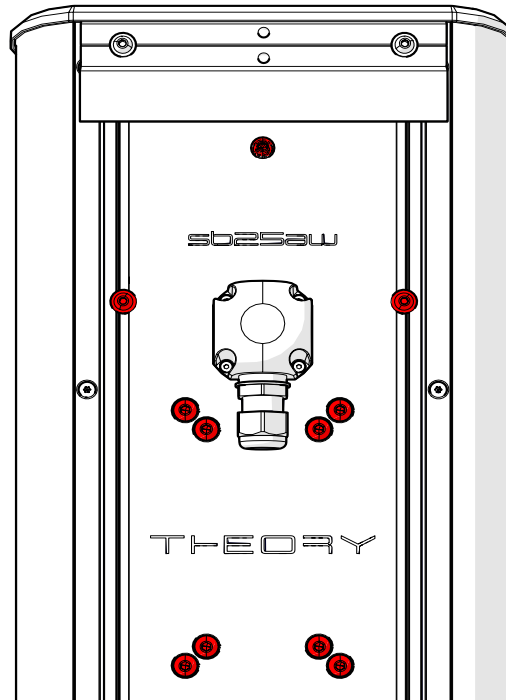

FIGURE 3a. The sb25aw loudspeaker offers many places to secure a qualified safety tether to the loudspeaker.

3b. T-SLOT M5 TIE POINTS

All Theory sb models have "T-Slots" that run the length (height) of the product. Inside these slots are four captive M5 square nuts and can slide along the length of the slot into any position required. Two of these nuts are used to secure the included Z-Clip mounting bracket to the speaker from the factory and two are secured in place with M5 flange-head screws.

The two flange head screws may be used as safety points and be positioned anywhere along the slot as required by your installation.
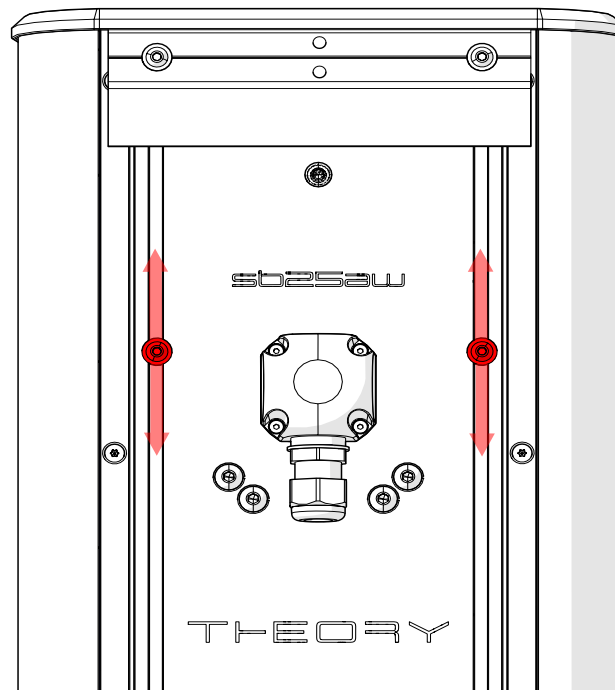

FIGURE 3b. The sb25aw loudspeaker can be mounted to the wall and rotated for aiming using the available optional yoke bracket in portrait or landscape mode.

3 - SAFETY TETHER TIE POINTS (cont'd)

3c. MAIN SAFETY TIE POINT

The primary safety tie point is positioned along the loudpseaker centerline and should be used whenever it is accessible and convenient.
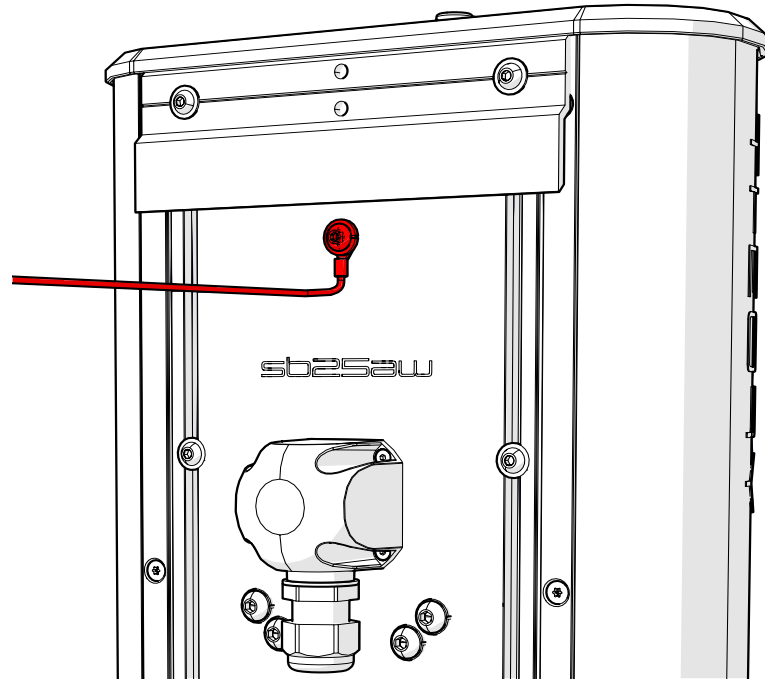

FIGURE 3c. Main sb25aw safety tie point.

3d. POLE MOUNT - YOKE

(THEORY sb25aw-YOKE SOLD SEPARATELY)

When using the sb25aw-YOKE mounting bracket to suspend the loudspeaker from a pole, the safety cable configuration shown in Figure 3d. should be used. One or more safety cables may be used. The safety cable(s) may be routed inside the pole for a clean installed appearance.

The pole is not shown in Figure 3d. for clarity.

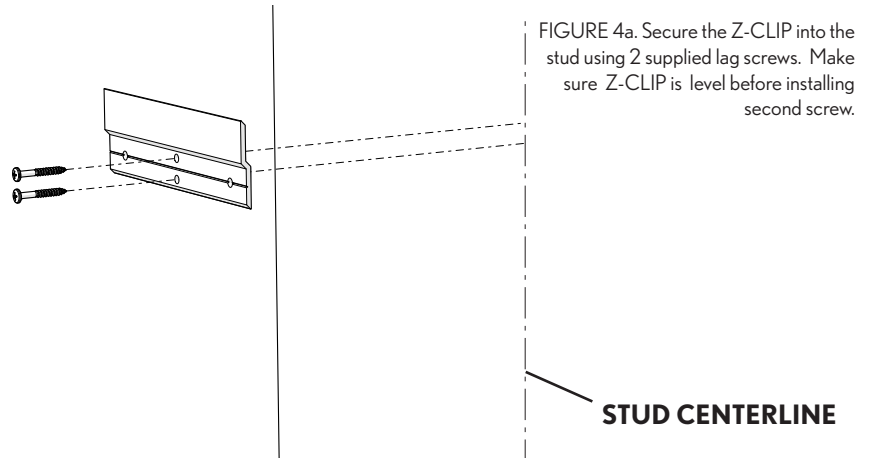**Speaker cable and safety cables are not included.**
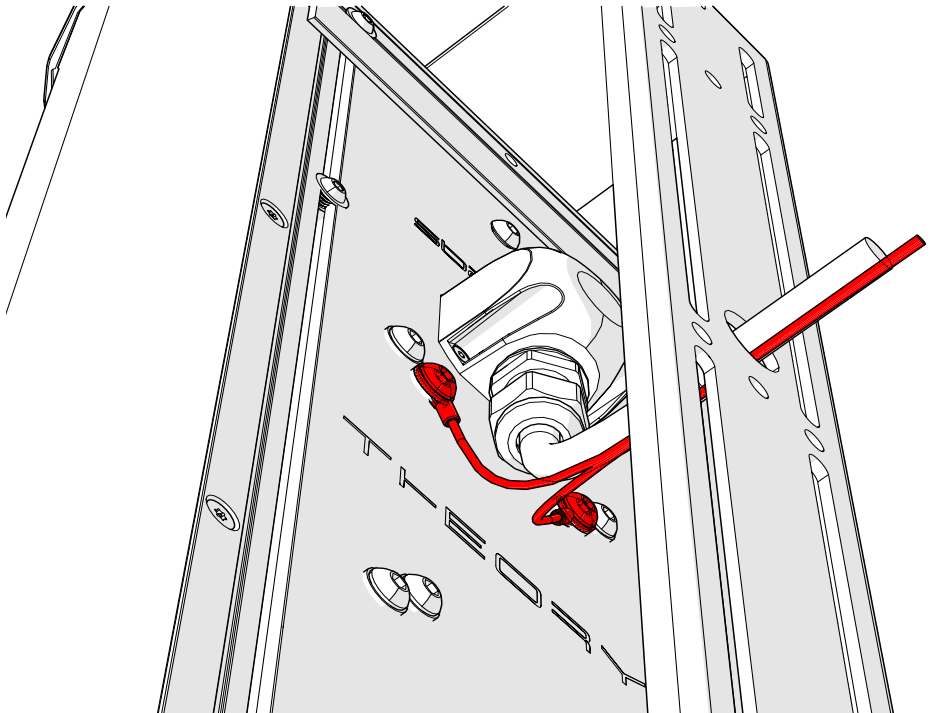
FIGURE 3d. The sb25aw YOKE/Pole mount configuration shown. Pole is omitted from the illustration for clarity.

4 - WALL MOUNT - Z-CLIP

4a. MOUNT Z-CLIP - STUD

If it is possible to secure the supplied Z-CLIP directly to a stud or other structurally-sound architectural member (post, beam, etc.) use 2 supplied lag screws per Z-CLIP: install one first, level the Z-CLIP and then install the second screw. (Figure 4a).
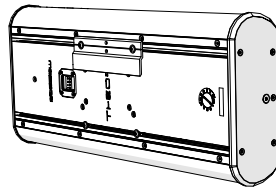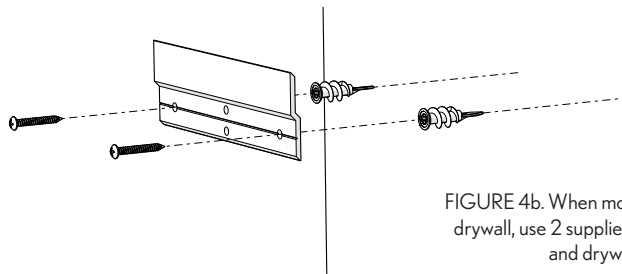
FIGURE 4a. Secure the Z-CLIP into the stud using 2 supplied lag screws. Make sure Z-CLIP is level before installing second screw.

STUD CENTERLINE

4b. MOUNT Z-CLIP - DRYWALL

When a stud is not available onto which to mount the wall Z-CLIPS, use the supplied drywall anchors as shown.

Mark the Z-CLIP outer hole positions on the wall and install the drywall anchors directly into the drywall.

Align the Z-CLIP outer holes with the drywall anchors and fasten to the wall using the supplied drywall anchor screws. (Figure 4b.)

FIGURE 4b. When mounting Z-CLIP to drywall, use 2 supplied drywall anchors and drywall anchor screws.

FIGURE 4c. The Z-CLIP may be moved to a single t-slot for landscape mounting orientation.
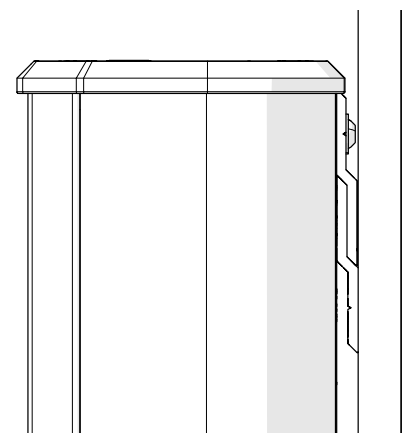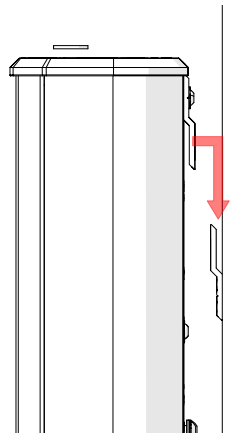
4c. MOUNT LOUDSPEAKER

Once wires are connected and checked for polarity, position the sb25aw such that the loudspeaker Z-CLIP is tight against the wall surface and directly above the wall Z-CLIP. (Figure 4d.)

Slowly lower the loudspeaker until the speaker Z-CLIP engages completely into the wall Z-CLIP. Push down on the loudspeaker to insure the Z-CLIPS are fully engaged. (Figure 4e.)

A SAFETY TETHER MUST BE USED IN CONJUNCTION WITH THE Z-CLIP MOUNTING METHOD.

FIGURE 4d. Align the speaker Z-CLIP directly above the wall Z-CLIP, press the loudpseaker Z-CLIP againts the wall and carefully lower the speaker until the Z-CLIPS are fully engaged.

FIGURE 4e. Make sure the loudspeaker Z-CLIP and wall Z-CLIP are fully engaged as shown.

THEORY

5 - WALL MOUNT - YOKE (SOLD SEPARATELY)

5a. SECURE YOKE TO SURFACE

The sb25aw-YOKE mounting bracket (sold separately) features mount holes and mount slots that make it easy to attach the yoke to a variety of diffent surfaces and constructions.

Using hardware appropriate for your conditions (not included), securely mount the sb25aw-YOKE to your surface as shown. Use at least four fasteners to insure a safe and secure installation.

IF POSITIONING THE YOKE VERTICALLY, MAKE SURE THE YOKE END WITH THE SLOT OPENING IS ORIENTED AT THE TOP.

IF POSITIONG THE YOKE HORZONTALLY, MAKE SURE THE SLOT OPENING IS DIRECTED UP TO CAPTURE BOLT SECURELY. (Figure 5a.)

SLOT AT THE TOP

SLOT OPENING FACING UP
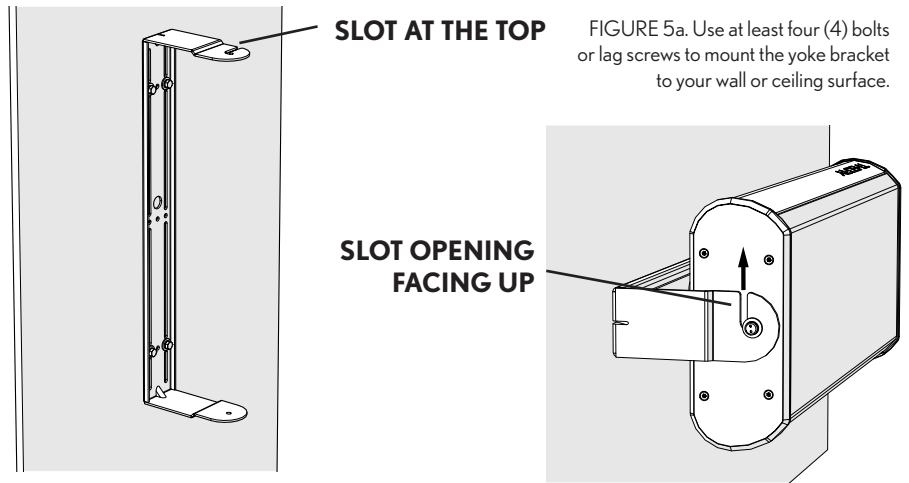
FIGURE 5a. Use at least four (4) bolts or lag screws to mount the yoke bracket to your wall or ceiling surface.

5b. INSTALL TAMPER-RESISTANT BOLT AND WASHERS INTO ONE END OF LOUDSPEAKER

To make it possible for one person to install the sb25aw loudpseaker into the sb25aw-YOKE mount bracket, one end of the yoke features a slot, and the other end a thru hole. The "slot" will hold one end of the loudspeaker while you install the bolt through the other end of the bracket.

First, install one of the tamper resistent bolts included with the yoke together with flat and lock washers as shown into the top of the loudspeaker leaving a gap slightly greater than the thickness of the yoke bracket.

A 1/4" spanner-head key is included with the sb25aw-YOKE to facilitate tightening of the spanner-head screw.
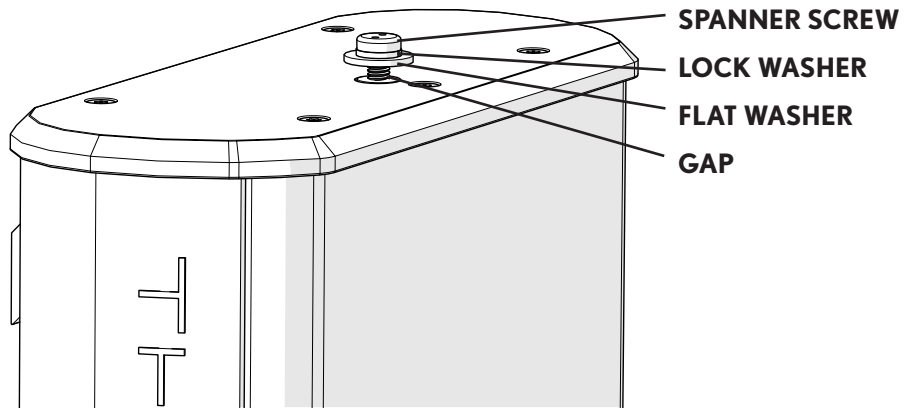
(Figure 5b.)

SPANNER SCREW
LOCK WASHER
FLAT WASHER
GAP

FIGURE 5b. Install screw with lock and flat washers as shown into the loudpseaker end that will be inserted into the yoke slot.

5c. INSERT SPANNER HEAD SCREW INTO YOKE SLOT

Insert the spanner head screw into the yoke slot making sure that both the lock and flat washers are positioned on the outside of the yoke surface. Make the "corner" to insure that the screw is in contact with the end of the slot. (Figure 5c.)

MAKE SURE TO INSERT SCREW FULLY INTO SLOT SO THAT THE BODY OF THE SCREW IS FULLY ENGAGED AT THE END OF THE SLOT.

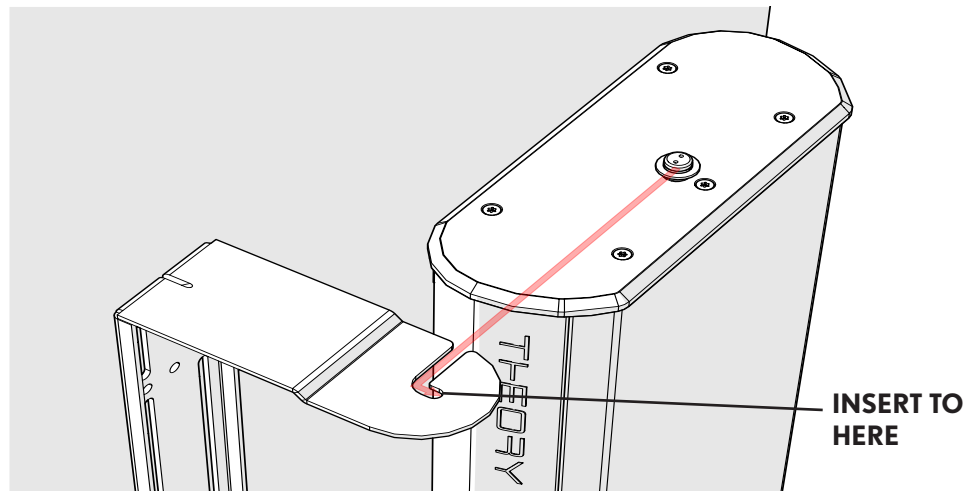**A SAFETY TETHER MUST BE USED IN CONJUNCTION WITH THE YOKE MOUNTING METHOD.**

INSERT TO HERE

FIGURE 5c. Insert screw fully into yoke slot making sure to make the 90° bend.

5 - WALL MOUNT - YOKE (cont'd)

5d. HAND-TIGHTEN SPANNER SCREW

Once screw is fully inserted into yoke slot, hand-tighten the screw to hold it in the slot so that you can install the spanner screw at the other end of the yoke.

You will come back to this one and tighten it with the spanner key once the other screw is securely installed and tightened.

A SAFETY TETHER MUST BE USED IN CONJUNCTION WITH THE YOKE MOUNTING METHOD.
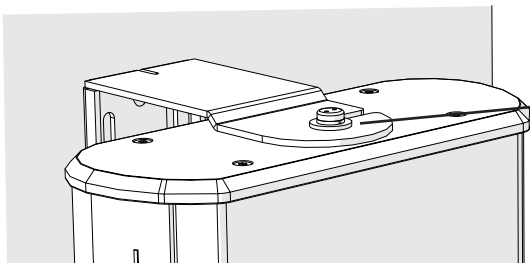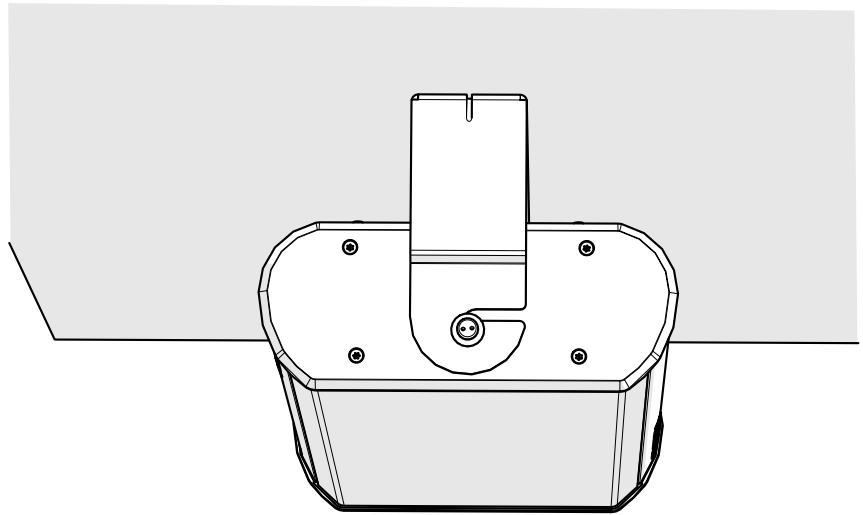
WASHERS AGAINST YOKE OUTER SURFACE.

FIGURE 5d. Make sure the spanner screw is fully installed into slot as shown above then hand-tighten screw.

5e. INSTALL SPANNER SCREW IN OPPOSITE END OF YOKE BRACKET, TIGHTEN BOTH SCREWS

With the hand-tightened screw supporting one end of the loudspeaker, insert the other spanner screw, lock and flat washers in the opposite end as shown in Figure 5e. Using the spanner key supplied with the Yoke kit, tighten screw securely.

Finally, insure that the slot spanner screw is fully inserted at the end of the slot and using the spanner key, tighten it securely.

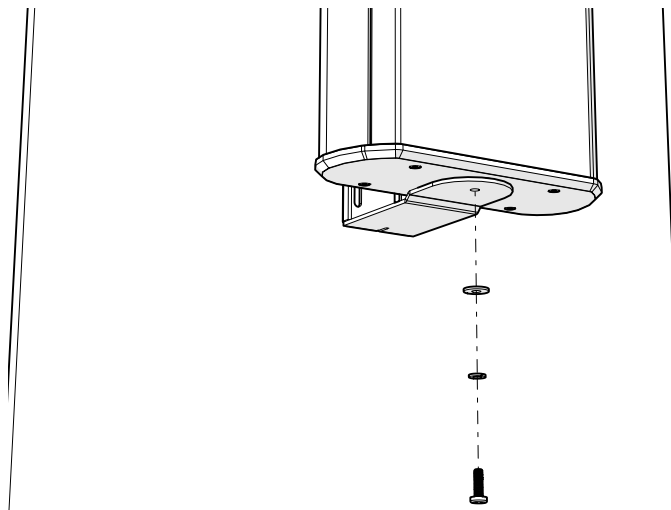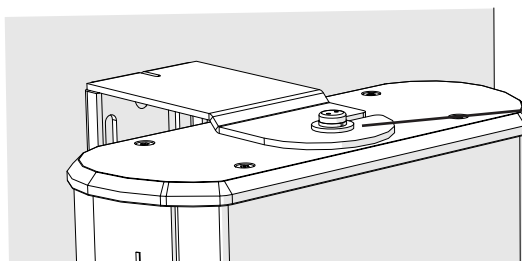**A SAFETY TETHER MUST BE USED IN CONJUNCTION WITH THE YOKE MOUNTING METHOD.**

FIGURE 5e. Insert spanner screw into opposite end and tighten throuroughly.

TIGHTEN SLOT SCREW LAST

6 - OUTDOOR INSTALLATIONS - TERMINAL COVER W GLAND NUT

6a. INSTALL TERMINAL COVER GASKET

When using the sb25aw outdoors, the included water-tight terminal cover must be used.

Remove the Euro input plug from the socket. Peel off the adhesive backer from included foam gastket and adhere it to the recessed surface surrounding the terminal socket on the sb25aw back panel as shown. (Figure 6a.)

FIGURE 6a. Adhere the supplied gasket into loudpseaker back panel recess as shown.
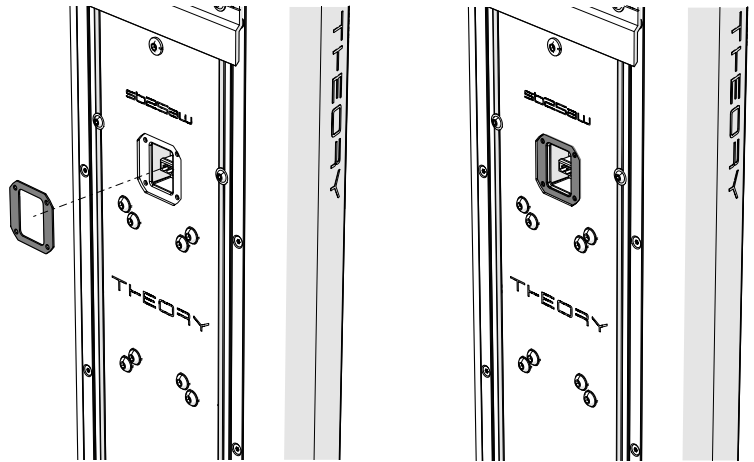
6b. - ROUTE SPEAKER WIRE THRU TERMINAL COVER ASSEMBLY

Strip the outer round cable jacket exposing approximately 4" of the individual speaker wires.

Route the speaker cable through the gland nut making sure the round outer jacket is fully inserted to the nut, but that only the exposed speaker conductors exit the terminal cover.

Tighten the gland nut securely to insure a water-tight seal around the speaker cable jacket.

Trim the exposed wires to extend about 1-2" past the terminal cover then connect them to the Euro plug according to instruction in Section 2. (Figure 6b.)
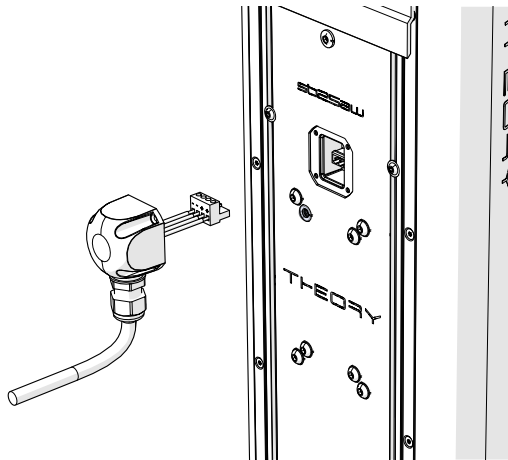
FIGURE 6b. Route speaker cable through gland nut, then connect to Euro plug.

6c. INSERT EURO PLUG AND INSTALL TERMINAL COVER

Insert the Euro plug into the loudpseaker socket, coil the excess speaker conductors and tuck them into the terminal cover body.

Press the cover tightly againts the previously installed cover gasket and secure the cover in place with the supplied M3 flat head screws. Take care to tighten the screws completely and uniformly to insure a water-tight seal. (Figure 6c.)

TAKE CARE TO INSURE GLAND NUT AND TERMINAL COVER ARE SUFFICIENTLY TIGHTENED. FAILING TO DO SO WILL ALLOW MOISTURE TO ENTER THE COVER AND SIGNIFICANTLY REDUCE WEATHER RESISTANCE IN OUTDOOR INSTALLATIONS.
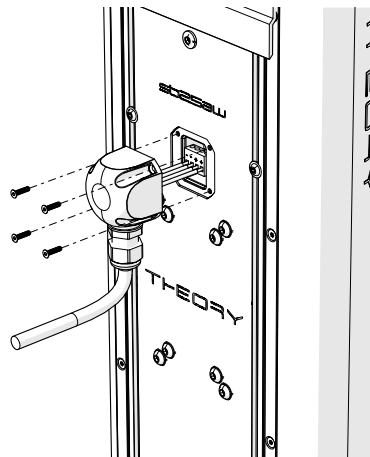
FIGURE 6c. Install terminal cover using 4 supplied M3 flat head screws. Tighten uniformly to insure a water-tight seal.

7 - OUTDOOR INSTALLATIONS - TERMINAL COVER WITH CONDUIT

7a. REMOVE GLAND NUT

The sb25aw Terminal Cover (included) features 3/8" NPT threads at the juction of the gland nut and cover housing.

To terminate conduit directly to the terminal cover housing, before installing cover, remove the gland nut by unscrewing it as shown.
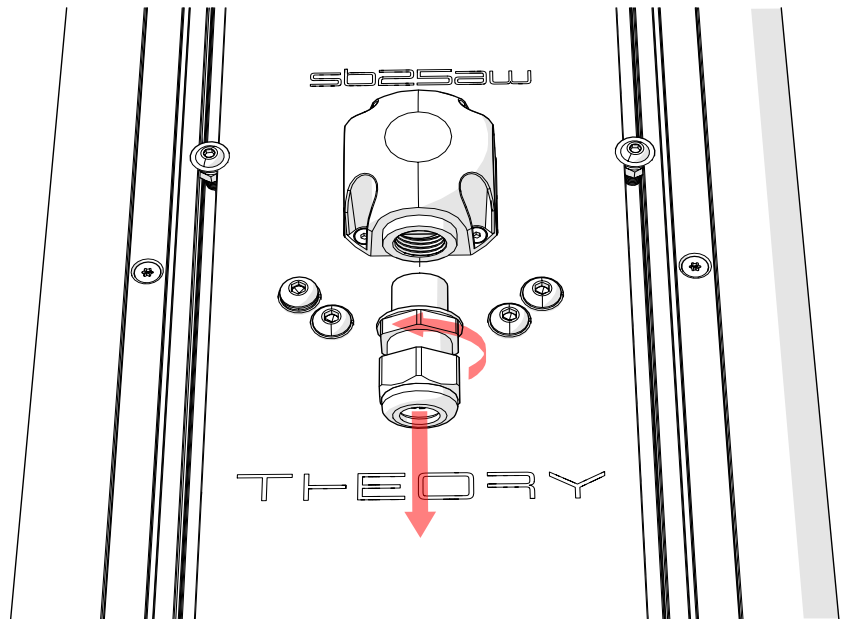
FIGURE 7a. To terminate conduit directly to the sb25aw terminal cover, first remove the gland nut.

7b. INSTALL CONDUIT (NOT INCLUDED).

3/8" NPT conduit or conduit adapters may now be screwed into the sb25aw terminal cover's 3/8" threaded opening. Figure 7b.
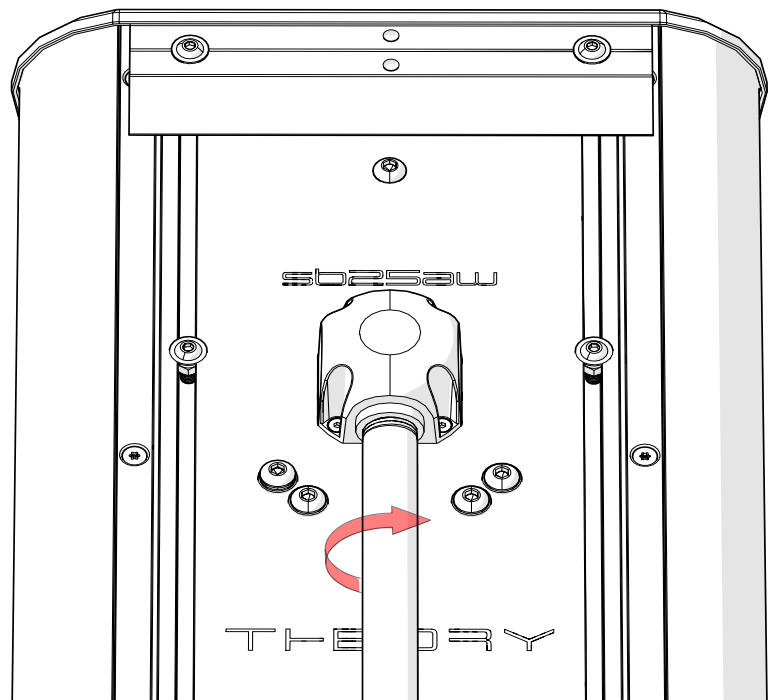
FIGURE 7b. 3/8" NPT conduit or conduit adapters may be screwd directly into the terminal cover's threaded opening.

THEORY
THEORY AUDIO DESIGN

SPECIFICATIONS

OPERATION:	Passive, 4-ohms or 70V/100V Requires 1 Theory Loudspeaker Controller Amplifier Channel
DRIVERS:	2 x 5" Theory Carbon Fiber Low Woofers 1 x 1.4" Theory Advanced Polymer Compression Tweeter
COVERAGE:	125 Degrees, Conical
BANDWIDTH:	51Hz - 23kHz, -6dB 46Hz - 24kHz, -10dB
SENSITIVITY:	94dB/W LF; 108dB/W HF
POWER HANDLING:	200W (AES)
POWER REQUIREMENTS	Requires Theory Amplified Loudspeaker Controller
MAXIMUM OUTPUT:	117dBSPL @ 1m
NOMINAL IMPEDANCE:	4-ohms or 70V/100V HiZ Operation, Selectable
TRANSFORMER TAPS:	60W, 30W, 15W, (7.5W, 70V)
COLORS:	Black; White
DIMENSIONS:	21.5" H x 9.5" W x 3.8" D
WEIGHT:	25 lbs. Each