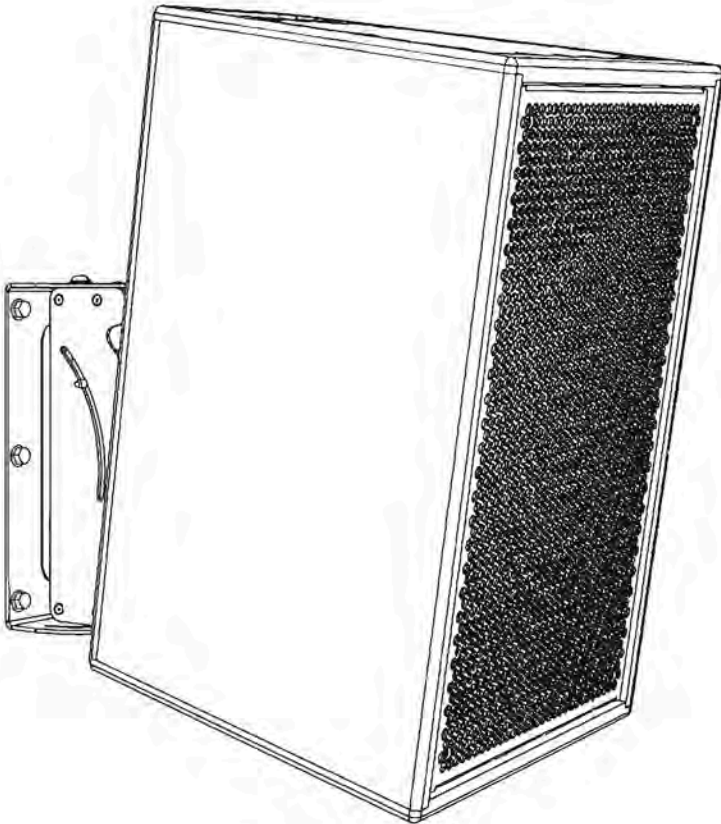
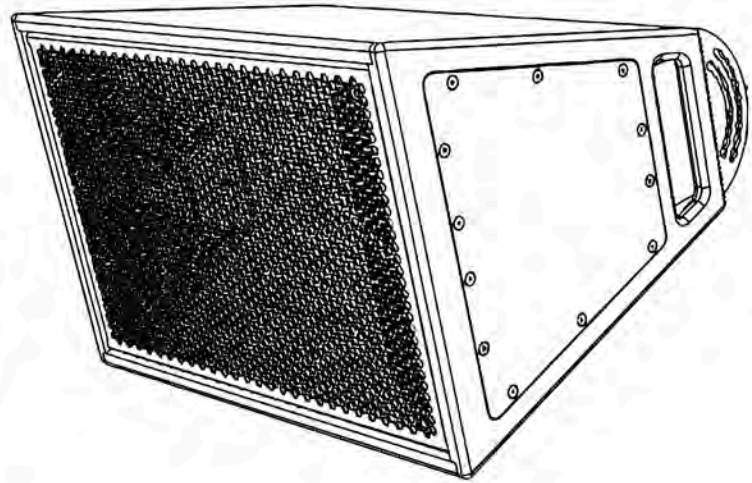


1
SOUND



CONTOUR CT28 WALL & CEILING INSTALLATION

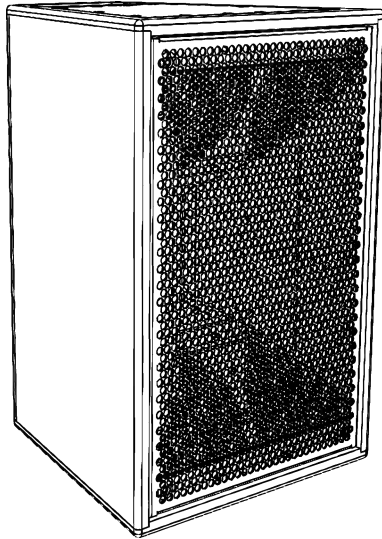
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Chapter 1. Contour CT28

Horn-Loaded Point Source Speaker Enclosure

Figure 1. Contour CT28



The Contour CT28 is a compact, 3-way passive loudspeaker capable of delivering a maximum SPL of 140 dB. This is a powerful speaker that sounds intimate at lower volumes.

The Contour combines two 8" low-frequency drivers and a coaxial 4" + 2.5" mid-high compression driver in a horn-loaded point-source enclosure that delivers a controlled 100° x 50° coverage down to 200 Hz, with a bass response down to 70 Hz. It is a medium-to-long throw point-source that maintains its directivity in the far field.

With its compact format coupled with its versatile accessories, this loudspeaker is useful for small to large installations and live production audio.

CT28 Specifications

Table 1. CT28 Specifications

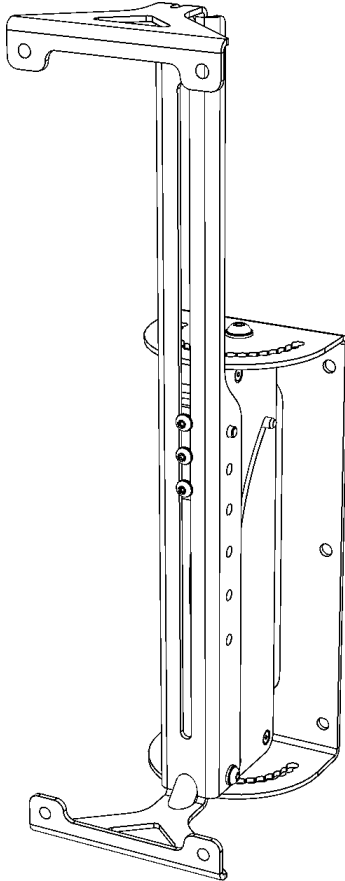
Description	Passive, compact, 3-way loudspeaker, lightweight horn-loaded point source
Bandwidth	70 Hz - 18 kHz (-6 dB preset dependent)
Max SPL	140 dB @ 1 m with preset
Power	1780 W (program)
Directivity	100° x 50°
Elements	(2) 8" low frequency drivers, (1) 4" + 2.5" coaxial mid-high compression driver
Impedance	8 Ω
Connectors	(2) NL4 audio input and link, (1) Neutrik NDL dummyPLUG
IP Rating	IP55 indoor/outdoor and salt water resistant
Rigging	(8) M5 points, (4) M6 points
Weight	44 lbs / 20 kg
Construction	Construction: Finland birch plywood (urea glue), matte salt and UV resistant polyurea coating, 316 stainless steel and aluminum
Dimensions	13.6" (345 mm) x 13.6" (345 mm) x 20" (510 mm)
Colors	Stocking black and white, custom colors and fabrics available
Accessories	CT28 Horizontal Mounting Bracket, CT28 Angle Bar, CT28 Wall Bracket, CT28 Fly Bar, CT28 Rigging System, Tube Mount, Active Speaker Stand and Tubes, removable magnetic front grille [included]

Chapter 2. Accessories

CT28 Wall Bracket

Wall-mount bracket with tilt and pan adjustment

Figure 2. CT28 Wall Bracket



This bracket attaches to the rear of the Contour CT28 enclosure and mounts to a wall. It allows for variable positioning on both the horizontal and vertical axes. The vertical positioning can be tilted down to 25°. The bracket is made from stainless steel 316, or galvanized zinc plated steel with black or white powder coating.

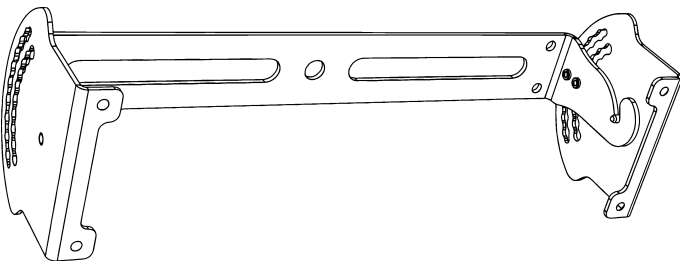
The kit includes:

- The fully assembled Wall Bracket

CT28 Horizontal Mounting Bracket

Wall- or ceiling-mount bracket with tilt adjustment

Figure 3. Horizontal Mounting Bracket



This bracket is for horizontal installation of a CT28 on a wall, allowing for vertical aiming on a wall. It can also be used for ceiling mounting, facilitating both vertical and horizontal positioning. The bracket is made from stainless steel 316, or galvanized zinc plated steel with black or white powder coating.

The bracket can be used together with the CT28 Angle Bar, allowing CT28 to be positioned flush to the wall or ceiling, or extend the tilt up to a maximum of 75° away from the wall or ceiling.

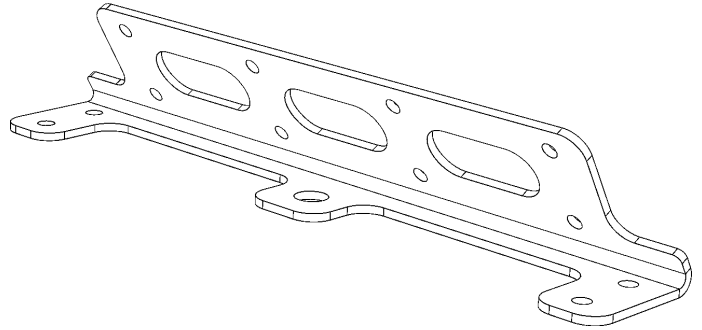
The kit includes:

- The fully assembled Horizontal Bracket

CT28 Angle Bar

Angled extension for the Horizontal Mounting Bracket

Figure 4. The CT28 Angle Bar

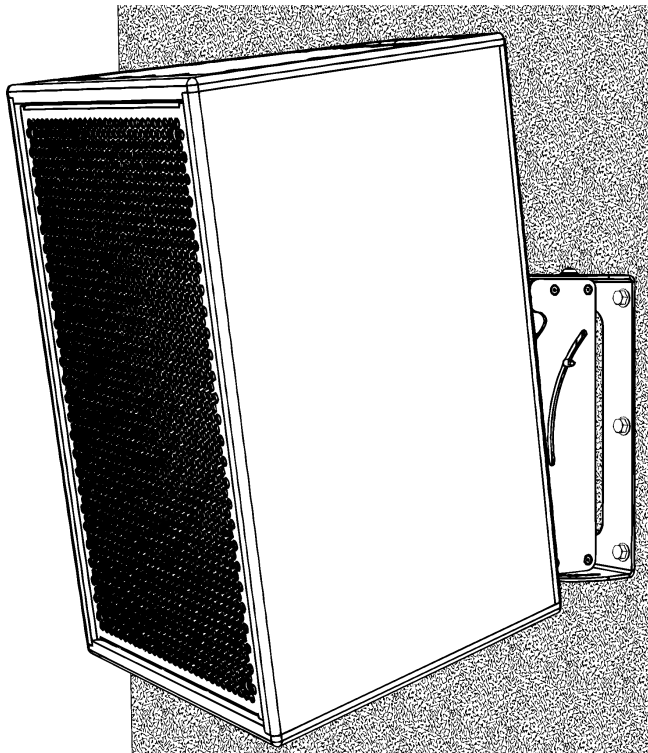


The Angle Bar attaches to the Horizontal Bracket in order to extend the tilt angle. It can either extend the tilt angle so the CT28 is flush to the wall or the ceiling to which it is mounted, or it can allow a range of tilt angle from 15° to 75° away from the wall or ceiling. The bar is made from stainless steel 316, or galvanized zinc plated steel with black or white powder coating.

The kit includes:

- The angle bar
- 4 × M8×20 bolts
- 4 × M8 stainless steel lock nuts

Chapter 3. Installing CT28 on the Wall Bracket



Critical information

Attention: This wall-mount bracket is intended for installation by qualified professionals.

Notice: Please read these instructions carefully and completely before attempting installation.

WARNING



Improper installation or suspension of any heavy load can result in death or serious injury to persons, as well as damage to property.

It is the responsibility of the installation personnel to verify and guaranty the reliability and safety of the installation.

Notice: This product must be installed in compliance with all applicable local, state and national regulatory provisions. The responsibility rests with the installer to verify that the installation is carried out in accordance with any applicable legislation.

Important: The installer must assess the appropriate stability and sturdiness of the mounting surface. In the case of wall-mount and ceiling-mount brackets, this includes, but is not limited to verifying the positions of suitable studs in the case of drywall mounts, hollow points in concrete block or solid concrete, as well as the presence and vicinity of electrical wiring or plumbing.

Restriction: Only hardware and accessories included with the product or specified by 1 Sound should be used for its installation.

Restriction: Do not modify or alter the loudspeaker or any accessory. Any modification by the user or installer could render the product or the installation unsafe.

Restriction: Do not install a loudspeaker or any accessory near any open flame or heat source.

Products, accessories and tools required

To install a CT28 enclosure permanently on a wall or surface using the Horizontal Mounting Bracket, you will need the following:

- A CT28 loudspeaker enclosure
- The CT28 Wall Bracket kit
- An appropriate power drill and bit for the installation surface material
- A 4 mm hex driver and/or a 4 mm hex wrench (Allen)
- A 5 mm hex wrench (Allen)
- A 3 mm hex wrench (Allen)
- Medium-duty mounting screws or bolts appropriate to the mounting surface (coach screws for drywall studs, concrete screw anchors for concrete or masonry, etc.); screws and bolts should have a flanged head or a coupled washer \varnothing 14-16 mm in order to retain the mounting plate
- Appropriate tools for securing the aforementioned fasteners (power screwdriver etc.)
- A Torque wrench
- Optional: a short two-leg steel wire rope bridle, 2 x M5 lifting eye bolt (shouldered type); eye bolt spanner or driver
- **Recommended:** pencil or marker, spirit level, stud finder

Procedures

Disassembling the CT28 Wall Bracket

The Wall Bracket ships fully assembled, but to facilitate installation, it should first be separated into two parts, the bracket arm with the tilt mechanism, and the wall-mounted yoke with the pan-fixing mechanism. Before disassembly, be sure to note the proper interlocking configuration of the Bracket; this will remove doubts when it is time to reassemble the bracket.

Figure 5. The CT28 Wall Bracket.

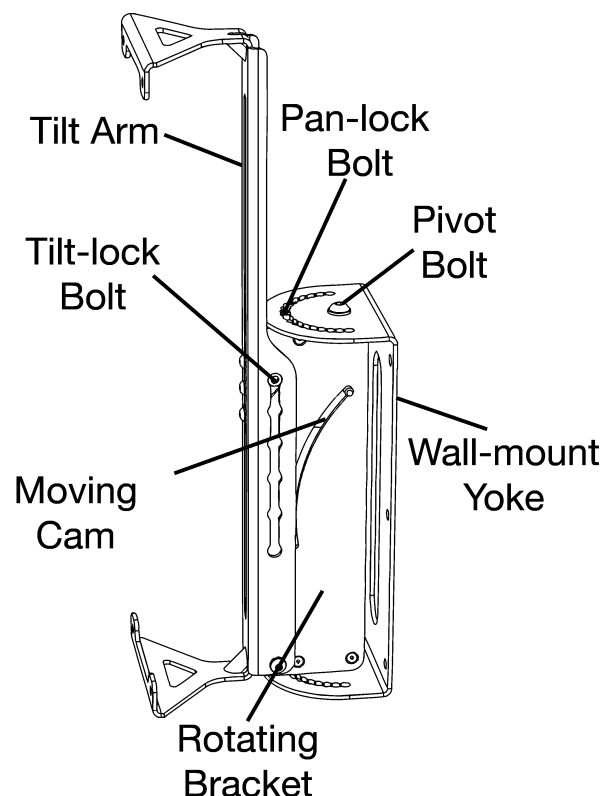


Figure 6. Removing the bottom M4 pan-lock bolt.

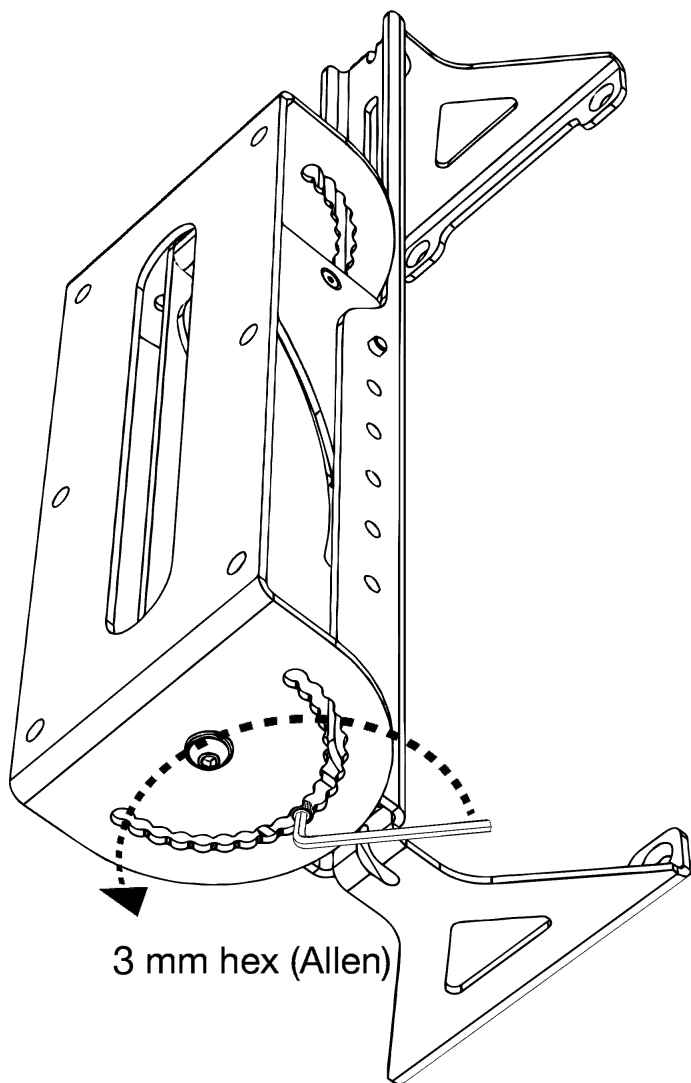
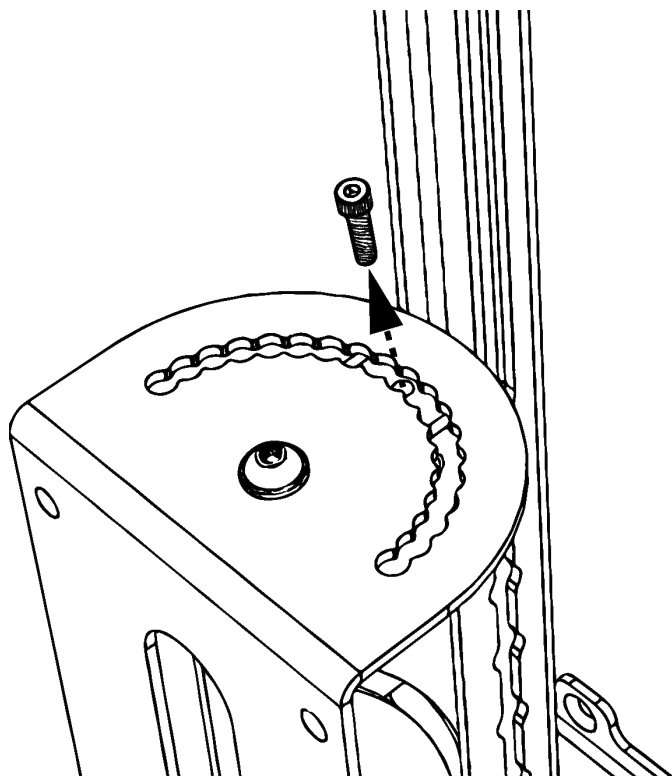
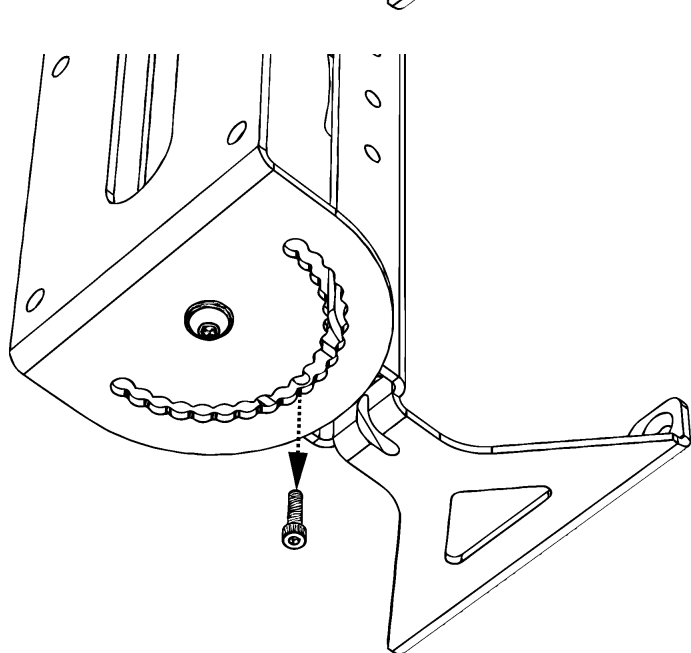
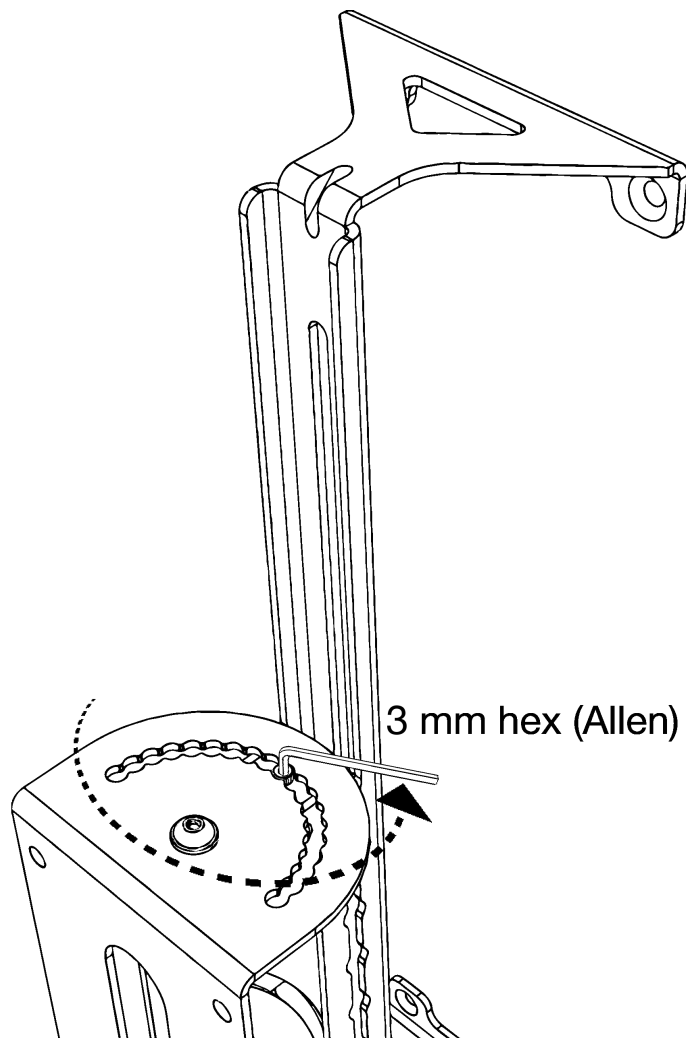


Figure 7. Removing the top M4 pan-lock bolt.



- Use a 3 mm hex wrench to loosen and remove the M4x16 mm pan-lock bolt from the bottom of the bracket. Be sure to keep this bolt, as it will be necessary to fix the pan angle when the installation is completed.

- Repeat the previous step on the top end of the bracket.

Figure 8. Removing the bottom M8 pivot bolt.

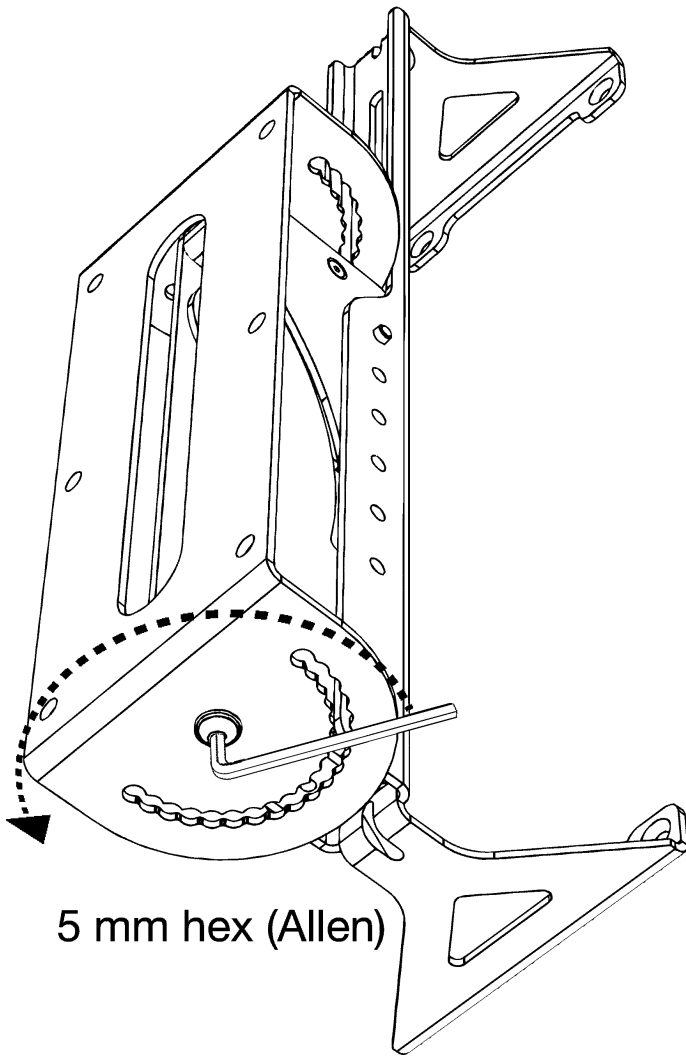
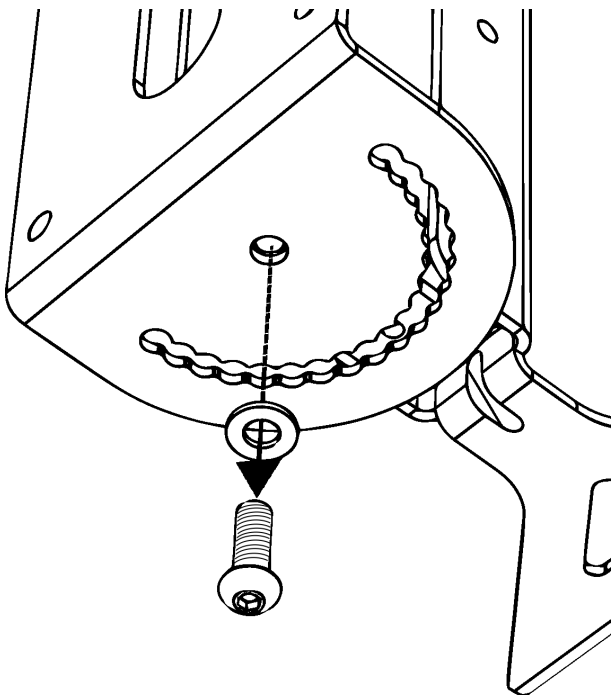
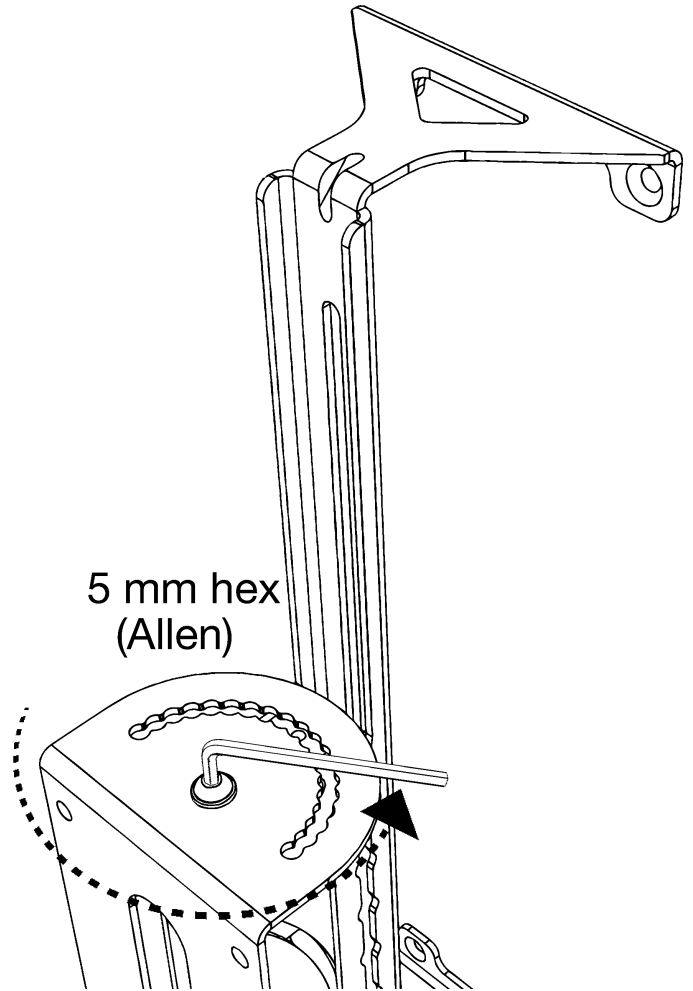
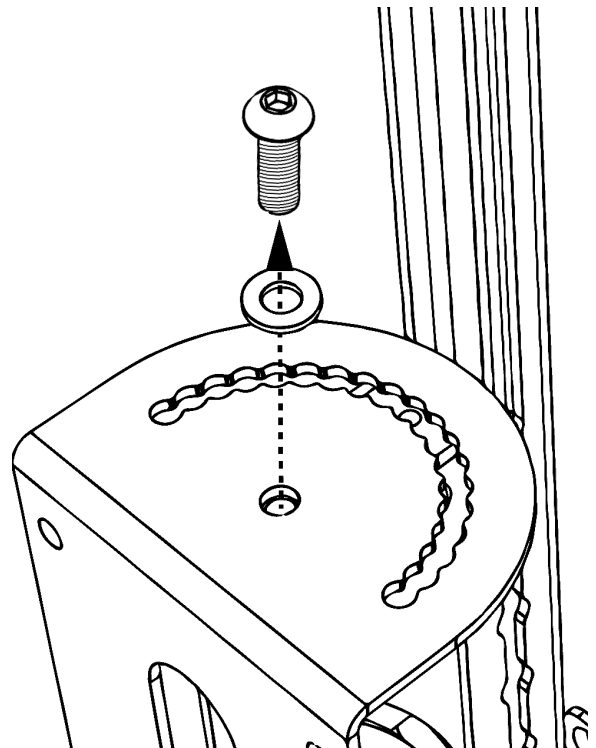


Figure 9. Removing the top M8 pivot bolt.

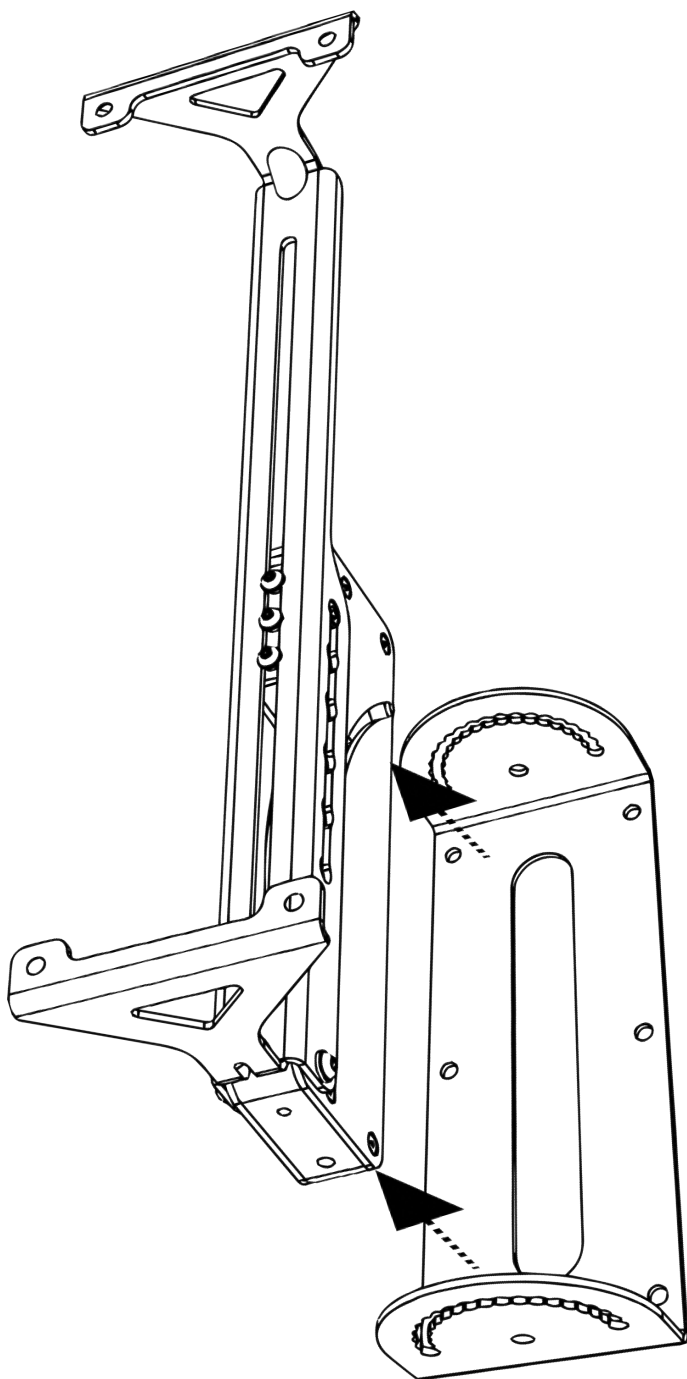


- Then use a 5 mm hex wrench to remove the M8x25 mm pivot bolt and its washer from the top of the bracket. Again, be sure to keep these bolts and washers, as they will be necessary to complete the installation.



- Likewise, remove the M8x25 mm pivot bolt and its washer from the bottom of the bracket, and keep them for the installation.

Figure 10. Separating the tilt assembly from the wall yoke.



- The tilt assembly should come away from the yoke.


 **Note:** Before mounting the tilt assembly to the CT28 enclosure, it is recommended that you unlock the tilt mechanism to ensure that it moves properly.

Figure 11. Loosening the tilt-lock bolt.

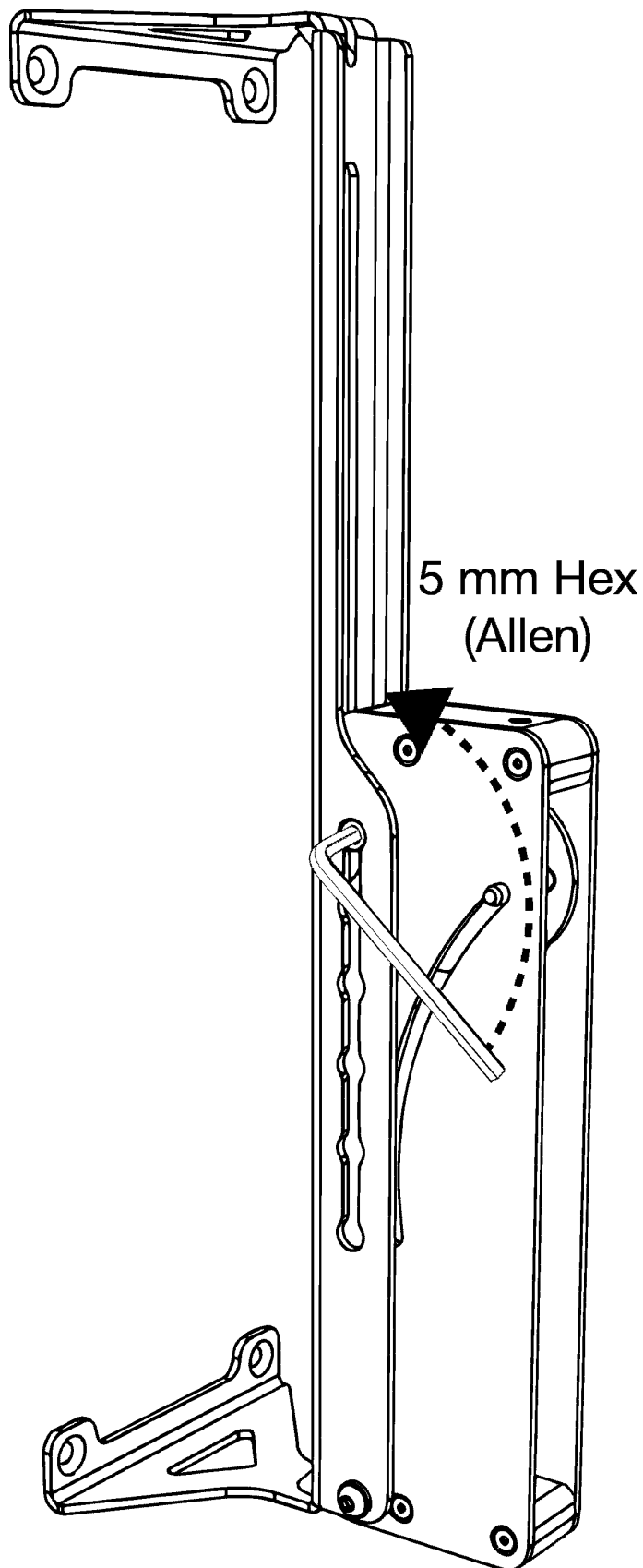


Figure 12. Removing the tilt-lock bolt.

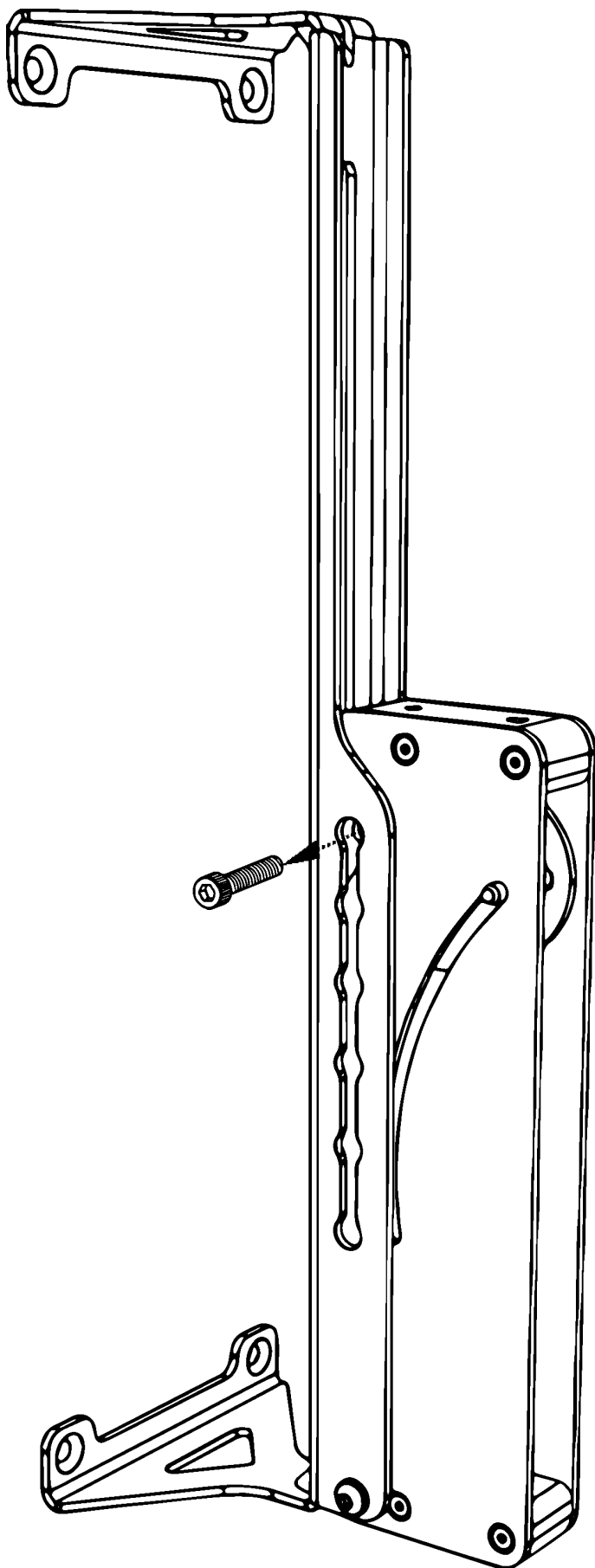
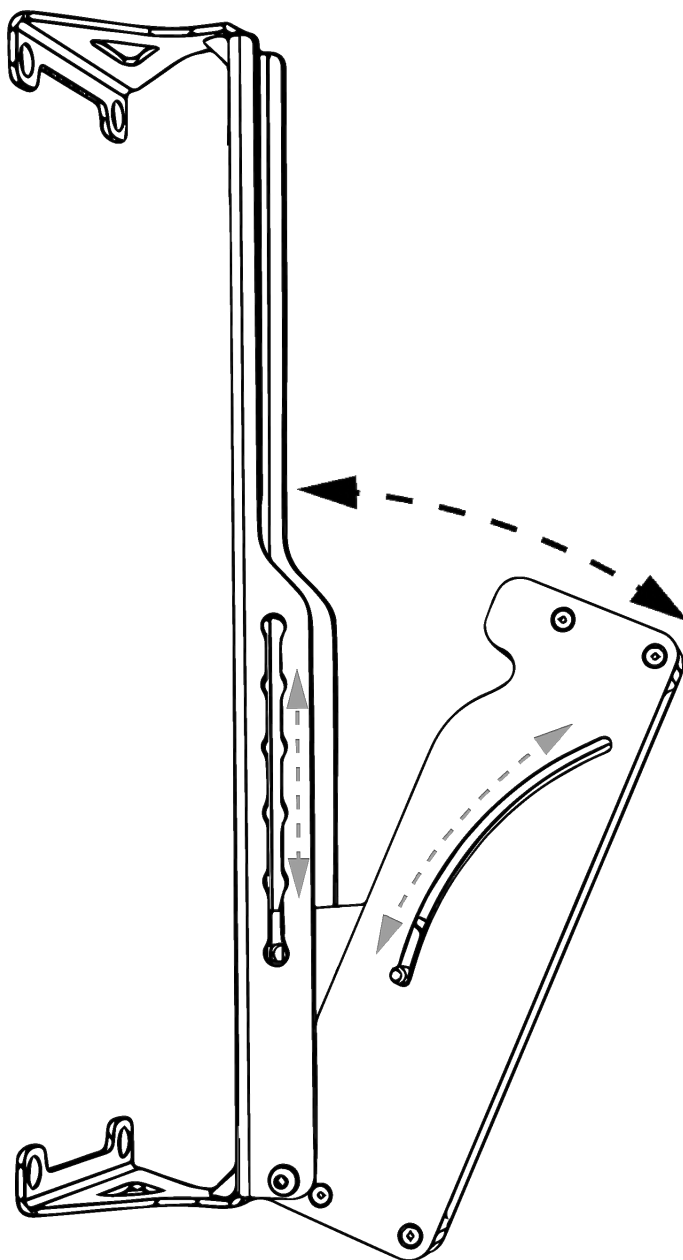


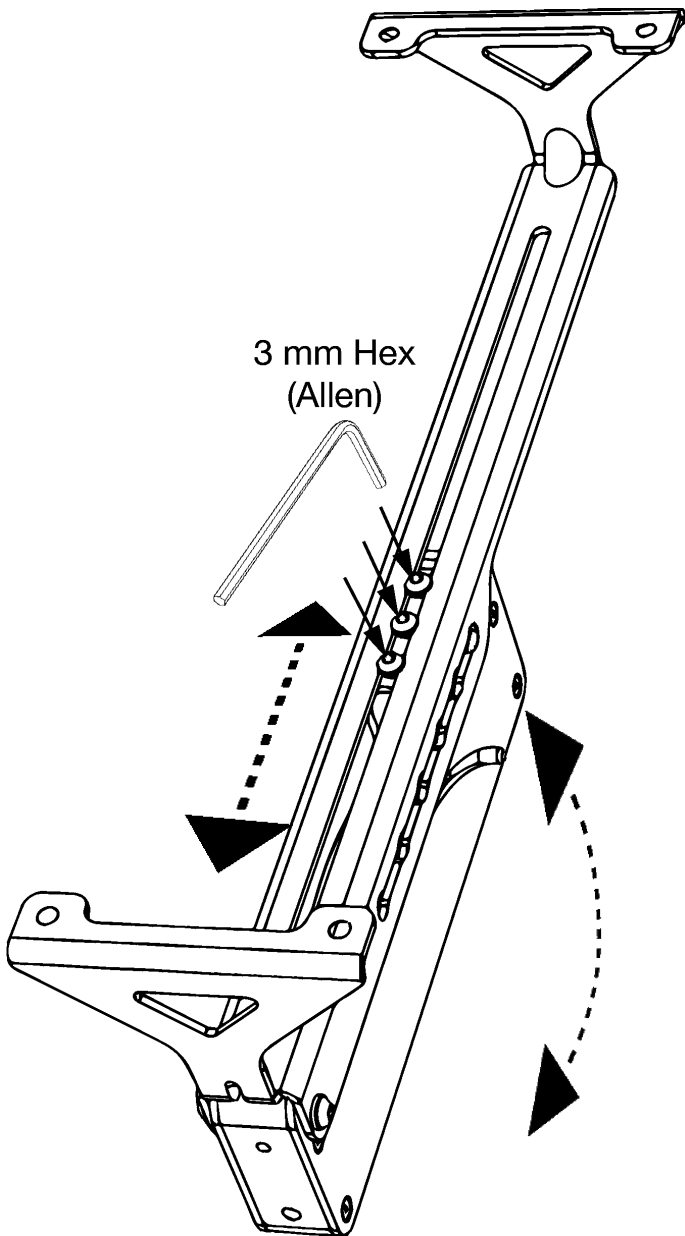
Figure 13. Verifying the movements of the tilt mechanism.



- First, loosen and remove the tilt-lock bolt using a 5 mm hex wrench.

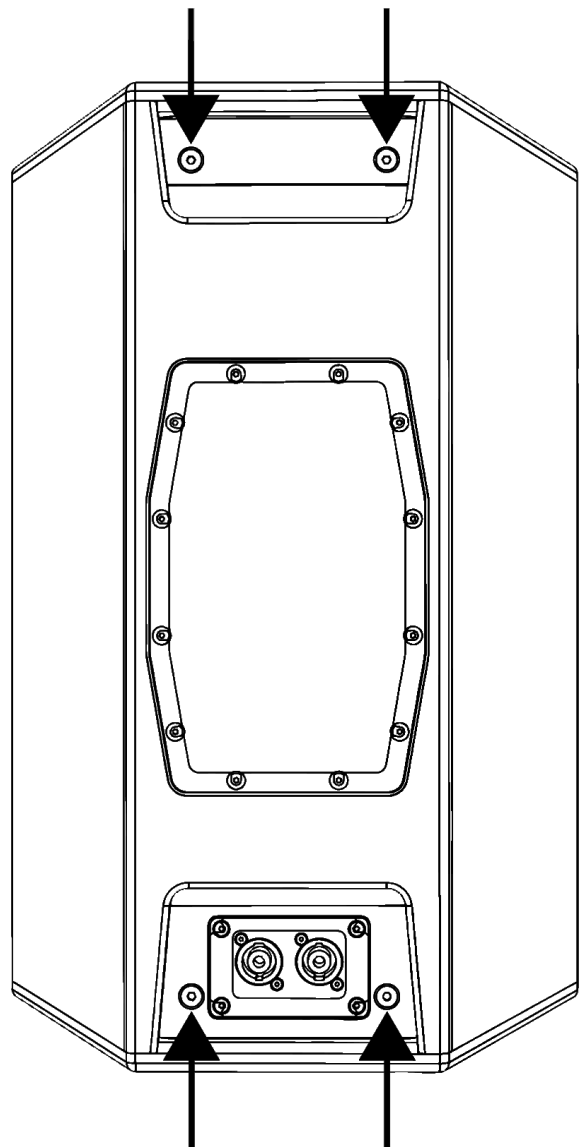
- Swing down the tilt arm to verify the free movement of the components of the tilt mechanism. As the rotating bracket and the tilt arm move with respect to each other, the moving cam should slide up and down the tilt arm and within the rotating bracket with negligible resistance. IF THE MECHANISM MOVES WITHOUT BINDING, [PROCEED DIRECTLY TO INSTALLING THE ASSEMBLY ON THE CT28.](#) (on page 10)
- If the tilt arm does not move, first inspect the entire mechanism to verify that no components seem damaged or bent. If it does appear damaged in some way, replace the entire mount immediately.

Figure 14. Verifying the movement of the cam in the tilt arm.



- If there appears to be no damage, and the bracket continues to bind, use a 3 mm hex wrench to verify that the three screws that hold the moving cam in the guide slot on the inside of tilt arm are not too loose or not overly tightened. **DO NOT REMOVE THESE SCREWS**, but only verify that they are tight enough to keep the cam in the guide without rattling, but not so tight as to impede the movement of the cam in the slot.
- If the mechanism does not move freely with negligible resistance, the entire mount should be replaced.

Figure 15. The rear panel of the CT28 with the mounting points for the bracket indicated.



- Lay the enclosure on its front grille, taking whatever necessary precautions to avoid damaging the finish of the cabinet or the grille.

Installing the Tilt Arm assembly on the CT28

Once the Wall Bracket tilt assembly has been separated from the wall-mounted yoke, it can be easily attached to the CT28 enclosure.

Figure 16. Removing the M6 mounting bolts from the top of CT28.

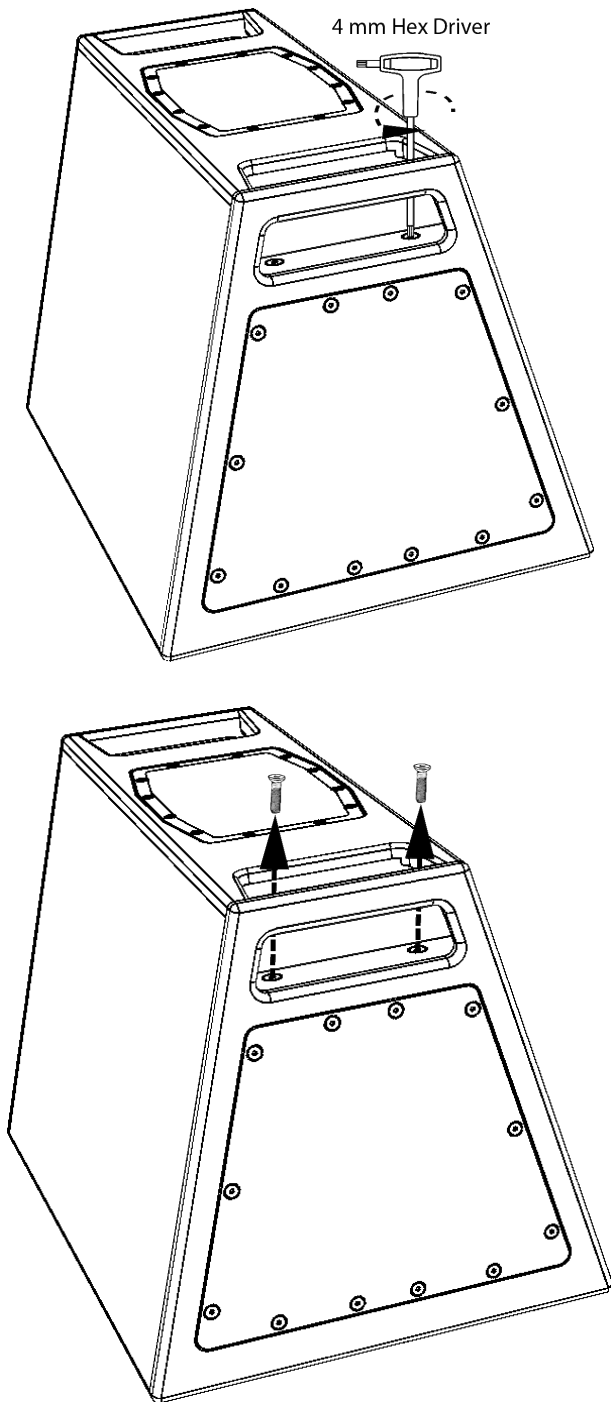
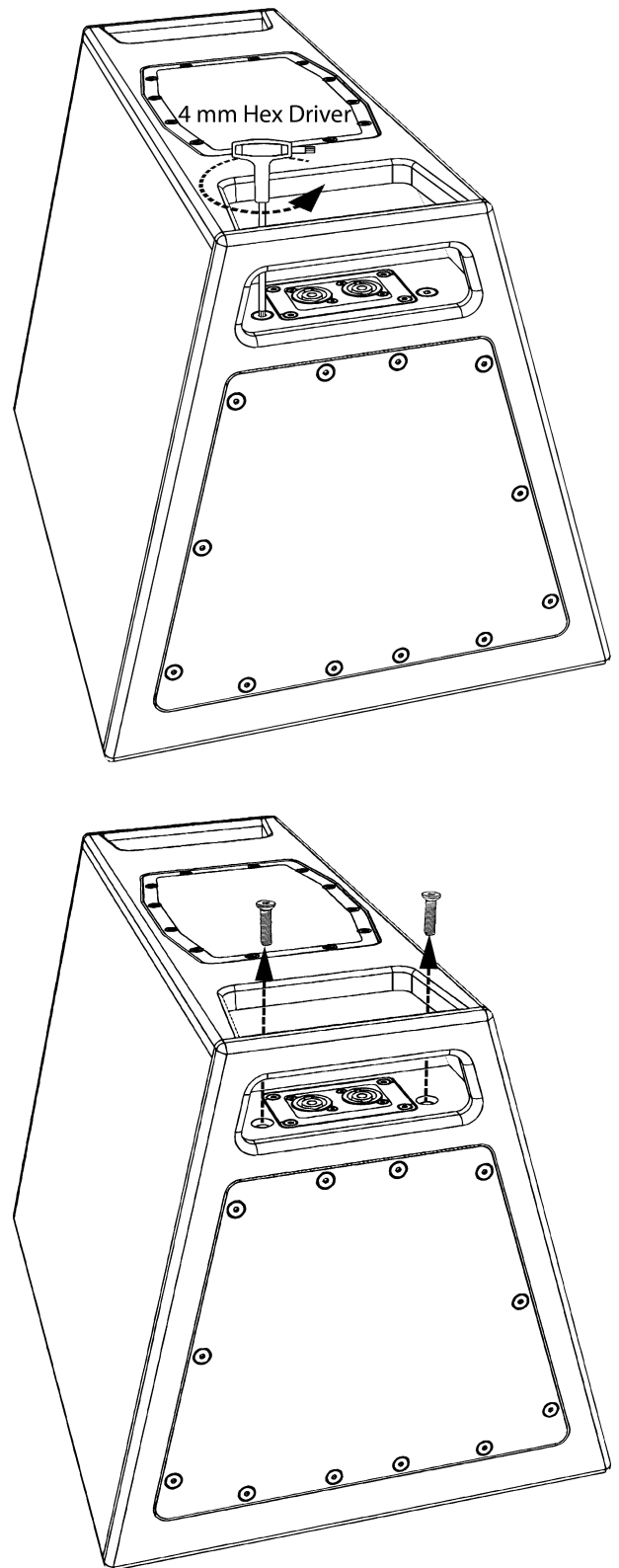


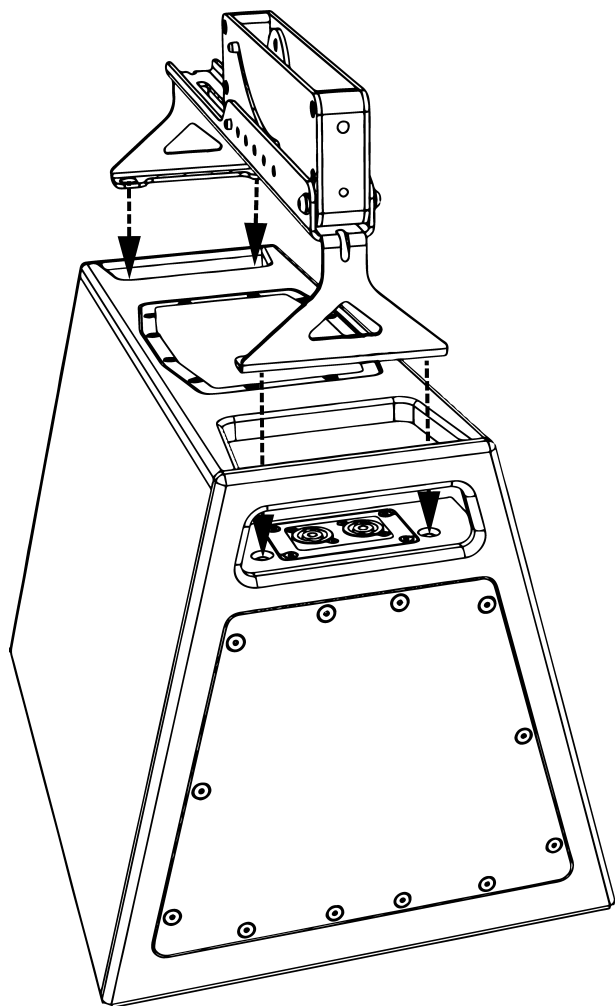
Figure 17. Removing the M6 bolts from the bottom (connector end) of the CT28



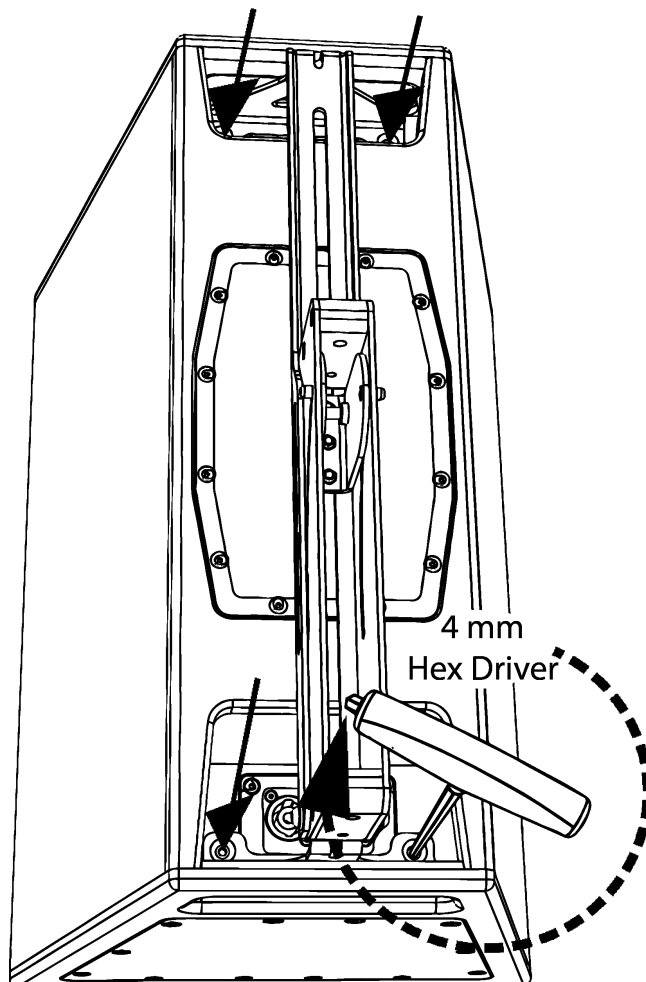
- Using a 4 mm hex wrench or hex driver, remove the two M6 x 25 mm screws from the top rear of the enclosure, inside the recess. Keep these, as they will be used to mount the bracket.

- Repeat the previous step on the bottom (connector end) rear of the enclosure.

Figure 18. Aligning the tilt arm and M6 bolts with the M6 rigging points on the CT28



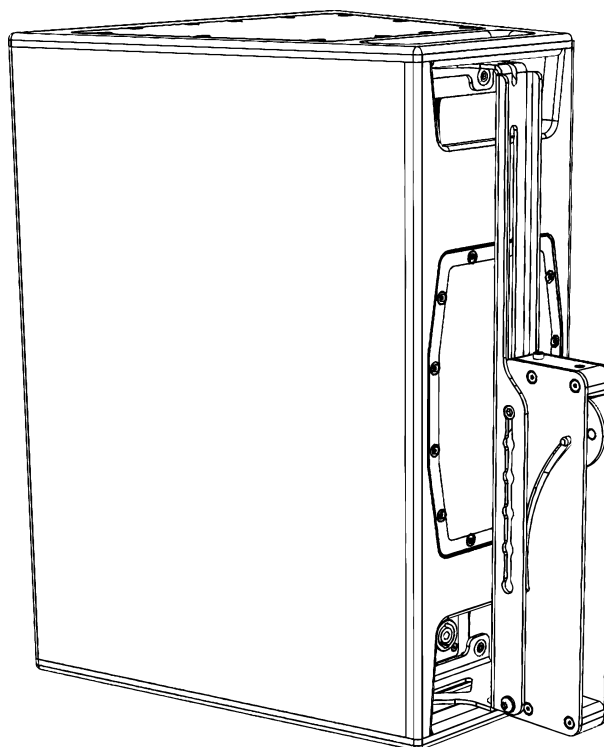
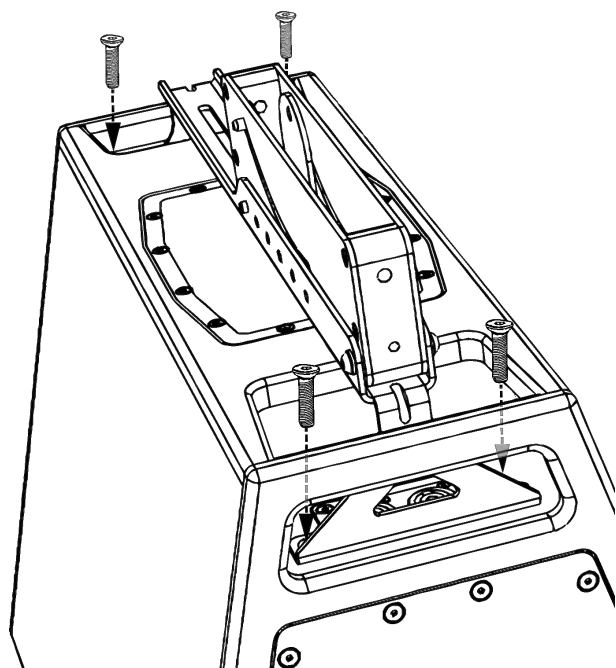
- Align the four holes in the mounting ears of the tilt arm with the M6 rigging points from which the screws have been removed.



! **Important:** For permanent or semi-permanent installation, the use of medium-strength thread-locking compound is recommended on all user-installed screws.

- Thread the four M6 x 25 mm screws into the four rigging points through the holes in the mounting ears of the tilt arm.

- Insert the two mounting ears of the tilt arm into the recesses in the rear of the speaker enclosure, oriented so that the tilt mechanism is towards the bottom (connector end) of the CT28.



- Firmly tighten these four screws using a 4 mm hex driver.

Fixing the Tilt Angle

It is necessary to fix the desired tilt angle before installing the tilt arm assembly on the CT28 enclosure. the tilt angle of the Wall Bracket can be adjusted from 0° (with the rear of the speaker cabinet parallel to the wall) to -25°, in steps of 5°.

Before proceeding with the installation, be sure to verify the available horizontal and vertical space for the speaker enclosure with the bracket attached, referring to the figures below.

Figure 19. The necessary vertical and forward clearance for the CT28 on the Wall Bracket (perpendicular to wall).

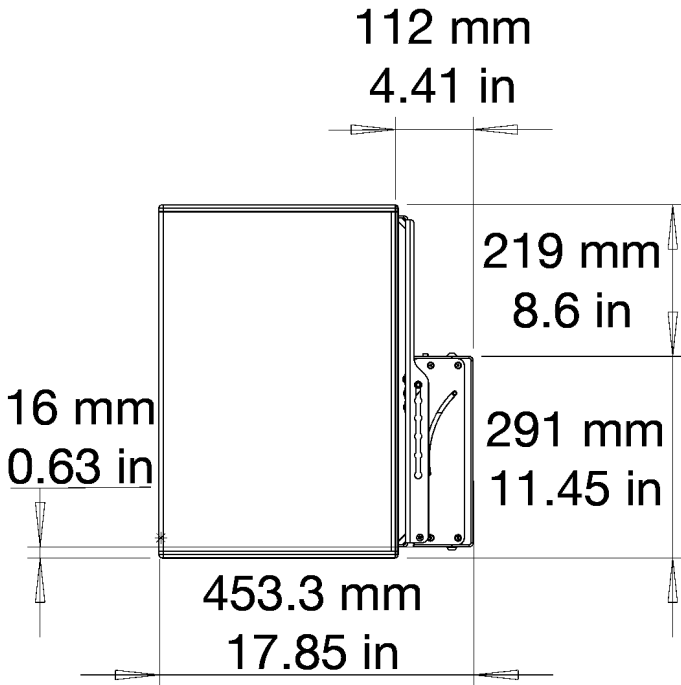


Figure 20. The necessary vertical and forward clearance for the CT28 on the Wall Bracket (maximum tilt).

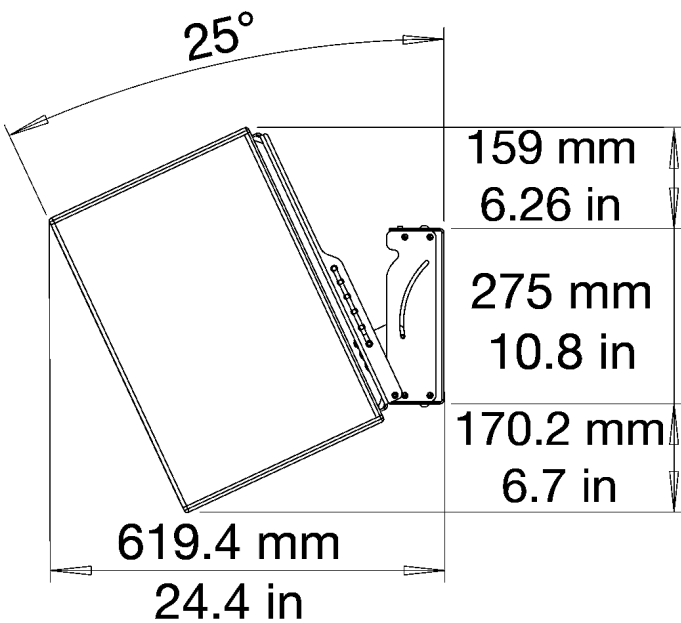
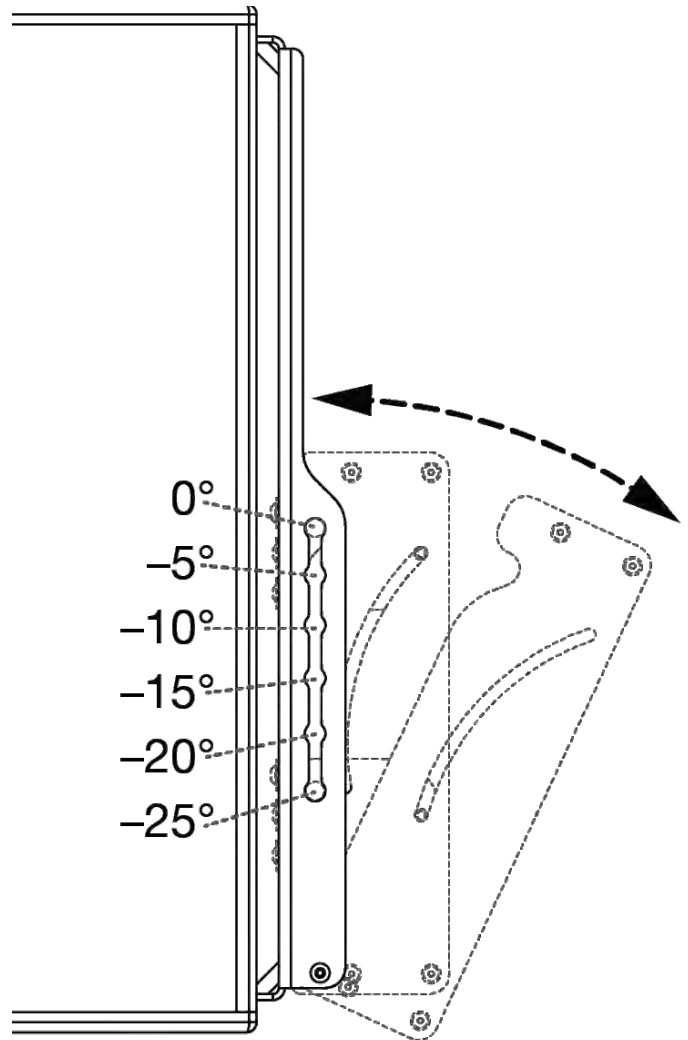


Figure 21. The holes corresponding to the selectable tilt angles.



(0° = perpendicular to wall)

- Tilt the rotating bracket out away from the tilt arm to align the holes that correspond to the desired tilt angle. The moving cam should slide smoothly down the tilt arm to align with the various holes.

Figure 22. Re-inserting the tilt-locking bolt in the holes corresponding to the selected angle (-25° shown).

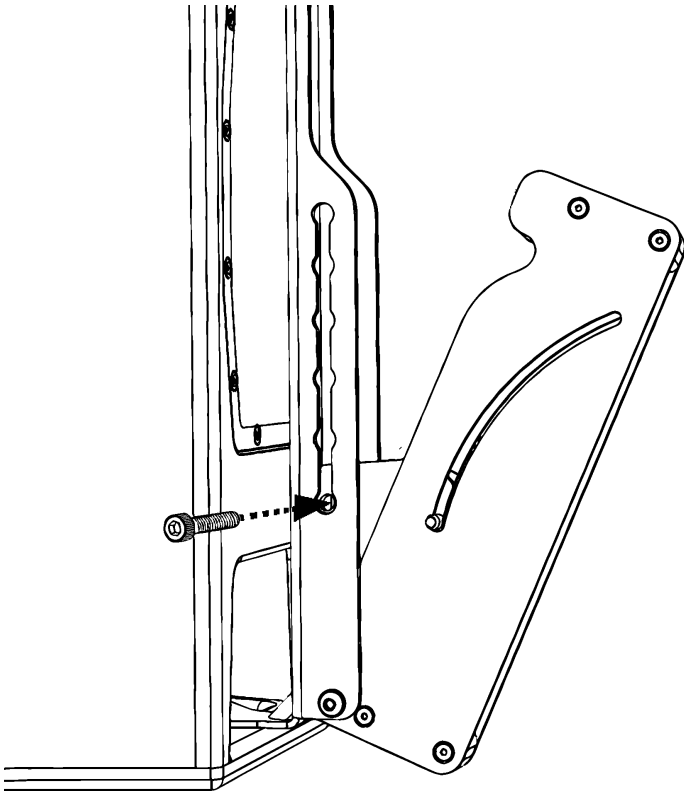
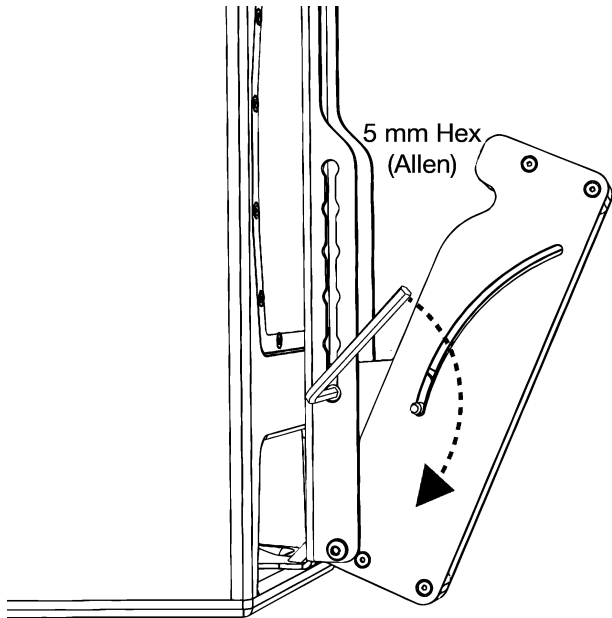


Figure 23. Tightening the tilt-locking bolt.



- Re-insert the tilt-locking bolt and thread it into through the tilt arm and the moving cam and tighten it firmly using the 5 mm hex wrench.

Installing redundant safety anchors

! Attention: When correctly installed, the Wall Bracket and the Horizontal Mounting Bracket are designed to safely support the CT28 speaker enclosure under normal conditions. However, connection to an external anchor point using a steel wire rope safety bridle is strongly recommended in any installation where people could pass beneath or near the loudspeakers and may be required by local or national codes in installations in public places. If you intend to install a secondary safety bridle anchored directly to the enclosure, it is recommended that you use two of

! the M5 rigging points on the top of the CT28 enclosure for this purpose.

In most cases of wall mounting a single CT28 enclosure, the use of a steel wire rope safety bridle will provide sufficient redundant safety. Carefully review the third-party manufacturer's documentation to assure that the bridle and all its components are certified for the proper Safe Working Load with the required Factor of Safety. The length of the bridle and termination on the opposite end will obviously depend on the requirements of the structure to which it will be anchored.

It will be necessary to install two eye bolts in the rear M5 rigging points in the place of the M5 x 25 mm screw supplied with the speaker enclosure. Only a forged steel eye bolt with a collar or shoulder, certified for the proper Safe Working Load with the required Factor of Safety at its minimum load angle can be used.

! Important: For permanent or semi-permanent installation, the use of medium-strength thread-locking compound is recommended on all user-installed screws.

Figure 24. Threaded inserts usable for safety anchors on the top or bottom of CT28.

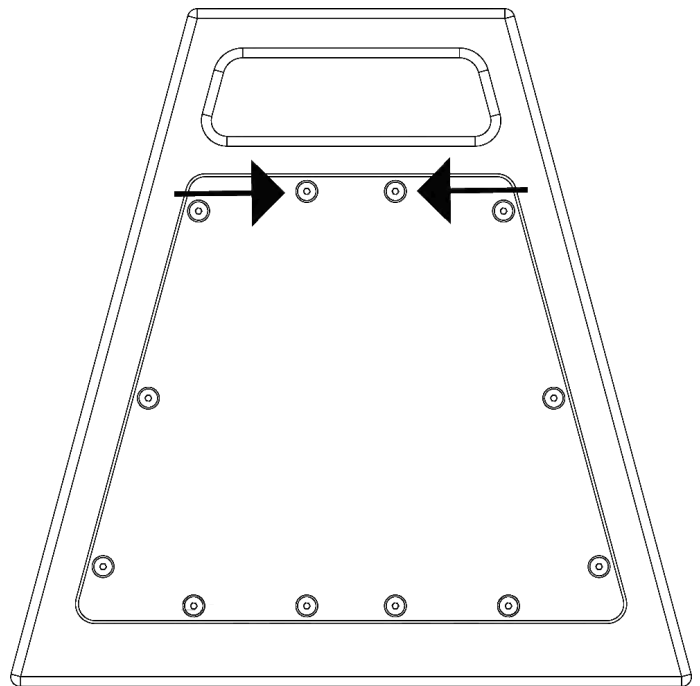


Figure 25. M5 Eye bolt measurement requirements.

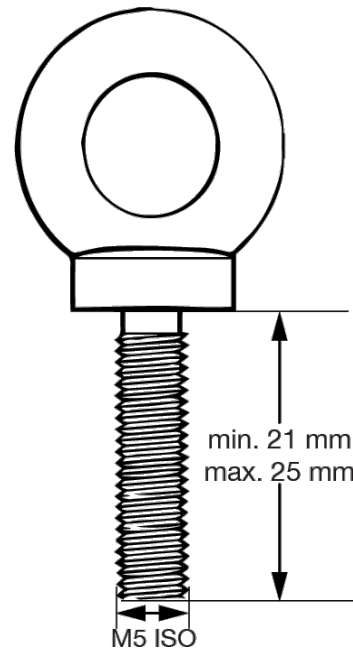
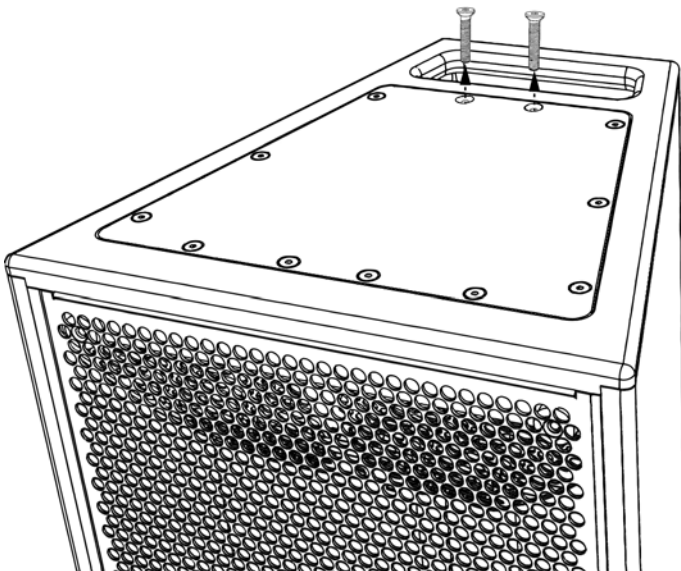
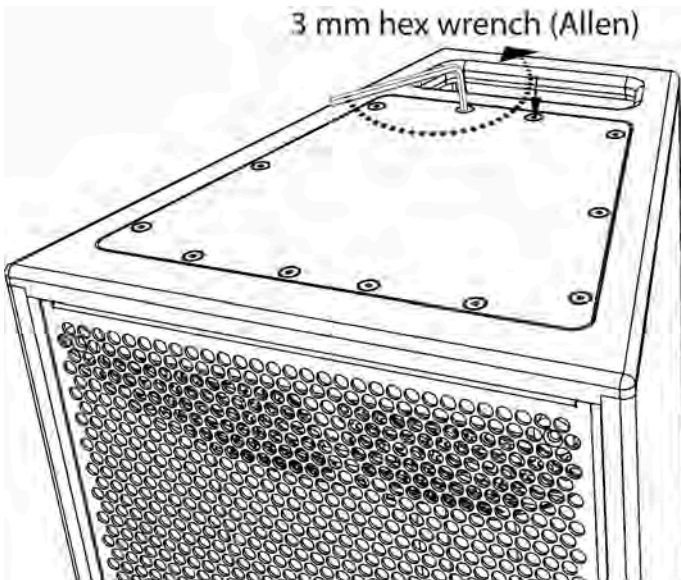
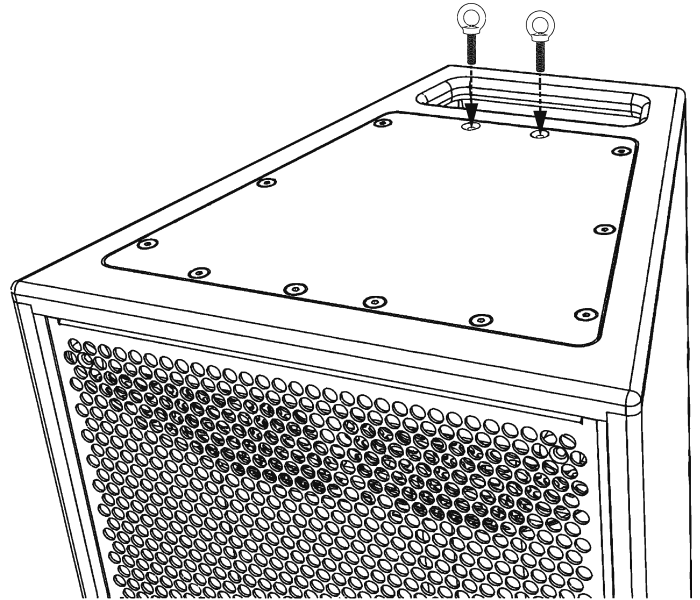


Figure 26. Removing the M5x25 mm countersunk screws for the installation of safety anchors.



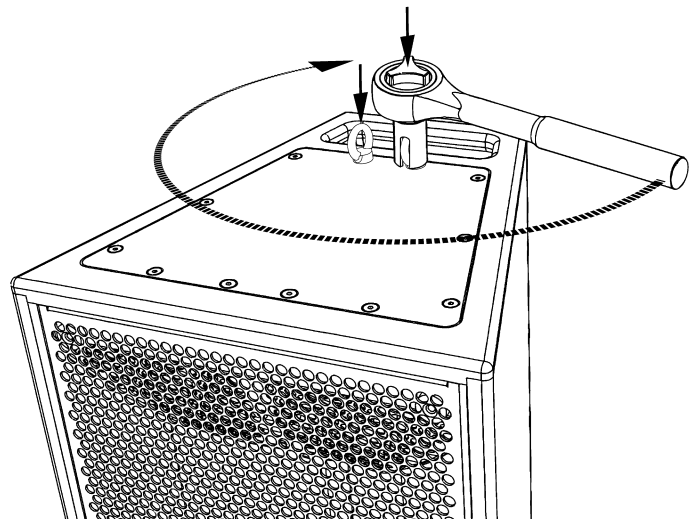
- Using a 3 mm hex wrench, remove the two rear M5x25 mm countersunk screws from the top of the CT28 enclosure.

Figure 27. Inserting the M5 eye bolts in the rigging points on the top of the CT28 enclosure.



- Thread the M5 eye bolts into the rigging points from which the screws were removed and tighten them with your fingers.

Figure 28. Tightening the eye bolts.



- Using a slotted socket or eye bolt spanner, firmly tighten the eye bolts. Once seated, the eye bolts should be aligned with the openings perpendicular to the orientation of the enclosure (see illustration).

Installing the Wall Bracket to the wall

The mounting plate of the CT28 Wall Bracket must be firmly fitted to the wall or surface before mounting and fixing the pan angle the speaker enclosure.

⚠ WARNING



Before beginning this installation, it is necessary to ascertain the construction type, load-bearing capability and durability of the wall or surface. Bear in mind that the CT28 speaker enclosure weighs 20 kg (44 lb), and can be positioned in such a way as to extend the mass of the enclosure out to perpendicular from the mounting surface. Therefore the increased forces imposed on the fixings and wall must be taken into account.

Careful thought must be given to ensure that the wall structure is strong enough to safely support the total load with the proper Factor of Safety required by local, state and national norms or legislation. If the facility or venue is open to the public and the mount is within reach of the public, the installer should take into consideration possible miscreant behavior or tampering when determining the appropriate factor of safety. If the wall structure is deemed incapable of supporting the load, consideration should be given to strengthening and/or stabilizing the wall or adopting an alternative method of installation. In the case of any doubt, architects, structural engineers or other specialists should be consulted.

⚠ WARNING



Risk of Electric Shock
Drilling into hidden electrical wiring within walls can result in serious injury or death, fires and property damage.

BE AWARE OF WHAT YOU ARE DRILLING INTO. Before drilling holes in any wall or surface, make sure that it does not conceal electrical wiring or conduits. Consult the wiring diagram of the facility or venue and check for nearby outlets, switches or junction boxes that could indicate concealed wiring, be it electrical mains, network, telephone or other infrastructure.

⚠ CAUTION



Use Proper Eye, Ear, Head, Foot and Hand Protection During Installation

This task requires the use of power tools and potentially elevated loads.

All local and national norms, regulations and guidelines must be followed during the installation procedures, including the use of proper protective clothing and gear.

Notice: Due to the wide variety of building materials and construction methods that can be encountered in an installation, 1 Sound can only provide general recommendations for installing the Wall Bracket. It is the responsibility of the installer to assess the appropriate stability and sturdiness of the installation. This includes verifying the positions of suitable studs, posts or framing in the case of drywall mounts, verifying hollow points in masonry, concrete block or solid concrete, and utilizing anchoring methods and hardware appropriate for safe installation of the equipment according to the construction material and depth of the mounting surface. The responsibility rests with the installer to verify that the installation is carried out in accordance with any applicable legislation. In case of any doubt, architects, structural engineers or other specialists should be consulted.

Figure 29. The wall-mount plate of the CT28 Wall Bracket

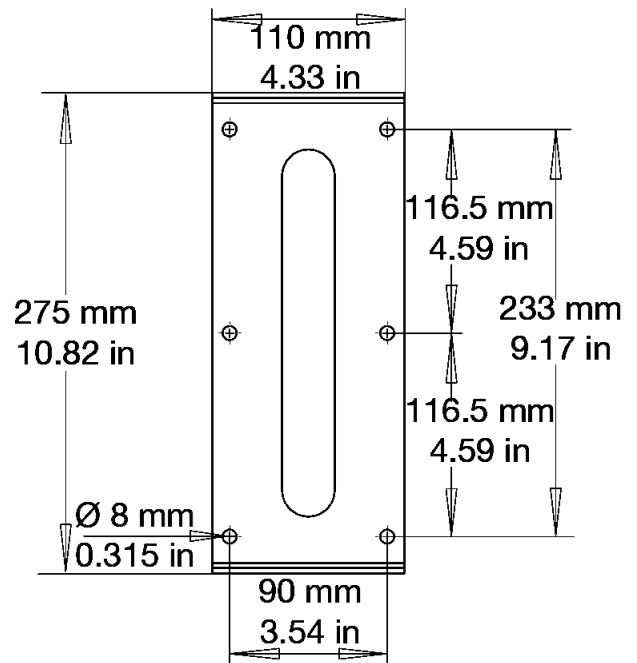
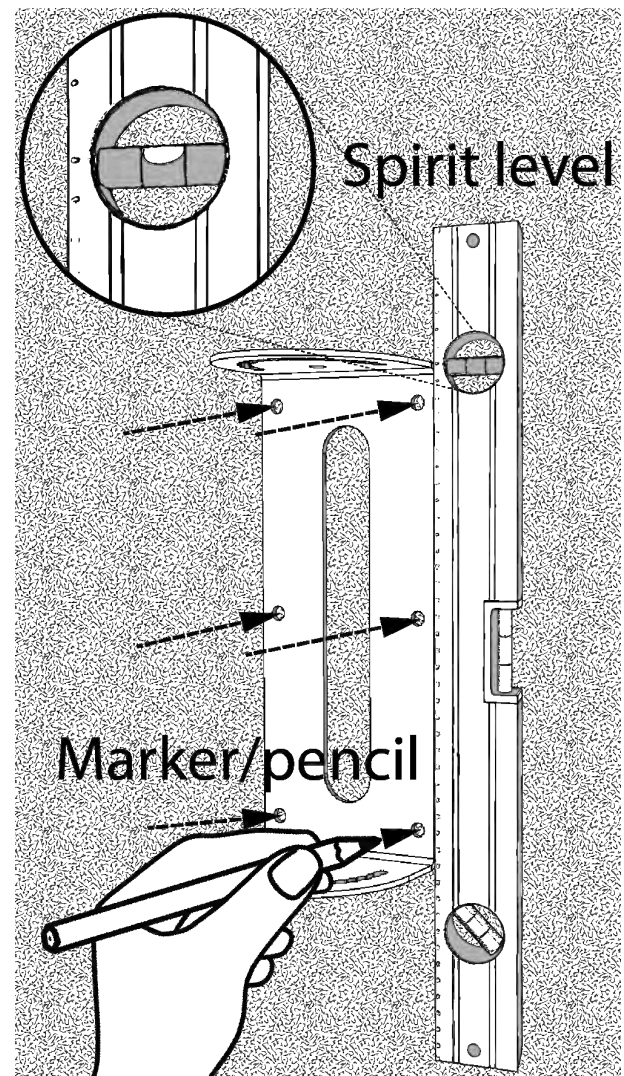
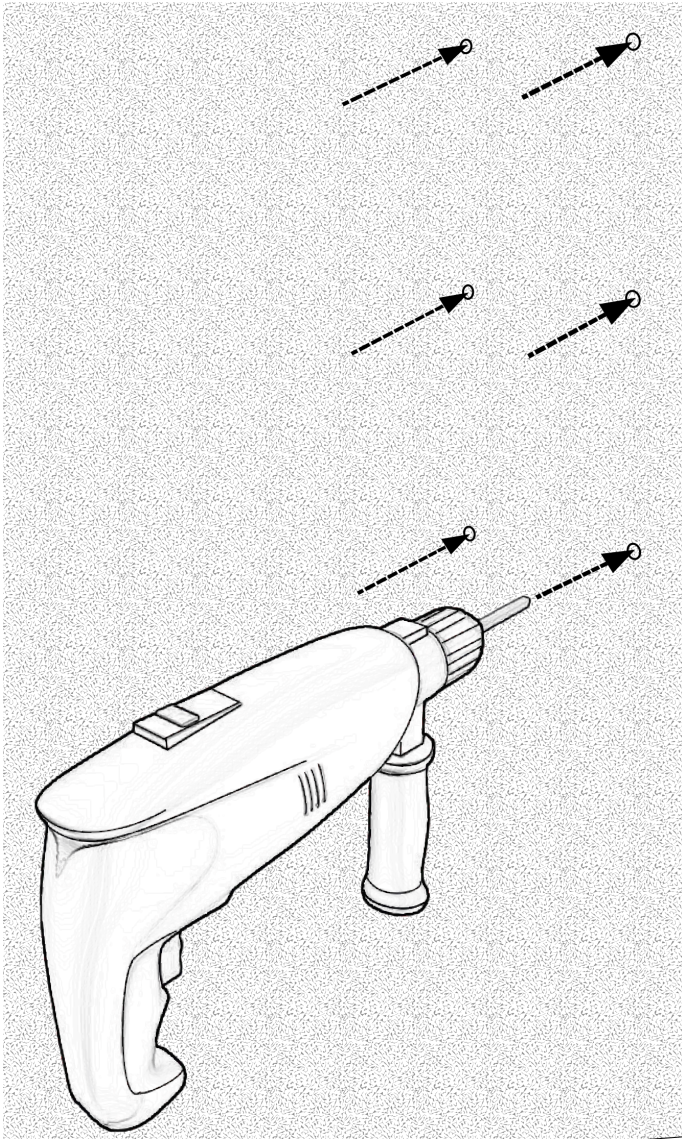


Figure 30. Marking the mounting surface for drilling.



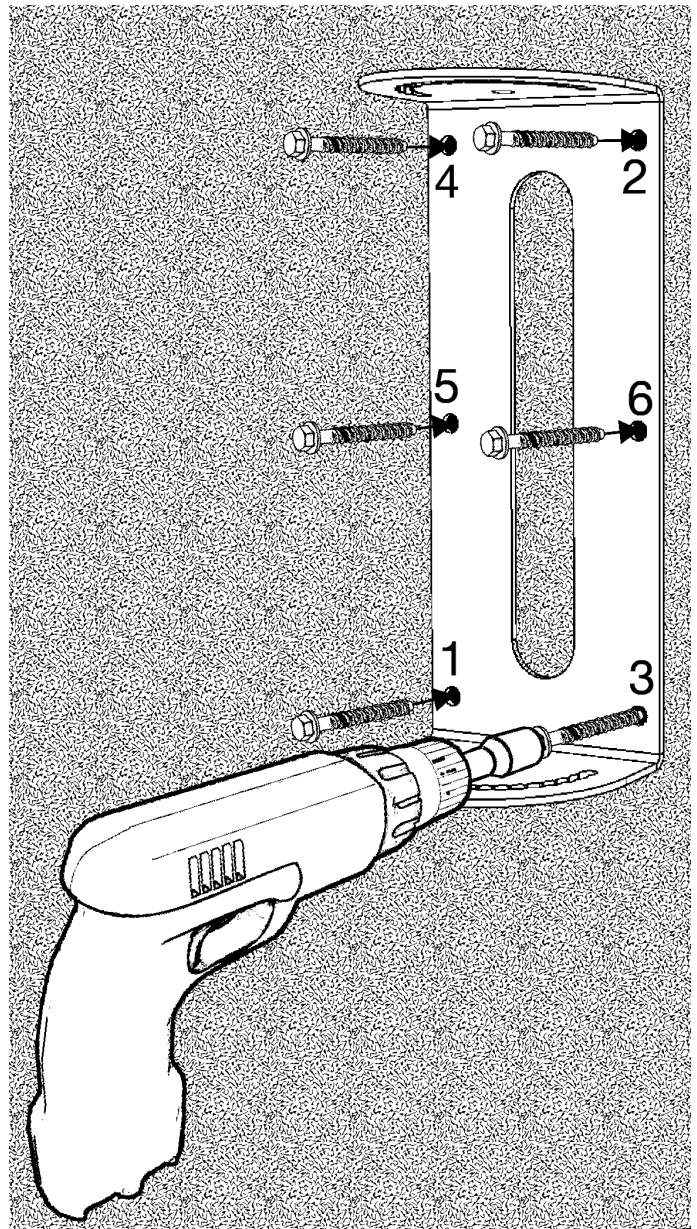
- When it has been verified that there is no wiring or plumbing in the wall behind the mounting position, use the plate itself as a drilling template and mark with the pencil the centers and outlines of the mounting holes. A spirit level can be useful to assure that the mount is properly leveled.

Figure 31. Drilling the mounting holes.



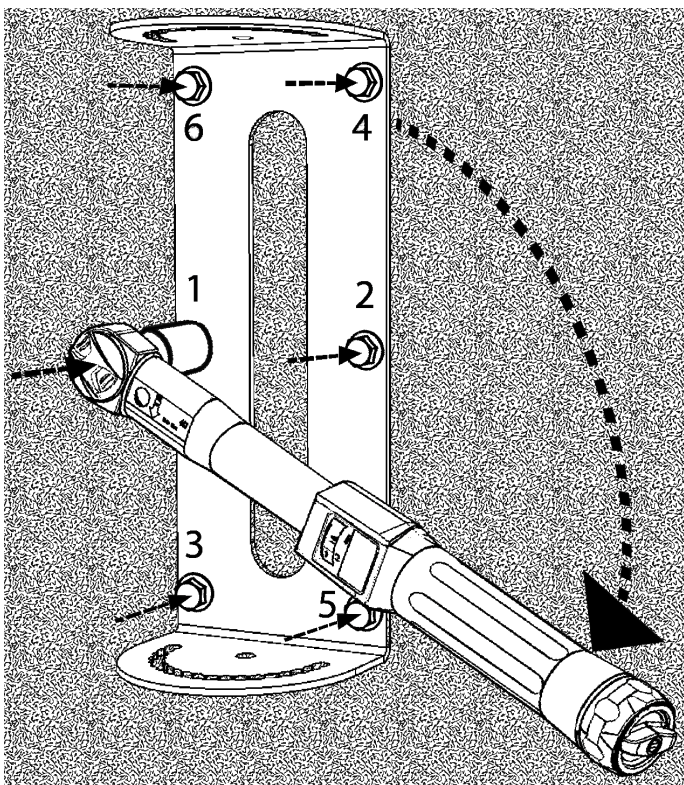
- Drill the six holes, using a drill or percussion drill with a bit appropriate to the substrate material (masonry/concrete, wood, steel etc.) with the appropriate diameter and to the appropriate depth for the anchor type being used.
- Once the six mounting holes have been drilled, clear them of residue and verify the appropriate depth of each.
- Place the mounting plate against the wall and align the four mounting holes centered on the drilled holes.
- Insert the six screws or anchors directly through the mounting holes in the plate, tightening the screw anchors with your fingers sufficiently to keep them in place.

Figure 32. Driving the screw anchors into the wall.



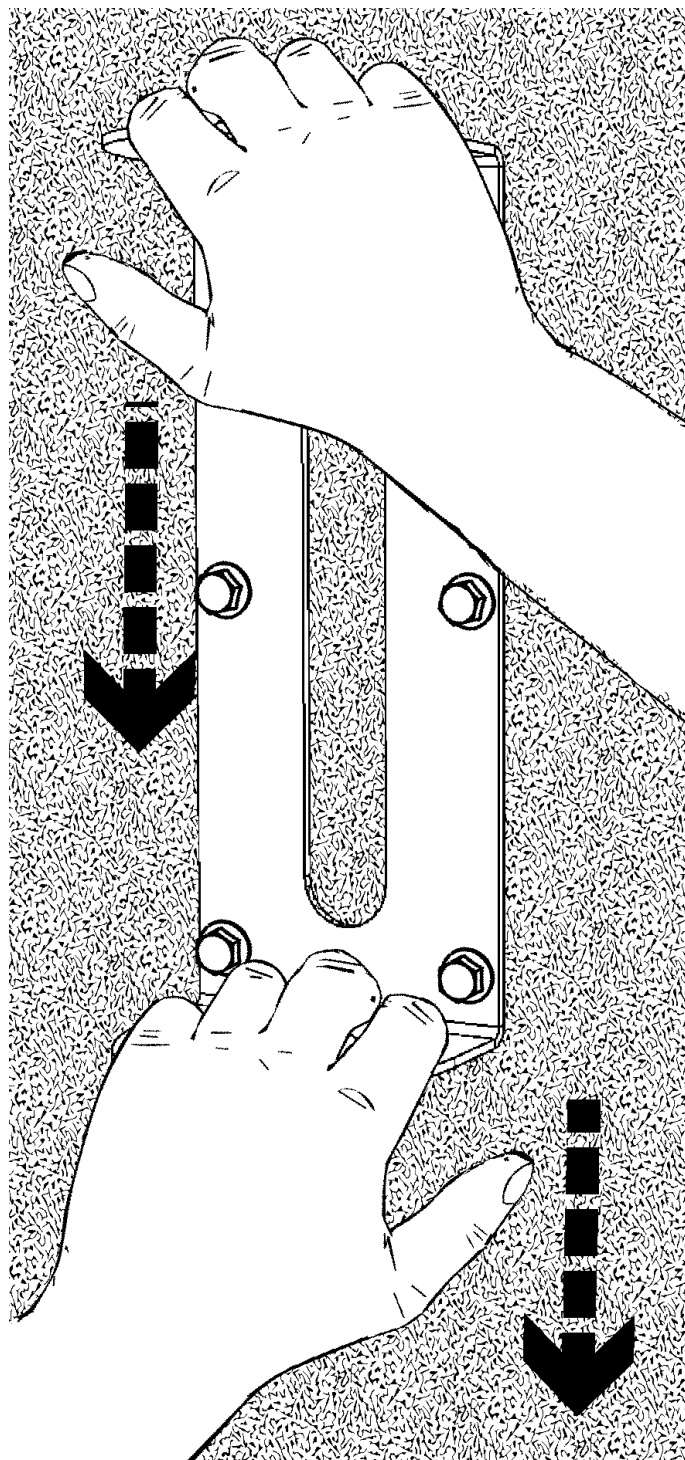
- While holding the plate in place, use a socket wrench or a power screwdriver to tighten each fastener gradually, alternating diagonally opposed fasteners in an "X" pattern until each holds the plate to the wall. When using a power driver, keep it at a low speed to avoid stripping the threading cut into the substrate material. Once the washer or flanged head on each bolt is in contact with the plate and the plate is against the wall, continue tightening them only by hand.

Figure 33. Tightening the screw anchors with a torque wrench.



- Using a torque wrench, tighten each screw anchor into the wall. Take care not to exceed the maximum installation torque specified by the manufacturer of the hardware.

Figure 34. Applying downward force to verify the mount.



- Apply force or weight to the mounting plate to physically verify its ability to support the necessary load. There must be no movement possible between the plate and the wall.

Installing and pointing CT28 on the Wall Bracket

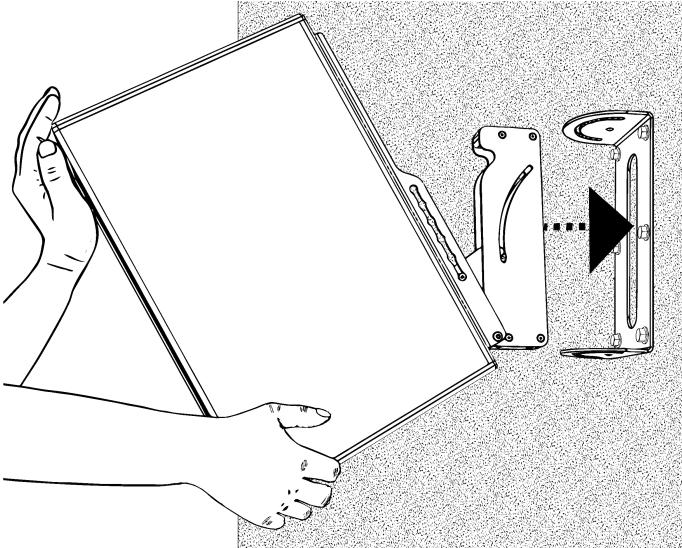
Once the yoke of the Wall Bracket has been attached to the wall and the tilt arm of the bracket is installed on the CT28 enclosure, the installation can be completed by re-coupling the components of the bracket, and then securing and pointing the loudspeaker to achieve the required coverage.

CAUTION



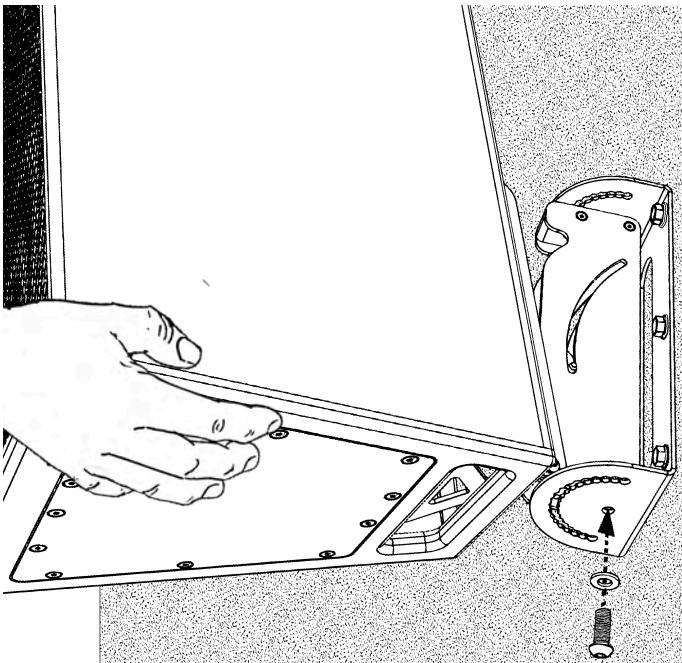
Two People Required
The following task simultaneously requires moderate two-handed lifting and the performance of fine motor operations. To avoid possible injury or damage, this procedure must be performed by two people.

Figure 35. Lifting the CT28 with the tilt assembly onto the wall-mounted yoke.



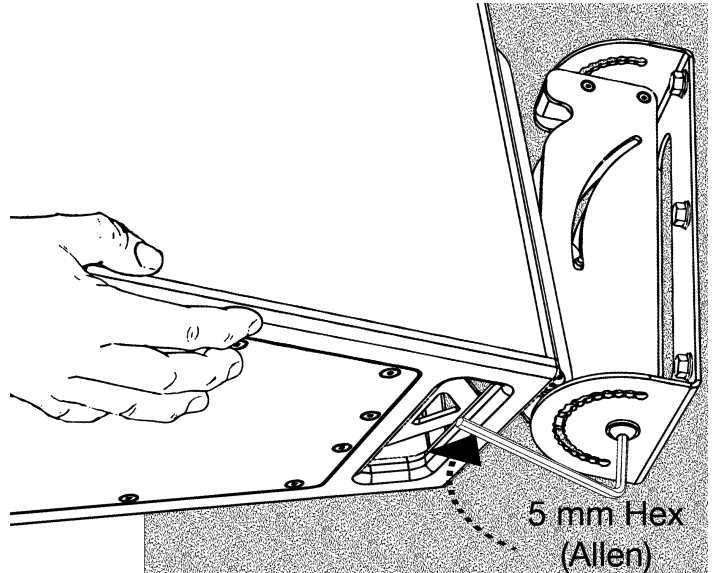
- Lift the CT28 (with the tilt arm assembly installed) in front of the yoke installed on the wall, and insert the rotating bracket into the yoke.

Figure 36. Inserting the bottom pivot bolt.



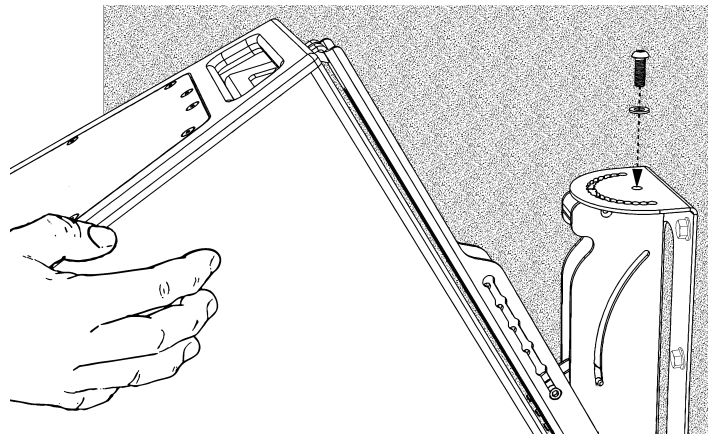
- As one person holds the speaker enclosure, the second operator should align the holes in the top and bottom of the rotating bracket with the holes in the top and bottom of the wall-mounted yoke and insert and thread the bottom pivot bolt, through its washer into the aligned holes in the yoke and bracket. **DO NOT** release the CT28.

Figure 37. Tightening the bottom pivot bolt.



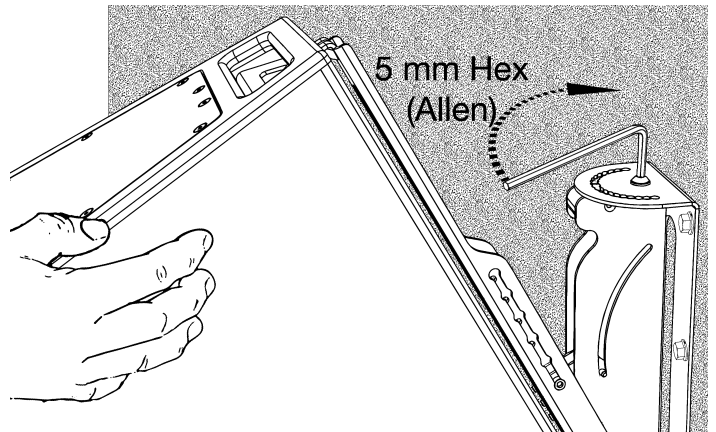
- Once the bottom pivot bolt is threaded through the yoke and into the rotating bracket, tighten it firmly using a 5 mm hex wrench.

Figure 38. Inserting the top pivot bolt.



- As one person continues to hold the speaker enclosure, the second operator should then insert the top pivot bolt and thread it through the wall-mounted yoke and into the rotating bracket .

Figure 39. Tightening the top pivot bolt.



- Because the speaker enclosure is still free to rotate horizontally, it should not be completely released at this point, but the mount should safely support its weight.

Fixing the pan angle

Once the pivot bolts have been installed and tightened, the CT28 must be fixed at the required pan angle to achieve the desired coverage.

As shown in figures below, the CT28 can be panned up to 90° left or right when installed on a column, or up to 60° in either direction when installed on a wall.

Figure 40. Horizontal clearance for the CT28 on the Wall Bracket on a column at maximum pan (90°)

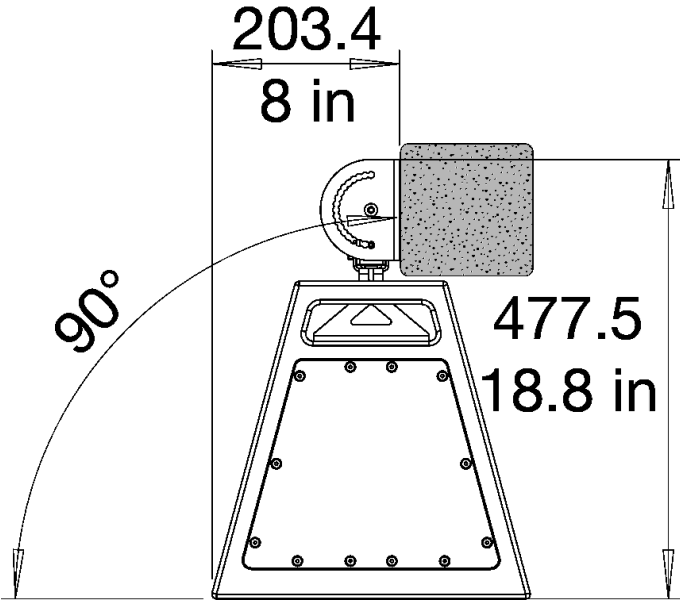
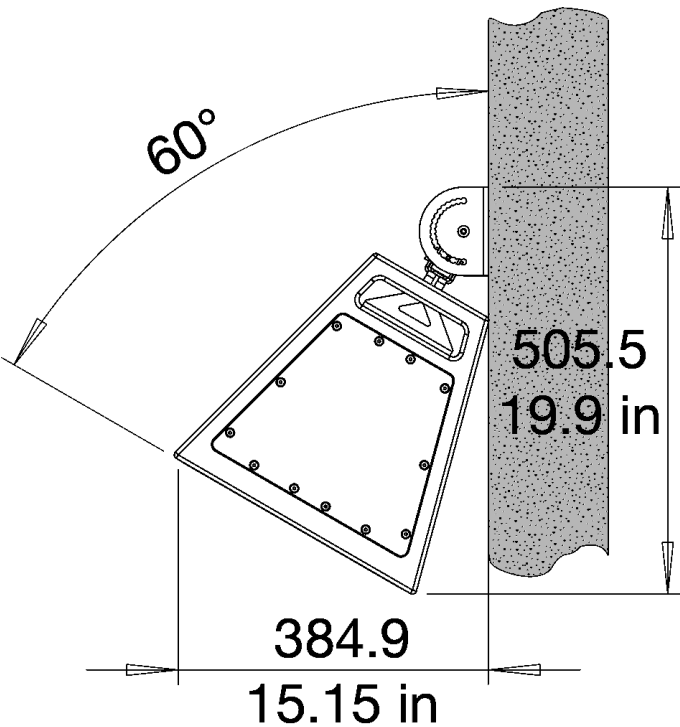


Figure 41. Horizontal clearance for the CT28 on the Wall Bracket on a continuous wall at maximum pan (60°)



The top and bottom plates of the feature a set of holes used to set the pan angle, in 10° steps.

Figure 42. The holes corresponding to the selectable pan angles (overhead view).

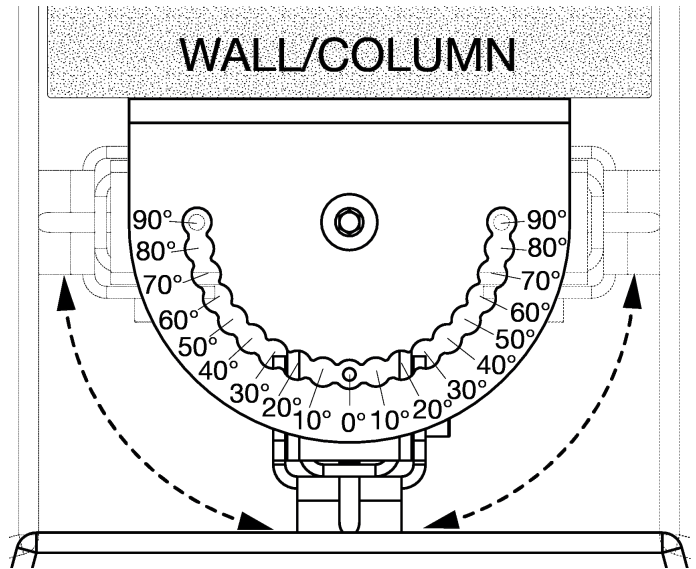
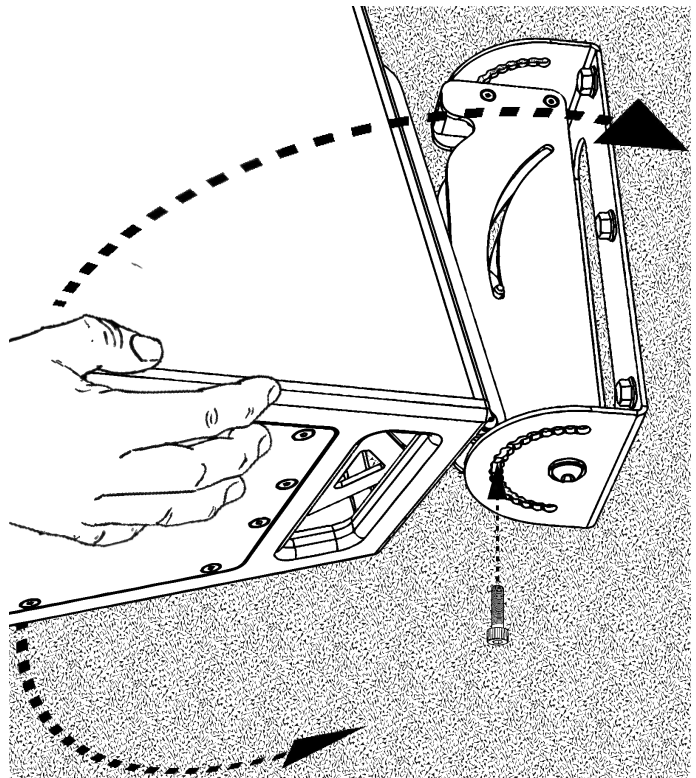
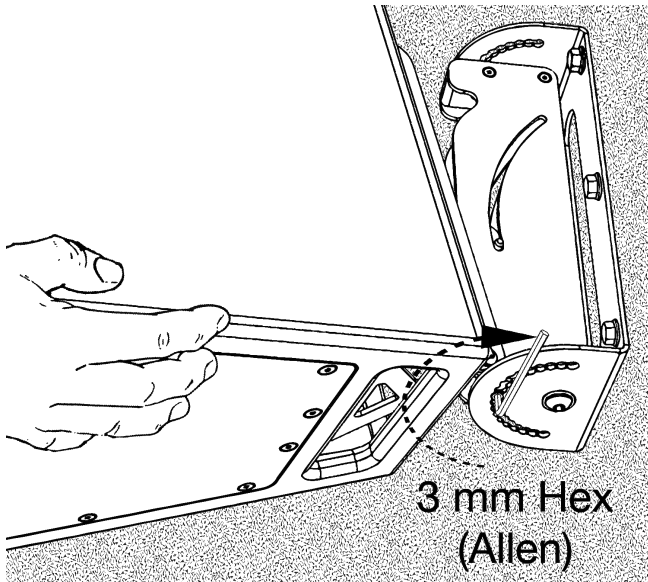


Figure 43. Inserting the bottom pan-locking bolt – 0° (perpendicular) pan angle shown.



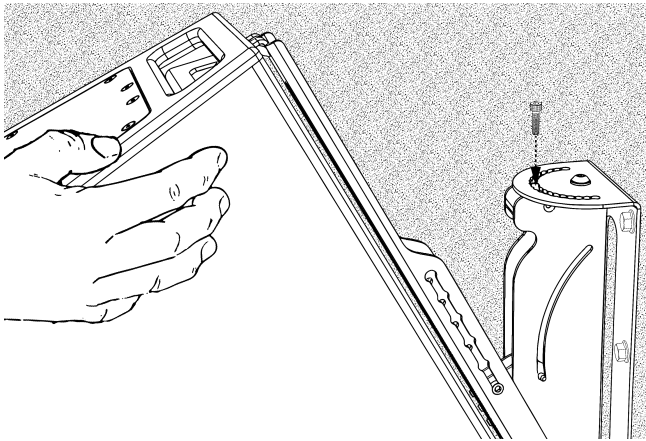
- Swing the CT28 into the desired pan position, aligning the threaded insert in the rotating bracket with the appropriate hole in the lower end-plate of the wall-mounted yoke, and thread the M4 x16 mm pan-lock bolt into the bracket through the yoke.

Figure 44. Tightening the bottom pan-lock bolt.



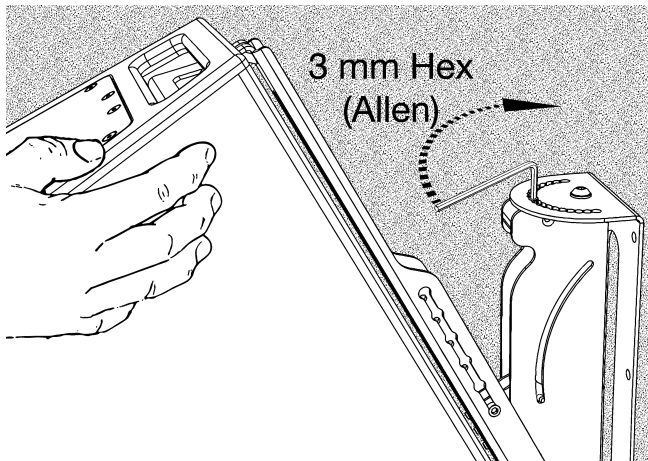
- Using a 3 mm hex wrench, firmly tighten the pan-lock bolt into the rotating bracket so that it cannot move laterally within the wall-mounted yoke.

Figure 45. Inserting the upper pan-lock bolt – 0° (perpendicular) pan angle shown.



- Insert and thread the other M4 x16 mm pan-lock bolt into the bracket through the appropriate hole in the upper end-plate of the wall-mounted yoke.

Figure 46. Tightening the upper pan-lock bolt.



- Again, using a 3 mm hex wrench, firmly tighten the pan-lock bolt into the rotating bracket so that it cannot move laterally within the wall-mounted yoke.

Attaching a safety bridle

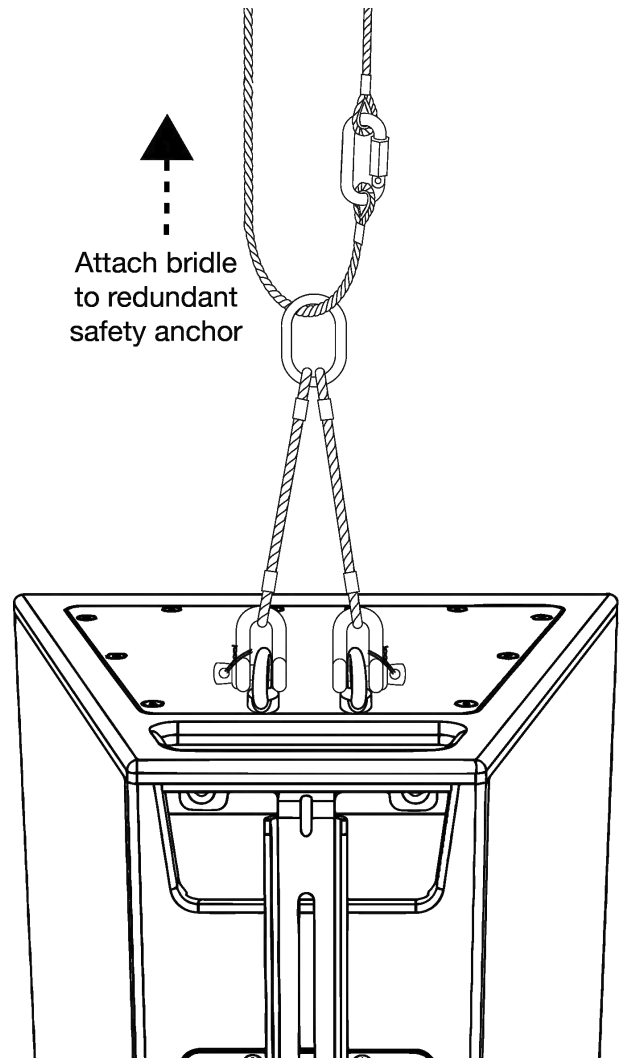
If the CT28 speaker enclosure has been equipped with eye bolts for a redundant safety bridle (steel wire rope), these must be attached to the external anchor before concluding the installation.

ATTENTION

A redundant safety must be anchored to a point higher than the enclosure and, where possible, to a separate structural member than the Bracket. If the secondary safety bridle must be anchored using a fastener to the same structural member as the Bracket, its anchor must be installed at least one speaker-length away from the anchors holding the Bracket. Use only steel wire ropes or steel chains that conform to applicable regulations or norms in terms of construction and Working Load Limit. These must be of proper length and installed in such a position as to prevent the enclosure from falling more than 20 cm in the case of failure of the Bracket or the structure to which it is installed.

In most cases of wall mounting a single CT28 enclosure, the use of a two-leg safety bridle will provide sufficient redundant safety. The legs of the bridle must be steel wire rope, with thimbles and each with a Working Load Limit rated at least 2.5x the weight of the enclosure. The legs can be permanently closed and swaged through the eye bolts, or attached with rated shackles or locking carabiners. Carefully review third-party manufacturers' documentation to assure that the bridle and all its components are certified for the proper load limit with the required Safety Factor. The length, material and termination on the sling that attaches the bridle to the anchor point will obviously depend on the requirements of the structure or point to which it will be anchored.

Figure 47. An example of a steel wire rope safety bridle attached using moused shackles (rear view).



Chapter 4. Installing CT28 on the Horizontal Mounting Bracket

Products, accessories and tools required

To install a CT28 enclosure permanently on a wall or surface using the Horizontal Mounting Bracket, you will need the following:

- A CT28 loudspeaker enclosure
- The Horizontal Mounting Bracket kit
- The Angle Bar kit
- An appropriate power drill and bit for the installation surface material
- A 4 mm hex driver and a 4 mm hex wrench (Allen)
- Medium-duty mounting screws or bolts appropriate to the mounting surface (coach screws for drywall studs, concrete screw anchors for concrete or masonry, etc.); screws and bolts should have a flanged head or a coupled washer \varnothing 14-16 mm in order to retain the mounting plate
- Appropriate tools for securing the aforementioned fasteners (power screwdriver etc.)
- A torque wrench
- Optional: a short two-leg steel rope bridle, 2 x M5 double-swivel hoist rings and appropriate tools for securing these
- **Recommended:** pencil or marker, spirit level, stud finder

Procedures

Disassembling the Horizontal Mounting Bracket

The Horizontal Mounting Bracket ships fully assembled, but to facilitate installation, it should first be separated into three parts: the wall-mount yoke and the two end plates with the tilt-adjustment mechanism that attach to the speaker enclosure. Before disassembly, be sure to note the proper interlocking configuration of the tilt mechanism; this will remove doubts when it is time to reassemble the bracket.

Figure 48. Removing the M6 bolts from the Horizontal Mounting Bracket.

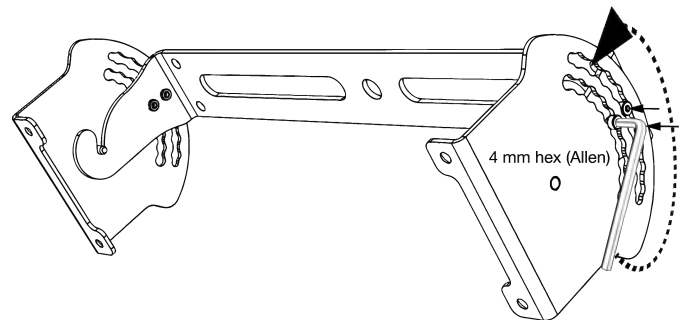
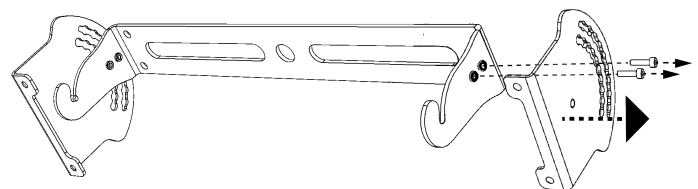


Figure 49. Removing the end plates from the wall-mount yoke.



- Use a 4 mm hex wrench or hex driver to remove the two M6 bolts from one end of the bracket. Be careful to hold both parts of the bracket, as the end of the bracket will be free to fall once the bolts have been removed. Keep these bolts, as they will be required to reassemble the bracket once it is installed.

Critical information

Attention: This wall-mount bracket is intended for installation by qualified professionals.

Notice: Please read these instructions carefully and completely before attempting installation.

WARNING



Improper installation or suspension of any heavy load can result in death or serious injury to persons, as well as damage to property. It is the responsibility of the installation personnel to verify and guaranty the reliability and safety of the installation.

Notice: This product must be installed in compliance with all applicable local, state and national regulatory provisions. The responsibility rests with the installer to verify that the installation is carried out in accordance with any applicable legislation.

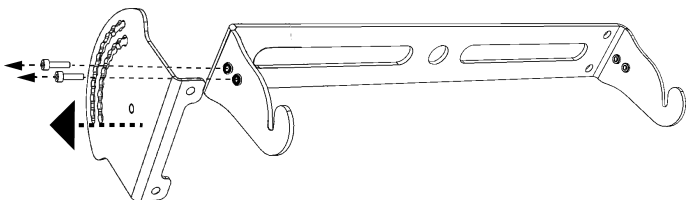
Important: The installer must assess the appropriate stability and sturdiness of the mounting surface. In the case of wall-mount and ceiling-mount brackets, this includes, but is not limited to verifying the positions of suitable studs in the case of drywall mounts, hollow points in concrete block or solid concrete, as well as the presence and vicinity of electrical wiring or plumbing.

Restriction: Only hardware and accessories included with the product or specified by 1 Sound should be used for its installation.

Restriction: Do not modify or alter the loudspeaker or any accessory. Any modification by the user or installer could render the product or the installation unsafe.

Restriction: Do not install a loudspeaker or any accessory near any open flame or heat source.

Figure 50. Removing the end plates from the wall-mount yoke .



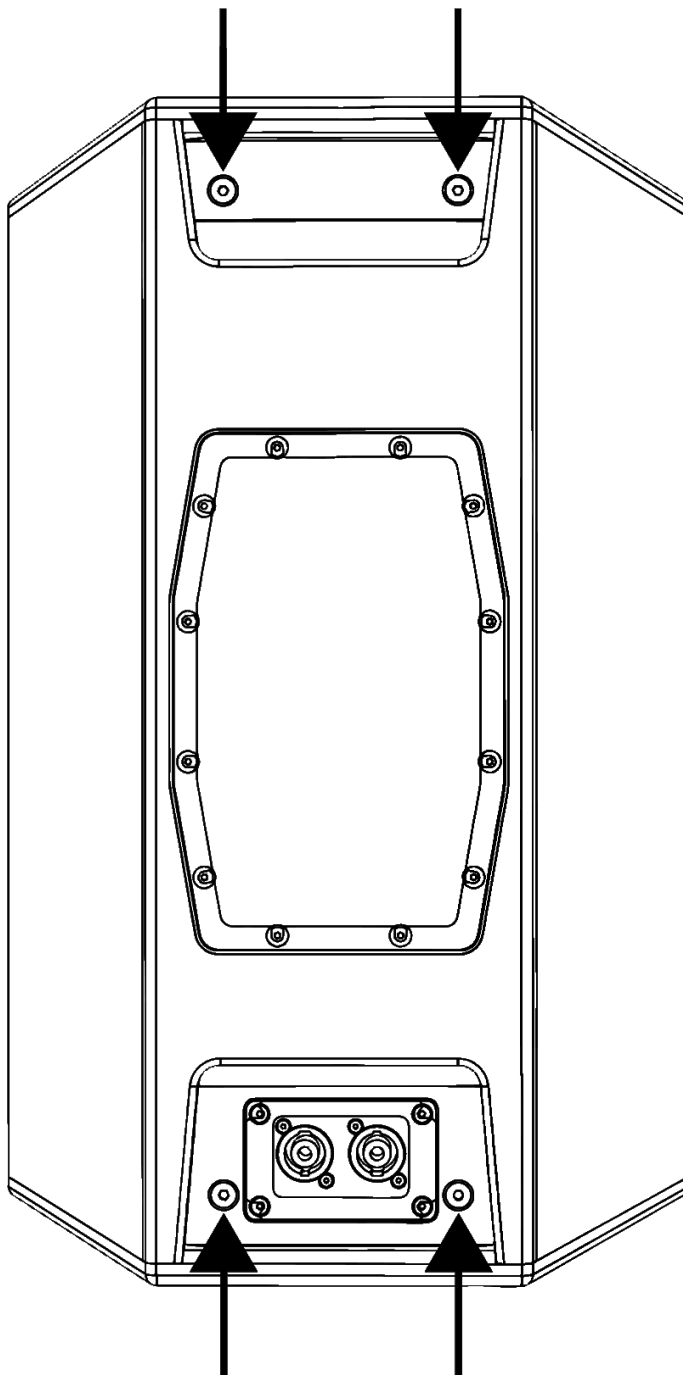
- Once the plate has been removed completely from one end of the bracket, repeat the above process to remove the plate from the opposite end.

Installing the Horizontal Bracket on the CT28

Once the two end-plates of the bracket have been separated from the wall-mounted yoke, they can be easily attached to the CT28 enclosure.

! **Important:** For permanent or semi-permanent installation, the use of medium-strength thread-locking compound is recommended on all user-installed screws.

Figure 51. The rear panel of the CT28 with the mounting points for the bracket indicated.



- Lay the enclosure on its front grille, taking whatever necessary precautions to avoid damaging the finish of the cabinet or the grille.
- Using a 4 mm hex wrench or hex driver, remove the two M6 x 25 mm screws from the top rear of the enclosure, inside the recess. Keep these, as they will be used to install the bracket.

Figure 52. Removing the mounting screws from the top of CT28.

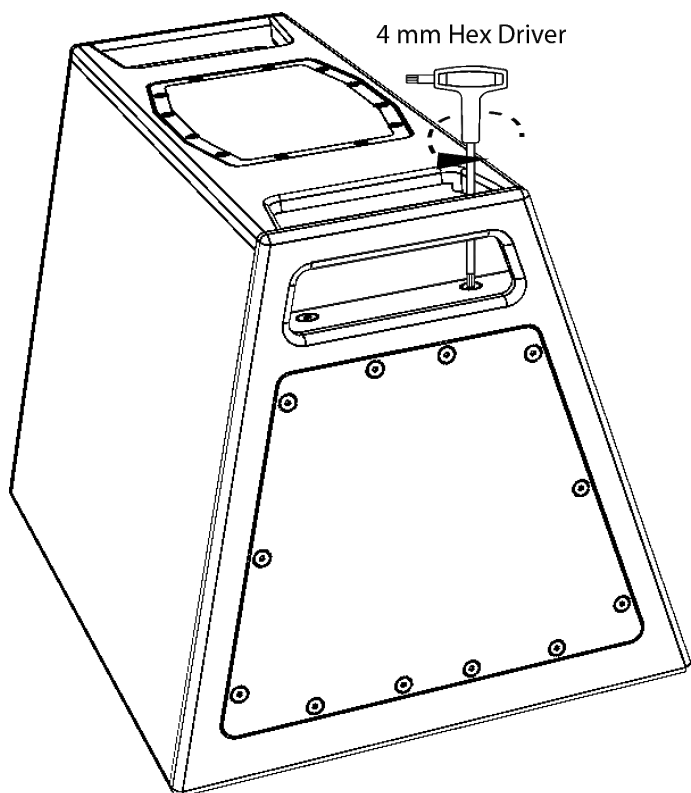
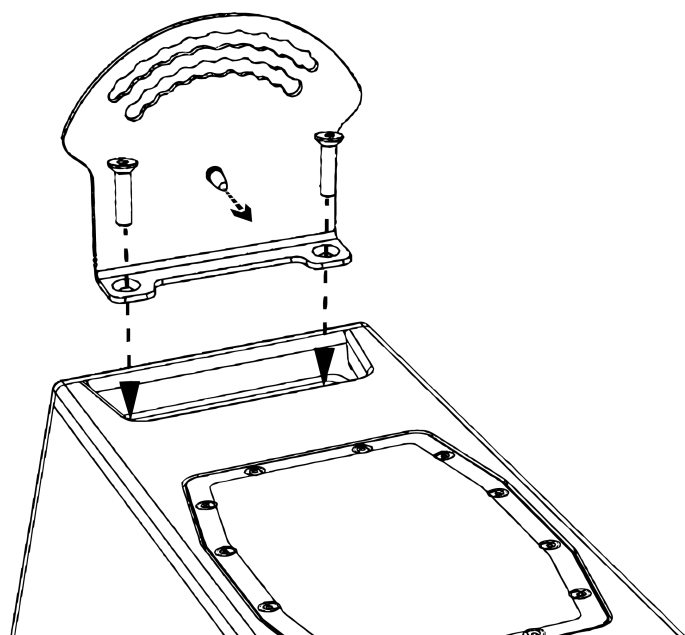
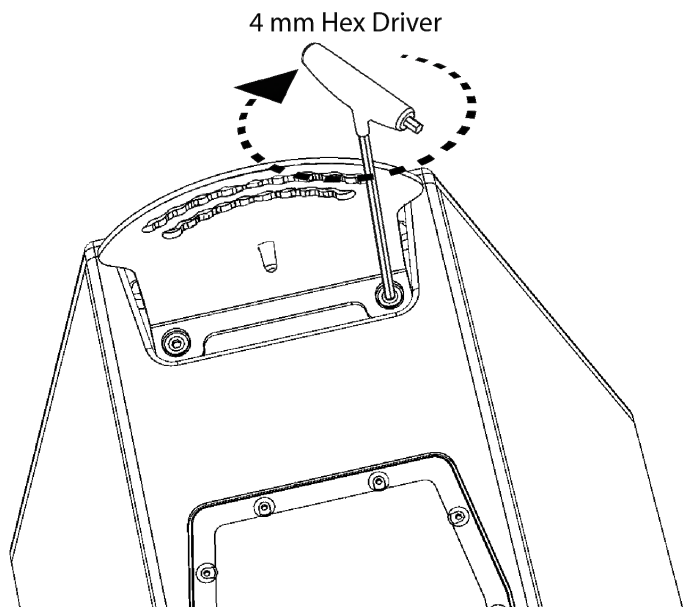
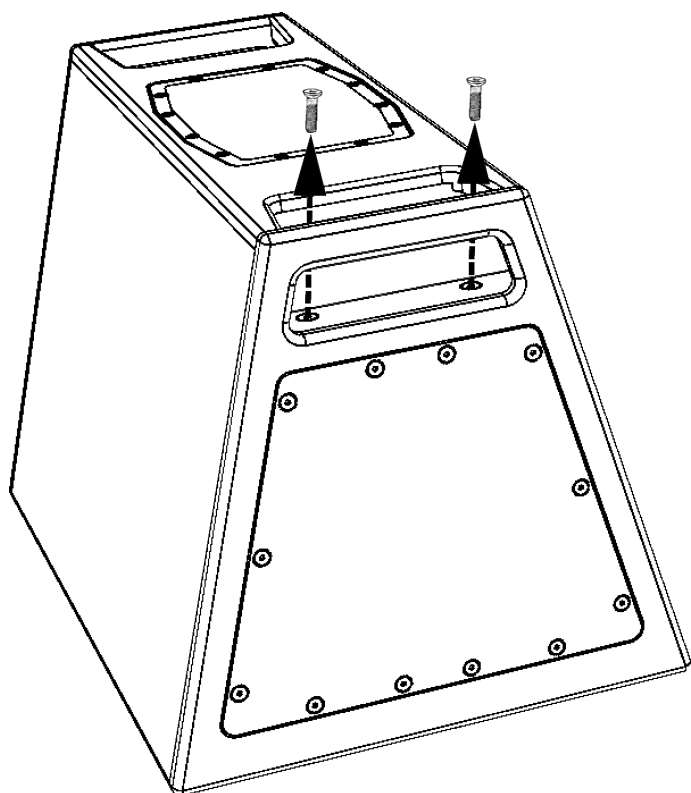


Figure 53. Installing the Horizontal Bracket plates on the CT28.



- Insert the two M6 x 25 mm screws previously removed, and thread them into the enclosure through the mounting holes in the bracket end.

Figure 54. Tightening the M6 screws to mount the bracket.



- Using a 4 mm hex wrench or hex driver that allows for sufficient leverage, firmly tighten the screws into the panels, making sure that there can be no movement between the bracket and the speaker enclosure.

- Place one of the ends of the bracket into the recess on the enclosure with the flat surface of the bracket towards the exterior (top) of the enclosure and the pivot lug pointed inward toward the enclosure. Align the two mounting holes in the bracket with the threaded holes in the rear of the enclosure.

Figure 55. Removing the M6 bolts from the bottom (connector end) of the CT28

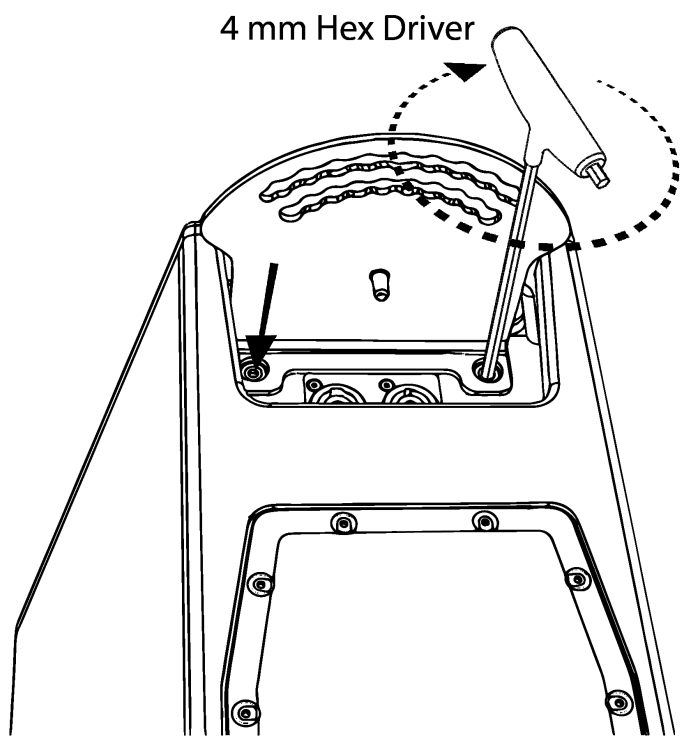
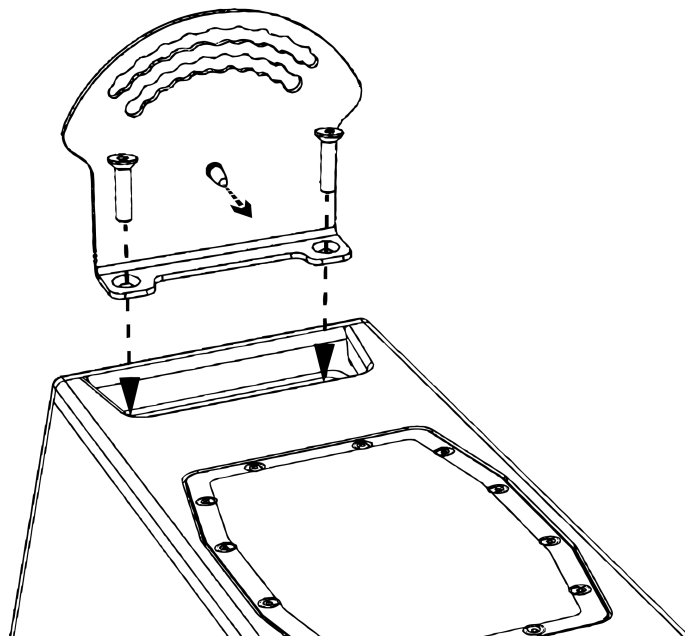
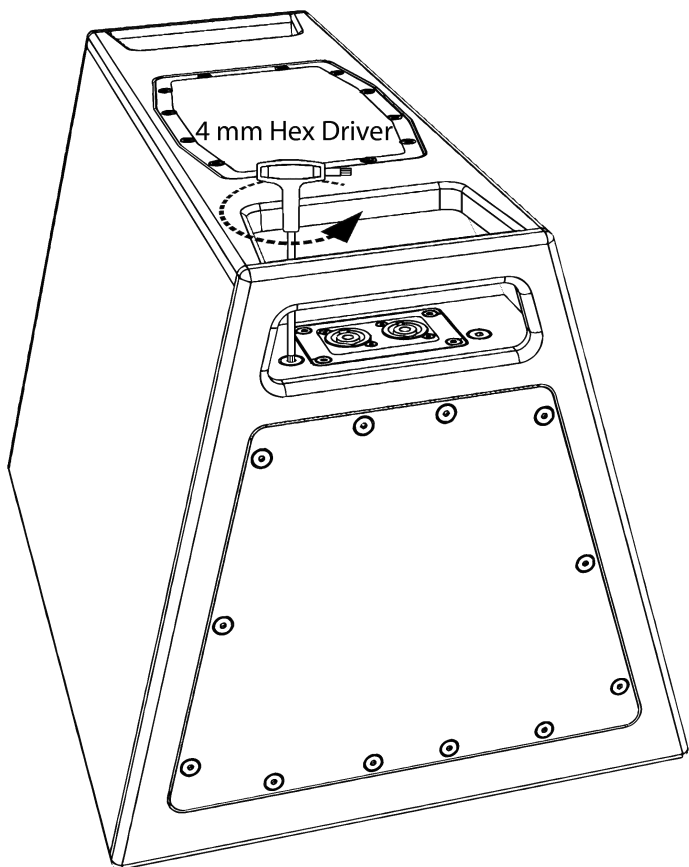
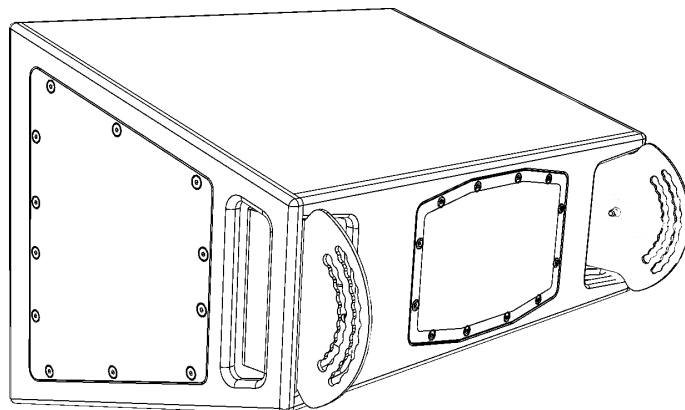
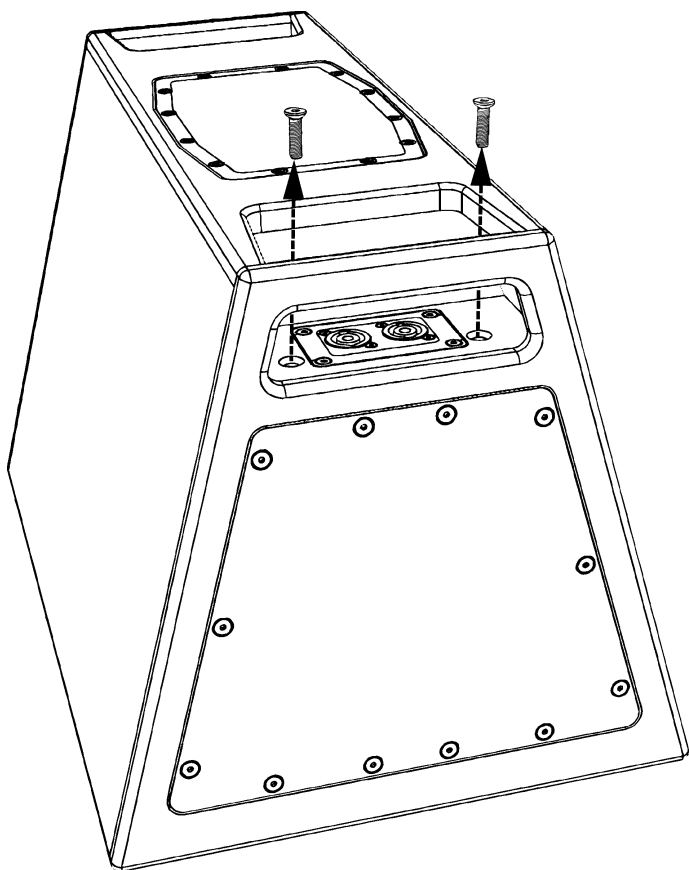


Figure 56. The plates of the Horizontal Bracket installed on the CT28.



- Repeat the previous four steps on the opposite (bottom/connector side) end of the CT28.

Installing redundant safety anchors

! **Attention:** When correctly installed, the Wall Bracket and the Horizontal Mounting Bracket are designed to safely support the CT28 speaker enclosure under normal conditions. However, connection to an external anchor point using a steel wire rope safety bridle is strongly recommended in any installation where people could pass beneath or near the loudspeakers and may be required by local or national codes in installations in public places. If you intend to install a secondary safety bridle anchored directly to the enclosure, it is recommended that you use two of the M5 rigging points on the top of the CT28 enclosure for this purpose.

In most cases of wall mounting a single CT28 enclosure, the use of a steel wire rope safety bridle will provide sufficient redundant safety. Carefully review the third-party manufacturer's documentation to assure that the bridle and all its components are certified for the proper Safe Working Load with the required Factor of Safety. The length of the bridle and termination on the opposite end will obviously depend on the requirements of the structure to which it will be anchored.

it will be necessary to install side-pull or double-swivel hoist rings in two of the M5 rigging points in the place of the M5 x 25 mm screws supplied with the speaker enclosure. Only forged steel hoist rings, certified for the proper Working Load Limit with the required Factor of Safety at their minimum load angle can be used.

! **Important:** For permanent or semi-permanent installation, the use of medium-strength thread-locking compound is recommended on all user-installed screws.

Figure 57. Threaded inserts usable for safety anchors on the top or bottom of CT28.

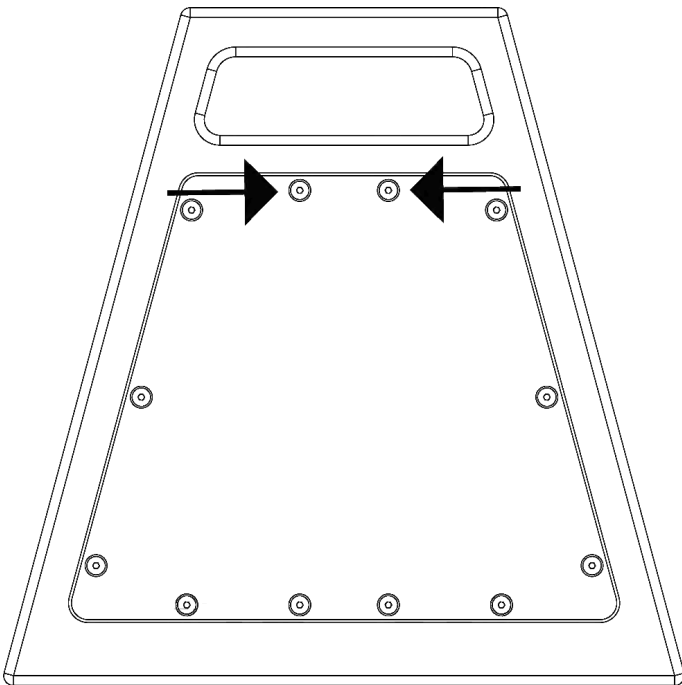


Figure 58. M5 double-swivel hoist ring measurement requirements.

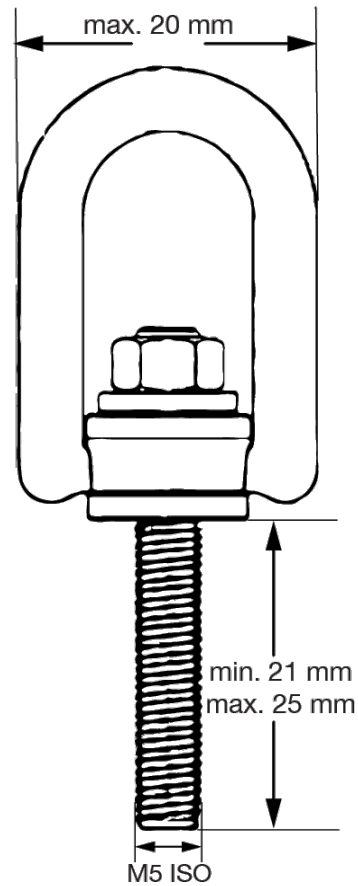
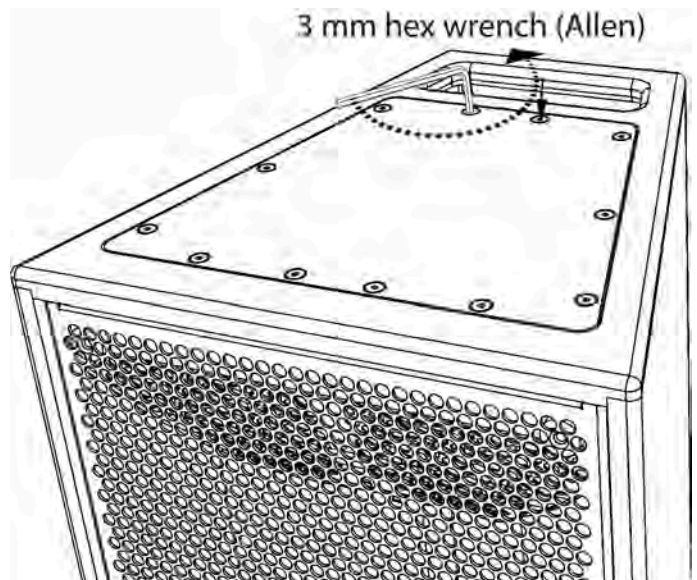
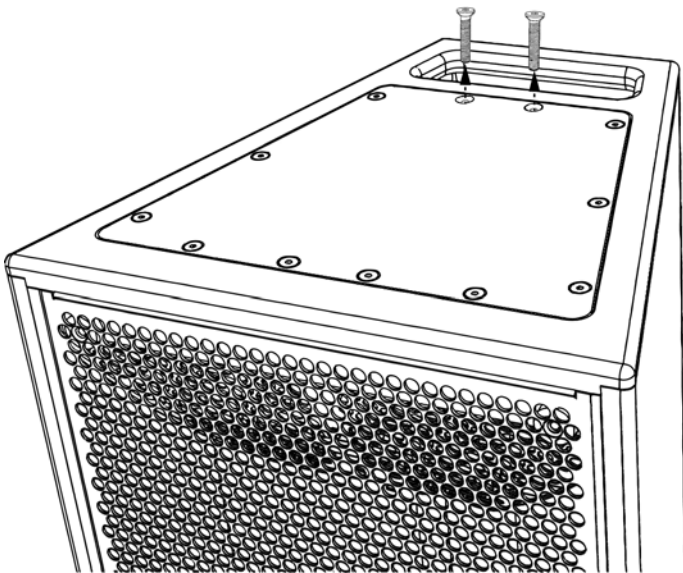


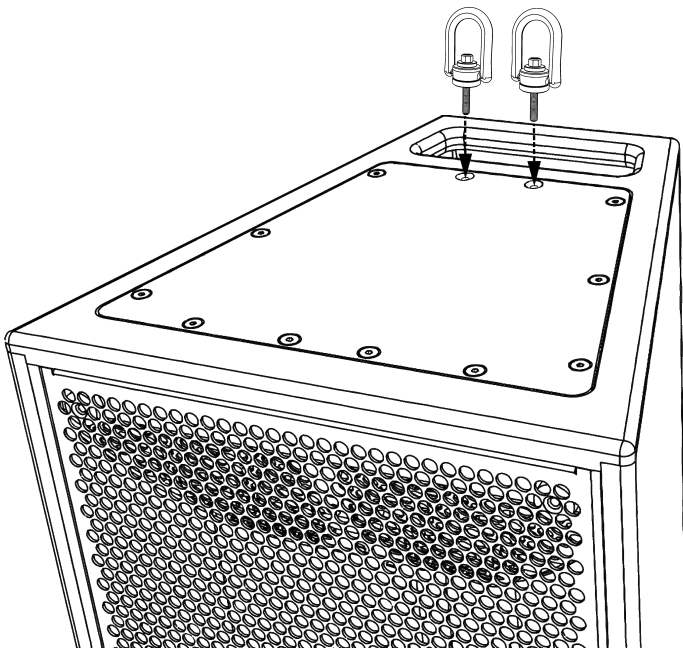
Figure 59. Removing the M5x25 mm countersunk screws for the installation of safety anchors.





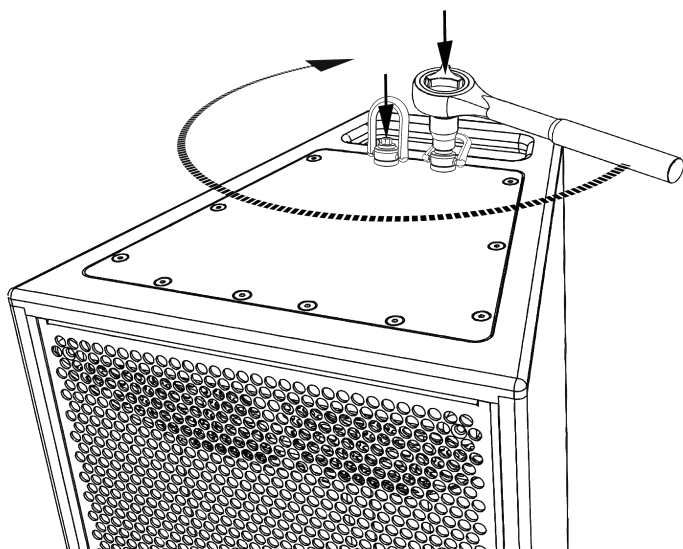
- Using a 3 mm hex wrench, remove the two rear M5x25 mm countersunk screws from the top of the CT28 enclosure.

Figure 60. Inserting the M5 swivel hoist rings in the rigging points on the top of the CT28 enclosure.



- Thread the M5 eye bolts into the rigging points from which the screws were removed and tighten them with your fingers.


Figure 61. Torquing the hoist rings.




- Tighten the two hoist rings into the rigging points to the torque specified by the manufacturer. The tools necessary will be specified in the product literature provided by the manufacturer of the third-party hoist rings.

Installing the Horizontal Bracket to the wall

The wall mounted yoke of the CT28 Horizontal Mounting Bracket must be firmly fitted to the wall or surface before mounting and pointing the speaker enclosure.

⚠ WARNING	
	<p>Before beginning this installation, it is necessary to ascertain the construction type, load-bearing capability and durability of the wall or surface. Bear in mind that the CT28 speaker enclosure weighs 20 kg (44 lb), and can be positioned in such a way as to extend the mass of the enclosure out to perpendicular from the mounting surface. Therefore the increased forces imposed on the fixings and wall must be taken into account.</p> <p>Careful thought must be given to ensure that the wall structure is strong enough to safely support the total load with the proper Factor of Safety required by local, state and national norms or legislation. If the facility or venue is open to the public and the mount is within reach of the public, the installer should take into consideration possible miscreant behavior or tampering when determining the appropriate factor of safety. If the wall structure is deemed incapable of supporting the load, consideration should be given to strengthening and/or stabilizing the wall or adopting an alternative method of installation. In the case of any doubt, architects, structural engineers or other specialists should be consulted.</p>

⚠ WARNING	
	<p>Risk of Electric Shock Drilling into hidden electrical wiring within walls can result in serious injury or death, fires and property damage.</p> <p>BE AWARE OF WHAT YOU ARE DRILLING INTO. Before drilling holes in any wall or surface, make sure that it does not conceal electrical wiring or conduits. Consult the wiring diagram of the facility or venue and check for nearby outlets, switches or junction boxes that could indicate concealed wiring, be it electrical mains, network, telephone or other infrastructure.</p>

CAUTION



Use Proper Eye, Ear, Head, Foot and Hand Protection During Installation
 This task requires the use of power tools and potentially elevated loads.
 All local and national norms, regulations and guidelines must be followed during the installation procedures, including the use of proper protective clothing and gear.

Notice: Due to the wide variety of building materials and construction methods that can be encountered in an installation, 1 Sound can only provide general recommendations for installing the Horizontal Mounting Bracket. It is the responsibility of the installer to assess the appropriate stability and sturdiness of the installation. This includes verifying the positions of suitable studs, posts or framing in the case of drywall mounts, verifying hollow points in masonry, concrete block or solid concrete, and utilizing anchoring methods and hardware appropriate for safe installation of the equipment according to the construction material and depth of the mounting surface. The responsibility rests with the installer to verify that the installation is carried out in accordance with any applicable legislation. In case of any doubt, architects, structural engineers or other specialists should be consulted.

Before proceeding with the installation, be sure to verify the available horizontal and vertical space for the speaker enclosure with the bracket attached, referring to the figures below.

Figure 62. The necessary horizontal clearance for the CT28 on the Horizontal Mounting Bracket

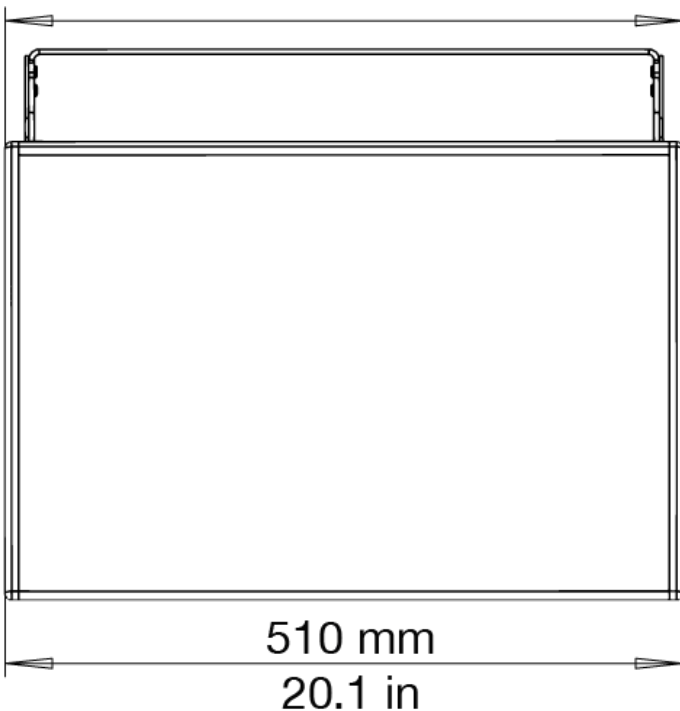


Figure 63. The necessary vertical and forward clearance for the CT28 on the Horizontal Mounting Bracket (perpendicular to wall).

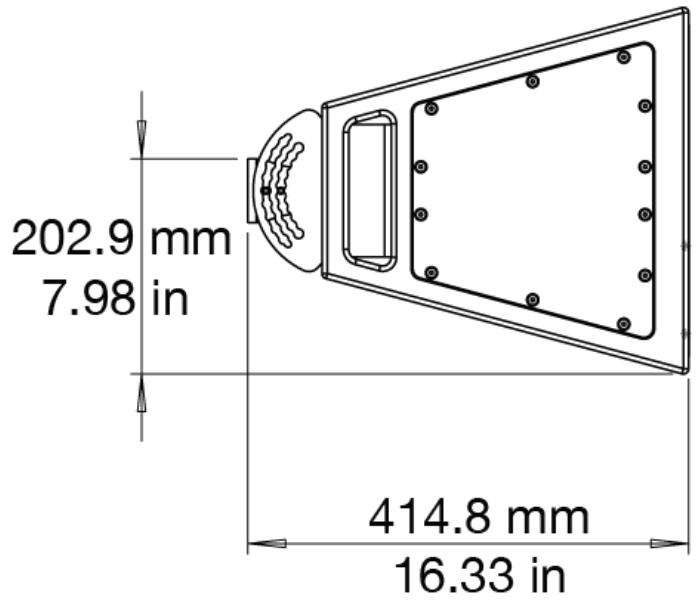


Figure 64. The necessary vertical clearance for the CT28 on the Horizontal Mounting Bracket (maximum tilt).

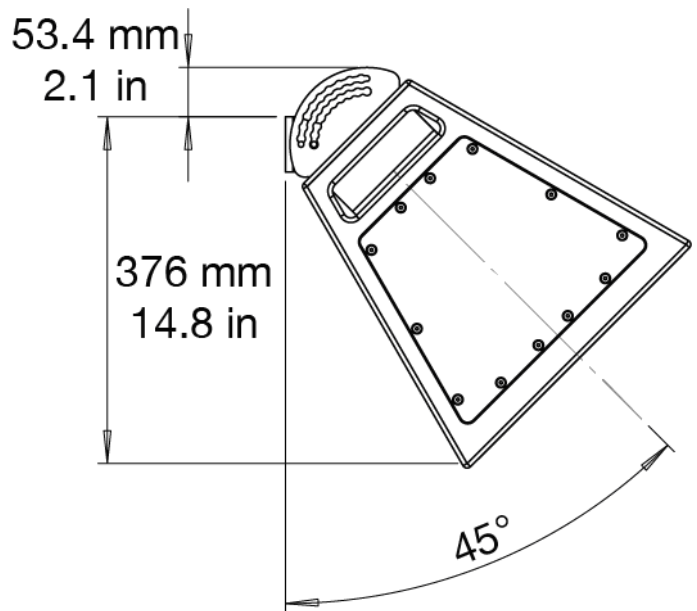


Figure 65. The wall-mounted yoke of the CT28 Horizontal Mounting Bracket

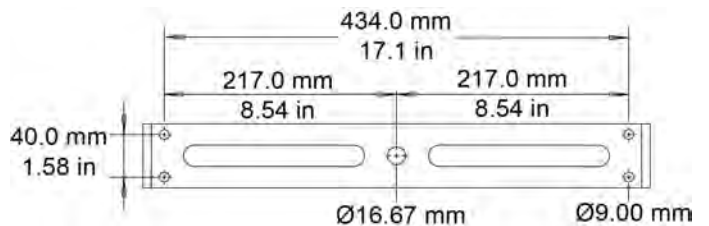
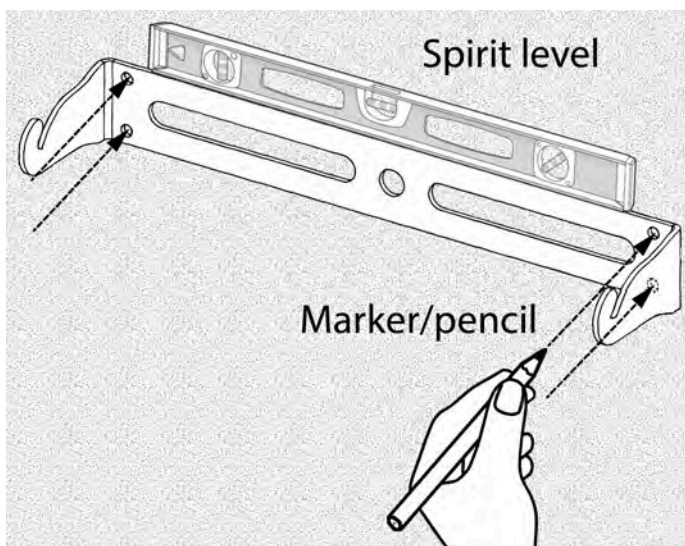
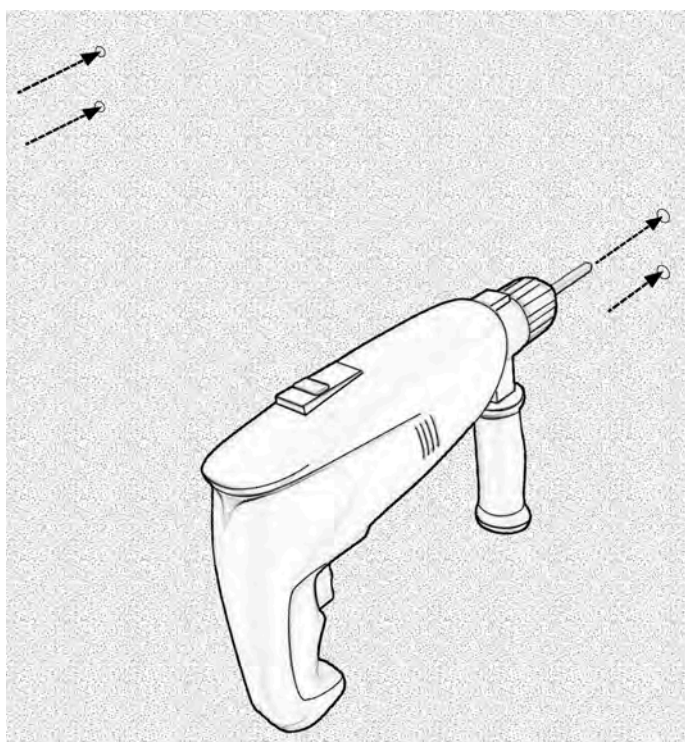


Figure 66. Marking the mounting surface for drilling.



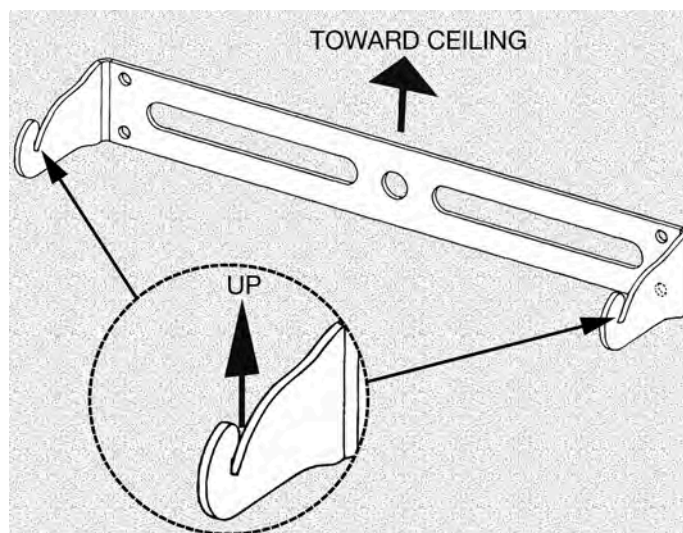
- When it has been verified that there is no wiring or plumbing in the wall behind the mounting position, use the yoke itself as a drilling template and mark with the pencil the centers and outlines of the mounting holes. A spirit level can be useful to assure that the mount is properly leveled.

Figure 67. Drilling the mounting holes.



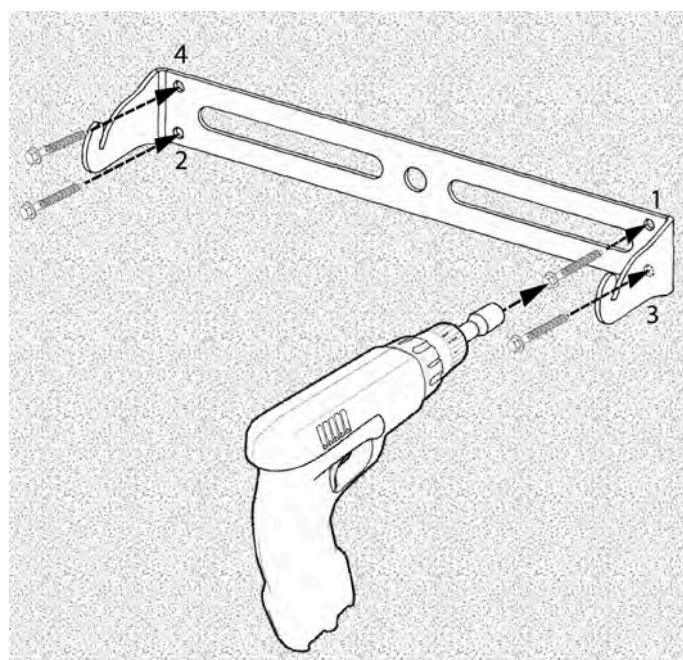
- Drill the four holes, using a drill or percussion drill with a bit appropriate to the substrate material (masonry/concrete, wood, steel etc.) with the appropriate diameter and to the appropriate depth for the anchor type being used.
- Once the four mounting holes have been drilled, clear them of residue and verify the appropriate depth of each.
- Place the mounting yoke against the wall in the correct orientation (with the open "hooks" for the angle-adjustment plates facing up) and align the four mounting holes centered on the drilled holes.

Figure 68. Correctly orienting the Bracket yoke.



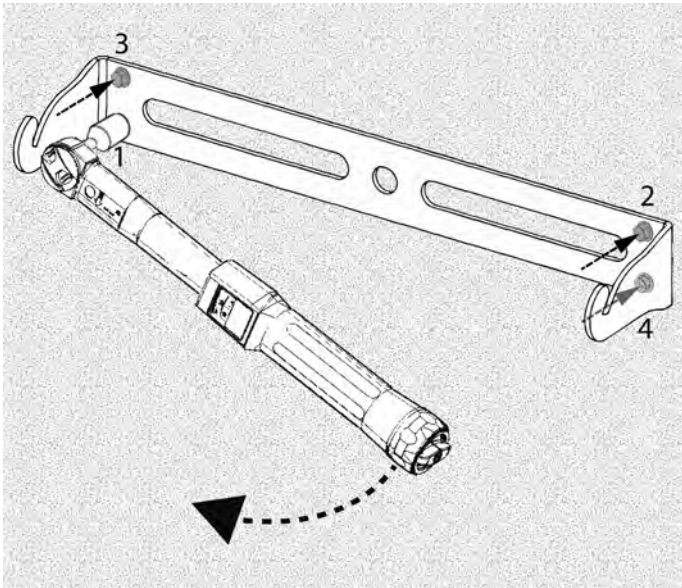
- Insert the four screws or anchors directly through the mounting holes in the rear plate of the yoke, tightening the screw anchors with your fingers only sufficiently to keep them in place.

Figure 69. Driving the screw anchors into the wall.



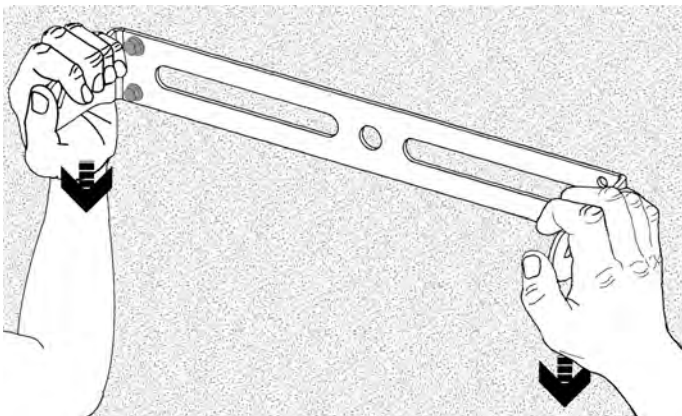
- While holding the yoke in place, use a socket wrench or a power screwdriver to tighten each fastener gradually, alternating diagonally opposed fasteners in an "X" pattern until each holds the plate to the wall. When using a power driver, keep it at a low speed to avoid stripping the threading cut into the substrate material. Once the washer or flanged head on each bolt is in contact with the yoke and the yoke is against the wall, continue tightening them only by hand.

Figure 70. Tightening the screw anchors with a torque wrench.



- Using a torque wrench, tighten each screw anchor into the wall. Take care not to exceed the maximum installation torque specified by the manufacturer of the hardware.

Figure 71. Applying downward force to verify the mount.



- Apply force or weight to the mounting yoke to verify physically its ability to support the necessary load. There must be no movement possible between the rear plate of the yoke and the wall.

Figure 72. Lifting the CT28 onto the wall-mounted yoke.

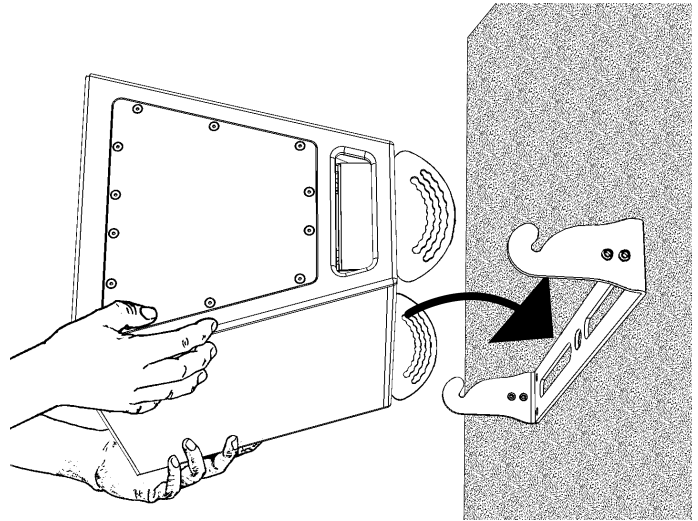
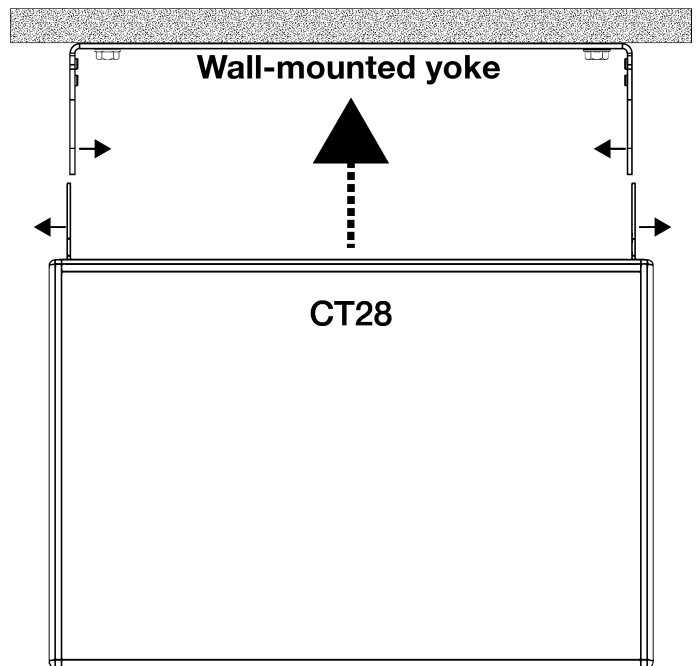


Figure 73. Fitting the CT28 with plates onto the yoke of the Horizontal Mounting Bracket (Top View).



- Lift the CT28 (with the end plates of the bracket installed) in front of and slightly above the yoke installed on the wall, aligning the end-plates on the outside of the upward-facing hooks of the wall-mounted yoke.

Installing and pointing CT28 on the Horizontal Mounting Bracket

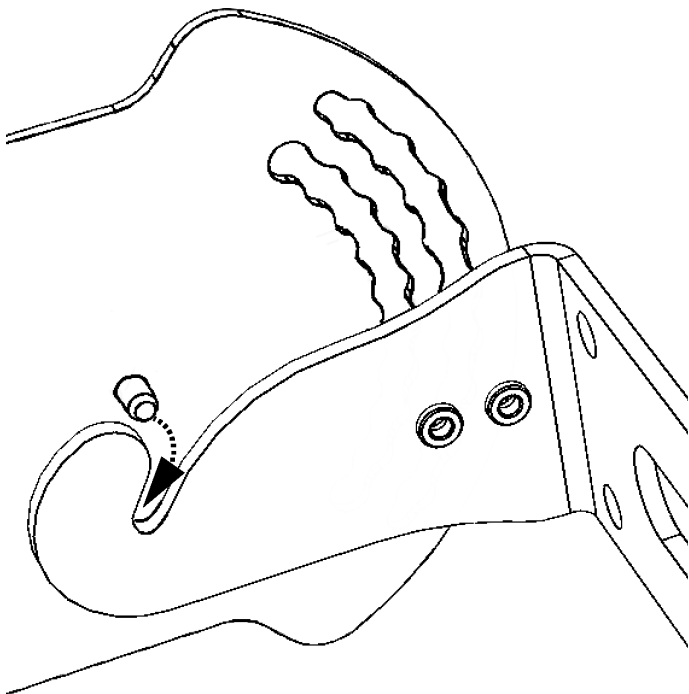
Once the yoke of the Horizontal Mounting Bracket has been attached to the wall and the end plates of the bracket are installed on the CT28 enclosure, the installation can be completed by re-coupling the components of the bracket, securing and pointing the loudspeaker to achieve the required coverage.

CAUTION



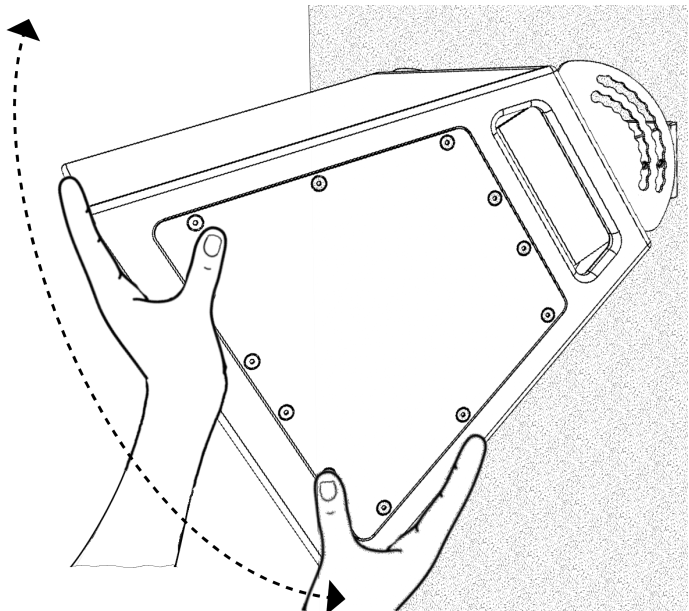
Two People Required
The following task simultaneously requires moderate two-handed lifting and the performance of fine motor operations. To avoid possible injury or damage, this procedure must be performed by two people

Figure 74. Aligning the lug on the angle-adjustment plate with the hook on the wall-mounted yoke.



- Lower the speaker enclosure so that the two lugs on the end-plates engage the hooks on the wall-mounted yoke. DO NOT release the CT28.

Figure 75. Positioning the CT28 for the required coverage (-30° shown).



- As one person holds and tilts the speaker enclosure, the second operator should help to align the holes in the bracket to apply the required tilt angle (see the figure and examples).

Figure 76. The tilt-locking holes and their corresponding angles (0° being perpendicular to wall).

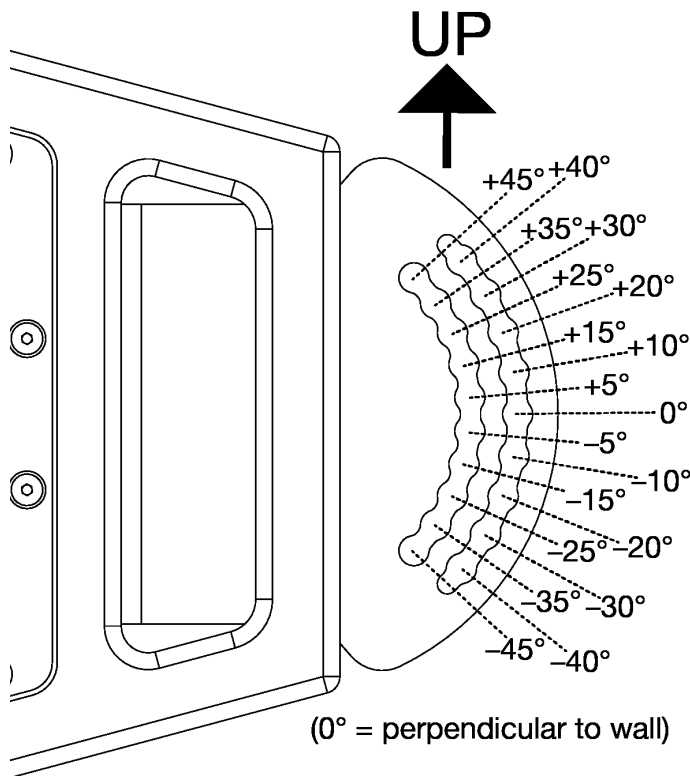


Figure 77. Example alignment of an even angle (-10°).

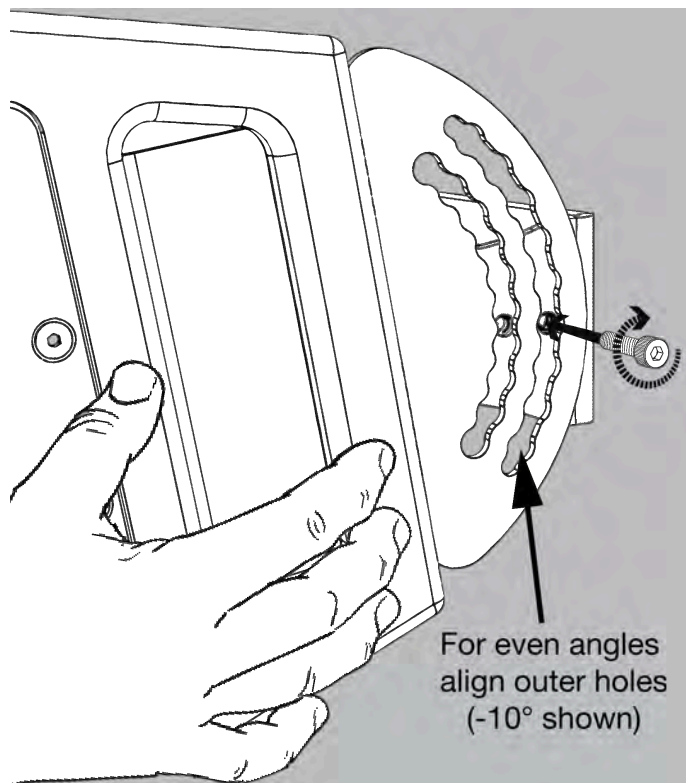
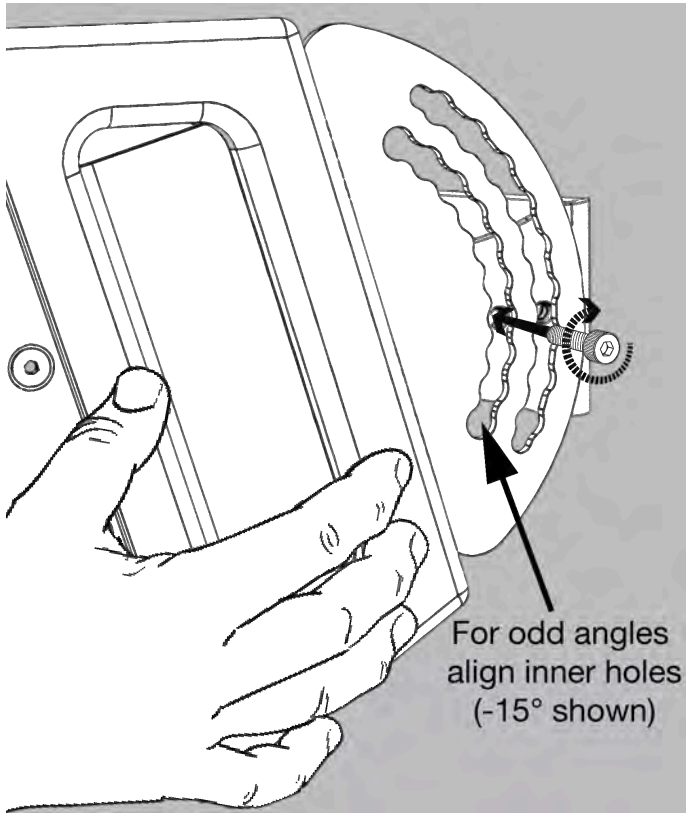
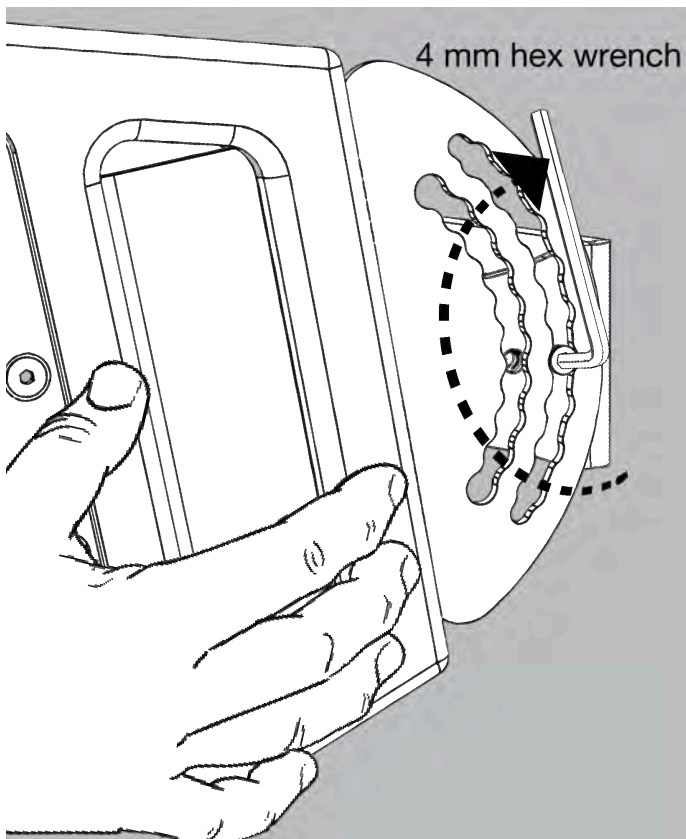


Figure 78. Example alignment of an odd angle (-15°).



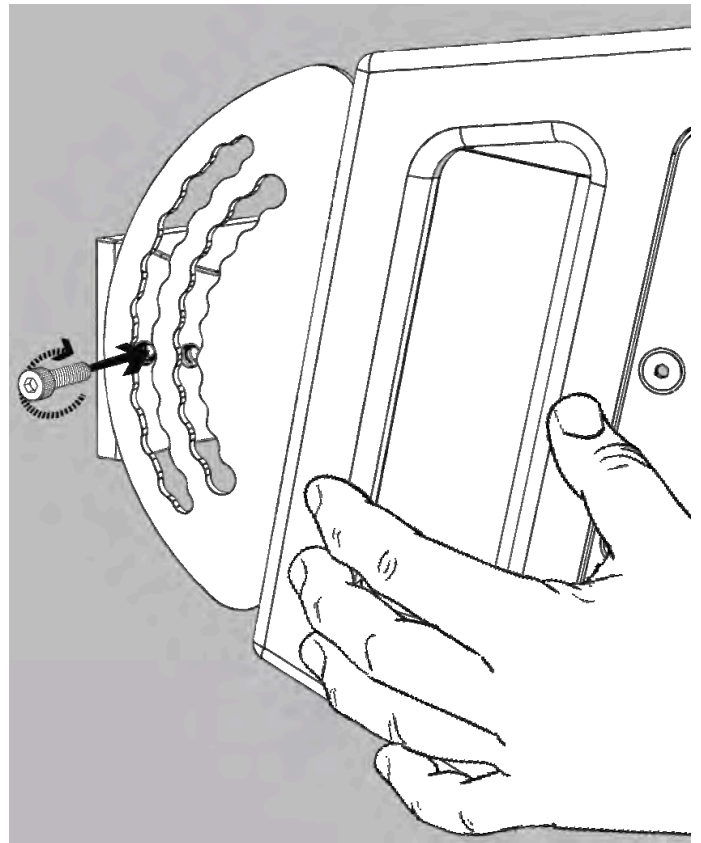
- When the holes in the bracket ears are correctly aligned with the threaded inserts in the wall-mounted yoke, according to the selected tilt angle, the second operator should insert the M6 bolt (one of those removed during [disassembly of the Bracket \(on page 22\)](#)) through the appropriate hole for the selected angle and thread it into the bracket.

Figure 79. Tightening the tilt-locking bolt into the Horizontal Mounting Bracket (-10° shown).



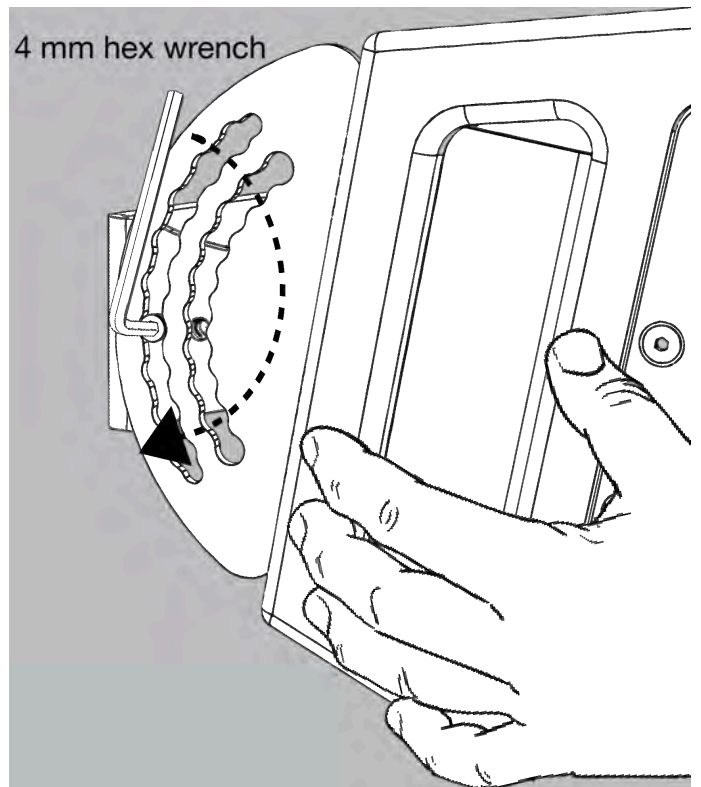
- Using a 4 mm hex wrench, tighten the first bolt firmly into the bracket, so that the head of the bolt is inside the hole and will prevent upward or downward tilt of the bracket.

Figure 80. Inserting the locking bolt on the opposite side (-10° show).



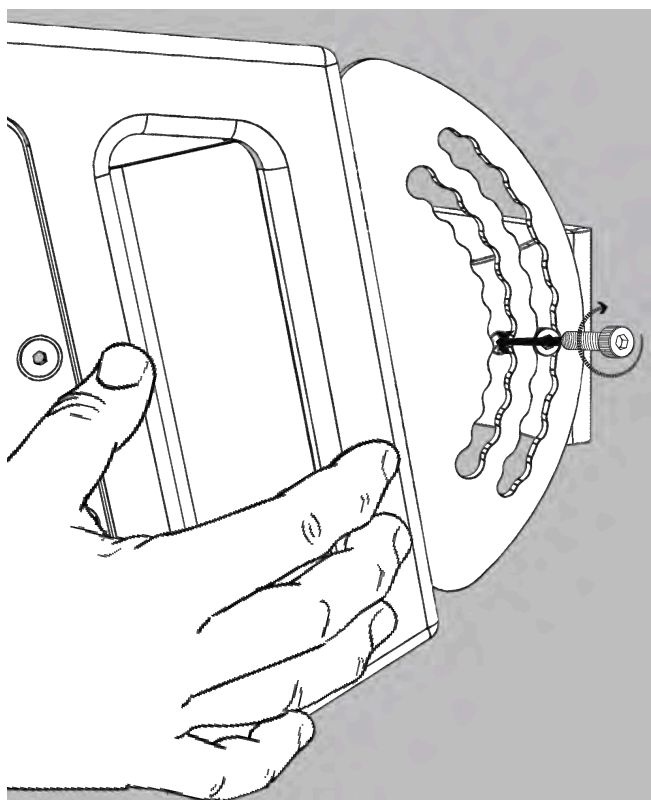
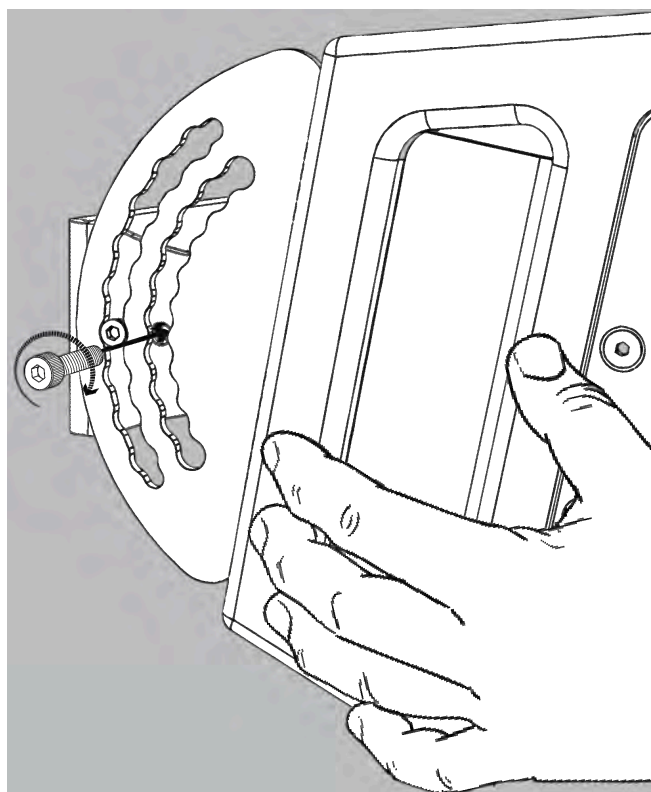
- Repeat the previous two steps on the opposite side of the speaker enclosure, making sure that the same corresponding angle-selection hole aligns on both sides.

Figure 81. Tightening the locking bolt on the opposite side (-10° shown).



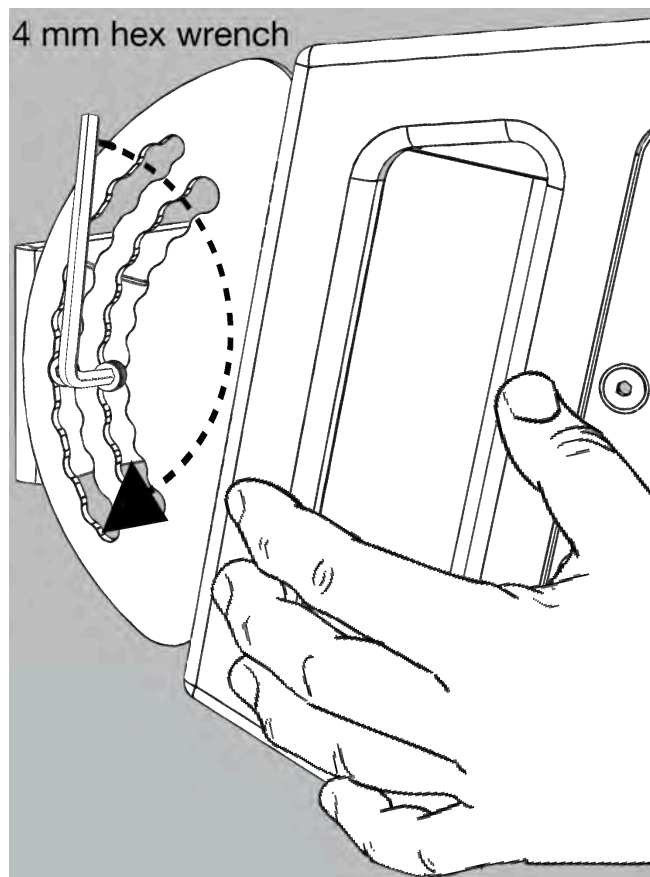
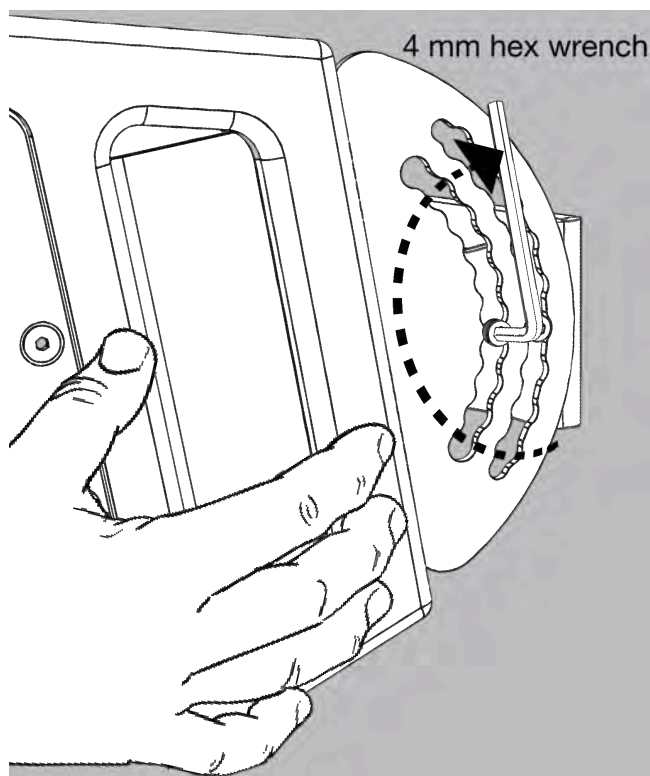
- Once the two primary bolts have been inserted to fix the tilt angle, the secondary bolts should be inserted on each side and threaded into the remaining inserts on the bracket. These WILL NOT enter holes on the external plates of the bracket, but will come into contact with the external surface of the plates, between the holes.

Figure 82. Inserting the secondary bolts (-10° tilt angle shown).



- When these two secondary bolts are threaded into the Bracket, use a 4 mm hex wrench to tighten them securely. These two secondary bolts serve to lock the two components of the bracket together and prevent the external plate from slipping over the head of the primary bolt, in case of unforeseen lateral or vertical forces strong enough to flex or bend the bracket.

Figure 83. Tightening the secondary bolts (-10° tilt angle shown).



- It is now safe to release the speaker enclosure and verify the stability and security of the installation.

Attaching a safety bridle

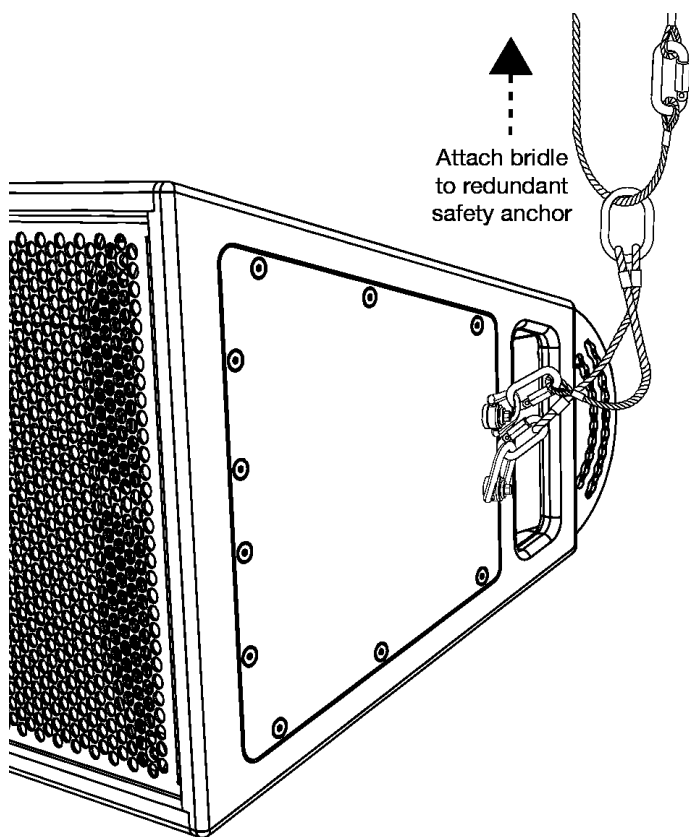
If the CT28 speaker enclosure has been equipped with swivel hoist rings for a redundant safety bridle (steel wire rope), these must be attached to the external anchor before concluding the installation.

ATTENTION

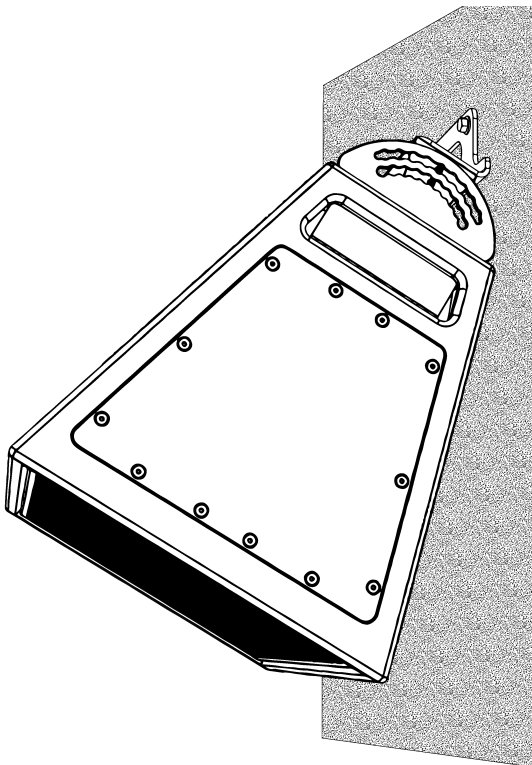
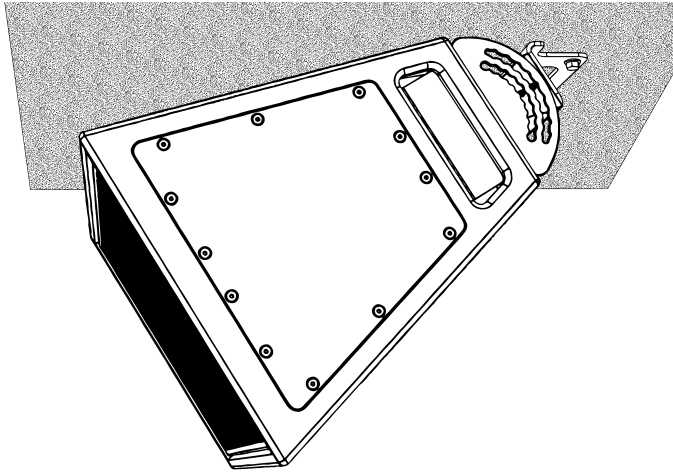
A redundant safety must be anchored to a point higher than the enclosure and, where possible, to a separate structural member than the Bracket. If the secondary safety bridle must be anchored using a fastener to the same structural member as the Bracket, its anchor must be installed at least one speaker-length away from the anchors holding the Bracket. Use only steel wire ropes or steel chains that conform to applicable regulations or norms in terms of construction and Working Load Limit. These must be of proper length and installed in such a position as to prevent the enclosure from falling more than 20 cm in the case of failure of the Bracket or the structure to which it is installed.

In most cases of wall mounting a single CT28 enclosure, the use of a two-leg safety bridle will provide sufficient redundant safety. The legs of the bridle must be steel wire rope, with thimbles and each with a Working Load Limit rated at least 2.5x the weight of the enclosure. The legs can be permanently closed and swaged through the hoist rings, or attached with rated shackles or locking carabiners. Carefully review third-party manufacturers' documentation to assure that the bridle and all its components are certified for the proper load limit with the required Safety Factor. The length, material and termination on the sling that attaches the bridle to the anchor point will obviously depend on the requirements of the structure or point to which it will be anchored.

Figure 84. An example of a steel wire rope safety bridle attached using carabiners.



Chapter 5. Installing CT28 on the Horizontal Mounting Bracket and Angle Bar



⚠ WARNING



Improper installation or suspension of any heavy load can result in death or serious injury to persons, as well as damage to property.

It is the responsibility of the installation personnel to verify and guaranty the reliability and safety of the installation.



Notice: This product must be installed in compliance with all applicable local, state and national regulatory provisions. The responsibility rests with the installer to verify that the installation is carried out in accordance with any applicable legislation.



Important: The installer must assess the appropriate stability and sturdiness of the mounting surface. In the case of wall-mount and ceiling-mount brackets, this includes, but is not limited to verifying the positions of suitable studs in the case of drywall mounts, hollow points in concrete block or solid concrete, as well as the presence and vicinity of electrical wiring or plumbing.



Restriction: Only hardware and accessories included with the product or specified by 1 Sound should be used for its installation.



Restriction: Do not modify or alter the loudspeaker or any accessory. Any modification by the user or installer could render the product or the installation unsafe.



Restriction: Do not install a loudspeaker or any accessory near any open flame or heat source.

Products, accessories and tools required

To install a CT28 enclosure permanently on a wall or surface using the Horizontal Mounting Bracket, you will need the following:

- A CT28 loudspeaker enclosure
- The Horizontal Mounting Bracket kit
- The Angle Bar kit
- An appropriate power drill and bit for the installation surface material
- A 4 mm hex driver and a 4 mm hex wrench (Allen)
- A 13 mm spanner or wrench
- A 5 mm hex wrench (Allen)
- Medium-duty mounting screws or bolts appropriate to the mounting surface (coach screws for drywall studs, concrete screw anchors for concrete or masonry, etc.); screws and bolts should have a flanged head or a coupled washer \varnothing 14-16 mm in order to retain the mounting plate
- Appropriate tools for securing the aforementioned fasteners (power screwdriver etc.)
- A torque wrench
- Optional: a short two-leg steel rope bridle, 2 x M5 double-swivel hoist rings and appropriate tools for securing these
- **Recommended:** pencil or marker, spirit level, stud finder

Critical Information



Attention: This mounting bracket is intended for installation by qualified professionals.



Notice: Please read these instructions carefully and completely before attempting installation.

Procedures

Disassembling the Horizontal Mounting Bracket

The Horizontal Mounting Bracket ships fully assembled, but to facilitate installation, it should first be separated into three parts: the wall-mount yoke and the two end plates with the tilt-adjustment mechanism that attach to the speaker enclosure. Before disassembly, be sure to note the proper interlocking configuration of the tilt mechanism; this will remove doubts when it is time to reassemble the bracket.

Figure 85. Removing the M6 bolts from the Horizontal Mounting Bracket.

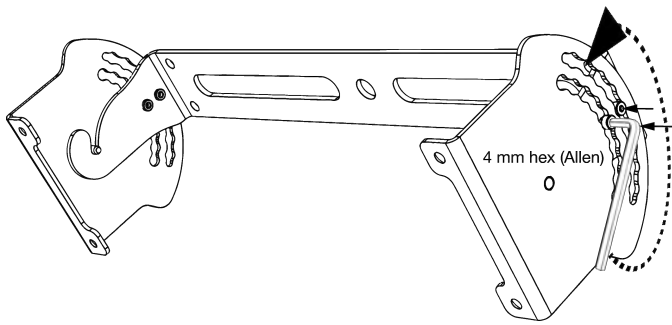
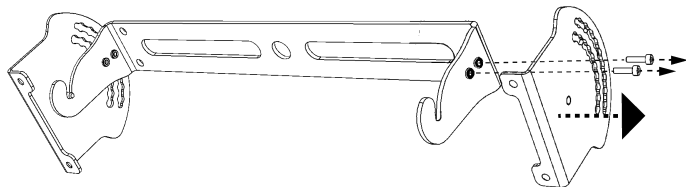
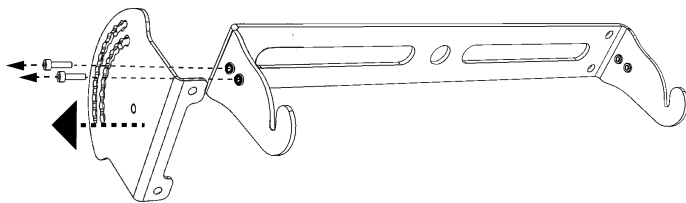


Figure 86. Removing the end plates from the wall-mount yoke.



- Use a 4 mm hex wrench or hex driver to remove the two M6 bolts from one end of the bracket. Be careful to hold both parts of the bracket, as the end of the bracket will be free to fall once the bolts have been removed. Keep these bolts, as they will be required to reassemble the bracket once it is installed.

Figure 87. Removing the end plates from the wall-mount yoke .



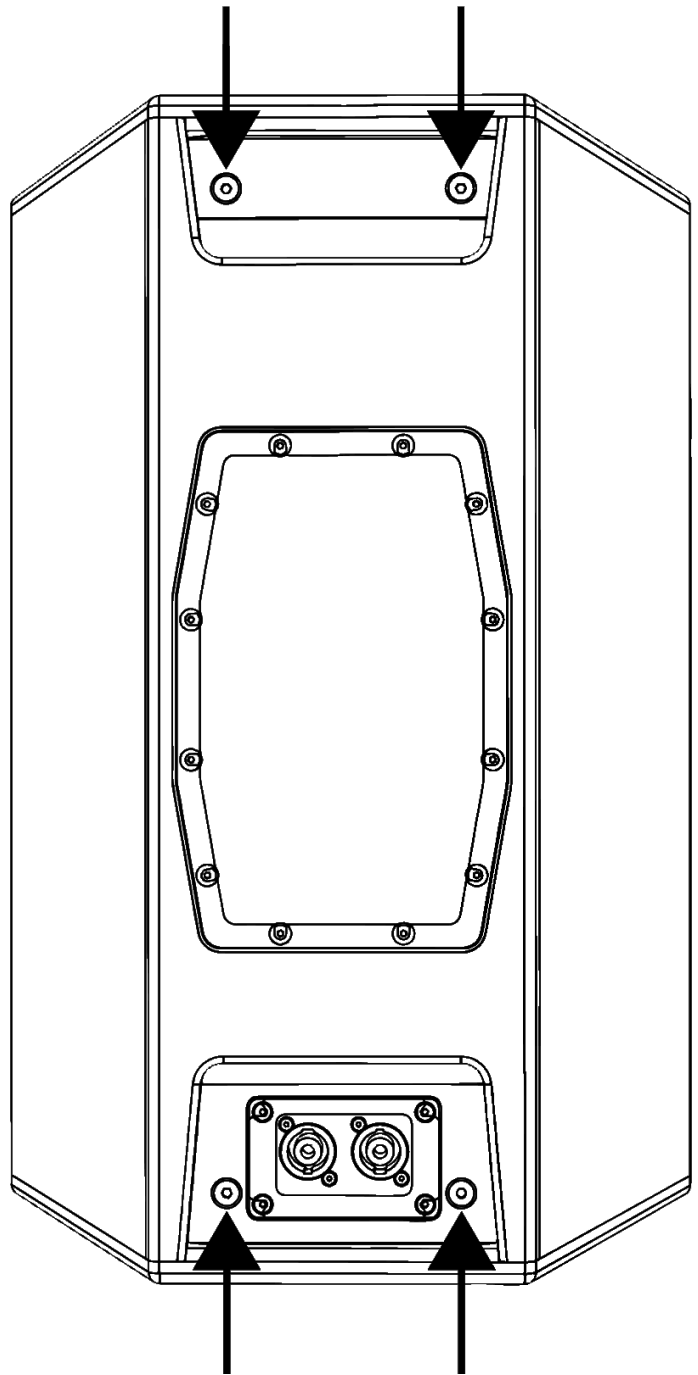
- Once the plate has been removed completely from one end of the bracket, repeat the above process to remove the plate from the opposite end.

Installing the Horizontal Bracket on the CT28

Once the two end-plates of the bracket have been separated from the wall-mounted yoke, they can be easily attached to the CT28 enclosure.

! **Important:** For permanent or semi-permanent installation, the use of medium-strength thread-locking compound is recommended on all user-installed screws.

Figure 88. The rear panel of the CT28 with the mounting points for the bracket indicated.



- Lay the enclosure on its front grille, taking whatever necessary precautions to avoid damaging the finish of the cabinet or the grille.
- Using a 4 mm hex wrench or hex driver, remove the two M6 x 25 mm screws from the top rear of the enclosure, inside the recess. Keep these, as they will be used to install the bracket.

Figure 89. Removing the mounting screws from the top of CT28.

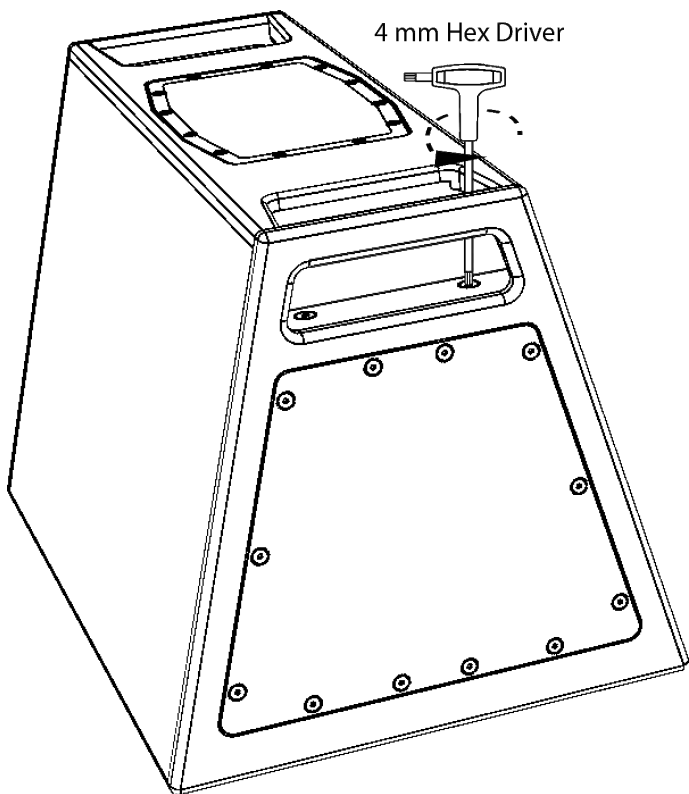
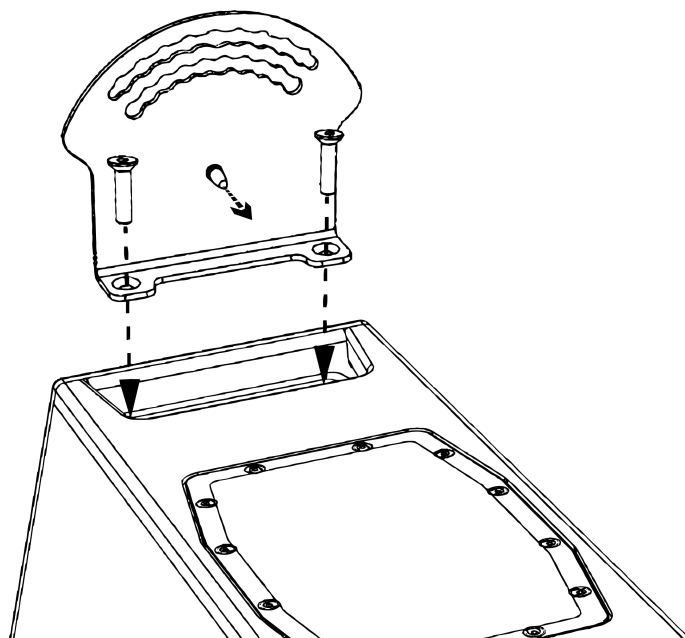
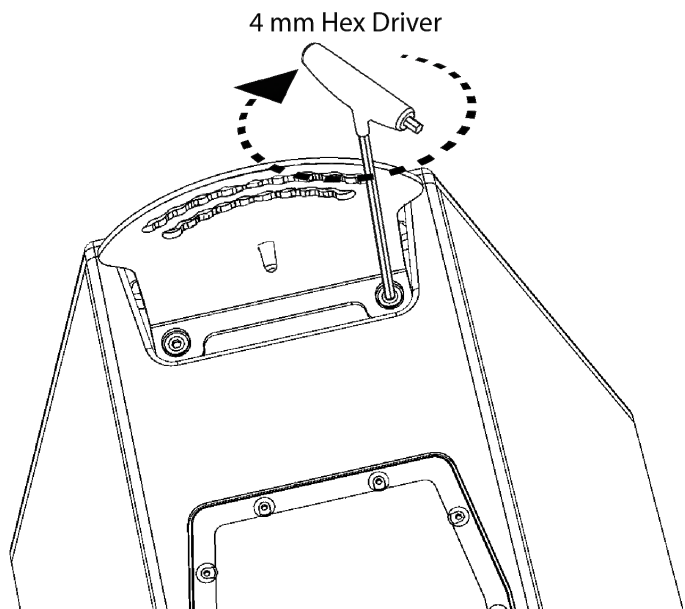
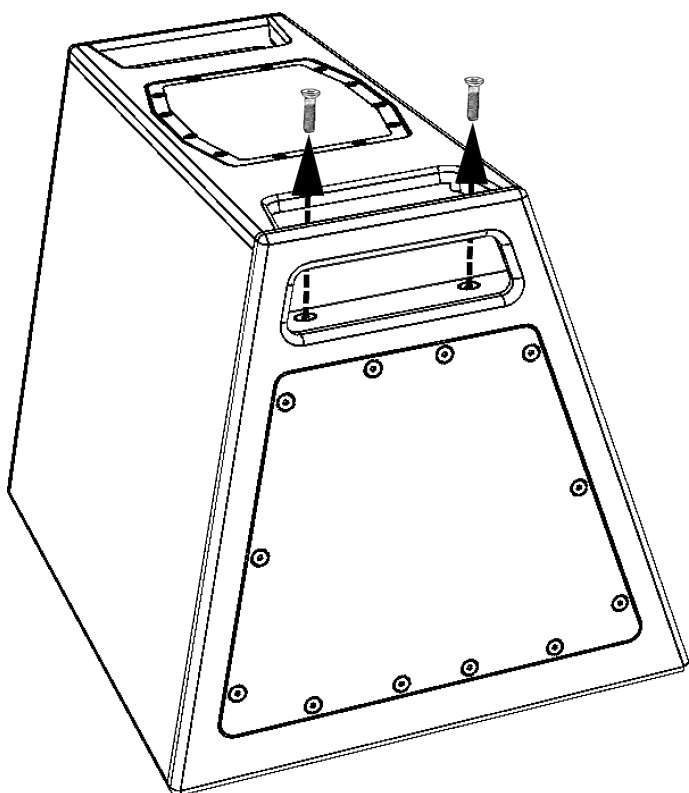


Figure 90. Installing the Horizontal Bracket plates on the CT28.



- Insert the two M6 x 25 mm screws previously removed, and thread them into the enclosure through the mounting holes in the bracket end.

Figure 91. Tightening the M6 screws to mount the bracket.



- Using a 4 mm hex wrench or hex driver that allows for sufficient leverage, firmly tighten the screws into the panels, making sure that there can be no movement between the bracket and the speaker enclosure.

- Place one of the ends of the bracket into the recess on the enclosure with the flat surface of the bracket towards the exterior (top) of the enclosure and the pivot lug pointed inward toward the enclosure. Align the two mounting holes in the bracket with the threaded holes in the rear of the enclosure.

Figure 92. Removing the M6 bolts from the bottom (connector end) of the CT28

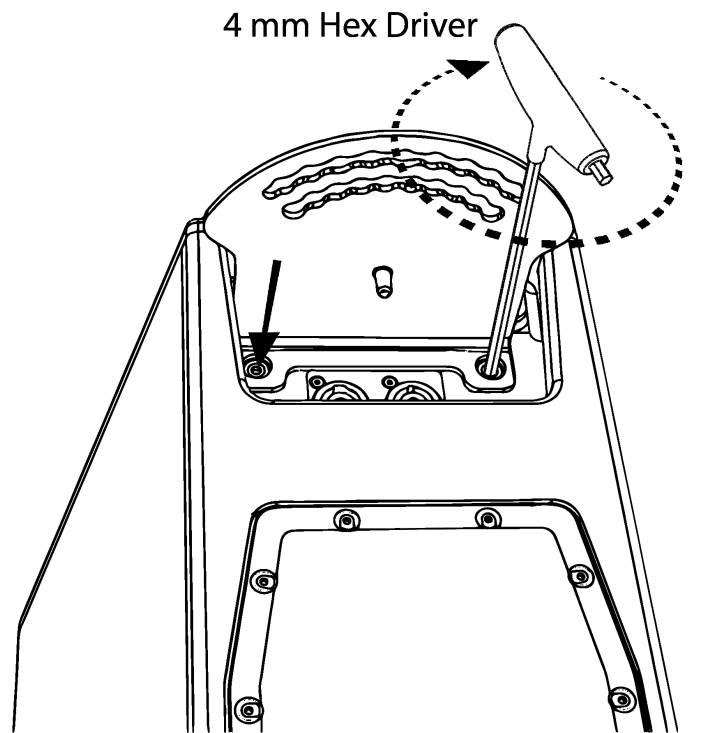
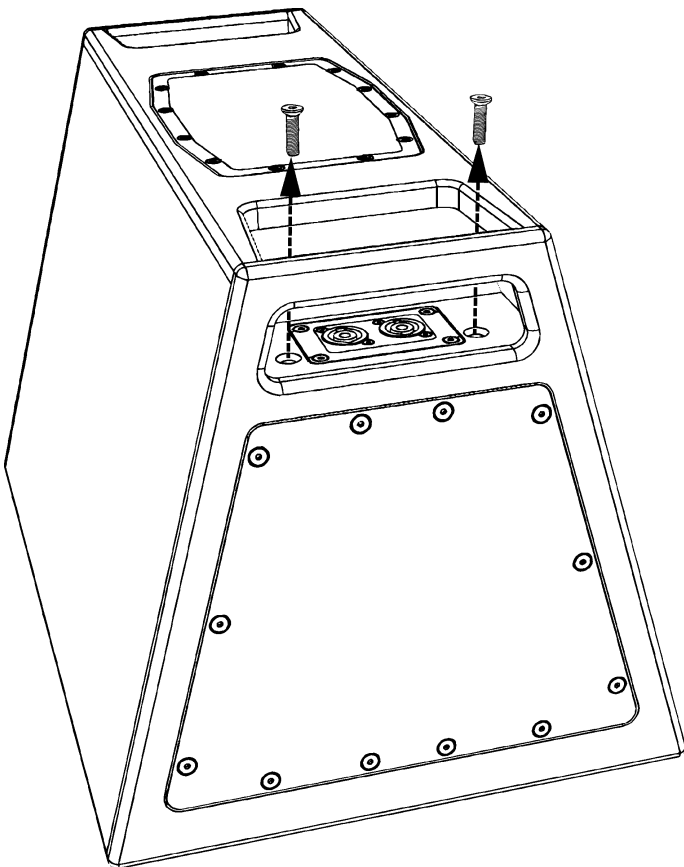
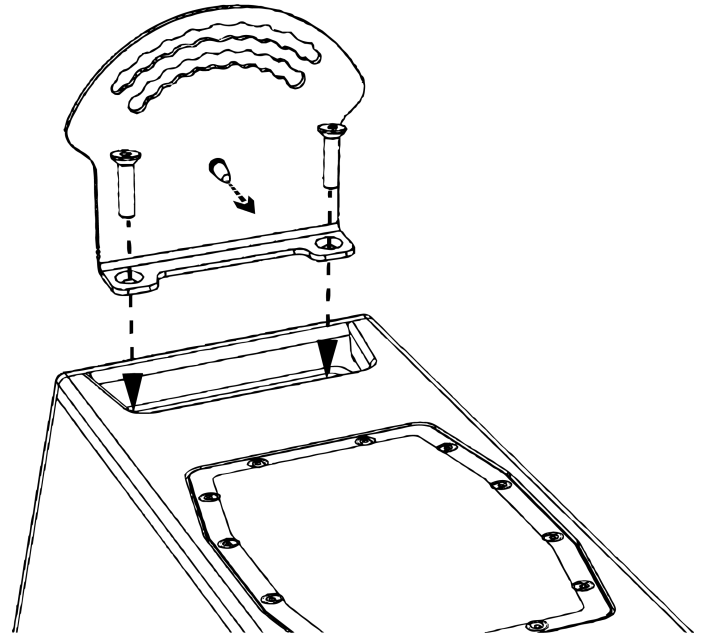
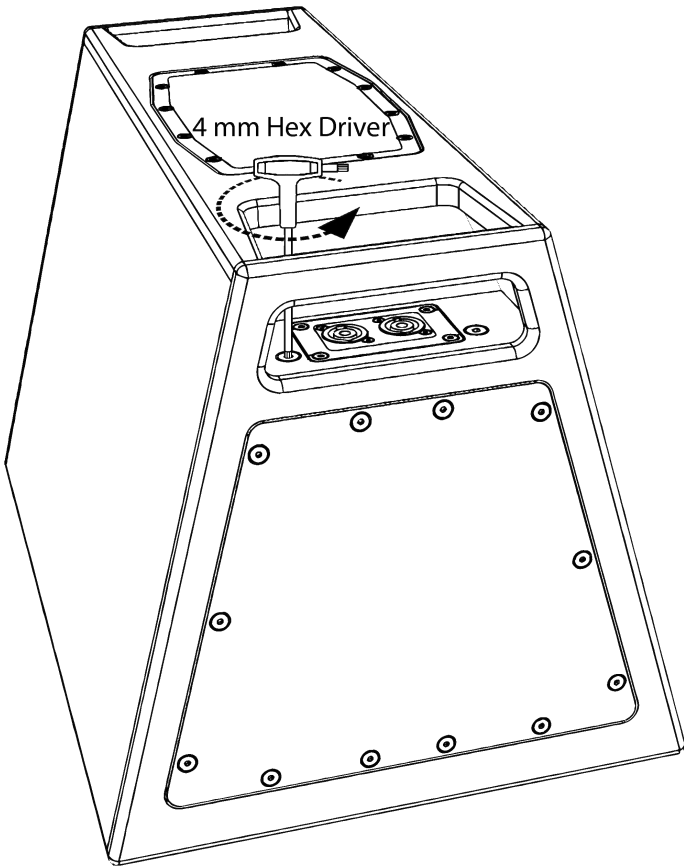
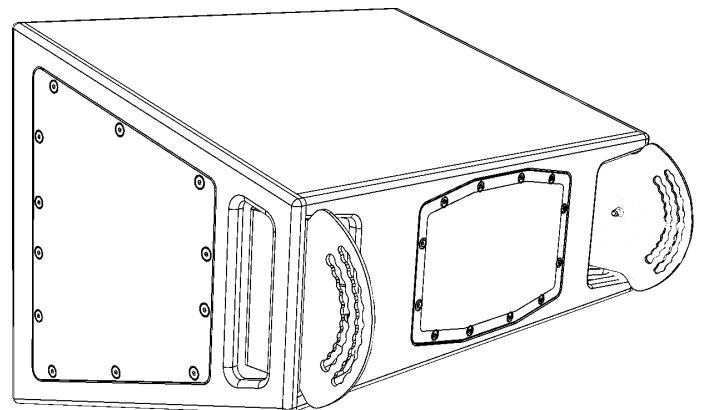


Figure 93. The plates of the Horizontal Bracket installed on the CT28.



- Repeat the previous four steps on the opposite (bottom/connector side) end of the CT28.

Installing redundant safety anchors

! **Attention:** When correctly installed, the Wall Bracket and the Horizontal Mounting Bracket are designed to safely support the CT28 speaker enclosure under normal conditions. However, connection to an external anchor point using a steel wire rope safety bridle is strongly recommended in any installation where people could pass beneath or near the loudspeakers and may be required by local or national codes in installations in public places. If you intend to install a secondary safety bridle anchored directly to the enclosure, it is recommended that you use two of the M5 rigging points on the top of the CT28 enclosure for this purpose.

In most cases of wall mounting a single CT28 enclosure, the use of a steel wire rope safety bridle will provide sufficient redundant safety. Carefully review the third-party manufacturer's documentation to assure that the bridle and all its components are certified for the proper Safe Working Load with the required Factor of Safety. The length of the bridle and termination on the opposite end will obviously depend on the requirements of the structure to which it will be anchored.

it will be necessary to install side-pull or double-swivel hoist rings in two of the M5 rigging points in the place of the M5 x 25 mm screws supplied with the speaker enclosure. Only forged steel hoist rings, certified for the proper Working Load Limit with the required Factor of Safety at their minimum load angle can be used.

! **Important:** For permanent or semi-permanent installation, the use of medium-strength thread-locking compound is recommended on all user-installed screws.

Figure 94. Threaded inserts usable for safety anchors on the top or bottom of CT28.

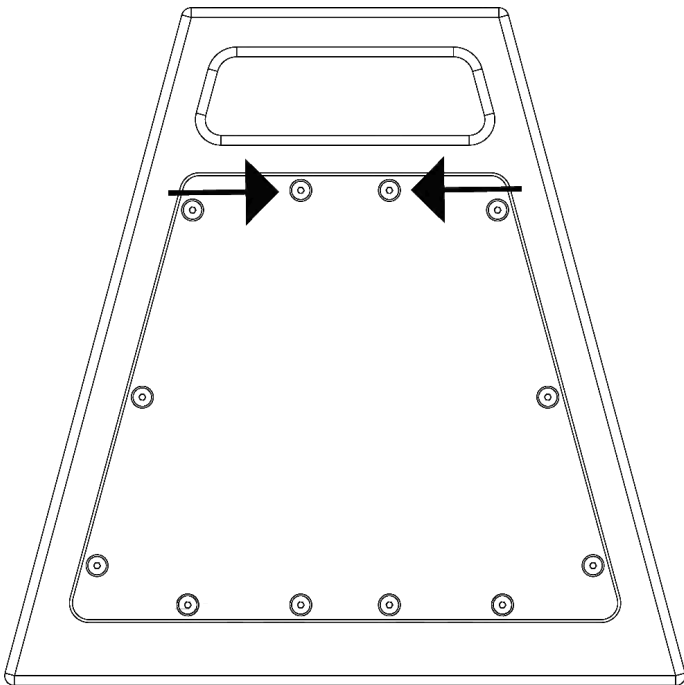


Figure 95. M5 double-swivel hoist ring measurement requirements.

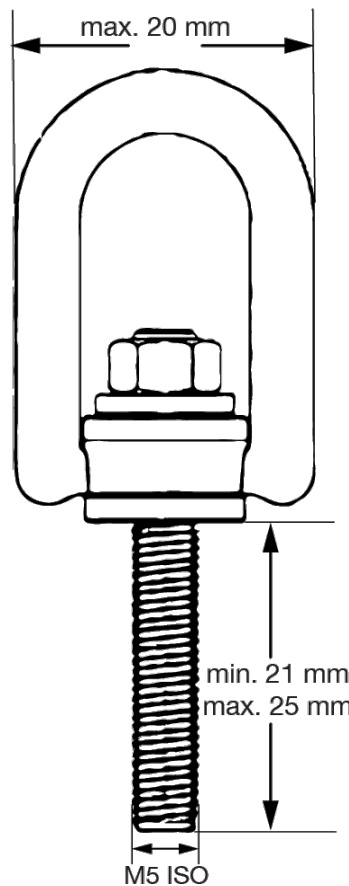
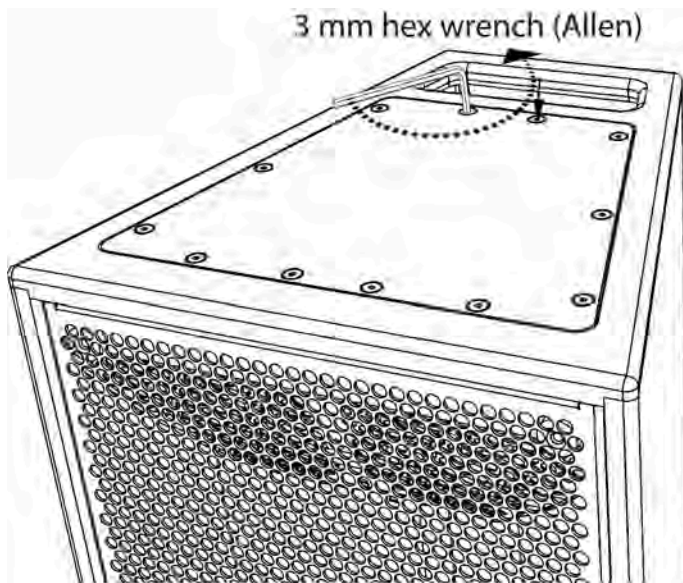
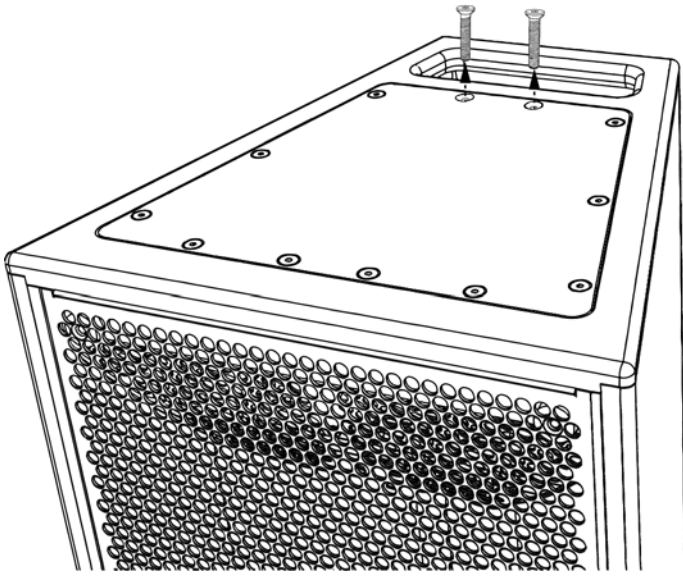


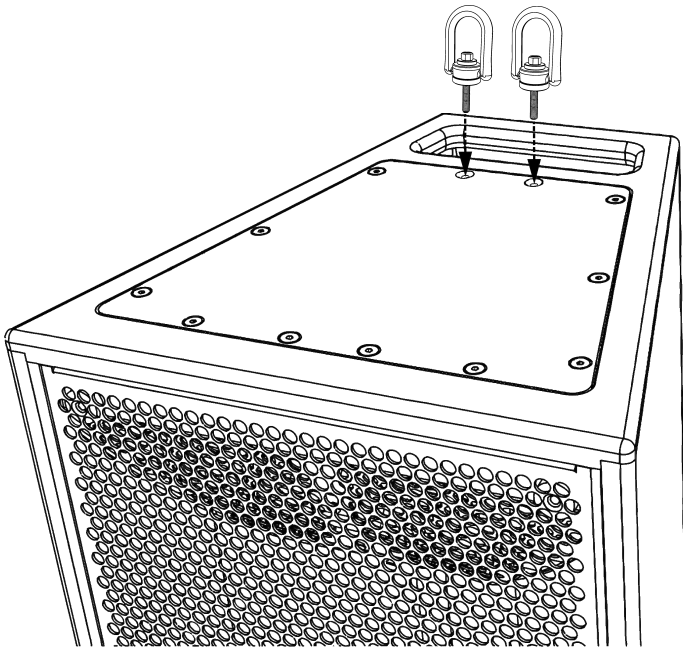
Figure 96. Removing the M5x25 mm countersunk screws for the installation of safety anchors.





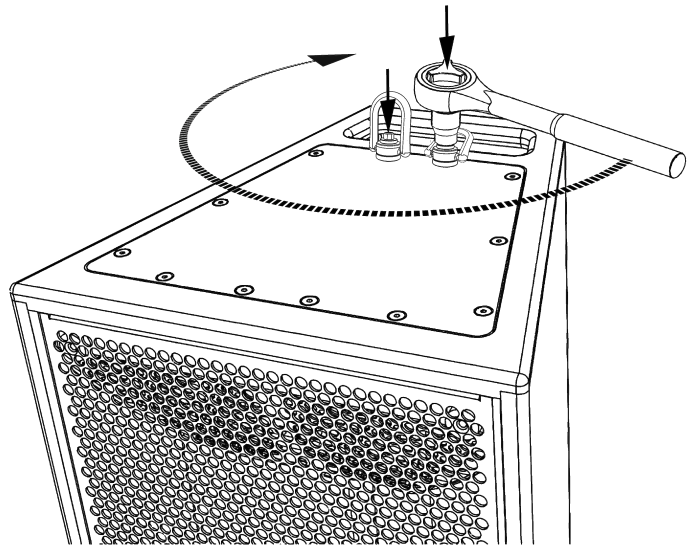
- Using a 3 mm hex wrench, remove the two rear M5x25 mm countersunk screws from the top of the CT28 enclosure.

Figure 97. Inserting the M5 swivel hoist rings in the rigging points on the top of the CT28 enclosure.



- Thread the M5 eye bolts into the rigging points from which the screws were removed and tighten them with your fingers.

Figure 98. Torquing the hoist rings.



- Tighten the two hoist rings into the rigging points to the torque specified by the manufacturer. The tools necessary will be specified in the product literature provided by the manufacturer of the third-party hoist rings.

Installing the Angle Bar

The Angle Bar combined with the Horizontal Mounting Bracket can be installed horizontally on a ceiling to provide a tilt angle from -15° to -75°, or vertically on a wall to allow a steeper downward tilt (down to -75°) than would be possible with the Horizontal Mounting Bracket alone.

⚠ WARNING



Before beginning this installation, it is necessary to ascertain the construction type, load-bearing capability and durability of the wall or surface. Bear in mind that the CT28 speaker enclosure weighs 20 kg (44 lb), and can be positioned in such a way as to extend the mass of the enclosure out to perpendicular from the mounting surface. Therefore the increased forces imposed on the fixings and wall must be taken into account.

Careful thought must be given to ensure that the wall structure is strong enough to safely support the total load with the proper Factor of Safety required by local, state and national norms or legislation. If the facility or venue is open to the public and the mount is within reach of the public, the installer should take into consideration possible miscreant behavior or tampering when determining the appropriate factor of safety. If the wall structure is deemed incapable of supporting the load, consideration should be given to strengthening and/or stabilizing the wall or adopting an alternative method of installation. In the case of any doubt, architects, structural engineers or other specialists should be consulted.

⚠ WARNING



Risk of Electric Shock
Drilling into hidden electrical wiring within walls can result in serious injury or death, fires and property damage.

BE AWARE OF WHAT YOU ARE DRILLING INTO. Before drilling holes in any wall or surface, make sure that it does not conceal electrical wiring or conduits. Consult the wiring diagram of the facility or venue and check for nearby outlets, switches or junction boxes that could indicate concealed wiring, be it electrical mains, network, telephone or other infrastructure.

CAUTION



Use Proper Eye, Ear, Head, Foot and Hand Protection During Installation
 This task requires the use of power tools and potentially elevated loads.
 All local and national norms, regulations and guidelines must be followed during the installation procedures, including the use of proper protective clothing and gear.

Notice: Due to the wide variety of building materials and construction methods that can be encountered in an installation, 1 Sound can only provide general recommendations for installing the Angle Bar. It is the responsibility of the installer to assess the appropriate stability and sturdiness of the installation. This includes verifying the positions of suitable studs, posts or framing in the case of drywall mounts, verifying hollow points in masonry, concrete block or solid concrete, and utilizing anchoring methods and hardware appropriate for safe installation of the equipment according to the construction material and depth of the mounting surface. The responsibility rests with the installer to verify that the installation is carried out in accordance with any applicable legislation. In case of any doubt, architects, structural engineers or other specialists should be consulted.

Figure 101. The necessary vertical clearance for the CT28 a CT28 -75° (maximum tilt) ceiling mount..

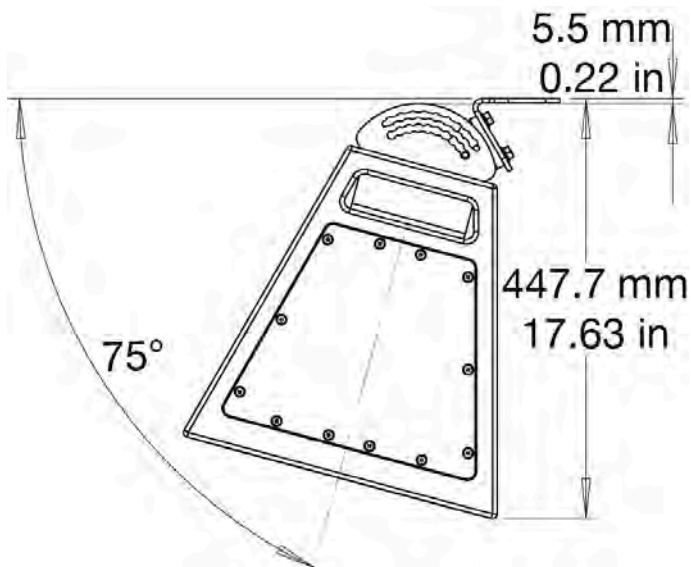
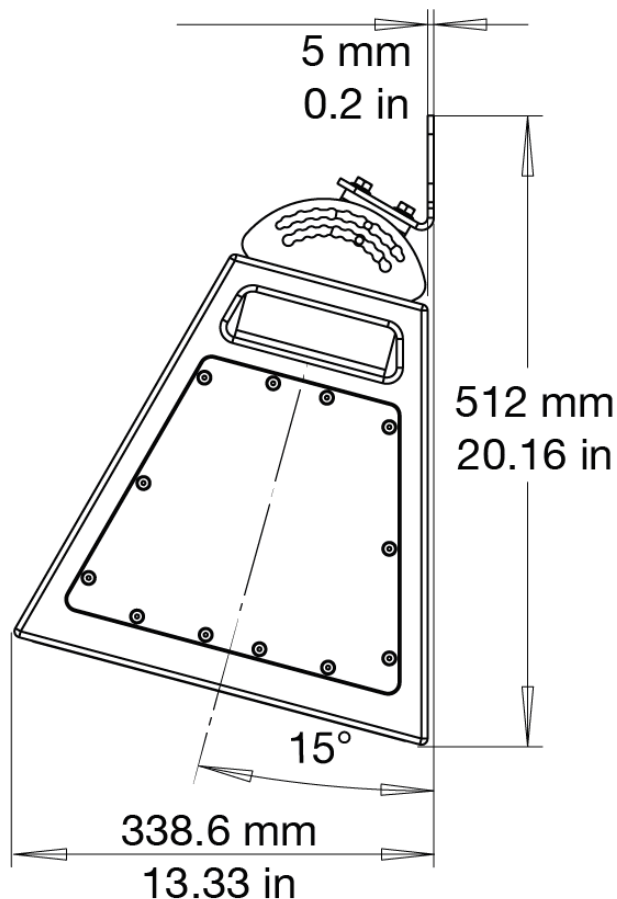


Figure 102. The necessary vertical and forward clearance for the CT28 on the Horizontal Mounting Bracket (maximum tilt).



Before proceeding with the installation, be sure to verify the available horizontal and vertical space for the speaker enclosure with the bracket attached, referring to the figures below.

Figure 99. The CT28 installed on a ceiling at minimum tilt (-15° – flush with ceiling)

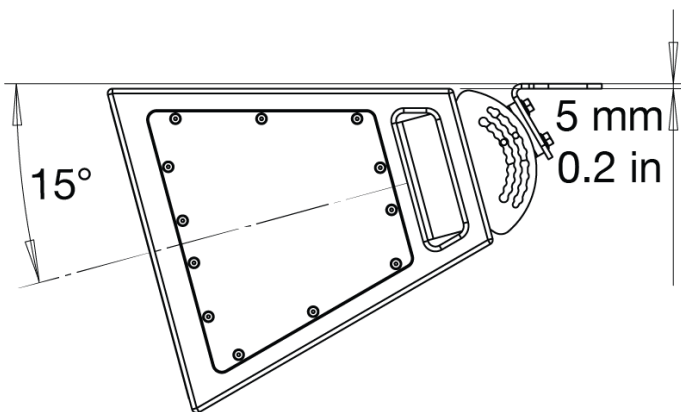


Figure 100. The necessary clearance for a CT28 -15° (minimum tilt) ceiling mount.

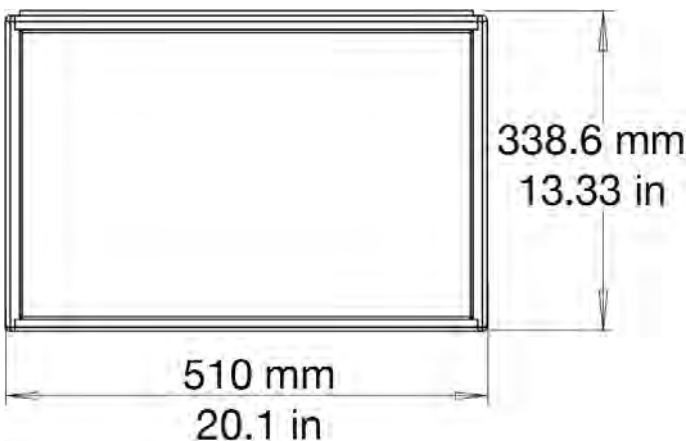


Figure 103. The clearance and drilling template of the wall-mounted face of the CT28 Angle Bar.

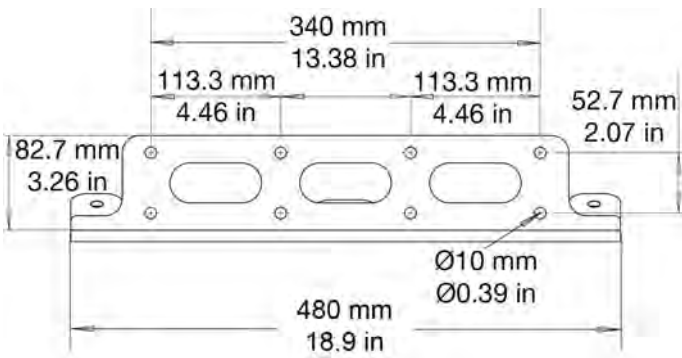


Figure 104. Marking a wall for drilling.

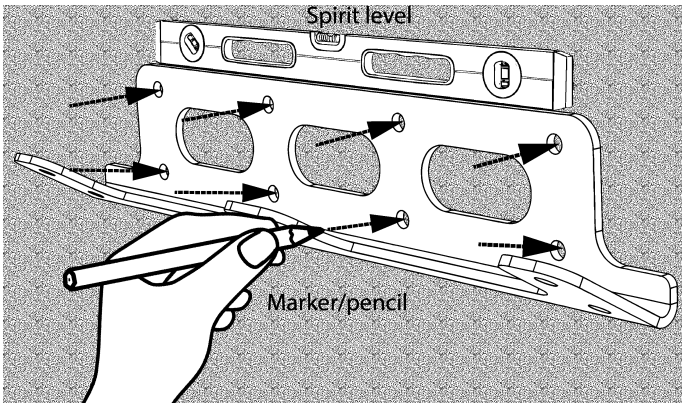
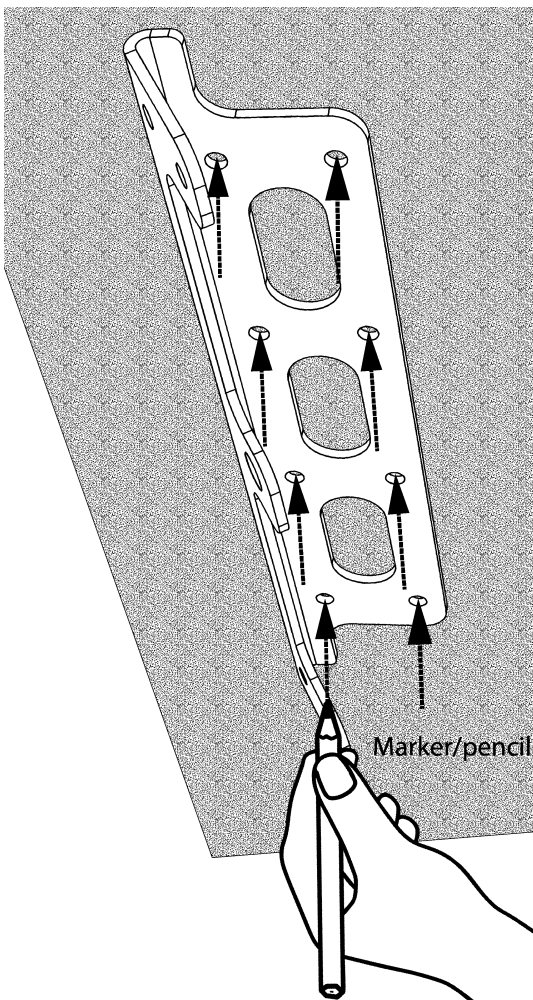
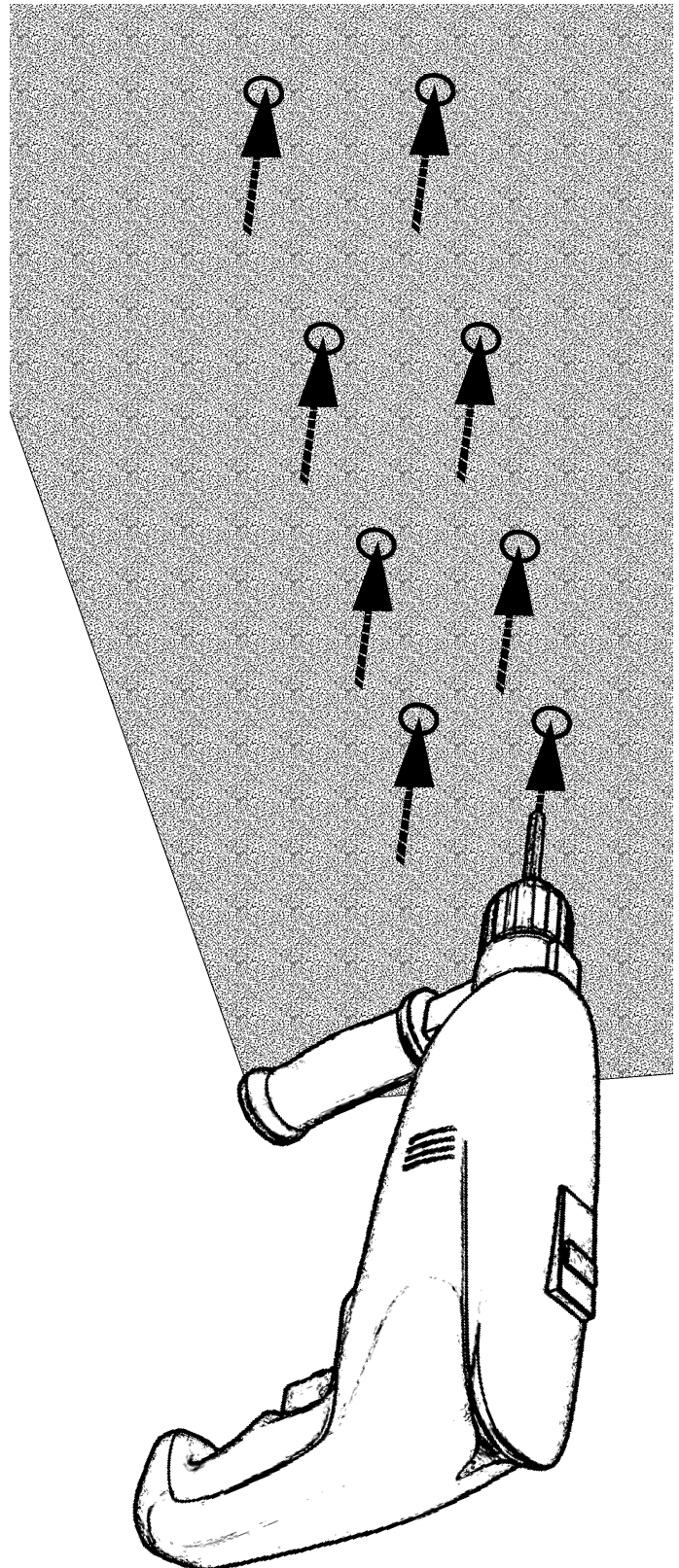


Figure 105. Marking a ceiling for drilling.



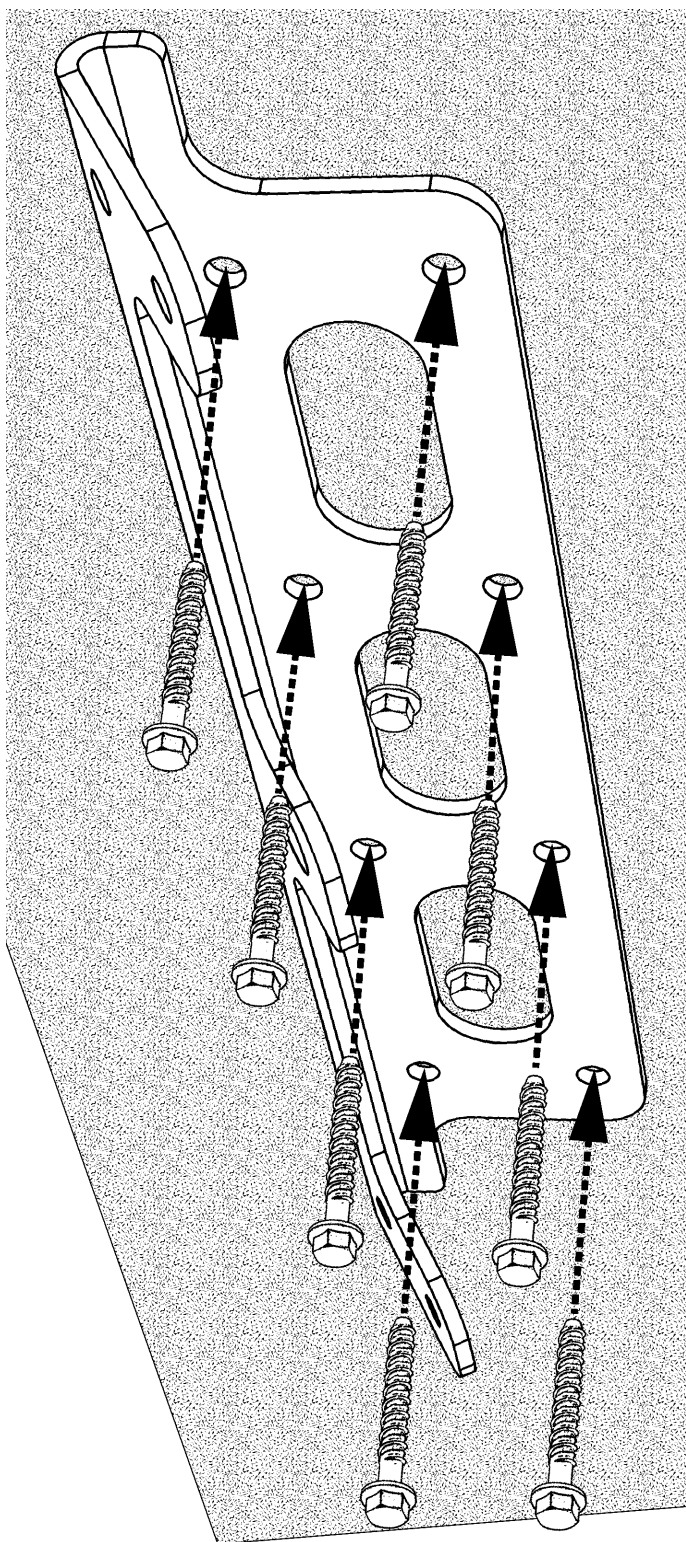
- When it has been verified that there is no wiring or plumbing in the wall or ceiling behind the mounting position, use the Angle Bar itself as a drilling template and mark with the pencil the centers and outlines of the mounting holes. In case of a wall installation, a spirit level can be useful to assure that the mount is properly leveled.

Figure 106. Drilling the mounting holes.



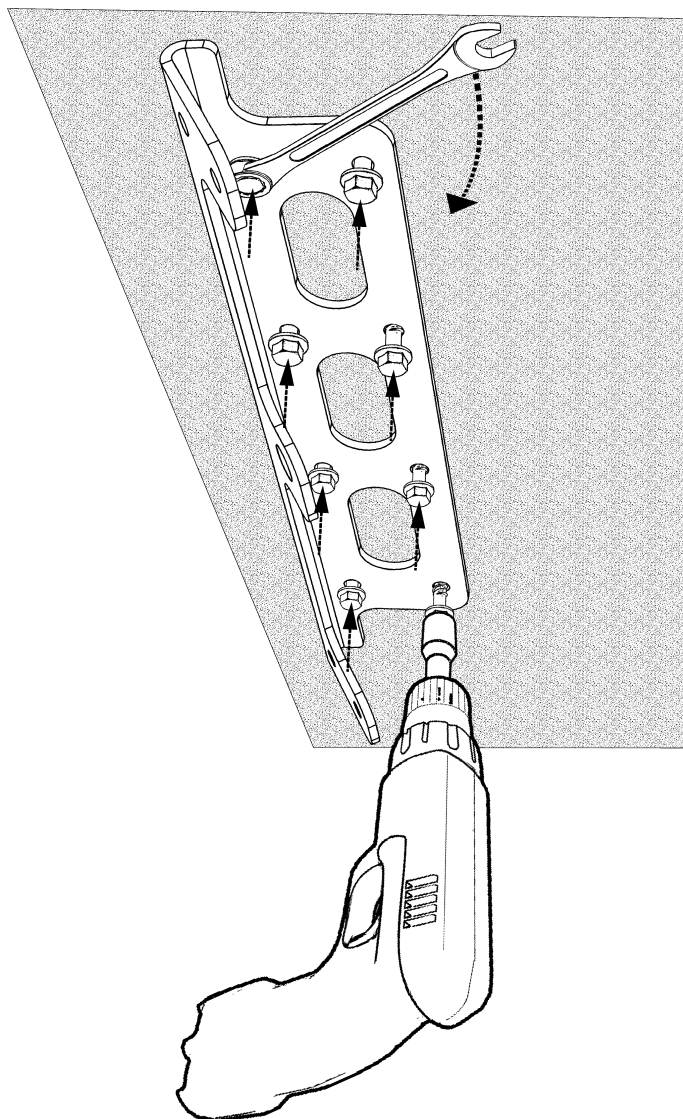
- Drill the eight holes, using a drill or percussion drill with a bit appropriate to the substrate material (masonry/concrete, wood, steel etc.) with the appropriate diameter and to the appropriate depth for the anchor type being used.
- Once the eight mounting holes have been drilled, clear them of residue and verify the appropriate depth of each.
- Place the Angle Bar/yoke assembly against the wall in the correct orientation (with the open "hooks" for the angle-adjustment plates facing up) and align the eight mounting holes centered on the drilled holes.

Figure 107. Inserting the screw anchors (ceiling mount shown).



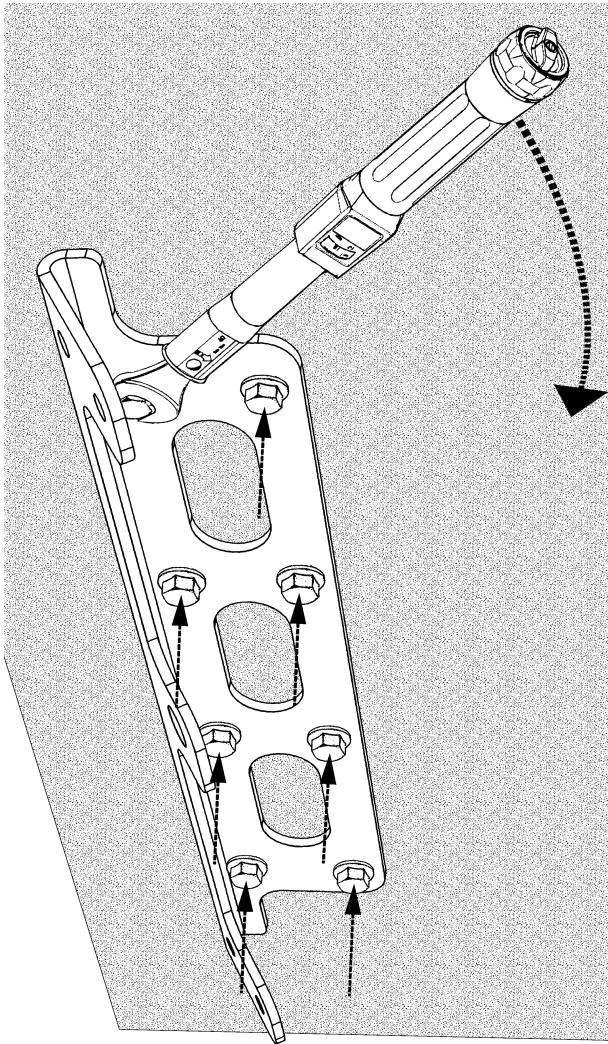
- Insert the eight screws or anchors through the mounting holes in the Angle Bar. Tighten the screw anchors with your fingers only sufficiently to keep them in place.

Figure 108. Driving the screw anchors into the ceiling.



- While holding the Angle Bar in place, use a spanner wrench or a power screwdriver to tighten each anchor, until each holds the plate to the wall. Due to the shape of the Angle Bar, it could be difficult to use a power driver for the four screw anchors nearest the attachment for the yoke. It could be necessary to use a simple spanner or wrench to drive in these anchors. When using a power driver, keep it at a low speed to avoid stripping the threading cut into the substrate material. Once the washer or flanged head on each bolt is in contact with the bracket and the bracket is against the wall, continue tightening them only by hand.

Figure 109. Tightening the screw anchors with a torque wrench.



- Using a torque wrench, tighten each screw anchor into the wall. Take care not to exceed the maximum installation torque specified by the manufacturer of the hardware.
- Once the Angle Bar has been properly secured to the ceiling or wall, it is possible to attach the yoke of the Horizontal Bracket to the Angle Bar. To do this, align the four holes in the rear plate of the yoke with the matching holes in the Angle Bar and use the (4x) bolts, lock-washers and nuts supplied with the Angle Bar to lock these together.

! Important: Depending on whether the installation is on a vertical wall or on a ceiling, the yoke of the Horizontal Mounting Bracket must be oriented

Figure 110. Aligning the Yoke with the Angle Bar in the ceiling-mount configuration.

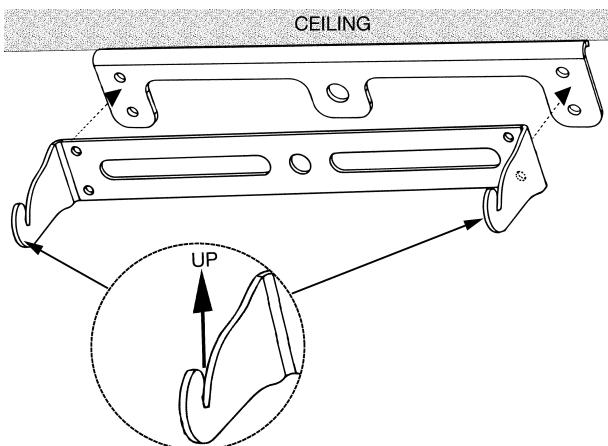


Figure 111. Aligning the Yoke with the Angle Bar in the wall-mount configuration.

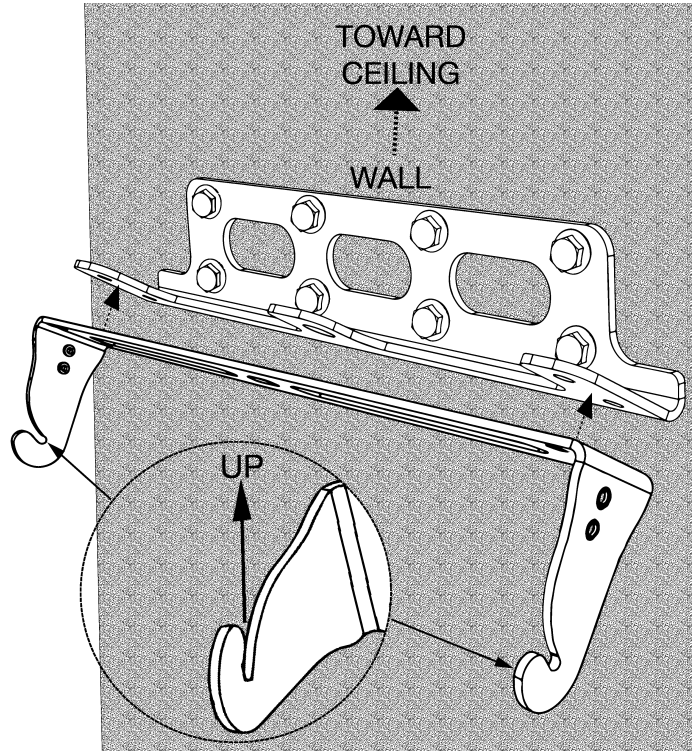
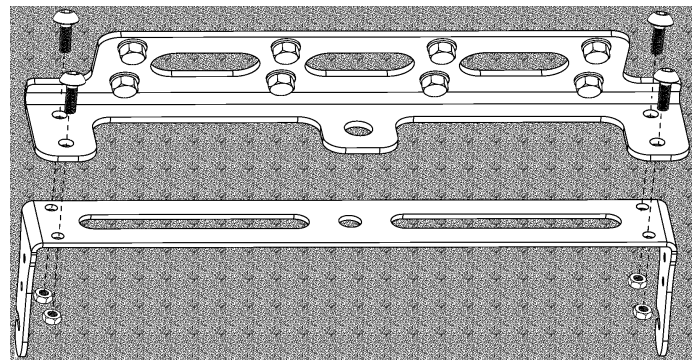
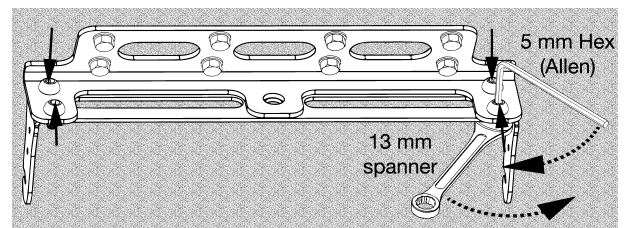


Figure 112. Mounting the yoke of the Horizontal Mounting Bracket to the Angle Bracket (ceiling configuration shown).



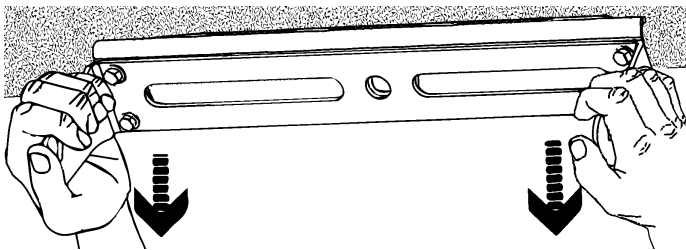
! Important: For permanent or semi-permanent installation, the use of medium-strength thread-locking compound is recommended on all user-installed hardware.

Figure 113. Tightening the bolts and nuts to couple the yoke and the Angle Bracket.



- Using a 5 mm hex wrench and a 13 mm spanner, firmly tighten the bolts and nuts to compress the lock-nuts against the Bracket and the yoke.

Figure 114. Applying downward force to verify the mount.



- Apply force or weight to the mounting yoke to verify physically its ability to support the necessary load. There must be no movement possible between the Angle Bar and the wall/ceiling, nor between the yoke and the Angle Bar.

Mounting and pointing the CT28

Once the yoke of the Horizontal Mounting Bracket has been mounted to the Angle Bracket and to the wall, and the end plates of the bracket are installed on the CT28 enclosure, the installation can be completed by re-coupling the components of the bracket, securing and pointing the loudspeaker to achieve the required coverage.

CAUTION



Two People Required
The following task simultaneously requires moderate two-handed lifting and the performance of fine motor operations. To avoid possible injury or damage, this procedure must be performed by two people

Figure 115. Lifting the CT28 onto the ceiling-mounted yoke.

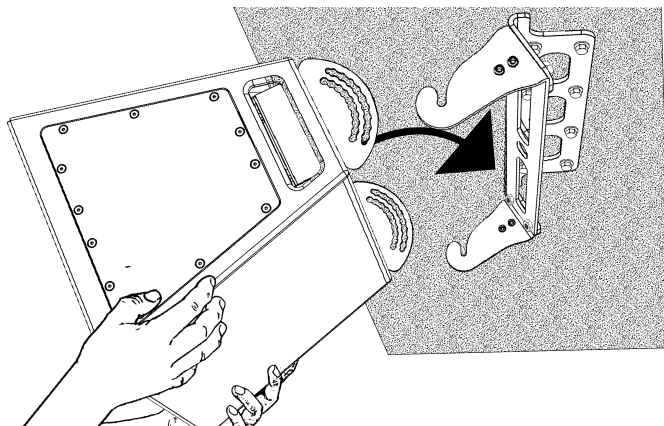
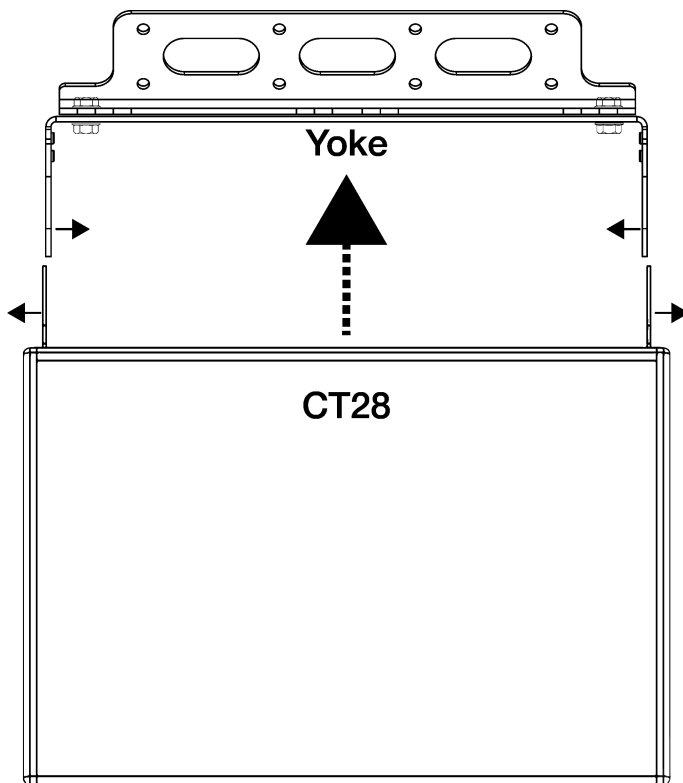
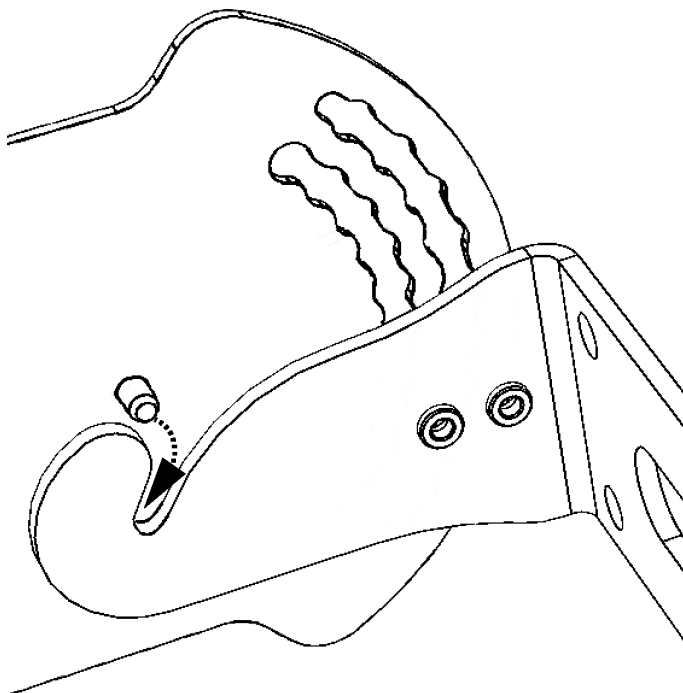


Figure 116. Fitting the CT28 with plates onto the yoke of the Horizontal Mounting Bracket (Top View).



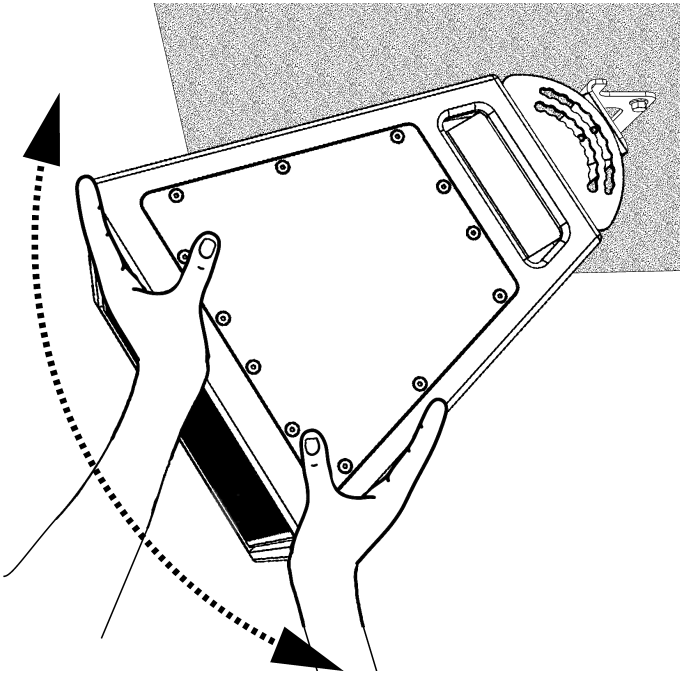
- Lift the CT28 (with the end plates of the bracket installed) in front of and slightly above the yoke, aligning the end-plates on the outside of the upward-facing hooks of the wall-mounted yoke.

Figure 117. Aligning the lug on the angle-adjustment plate with the hook on the yoke.



- Lower the speaker enclosure so that the two lugs on the end-plates engage the hooks on the wall-mounted yoke. DO NOT release the CT28.

Figure 118. Positioning the CT28 for the required coverage (-30° shown).



- As one person holds and tilts the speaker enclosure, the second operator should help to align the holes in the bracket to apply the required tilt angle (see the figure and examples).

Figure 119. The tilt-locking holes and their corresponding angles in the ceiling-mounted configuration (0° = parallel to ceiling).

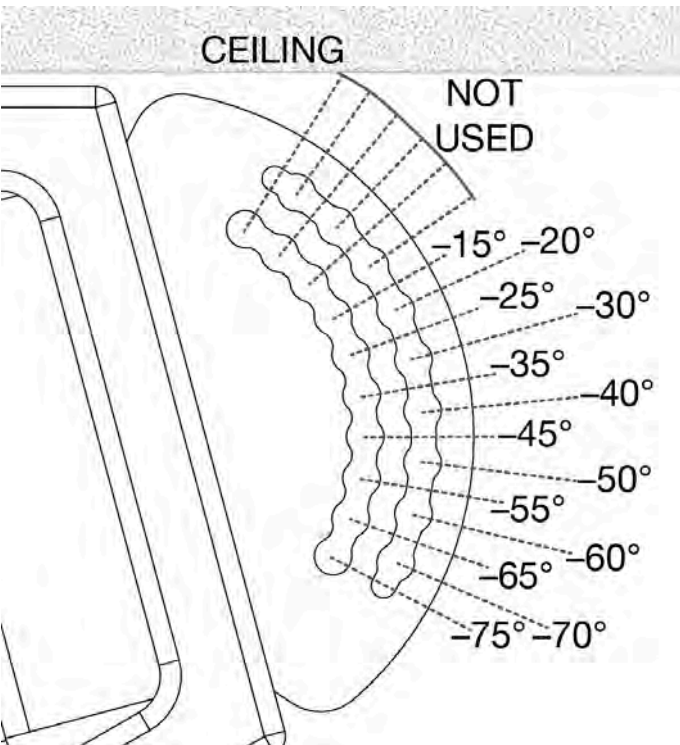
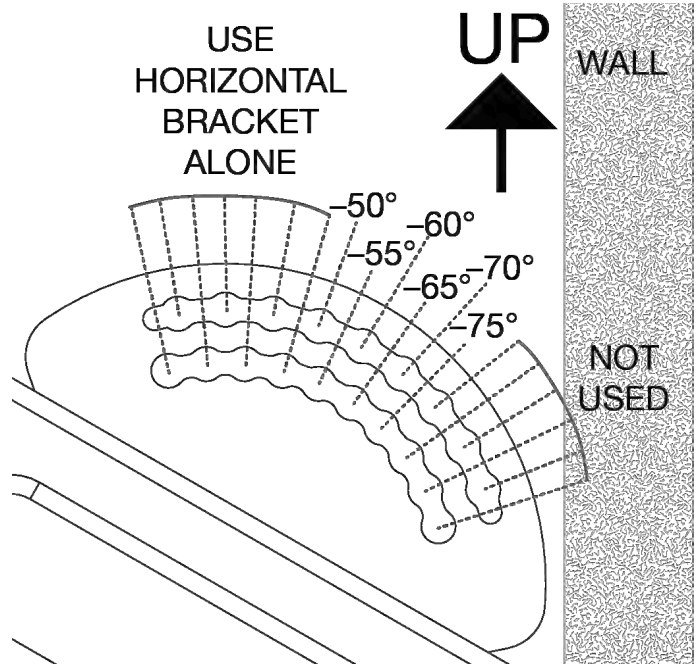


Figure 120. The tilt-locking holes and their corresponding angles in the wall-mounted configuration (0° = perpendicular to wall).



! Attention: Use the Angle Bar for a vertical wall-mount installation only if a downward tilt angle greater than -45° (down to -75°) is necessary. For tilt angles from +45° to -45°, use the [Horizontal Mounting Bracket installed directly to the wall.](#) (on page 22)

Figure 121. Example alignment of an even angle (-40° ceiling mount shown).

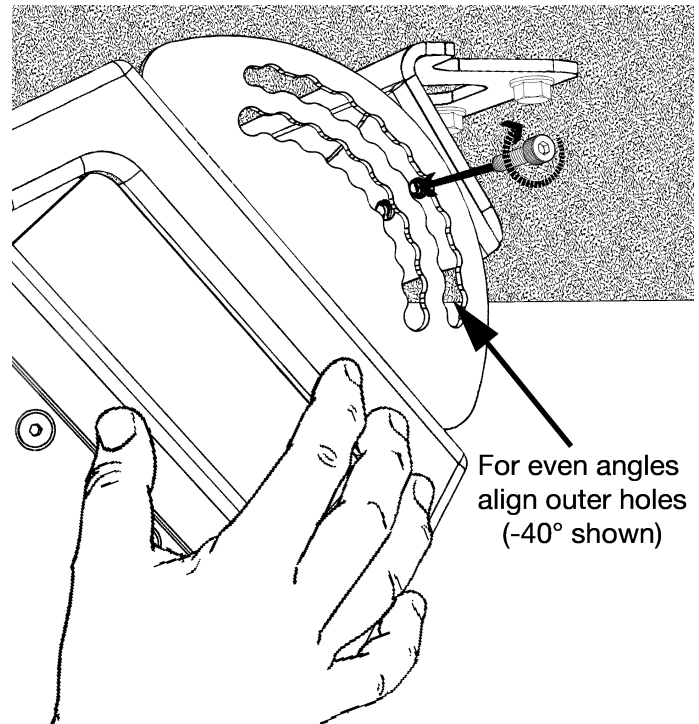
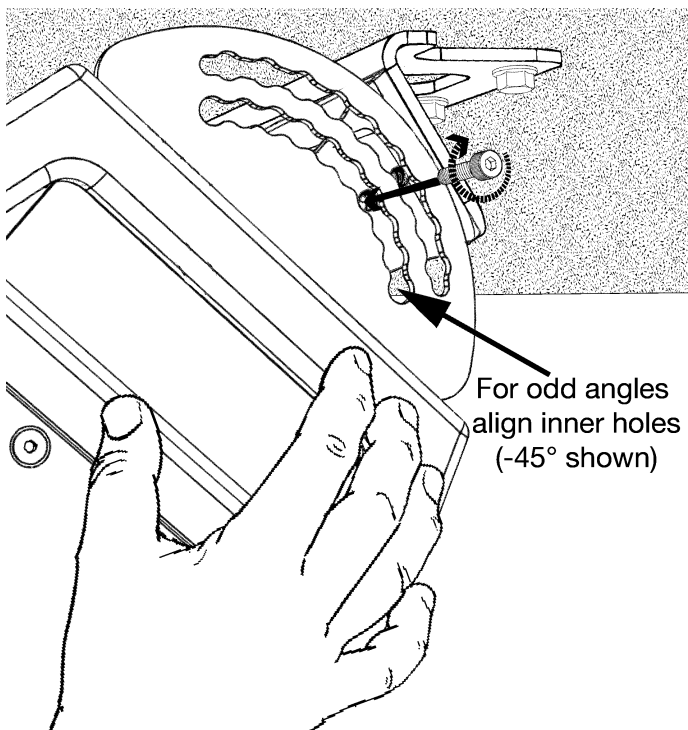
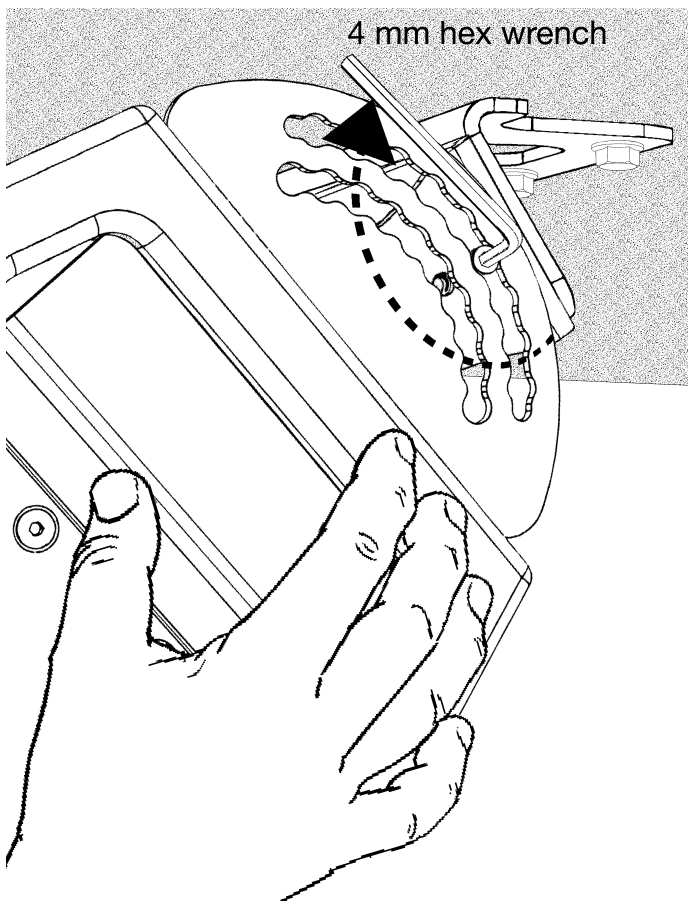


Figure 122. Example alignment of an odd angle (-45° ceiling mount shown) .



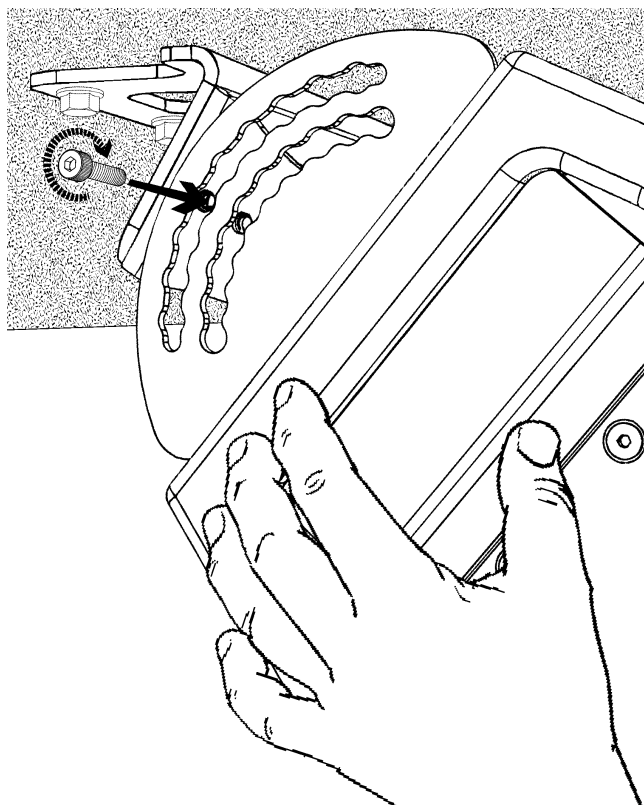
- When the holes in the bracket ears are correctly aligned with the threaded inserts in the wall-mounted yoke, according to the selected tilt angle, the second operator should insert the M6 bolt (one of those removed during [disassembly of the Bracket \(on page 22\)](#)) through the appropriate hole for the selected angle and thread it into the bracket.

Figure 123. Tightening the tilt-locking bolt into the Horizontal Mounting Bracket (-40° shown).



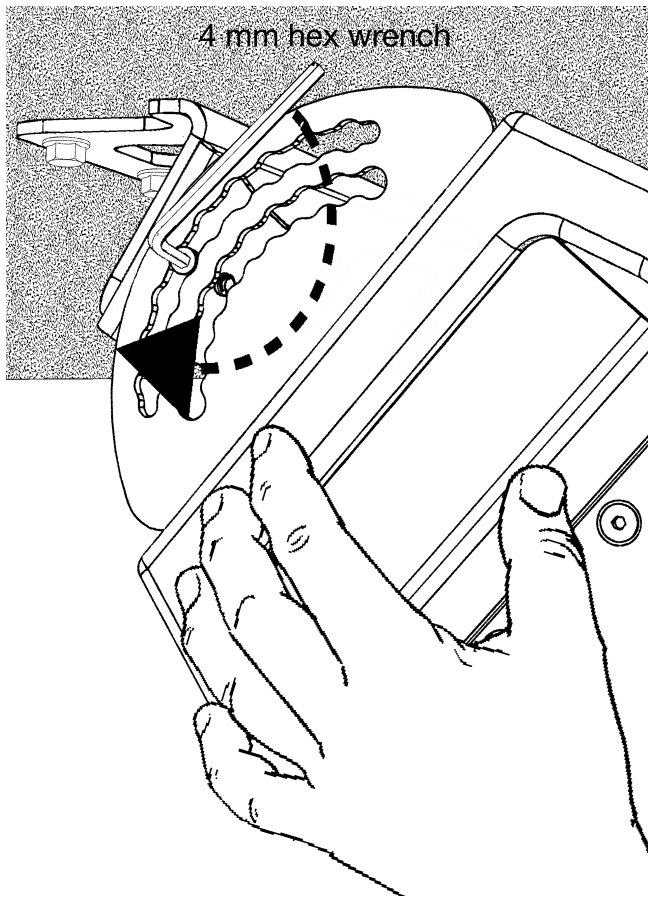
- Using a 4 mm hex wrench, tighten the first bolt firmly into the bracket, so that the head of the bolt is inside the hole and will prevent upward or downward tilt of the bracket.

Figure 124. Inserting the locking bolt on the opposite side (-40° show).



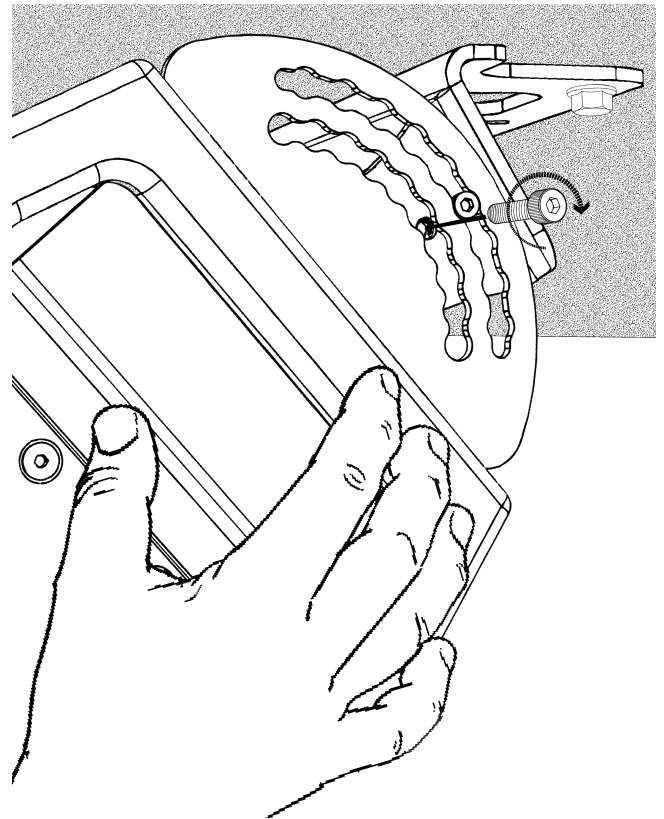
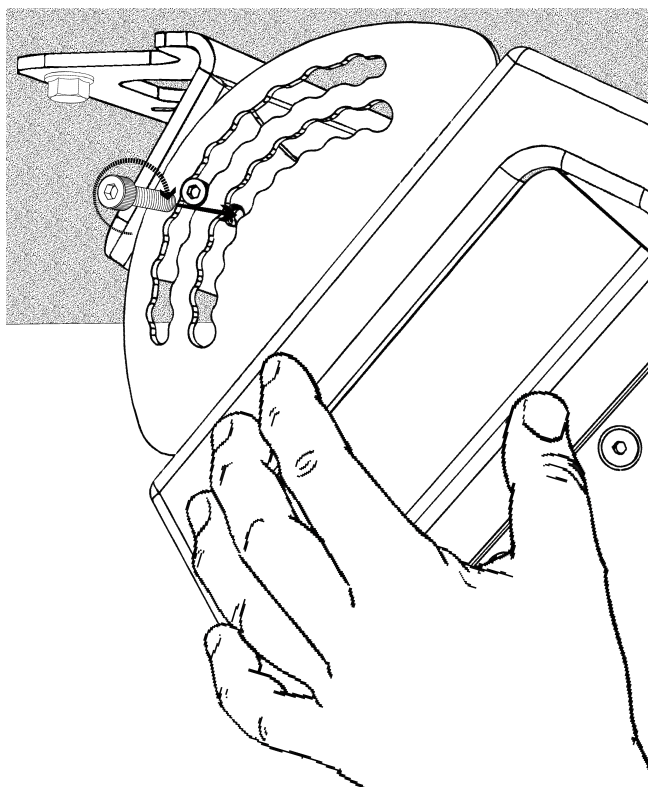
- Repeat the previous two steps on the opposite side of the speaker enclosure, making sure that the same corresponding angle-selection hole aligns on both sides.

Figure 125. Tightening the locking bolt on the opposite side (-40° shown).



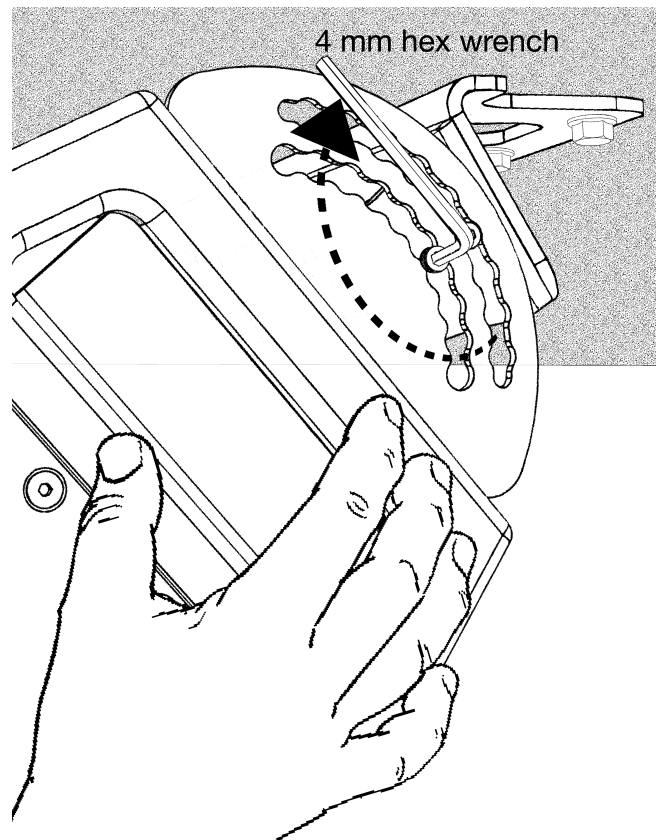
- Once the two primary bolts have been inserted to fix the tilt angle, the secondary bolts should be inserted on each side and threaded into the remaining inserts on the bracket. These WILL NOT enter holes on the external plates of the bracket, but will come into contact with the external surface of the plates, between the holes.

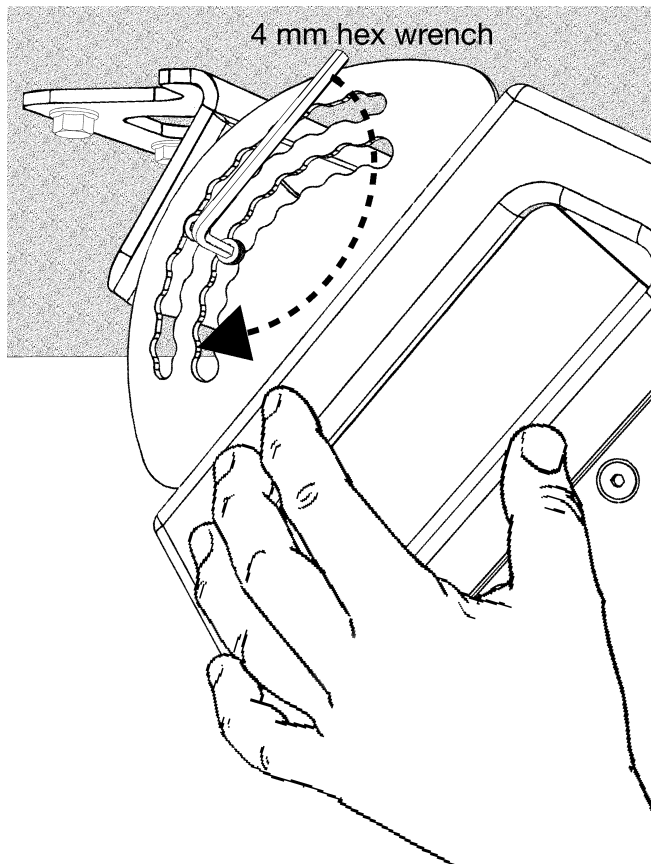
Figure 126. Inserting the secondary bolts (-40° tilt angle shown).



- When these two secondary bolts are threaded into the Bracket, use a 4 mm hex wrench to tighten them securely. These two secondary bolts serve to lock the two components of the bracket together and prevent the external plate from slipping over the head of the primary bolt, in case of unforeseen lateral or vertical forces strong enough to flex or bend the bracket.

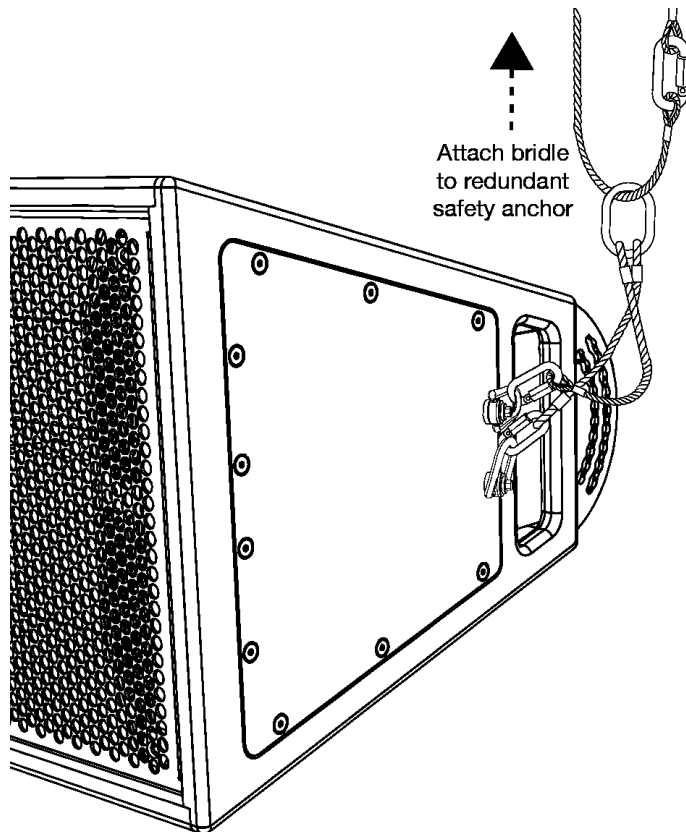
Figure 127. Tightening the secondary bolts (-40° tilt angle shown).





- It is now safe to release the speaker enclosure and verify the stability and security of the installation.

Figure 128. An example of a steel wire rope safety bridle attached using carabiners.



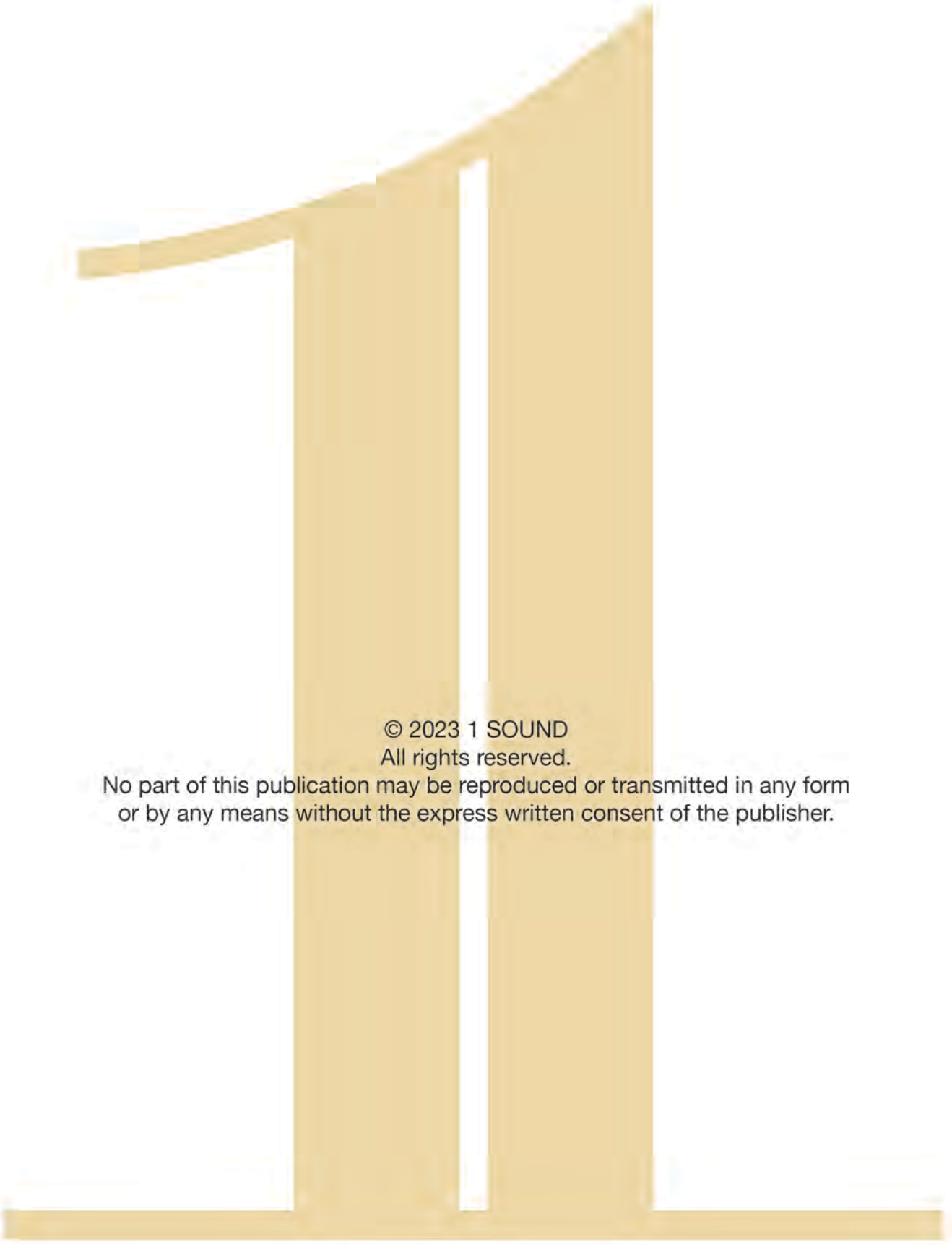
Attaching a safety bridle

If the CT28 speaker enclosure has been equipped with swivel hoist rings for a redundant safety bridle (steel wire rope), these must be attached to the external anchor before concluding the installation.

ATTENTION

A redundant safety must be anchored to a point higher than the enclosure and, where possible, to a separate structural member than the Bracket. If the secondary safety bridle must be anchored using a fastener to the same structural member as the Bracket, its anchor must be installed at least one speaker-length away from the anchors holding the Bracket. Use only steel wire ropes or steel chains that conform to applicable regulations or norms in terms of construction and Working Load Limit. These must be of proper length and installed in such a position as to prevent the enclosure from falling more than 20 cm in the case of failure of the Bracket or the structure to which it is installed.

In most cases of wall mounting a single CT28 enclosure, the use of a two-leg safety bridle will provide sufficient redundant safety. The legs of the bridle must be steel wire rope, with thimbles and each with a Working Load Limit rated at least 2.5x the weight of the enclosure. The legs can be permanently closed and swaged through the hoist rings, or attached with rated shackles or locking carabiners. Carefully review third-party manufacturers' documentation to assure that the bridle and all its components are certified for the proper load limit with the required Safety Factor. The length, material and termination on the sling that attaches the bridle to the anchor point will obviously depend on the requirements of the structure or point to which it will be anchored.

A large, stylized number '1' in a gold color, serving as a background for the text. The '1' has a curved top and a vertical bar in the center.

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