

Cisco Room Panorama (Low Ceiling Option)

82-INCH MAIN SCREENS

Installation guide



Cisco Room Panorama (Low Ceiling Option)



The Cisco Room Panorama system is designed to make your video conferencing room more versatile and flexible also for local meetings.

The Cisco Room Panorama is built on the Cisco Room Kit Pro technology platform, with the Codec Pro and the Quad Camera as core.

It has two 82-inch 8K video screens, and a screen for content presentation.

The low ceiling height option allows for installations in rooms with a ceiling height of 2.35 m (92.5 in.) or more. This option requires that you work with an AV integrator to customize the system. The AV integrator will be fully responsible for the content screen solution.

The camera provides panorama video, speaker-tracking, and auto-framing capabilities.

The integrated loudspeaker system consists of twelve main loudspeakers and four bass loudspeakers, driven by a sixteen channel amplifier.

We recommend using the Cisco Table Microphone Pro / Cisco Microphone Array external digital microphones. The system supports up to six of them, and three are shipped as default. As an alternative, you may use up to eight analog microphones or a full external DSP controlled microphone solution.

In addition, integrated microphones are part of the state of the art speaker tracking solution.

The cosmetic wall panels shown here are available as an option.

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Before you start the installation

It is important that you read our *Room Preparation Guidelines* and the *Additional Guidelines and Requirements* for Low Ceiling systems before you start the installation. They are available online.

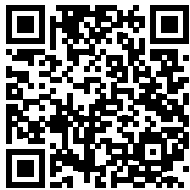
During the installation you need both the *Low Ceiling Installation Guide* (this guide) and the *Wiring Diagram*. Both documents are shipped with the product.

We recommend you to check if there are newer versions of the *Low Ceiling Installation Guide* and *Wiring Diagram* online. You find the version number on the last page (format: 78-xxxxxx-yyyy, where yyyy is the version number).

Download information

You can download the room preparation guidelines, wiring diagram, and installation instructions from:

<https://www.cisco.com/go/panorama-installation>



This webpage contains installation guides for all products in the Cisco Room Series. Look for *Cisco Room Panorama*.*

The content screen solution must be provided by a Cisco certified AV integrator

The Room Panorama Low Ceiling Option requires that you work with a Cisco certified AV integrator to design and implement the content screen solution. **This guide does not cover mounting and cabling of content screen(s) and other components that may have been added by your AV integrator.** It is the AV integrator's responsibility to integrate the required mounting steps to the installation procedure that is provided in this guide.

Installation by instructed personnel

Due to the size and mass of the Room Panorama system, it must be installed according to our installation instructions by qualified personnel. The installer must determine whether the wall must be reinforced prior to the installation and calculate the number and type of screws required for a safe wall mounting.

The product is fastened to the wall

The Room Panorama is fastened to the wall with three horizontal rails. These rails must be fastened so that they can safely support the product. In total, the product weighs close to 575 kg (1270 lb). When installed correctly, the system rests on the floor.

Perfectly flat wall

The rails must be level. If the wall is not perfectly flat, horizontally and vertically, this must be compensated for before you mount the rails. The system has adjustable feet, which can compensate for the floor not being perfectly flat.

Power

Room Panorama consists of separately approved components. **This requires each component to be connected directly to a wall socket outlet that is installed by a qualified electrician.** You are not allowed to use a power strip (multi-socket extension cord).

Since each component has a power cord connected directly to a wall socket outlet, there is no total electrical rating (voltage, current, and frequency) for the Room Panorama system. You should check the rating label on each component.

Cosmetic wall

Part 1 of this guide explains how to install the Room Panorama Low Ceiling option with the optional cosmetic wall panels offered by us.

As an alternative to these cosmetic wall panels, you can integrate the Room Panorama system fully in the room by making your own custom wall integration. This is described in Part 2.

* A new main screen model for Room Panorama was introduced in 2023. The new model is 85 inches; the original model was 82 inches. Room Panorama has the same functionality regardless of main screen model. However, since there are a few installation and cabling differences between them, there are two sets of installation instructions and wiring diagrams online. This guide is for systems with 82-inch main screens.

Risk of personal injury

There is a potential hazard risk tied to the gas springs in the screen mount modules when installing or dismantling the system. There is no risk involved when following the Install Guide step by step, but if caution is not taken regarding the screen mount safety brackets, there is a chance of personal injury.

To help lifting the screen with the screen mount module, the gas springs store a lot of energy. If the screen mount safety brackets are moved out of the **Safe Mode** position before the screen is mounted, the screen mount module can shoot out at high speed, potentially causing harm. The same goes if one tries to remove or dismantle the gas springs from the product.

To avoid the risk of personal injury:

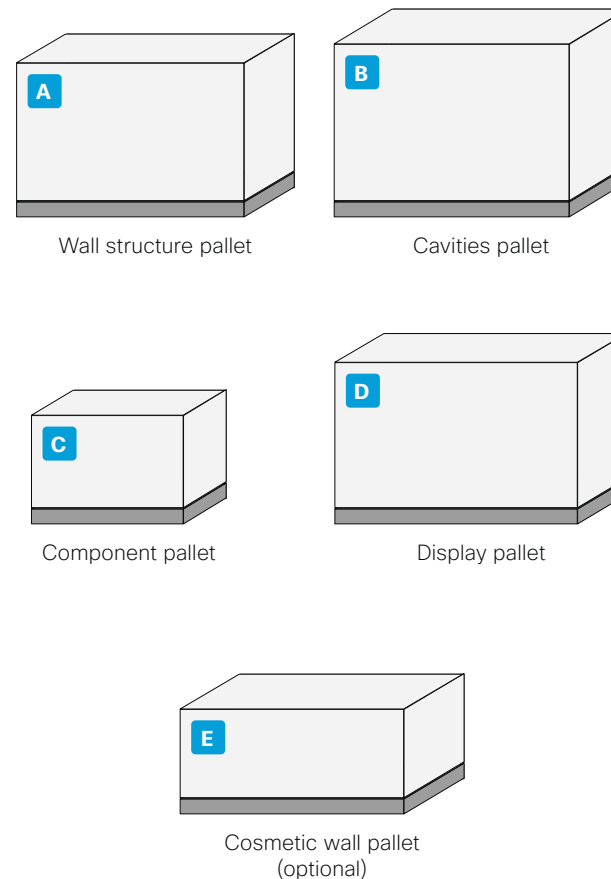
- Do not disassemble any of the pre-assembled parts of a display cavity at any time.
- Do not move the screen mount safety brackets out of the **Safe Mode** position (transport position) before the main screens are mounted (refer to step 25.3).

Packaging

You have received four or five pallets with parts and components, depending on whether you have ordered the optional cosmetic wall.

The pallets are marked with **A**, **B**, **C**, **D**, and **E**. During installation, you need parts from pallet **A** first.

This installation guide is on pallet **A**, the wiring diagram and other information from us are on pallet **C**.

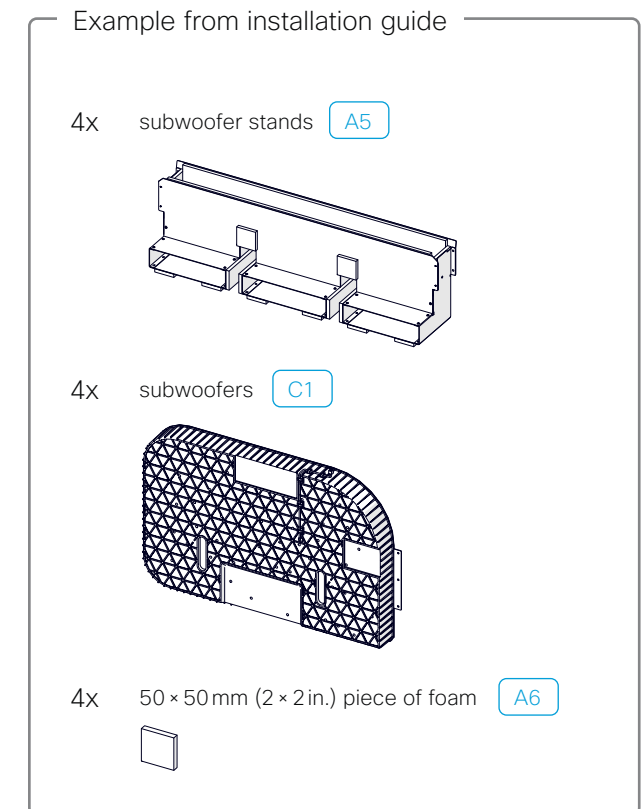


Boxes and labels

There are several boxes with parts on each pallet. The boxes are marked with a letter followed by a number. The letter identifies the pallet. For example **A1**, **A2**, **A3**, ... for the boxes on pallet **A**.

In general, you need box **A1** before box **A2**, and so on. But you don't always need *all* the parts contained in a box or pallet with a lower number before you need parts from the next.

The installation guide refers to these labels to show where the required parts for each step are.



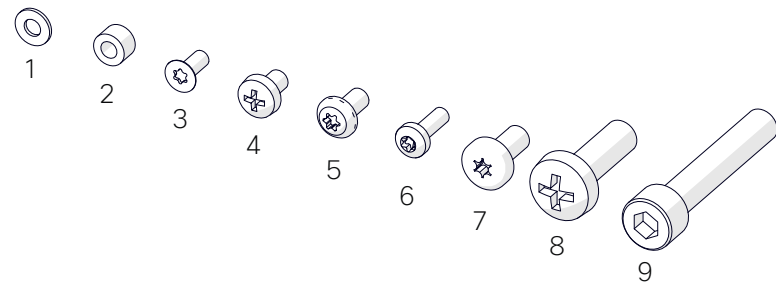
Screws and tools

Required tools and equipment

- Two stepladders
- Drill
 - Torx 20, Torx 25, and Torx 30 bits
 - PH2 and PH3 bits
 - Hex 2 mm and 6 mm bits
 - Angle chuck
 - Appropriate drill bits for your wall material
 - Appropriate wall fasteners/anchors for your wall construction
- Laser level (multi axis)
- Small spirit level (about 25 cm / 10 in.)
- Pencil
- Nylon draw tape

Screws and spacers

The following kit of screws and spacers are shipped with the product. The kit is in box [A1](#).



1. Washer, 0.9mm (28 pcs.)
2. Nylon spacer, 5 mm (16 pcs.)
3. FH M4x10, Torx 20 (24 pcs.)
4. PAN10-32x0.312, PH2 (4 pcs.)
5. M5x10, Torx 25 (12 pcs.)
6. M4x12, Torx 20 (100 pcs.)
7. M6x12, Torx 30 (150 pcs.)
8. M8x25, PH3 (8 pcs.)
9. M8x45, Hex 6 mm (4 pcs.)

In addition:

- The installer must bring the number and type of screws required for a safe wall mounting of the system (step 1).
- The installer must bring all screws and tools required for a safe mounting of the content screen solution that is chosen by your AV integrator.

Part 1

Installing Room Panorama (Low Ceiling) with cosmetic wall panels



This part of the guide explains how to install the Room Panorama (Low Ceiling) with the optional cosmetic wall panels offered by us.

As an alternative to these cosmetic wall panels, you can integrate the Room Panorama system fully in the room by making your own custom wall integration. This is described in Part 2.

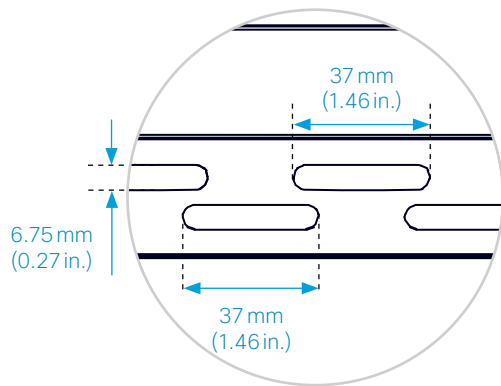
1. Fasten the horizontal rails

The Room Panorama (Low Ceiling) system is mounted on three rails - top, middle, and bottom. The rails are fastened to the wall.

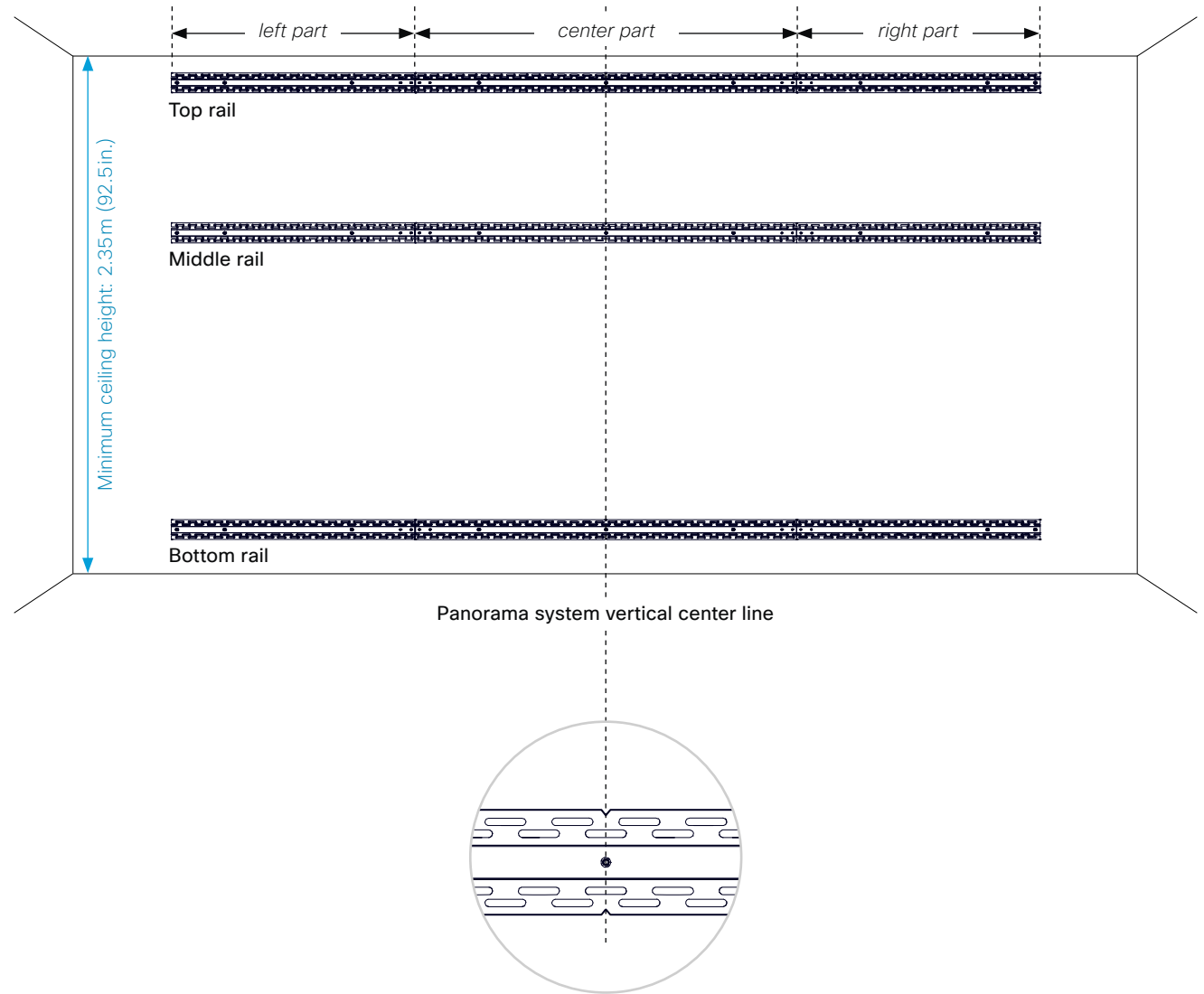
The rails must be level, and accurately centered about the system's vertical center line. If the wall is not perfectly flat, horizontally and vertically, this must be compensated for before you mount the rails.

Use a laser level to make sure the horizontal rails are placed perfectly. This is important for the rest of the installation process to go smooth.

Fasten the rails with the number and type of screws that are required for a safe mounting of the system on your type of wall. Any of the horizontal slots in the rails can be used.

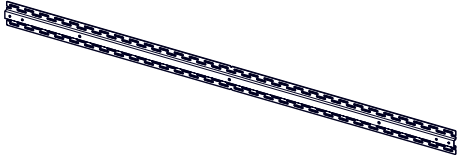


See the mounting details and exact rail positions on the following pages.

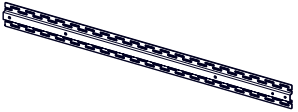


Rail parts

3x center part A1



6x left and right parts A2



6x joining bracket A2



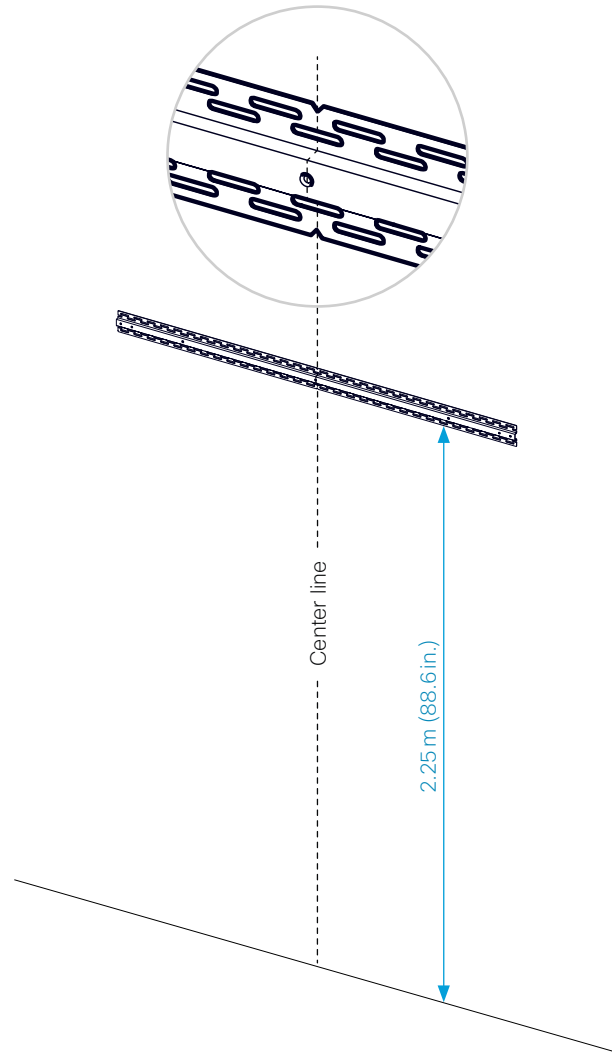
24x 
(FH M4x10, Torx 20)

You also need the number and type of screws that are required for fastening the rails safely to the wall (not provided by Cisco).

1.1. Fasten the top rail

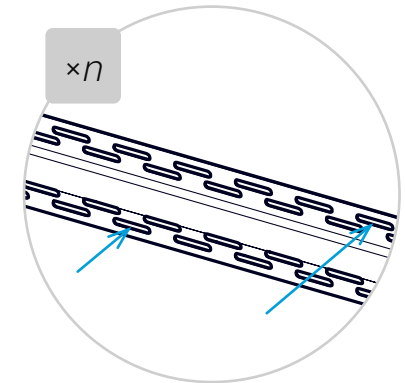
1. Start with the center part, and find the position of the upper rail.

The distance from the floor to the lower edge of the rail is shown in the illustration.

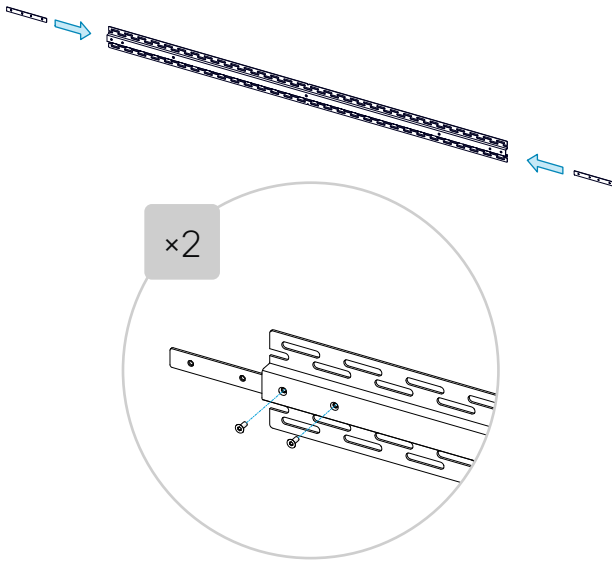


2. Fasten the center part of the rail to the wall.

Use the type and number of screws that are required to support the system. You can use any of the horizontal slots in the rails.

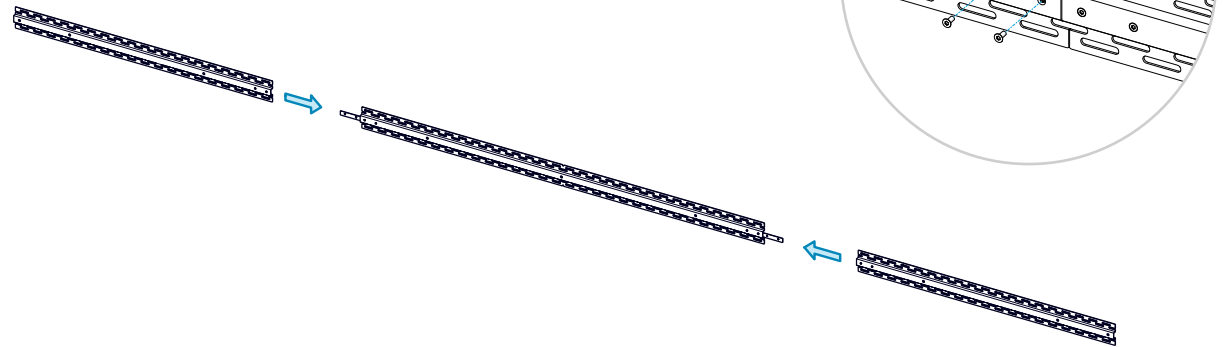


3. Fasten a joining bracket on each side of the center rail (FH M4x10, Torx 20).



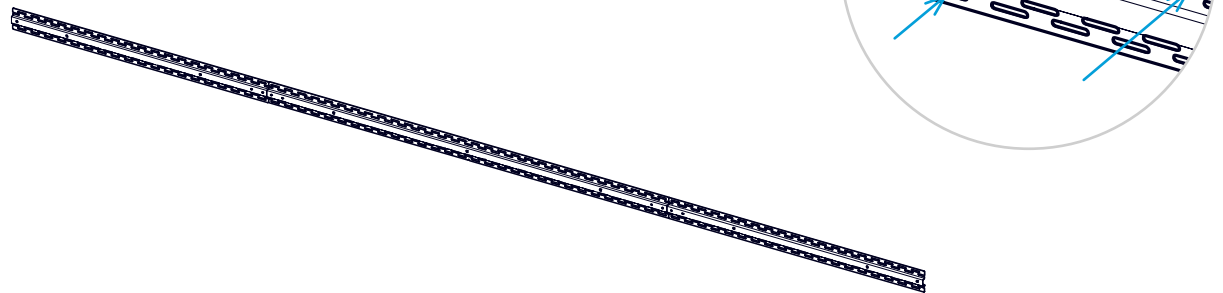
4. Fasten the left and right part of the rail to the center part.

Depending on the type of wall, you may need to remove the part temporarily after marking the mounting points on the wall.



5. Fasten the left and right parts of the rail to the wall.

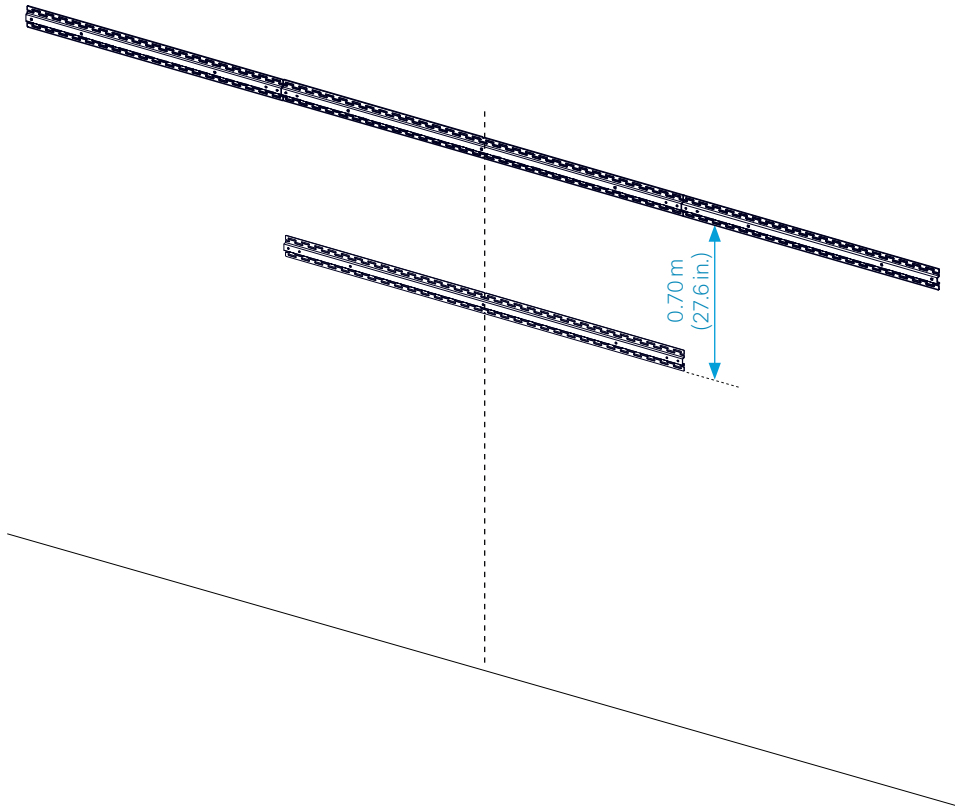
Use the type and number of screws that are required to support the system. You can use any of the horizontal slots in the rails.



1.2. Fasten the middle rail

Use the same procedure as for the upper rail, but measure the distance from the upper rail and not from the floor.

The distance between the lower edges of the upper and middle rails is shown in the illustration.

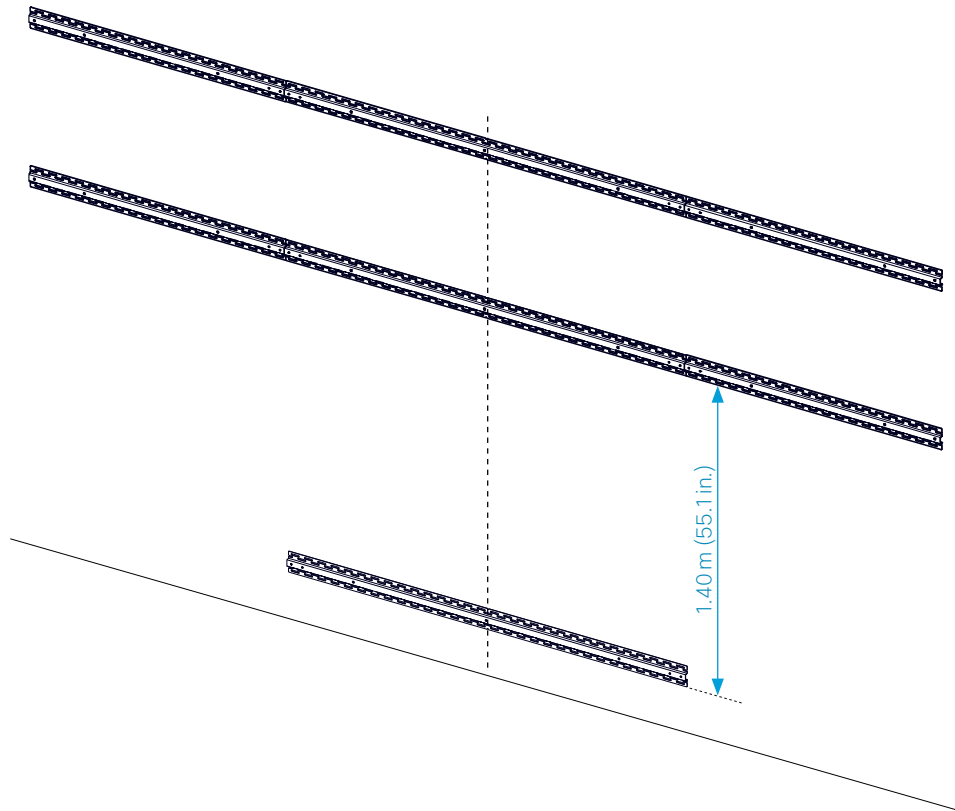


Remember that all rails must be level,
and accurately centered around the system's vertical center line.

1.3. Fasten the bottom rail

Use the same procedure as for the upper rail, but measure the distance from the middle rail and not from the floor.

The distance between the lower edges of the middle and bottom rails is shown in the illustration.



Remember that all rails must be level,
and accurately centered around the system's vertical center line.

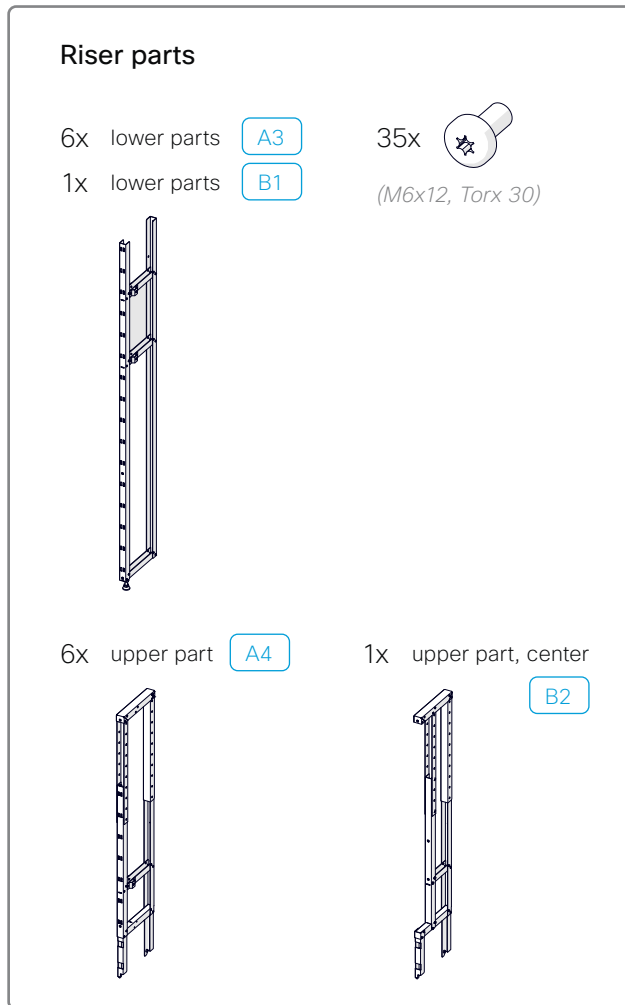
2. Mount the vertical risers

The system has seven vertical risers, which are attached to the rails. The center riser differs from the others; it has a setback to make space for the content screen.

2.1. Adjust the upper parts to the correct height

You have to slide the upper parts together, to get the correct height for the Room Panorama low ceiling height option. The correct height is 890 mm (35.0 in.).

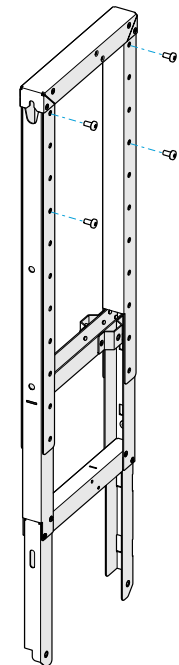
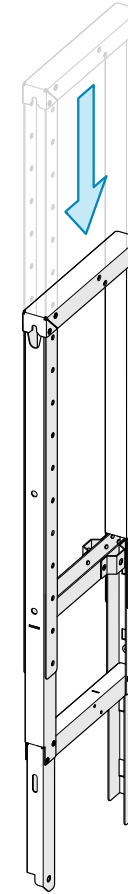
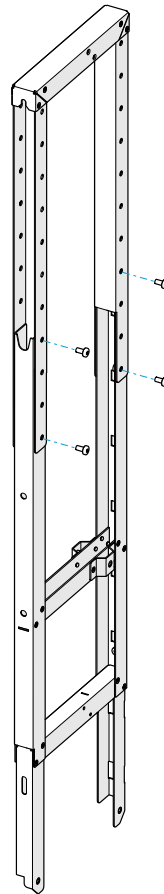
Repeat for all the seven risers (including the center riser, which is not shown in the illustration).



1. Remove the four screws (M6x12, Torx 30).

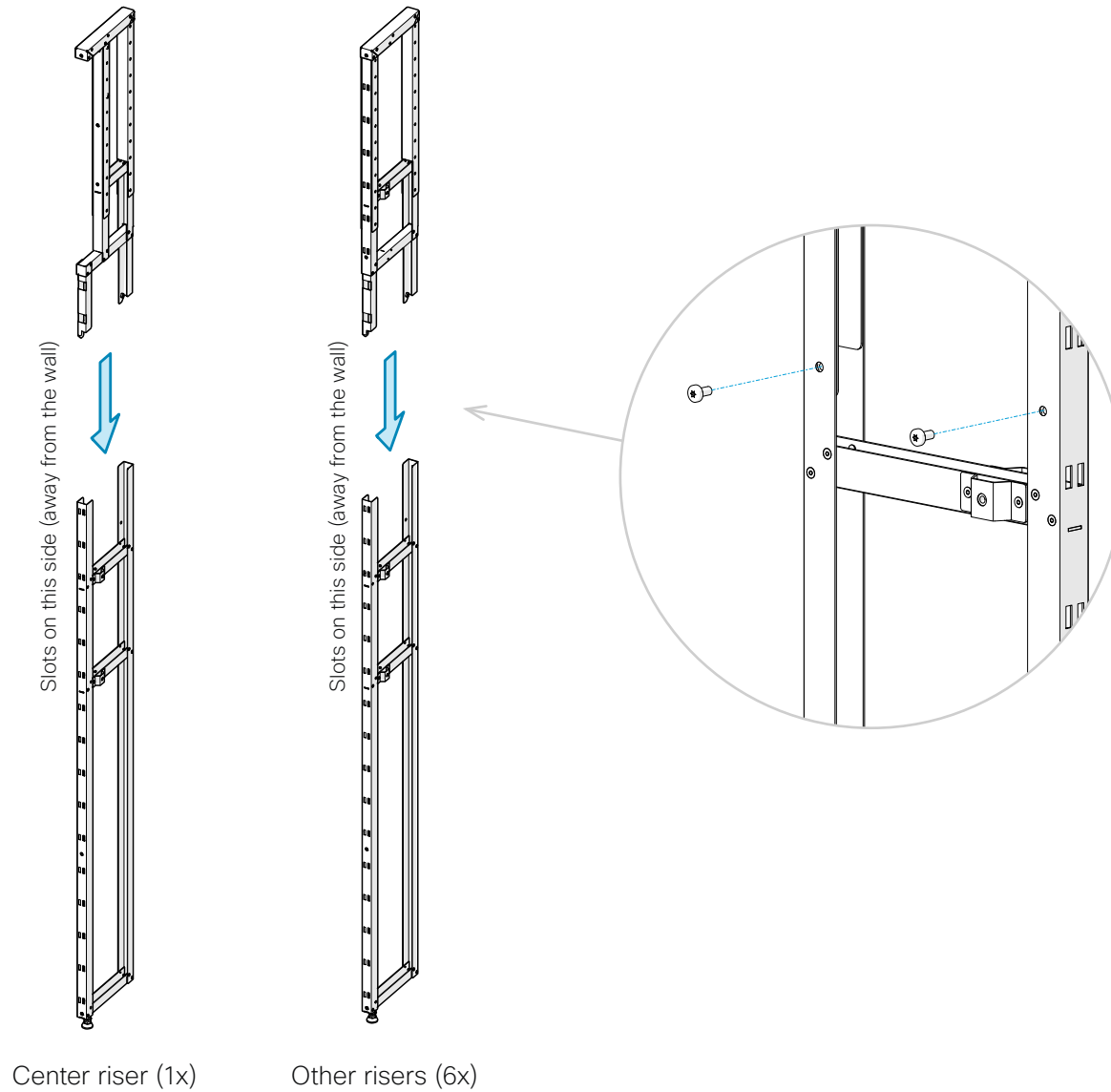
2. Slide the parts together.

3. Re-enter and fasten the four screws (M6x12, Torx 30).



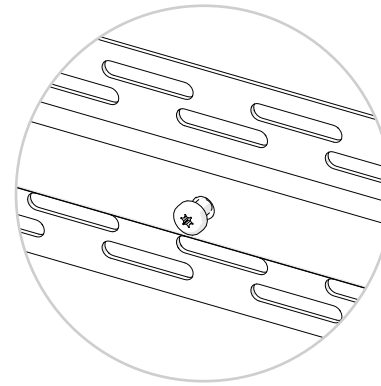
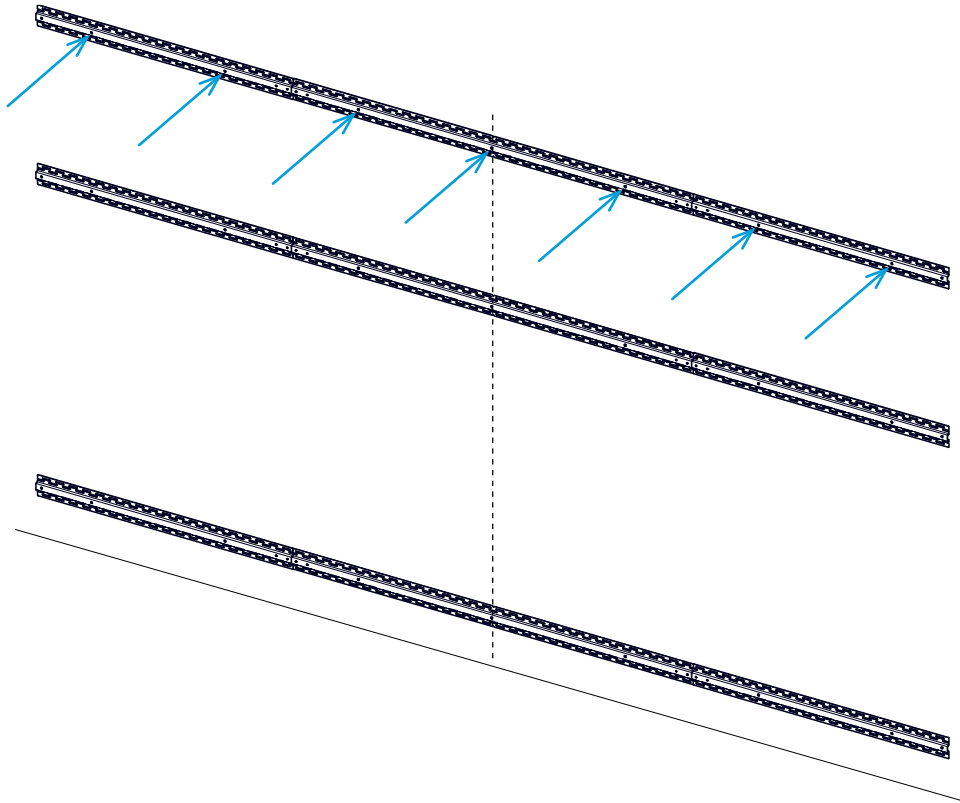
2.2. Assemble the risers

Enter the upper part into the lower part, and fasten with two screws (*M6x12, Torx 30*). Repeat for all risers.

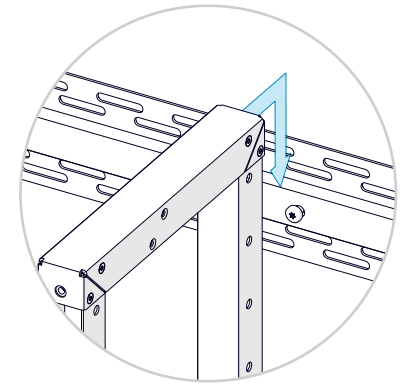


2.3. Fasten the risers to the rails

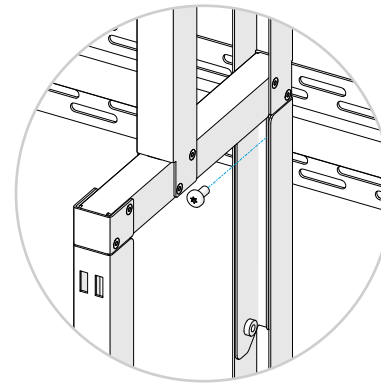
The risers are fastened to the rails with screws (M6x12, Torx 30), one in each rail. Repeat the same procedure to fasten the seven risers.



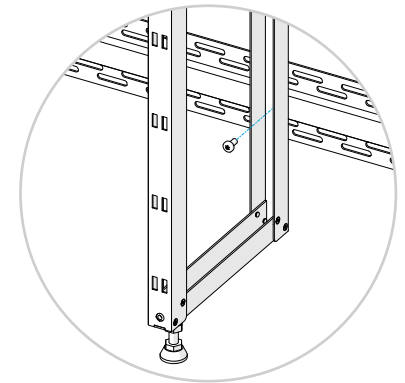
1. Enter a screw into the top rail, without tightening.
There is one screw for each riser as shown in the illustration to the left.



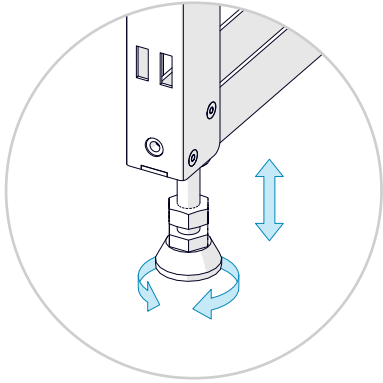
2. Hang a riser onto the screw. The riser with a setback shall be at center.
Check that the riser hangs on the screw, and doesn't rest on the floor.



3. Fasten the riser to the middle rail with a screw. Don't tighten the screw now.

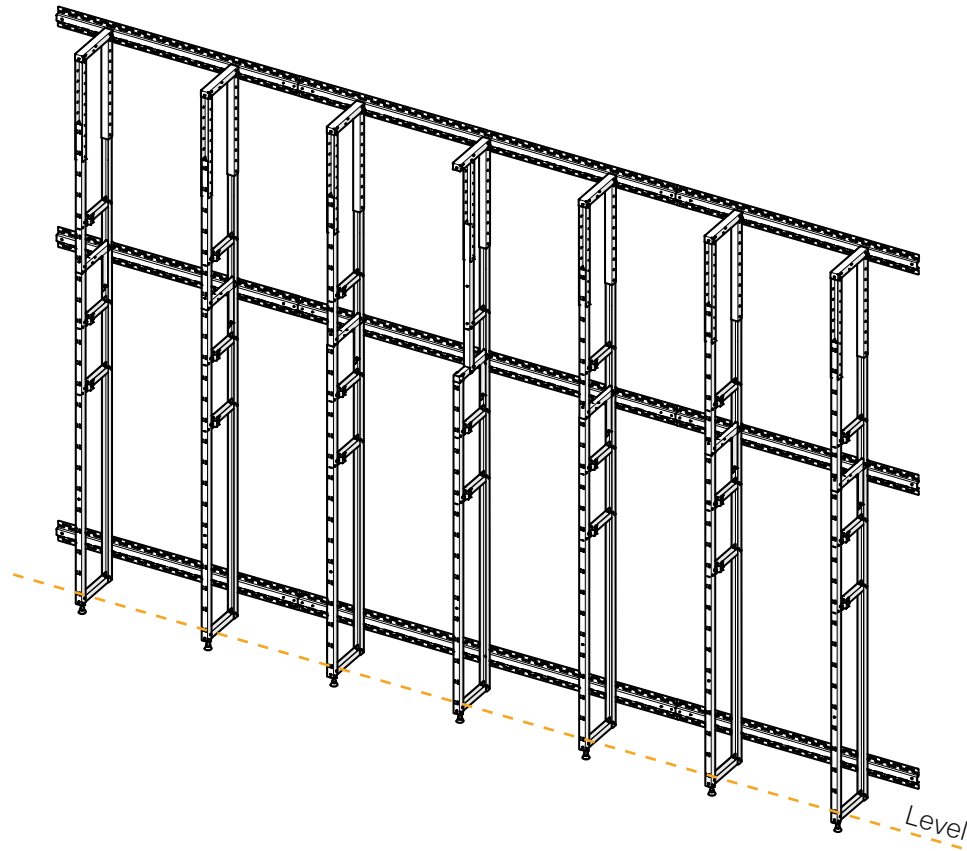


4. Fasten the riser to the bottom rail with a screw. Don't tighten the screw now.

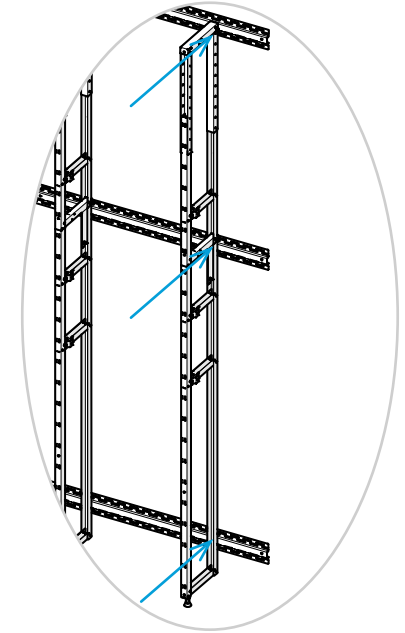


5. Temporarily adjust the foot on the riser, so that the riser rests on the floor. Do not tighten the upper nut to lock its position now.

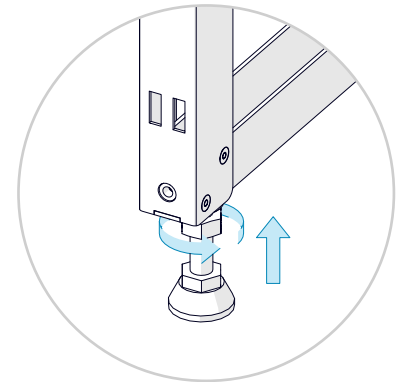
6. Repeat steps 1-5 for all risers.



7. **Adjust the feet to make the risers perfectly aligned horizontally while resting on the floor. Use the laser level.**



8. Tighten the screws that fasten the risers to the rails. Three screws on each riser (entered in step 1, 3 and 4).

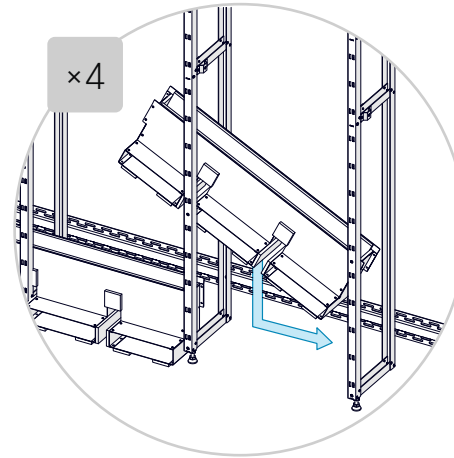


9. Re-adjust the feet, if necessary, to make them tight against the floor. Make sure to keep all risers aligned. Tighten the upper nuts to lock the position of the feet.

3. Place the subwoofers

The system has four subwoofers. They are placed in stands on the floor. Repeat the same procedure for all stands and subwoofers.

3.1. Place the subwoofer stands

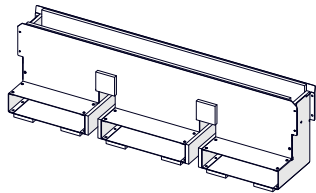


Place the stands as far to the front as possible.

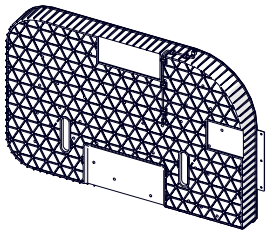
Check that the metal does not touch the risers. Such contact may cause rattling noise.

Subwoofers and subwoofer stands

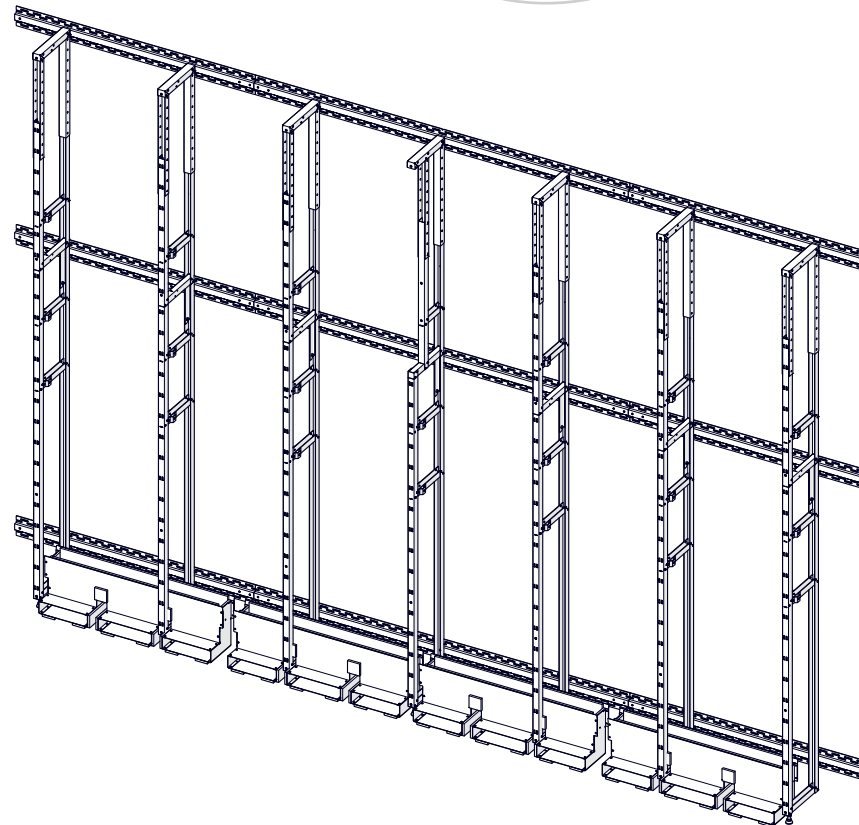
4x subwoofer stands **A5**



4x subwoofers **C1**



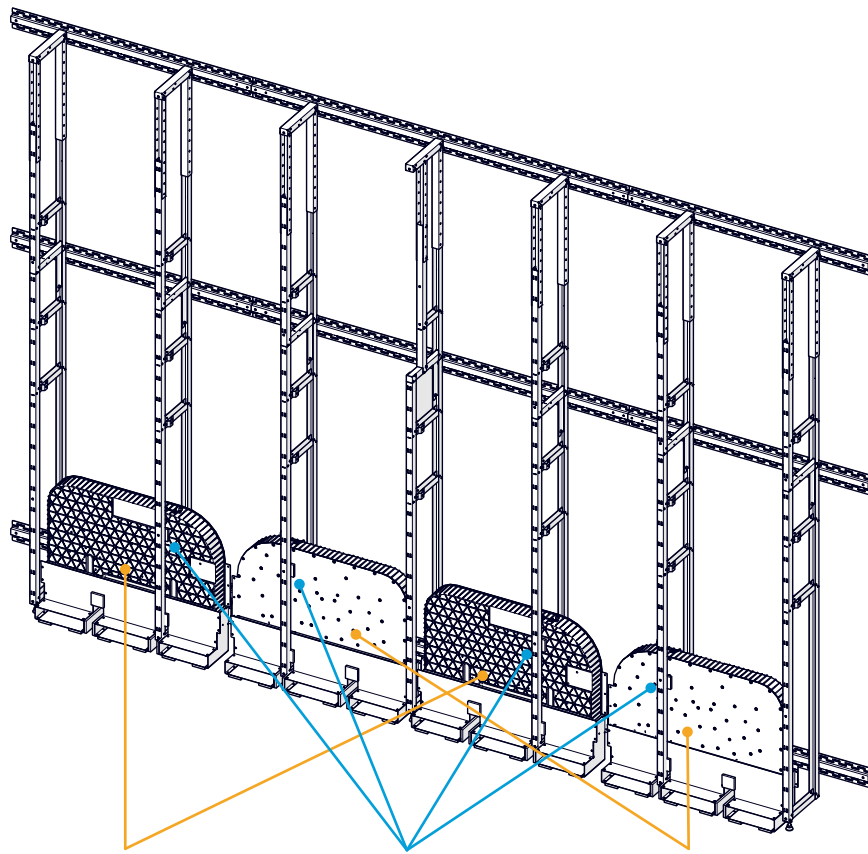
4x 50 × 50 mm (2 × 2 in.) piece of foam **A6**



3.2. Place the subwoofers in the stands

Note that - counting from the left:

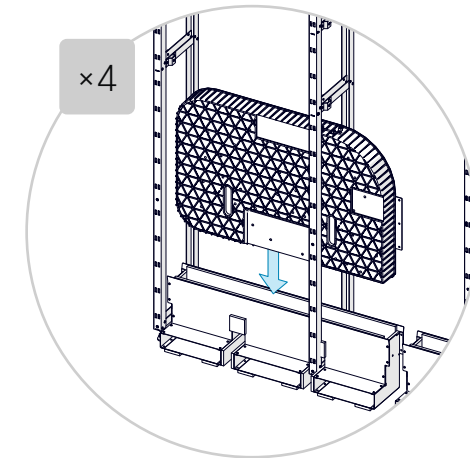
- Subwoofer number 1 and 3: Black finish facing the room
- Subwoofer number 2 and 4: Silver finish facing the room



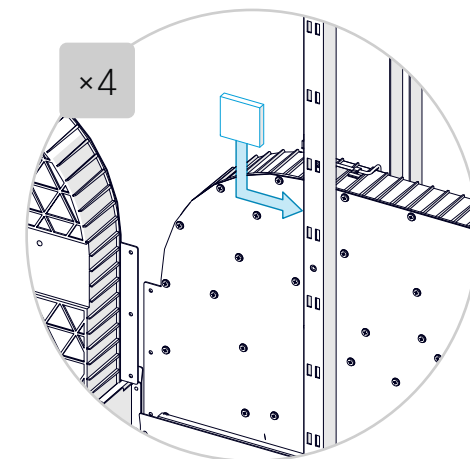
Black finish facing the room

Add a piece of foam on the subwoofer to prevent noise

Silver finish facing the room



Push the subwoofer all the way down into the stand. Check that the foam doesn't curl when pushing it down.



Add a piece of foam - 50 × 50 mm (2 × 2 in.) - on the upper part of the subwoofer to prevent it from touching the riser and cause rattling noise.

4. Mount the cavities

The system has six cavities, which are designed for mounting the two main screens and the equipment behind them.

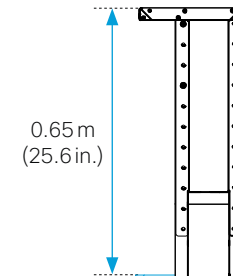
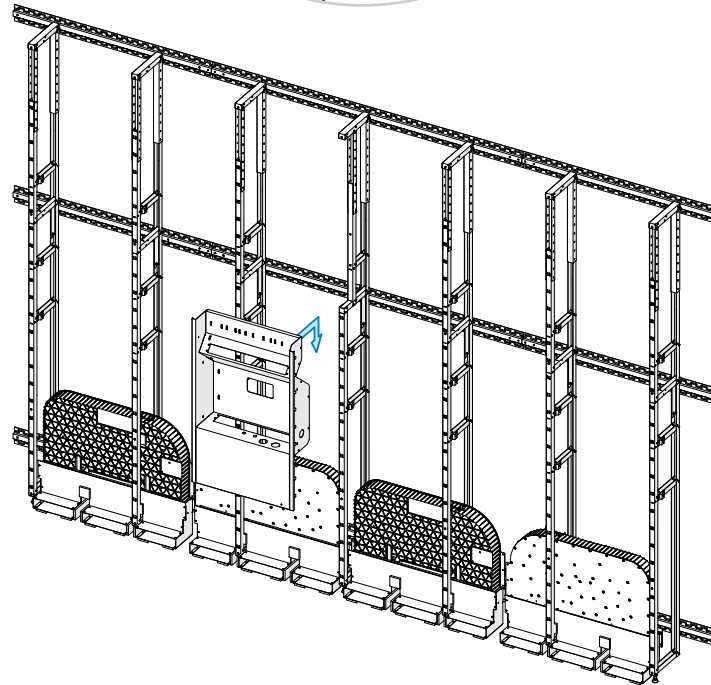
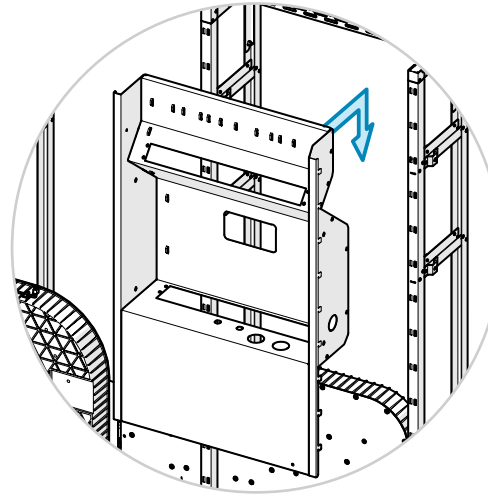
A cavity fits between two vertical risers. It hangs on the risers, and is secured with four screws.

We recommend you to insert the cavities close to the center first, and the display cavities last.

4.1. Insert the rack cavity

Hang the cavity between the two risers as shown in the illustration. Check that the hooks fully enter all slots on both sides (see details on the next page).

The top of the cavity aligns with the setback of the center riser.

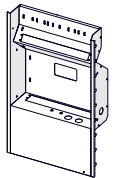


Side view

Cavities

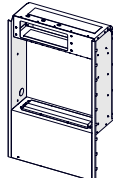
1x rack cavity

B3



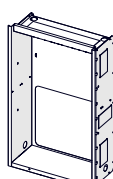
1x cooling cavity

B4



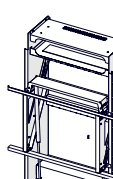
2x power cavity

B5



2x display cavity

B6



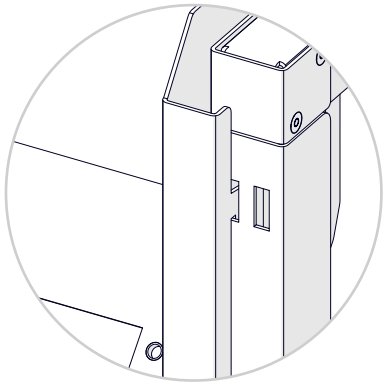
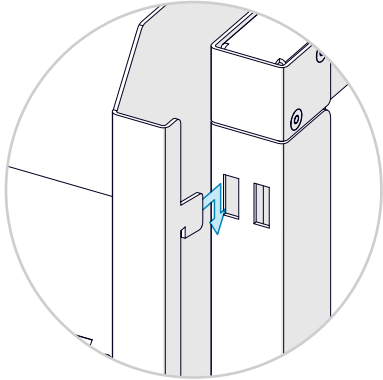
B7

24x



(M6x12, Torx 30)

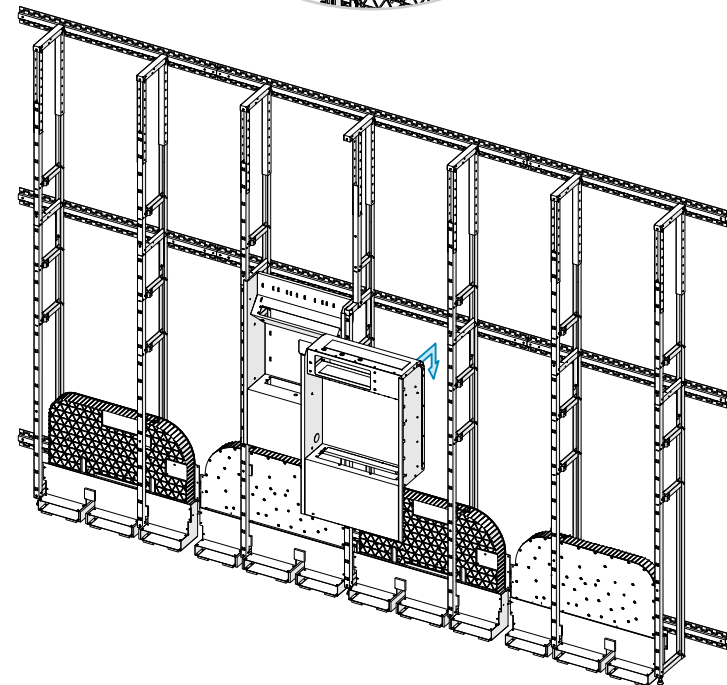
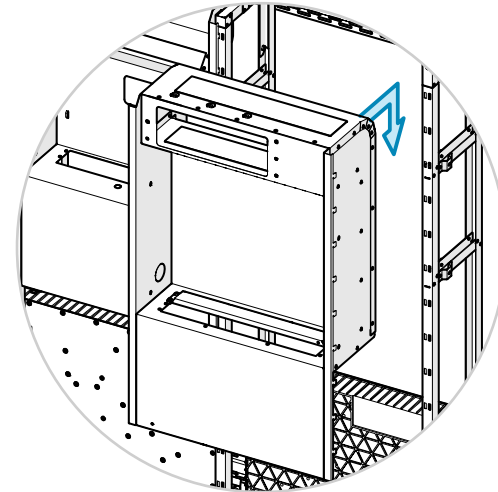
There are hooks along both sides of the cavities. Hook all of them into the corresponding slots on the risers. Check that they fully enter all slots on both sides.



Hook in place in the slot.

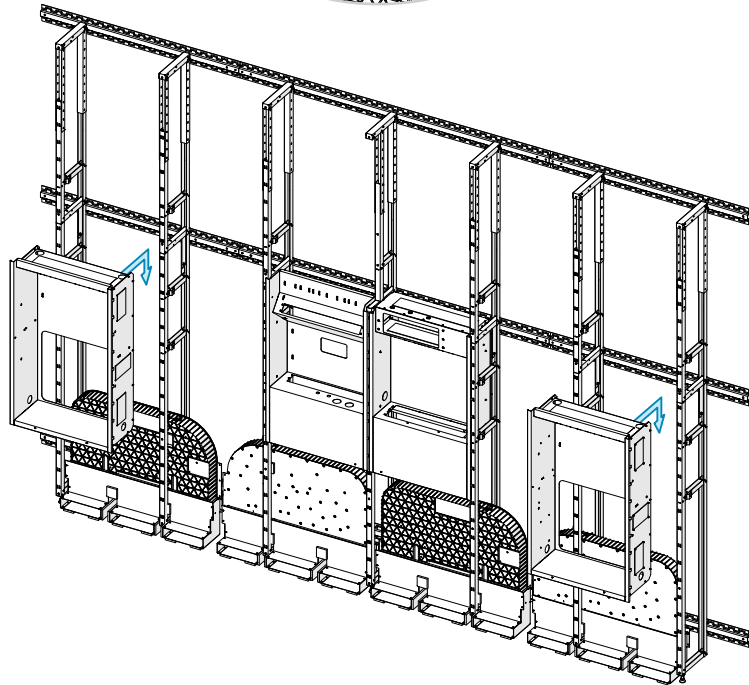
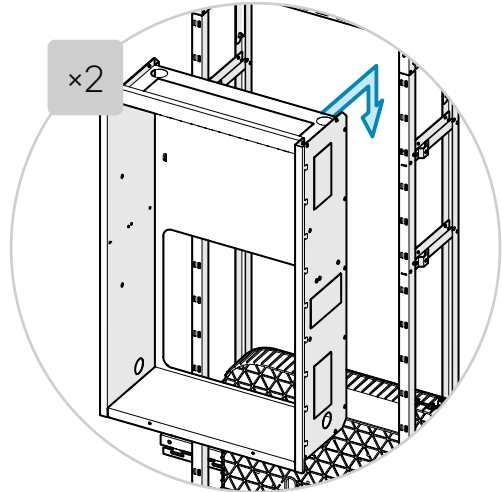
4.2. Insert the cooling cavity

Hang the cavity between the risers as shown. The top of the cavity aligns with the rack cavity.



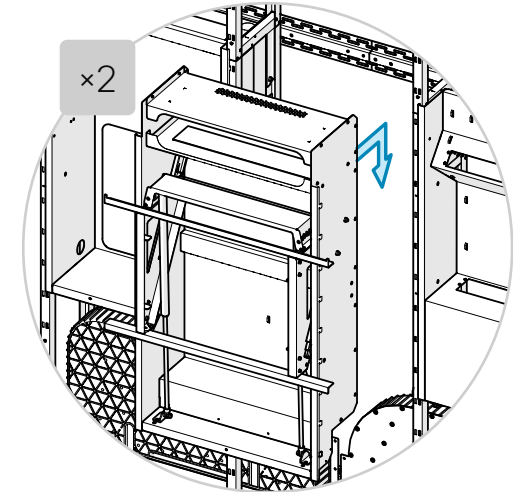
4.3. Insert the power cavities

Hang the two power cavities between the risers as shown. They are equal. The top of the cavities aligns with the rack cavity.

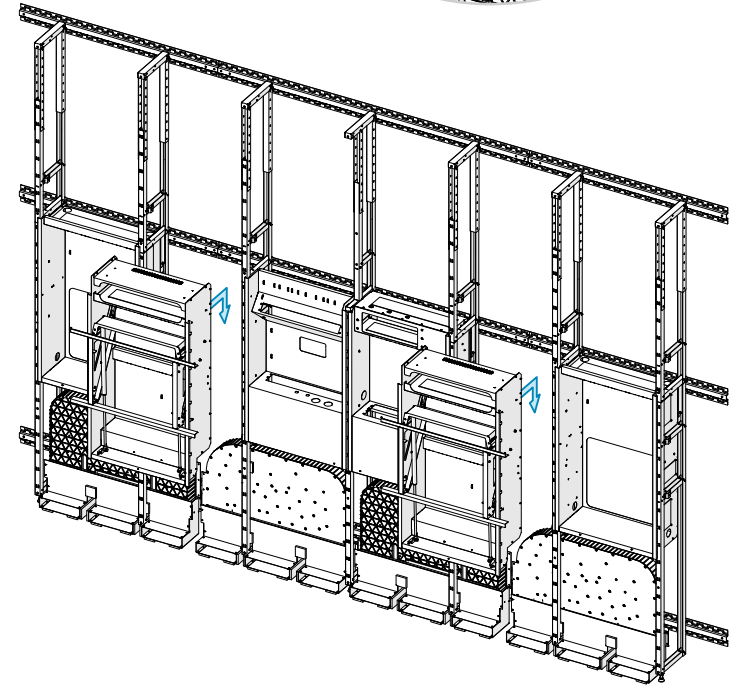


4.4. Insert the display cavities

Hang the two display cavities between the risers as shown. They are equal. The display cavities are higher than the others. The **bottom** of the display cavities aligns with the other cavities.

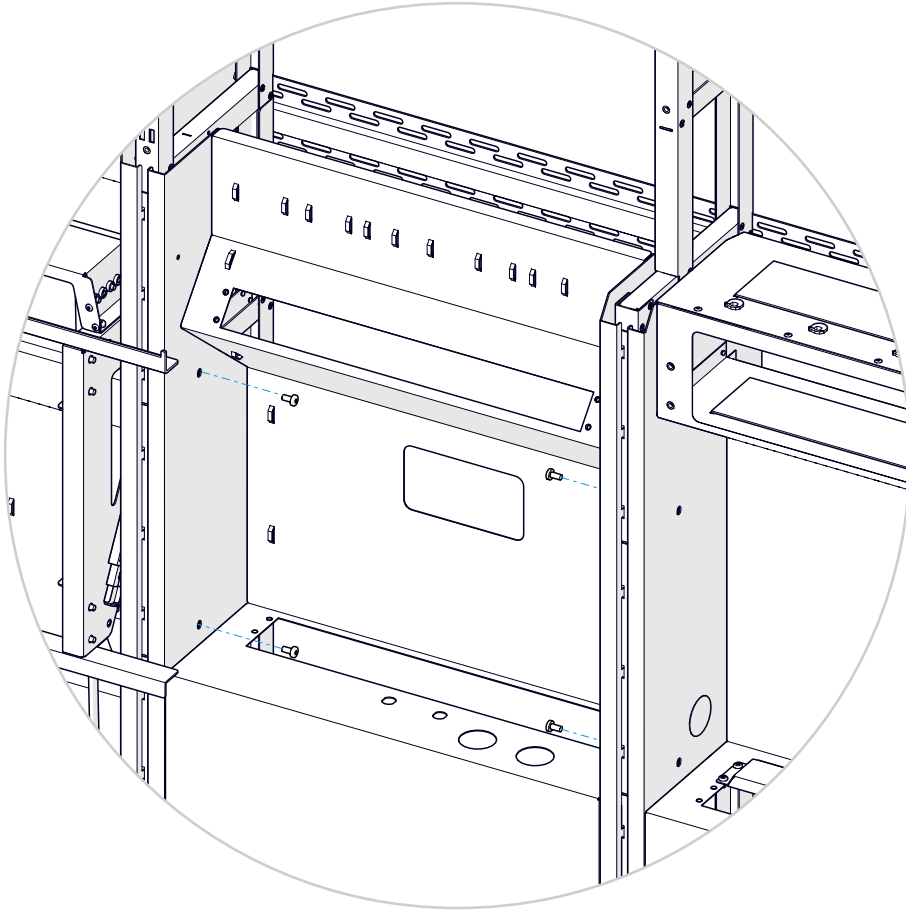


To avoid the risk of personal injury, do not disassemble any of the pre-assembled parts of a display cavity.



4.5. Fasten the six cavities with screws

Fasten each cavity with two screws on each side (M6x12, Torx 30), as shown for the rack cavity in this illustration.

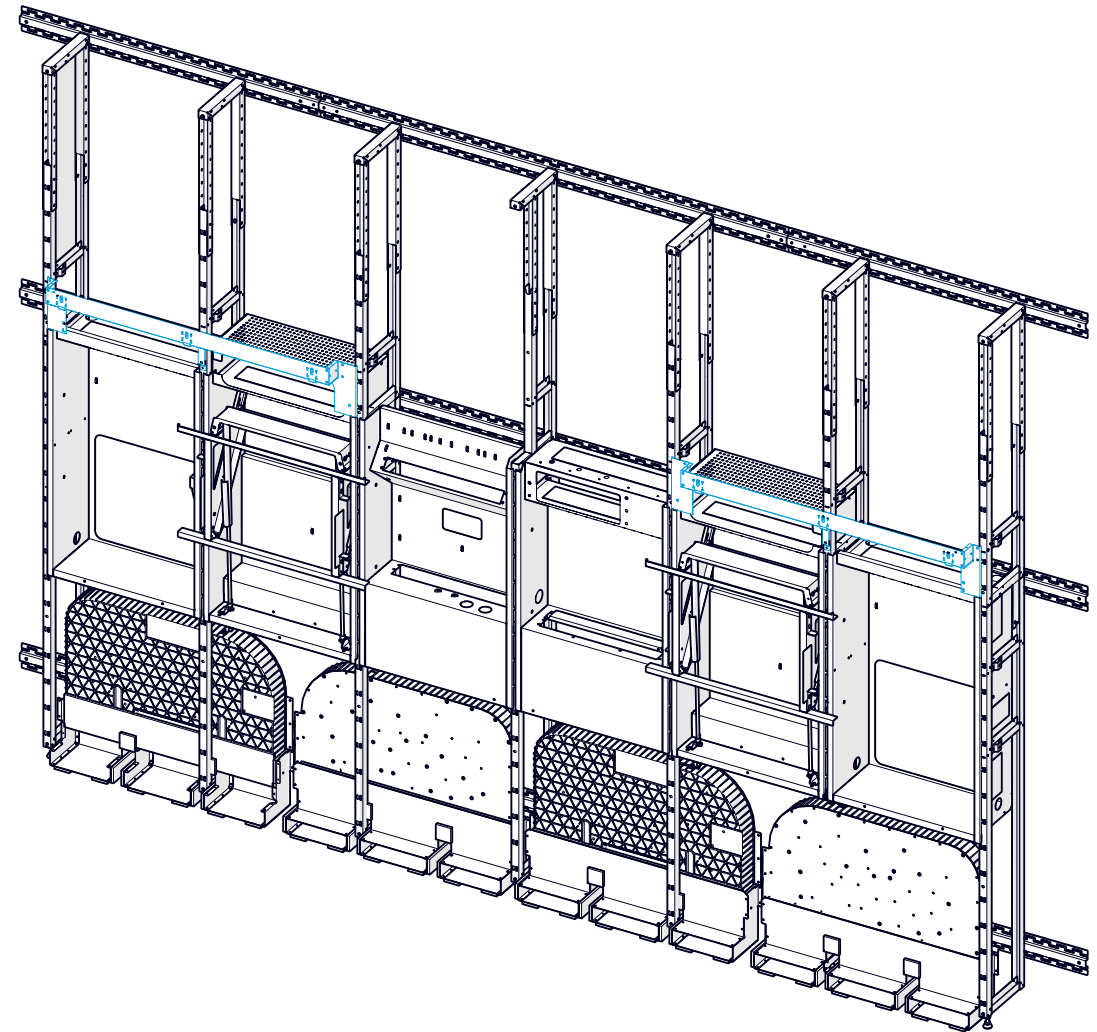


5. Fasten the mounting plates for the speakers

There are mounting plates for the speakers above the cavities.

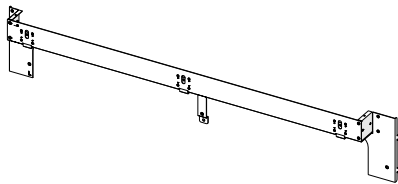
The left and right plates are not equal; they are marked with L and R, respectively. Take care to put them in the correct position.

Repeat the same procedure for both plates.

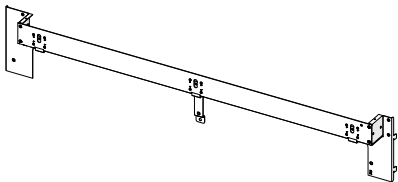


Mounting plates

1x left mounting plate E4

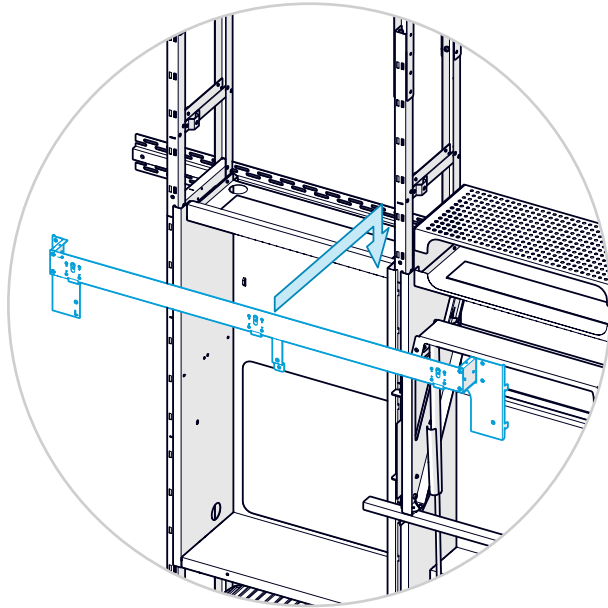


1x right mounting plate E4

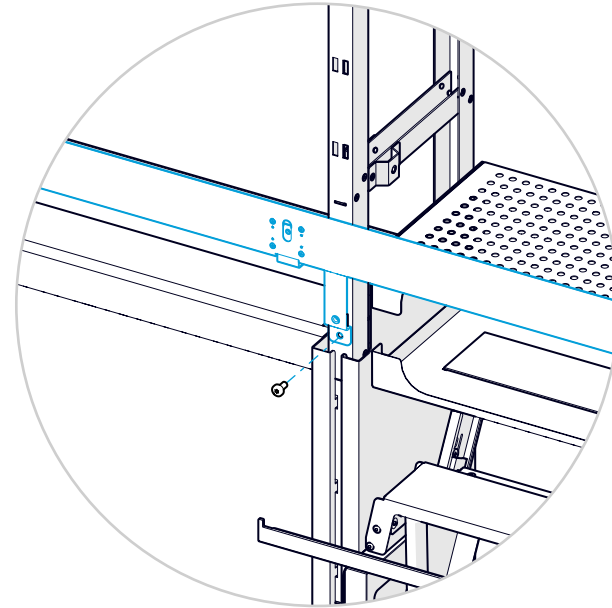


2x 

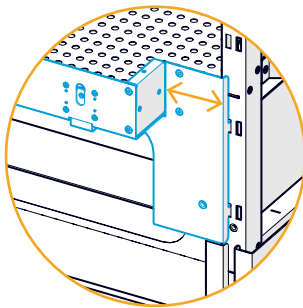
(M6x12, Torx 30)



1. Hang the mounting plate on the risers. Check that the hooks enter all slots on both sides.



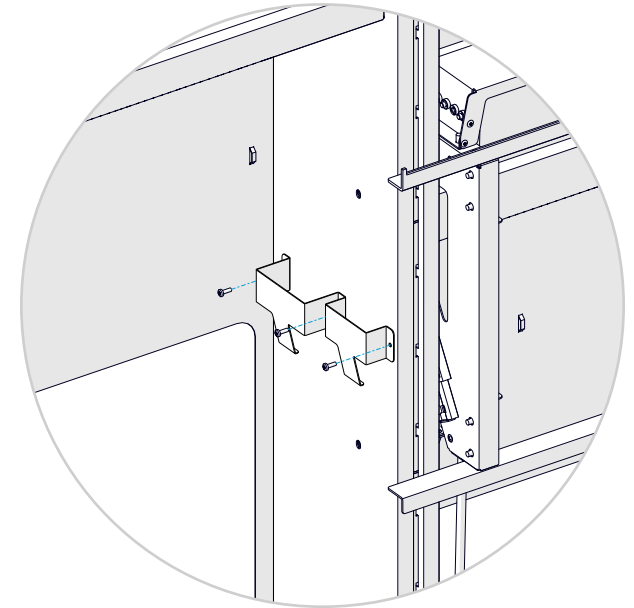
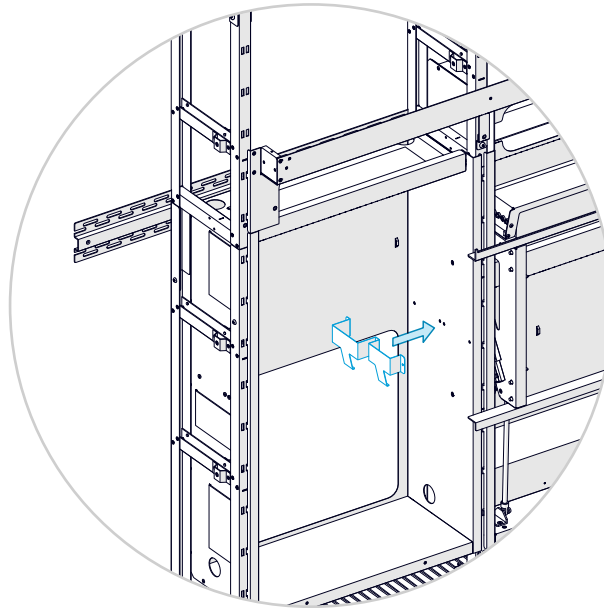
2. Secure the mounting plate with one screw (*M6x12, Torx 30*) at center.



Take care to mount the plate on the correct side. The widest flap is toward center. This is the left side plate (also marked with an L).

6. Mount the PSU bracket

Fasten the PSU bracket on the right side of the left power cavity with three screws.



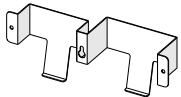
1. Place the PSU bracket on the right side of the left power cavity.

You may enter the center screw (*M4x12, Torx 20*) first, and hang the bracket onto it.

2. Add two more screws (*M4x12, Torx 20*), and fasten them all.

PSU bracket

1x PSU bracket A6



3x

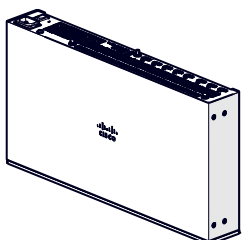
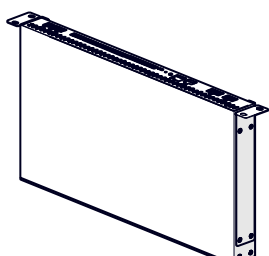
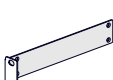



(*M4x12, Torx 20*)

7. Mount the codec and amplifier

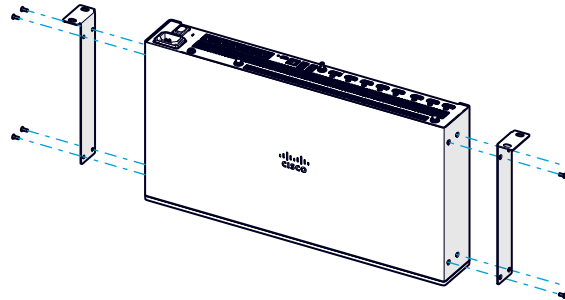
The codec and amplifier are placed in the rack cavity. **The connector panels are facing upward.**

Codec and amplifier

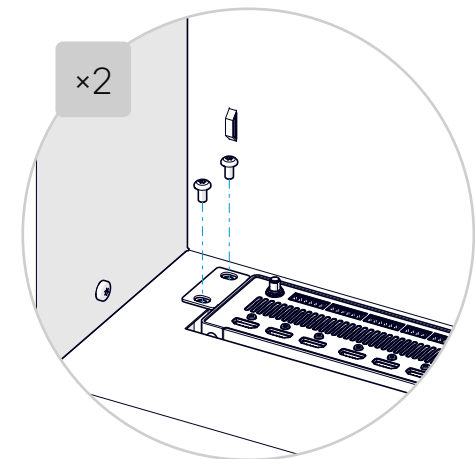
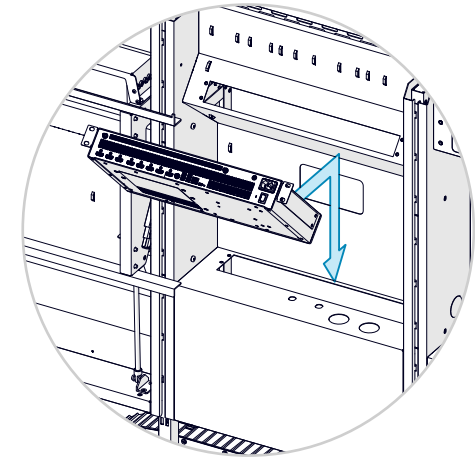
- 1x codec **C2**

- 1x amplifier with rack ears **C3**

- 2x rack ears **A6**

- 8x 
(M5x10, Torx 25)

7.1. Mount the codec

1. Remove the eight pre-mounted screws (Hex 2mm), put the rack ears in place, and fasten them using the same screws and screw holes.

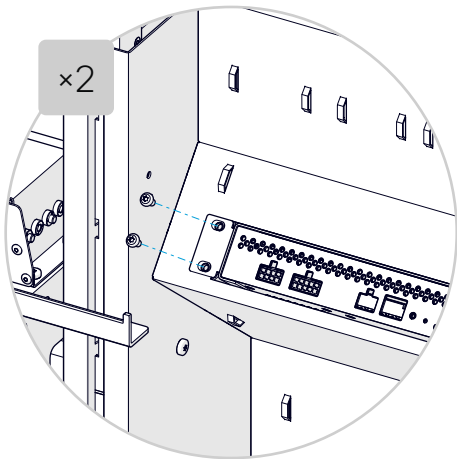
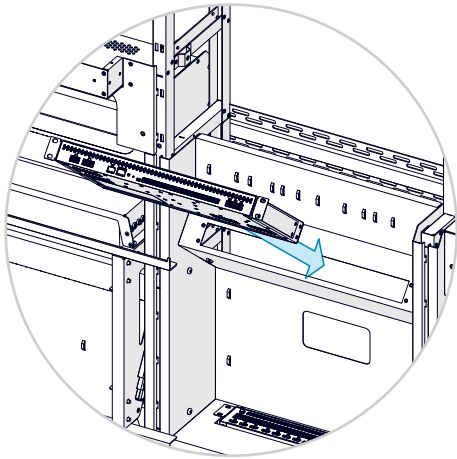


2. Remove the rubber feet from the codec.
3. Slide the codec into its slot. Fasten it with four screws (M5x10, Torx 25).

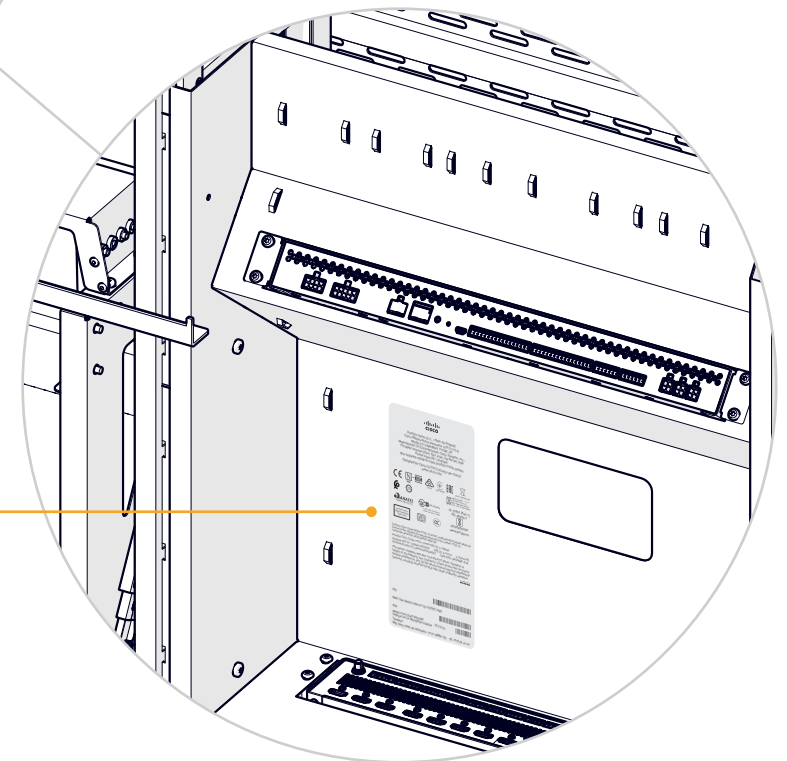
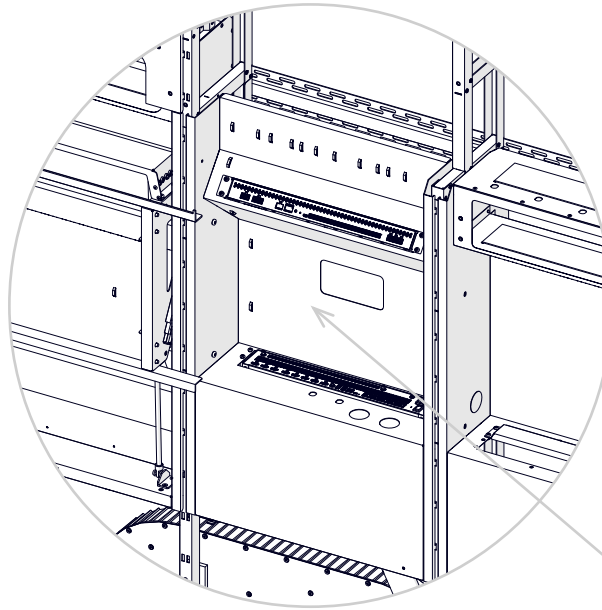


7.2. Mount the amplifier

Slide the amplifier into its slot. Fasten it with four screws (*M5x10, Torx 25*).



8. Attach the rating label



Rating label

1x Rating label

C - in the document bag



Attach the self-adhesive rating label here.

The label shows that the Room Panorama system complies with country compliance regulations.

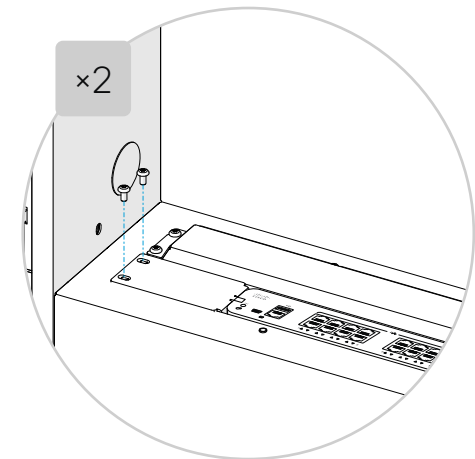
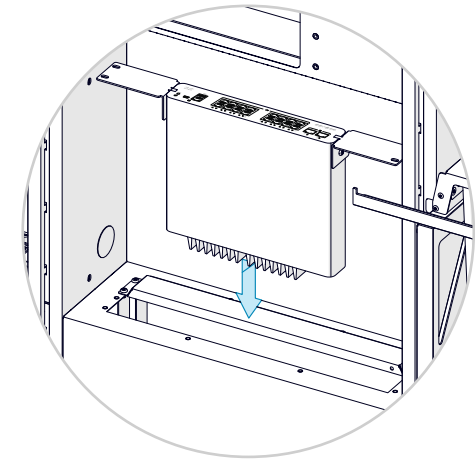
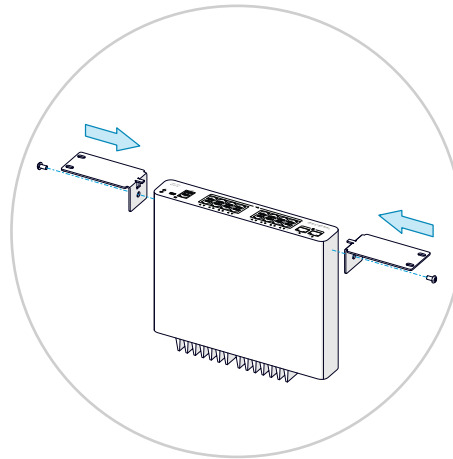
9. Mount the Ethernet switch

The system has two Ethernet* switches; the first one is placed in the cooling cavity.

The Ethernet sockets are facing upward.

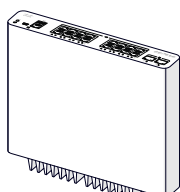
1. Fasten the rack ears to the switch. One screw for each rack ear (*PAN10-32x0.312, PH2*).

2. Slide the switch into its slot, and fasten it with four screws (*M5x10, Torx 25*).





Ethernet switch


1x Ethernet switch C4



2x rack ears A6



2x  (*PAN10-32x0.312, PH2*)

4x  (*M5x10, Torx 25*)

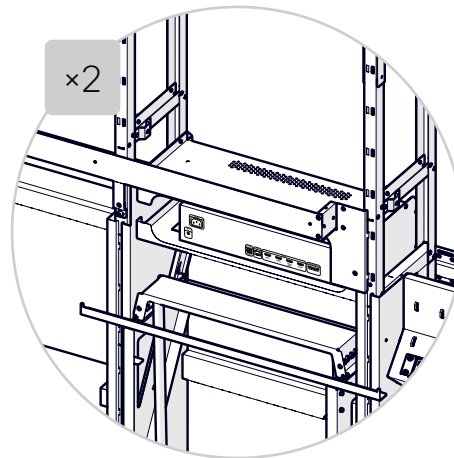
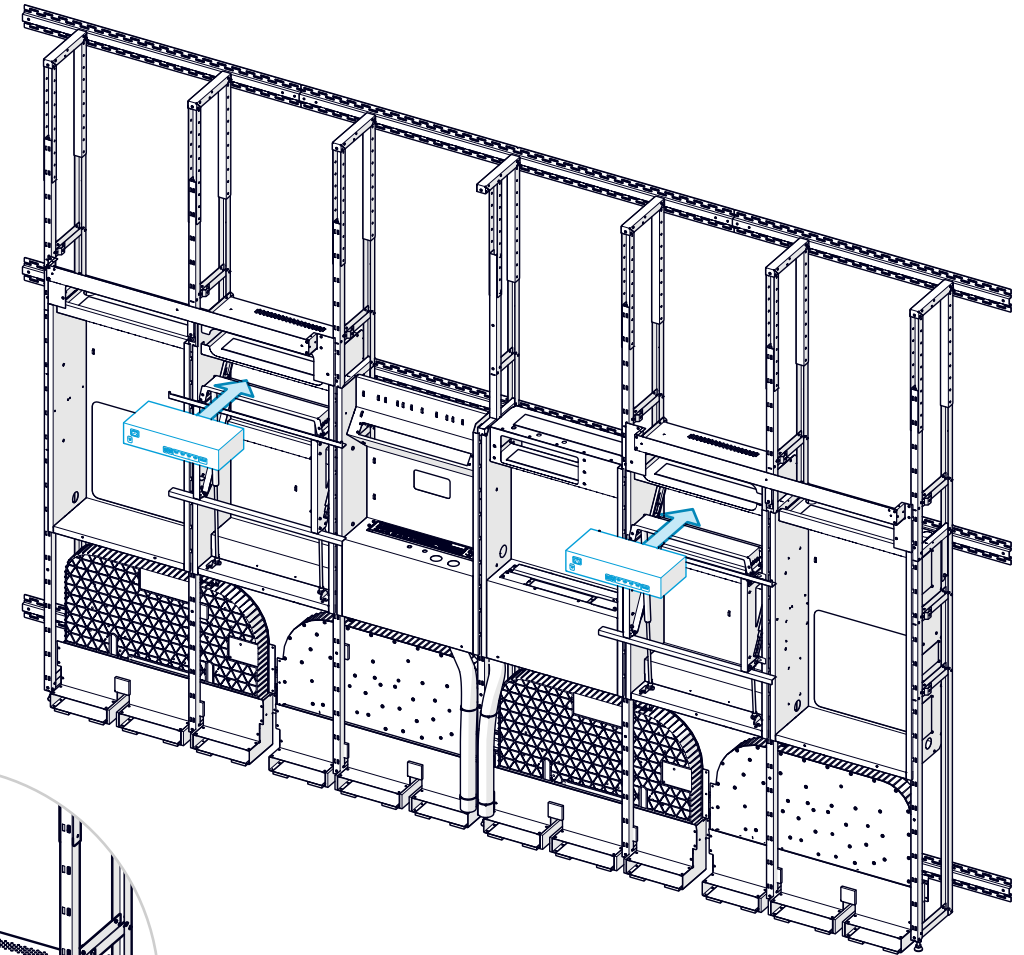
* We introduced the Cisco Catalyst 1000-16FP-2G-L switch in early 2021. Earlier shipments have the Cisco Catalyst 3560CX-12PC-S switch.

10. Place the One Connect boxes

The main screens has an associated One Connect box. There is one such box in each main screen package.

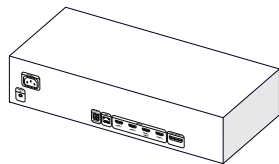
Remove the One Connect cable and other screen accessories from the screen packaging now; you need them later.

The cable and screen accessories lay in the foam that is on top of the screen. Make sure they are not lost or thrown together with foam and cardboard.



One Connect boxes

2x One Connect box D3 D4



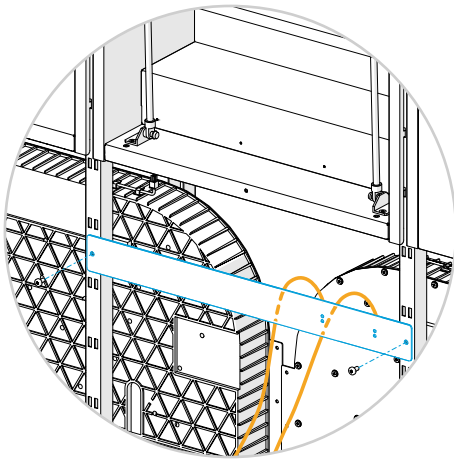
Place a One Connect box on top of each display cavity with the connectors facing outward.

11. Mount the antennas

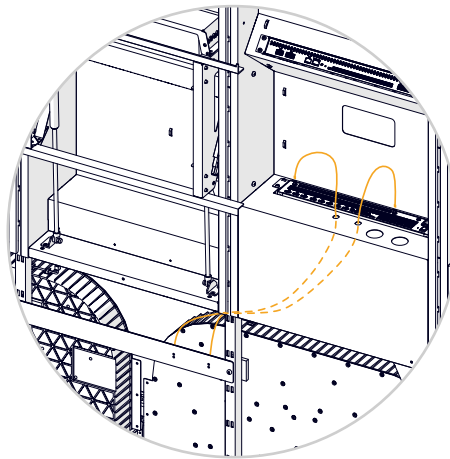
Skip this step if you have a non-radio product. Non-radio products, which have the letters 'NR' in their product identifier (PID), are delivered without antennas.

1. Fasten the antenna support below the left display cavity. The antennas themselves face right and inward.

Fasten the support to the risers with two screws (M6x12, Torx 30).

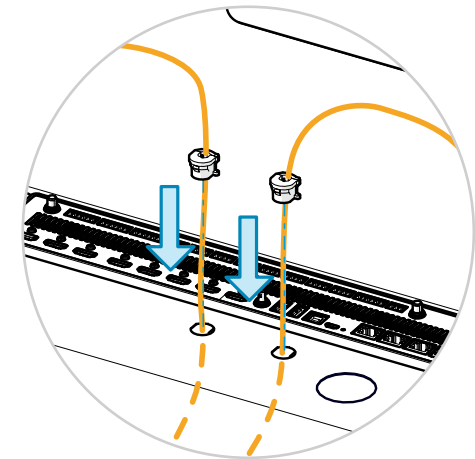


2. Thread the two antennas up through the *small* holes in the rack cavity, and connect them to the codec. The antennas are equal.



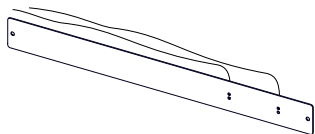
3. Guide the antennas around the codec as shown below. Then attach cable glands for strain relief.

Fasten the antennas to the risers with velcro to prevent them from touching the subwoofers and cause rattling noise.



Antenna kit

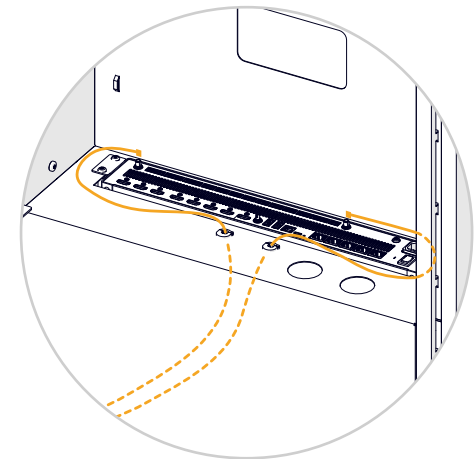
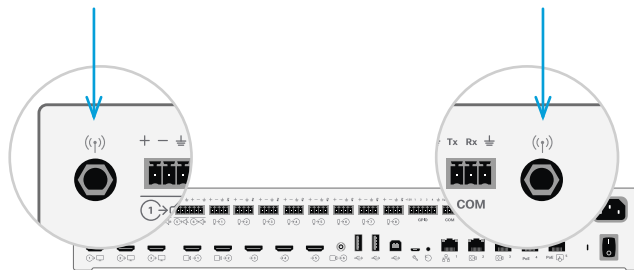
1x Antenna support with two antennas C5



2x Cable gland A6

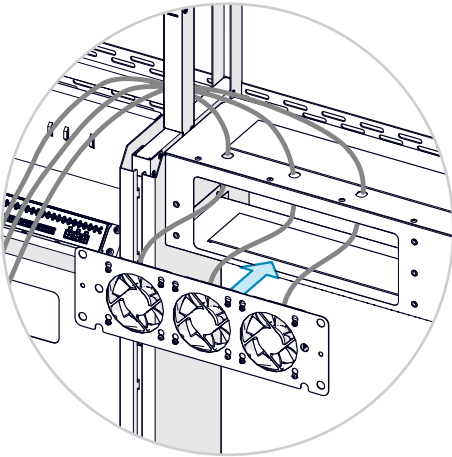


(M6x12, Torx 30)

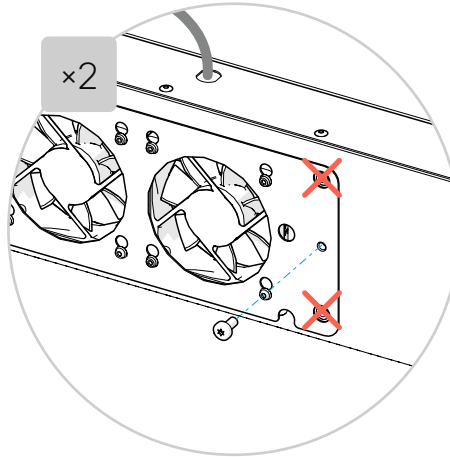


12. Mount the fan module

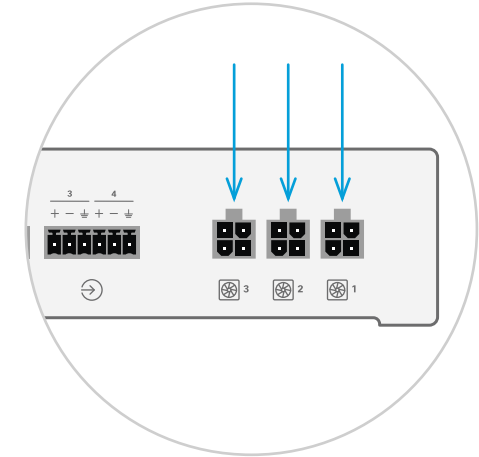
1. Hold the fan module with the cables upward. Thread the cables through the small holes in the cooling cavity, and insert the fan module in the slot.



2. Fasten the fan kit with two screws
(M6x12, Torx 30)

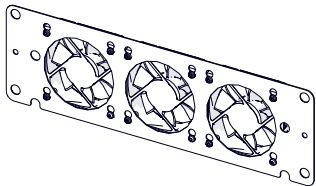


3. Connect the fan cables to the amplifier.
Which fan is connected to which input does not matter.



Fan module

1x Fan module C6



2x



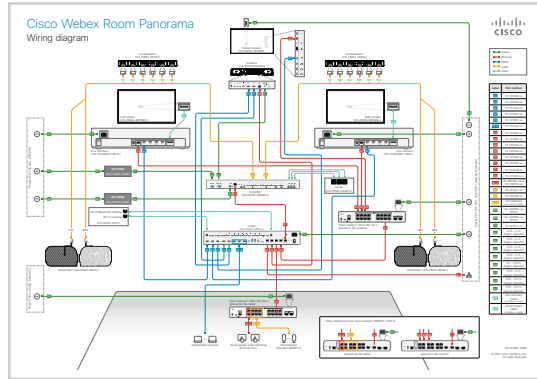
(M6x12, Torx 30)

13. Connect cables

Wiring diagram

C - in the document bag

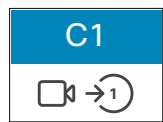
Now you need the wiring diagram that was shipped with the product.



The wiring diagram is also available online, at <https://www.cisco.com/go/panorama-installation>

Cable marking

The cables are marked as shown in the wiring diagram. They have a colored tag for identification, and a symbol that match the symbol you find on the connector panel that the cable shall be connected to.



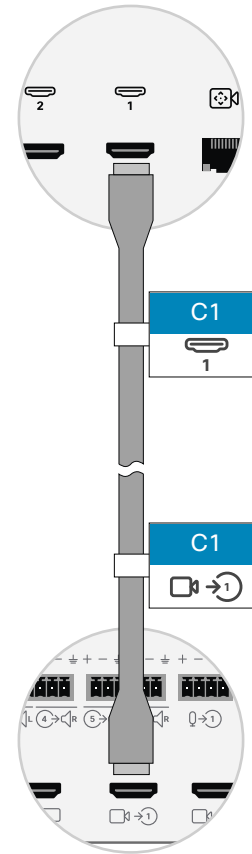
This is the unique identifier for the cable.

This is the same symbol that is used on the connector panel of the device.

Cable marking - example:

This pair of labels is used on one of the HDMI cables between the *codec* and the *camera*.

Camera connector panel



Codec connector panel

Cable guiding

For some cables, only one end can be connected at this point in the installation. In those cases, leave the other end hanging in front of the system or place it on top of the cavities for later use.

The main path for cables is on top of the cavities.

Organize cables neatly using velcro straps

We strongly recommend that you fasten the cables to the steel structure with velcro straps. Both to avoid strain on the cables and connectors and for a neat and tidy look. Also see step 14.

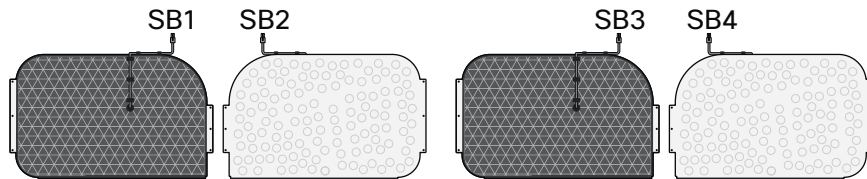
You find velcro straps in box [A6](#).

Do not connect to power!

Do not connect any power cords to the socket outlets at this point in the installation. Only guide them to the power cavity, where they will be connected later.

13.1. Loudspeaker cables C6

1. Connect cable bundles **A1** (left) and **A2** (right) to the amplifier as shown in the diagram.
2. Attach the cables to the hooks above the amplifier with velcro.
3. Leave ends marked **S1-S6** and **S7-S12** on top of the cavities:
 - **S1-S6** to the left
 - **S7-S12** to the right
4. Hang ends marked **SB1-SB4** down behind the rack cavity, and **connect them to the subwoofers**.
 - **SB1-SB2** to the left
 - **SB3-SB4** to the right



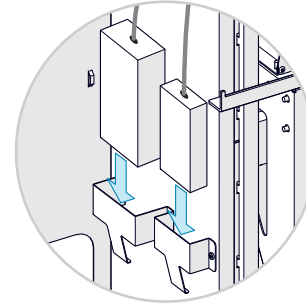
5. Fasten the subwoofer cables to the bottom of the display cavities with velcro to prevent the cables and connectors from touching the subwoofers. Touching the subwoofers may cause rattling noise.

13.2. Power cable for the Ethernet switch in the system C7

1. Connect the power cable (**X4**) to the Ethernet switch in the system. The power socket is facing downward, so you have to connect it from below.
2. Lead the cable through the hole toward the right power cavity. Don't connect it to the socket outlet now.
3. Fasten the cable to the bottom of the display cavity with velcro to prevent the cable from touching the subwoofers and causing rattling noise. Make sure to leave enough slack so that it is possible to lift the switch out of the cavity later, without disconnecting the power cable.

13.3. PSUs for the amplifier C6 C7

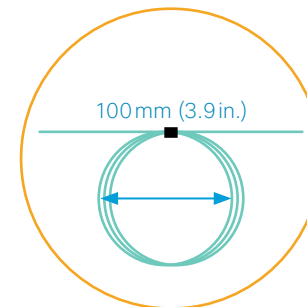
1. Place the two PSUs in the bracket in the left power cavity.



2. Lead the cables on top of the cavities and connect the two PSUs to the amplifier as shown in the wiring diagram (**D2, D3**).
3. The 24V PSU (the largest one) has a power switch. Switch it to ON.
4. Connect the power cords to the PSUs (**D4, D5**). Don't connect them to the socket outlets now.

13.4. One Connect cable D3 D4

You find the One Connect cables along with the screen accessories, which were unpacked in step 10 on page 29.



Always take care not to pinch or bend the One Connect cables too much; they are fragile.

1. Connect a cable (**S10, S11**) to each Samsung One Connect box.
2. Bundle excess cable carefully, thread it behind the screen bracket and hang it in the display cavity.

Leave about 1 meter (40in.) of cable for the screen. It will be connected later.

13.5. Cables from the system toward the table

The cables between the system and the table will be connected later:

- Presentation cables (T1..3)
- Ethernet cable from the codec to the Ethernet switch by the table (X1)

13.6. Cables by the table

Other cables that are connected to the Ethernet switch by the table will be connected later:

- Microphones (M1..6)
- Cables for the touch panels (T4..5)
- Power cable (X2)

13.7. Other cables C6 C7

The content screen cables (S3, S6, and S9) shown in the wiring diagram may not apply to your installation. Your AV integrator is fully responsible for the content screen solution, and may have chosen a different approach.

Connect all the other cables as shown in the wiring diagram, and note the following.

Cables for the camera:

- The camera will be installed later.
- Connect the camera cables to the codec (C1, C2, C3) and amplifier (C4) as shown in the diagram.
- Leave the ends for the camera on top of the rack cavity.

Cables for the Samsung One Connect boxes:

- Connect the main screen cables to the codec (S1, S2) and Ethernet switch (S4, S5).

Cable for the amplifier:

- Connect the cable between the amplifier to the codec (D1).

Cable for the Ethernet switch in the system:

- Connect the Ethernet switch in the system to the codec (X3).

Power cables:

- Connect a power cable (S7, S8) to each Samsung One Connect box and to the codec (P2).
- Don't connect any power cables to the socket outlets yet.

Network cable:

- Connect the network cable to the codec (P1).
- Don't connect it to the wall socket yet.

14. Organize the cables neatly

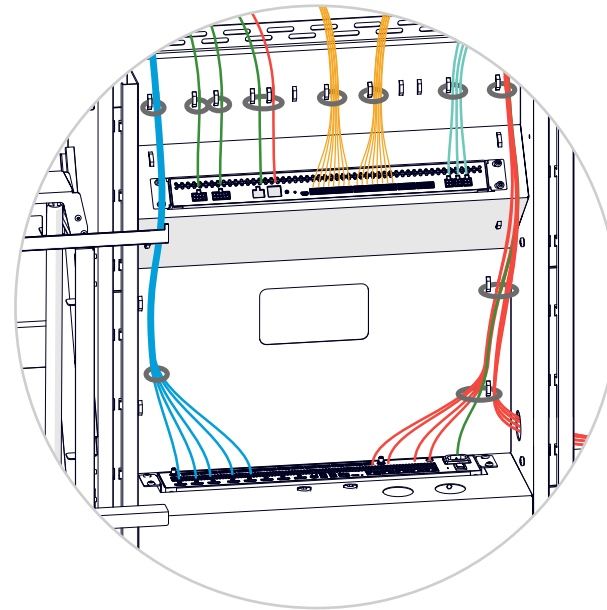
The system has many cables!

To avoid rattling noise and to have a nice looking system we recommend you to fasten the cables to the steel structure with velcro straps.

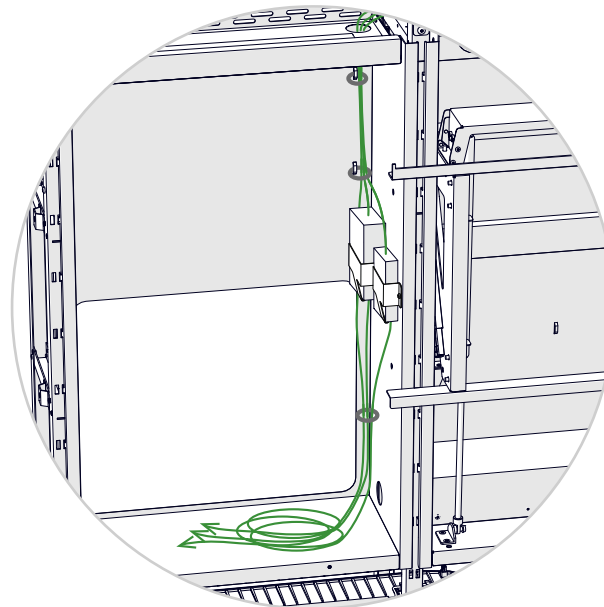
The main cable routes are:

- From the codec:
 - Upward and to the sides
 - Downward through the flex tubes (will be installed later)
- From the amplifier:
 - Upward
- From the Ethernet switch:
 - Through to the rack cavity and upward together with the cables from the codec
- To the left and right on top of the cavities

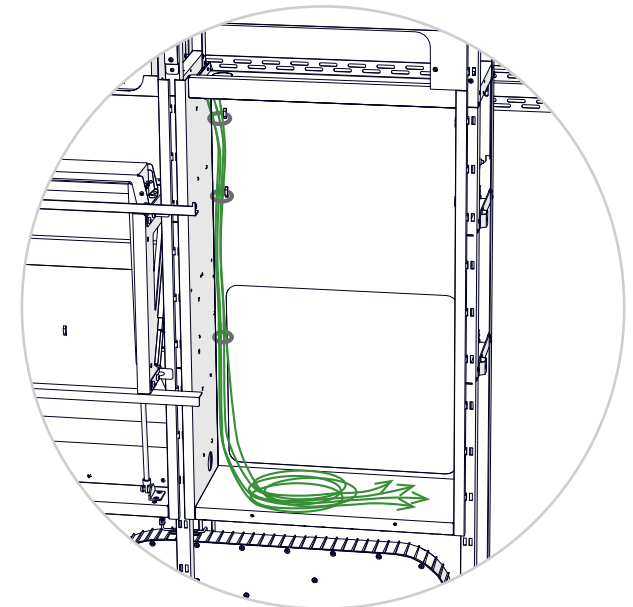
Don't thread cables through the hole in the back plate of the rack cavity. This hole should only be used if you prefer routing the cables for the table through the wall, and either over the ceiling or under the floor, instead of using the flex tubes.



Rack cavity



Left power cavity

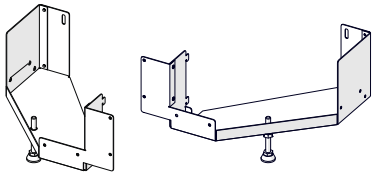


Right power cavity

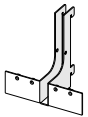
15. Mount brackets for the cosmetic panels

Brackets

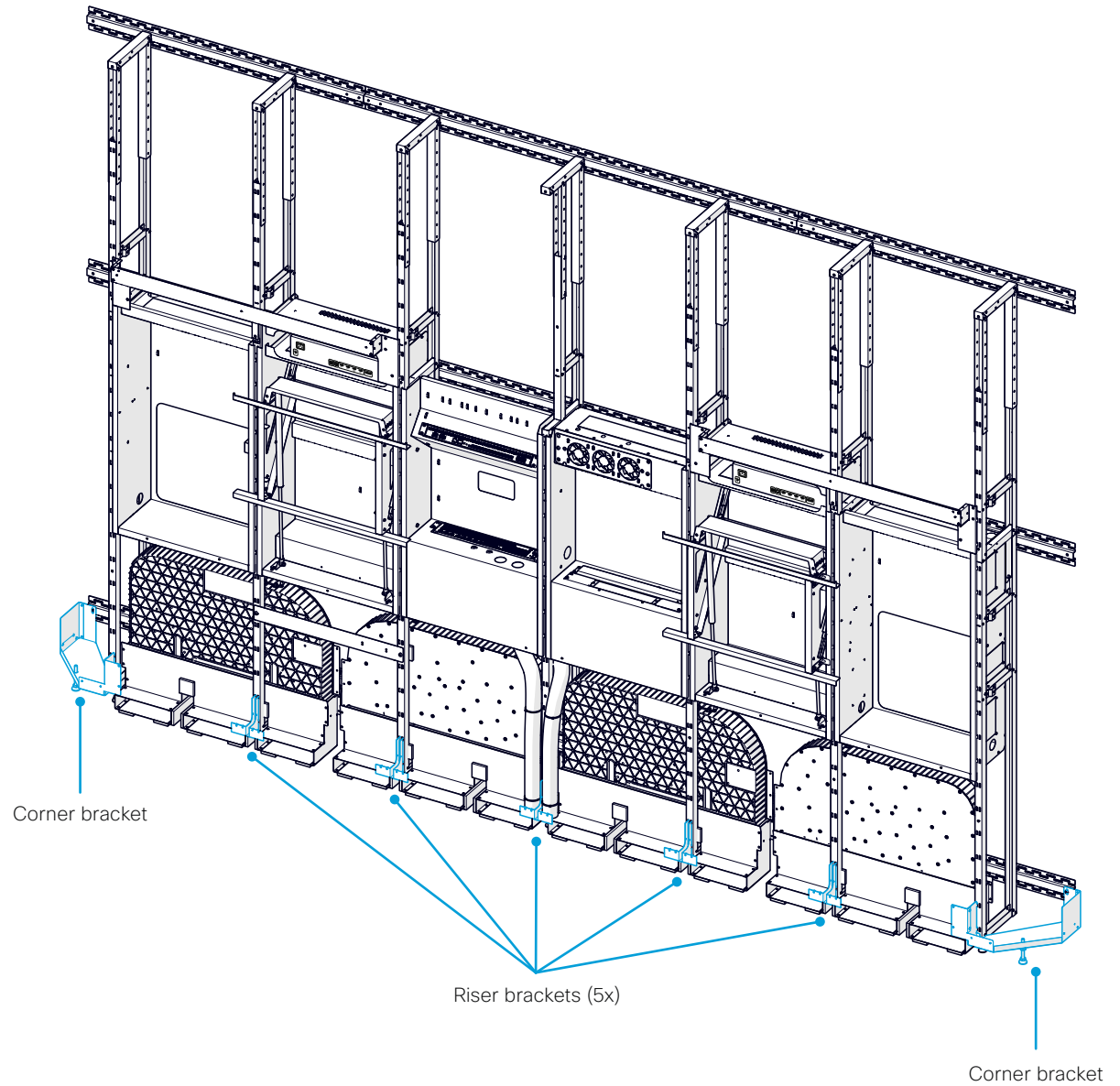
2x Corner bracket, left and right **E1**



5x Riser bracket **E2**



9x
(M6x12, Torx 30)

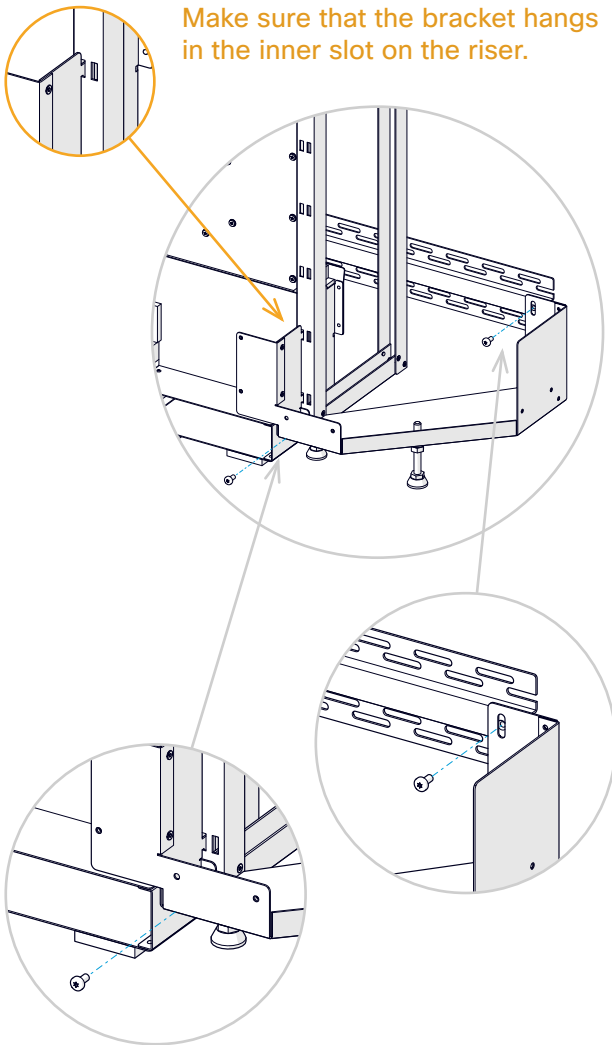


15.1. Corner brackets

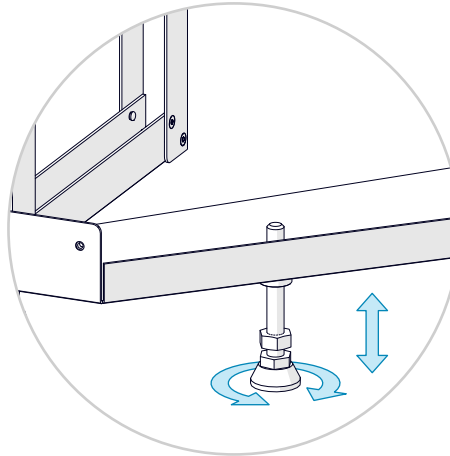
The system has a corner bracket on each side.
Repeat the procedure for both corners.

1. Hang the corner bracket in the inner slot of the riser, and fasten it with two screws (M6x12, Torx 30).

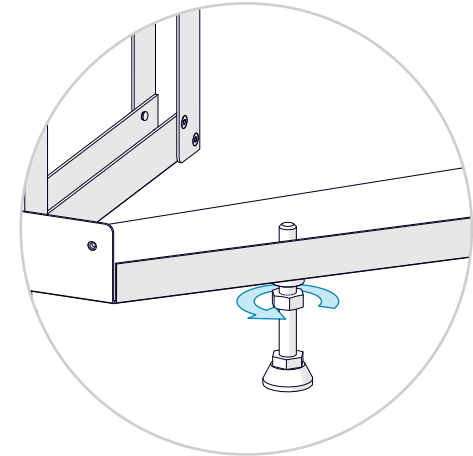
Make sure that the bracket hangs in the inner slot on the riser.



2. Adjust the foot of the corner bracket until the bracket is level.



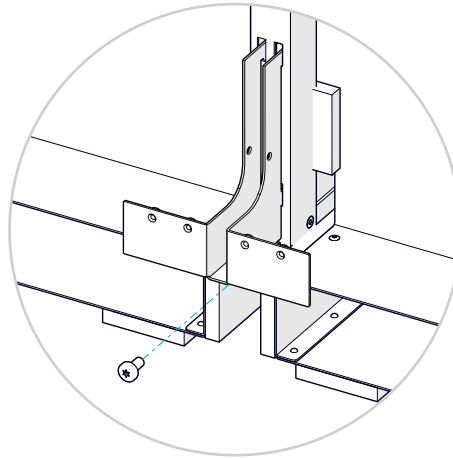
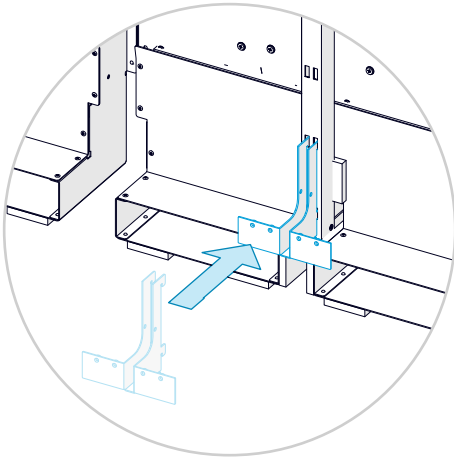
3. Tighten the upper nut to lock the foot's position.



15.2. Riser brackets

The system has a small bracket on five of the risers (all except the outer risers). Repeat the procedure for the five risers.

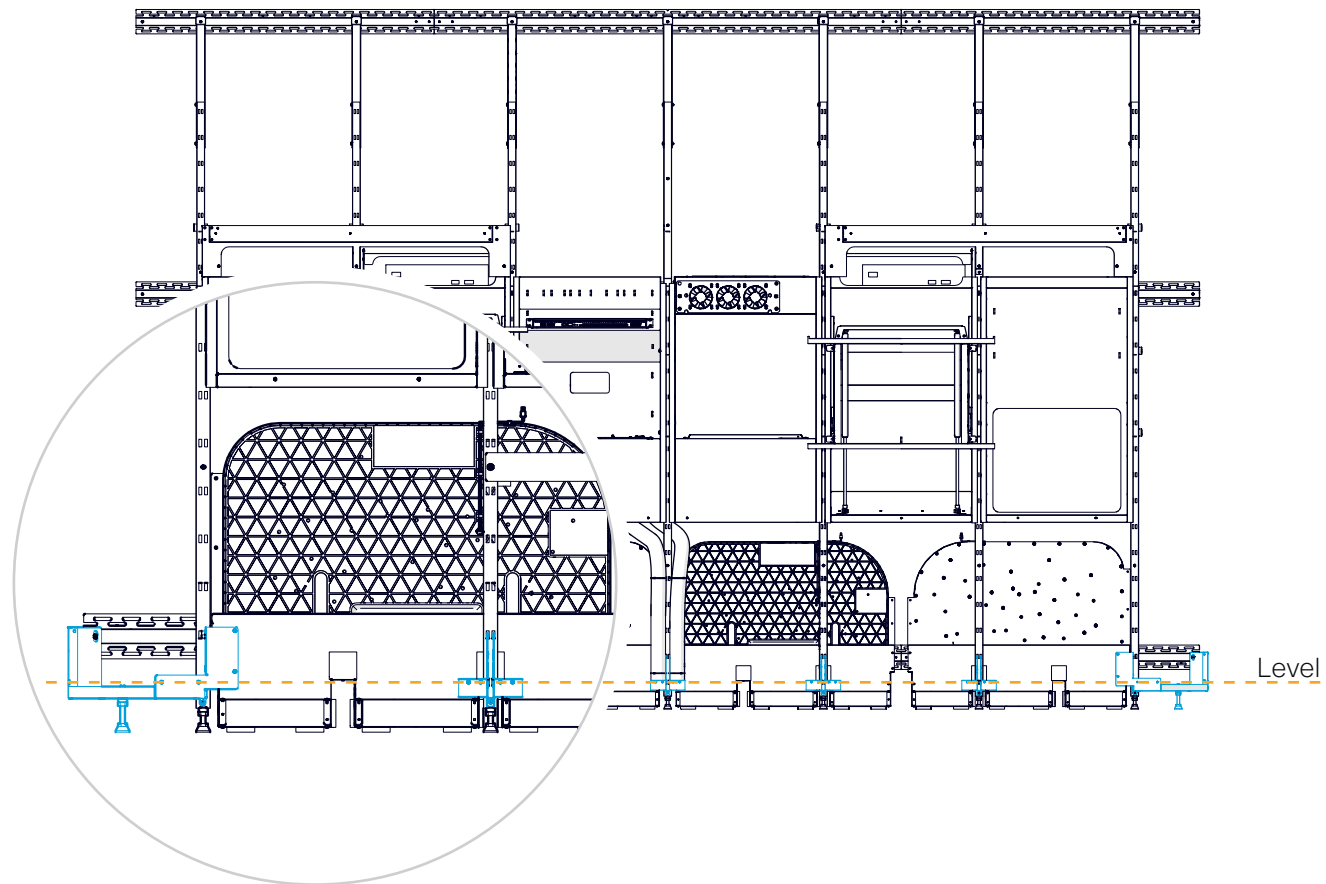
1. Hang the bracket on the riser.
2. Fasten the bracket with one screw
(M6x12, Torx 30).



15.3. Level the brackets

We recommend that you use the laser level to check that the holes in the corner and riser brackets are level.

If not, adjust the feet on the risers and corner brackets until level. Remember to pull the subwoofers forward again when done.



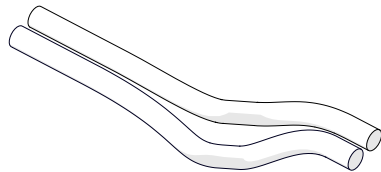
16. Mount the flex tubes for cables

Two flex tubes run from the rack cavity toward the floor. You need them to route the cables between the codec and the components on the table, across the floor.

Alternatively, you can route these cables through the hole in the back wall of the rack cavity, through the wall, under the floor or above the ceiling, and toward the table. In this case, you don't need to install the flex tubes.

Flex tubes

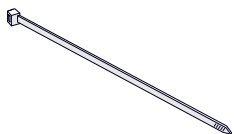
2x flex tubes A6



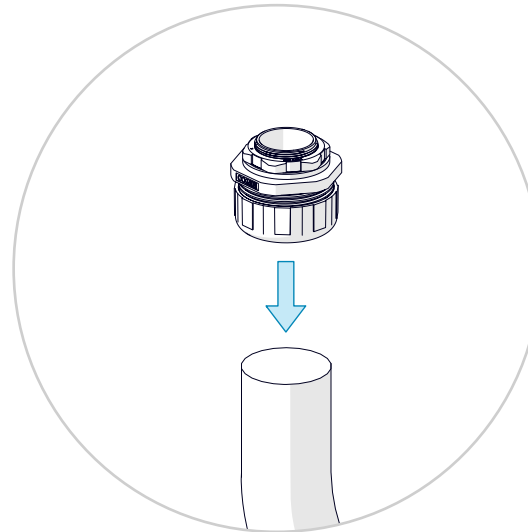
2x tube adapter A6



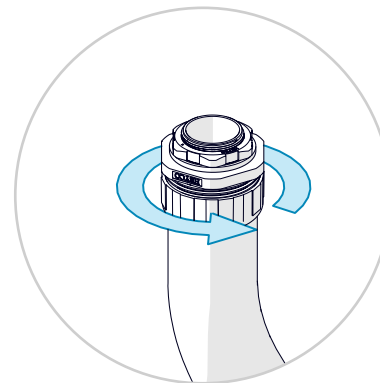
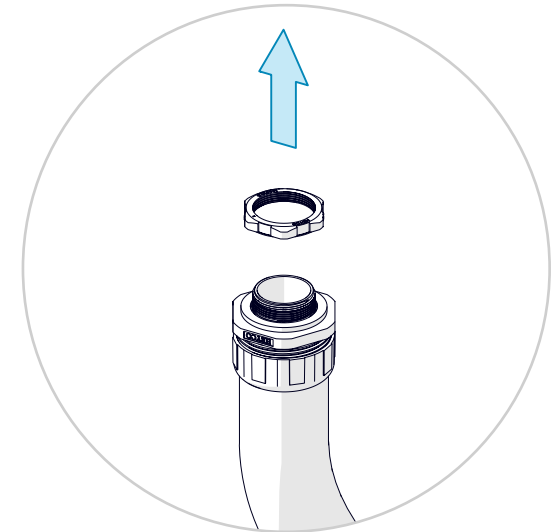
6x cable tie A6



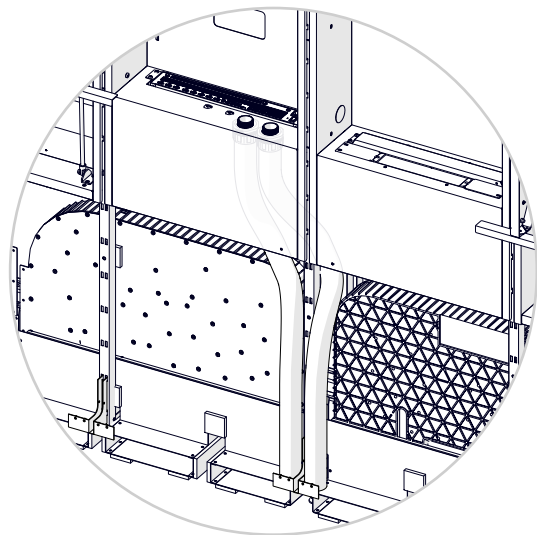
1. Add an adapter to both tubes and tighten.



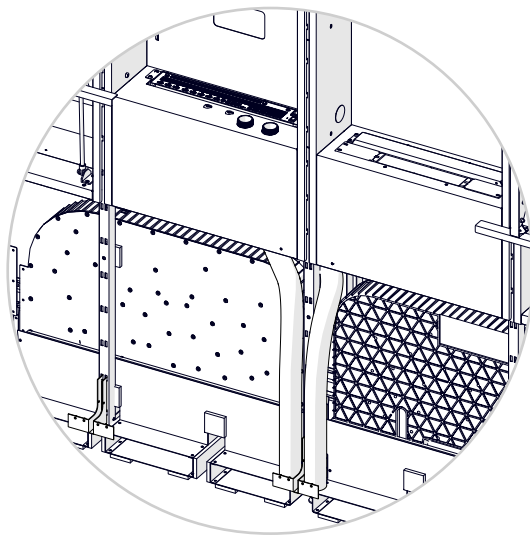
2. Unscrew and remove the nut from the adapters.



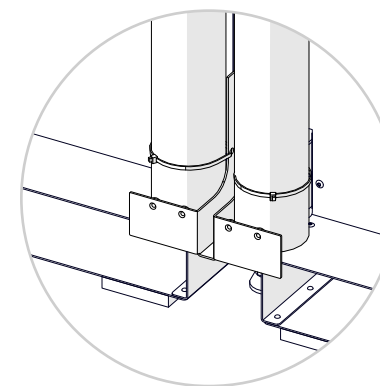
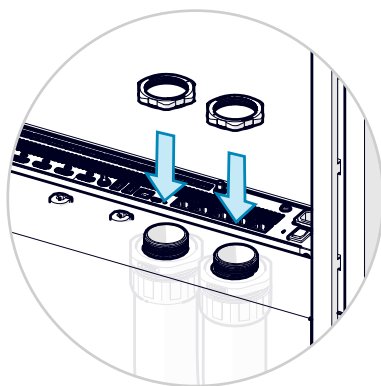
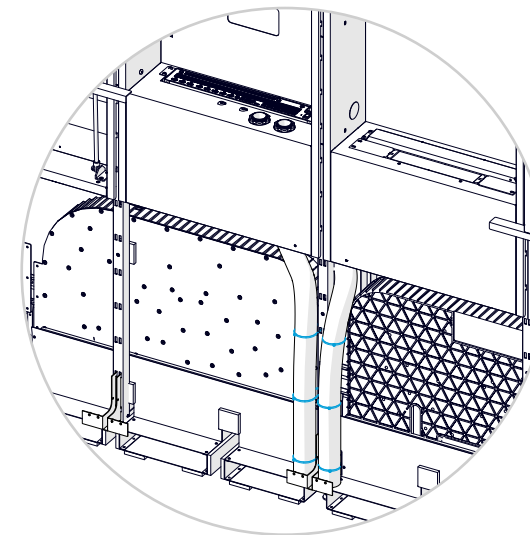
3. Insert the tubes into the holes in the rack cavity from below. Attach them by putting back and tightening the nuts.



4. Guide the two tubes down on each side of the center riser. Cut them at the appropriate length, 5 mm (0.2 in.) above the ducts of the subwoofer stand.



5. Fasten the tubes to the riser and bracket with cable ties, in order to prevent the tubes from touching the subwoofers and cause rattling noise.

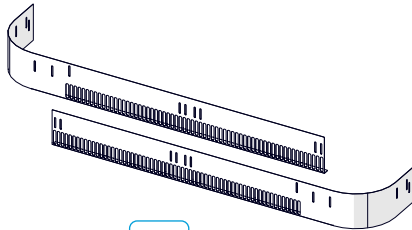


17. Mount the bottom trim

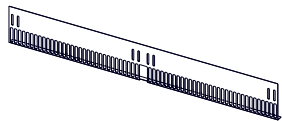
The bottom trim stands on the floor and is fastened to the corner and riser brackets. The trim is fastened through the front and side profiles as shown in the close-up illustrations.

Bottom trim and brackets

2x Bottom trim, left and right **E4**



1x Center trim **E2**





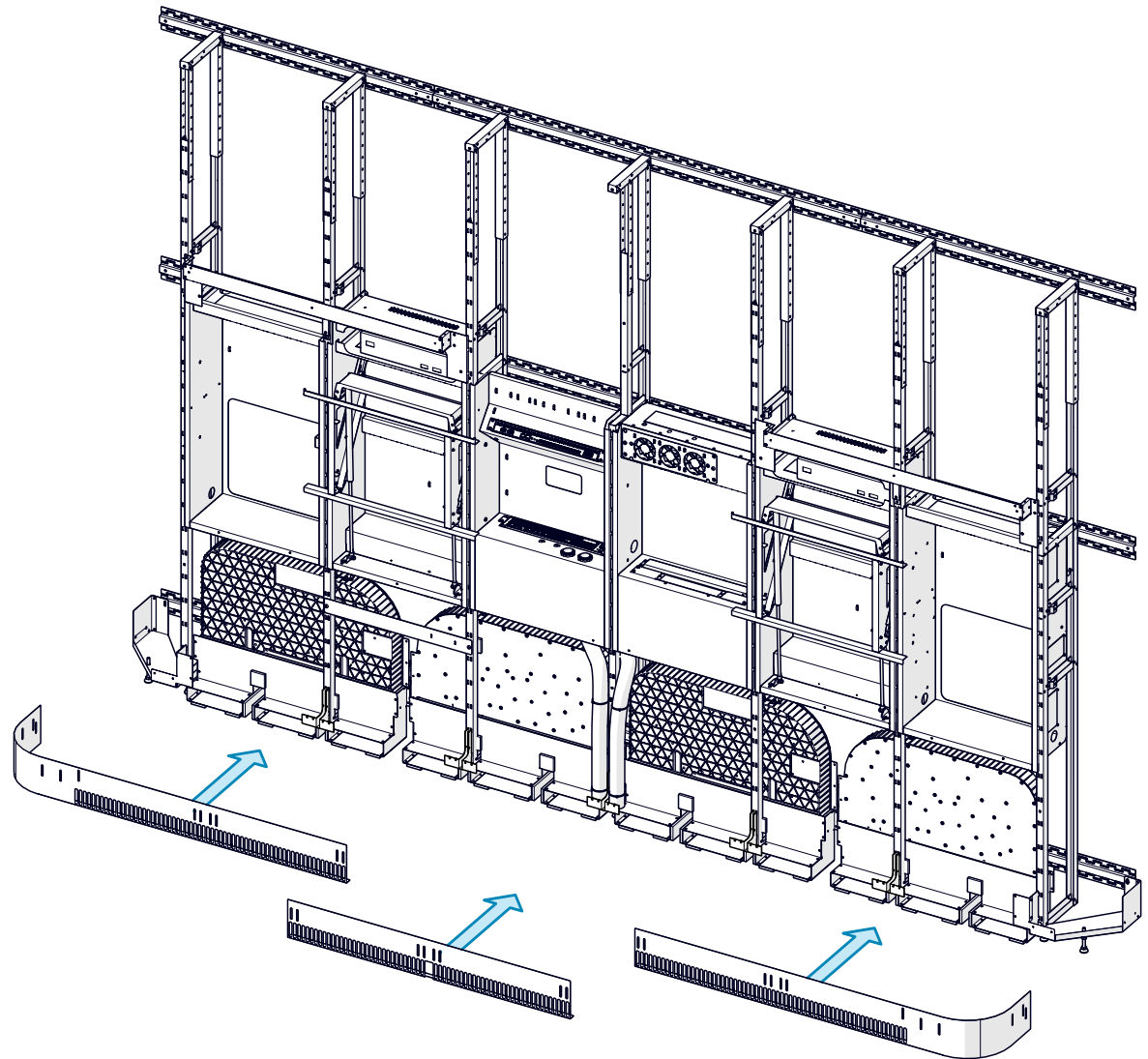
3x Front profile (3203 #5) **E3**



2x Side profile (3203 #1) **E3**

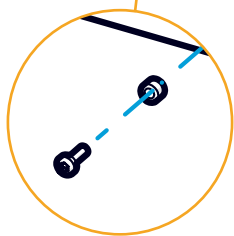
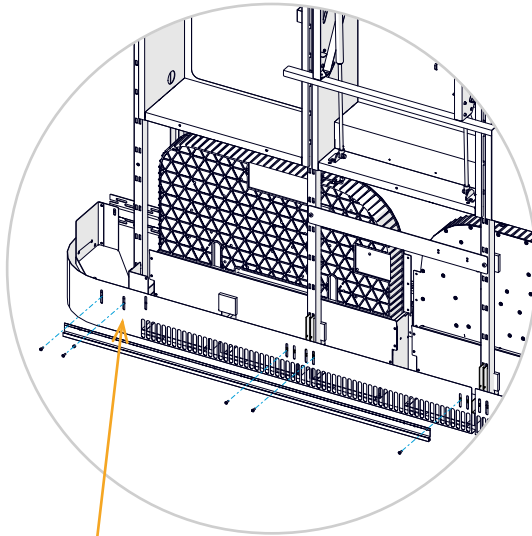


20x  4x 
(M4x12, Torx 20) (Nylon spacer, 5mm)



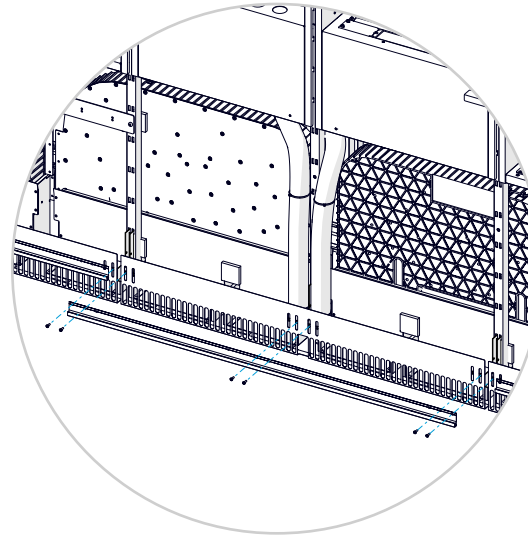
1. Fasten the trim, through a front profile (3203 #5), with five screws (M4x12, Torx 20).

Repeat the procedure for both the left and right trims.



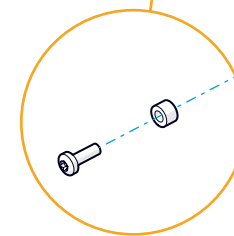
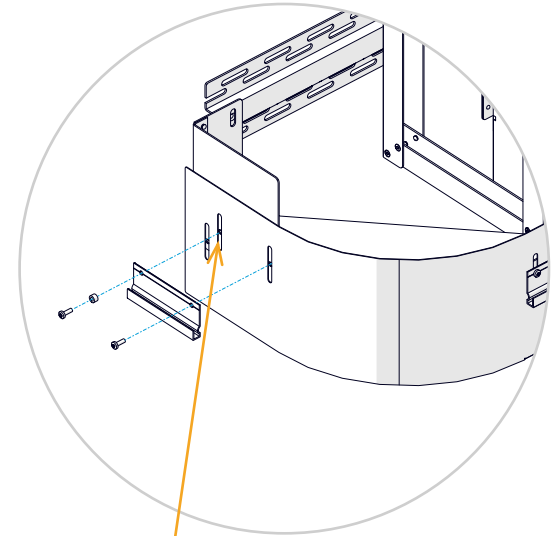
Add a spacer to this screw.

2. Fasten the center trim, through a front profile (3203 #5), with six screws (M4x12, Torx 20).



3. Fasten the trim, through a side profile (3203 #1), with two screws.

Repeat the procedure for both the left and right trims.



Add a spacer to this screw.

4. We recommend that you use the laser level to check that the all profiles are level.

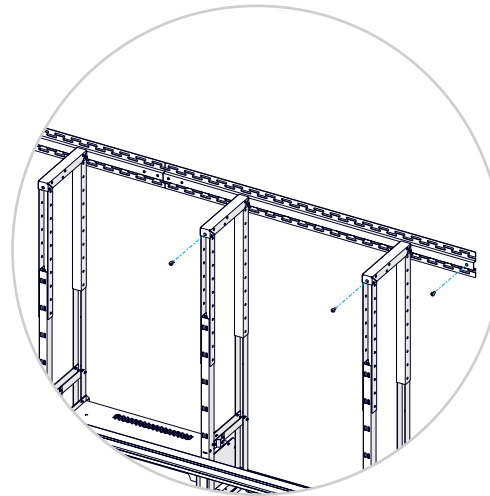
18. Mount the upper trim

The top trim and its support are fastened to the risers and rails as shown in the close-up illustrations.

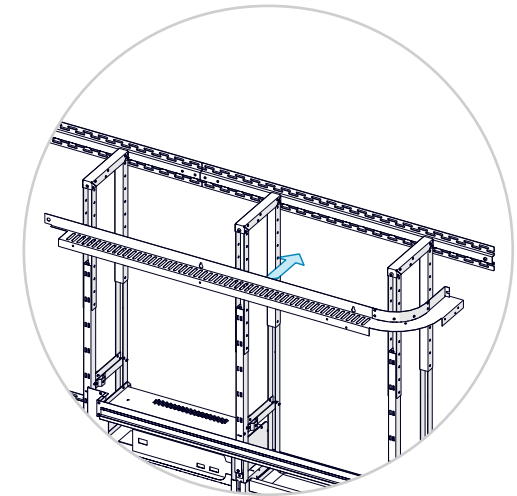
Repeat the procedure for both the left and right trims.

18.1. Fasten the upper trim support

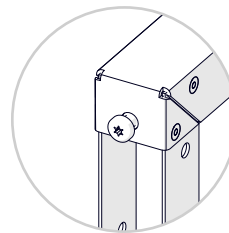
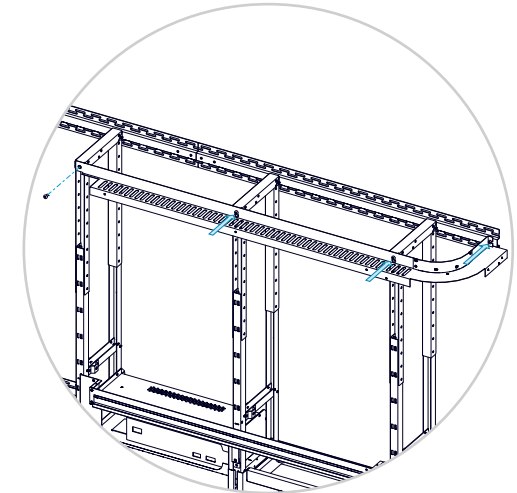
1. Enter three screws (*M6x12, Torx 30*) into the rail and risers as shown, without tightening.



2. Hang the trim support onto the three screws. You may need to use some force to get the trim support onto the corner screw.



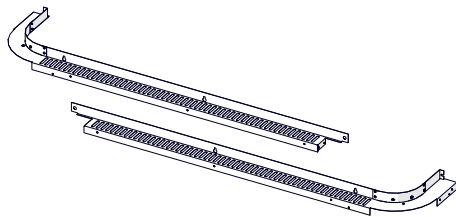
3. Tighten the three screws, and add one more (*M6x12, Torx 30*).



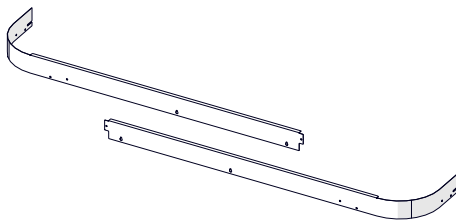
Don't tighten the screws so much that it becomes difficult to hang the trim support on them.



Upper trim



2x Upper trim support, left and right E4



2x Upper trim, left and right E4

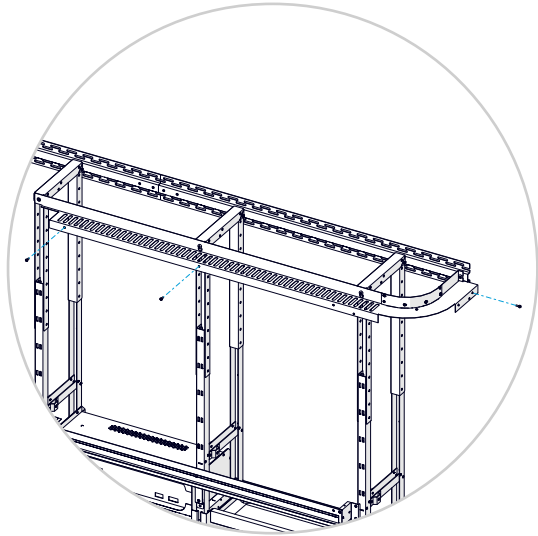


8x  2x 
(*M6x12, Torx 30*) (*Nylon spacer, 5mm*)

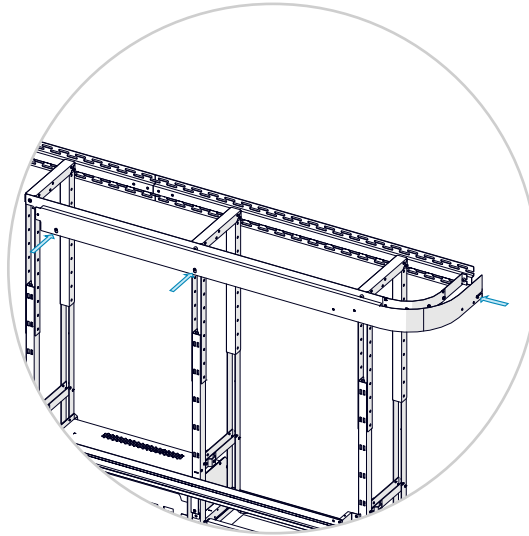
12x  4x 
(*M4x12, Torx 20*) (*Washer, 0.9mm*)

18.2. Fasten the upper trim

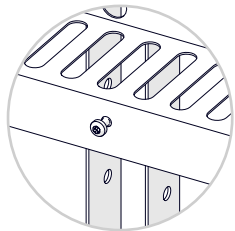
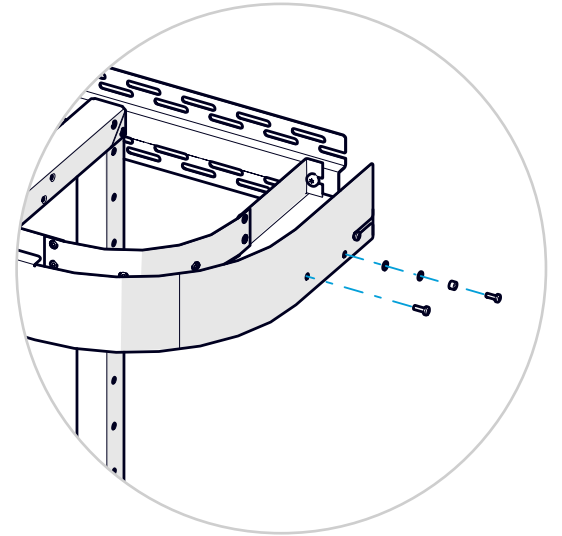
1. Enter three screws (*M4x12, Torx 20*) into the trim support as shown, without tightening.



2. Hang the trim onto the screws.
3. Tighten the three screws.



4. Add two more screws (*M4x12, Torx 20*), one of them with a spacer and two washers.

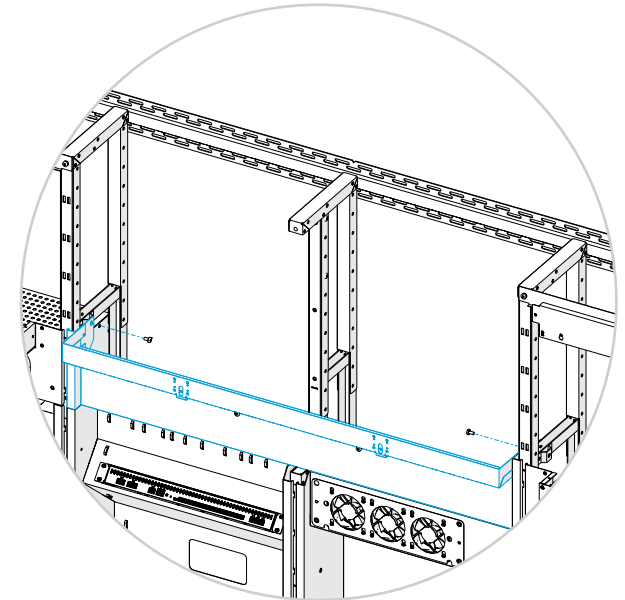
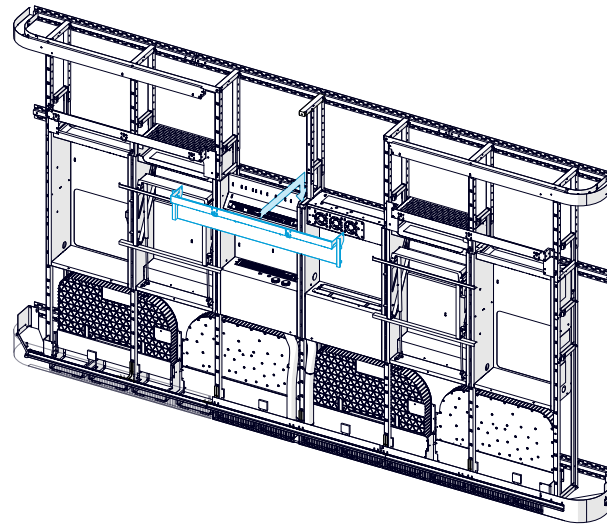


Don't tighten the screws so much that it becomes difficult to hang the trim on them.

19. Mount the camera cavity

The camera cavity is above the cooling and rack cavities.

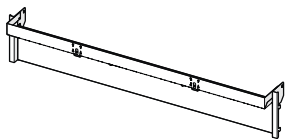
Hang the cavity on the risers and fasten with two screws (M6x12, Torx 30).



Camera cavity

1x Camera cavity

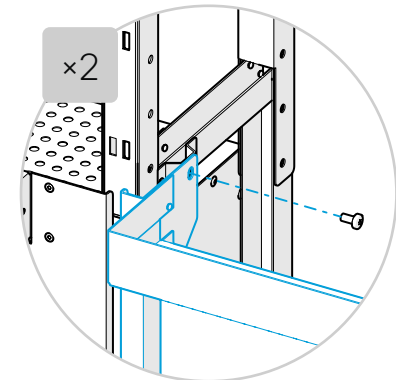
B13



2x



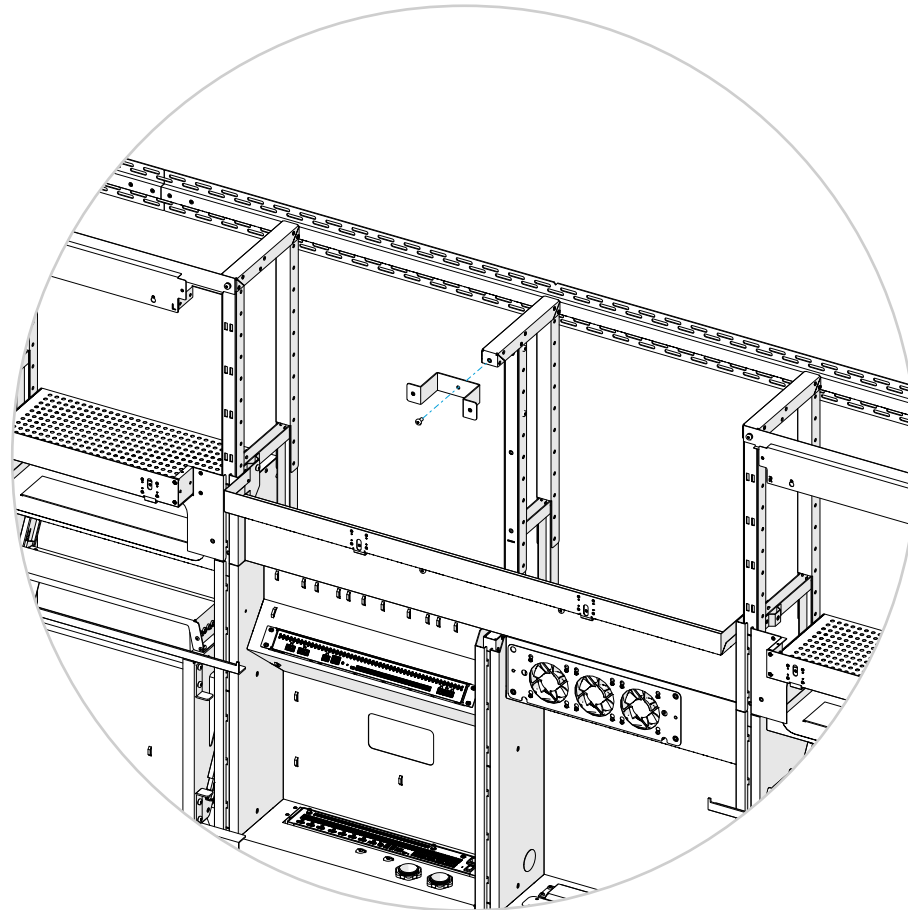
(M6x12, Torx 30)



20. Mount a support bracket for the upper trim

The support bracket on the center riser is needed when fastening the center part of the upper trim in a later step.

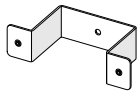
Fasten the support bracket to the center riser with one screw (*M6x12, Torx 30*).



Support bracket

2x Upper trim support bracket

E4



1x



(*M6x12, Torx 30*)

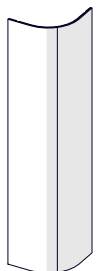
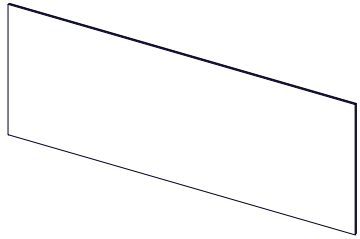

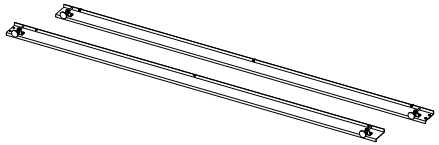
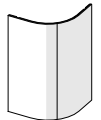
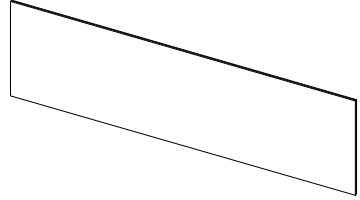
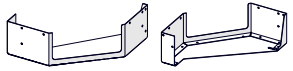
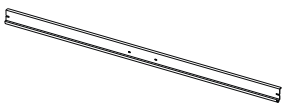


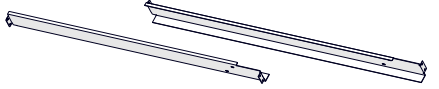

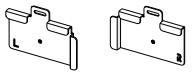






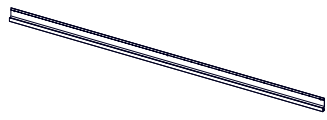
21. Mount the cosmetic panels

Before you start mounting the panels, take an extra look to assure that these cables are connected:

- Cable to the subwoofers (4x)
- Power cable to the Ethernet switch

The subwoofers and the rear side of the Ethernet switch are not easily accessible once the panels have been mounted.

Cosmetic panels

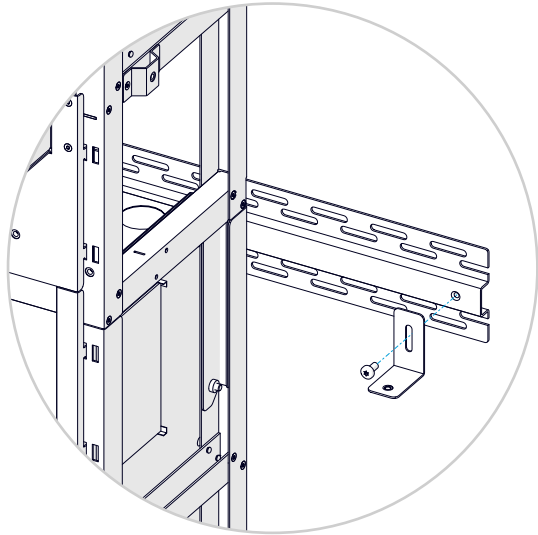
2x Lower corner panel E6	2x Lower front panel E7	2x Middle rail bracket E5	2x Wall top trim (left and right) E4
			
2x Upper corner panel E8	2x Upper front panel E9	2x Joining module, left and right E5	1x Upper trim, center E4
			
2x 50 × 50 mm (2 × 2 in.) piece of foam A6		2x Vertical profile (3201 #2) E3	2x Wall side trim, lower (left and right) E2
			
2x Upper panel lock, left and right E4	1x Upper panel spacer E4	6x Horizontal/vertical profile (3201 #3) E3	49x  (M4x12, Torx 20)
			10x  (Nylon spacer, 5mm)
		2x Vertical profile (3203 #1) E3	4x  (M6x12, Torx 30)
			12x  (Washer, 0.9mm)
		2x Front profile (3203 #3) E3	
			

21.1. Mount the lower corner panels

Repeat the procedure on both sides.

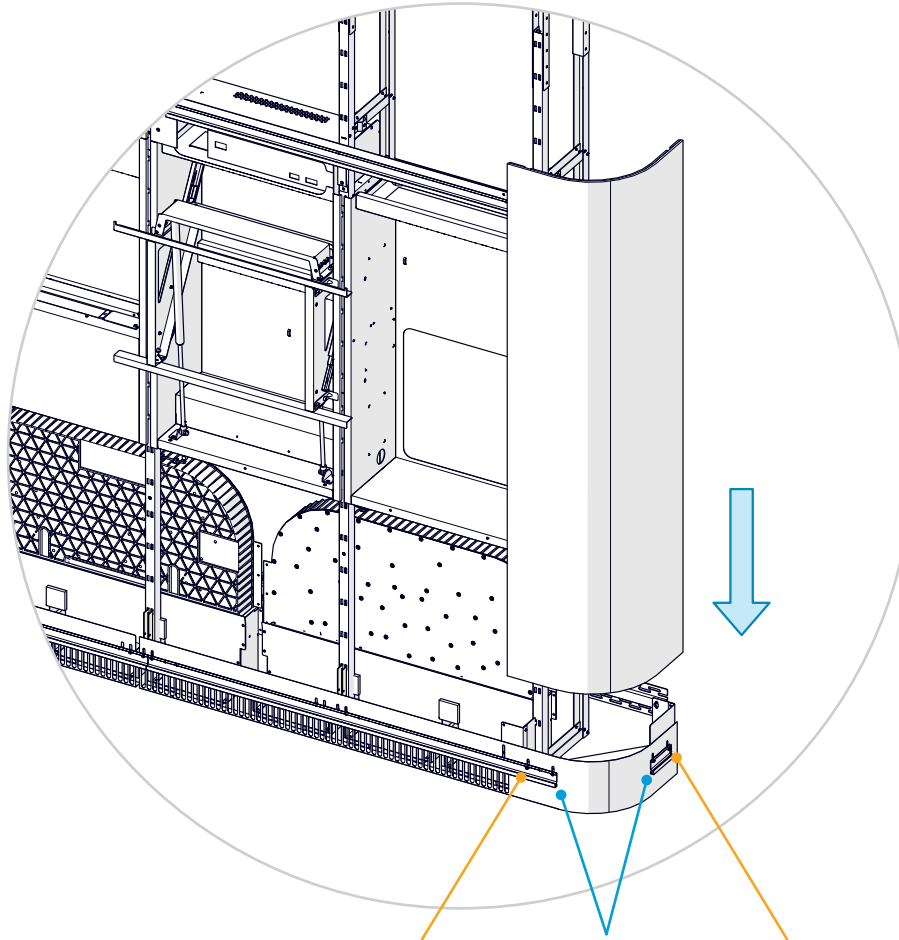
1. Add a small bracket to the middle rail, and fasten with a screw (*M6x12, Torx 30*).

Do not tighten the screw now. You need the flexibility when aligning the panels later.



2. Place the corner panel onto the profiles.

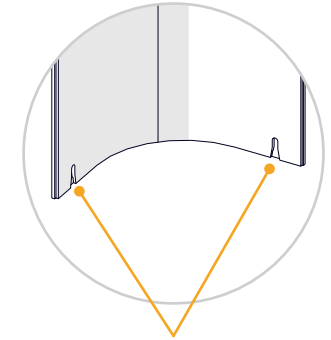
Make sure to fit the groove of the panel fully onto both profiles, and check that the slots at the rear side of the panel enter the screws with spacers.



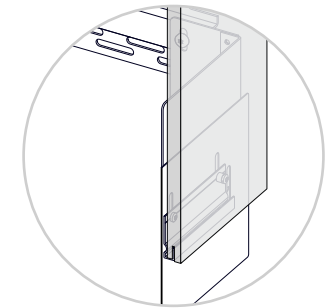
Screw with
spacer

Profiles

Screw with
spacer



The slots at the rear side
of the panel shall enter the
screws with spacers.

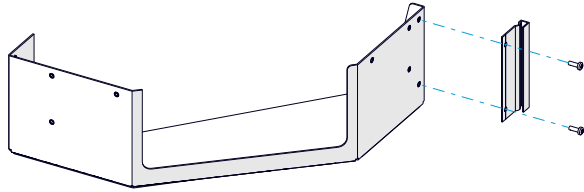


Fit the panel groove fully
onto the profile
(cross section, lower corner)

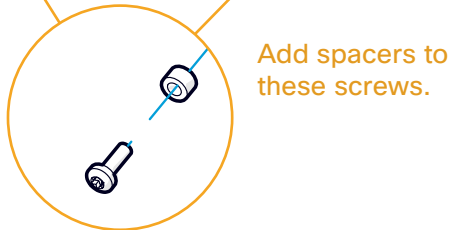
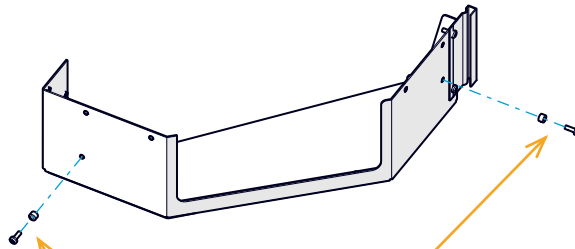
21.2. Mount a joining module on top of the lower corner panel

Repeat the procedure on both sides.

1. Fasten the vertical profile (3203 #1) with two screws (M4x12, Torx 20).

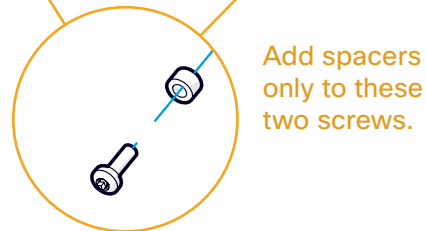
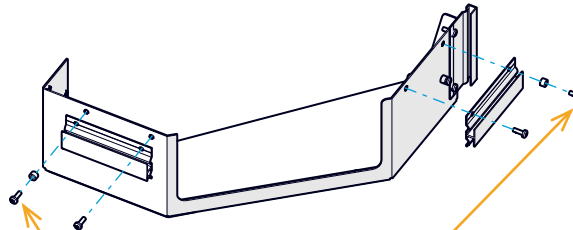


2. Add two screws with spacers (M4x12, Torx 20; Nylon spacer, 5 mm).



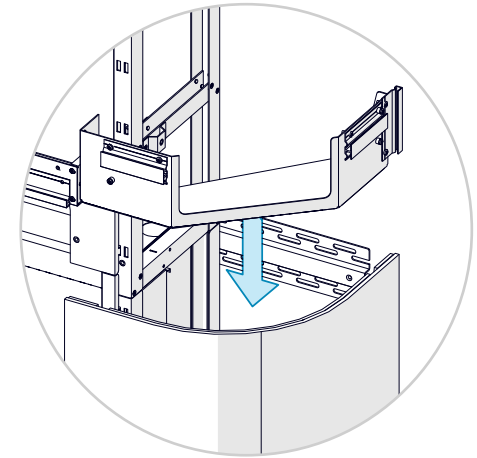
3. Fasten the two horizontal profiles (3201 #3) with two screws (M4x12, Torx 20) each.

Note that two screws have spacers (Nylon spacer, 5 mm).

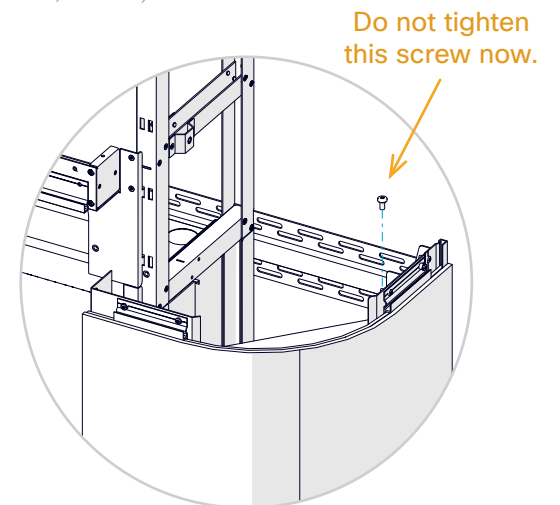


4. Place the joining module onto the corner panel.

Make sure to fit the module fully into the groove of the panel on all sides. Check that the screws with spacers enter the corresponding slots at the rear side of the panel.



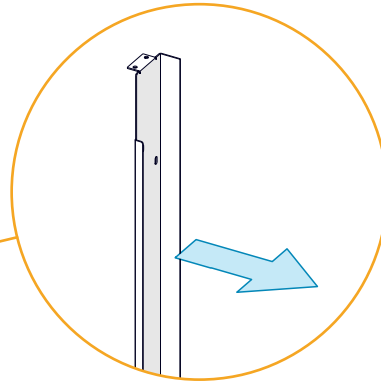
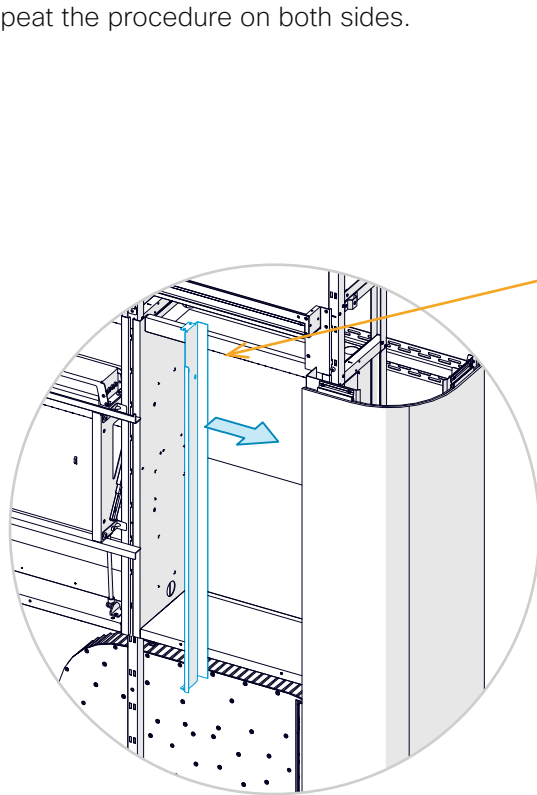
5. Fasten the module with one screw (M6x12, Torx 30).



21.3. Attach a side trim to the lower corner panel

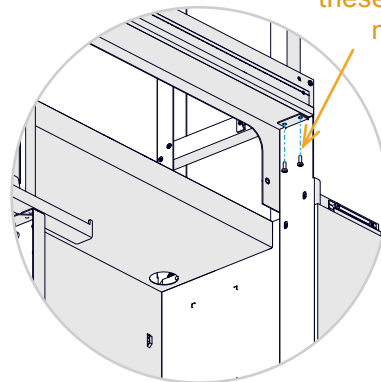
Attach a side trim to the corner panel. The left and right trims are not equal. Take care to put them in the correct position.

Repeat the procedure on both sides.



1. Fit the trim fully into the groove of the panel.

Take care to mount the trim on the correct side. This is the trim for the right side.

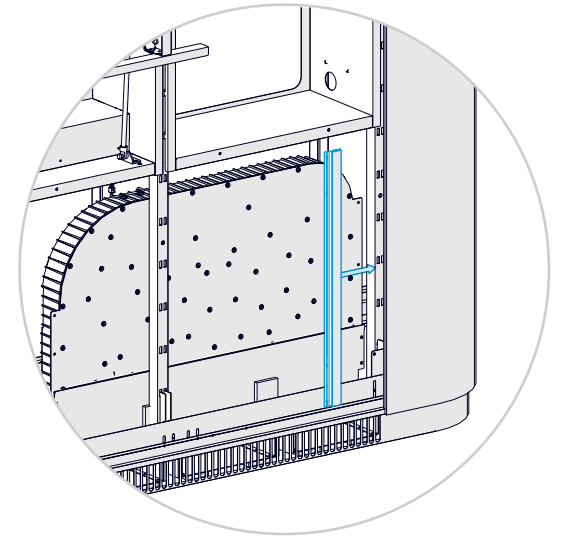


2. Fasten the trim with two screws (*M4x12, Torx 20*) at the top.

21.4. Insert a profile in the corner panel

Insert a profile (*3201 #2*) into the groove of the panel, below the side trim.

Repeat the procedure on both sides.



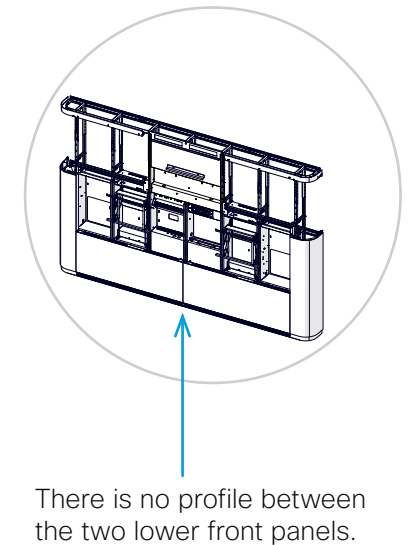
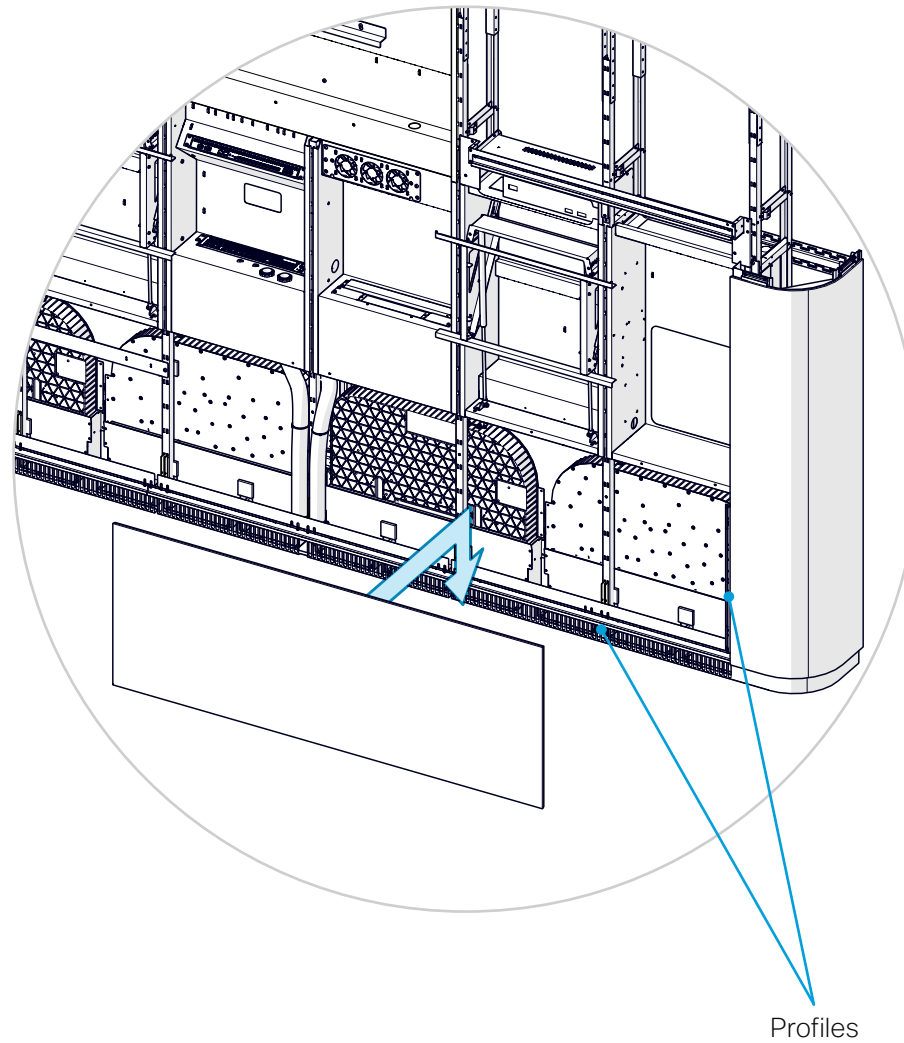
The profile is held in place by the corner and front panels. It's not fastened by screws.

21.5. Insert the lower front panels

Slide the lower front panel onto the profiles, both at the bottom and at the outer side.

Make sure to fit the groove of the panel fully onto both profiles.

Repeat the procedure on both sides.



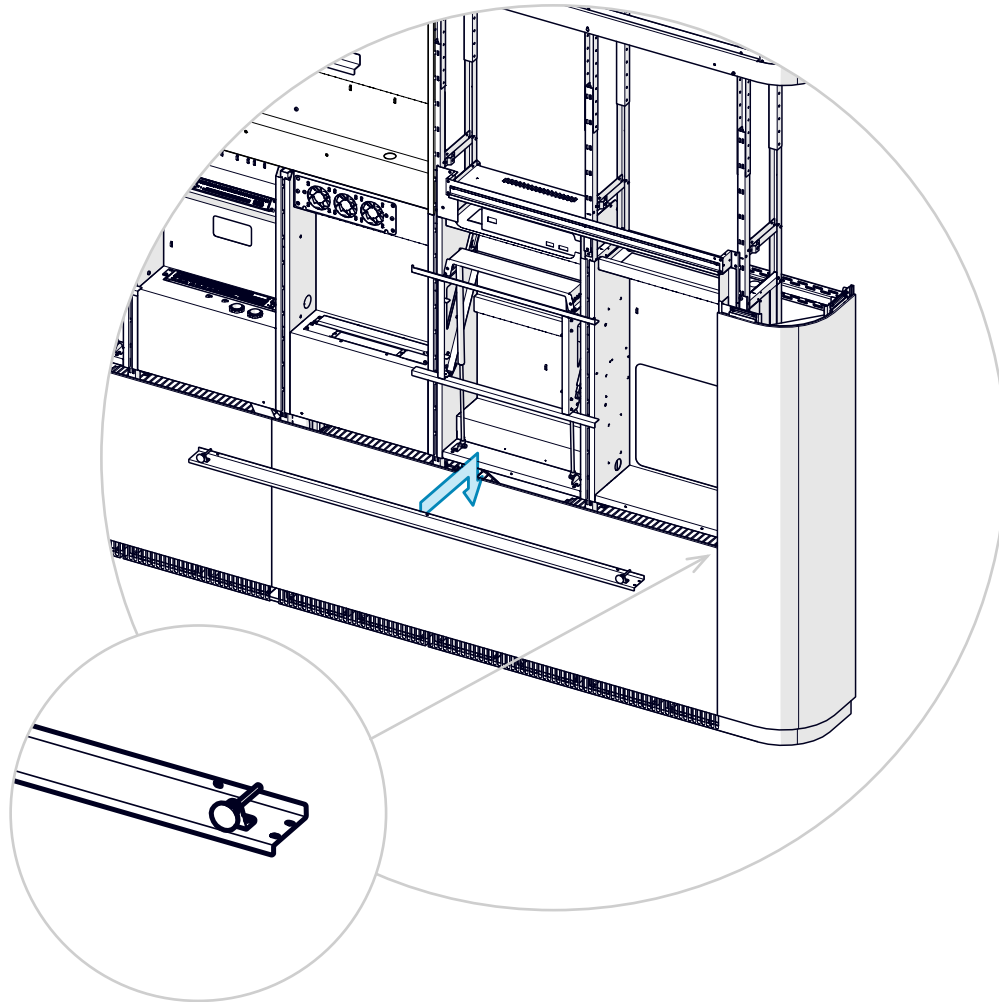
There is no profile between the two lower front panels.

21.6. Attach the wall top trims

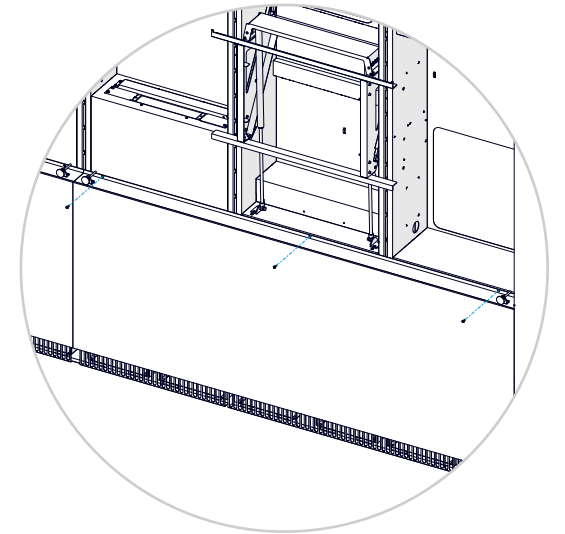
The left and right trims are different; check that you mount them the correct way.

Fit the trim fully into the groove of the front panel, before you fasten them.

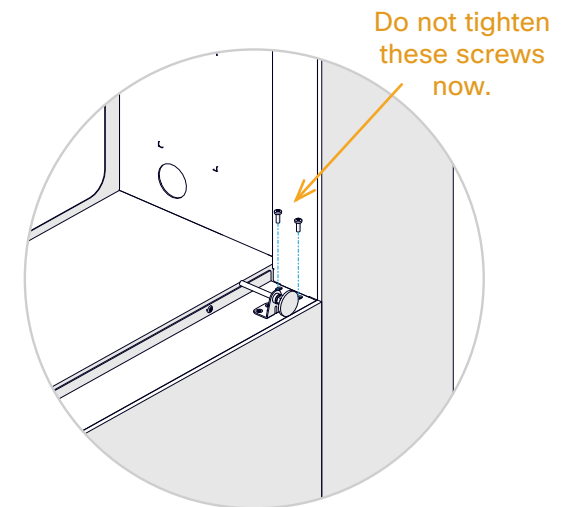
Repeat the procedure on both sides.



This side toward the corner.



Three screws (*M4x12, Torx 20*) from the front.



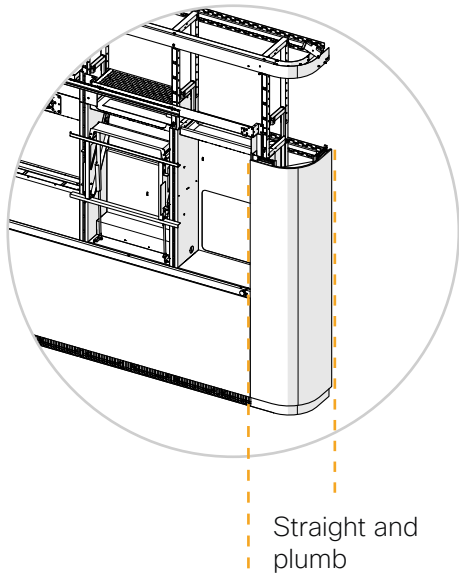
In the corner, two screws (*M4x12, Torx 20*) from the top. Push the corner panel toward center when entering these screws.

21.7. Straighten the lower corner panel and tighten screws

Before tightening the screws, make sure the lower corner panel is straight and plumb.

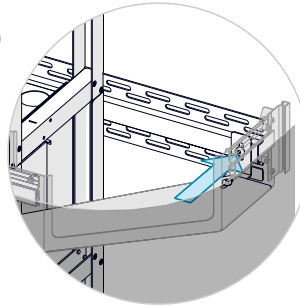
Repeat the procedure on both sides.

1. Make sure the corner panel is straight and plumb.

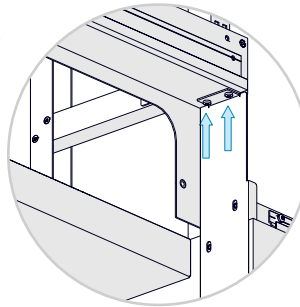


2. Tighten the screws that you entered without tightening in the following steps:

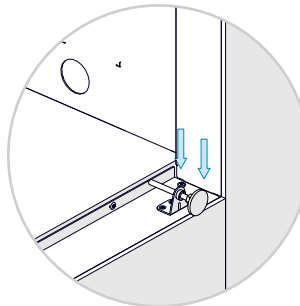
Step 21.1:
(M6x12, Torx 30)



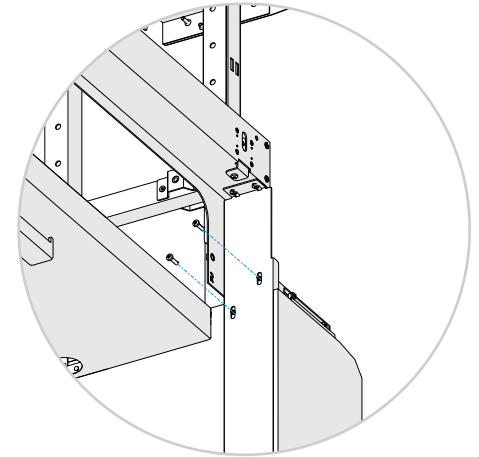
Step 21.3:
(M4x12, Torx 20)



Step 21.6:
(M4x12, Torx 20)



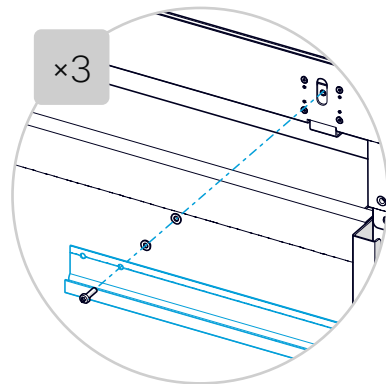
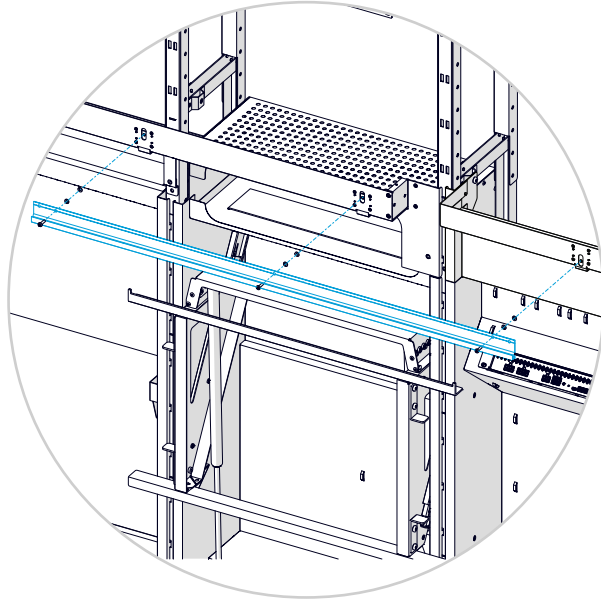
3. Add two more screws (M4x12, Torx 20) to fix the side trim to the joining module.



21.8. Mount profiles for the upper panels

Fasten the profile (3203 #3) to the mounting plate with three screws (M4x12, Torx 20).

Repeat the procedure for both profiles.



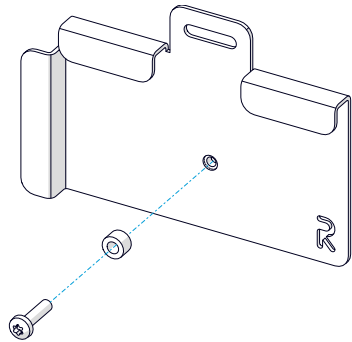
Add two washers to each screw, between the profile and the mounting plate.

21.9. Mount the upper corner panels

Repeat the procedure on both sides.

1. Add a screw with spacer to the upper panel lock (M4x12, Torx 20; Nylon spacer, 5 mm).

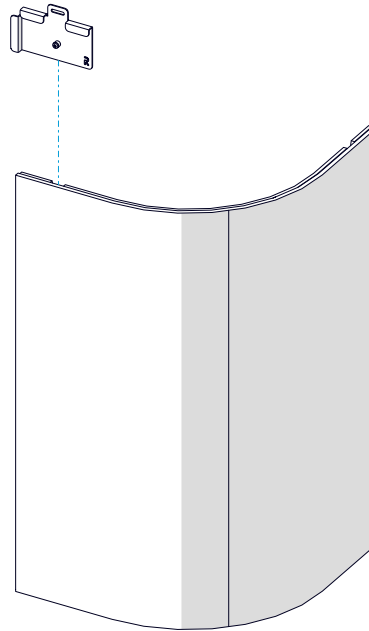
The left and right panel locks are marked with L and R, respectively.



2. Place the panel lock onto the upper corner panel.

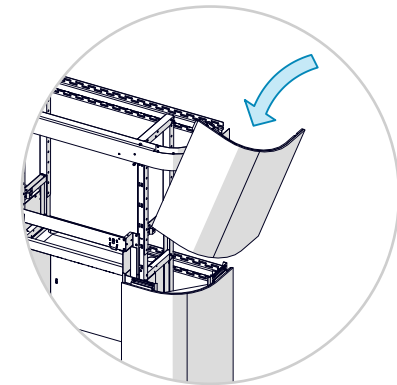
The left and right panel locks are not equal. Take care to put them in the correct position (right side shown in illustration).

Make sure to fit the hooks fully into the groove of the panel, and check that the screw with spacer enters the corresponding slot at the rear side of the panel.



3. Place the upper corner panel on top of the lower corner panel.

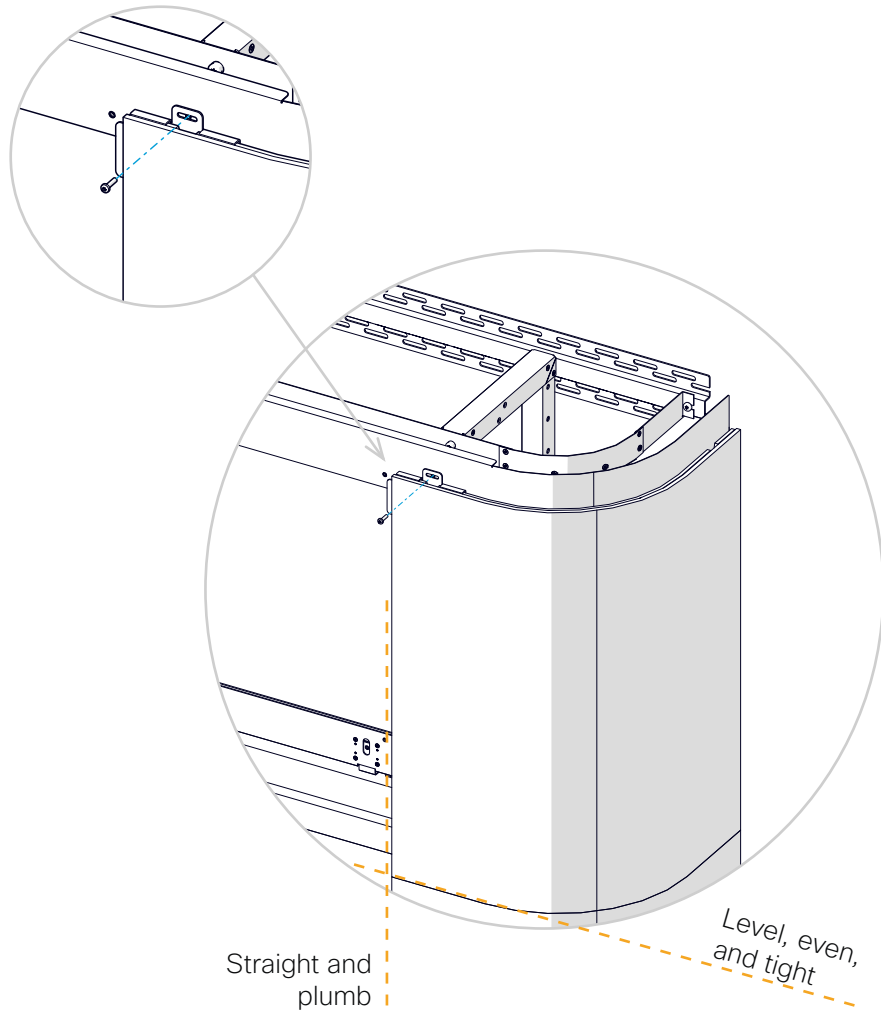
Make sure to fit the groove of the panel fully into the profiles on the joining module on all sides. Also check that the slots at the rear side of the panel enter the corresponding screws with spacers.



4. Give the panel a firm push at the top, so that the slots at the rear side of the panel enter the corresponding screws with spacers on the upper trim.

5. Make the split line between the upper and lower corner panels as tight and even as possible.

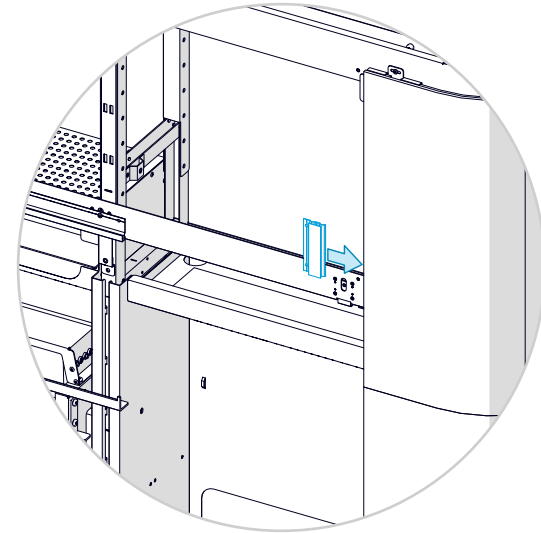
When done, fasten the bracket to the top trim with one screw (*M4x12, Torx 20*).



21.10. Mount a profile to the corner panel

Repeat the procedure on both sides.

Insert a profile (*3201 #3*) into the groove of the panel.



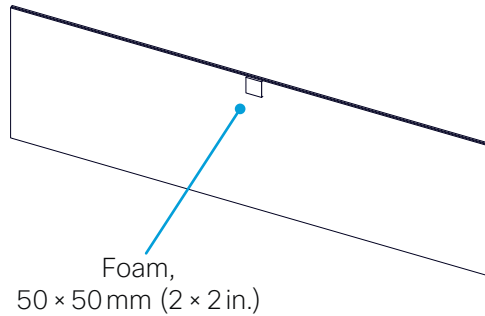
The profile is held in place by the corner and front panels. It's not fastened by screws.

21.11. Mount the upper front panels

Repeat the procedure on both sides.

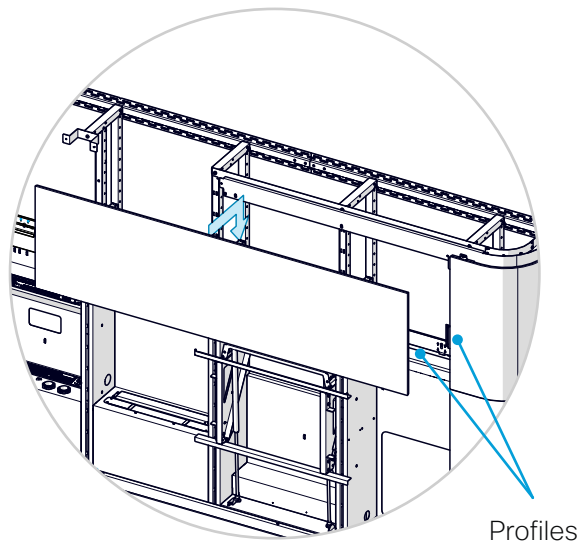
1. Add a piece of foam - 50 × 50 mm (2 × 2 in.) - at the rear side of the upper front panel.

This is to prevent the panel from touching the upper trim and causing rattling noise.



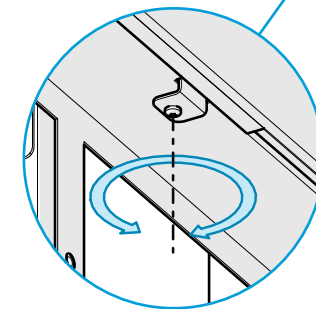
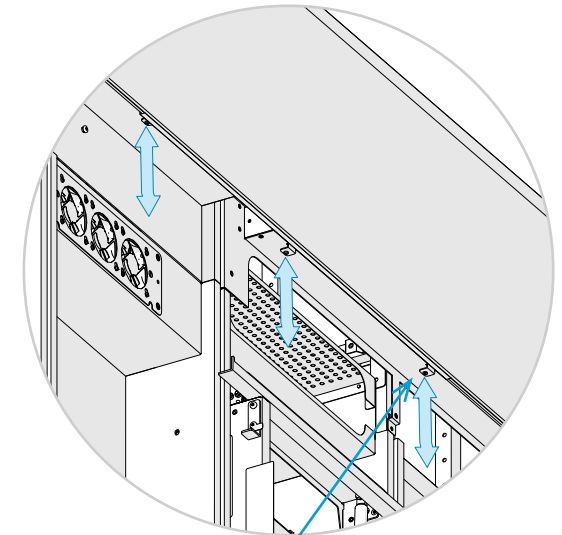
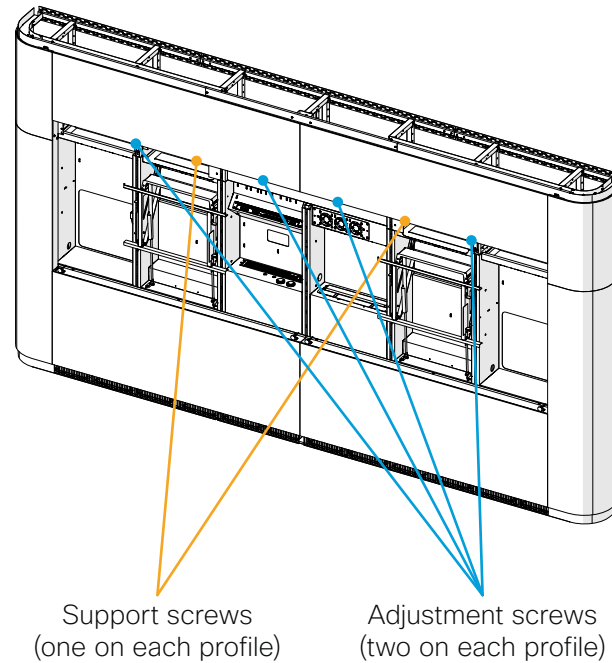
2. Slide the upper front panel on to the profiles, both at the bottom and at the outer side.

Make sure to fit the groove of the panel fully onto both profiles.



21.12. Align the upper panels

There are two adjustment screws and one support screw below each upper front panel. These screws are for aligning the upper panels and make the split lines between panels as tight and even as possible.



Adjust the screws until the panels are level at top, and the split lines are tight and even:

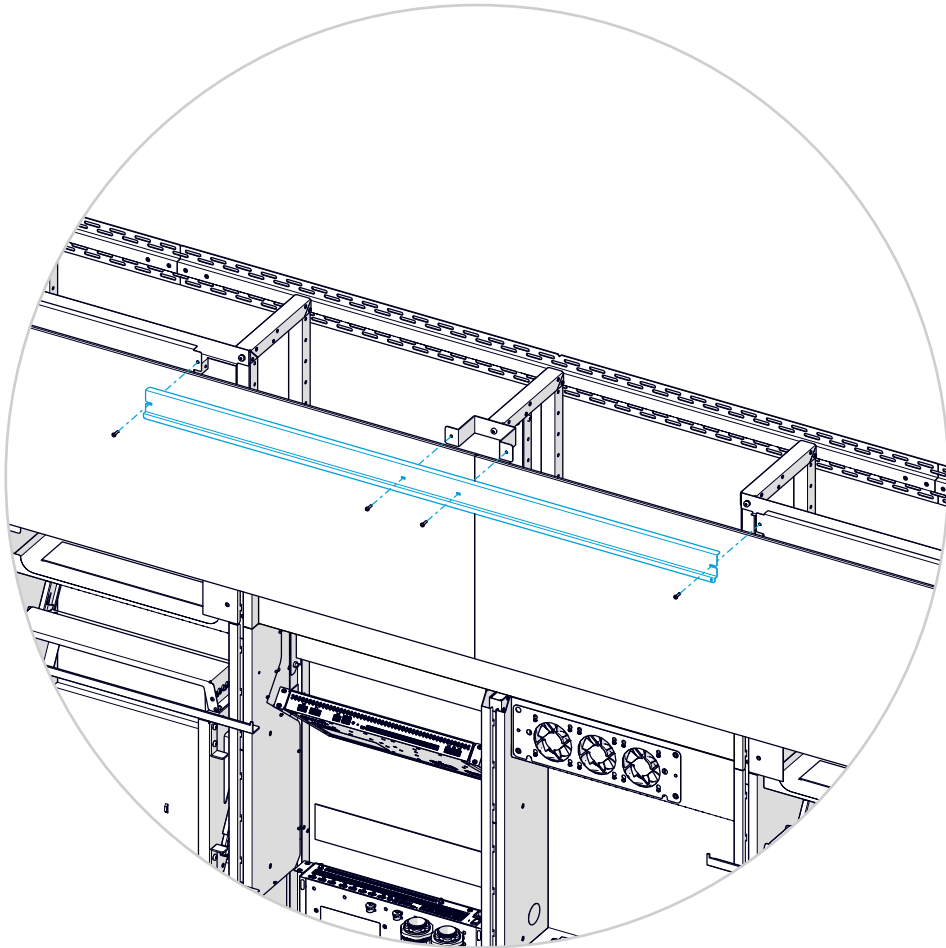
1. Loosen, without removing, the support screws so that they do not interfere when aligning the panels.
2. Tighten or loosen the adjustment screws on both profiles until you are satisfied with the alignment.
3. Finally, adjust the support screws to fit with the new and aligned position of the panels.

If it is impossible to align the panels, you may try to adjust the screw that you entered in Step 21.1 as well.

21.13. Mount the center part of the upper trim

Add the center part of the upper trim.

Fit the upper trim down into the groove of the front panels, and fasten it with four screws (*M4x12, Torx 20*).

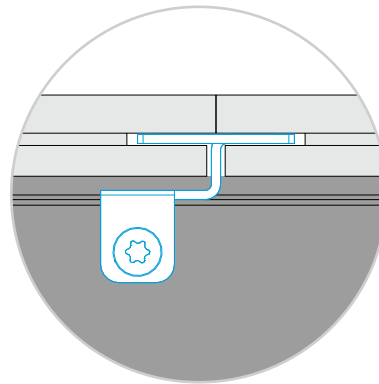
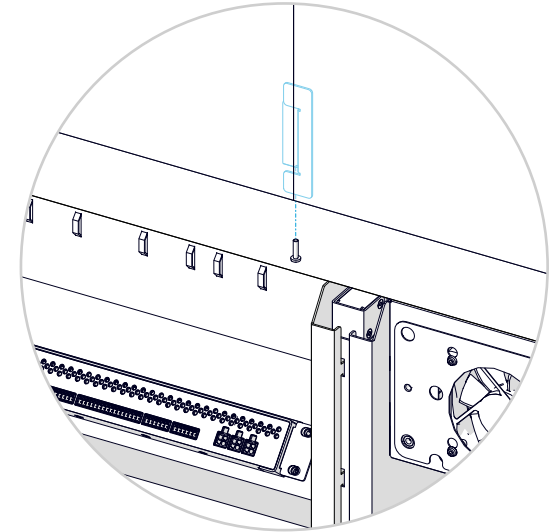
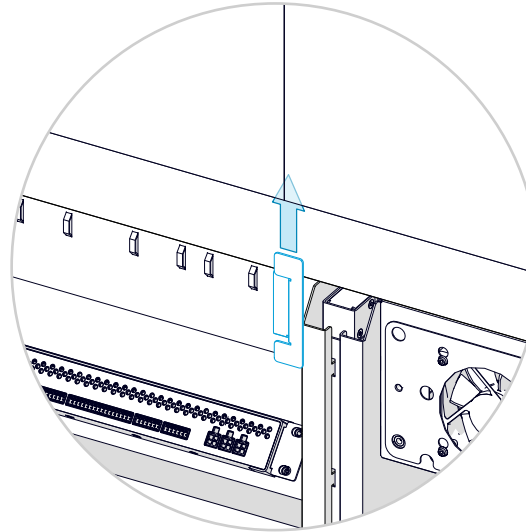
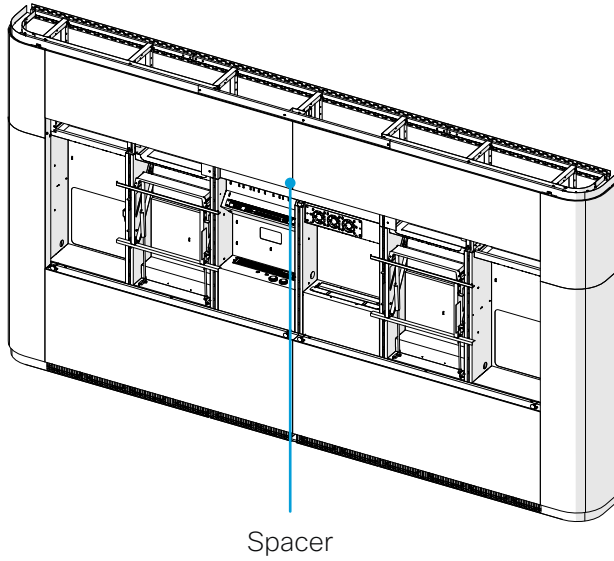


21.14. Fasten the panel spacer for the upper front panels

There is a spacer behind the upper front panels, which helps aligning the panels. It is fastened to the camera cavity.

1. Slide the panel spacer up in the grooves of the two front panels. Slide it as far in as possible.

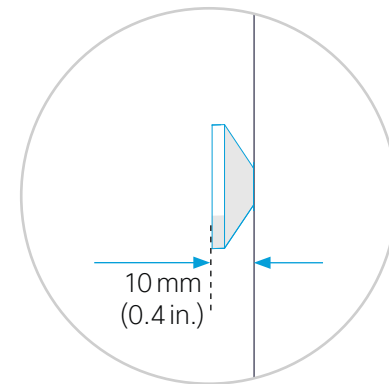
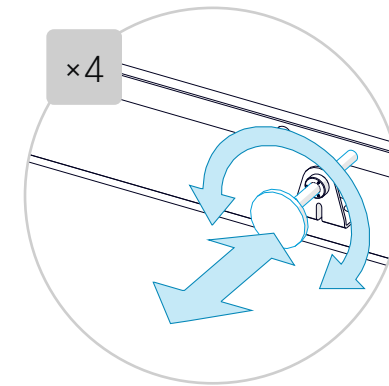
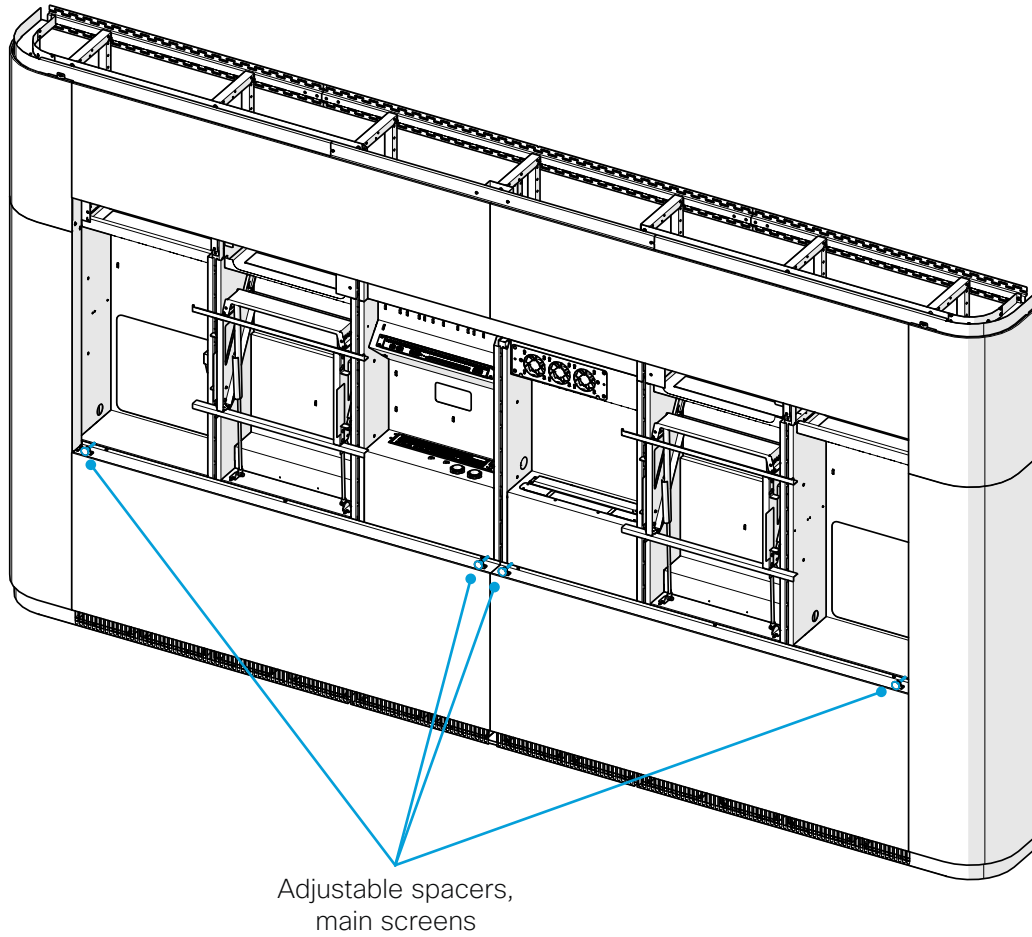
2. Fasten the panel spacer to the camera cavity with one screw (*M4x12, Torx 20*).



View from below -
spacer and screw (blue), front panels (grey), and
camera cavity (dark grey)

21.15. Adjust spacers for the screens

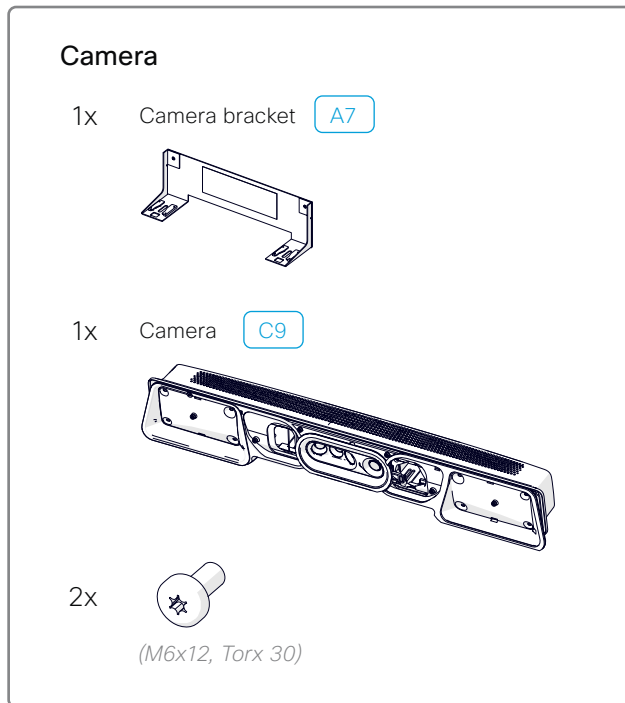
The system has four adjustable spacers, which prevents the screens from leaning on the cosmetic panels.



Adjust the spacers so that they protrude about 10 mm (0.4 in.) outside the cosmetic panels.

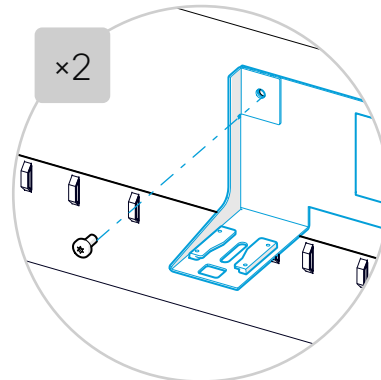
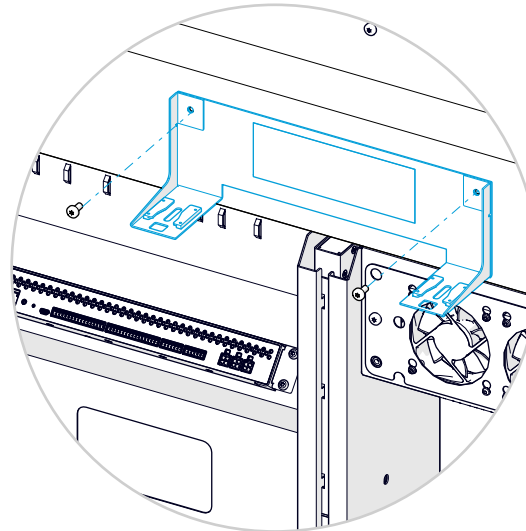
22. Mount the camera

The camera is mounted on a bracket that is fastened to the camera cavity.



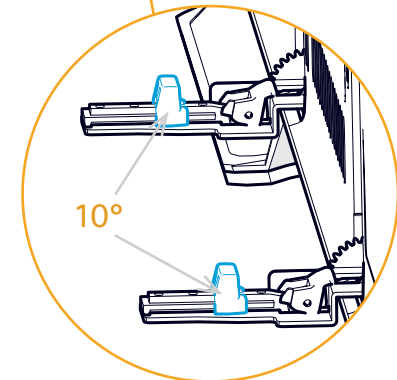
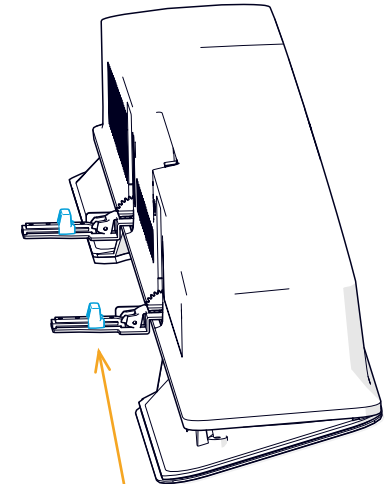
22.1. Mount the camera bracket

The camera bracket is fastened to the content cavity with two screws (M6x12, Torx 30).



22.2. Set the camera tilt angle to 10°

There are two sliders for adjusting the camera tilt angle at the bottom of the camera.



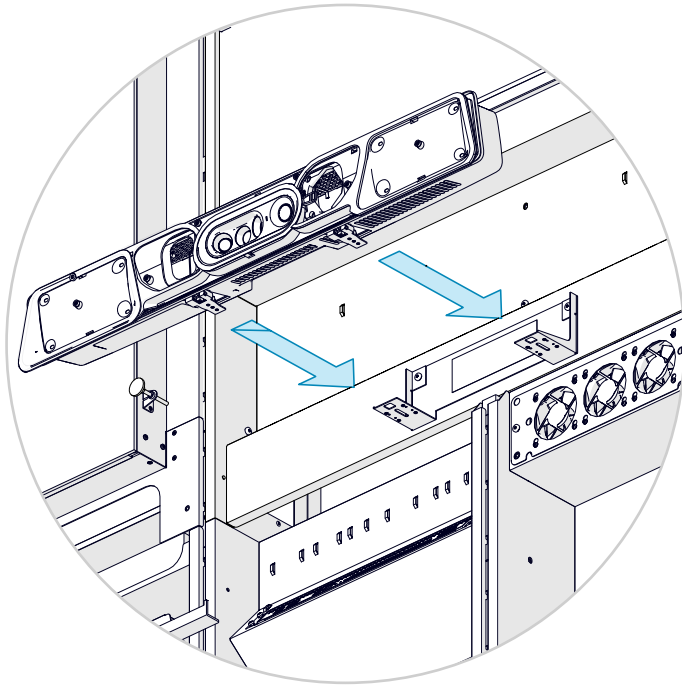
Flip down the brackets and **move the sliders to 10°**, which is the required tilt angle for this product.

Flip the brackets back when done.

22.3. Snap the camera onto the bracket

Click the camera onto the bracket. You should hear a click sound from both entry points.

Make sure the camera is fully in place by pulling it gently.



22.4. Connect the camera cables

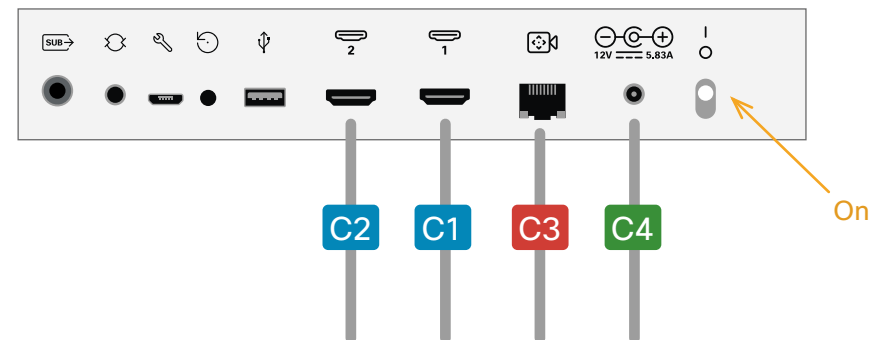
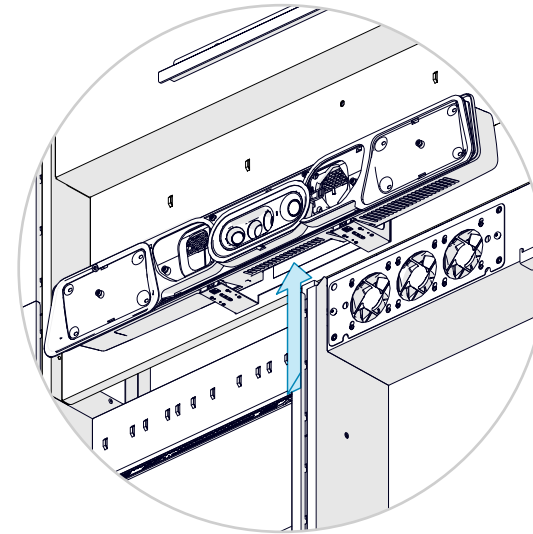
1. Connect the cables to the camera according to the wiring diagram:

- 2x HDMI (C1, C2)
- 1x Ethernet (C3)
- 1x Power (C4)

You may tilt the camera for easier access to the connector panel.

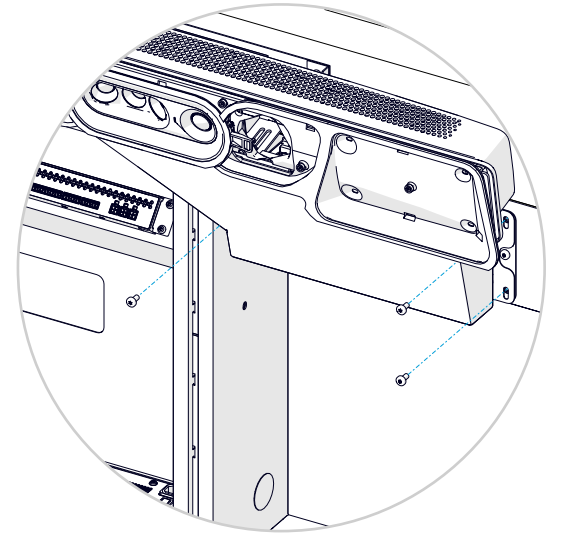
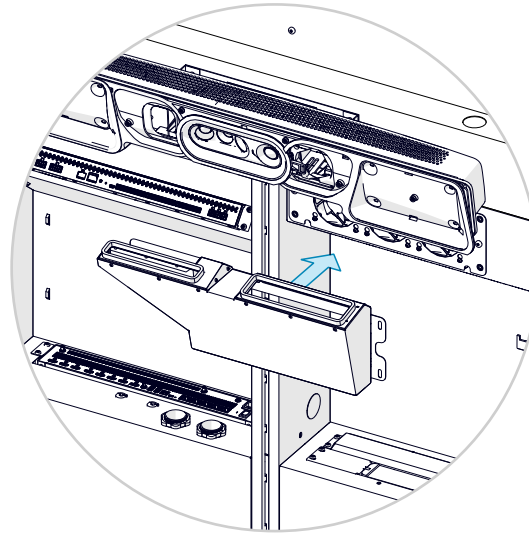
2. Fasten the cables to the rack cavity with velcro to prevent the cables from touching the camera and cause rattling noise.

3. Set the power switch in *On* position.



23. Mount the fan duct

The fan duct is placed in front of the fans, just below the camera. It's fastened with three screws.

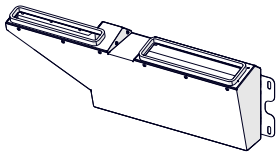


Push the duct gently upward toward the camera when tightening the screws (*M6x12, Torx 30*).

You want the duct as close to the camera as possible, but don't push so hard that the camera is moved out of position.

Fan duct

1x Fan duct A8

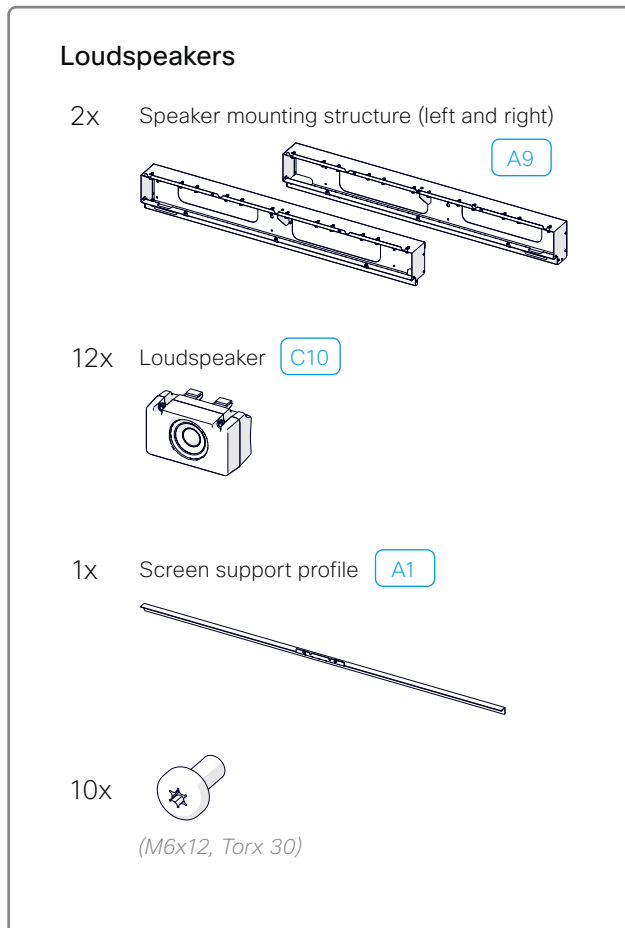


3x 

(*M6x12, Torx 30*)

24. Mount the loudspeakers

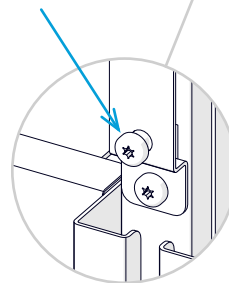
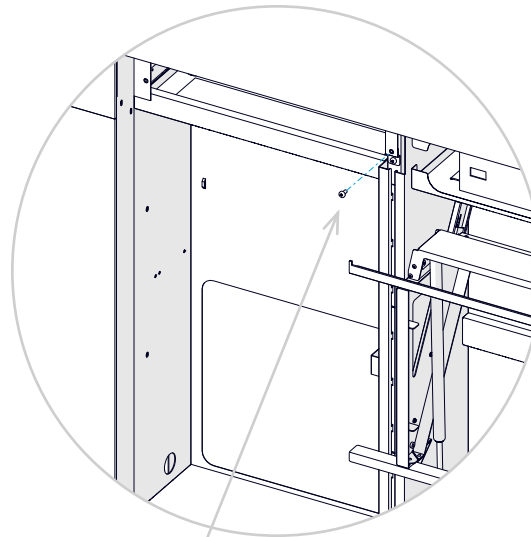
There are six loudspeakers on each side. They are inserted in a mounting structure that is fastened to the risers.



24.1. Mount the loudspeaker mounting structure

Repeat this procedure for both sides.

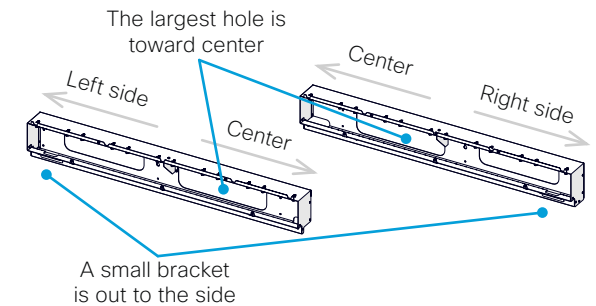
1. Enter a screw (*M6x12, Torx 30*) into the mounting plate as shown, without tightening.



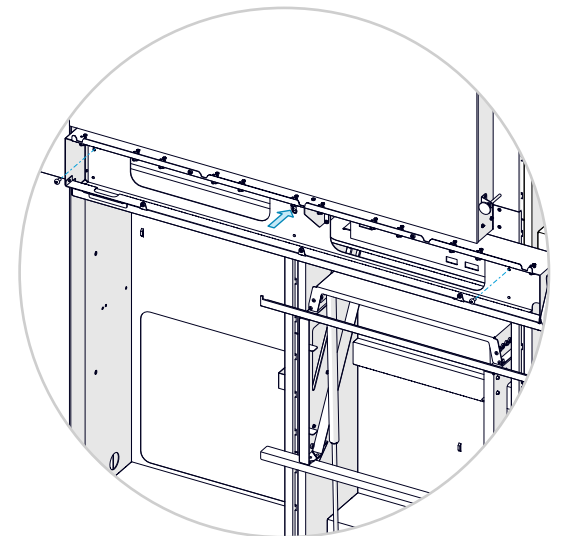
Don't tighten the screw so much that it becomes difficult to hang the mounting structure on it.

2. Hang the mounting structure onto the screw.

The left and right mounting structures are not equal; they are marked with L and R, respectively. Check that you mount them on the correct side.

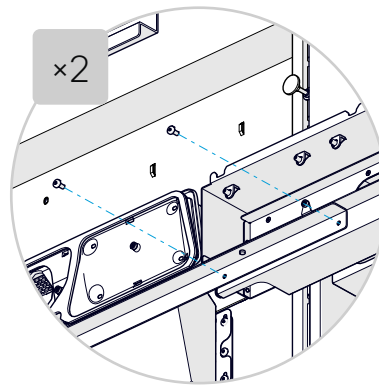
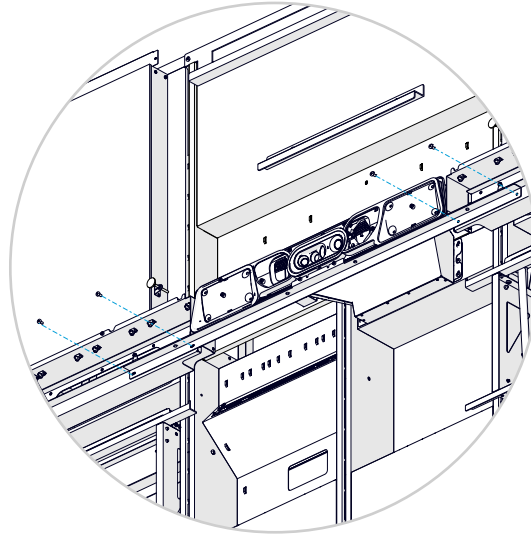
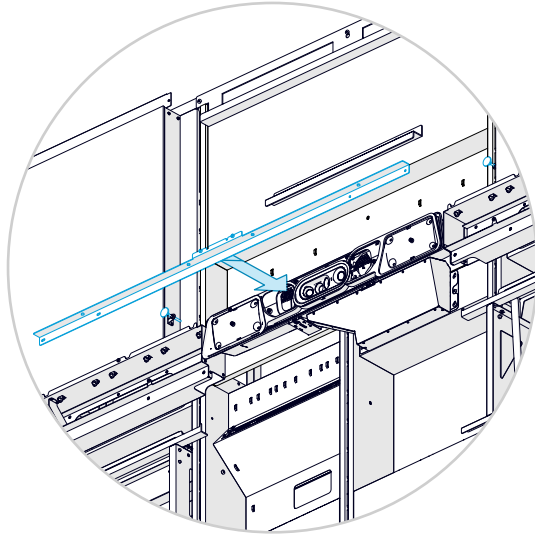


3. Add two more screws (*M6x12, Torx 30*). Also tighten the first screw.



24.2. Mount the screen support profile

The screen support profile goes between the two loudspeaker mounting structures; below the camera.

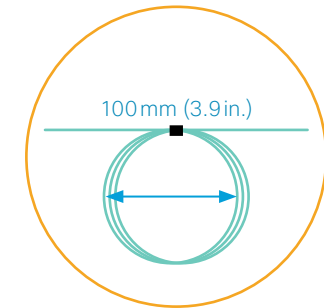
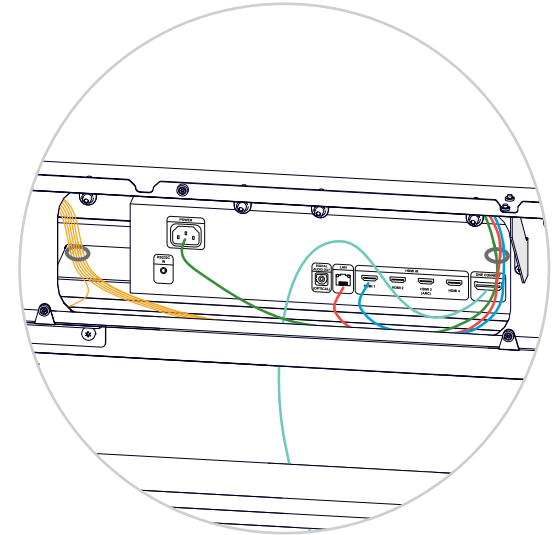


Fasten the profile with four screws (*M6x12, Torx 30*); two on each side.

24.3. Arrange cables

It is important that no cables are touching the loudspeakers. If they do, it may cause rattling noise.

Use velcro to bundle and secure the cables so that they are behind the speaker mounting structure or in the channel below the speakers.



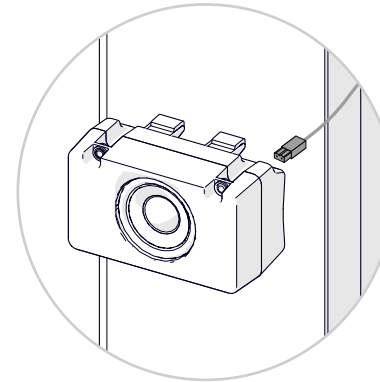
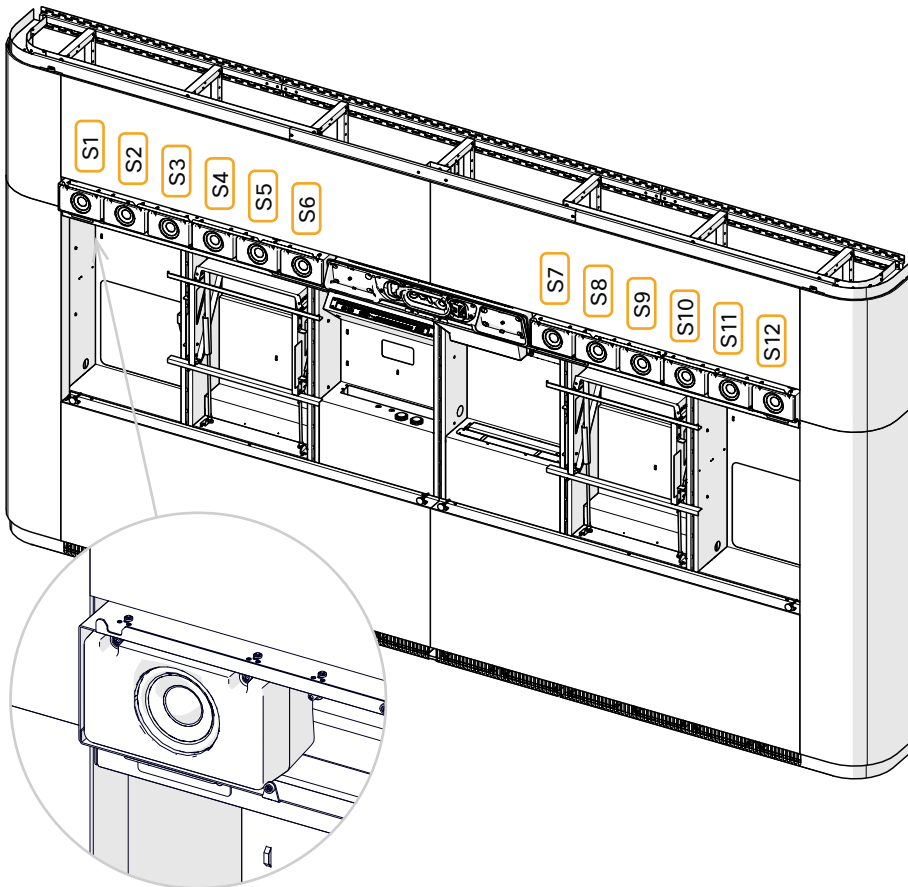
Always take care not to pinch or bend the One Connect cables too much; they are fragile

24.4. Insert the loudspeakers

The system has twelve loudspeakers; six on each side of the camera. The speakers are equal.

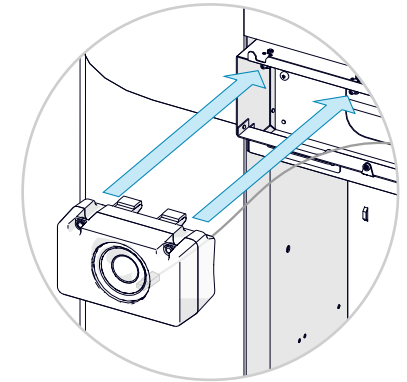
We recommend you to start from the center when mounting loudspeakers.

Repeat this procedure for all the speakers.



1. Connect the correct cable to the loudspeaker.

The cables are marked with numbers S1 to S12 - counting from the left, see illustration.



2. Enter the loudspeaker onto the pegs.

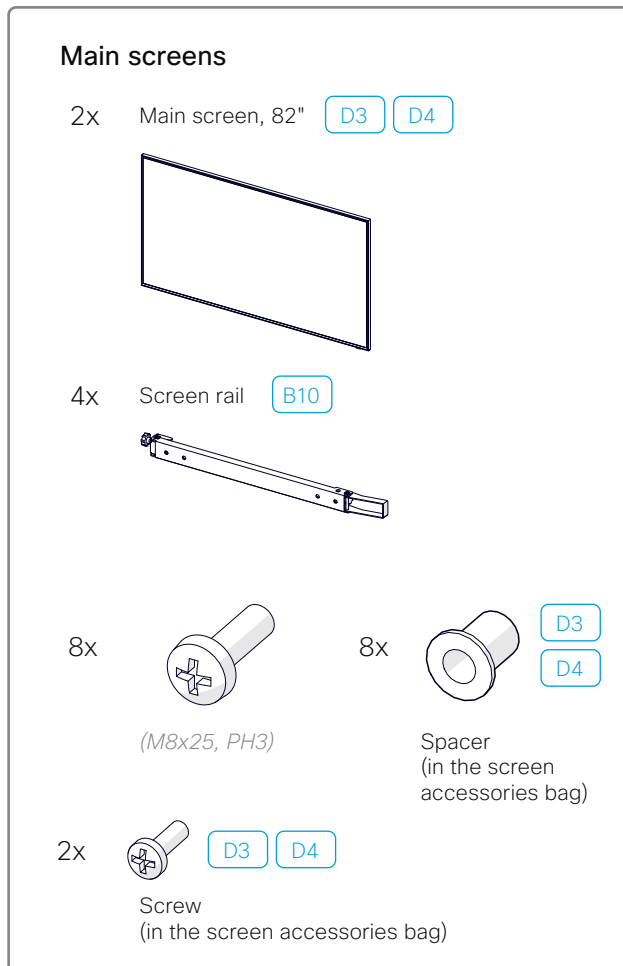
Check that the rubber gaskets stay firmly on the pegs.

Make sure that no cables, including the cables from the One Connect box, are touching the loudspeakers.

25. Mount the main screens

In addition to the screws, you need a set of spacers when mounting the screen rails.

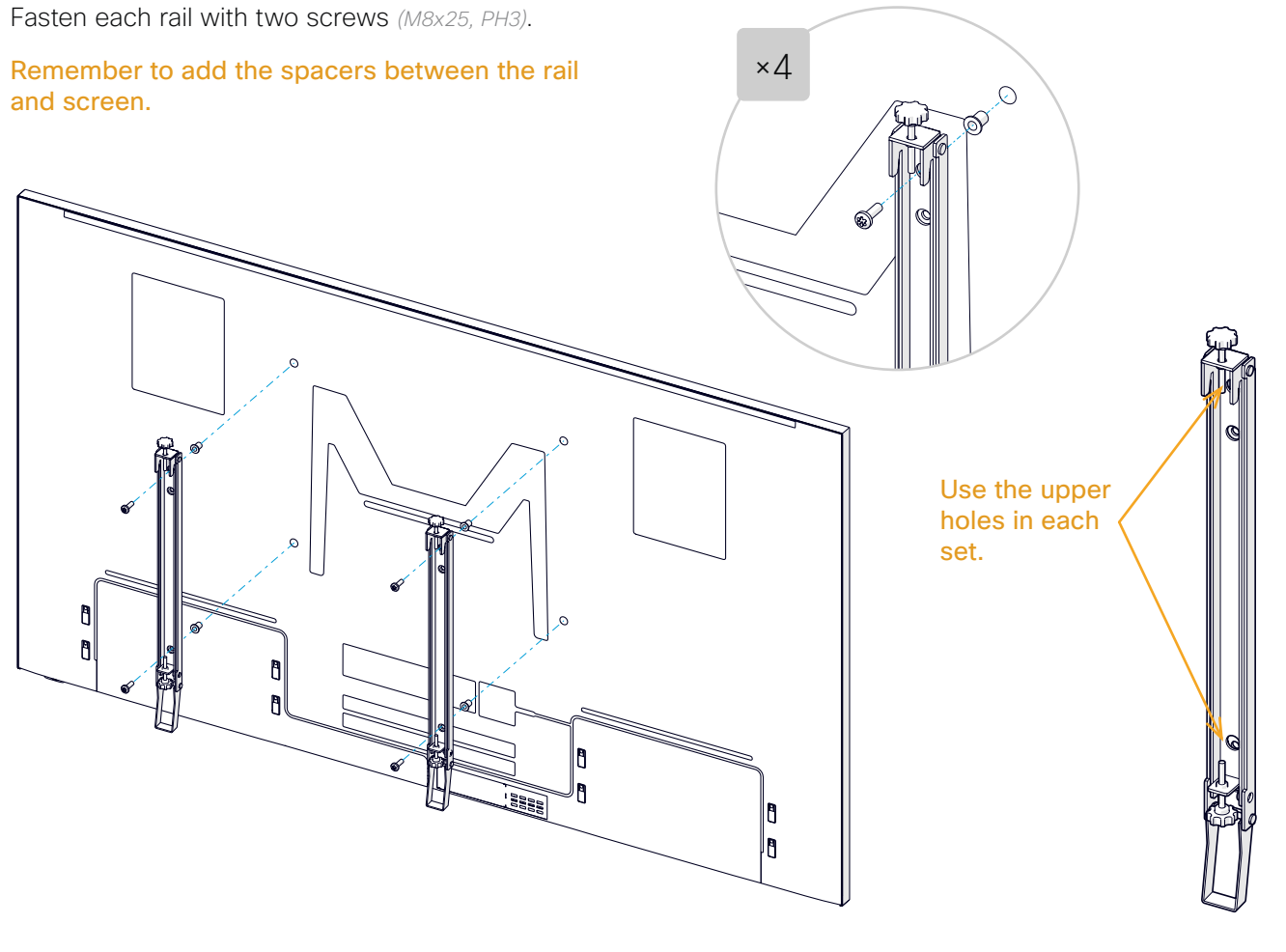
You find the spacers in the accessories bag that was in the screen package.



25.1. Mount rails on the screen

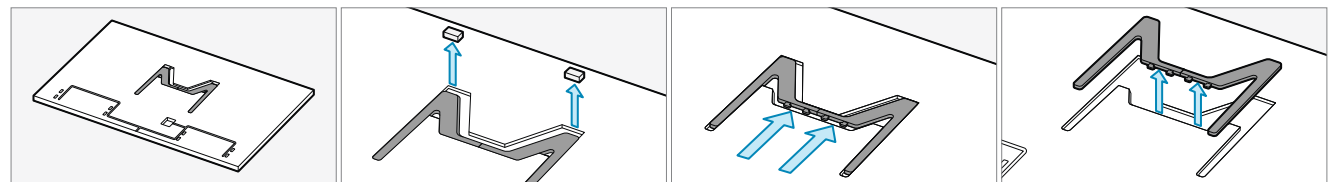
Fasten each rail with two screws (M8x25, PH3).

Remember to add the spacers between the rail and screen.



Note: We **strongly recommend** you to leave the stand that comes with the 82" screen in place at the back of the screen. This reduces the risk of damaging the screen.

If you choose to remove the stand, be aware of the risk and follow this procedure.



25.2. Hang the screen onto the screen mount module in the display cavity

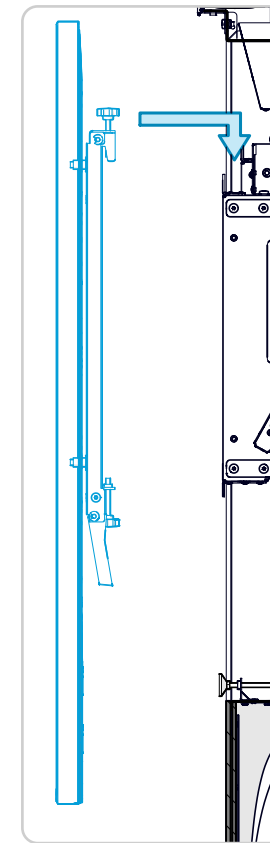
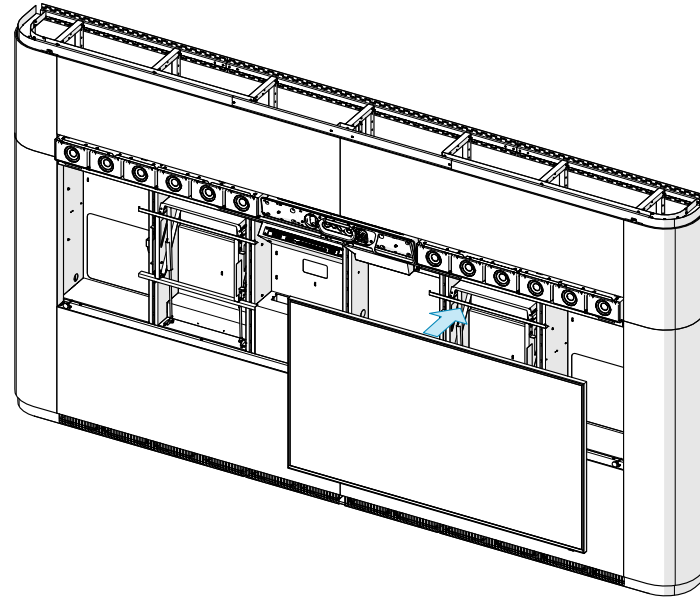
Risk of personal injury

There is a potential hazard risk tied to the gas springs in the screen mount modules when installing or dismantling the system. There is no risk involved when following the Install Guide step by step, but if caution is not taken regarding the screen mount safety brackets, there is a chance of personal injury.

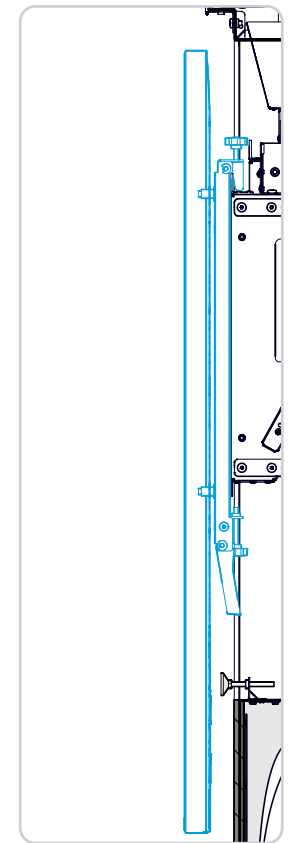
To help lifting the screen with the screen mount module, the gas springs store a lot of energy. If the screen mount safety brackets are moved out of the **Safe Mode** position before the screen is mounted, the screen mount module can shoot out at high speed, potentially causing harm. The same goes if one tries to remove or dismantle the gas springs from the product.

To avoid the risk of personal injury:

- Do not disassemble any of the pre-assembled parts of a display cavity at any time.
- Do not move the screen mount safety brackets out of the **Safe Mode** position (transport position) before the main screens are mounted.



Lift screen onto bracket
(side view)



Screen in place
(side view)

25.3. Move the screen mount safety brackets to Operational Mode position

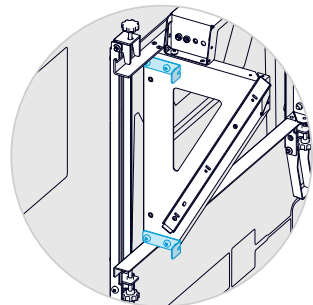
Each screen mount module has four safety brackets, which are all in *Safe Mode* position when shipped.

To avoid the risk of personal injury:

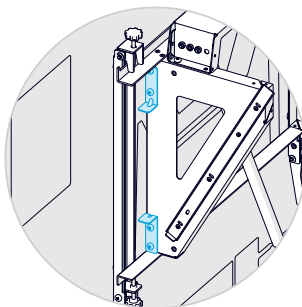
- Never move the screen mount safety brackets out of the *Safe Mode* position (transport position) when the screen is NOT hanging on the screen mount module.
- If you must remove the screen from the screen mount module, always move the safety brackets back to *Safe Mode* position before lifting off the screen.

When the screen is in place, you must move the brackets from *Safe Mode* to *Operational Mode* position. Otherwise you will not be able to push the screen fully toward the wall.

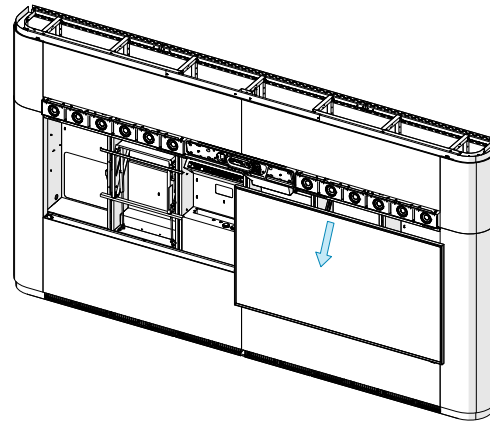
Repeat the procedure on both sides of the screen mount module.



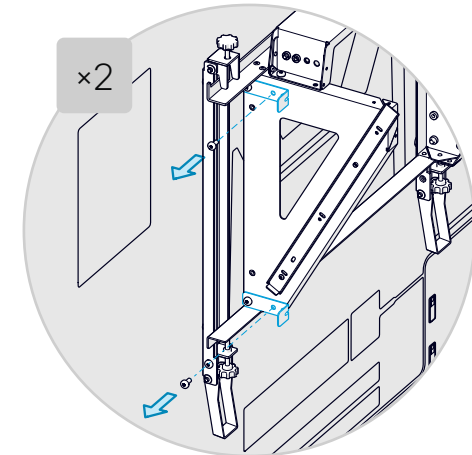
Safe Mode
(horizontal position)



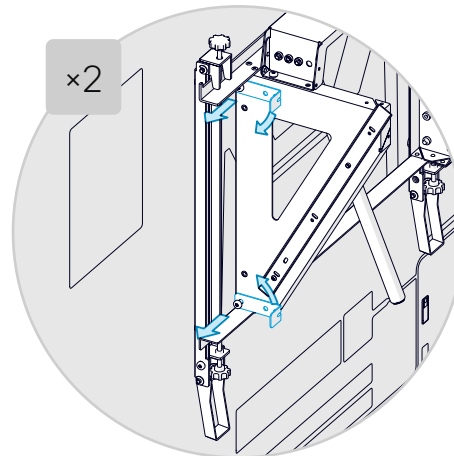
Operational Mode
(vertical position)



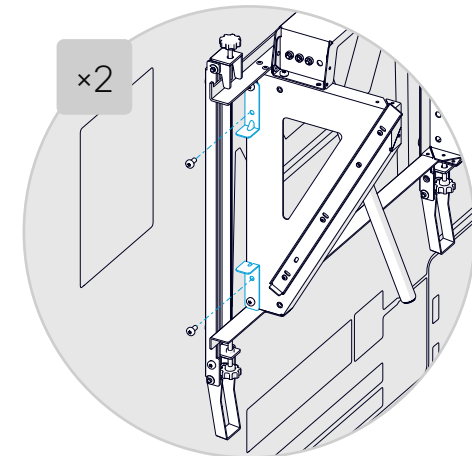
1. Gently pull the screen downward.



2. Identify the brackets behind the screen. There are two on each side of the screen mount. Remove one screw from each bracket.



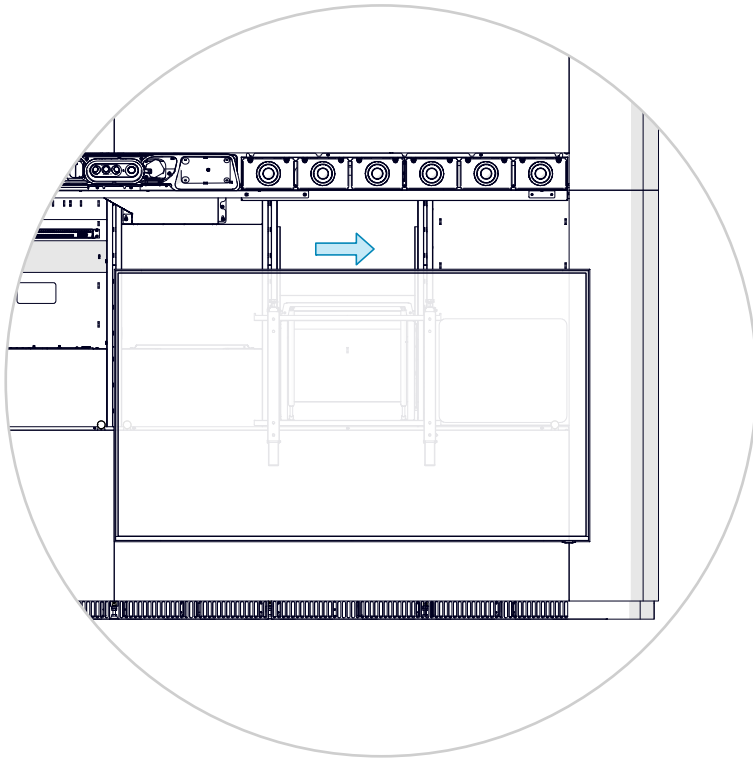
3. Loosen the remaining screw on each bracket, and rotate the upper bracket down and the lower bracket up.



4. Add the two screws that you just removed, and tighten all screws with the bracket in its new position.

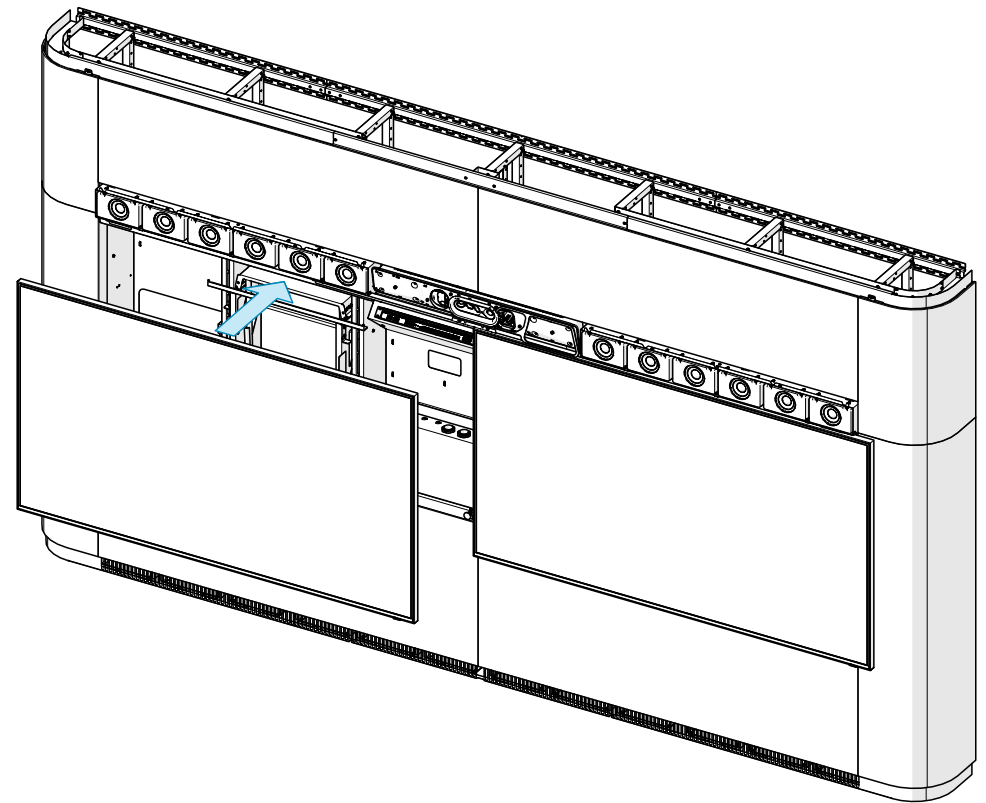
25.4. Mount the second screen

For more space when mounting the second screen, we recommend that you slide the first screen slightly to the side.



Repeat the following steps for the second screen:

- 25.1. Mount rails on the screen
- 25.2. Hang the screen onto the screen mount module in the display cavity
- 25.3. Move the screen mount safety brackets to Operational Mode position

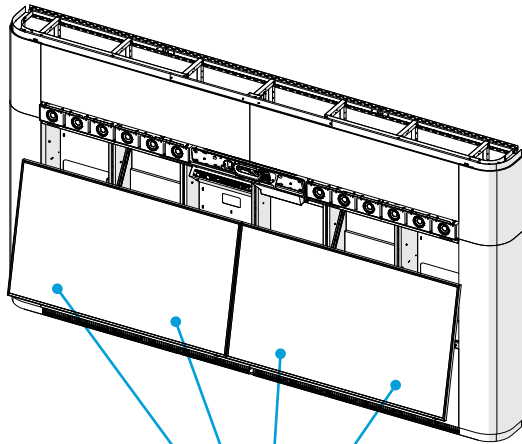


25.5. Secure both screens

Use the levers on the screen rails to fix the screen in a tilted position.

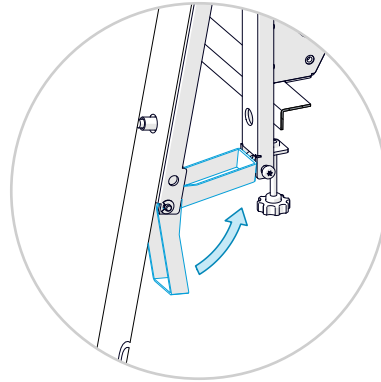
Repeat the procedure for the rails on both screens.

1. Carefully tilt the screen by lifting out the lower edge.

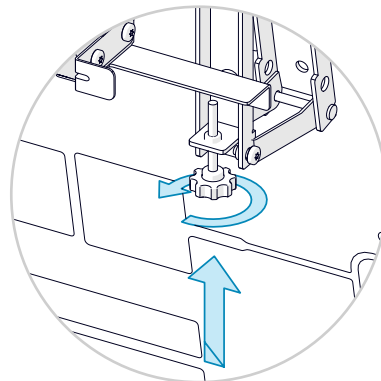


Levers on the rails at the back of the screens

2. Lift the lever so that the screen stays in a tilted position.



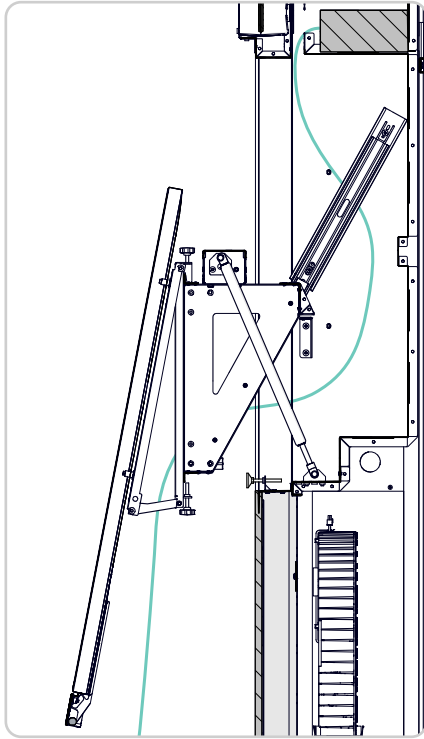
3. Tighten the thumb screw so that it secures the screen to the bracket.



25.6. Connect the One Connect cable

Repeat the procedure for both screens.

1. Thread the cable between the screen and the rod that is closest to the connector.



Side view, cross section

2. Connect the cable to the screen according to the wiring diagram:

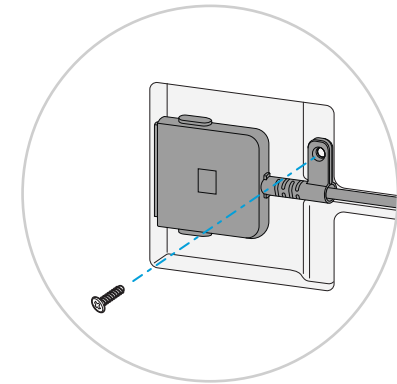
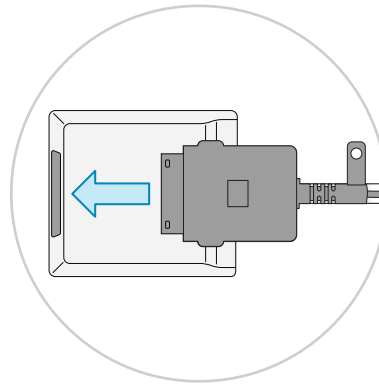
Left screen:

- 1x One Connect cable (S10)

Right screen:

- 1x One Connect cable (S11)

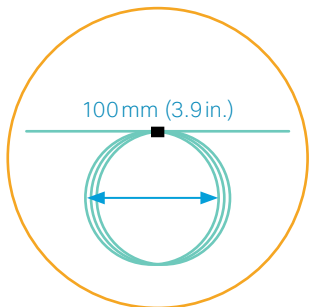
Take care not to bend the cable too much; it's fragile.



3. Strap the cable to the wall mount structure. Allow for moving the screen up and down without straining or pinching the cable.

4. Fasten the cable connector to the screen with a screw.

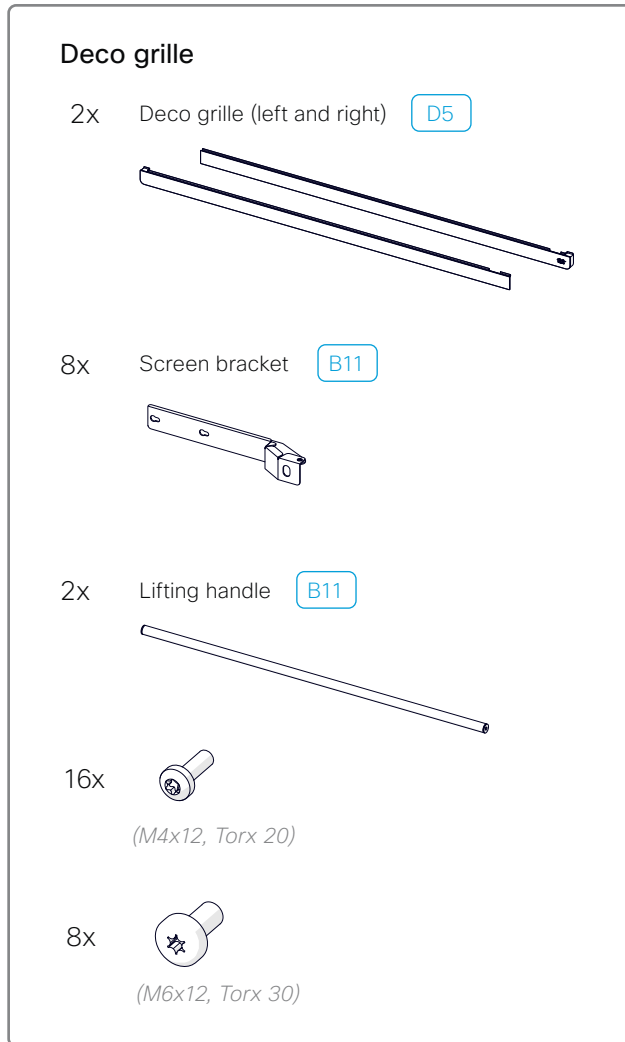
The screw is in the bag of accessories that was in the screen package.



Always take care not to pinch or bend the One Connect cables too much; they are fragile.

26. Mount the deco grille

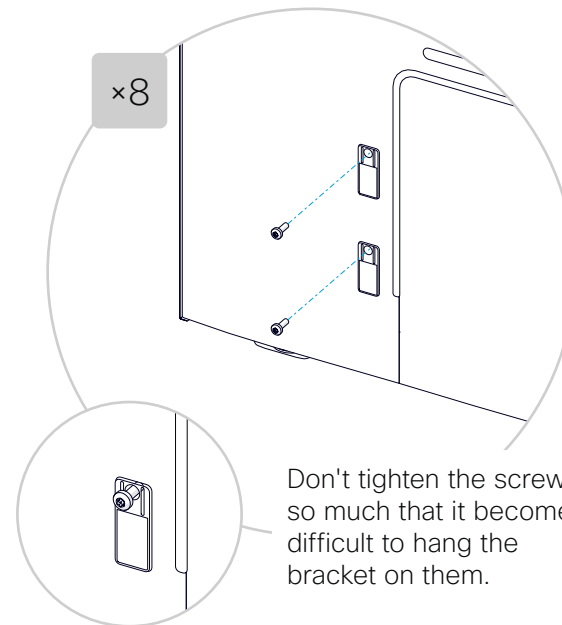
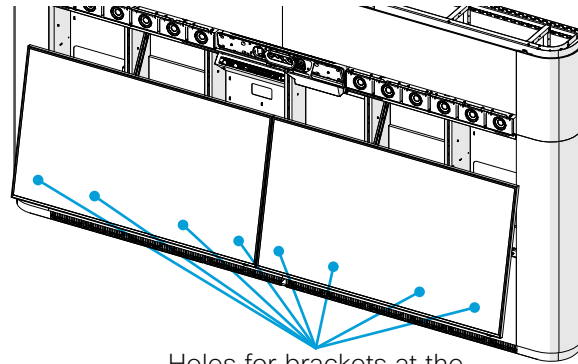
The deco grille is below the main screens. It is split at center; each part attached to its screen with four brackets.



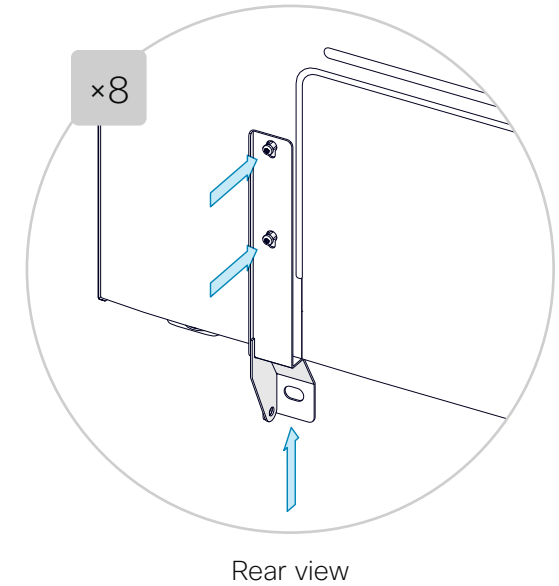
26.1. Mount the screen brackets

Repeat this procedure for all brackets.

1. Enter screws (M4x12, Torx 20) in the holes at the rear side of the screen, without tightening.



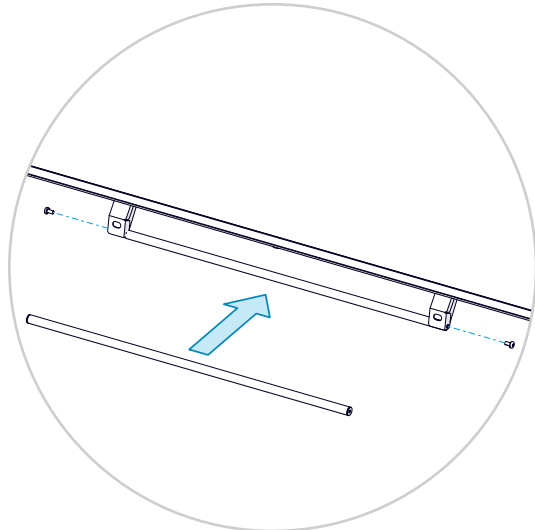
2. Hang the bracket onto the screws.
3. Push the bracket as far up as possible, and tighten the screws.



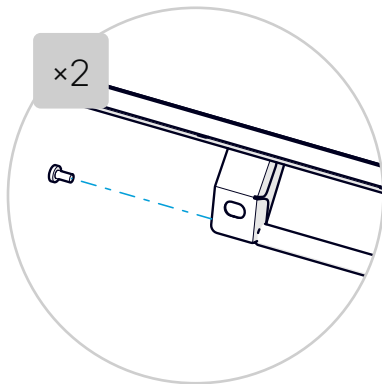
26.2. Mount the lifting handle

Repeat this procedure for both screens.

Attach a handle at the center of the screen. It is placed between two brackets and fastened with one screw (*M6x12, Torx 30*) in each end.



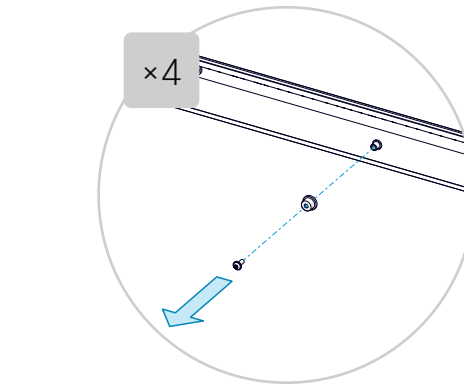
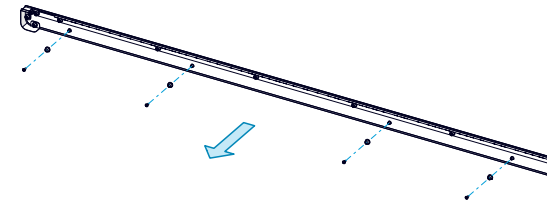
Front view



26.3. Attach the grille to the screens

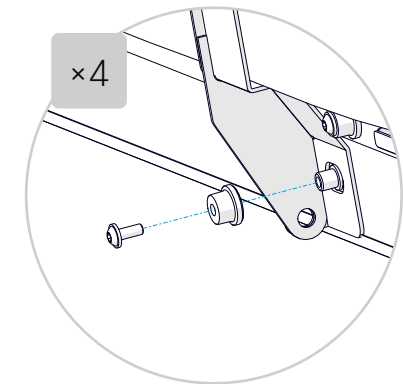
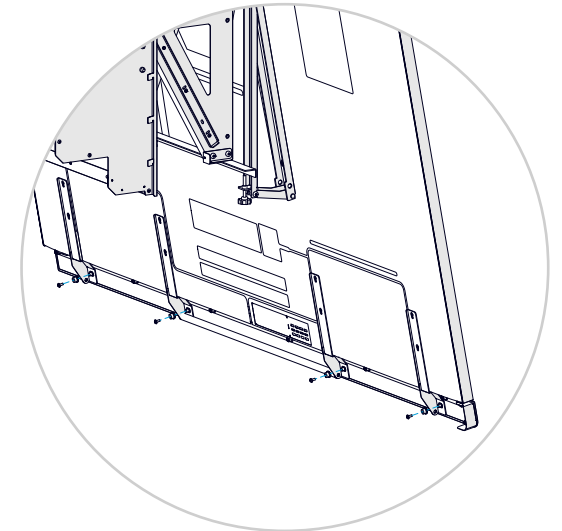
Repeat this procedure for both screens.

1. Remove the four screws and spacers from the deco grille, as shown in the illustration.



2. From front, hang the grille onto the holes of the brackets.
3. From behind, fasten the grille to the screen with the same screws and spacers that you just removed.

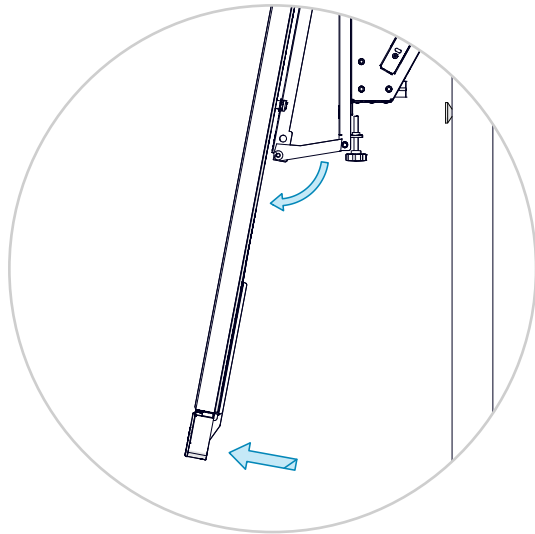
Push up and align the grille toward the center before tightening the screws.



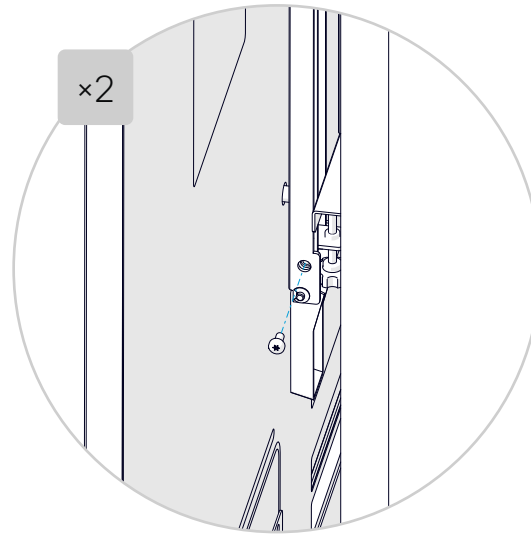
26.4. Lock the screen in vertical position and push the screens in place

Repeat this procedure for both screens.

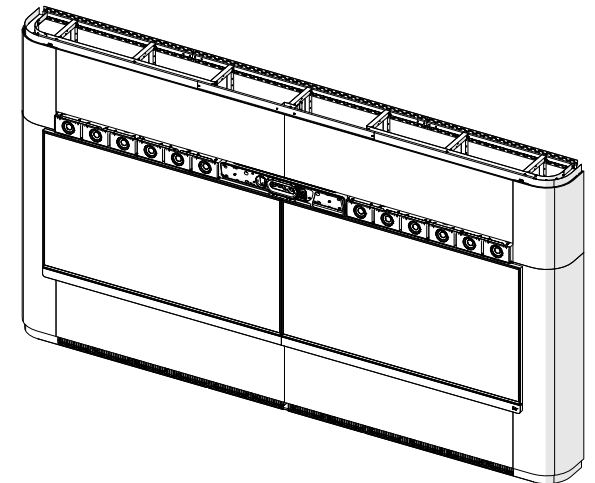
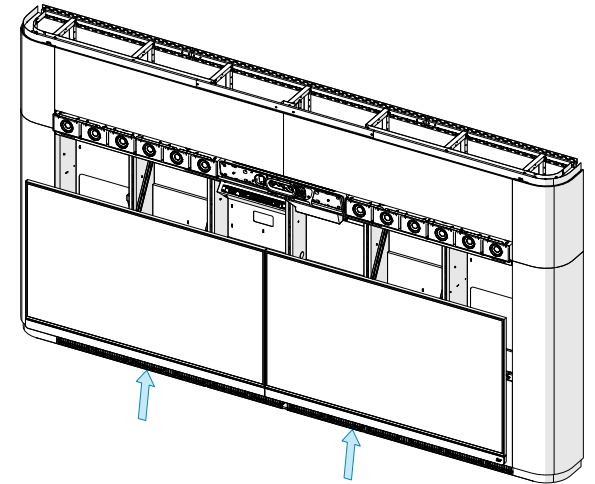
1. Pull the screen slightly outward, so that you can release the levers on both sides.
Then, gently let the screen move into vertical position.



2. Lock each lever in released position with one screw (M6x12, Torx 30).
This fixes the screen in a vertical position (no tilt).



3. Use the handle and push the screen up to its normal position. Also push them together to meet at the center split line.



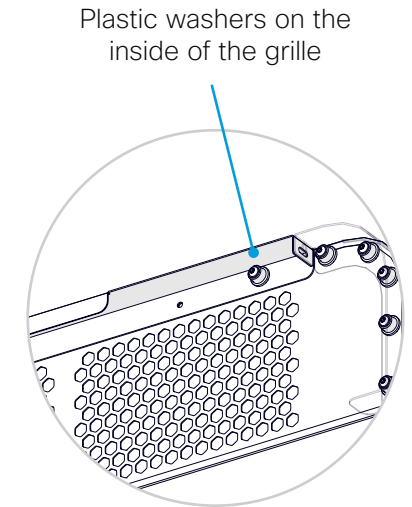
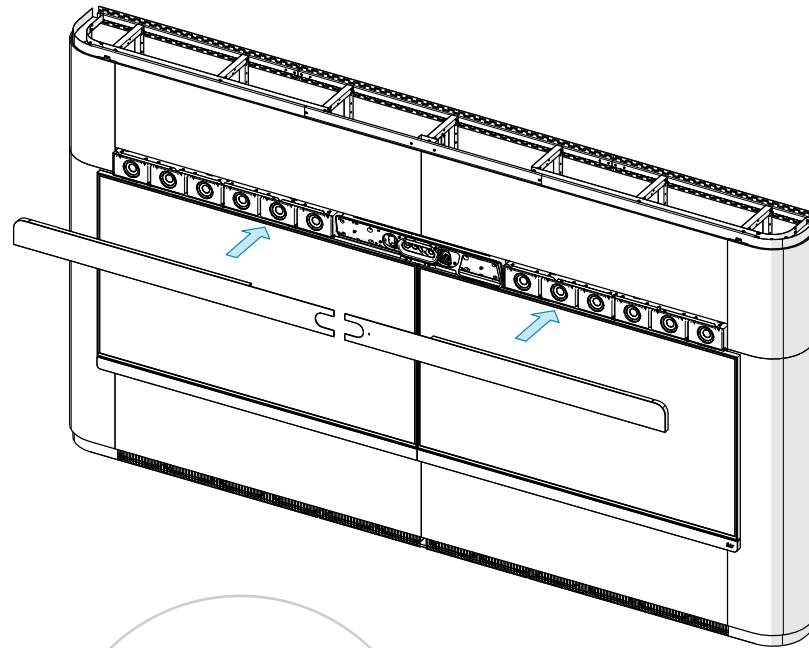
27. Mount the speaker grille

The speaker grille is split at center; each part is fastened by magnets.

27.1. Mount the speaker grille

Place the grille in front of the loudspeakers, and align the two parts nicely.

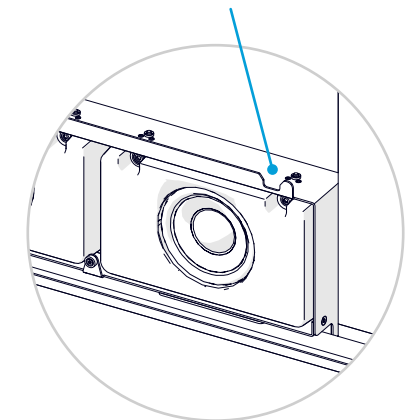
Plastic washers on the grille fit into slots above the loudspeakers; see the close up illustrations.



Plastic washers on the inside of the grille

Grille, rear view.

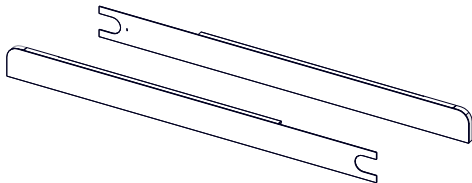
Slots above the loudspeakers



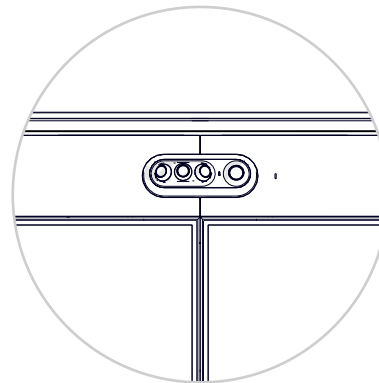
Loudspeaker mounting structure, front view.

Speaker grille

2x Speaker grille (left and right) **D5**



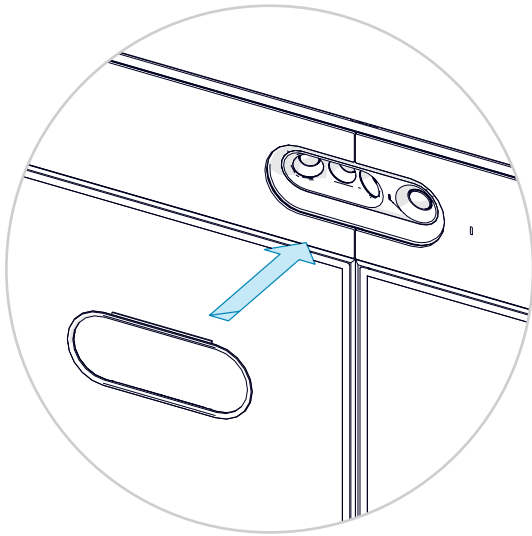
1x Deco ring **C7**



Align the split line of the grille with the gap between the screens. Make it as tight as possible.

27.2. Insert the deco ring

Place the deco ring around the camera. The ring provides a neat transition between the grill and camera.



28. Pull up and connect the cables between the system and components on the table

Note: If you have chosen not to use the flex tubes, you must route the cables (X1, T1...3) from the table to the codec through the hole in the back wall of the rack cavity, connect them as shown in the wiring diagram, and strap them with velcro or cable ties for strain relief.

Cables toward the table C6 C7

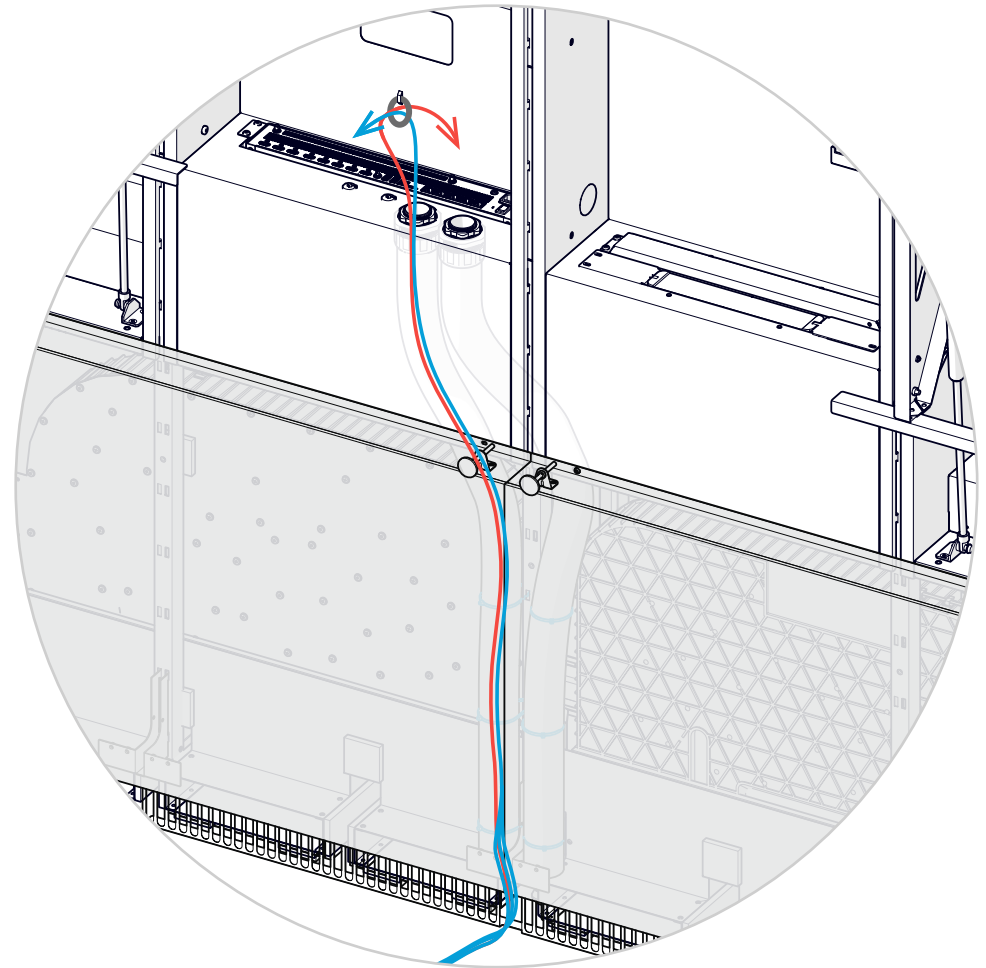
You must pull the cables between the system and the table through the flex tubes that you installed in step 16.

You need a nylon draw tape or similar when pulling the cables up the tubes from below.

Flex tubes:

Ethernet cable for the Ethernet switch by the table (X1) and *HDMI presentation cables* (T1...3). The number of presentation cables depends on your order.

1. Bundle these cables together and pull them up the flex tube with a nylon draw tape.
2. Connect the cables to the codec as shown in the wiring diagram.
3. Strap the cables with velcro or cable ties for strain relief.
4. Leave the other end of the cables on the floor for now.

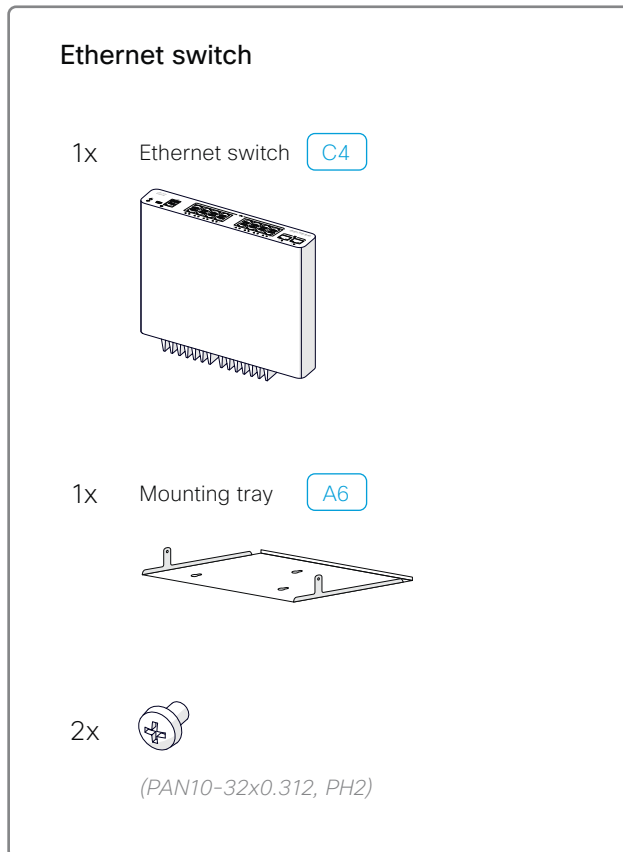


29. Mount the Ethernet switch in the table

This Ethernet switch* is used for the touch panels (user interfaces). You may have one or two touch panels.

We recommend mounting the switch under the table, or somewhere close to the table.

This switch is connected to the internal Room Panorama network, and cannot be used to access the company LAN or Internet.



29.1. Mount the switch.

To prevent airflow restriction, allow clearance around the ventilation openings to be at least 8 cm (3 in.).

Find more information how to mount the switches here:

Cisco Catalyst 1000 Series 8-Port and 16-Port Switch Hardware Installation Guide:

https://www.cisco.com/c/en/us/td/docs/switches/lan/catalyst1000/hardware/installation/8_16_port_hig/b_c1000_8_16_hig.pdf

Catalyst 3560-CX and 2960-CX Switch Hardware Installation Guide:

https://www.cisco.com/c/en/us/td/docs/switches/lan/catalyst2960cx_3650cx/hardware/installation/guide/b_2960cx-3560cx_hig.pdf

29.2. Connect the switch to the codec

Connect the Ethernet switch in table to the codec as shown in the wiring diagram:

- Ethernet (X1)

This is the Ethernet cable that you pulled through the flex tubes and connected to the codec in step 28.

Connect the power cable (X2) to the switch, but don't connect it to the socket outlet yet.

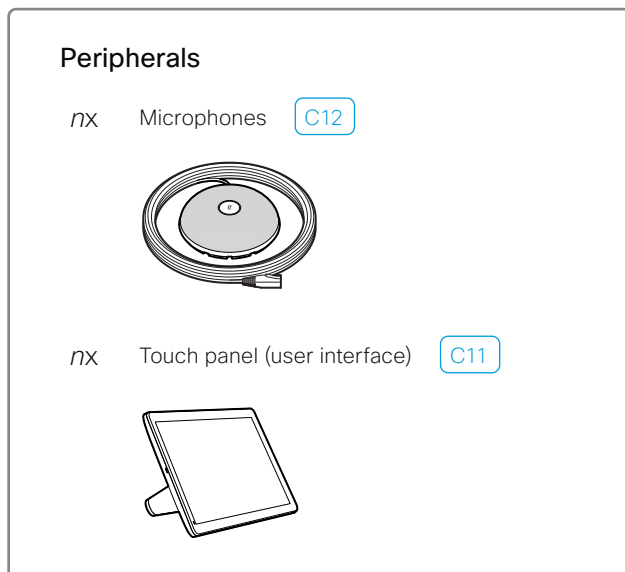
* We introduced the Cisco Catalyst 1000-16FP-2G-L switch in early 2021. Earlier shipments have the Cisco Catalyst 3560CX-12PC-S switch.

30. Place components on the table

30.1. Touch panels (user interfaces)

You may have one or two touch panels. Place them on the table in a position that is convenient for users of the system.

Connect the panels to the Ethernet switch that is under - or close to - the table, as shown in the wiring diagram (T4, T5).



30.2. Place the microphones

You may have up to six digital microphones.

Please read the *Cisco Table Microphone Pro Installation Guide (for Panorama) | Cisco Microphone Array Installation Guide* (online and in box)** and the *Cisco Room Panorama Room Preparation Guide* (online) carefully to find out where to best place the microphones.

- https://www.cisco.com/c/dam/en/us/td/docs/telepresence/endpoint/microphone/installation_guide/cisco-microphone-array-installation-guide.pdf
- https://www.cisco.com/c/dam/en/us/td/docs/telepresence/endpoint/room-series/installation_guide/room-panorama-room-preparation-guidelines.pdf

Connect the microphones to the Ethernet switch* that is under - or close to - the table, as shown in the wiring diagram (M1..6).

* We introduced the digital Cisco Microphone Array mid 2021. Earlier shipments have the analog Cisco Table Microphone. The latter must be connected directly to the codec, and the cable may be pulled up the flex tubes as described in step 28.

** The product name changed from Cisco Microphone Array to Cisco Table Microphone Pro early 2023.

30.3. Presentation cables

You may have up to three presentation cables. Place them on the table where it is convenient for the users of the system.

The presentation cables (T1, T2, T3) were pulled through the flex tubes and connected to the codec in step 28.

31. Finish up

31.1. Cleaning

Both the screens and the steel structure are sensitive to fingerprints and probably requires some cleaning.

Cleaning the screens:

- Be sure that the screen is *not* connected to power.
- Use a *soft and dry cloth* such as superfine fibers or cotton flannels. The surface of the product and the display are vulnerable to scratches.
- Do *not* apply chemicals containing alcohol, solvent, or surfactant such as wax, benzene, thinner, pesticide, air freshener, lubricant, or cleaner to the product.

Steel and aluminum parts:

- Apply a small amount of non-alcohol-based cleaning agents onto a soft, clean, lint-free cloth, and gently wipe the surface.

Cosmetic wall:

- Cleanings is done by dry mop or vacuum. Use synthetic cleaning fluid without ammonia for greasy stains, fruit, wine and coffee. Blood is removed with cold water.
- The UV coated and laminate surfaces are approved for hospital cleaning products containing up to 70% alcohol.

You can read our general guidelines on how to clean or disinfect Cisco Room devices here:

<https://help.webex.com/n6biz7y/>

31.2. Connect to network and power

1. Use the handles to pull down the main screens.
2. Connect the network cable to the wall outlet (P1).
3. Connect all the power cables to the socket outlets in the left and right power cavities (D4, D5, S7, S8, X4, P2).
For components provided by your AV integrator, refer to the integrator's instructions.
4. Connect the Ethernet switch under the table to power (X2).
5. The following components has a power switch. They should be On:
 - Codec
 - Camera
 - 24V PSU (the largest PSU in the left power cavity)
6. The main screens should automatically power up. If they don't, use the remote control or power button to switch them on. The power button is below the logo (lower right).
For the content screen(s), refer to your AV integrator's instructions.
7. Use the handles to push the main screens back in place.

Allow the system to initialize. Some components may have to reboot. This may take several minutes.

31.3. What's next

Follow the instructions in the Getting Started Guide to finalize the installation. These steps are mandatory:

1. Register the system
2. Follow the Setup assistant (on the touch controller)
3. Calibrate all screens

Download the *Getting Started Guide* from here:

<https://www.cisco.com/go/panorama-installation>

Part 2

Installing Room Panorama with a custom wall



Part 1 of this guide explains how to install the Room Panorama (Low Ceiling) with the optional cosmetic wall panels offered by us.

As an alternative to these cosmetic wall panels, you can integrate the Room Panorama system fully in the room by making your own custom wall integration. This is described in Part 2. You still have to use the provided steel mounting structure for all the components; it's only the cosmetic wall panels that are replaced by the custom wall.

The custom wall can be made in different ways, and by using different types of materials. Read Part 2 carefully to find how to install the system with a custom wall, and which requirements the wall must meet.

Extra requirements and preparations when building a custom wall

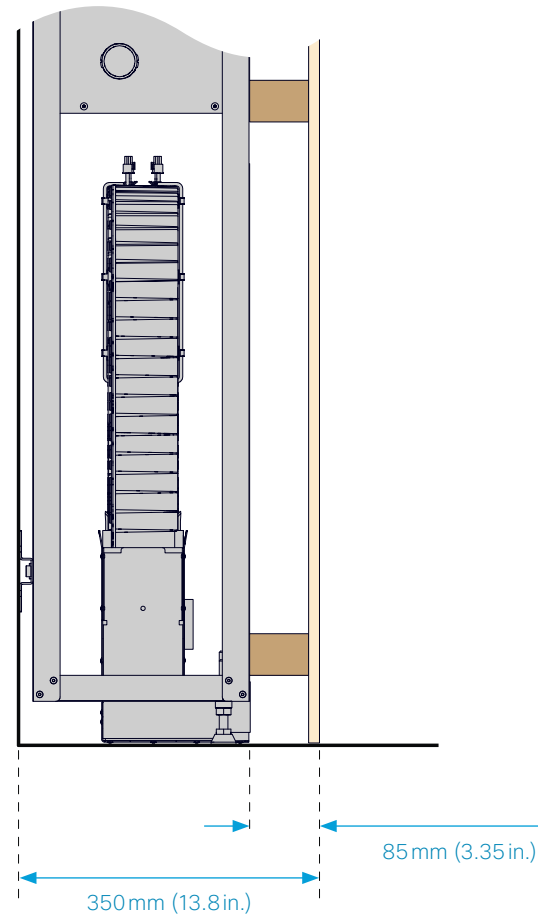
Depth of the wall

The custom wall must level at the same depth as the cosmetic wall panels provided by us. Otherwise the screen brackets and their hinge mechanism will not work. The hinge mechanism is required to allow access to the components behind the screens after the system is fully mounted.

Refer to the illustration for exact measurements.

Width of the wall

The minimum wall width is 4.2 m (165.4 in.). It can be as wide as you like.



Side view with rails, risers, subwoofers, and cavities in place.

The custom wall must level exactly as shown, 85 mm (3.35 in.) from the risers. This includes the wallboards or paneling.

Subwoofer output and air flow

Air intake area and subwoofer output

The ventilation air intake is close to the floor. It aligns with the four subwoofers, which need an opening toward the room to provide excellent audio quality.

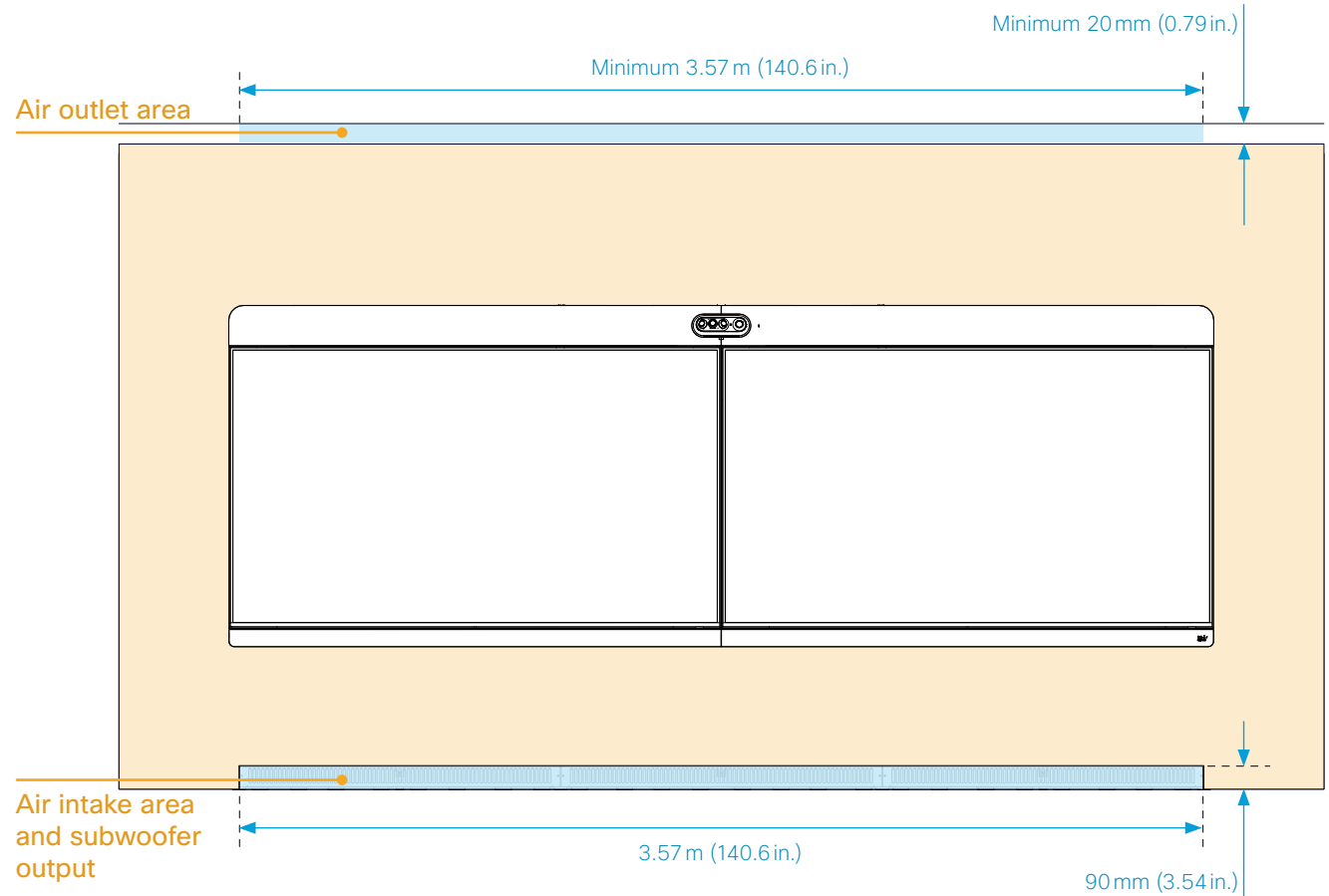
The opening must have the **exact** height and position as shown in the illustration.

You may have studs in front of some of the risers in the air intake area, as long as you don't cover the ducts from the subwoofers.

We provide subwoofer grille elements for the air intake area.

Air outlet area

The ventilation air outlet is at the top. It is created with a gap or opening toward the ceiling. The **minimum** size is shown in the illustration.

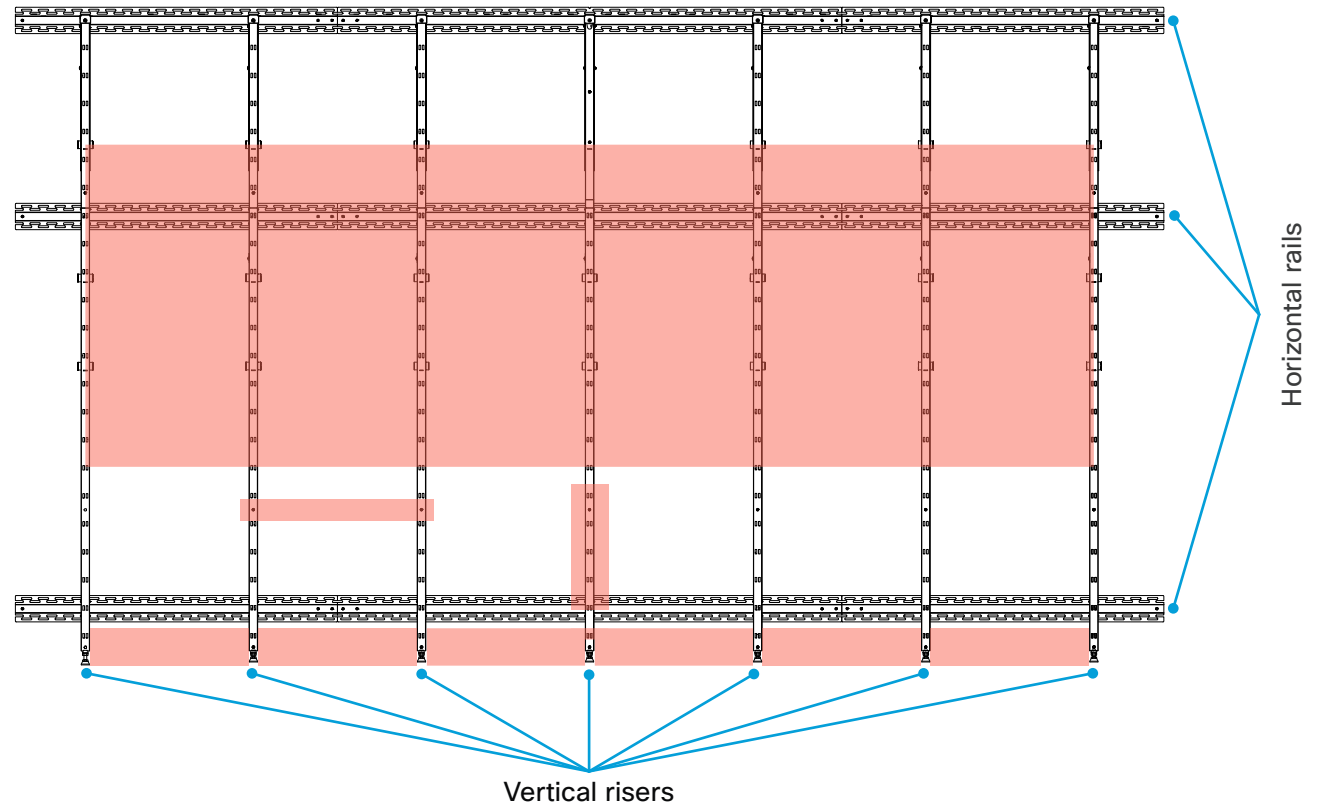


You may fasten the custom wall to the risers

The core mounting structure for the Room Panorama is the horizontal rails and vertical risers as shown in the illustration. This mounting structure must be securely fastened to the wall behind the system.

You may fasten the custom wall (studs) to the vertical risers. But take care not to cover up areas and holes that are needed when mounting the cavities and other components. These areas are marked with a color in the illustration.

We recommend you to study the complete installation procedure carefully before you proceed with the custom wall installation.



The subwoofer grille depends on how you route the cables toward the table

The two main options for routing cables between the Room Panorama system and the components on the table are:

- *Across the floor*

In this case you should route the cables from the codec down through the flex tubes inside the system toward the floor, as explained in [step A5](#) on page 92.

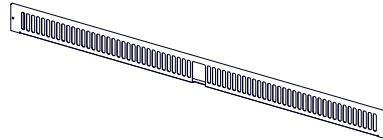
- *Behind the wall, then under the floor or above the ceiling*

In this case you can route the cables through the hole in the back wall of the rack cavity, and then further as it suits your installation.

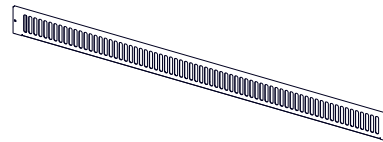
We ship two variants of the subwoofer grille to accommodate these cable routing options. It's only the center part of the grille that is affected.

These are the two variants for the center part:

- With a cut-out for cables



- Without a cut-out for cables



Use the one with the cut-out if you are routing the cables across the floor. Otherwise, choose the one without the cut-out (refer to [step A12](#) on page 97).

Things that the installer must provide

For the custom wall option you must provide all materials, fasteners, and tools required to make and safely set up the wall.

In addition we recommend:

- Paint for the parts of the custom wall framework that will be visible when you tilt out or pull down the screens. We recommend a dark color that goes well with the black metal parts. See [step A3](#).
- Screws:
 - 6 screws to fasten the subwoofer grilles. See [step A12](#).
 - 8 screws to fasten the screen spacers. See [step A17](#).

You need screws that match the material you are using for the custom wall. We recommend black screws that goes well with the color of the steel structure and subwoofer grille.

Installation

Before you start

Carefully read the introductory sections in this guide before you start the installation:

- [Before you start the installation](#) on page 3
- [Packaging](#) on page 4
- [Screws and tools](#) on page 5
- [Extra requirements and preparations when building a custom wall](#) on page 84

It is also important that you read our *Room Preparation Guidelines* and the *Additional Guidelines and Requirements for Low Ceiling systems* before you start the installation. They are available online.

About the installation procedure

The procedure how to install the Room Panorama with a custom wall are referring to the mounting steps in the main part of this installation guide. Only the steps that are specific to the custom wall option is outlined in detail here.

A1. Mount the rails and risers

Follow [steps 1-2](#) starting on page 7 in the main part of the installation guide to:

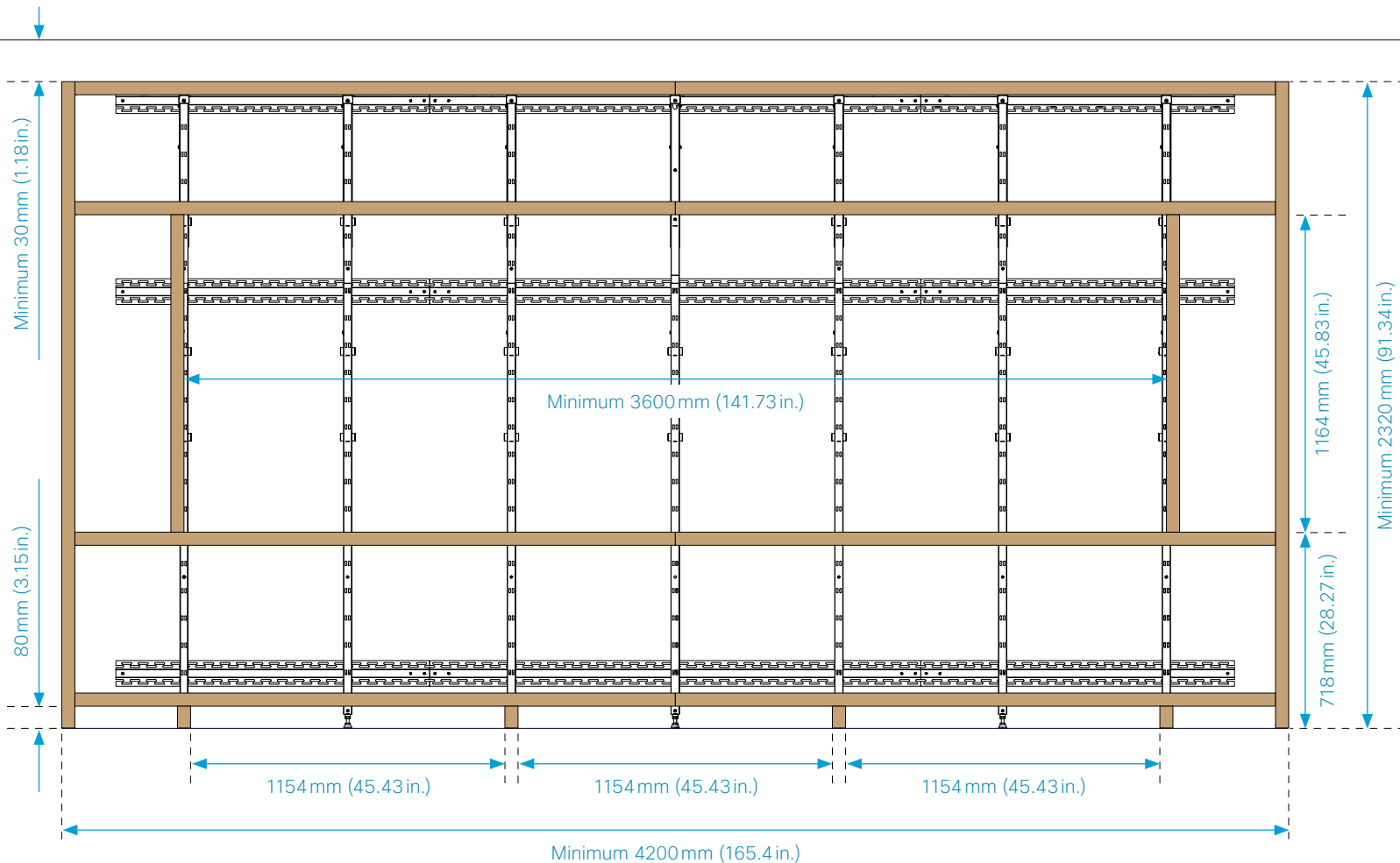
- Fasten the horizontal rails
- Mount the vertical risers

A2. Build the custom wall structure

In the examples on the next pages we show a wall structure made of 48 × 68 mm beams, and a drywall of 12.5 mm. You can adjust the size of these mounting elements, as long as the total depth and width of the wall are as specified.

The custom wall must be clear of the mounting cavities, mounting plates, components, and screen mounts. Refer to the dimensions in the illustration on the next page.

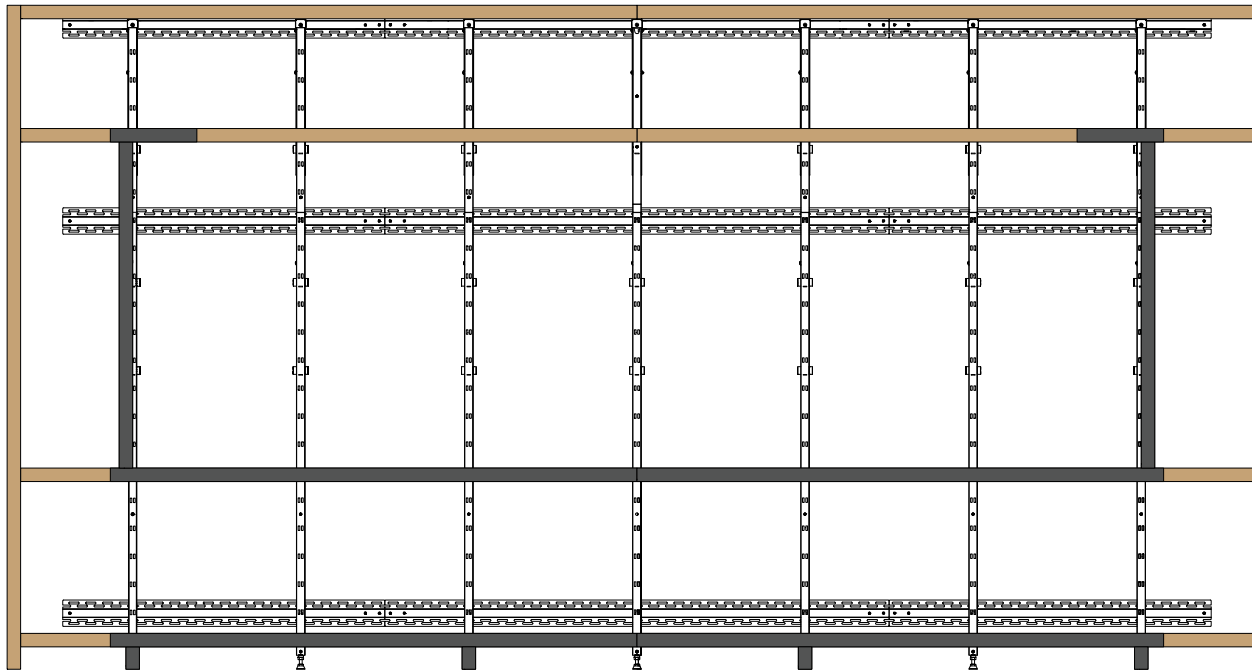




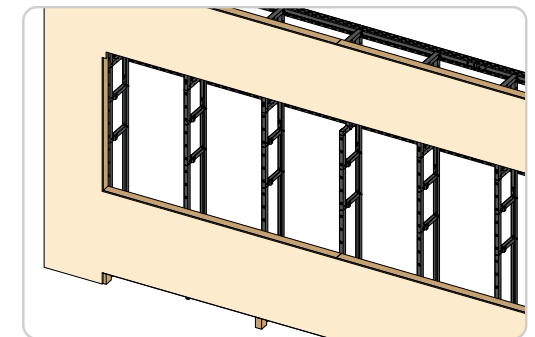
A3. Paint visible parts of the wooden structure

Some of the wooden structure is visible when tilting out or pulling down the screens. These areas are colored dark gray in the illustration.

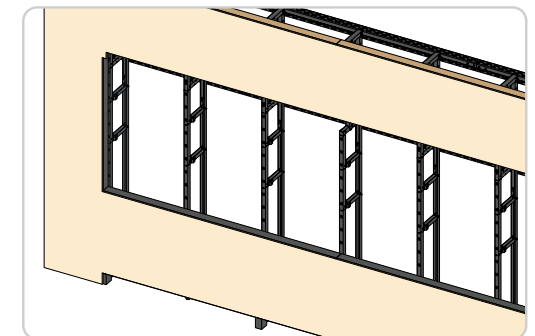
We recommend that you paint these parts in a color that blends well with the black metal parts.



These illustrations show how it will be after you have added the custom wallboards in step "A6. Mount the custom wallboards" on page 93.



Not painted



Painted black/gray

A4. Mount the antenna support

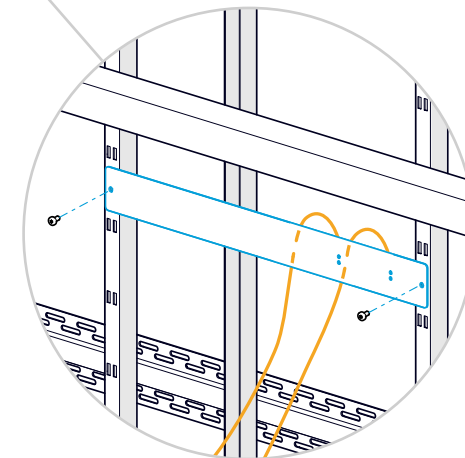
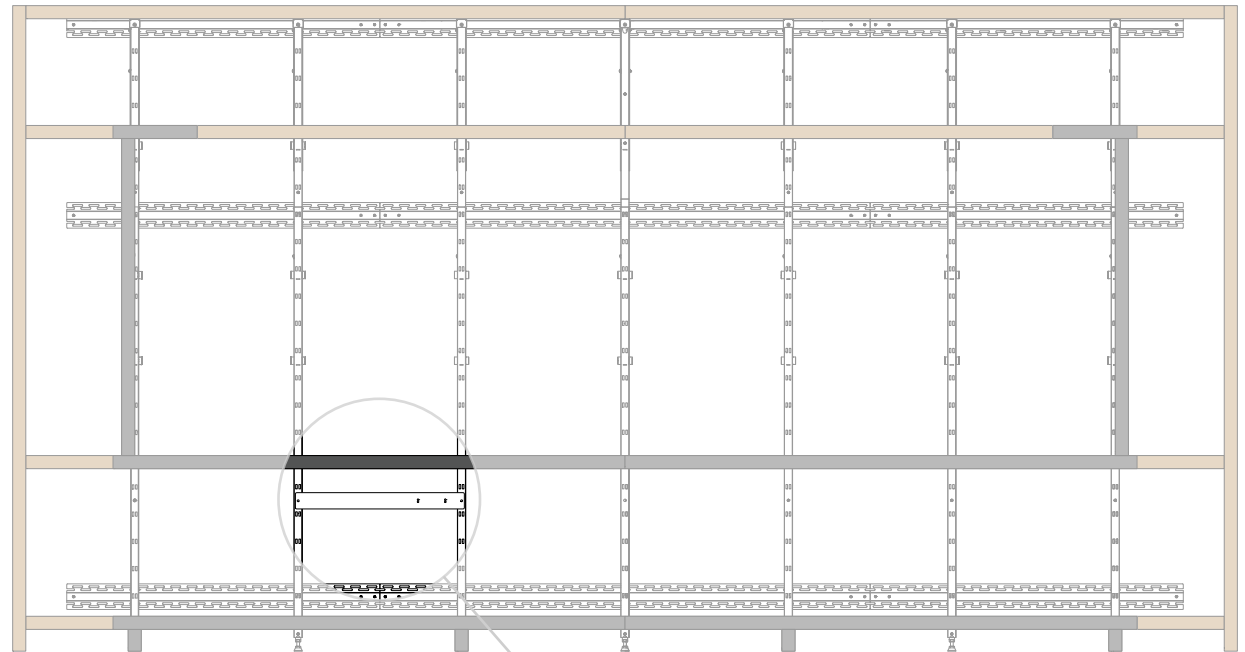
Skip this step if you have a non-radio product.

Non-radio products, which have the letters 'NR' in their product identifier (PID), are delivered without antennas.

Fasten the antenna support between the two risers as shown in the illustration. The antennas themselves face right and inward.

Fasten the support to the risers with two screws
(M6x12, Torx 30).

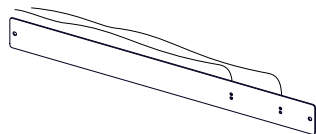
Leave the antennas hanging loose behind the antenna support for now; you will route them to the rack cavity and connect them to the codec later.



Antenna kit

1x Antenna support with two antennas

C5



2x



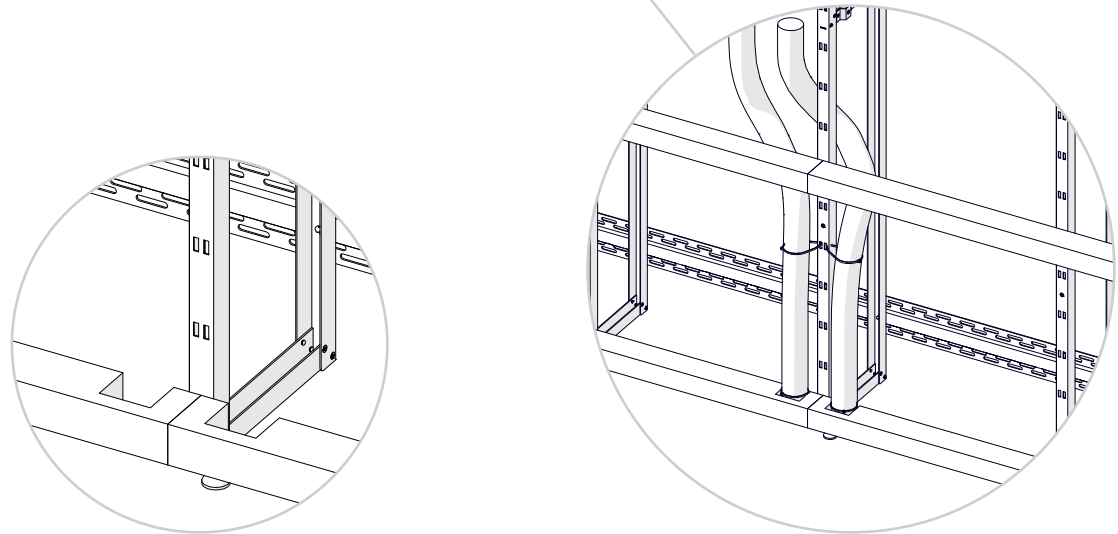
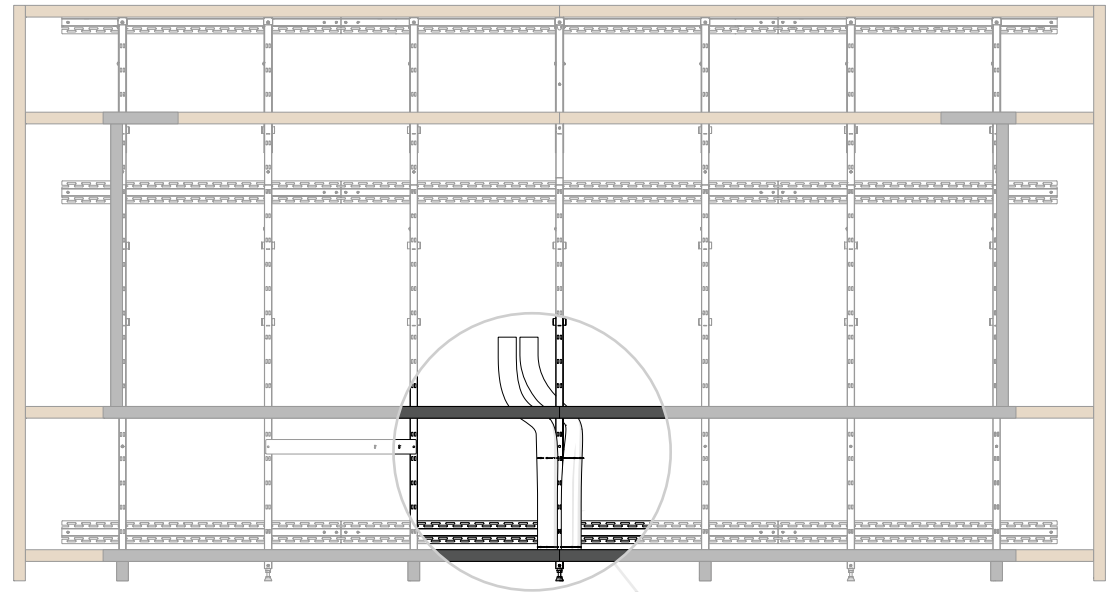
(M6x12, Torx 30)

A5. Mount the flex tubes

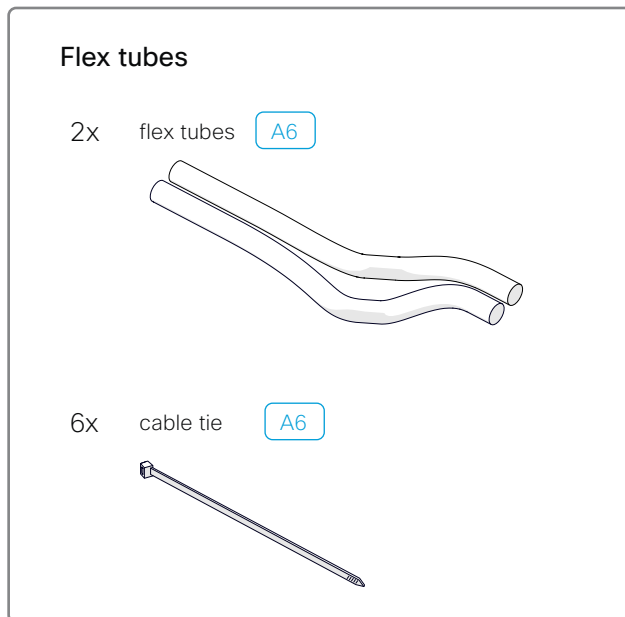
Skip this step if you are not going to lead the cables between the video system and the table through the grille and out on the floor.

Guide the two tubes down on each side of the center riser. They should end 80 mm (3.2 in.) above the floor.

Fasten the tubes to the riser with cable ties, in order to prevent the tubes from touching the subwoofers and cause rattling noise.



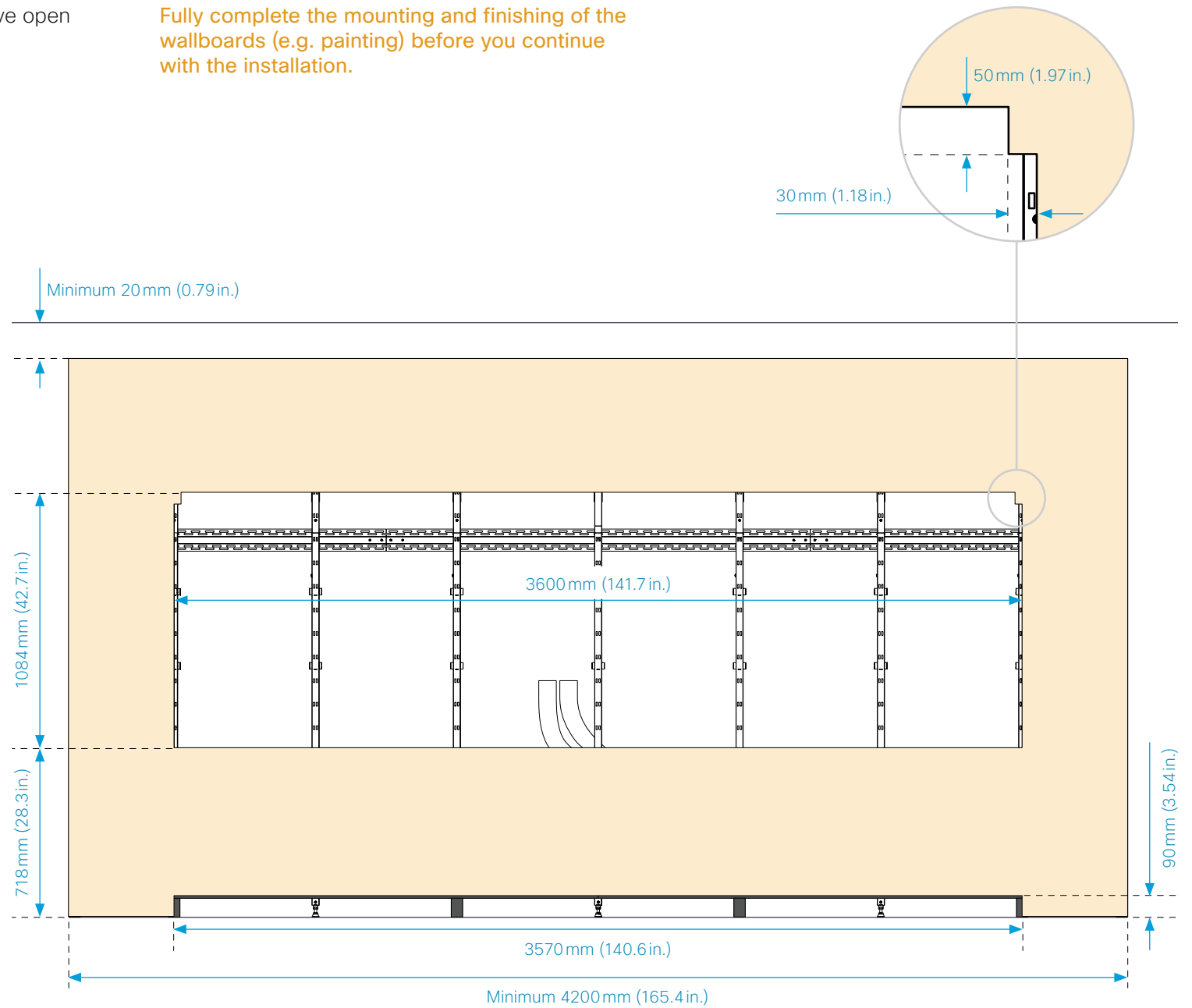
Make a cut-out in the beam to make room for the flex tubes.



A6. Mount the custom wallboards

Mount the wallboards on the beams. Leave open areas as shown in the illustration.

Fully complete the mounting and finishing of the wallboards (e.g. painting) before you continue with the installation.



A7. Place the subwoofers and mount the rack cavity

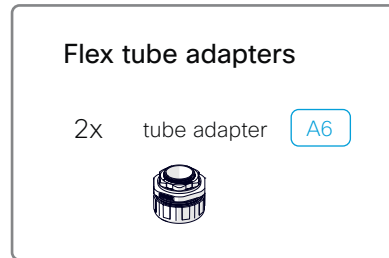
Follow [steps 3-4.1](#) starting on page 16 in the main part of the installation guide to:

- Place the subwoofers
- Insert the rack cavity

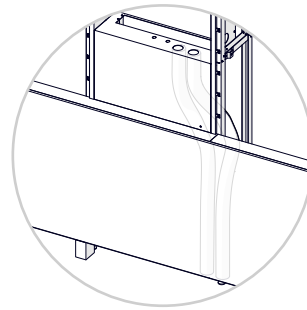
The other cavities (steps 4.2-4.5) will be installed later.

A8. Complete the flex tube mounting

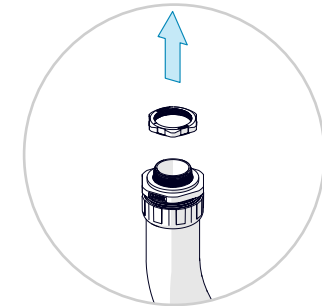
Skip this step if you are not routing any cables between the codec and the components on the table across the floor.



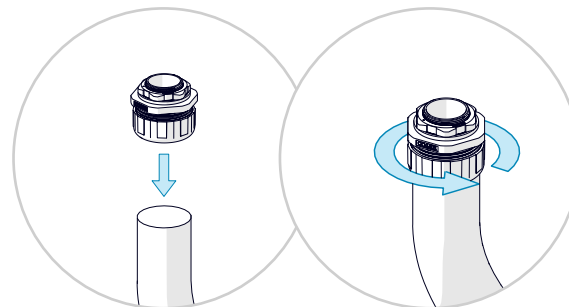
1. Lead the tubes up to the two holes in the rack cavity to find the appropriate length. Then cut them.



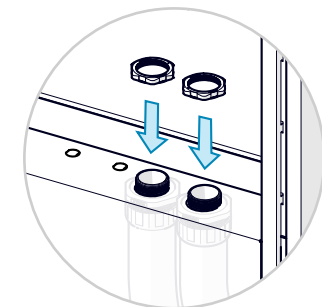
3. Unscrew and remove the nut from the adapters.



2. Add an adapter to each tube, and tighten.

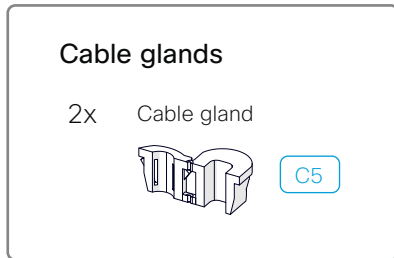


4. Insert the tubes into the holes in the rack cavity from below. Attach them by putting back and tightening the nuts.

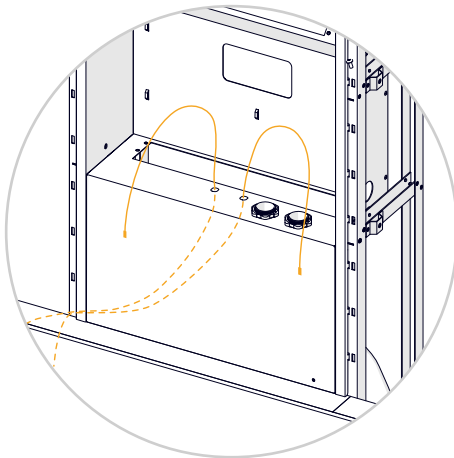


A9. Route the antennas to the rack cavity

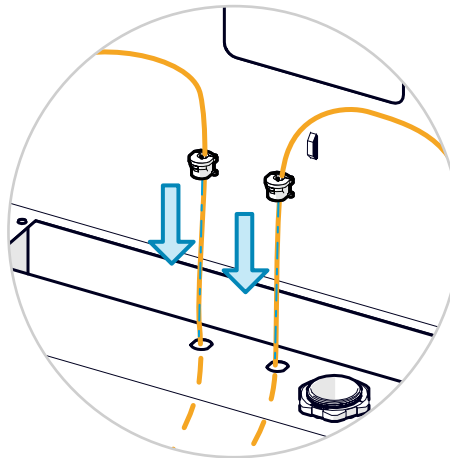
Skip this step if you have a non-radio product. Non-radio products, which have the letters 'NR' in their product identifier (PID), are delivered without antennas.



1. Thread the two antennas, which you added in step A4, up through the *small* holes in the rack cavity. The antennas are equal.



2. Attach cable glands to the antennas for strain relief, about 0.30 m (11 in.) from the connector.



3. Fasten the antennas to the risers with velcro to prevent them from touching the subwoofers and cause rattling noise.

A10. Mount the remaining cavities

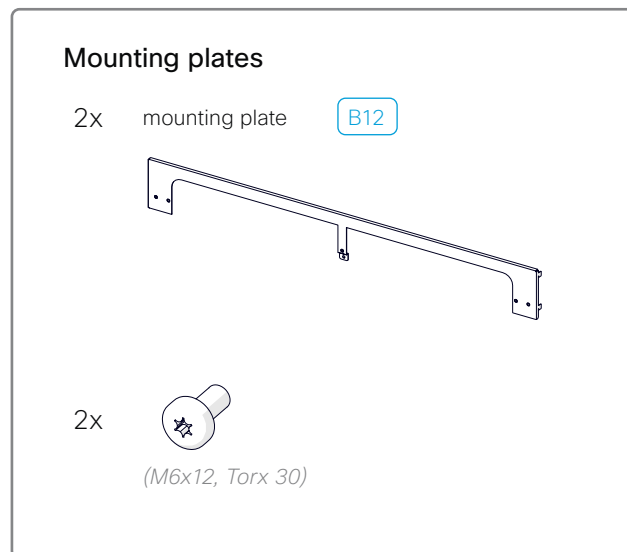
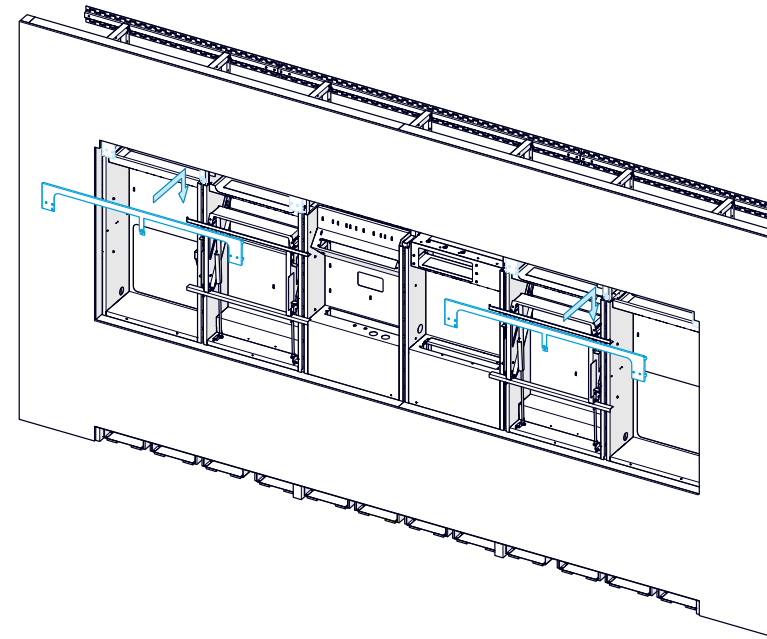
Follow [steps 4.2-4.5](#) starting on page 19 in the main part of the installation guide to:

- Insert the cooling cavity
- Insert the power cavities
- Insert the display cavities
- Fasten the six cavities with screws

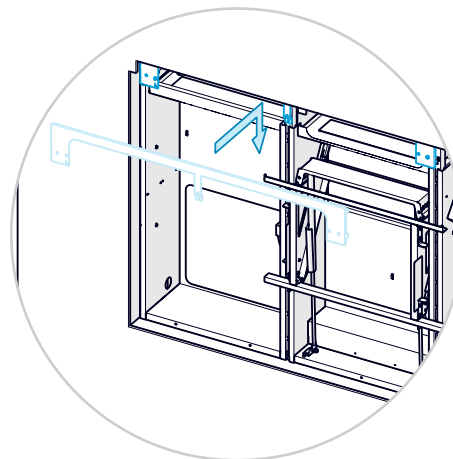
Skip step 5.

A11. Fasten the mounting plates for the speakers

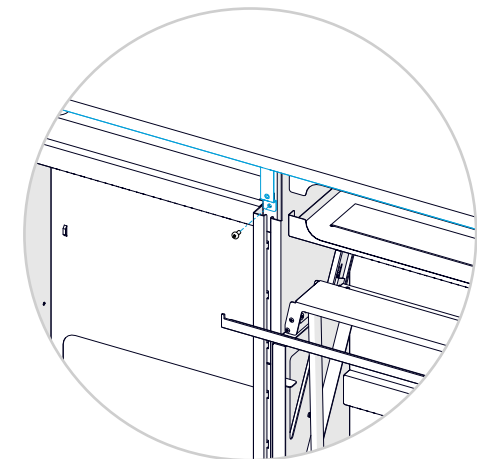
The left and right mounting plates are equal.
Repeat the same procedure on both sides.



1. Hang the mounting plate on the risers. Check that the hooks enter all slots on both sides.



2. Secure the mounting plate with one screw at center.

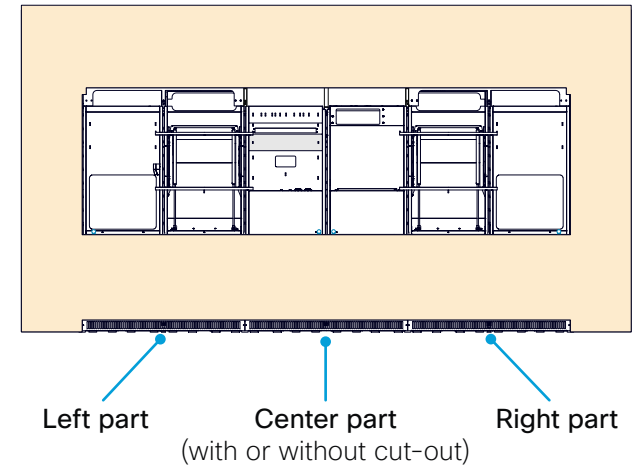


A12. Mount the subwoofer grille

There is a grille in front of the subwoofer outputs. It is composed of three parts.

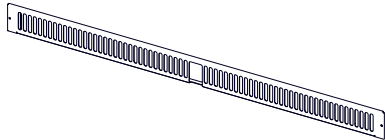
1. Choose which center part to use:
 - Use the one with a cut-out if you are going to lead the cables between the table and the video system across the floor.
 - Otherwise, use the one without a cut-out.
2. Fasten each profile with two screws.

The subwoofer stands should be as close to the grilles as possible, but not touching them. That would cause rattling noise. You may want to add some foam, or similar material, to avoid metal-to-metal contact.

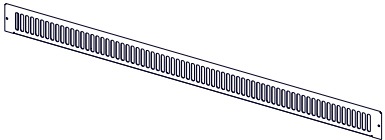


Subwoofer grille

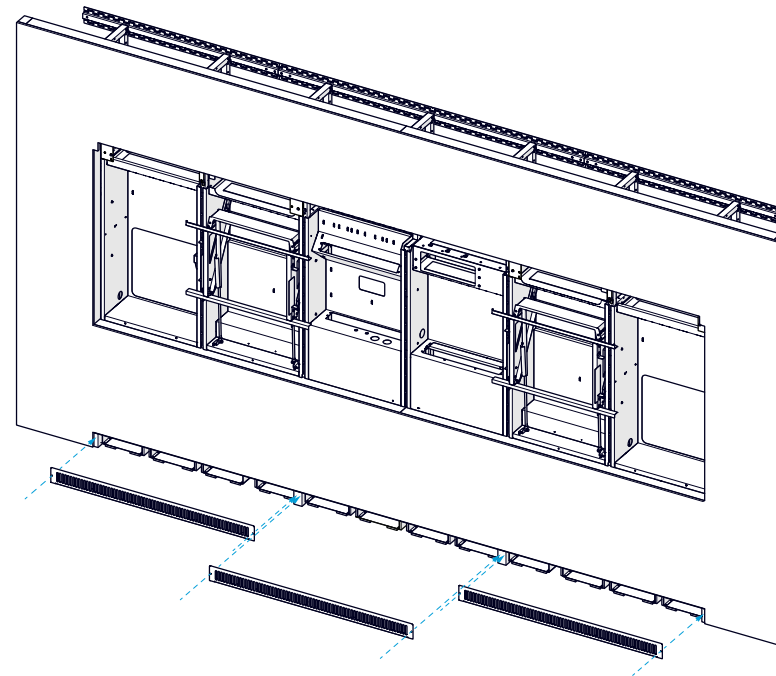
1x center part with a cut-out B12



3x left and right part, center part without a cut-out B12



6x screws, \varnothing 4 mm (provided by installer)
Recommended color: black



A13. Mount components

Follow [steps 6-10](#) starting on page 24 in the main part of the installation guide to:

- Mount the PSU bracket
- Mount the codec and amplifier
- Attach the rating label
- Mount the Ethernet switch
- Place the One Connect boxes

Skip step 11.

Follow [step 12](#) starting on page 31 in the main part of the installation guide to:

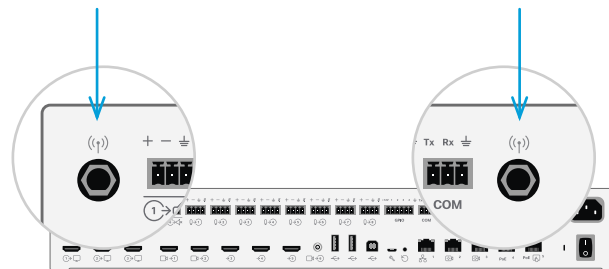
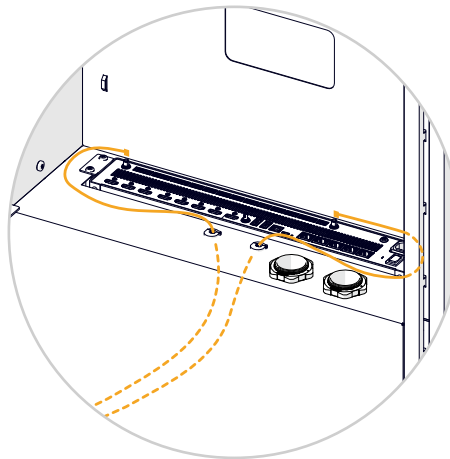
- Mount the fan module

A14. Connect the antennas

Skip this step if you have a non-radio product.

Non-radio products, which have the letters 'NR' in their product identifier (PID), are delivered without antennas.

Guide the antennas around the codec as shown below, and connect them to the codec. The antennas are equal.



A15. Connect and organize cables

Follow [steps 13-14](#) starting on page 32 in the main part of the installation guide to:

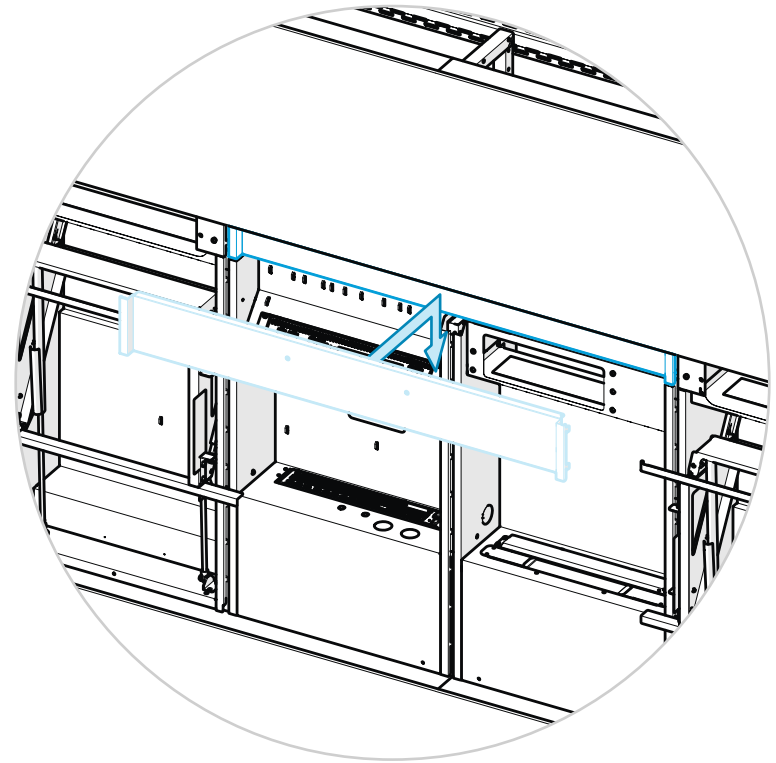
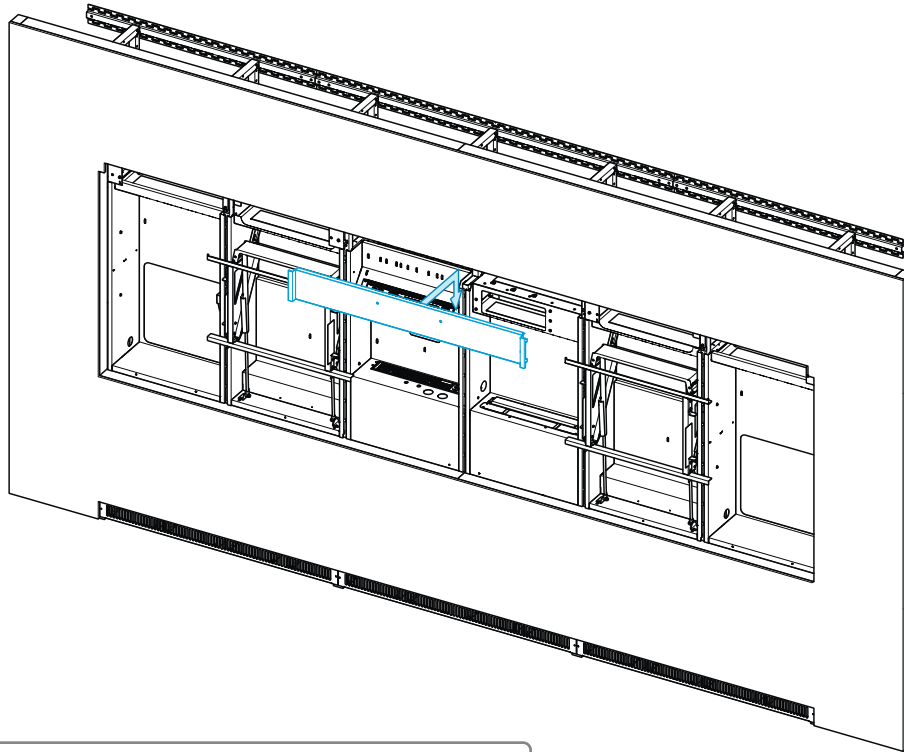
- Connect cables
- Organize the cables neatly

Skip steps 15 to 18.

A16. Mount the camera cavity

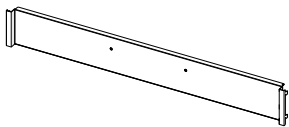
The camera cavity is above the cooling and rack cavities.

Hang the cavity on the risers. It is not fastened by screws.



Camera cavity

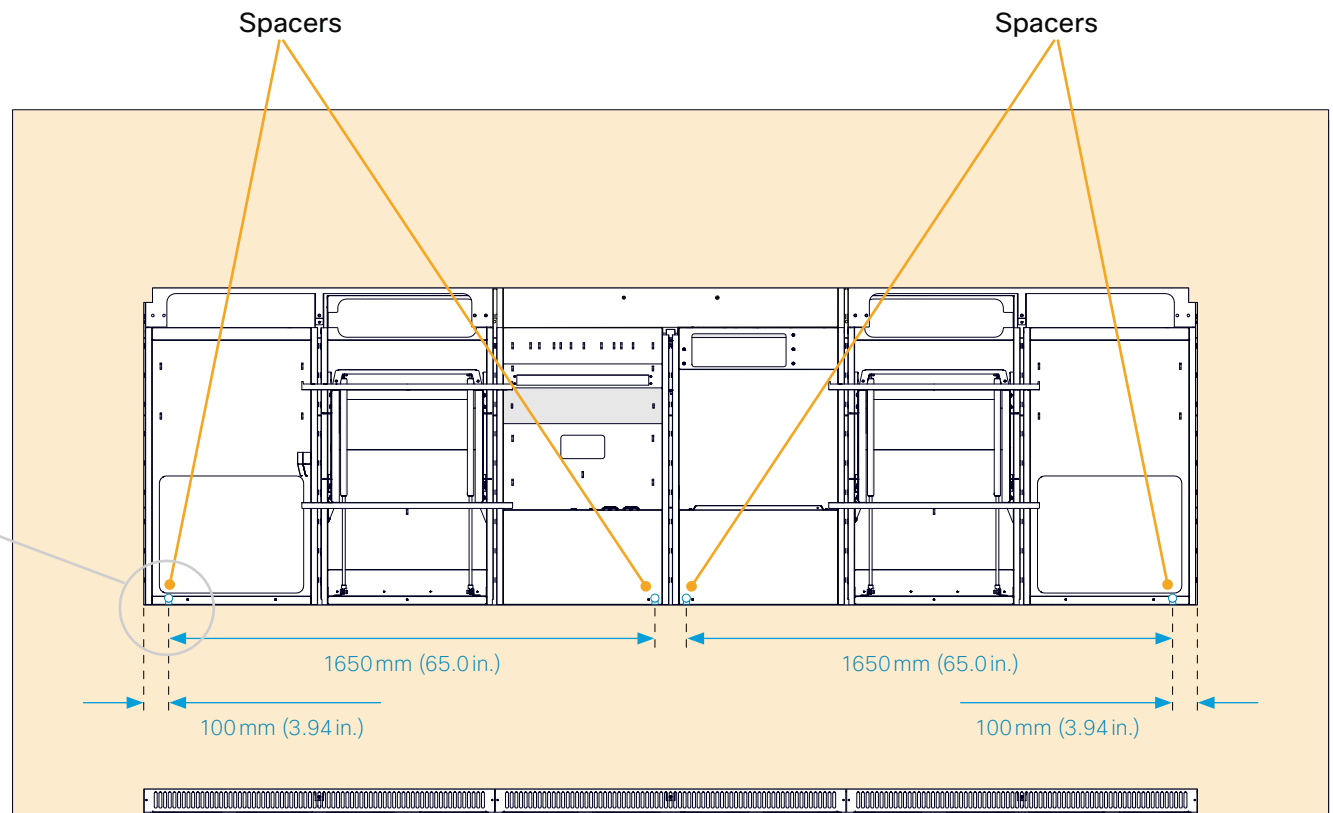
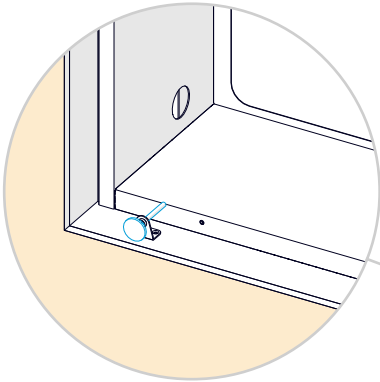
1x Camera cavity B13



A17. Mount and adjust spacers for all screens

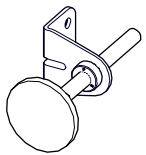
The system has four adjustable spacers, which prevents the screens from leaning on the wallboards.

Place them as shown in the illustration.

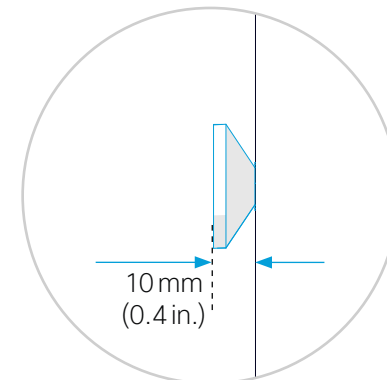
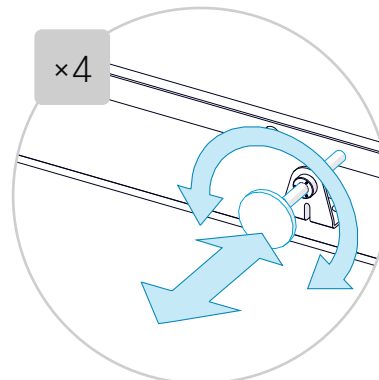


Spacers

6x spacers **B12**



8x screws, \varnothing 4 mm (provided by installer)
Recommended color: black



Adjust the spacers so that they protrude about 10 mm (0.4 in.) outside the wallboards.

A18. Mount the remaining components and grilles

Follow [steps 22-27](#) starting on page 62 in the main part of the installation guide to:

- Mount the camera
- Mount the fan duct
- Mount the loudspeakers
- Mount the main screens
- Mount the deco grille
- Mount the speaker grille

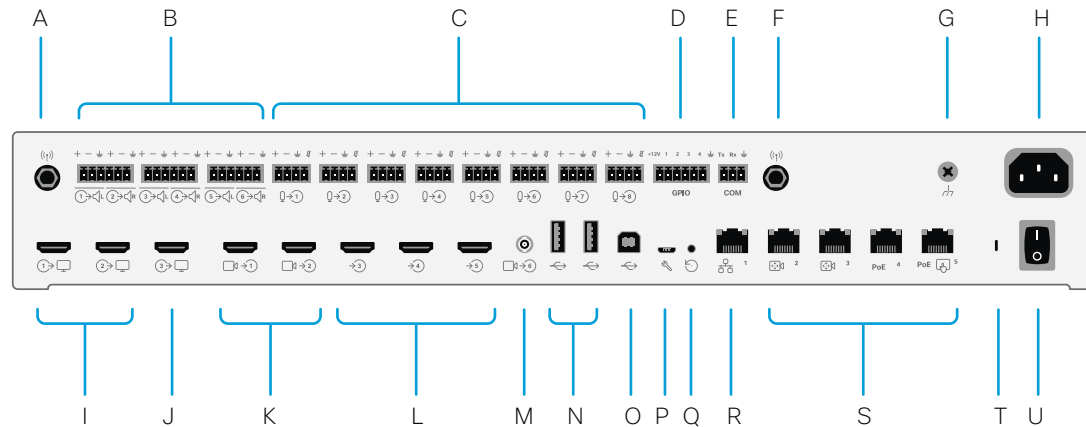
A19. Mount and connect the components on the table and finish up

Follow [steps 28-31](#) starting on page 79 in the main part of the installation guide to:

- Pull up and connect the cables between the system and components on the table
- Mount the Ethernet switch in the table
- Place components on the table
- Finish up

Connector panels

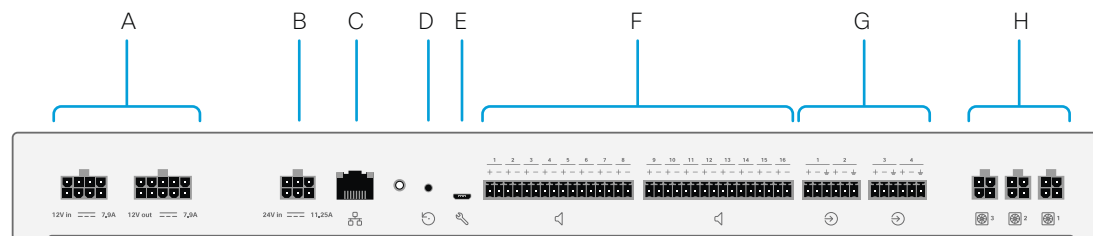
The codec (Cisco Codec Pro)



- A. Antenna connector
- B. Line outputs (Euroblock, 3.5 mm)
- C. Microphone/Line inputs (Euroblock, 3.5 mm)
- D. Programmable GPIO port (Euroblock, 3.5 mm)
- E. COM port (Euroblock, 3.5 mm)
- F. Antenna connector
- G. Ground (Protective earth)
- H. Power input
- I. HDMI outputs with audio and video, 4Kp60 (for internal use)
- J. HDMI output with audio and video, 4Kp30 (for internal use)
- K. Camera inputs (HDMI), 1080p60 (for internal use)
- L. HDMI inputs with audio and video, 4Kp30
- M. Camera input (3G-SDI/HD-SDI), 1080p60, HD-BNC, 75Ω
- N. USB 2.0 type A
- O. USB 2.0 type B
- P. Maintenance (micro USB)
- Q. Factory reset pin-hole
- R. Network (Ethernet) 1Gb
- S. Ethernet (for internal use)
- T. Status LED
- U. Power On/Off

The amplifier (Cisco Natural Audio Module IV)

The Cisco Natural Audio Module IV is a 16 channel audio power amplifier with Ethernet and analog inputs.



- A. 12V power input and output. Passthrough current limited power connection for the camera
- B. Amplifier power input (24VDC, 11.25A)
- C. Ethernet for audio streaming from the codec, and for control and software upgrades, 1000BASE-T
- D. Factory reset pinhole
- E. Maintenance (micro USB)
- F. Speaker outputs for the Room Panorama speakers and subwoofers (left and right cable bundles).

Bridged differential output on 3.5 mm Euroblock connectors:

- Max 25W / 8ohm at 0.1% THD per channel
- < 0.1% THD at all levels below clipping
- 106 dB SNR
- Max 200W total output power

- G. Analog inputs / Line inputs

Differential analog line input (not in use for the default Room Panorama installation).

Differential input on 3.5 mm Euroblock connectors.

- Max 24 dBu input level.
- 106 dB SNR.

- H. Fan outputs (for Room Panorama fan control)

More information about our products

<https://help.webex.com>

<https://www.cisco.com/go/room-docs>

Visit one of these websites to find out more about setup, management, and use of this product. Use the first link if your device is registered to the Cisco Webex service and the second link if the device is registered to another service.

<https://www.cisco.com/go/projectworkplace>

Explore the Cisco Project Workplace to find inspiration and guidelines when preparing your office or meeting room for video conferencing.

<https://cs.co/webexadoption>

The Webex Adoption site provides training tips, use cases and best practices for deployment and managing change. Our toolkits make adoption easier.



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