

# TORUS 8

Constant Curvature Array

## Rigging Manual



# TORUS



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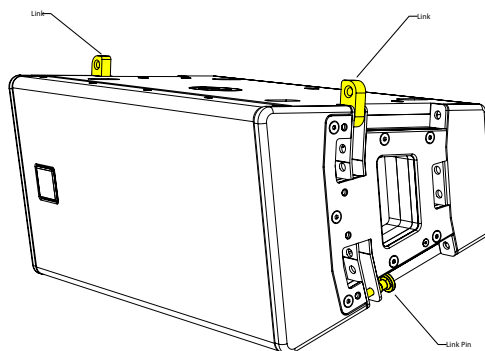
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### Rigging

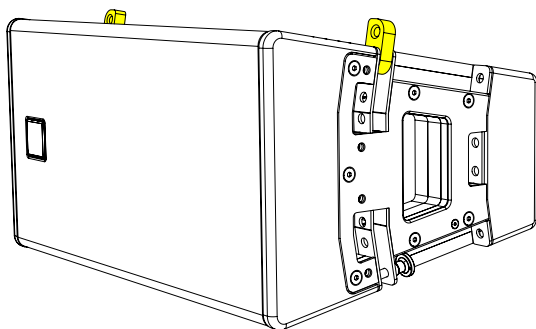
#### Cabinet Rigging Hardware

TORUS consists of a single point rigging system located on either side of the cabinet, all hardware is captive and can be stored conveniently for transportation.

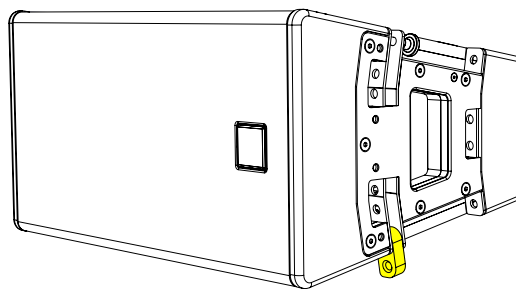


#### Flown Vertical Array

When flying TORUS vertically the HF horn can be positioned on the left or the right to create symmetrical system design.



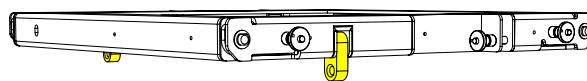
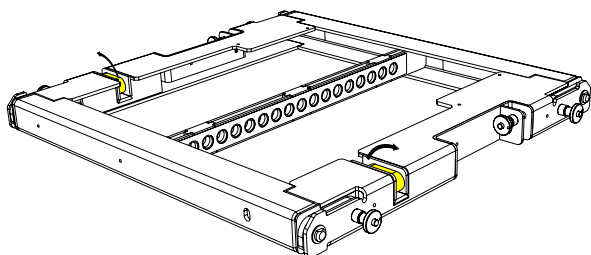
*Linking down – HF horn to the left*



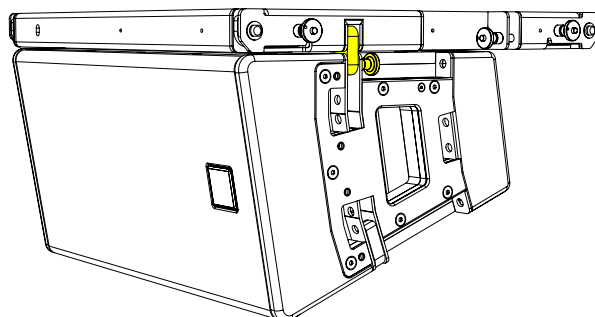
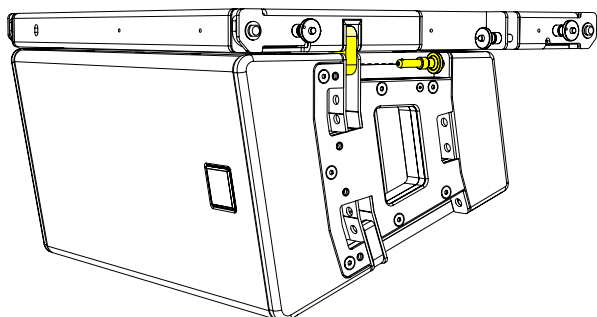
*Linking up – HF horn to the right*

#### HF Left

Release links from the stow position and rotate the T8 grid 180 degrees

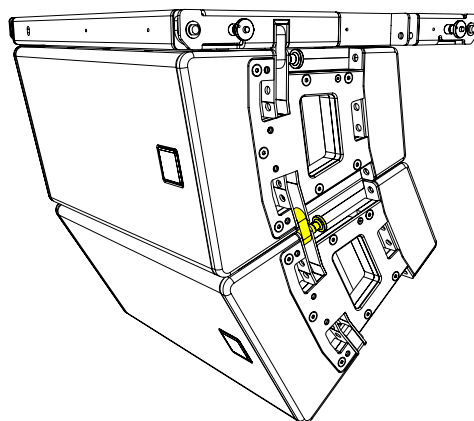
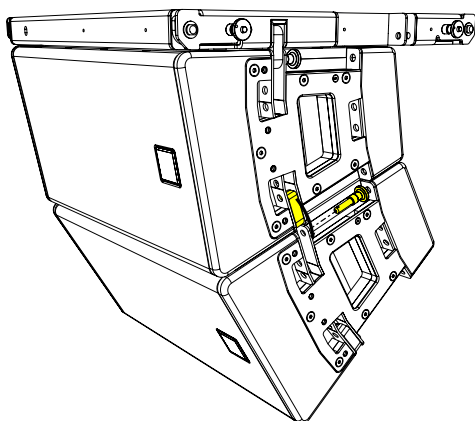


Position the T8GRID on top of the first TORUS 8 cabinet, locate the links and insert the rigging pins. Make sure the cabinet is secured on both sides before lifting.

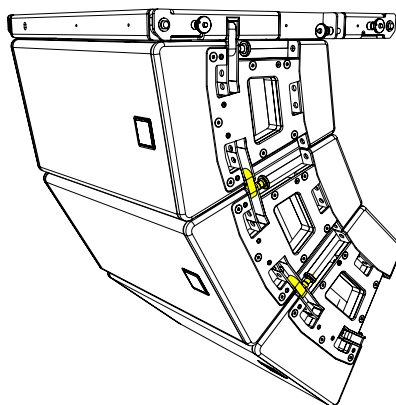


Lift the array to a height where the next cabinet can be positioned underneath. Either lift the cabinet into position or lower the array onto the cabinet below.

Remove the rigging pins from the cabinet above, rotate the links and insert the rigging pins to secure.



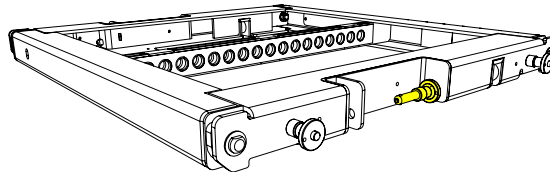
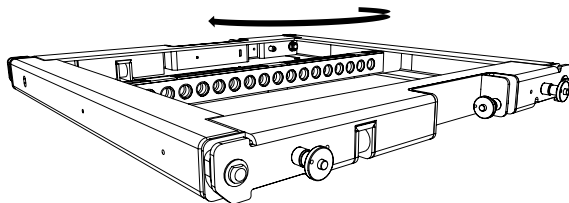
Repeat the process until the desired number of cabinets have been vertically arrayed. A maximum of 6 cabinets can be flown from the T8GRID in the vertical orientation.



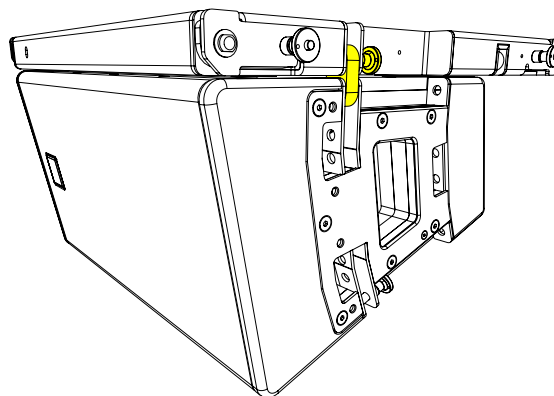
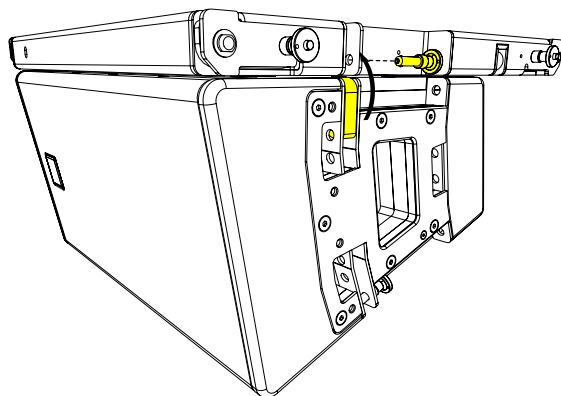


### HF Right

Rotate the T8GRID through 180° and release links from the stow position

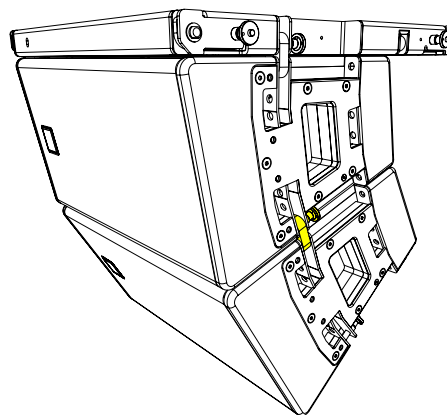
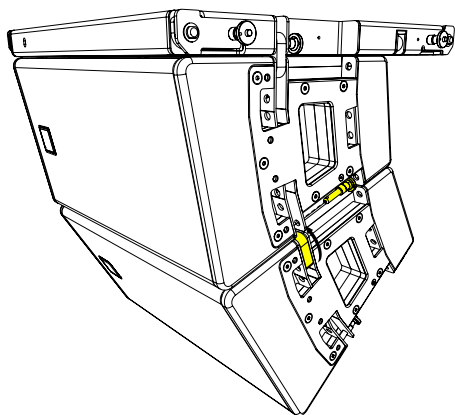


Position the T8GRID on top of the first TORUS 8 cabinet, rotate the links and insert the rigging pins. Make sure the cabinet is secured on both sides before lifting.

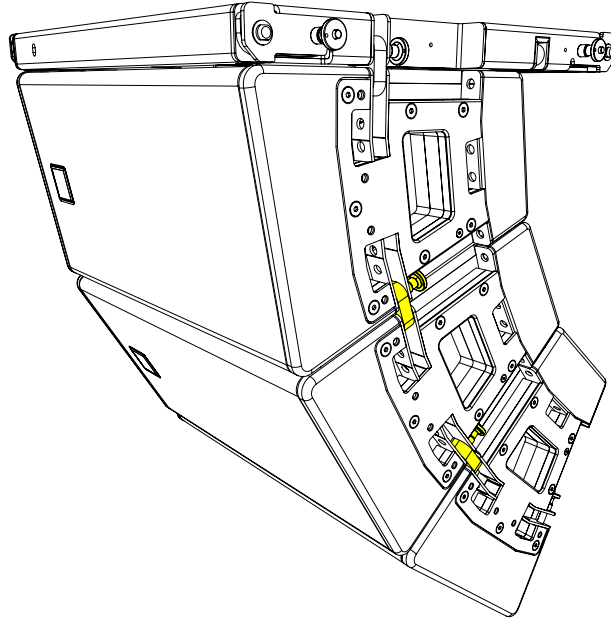


Lift the array to a height where the next cabinet can be positioned underneath. Either lift the cabinet into position or lower the array onto the cabinet below.

Remove the rigging pins from the cabinet below, rotate the links and insert the rigging pins to secure.



Repeat the process until the desired number of cabinets have been vertically arrayed. A maximum of 6 cabinets can be flown from the T8GRID in the vertical orientation.



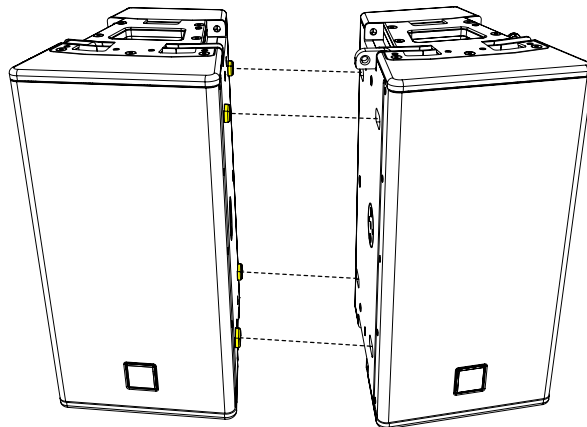
## HRIG100

The HRIG100 is a rigging accessory used to suspend TORUS in a horizontal configuration. The HRIG100 can be mounted to a cabinet or between two cabinets, given the best options to suspend multiple cabinets.

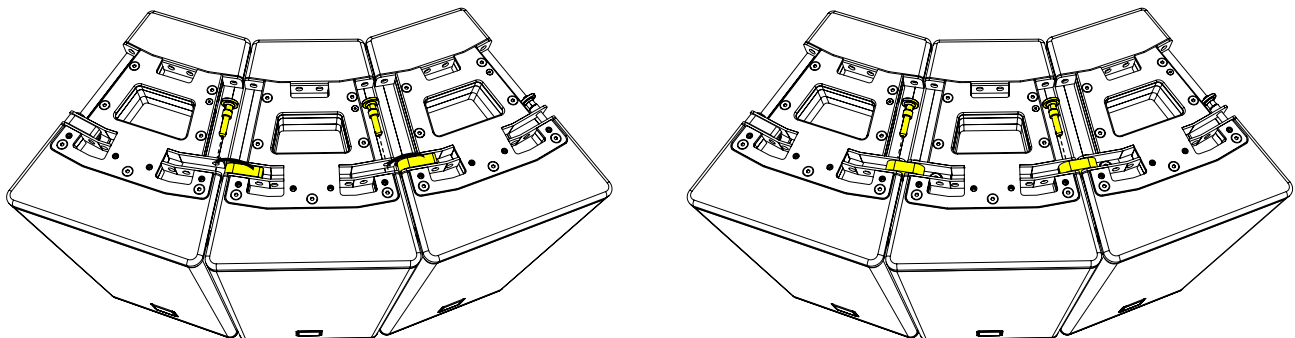
HRIG100 can be mounted on the top or bottom of the cabinet in portrait mode, this allows the HF horn to be positioned at the top or the bottom of the array.



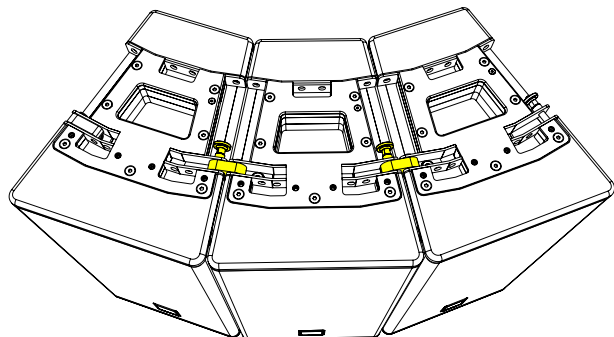
Link cabinets together by aligning the skids to the adjacent cabinet.



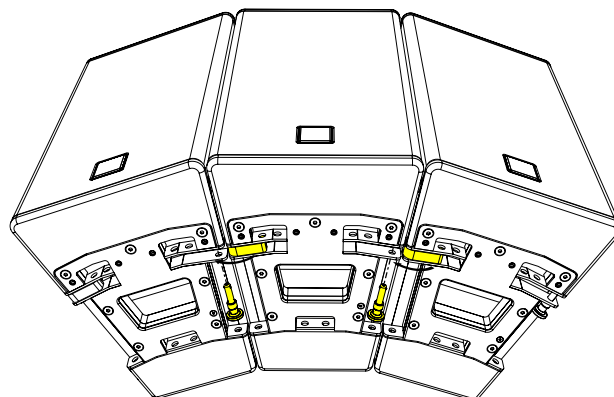
Remove pins and rotate the links on the top of the cabinets



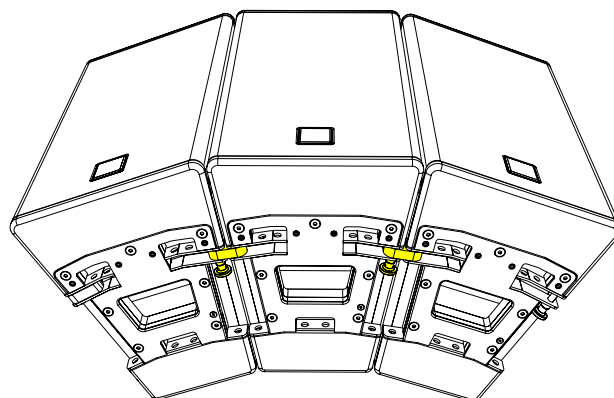
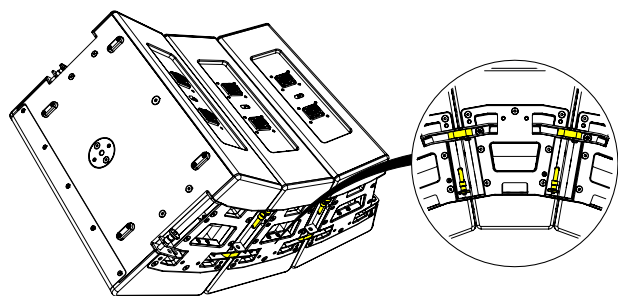
Replace the pins to lock the cabinets together



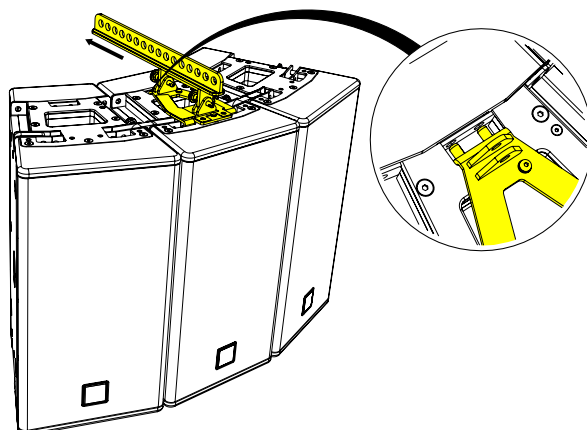
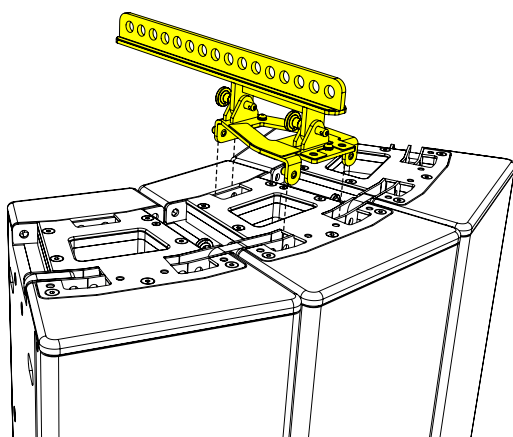
Tip the array and remove the rigging pins on the bottom of the array. Rotate the links into position.



Replace the pins to link the bottom of the cabinets together.

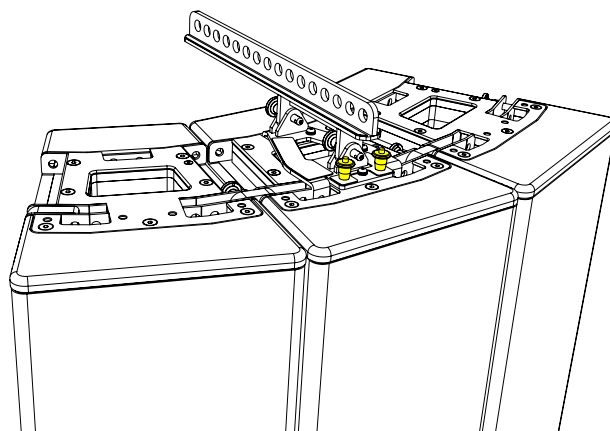
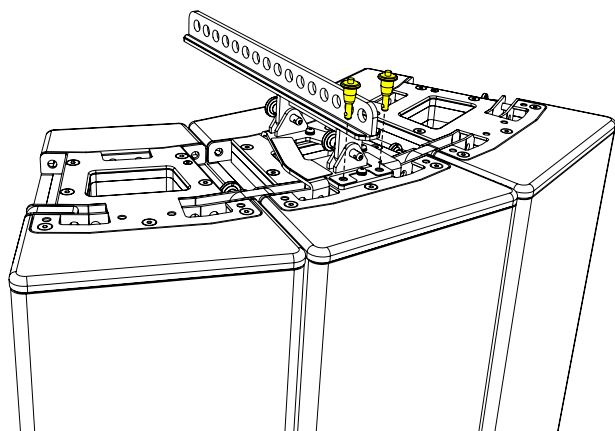


Attach the HRIG100 making sure all four pins (two back and two front) locate and lock into position

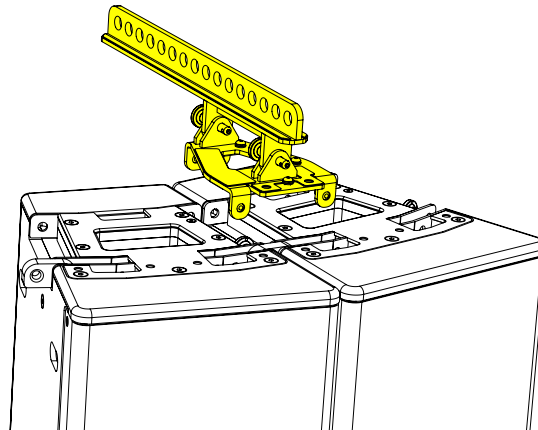
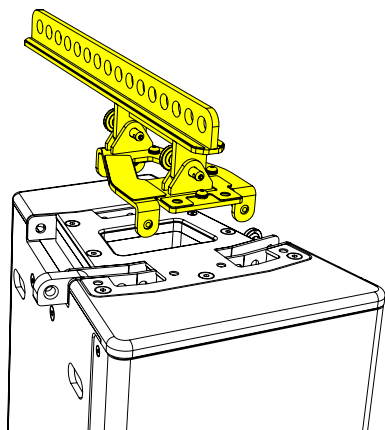


### WARNING

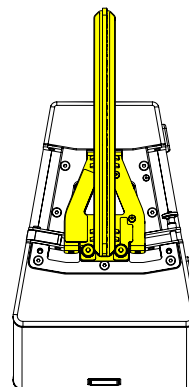
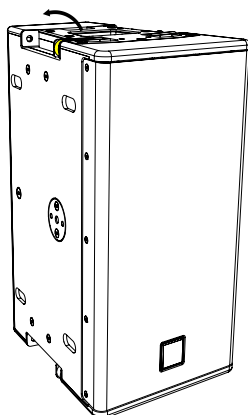
The HRIG100 is only secure when the two locking pins have been inserted and locked into place.



Depending on the configuration, mount the HRIG100 directly to one cabinet or between two cabinets.

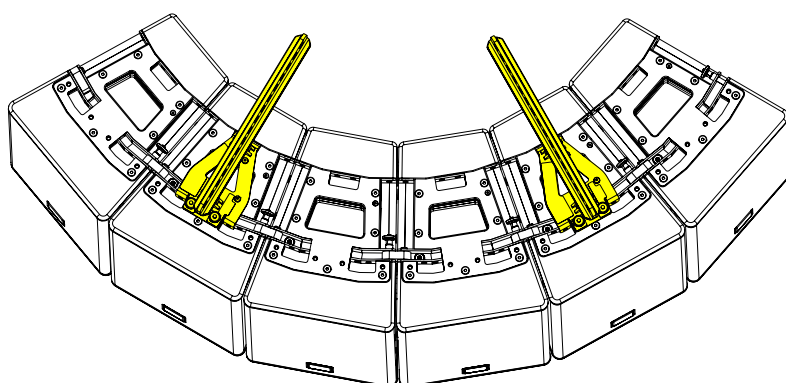
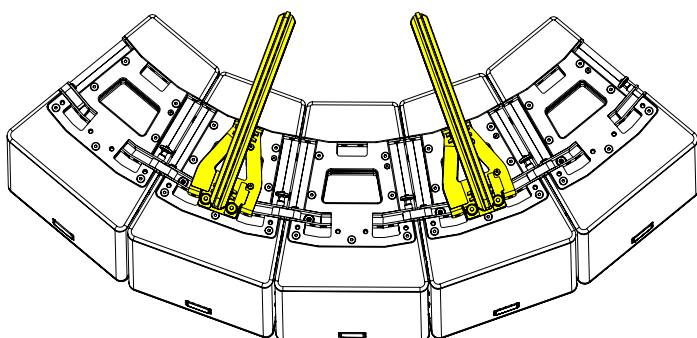
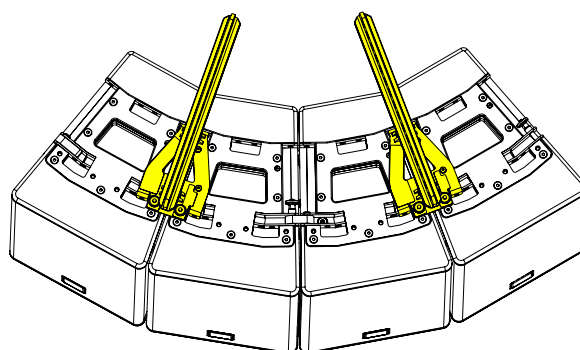
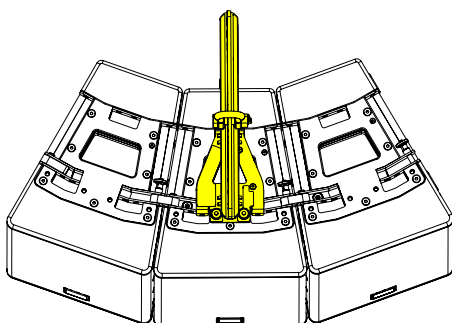
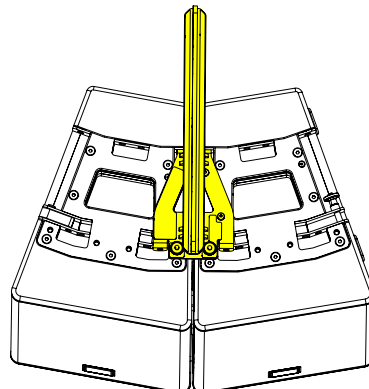
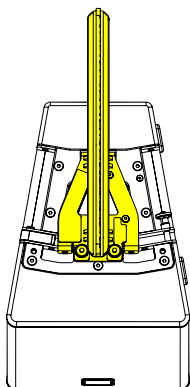


To connect multiple TORUS cabinets together, rotate the top link before you mount the HRIG100 between two cabinets.



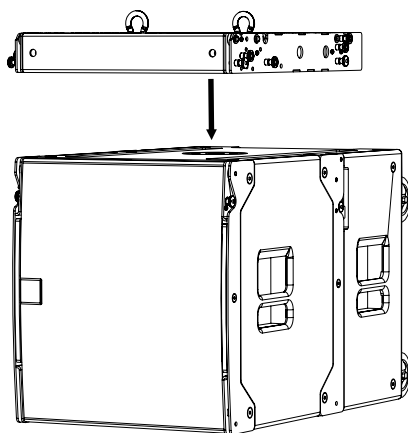


With one HRIG100 you can suspend up to three cabinets and with two HRIG100's you can suspend four, five or six cabinets, as shown below.

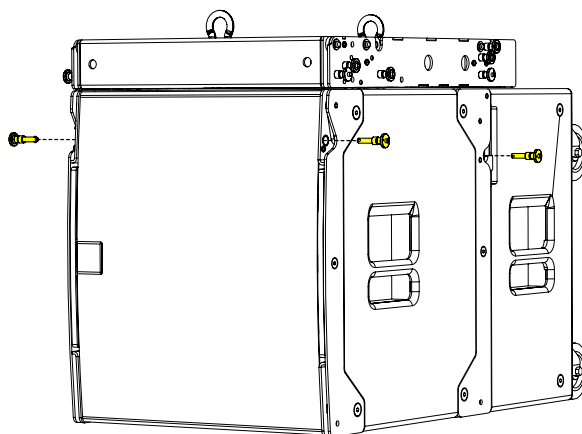


### Flown Arrays with SXCF115

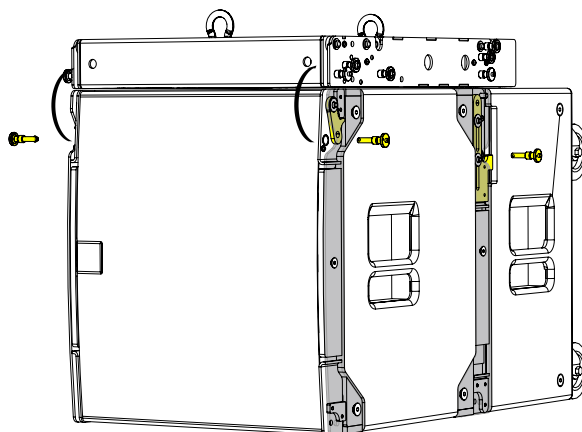
Position the WPMSXGRIDT on top of the SXCF115 cabinet



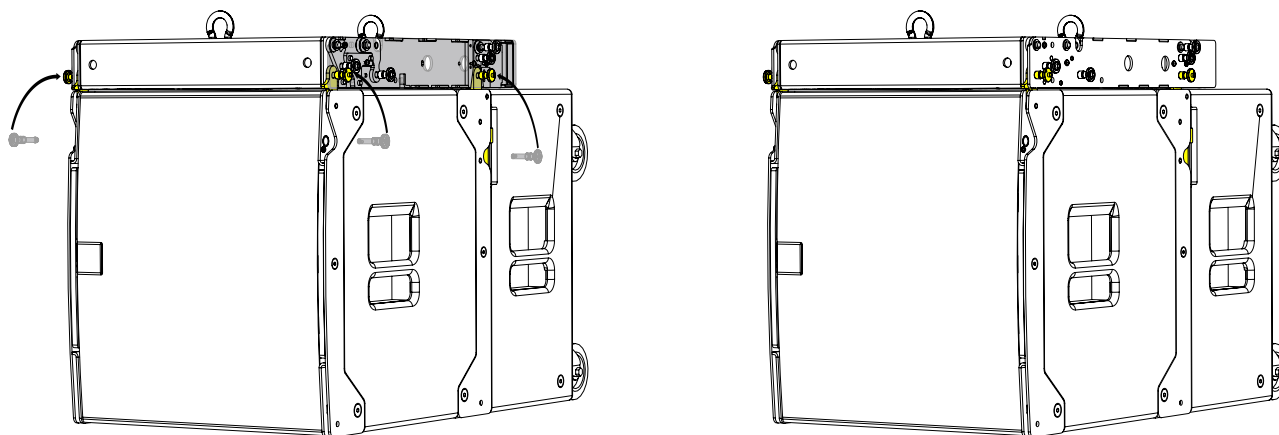
Remove the pins from the from SXCF115 to release the links.



Rotate the front links and lift the rear links to align with the pin holes in the WPMSXGRIDT.

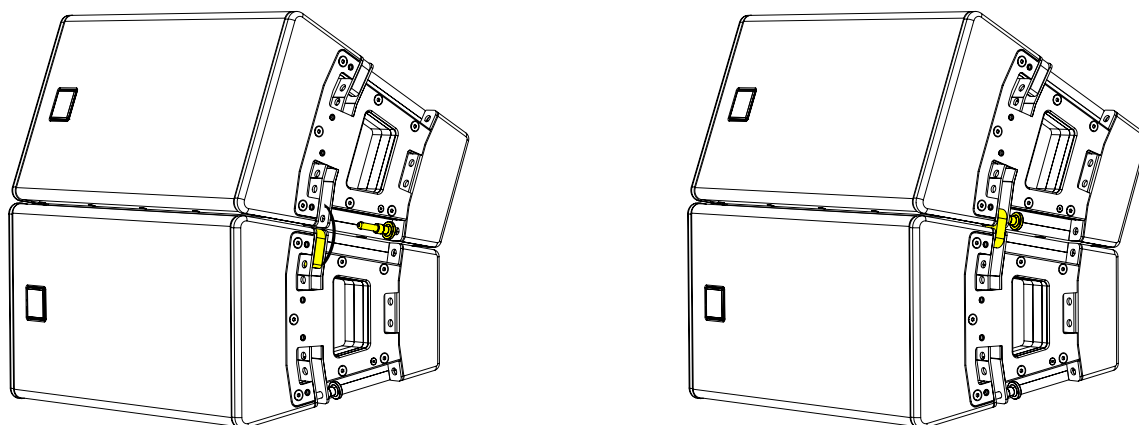


Replace the pins to link and lock the SXCF115 securely to the WPMGRIDT



Place cabinets on top of each other.

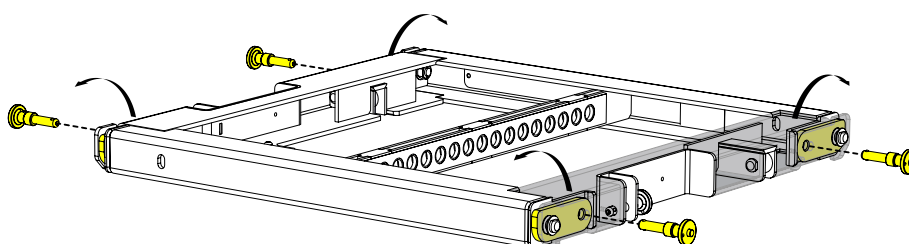
Remove the rigging pins from the cabinet above, rotate the links and insert the rigging pins to secure.



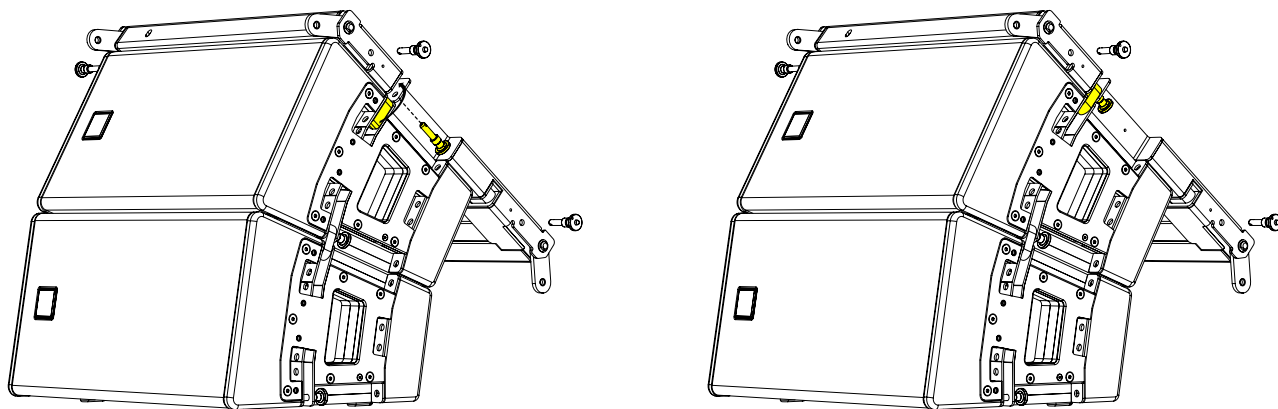
The T8GRID is also used as a conversion frame for the SXCF115 & T8 combined array.

*Horn Right*

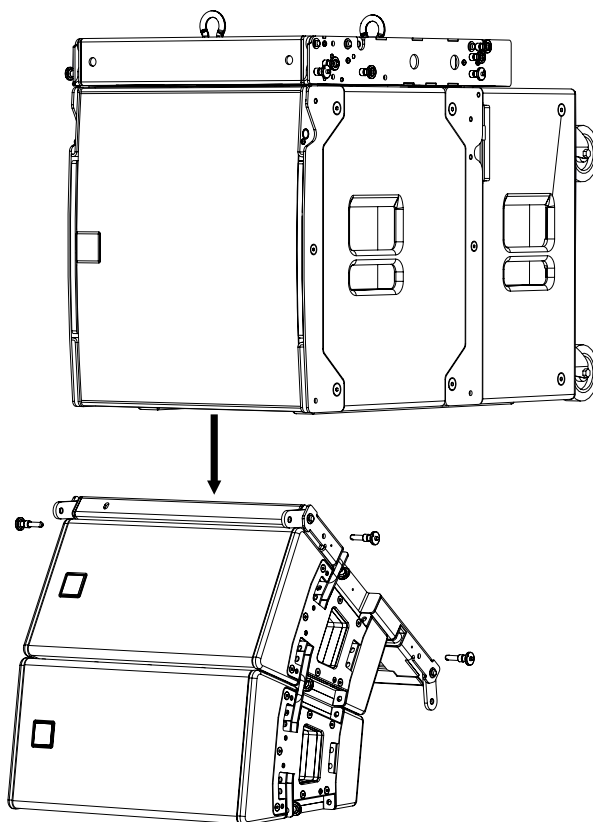
Remove the sub link pins and rotate the links



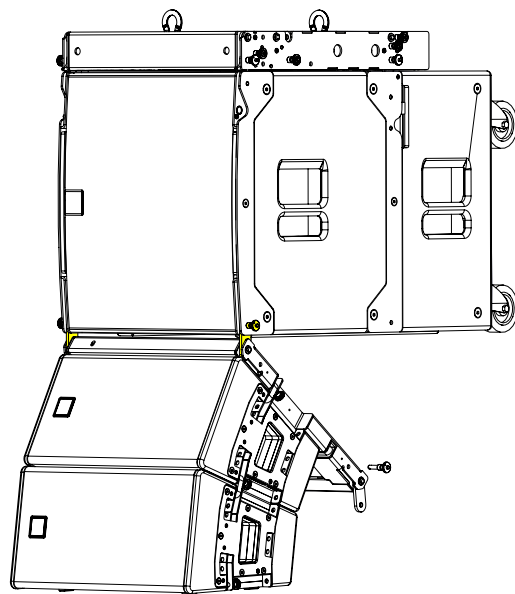
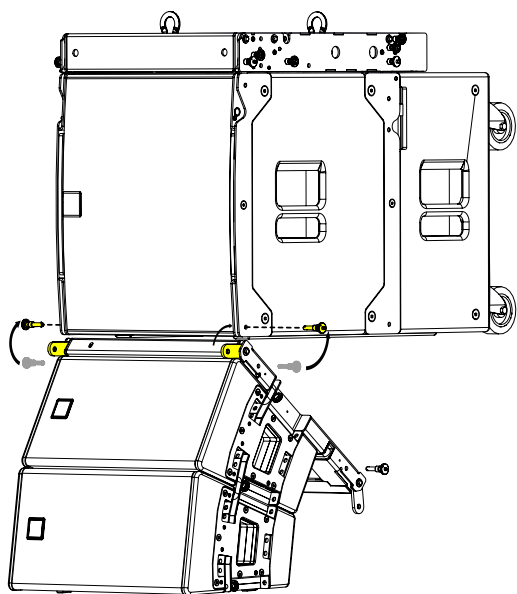
Place the T8GRID on top of the T8 cabinets, remove the link pins and rotate the T8 links. Replace the pins to lock the grid into position



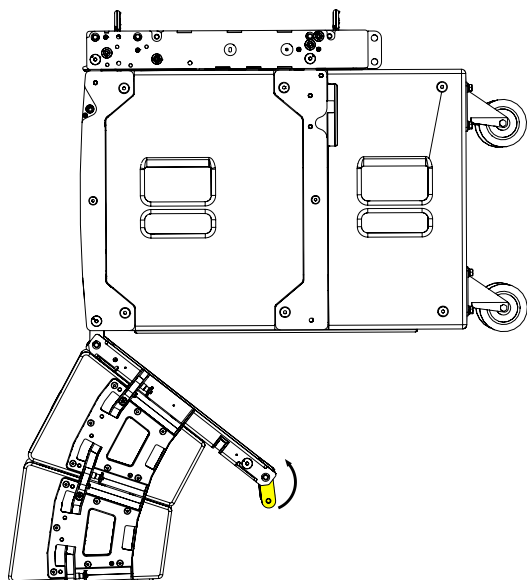
Position the T8 cabinets below the SXCF115 and lower the SXCF115 to connect the front links.



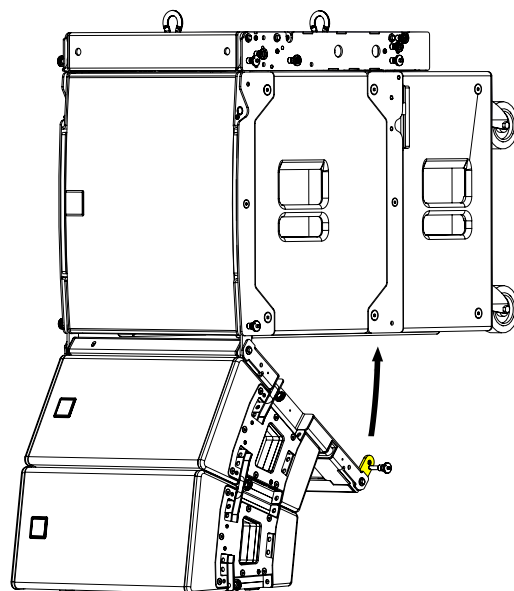
Rotate the front T8GRID sub links and connect to the front of the SXCF115 using the front rigging pins from the T8GRID



Rotate the rear T8GRID sub links

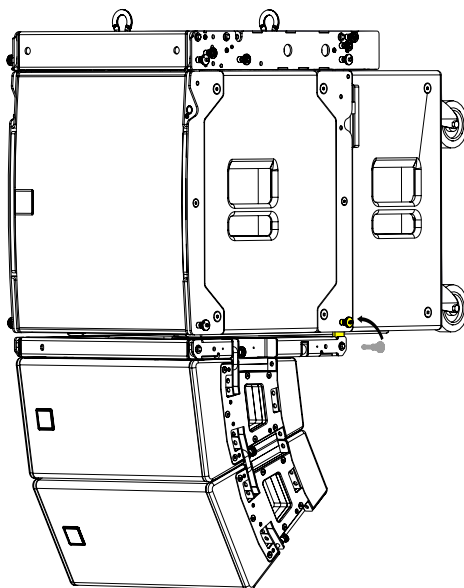


Swing the rear of the T8GRID to align the rear links





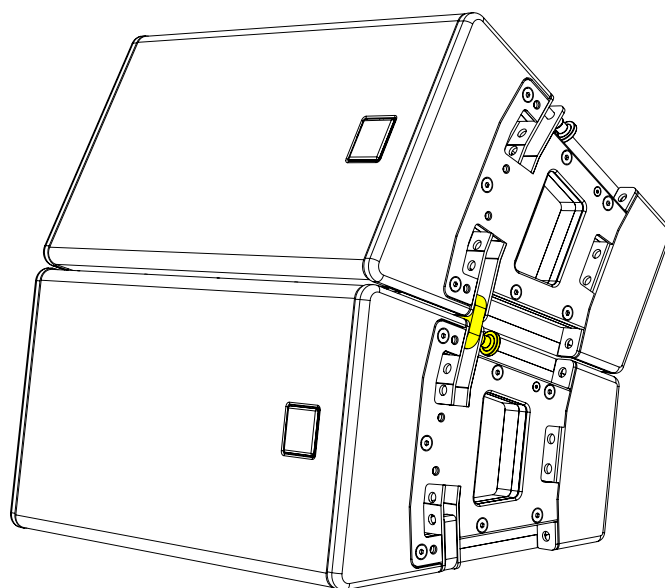
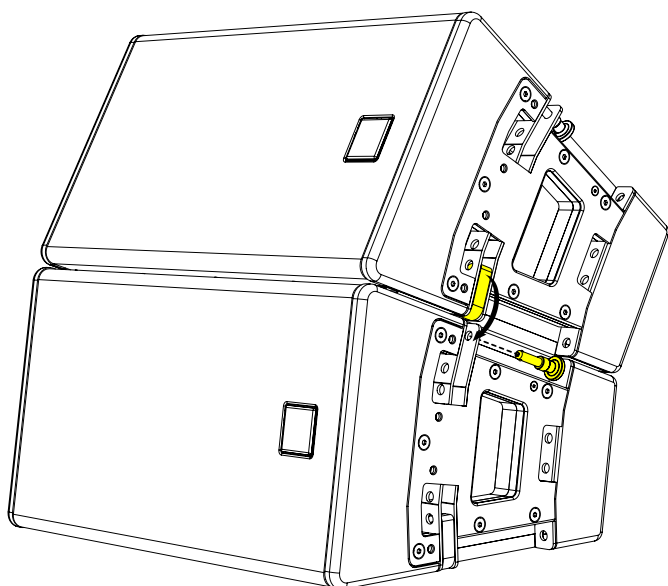
Connect to the rear of the SXCF115 using the rear rigging pins from the T8GRID



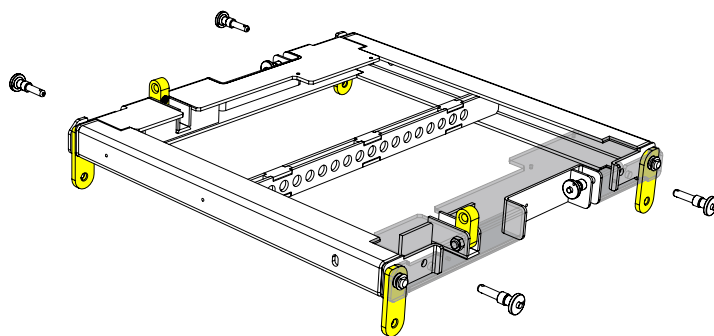
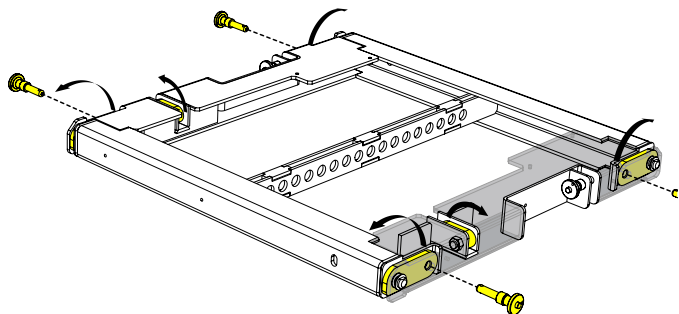
### *Horn left*

Place cabinets on top of each other.

Remove the rigging pins from the cabinet below, rotate the links and insert the rigging pins to secure.

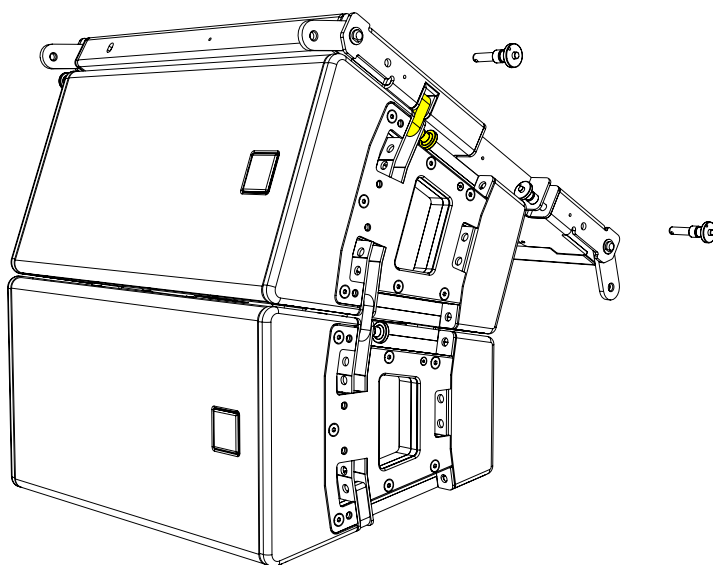
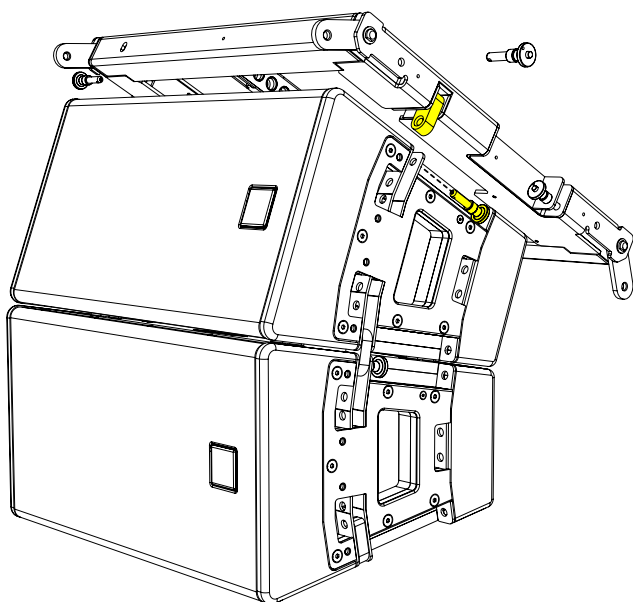


Remove the link pins and rotate the links. Links for T8 are held by a magnet, make sure they are moved from the stow position before attaching to the T8 array

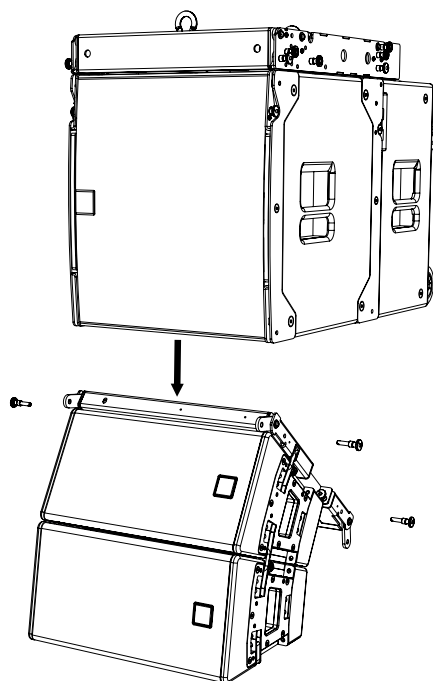


Rotate the T8GRID through 180° and place on top of the T8 cabinets. Remove the link pins from the cabinet.

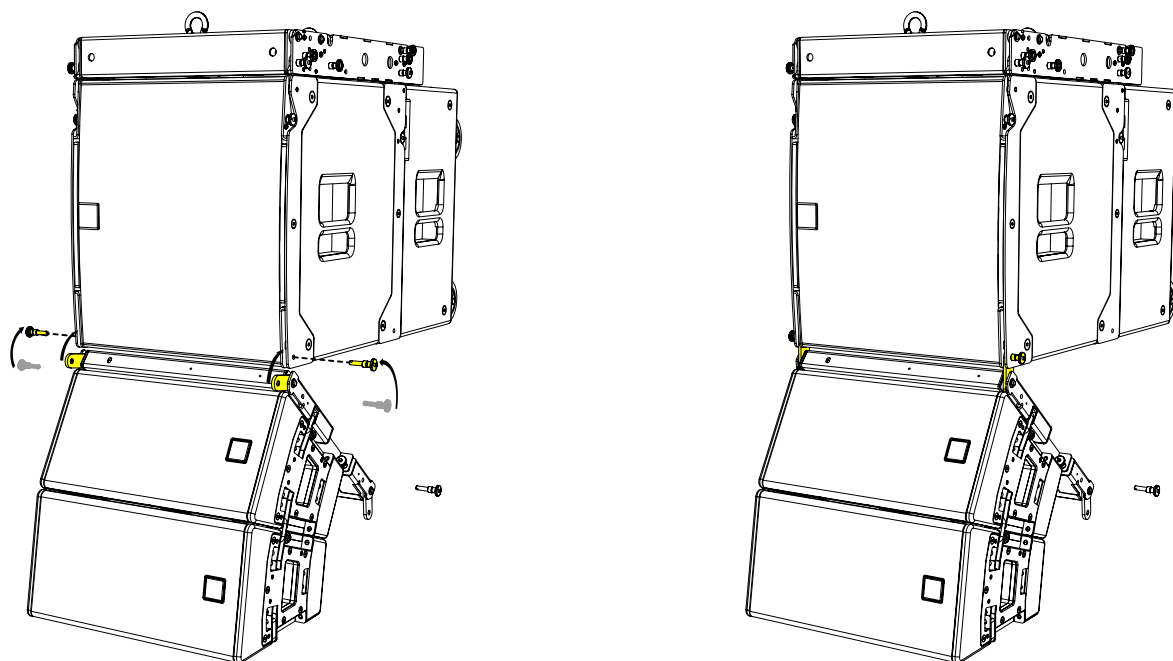
Replace the pins to lock the grid into position



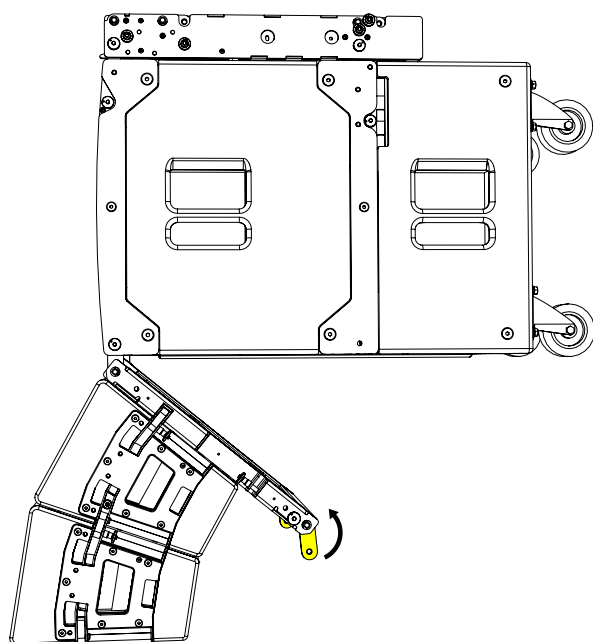
Position the T8 cabinets below the SXCF115 and lower the SXCF115 to connect the front links.



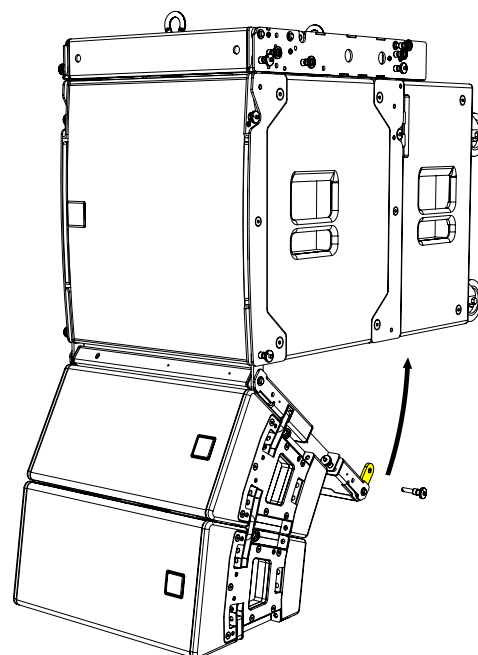
Rotate the front T8GRID sub links and connect to the front of the SXCF115 using the front rigging pins from the T8GRID



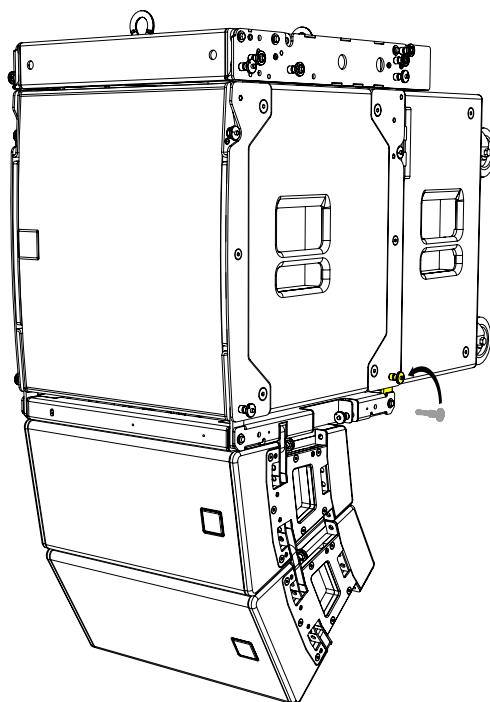
Rotate the rear T8GRID sub links



Swing the rear of the T8GRID to align the rear links



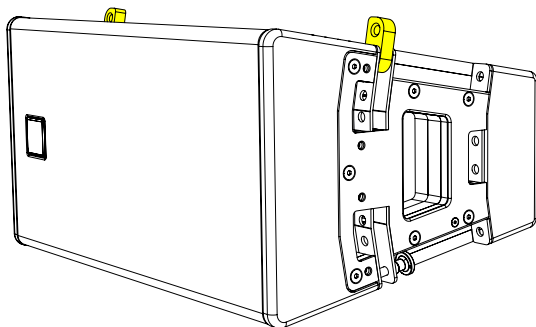
Connect to the rear of the SXCF115 using the rear rigging pins from the T8GRID



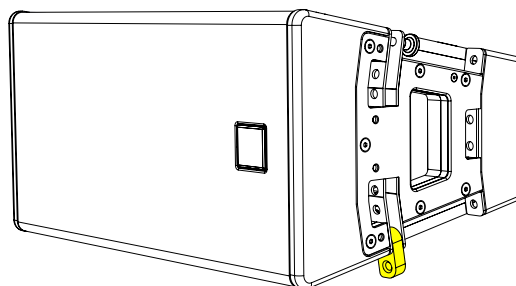
### T8PB

A rigging bar that can be mounted at the top and the bottom of the array allows extreme array deployment for installations.

When flying TORUS vertically the HF horn can be positioned on the left or the right to create symmetrical system design



*Linking up – HF horn to the right*

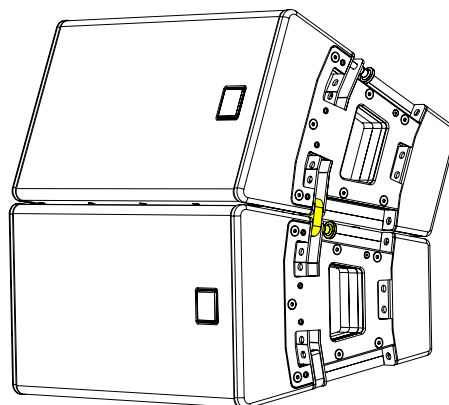
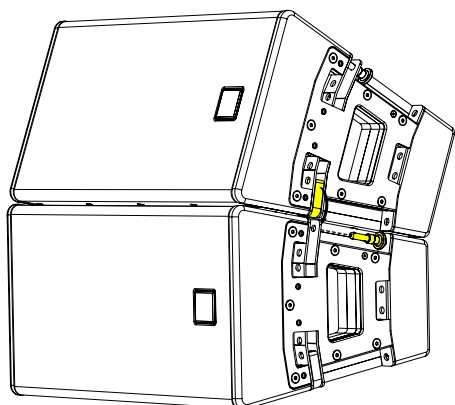


*Linking down – HF horn to the left*

### Horn Left

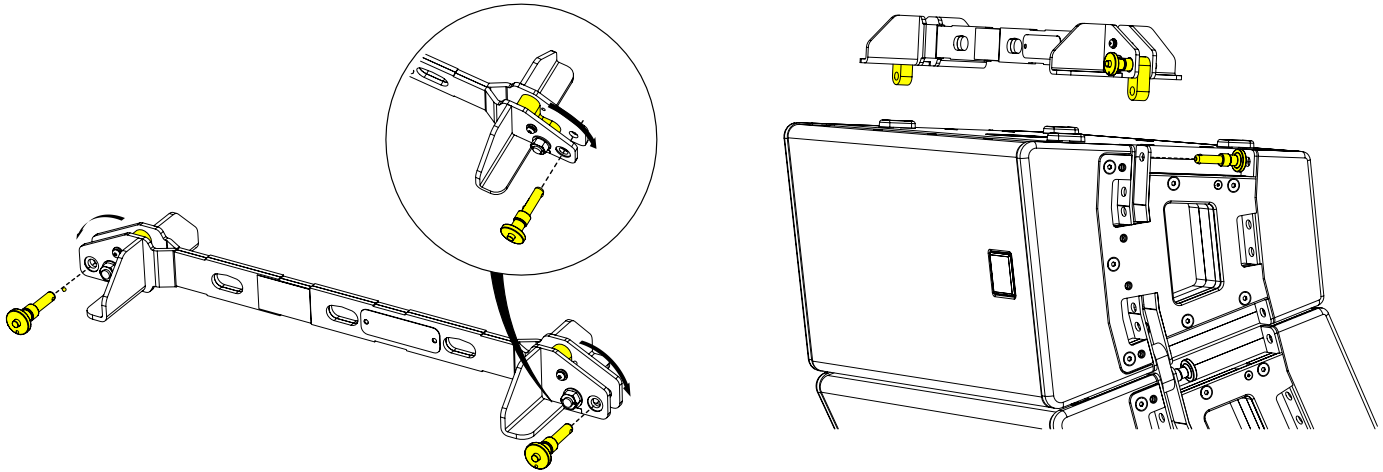
Place cabinets on top of each other. Remove the rigging pins from the cabinet below, rotate the links and insert the rigging pins to secure. Make sure the cabinet is secured on both sides.

Repeat the process until the desired number of cabinets have been vertically arrayed. A maximum of 6 cabinets can be flown from the T8PB in the vertical orientation.

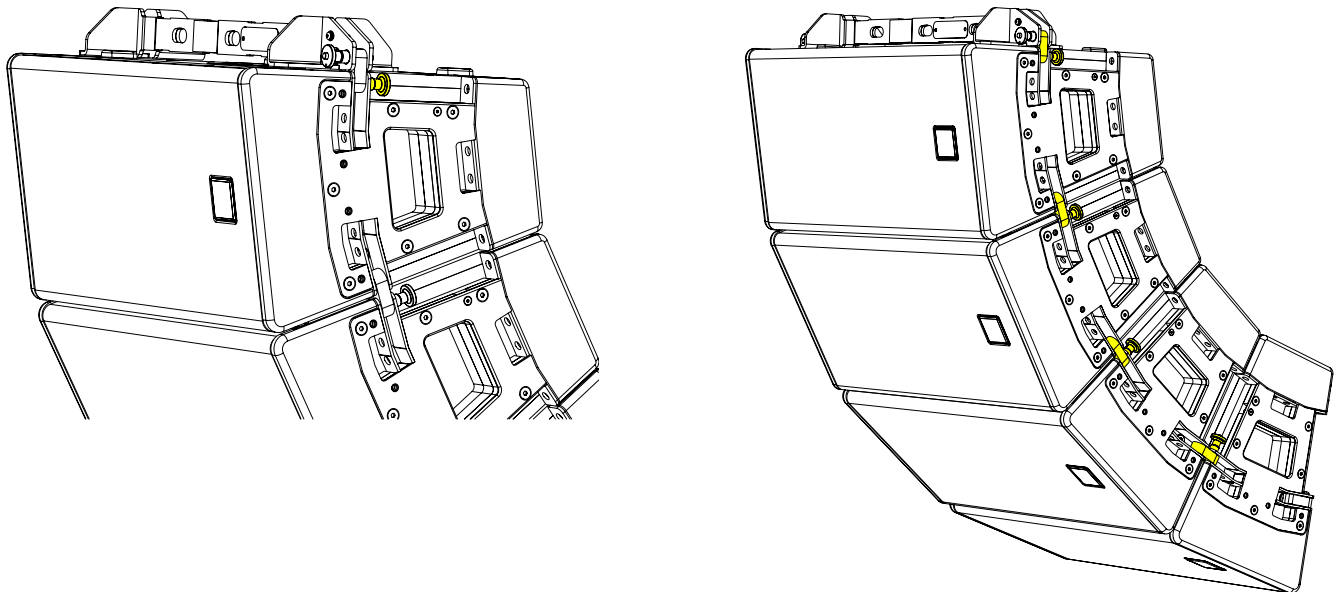




Rotate the links and position the T8PB on top of the TORUS cabinet

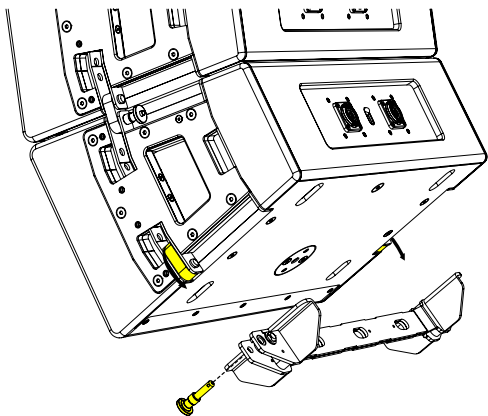


*Replace the rigging pins on both sides of the cabinet to secure.*

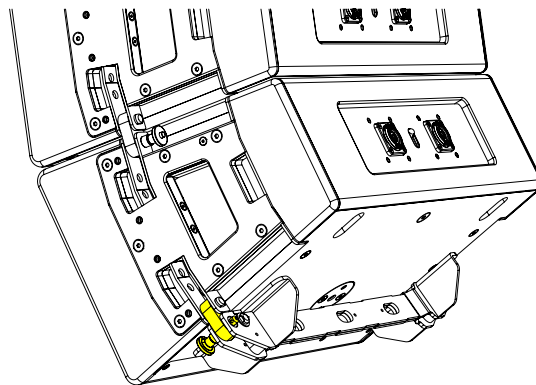


A second T8PB can be linked to the bottom of the array and used to achieve angles that are not possible with a single T8PB. This configuration can also be used to secure the array.

Rotate the links on the bottom cabinet and remove the rigging pins from the PB8.

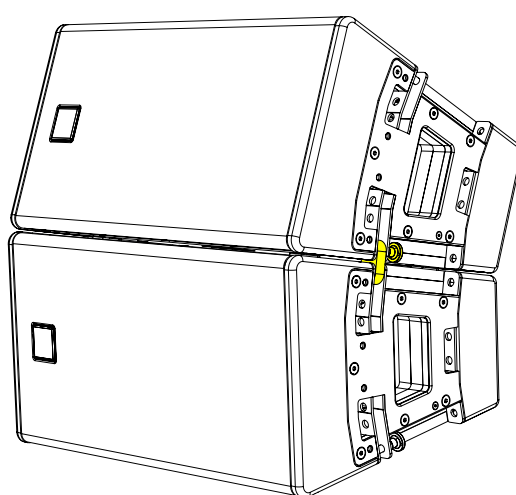
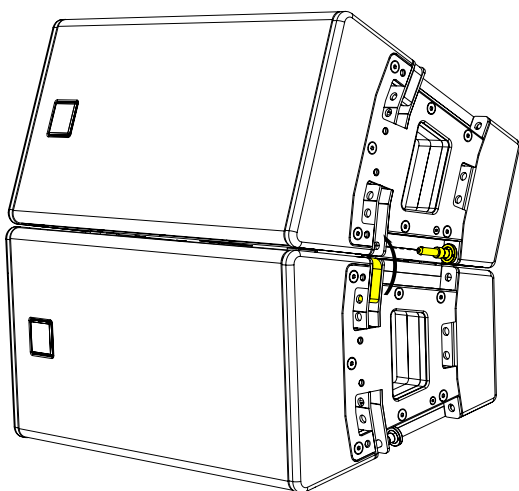


Secure the PB8 into the cabinet links and replace the rigging pins



### *Horn Right*

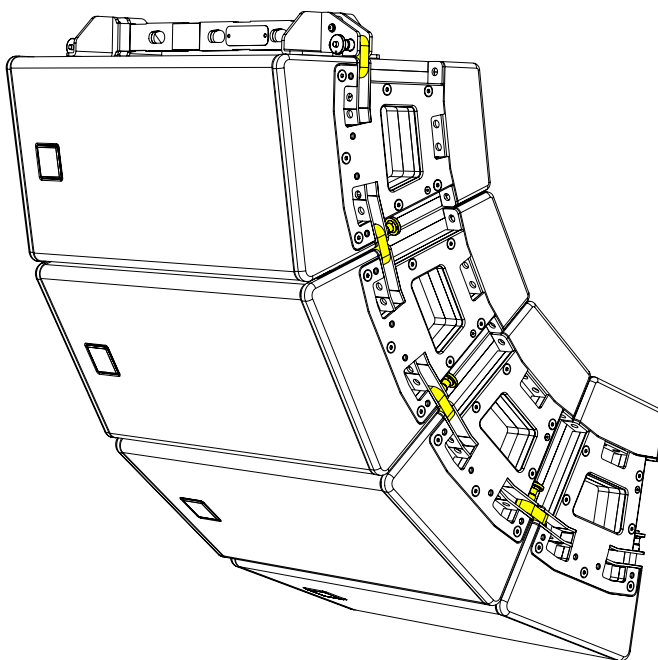
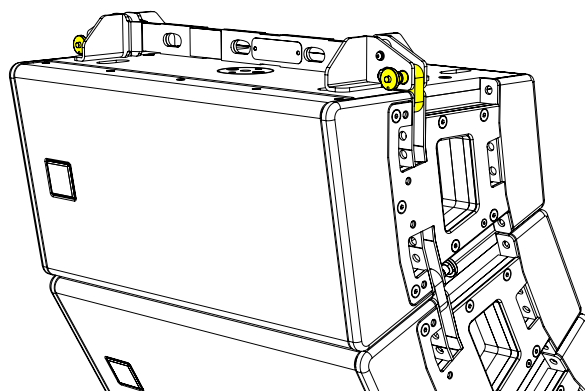
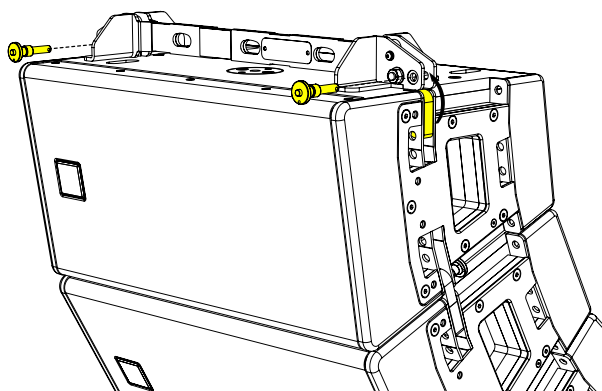
Place cabinets on top of each other. Remove the rigging pins from the cabinet above, rotate the links and insert the rigging pins to secure. Make sure the cabinet is secured on both sides.



Repeat the process until the desired number of cabinets have been vertically arrayed. A maximum of 6 cabinets can be flown from the T8PB in the vertical orientation.

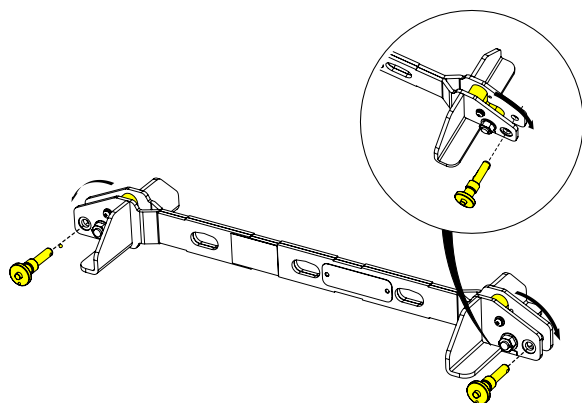
Position the T8PB on top of the TORUS cabinet, remove the rigging pins and rotate the links from the cabinet below.

Replace the rigging pins on both sides of the PB8 to secure to the array

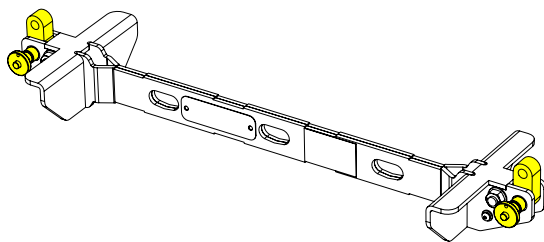


An additional T8PB can be linked to the bottom of the array and used to achieve angles that are not possible with a single T8PB. This configuration can also be used to secure the array.

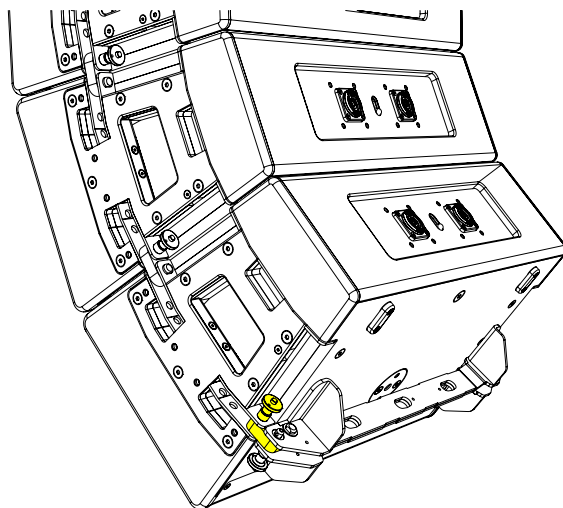
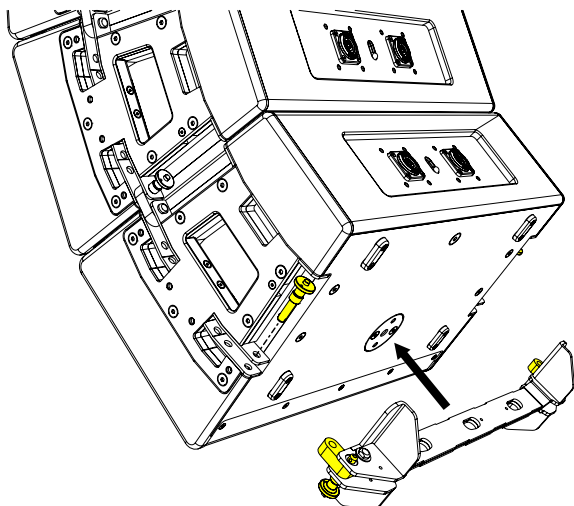
Remove the rigging pins from the PB8 and rotate the links



Replace the rigging pins to lock the links in place



Secure the PB8 into the cabinet rigging hardware and replace the rigging pins



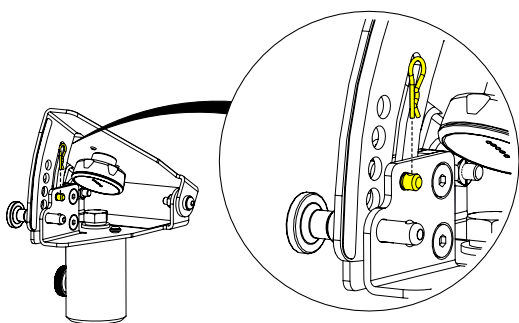
### POLERIG20

The vertical angle for a pole mounted TORUS can be adjusted and secured with a rigging pin. Angles available are

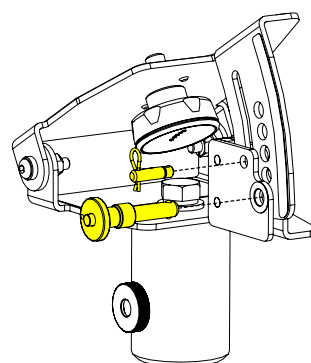
-10° to -30° in 5° increments

There are two mounting plates, one on either the top or the bottom of the cabinet (when in landscape). Decide which orientation you want the HF horn (left side or right side)

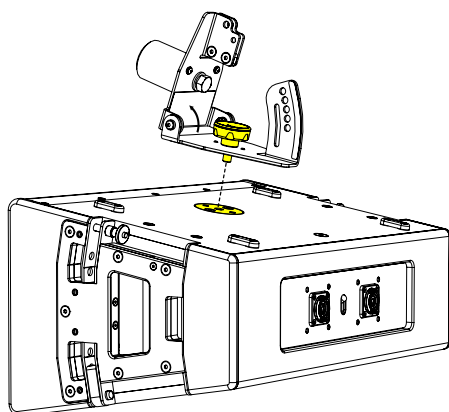
Remove the R-Clip from the safety pin



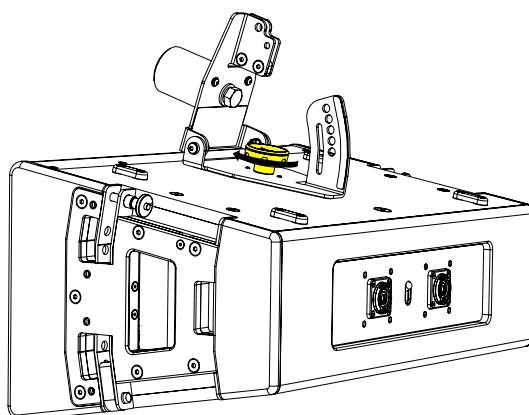
Remove the safety and rigging pin from the POLERIG20



Locate the POLERIG20 into the mounting plate

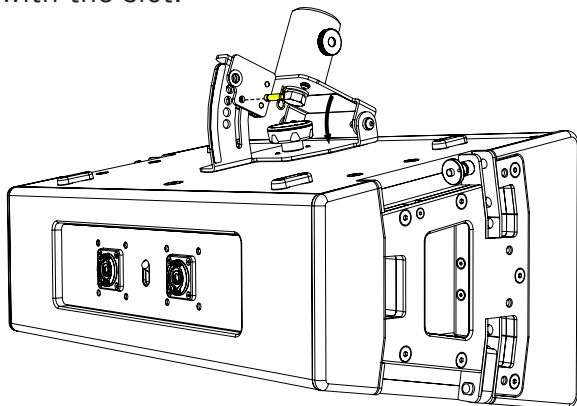


Tighten the handwheel until secure

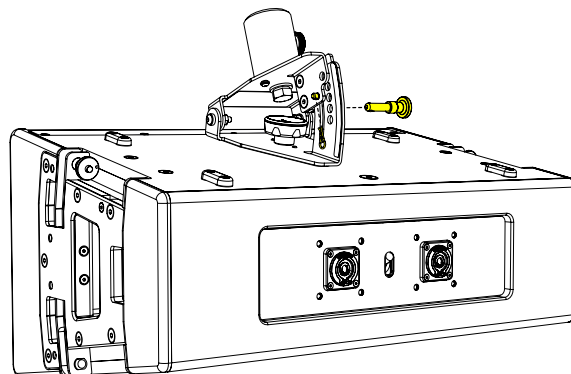




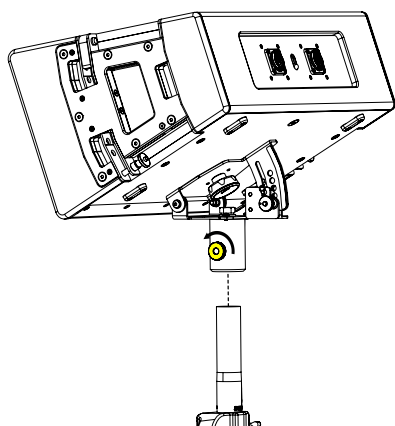
Rotate the base of the POLERIG20 and replace the safety pin, making sure it engages with the slot.



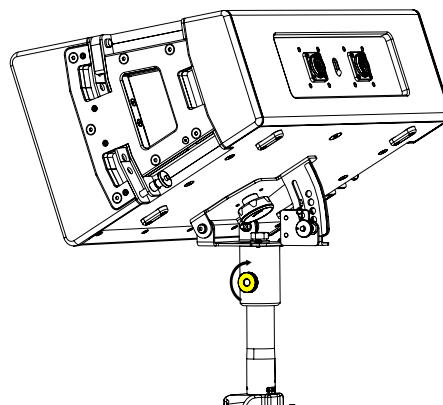
Replace the R-Clip and select the desired angle



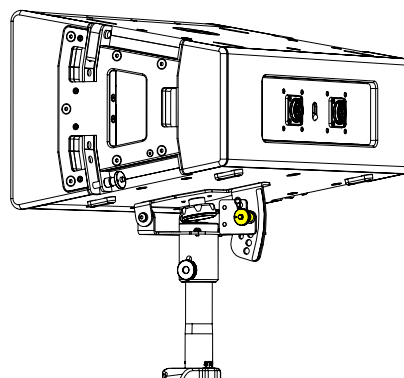
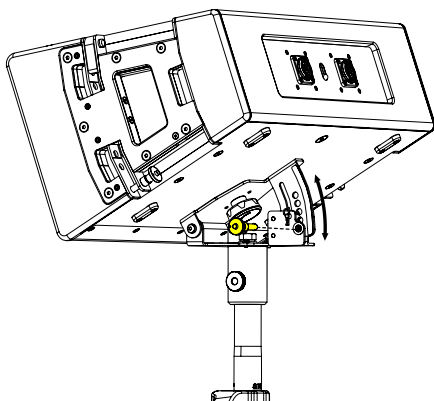
Before placing the cabinet onto a speaker stand or distance pole, undo the thumb wheel.



Place the cabinet on the stand or pole and secure by tightening the thumb wheel



The angle can be changed by removing the rigging and selecting one of the 5 holes available

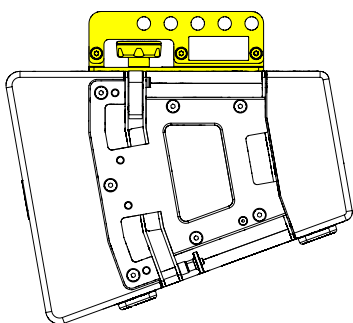


### SBAR40

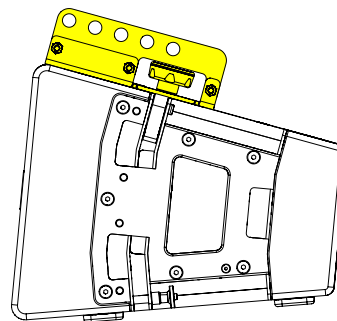
The SBAR40 is a simple accessory allowing 2 x T8 cabinets to be flown using 10 predetermined angles.

The SBAR can be mounted -

Towards the rear for - angles



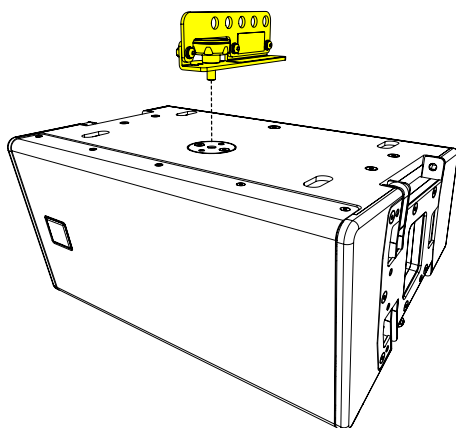
Towards the front for + angles.



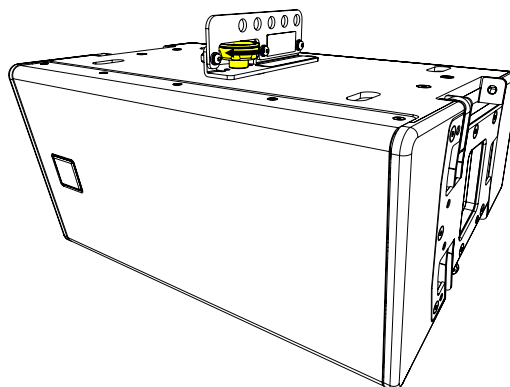
Please refer to DISPLAY 3 for angle options

There are two mounting plates, one on either the top or the bottom of the cabinet (when in landscape). Decide which orientation you want the HF horn (left side or right side)

Align the two pins and place the SBAR40 onto the mounting bracket.

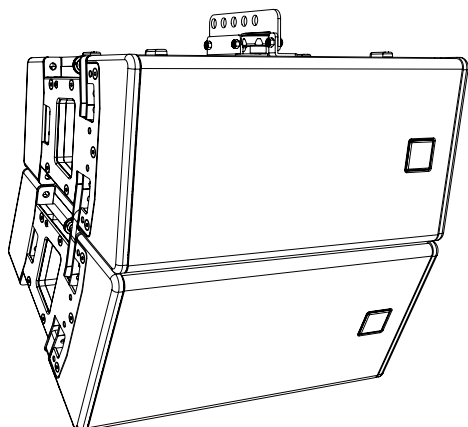


Turn the handwheel and tighten securely

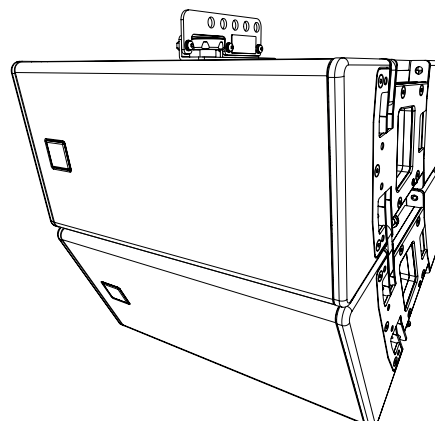


### Mounting options

#### *Horn Left*

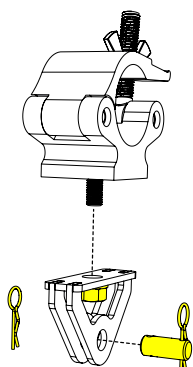


#### *Horn Right*

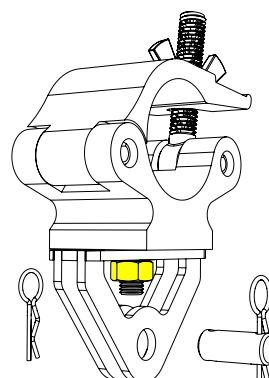


A half coupler adaptor can be used to suspend a single cabinet from the SBAR40.

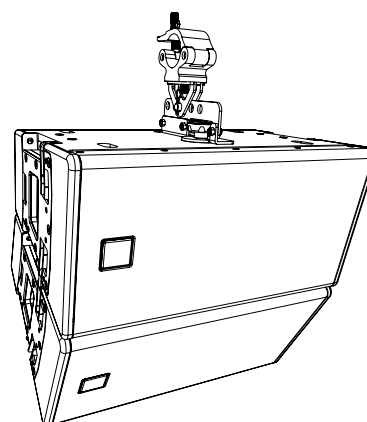
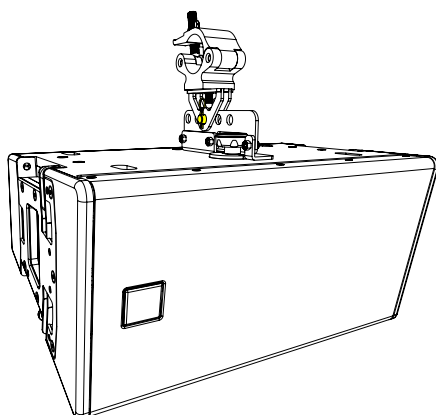
Remove the R-Clip to release the pin



Secure the half coupler to the adaptor



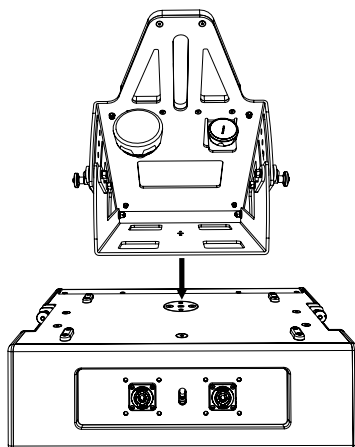
Position the adaptor in line with 1 of the 5 holes on the SBAR40 and replace the link pin and R-Clip



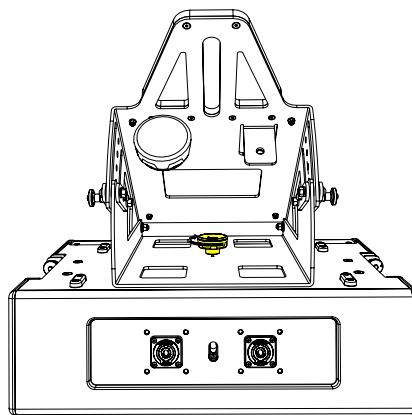
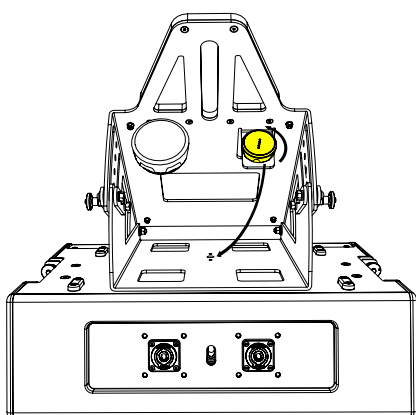
### GSRIG20

There are two mounting plates, one on either the top or the bottom of the cabinet (when in landscape). Decide which orientation you want the HF horn (left side or right side)

Align the two pins and place the GSRIG20 onto the mounting bracket

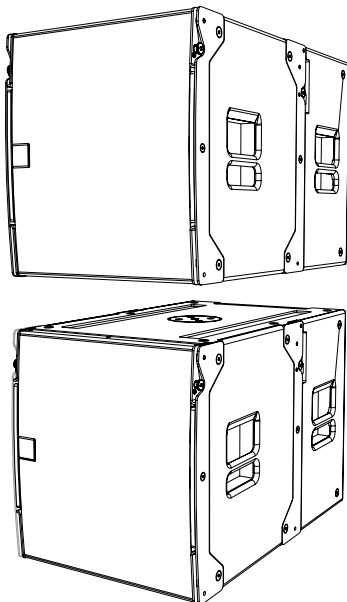


Remove the M10 handwheel from the stowing plate and secure to the plate through the mounting hole on the top plate of the GS20



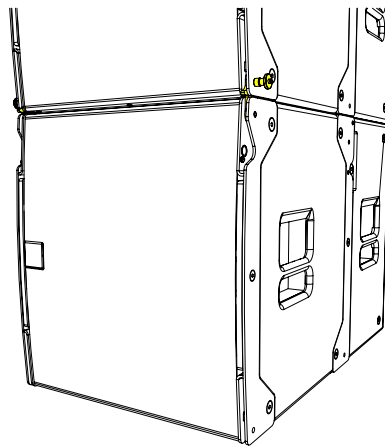
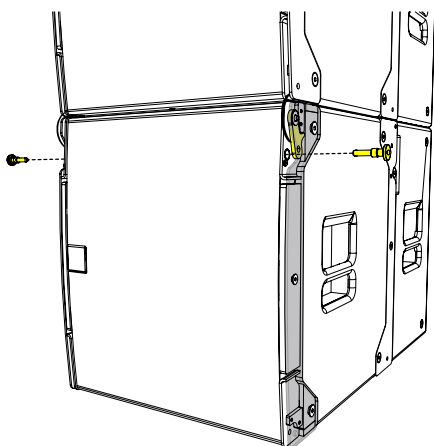
### Application example

Stack 2 x SXCF115 (one on top of the other).

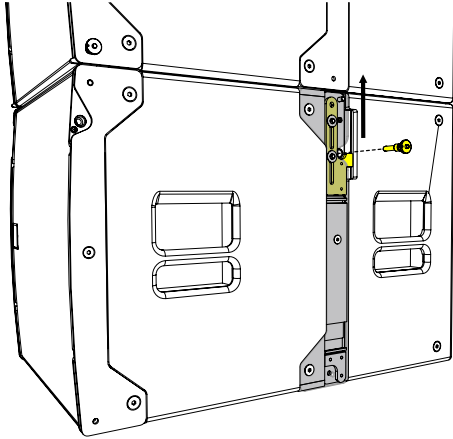


Remove the pins from the front SXCF115 to release the links.

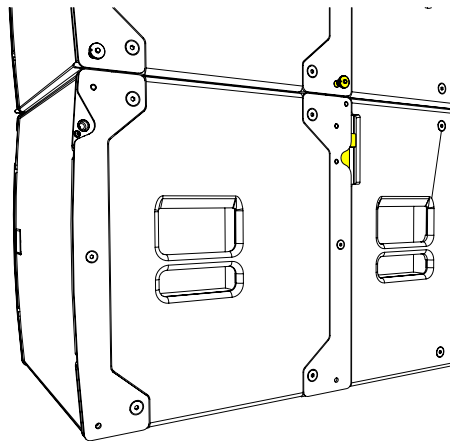
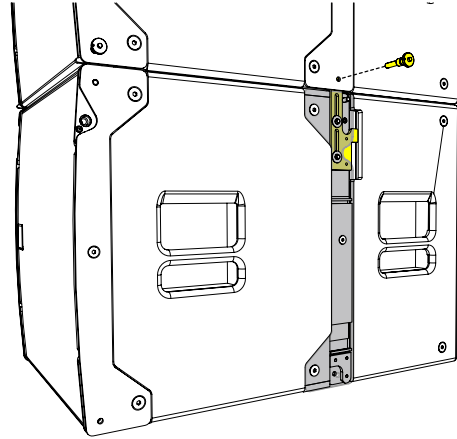
Rotate the links and line them up with the pin holes on the cabinet above.



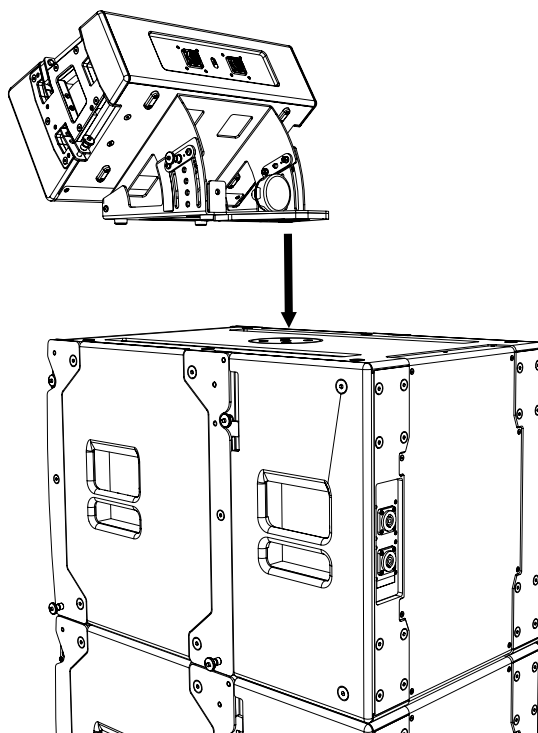
Remove the rear pins and lift the link



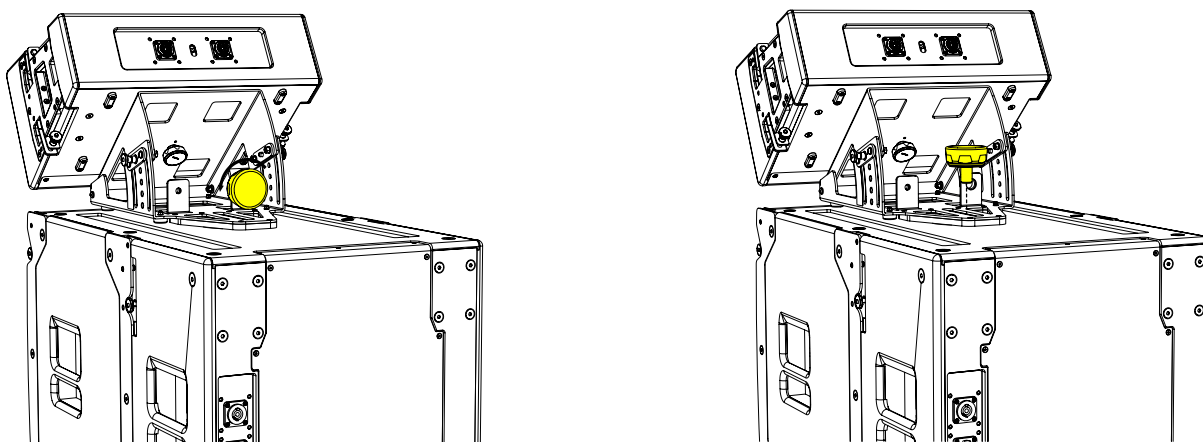
Insert the pins into the bottom of the top SXCF115 to lock the cabinets together



Place the assembly onto the top of the SXCF115 stack

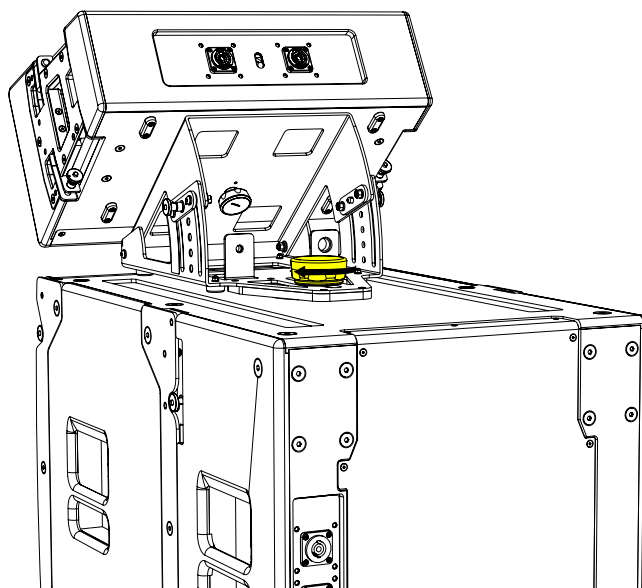


Remove the M20 handwheel from the stowing plate and secure to the M20 pole mount through the hole on the base plate of the GSRIG20



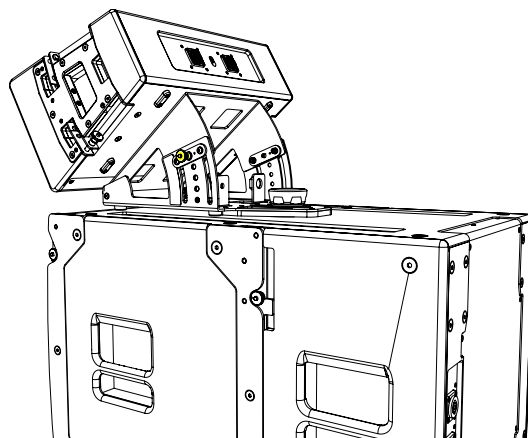
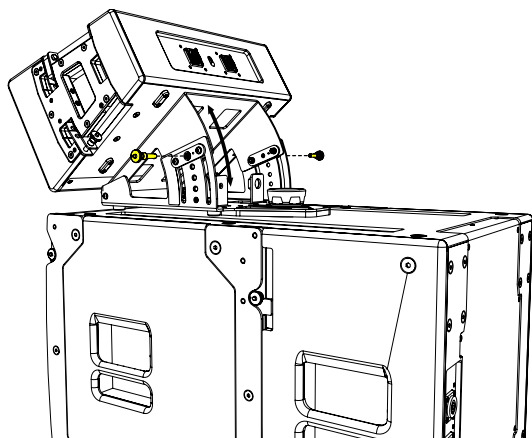


Tighten the M20 handwheel securely

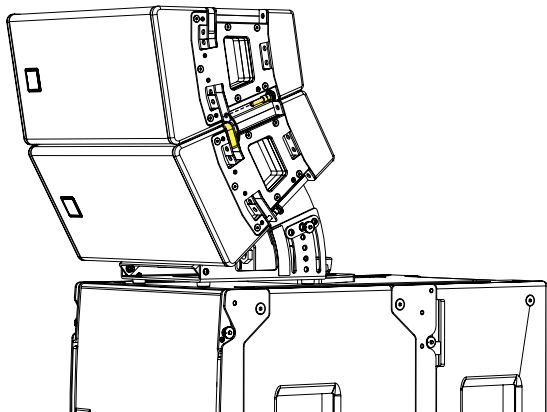


The angle of the GSRIG20 can be adjusted before adding more T8 cabinets, by removing the rigging pins from the side plates.

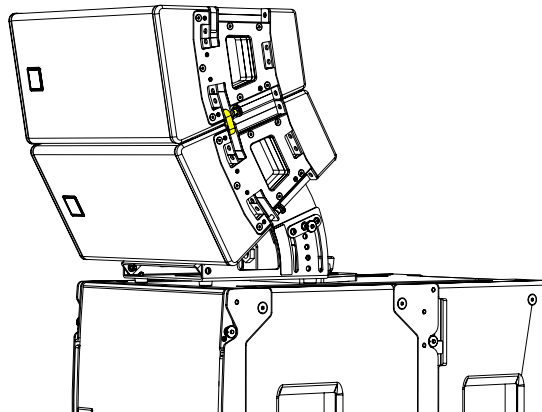
Replace the pins at the desired angle to lock into place



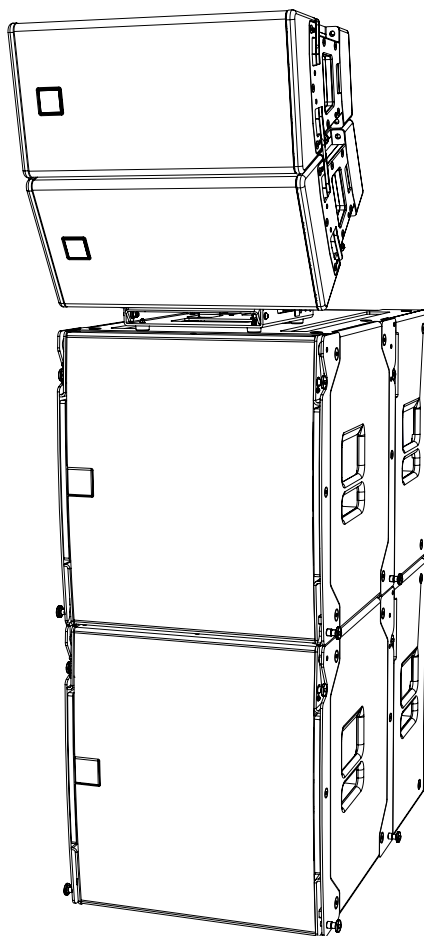
Place a cabinet on top and remove the rigging pins from the cabinet above, rotate the links.



Replace the rigging pins to secure. Make sure the cabinet is secured on both sides.



A maximum of three T8 cabinets can be arrayed on top of the T8GSRIG. Any Martin Audio subwoofer that has an M20 pole mount can be used with this accessory: for example SXC(F)115, SXC(F)118 and SX218.



## Essential maintenance

You must regularly inspect all rigging hardware for possible faults.

If you find any issues, repair the enclosures. Don't deploy them until deemed safe by a qualified expert.

The fixings that connect the rigging to the enclosures use internal Binx and Aerotight nuts. These nuts are designed to offer resistance to prevent the bolts from loosening, but they can become loose if the bolt has been adjusted or removed for service. Check that these fixings are tight and if not, do the following:

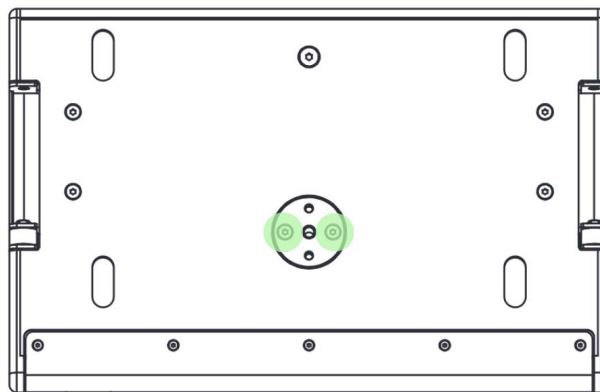
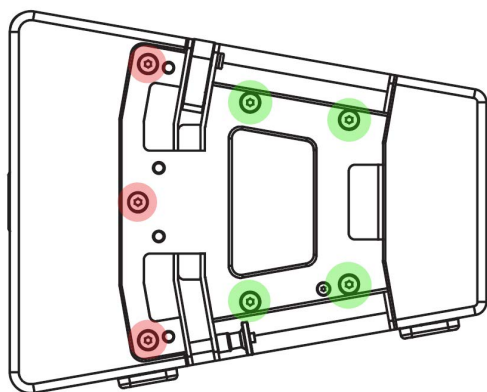
1. Remove the fixing bolt.
2. Clean the bolt using Loctite SF 7070 and dry.
3. Apply Loctite 243 to the bolt.
4. Fit the bolt.
5. Allow to dry for 24 hours before deploying the enclosure.

## Torque setting

M6 bolts highlighted in green below      8 Nm

M6 bolts highlighted in red below      4 Nm

These settings are for the highlighted bolts only. Don't use these settings for any other bolts.

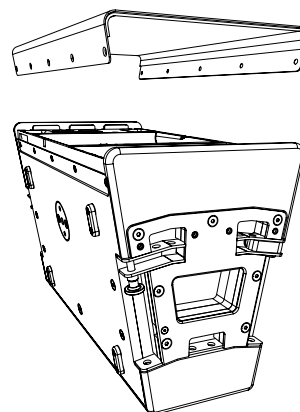
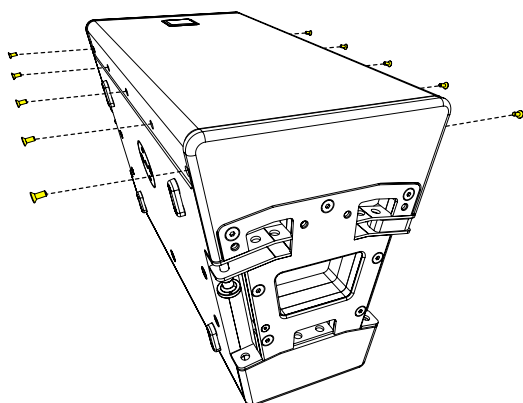


## Replacing the LF Driver

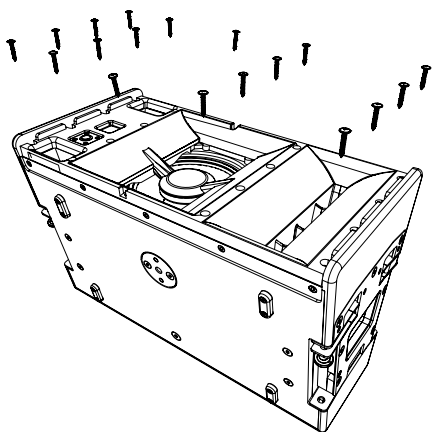
To do this you need the following tools:

- 4mm hex tool
- 5mm hex tool
- No. 2 Posi Screwdriver

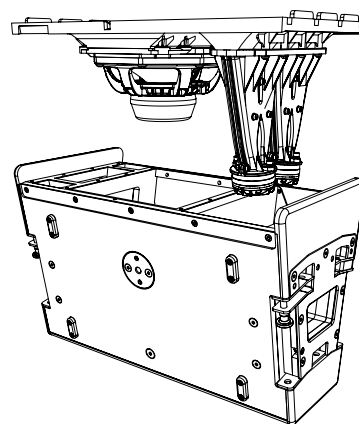
Remove the countersunk hex fasteners from the grille. (4mm hex tool)



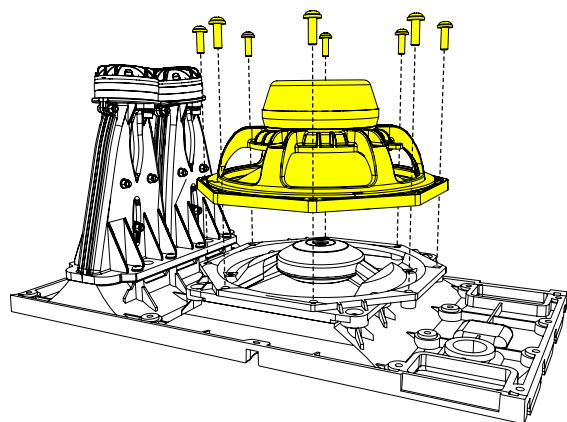
Remove the No. 8 Flange head screws



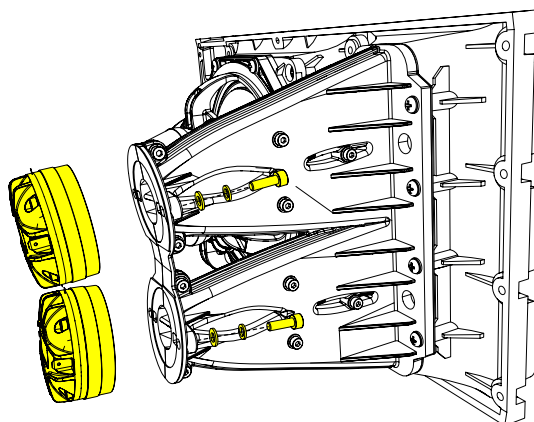
Lift the horn assembly out of the enclosure and disconnect the terminal spades on the LF and HF drivers



Remove the Pan head fasteners with a posi head screwdriver to remove the LF driver



Remove the hex bolts using the M5 hex tool to remove the HF drivers



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