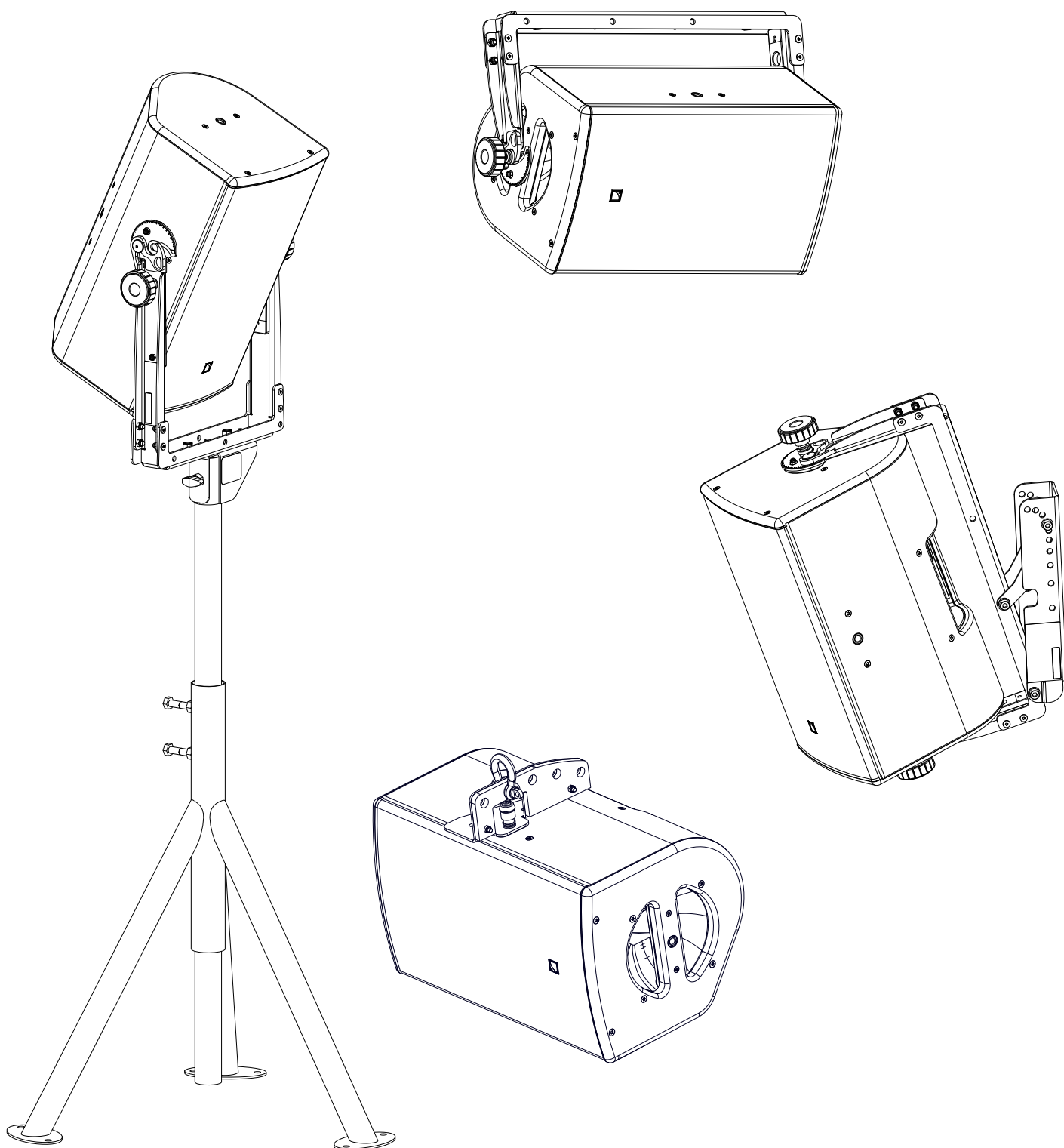


# X8

rigging manual 1.0 (EN)



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# Safety

## Instructions

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**Never incorporate equipment or accessories not approved by L-Acoustics.**

**Read all the related PRODUCT INFORMATION documents shipped with the products before exploiting the system.**



**Do not store the product on an unstable cart, stand, tripod, bracket, or table.**



**Respect the Working Load Limit (WLL) of third party equipment.**

L-Acoustics is not responsible for any rigging equipment and accessories provided by third party manufacturers. Verify that the Working Load Limit (WLL) of the suspension points, chain hoists and all additional hardware rigging accessories is respected.

**Respect the maximum configurations and the recommended safety precautions.**

For safety issue, respect the maximum configurations outlined in this manual. To check the conformity of any configuration in regards with the safety precautions recommended by L-Acoustics, model the system in Soundvision and refer to the warnings in Mechanical Data section.

**Be cautious when flying a loudspeaker configuration.**

Always verify that no one is standing underneath the loudspeaker array when it is being raised. As the array is being raised, check each individual element to make sure that it is securely fastened to the adjacent element. Never leave the array unattended during the installation process.

As a general rule, L-Acoustics recommends the use of safety slings at all times.

**Be cautious when ground-stacking a loudspeaker array.**

Do not stack the loudspeaker array on unstable ground or surface. If the array is stacked on a structure, platform, or stage, always check that the latter can support the total weight of the array.

As a general rule, L-Acoustics recommends the use of safety straps at all times.

**Take into account the wind effects on dynamic load.**

When a loudspeaker assembly is deployed in an open air environment, wind can produce dynamic stress to the rigging components and suspension points.

If the wind force exceeds 6 bft (Beaufort scale), lower down and/or secure the loudspeaker array.



**Read the USER MANUAL before operating the system.**

Use the loudspeaker system components described in the user manual and follow the operating instructions.



**Do not expose the product to extreme conditions.**

Do not expose the product to rain or sea spray.

Do not expose the product to moisture (mist, steam, humidity, condensation...) or excessive heat (direct sun, radiator...) for a long period of time.

## Symbols

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The following symbols are used in this document:



This symbol indicates a potential risk of harm to an individual or damage to the product.

It can also notify the user about instructions that must be strictly followed to ensure safe installation or operation of the product.



This symbol notifies the user about instructions that must be strictly followed to ensure proper installation or operation of the product.



This symbol notifies the user about complementary information or optional instructions.

# Welcome

Thank you for purchasing the L-Acoustics X8.

**As part of a continuous evolution of techniques and standards, reserves the right to change the specifications of its products and the content of its document without prior notice.** Please check on a regular basis to download the latest document and software updates.

# System components

## Loudspeaker enclosures

X8	Passive 2-way coaxial enclosure
SB15m	Compact subwoofer enclosure

## Rigging elements

EMBi	Pole mount socket
CLAMP250	Clamp certified for 250 kg
X-UTILT	U-bracket wallmount for X series with tilt adjustment
X-BAR	Rigging bar for X series
X-UL8	Long U-bracket for X8
X-US8	Short U-bracket for X8

## Software applications

Soundvision	3D acoustical and mechanical modeling software.
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### Other X8 system components

All the other components of the system are presented in the X8 user manual, document intended to describe the enclosure configurations and connection schemes.

# Mechanical safety

## Maximum configurations

The X8 rigging system complies with 2006/42/EC: Machinery Directive. It has been designed following the guidelines of BGV-Cl.

2006/42/EC: Machinery Directive specifies a safety factor of 4:1 against the rupture. The limits specified in the tables below are given with a safety factor of

- **5:1 or higher** for flown deployments,
- **1.8:1 or higher** for ground-stacked deployments.

Refer to Soundvision for the safety factor of a specific deployment.

The **safe limit** gives the maximum number of elements for which the safety factor is always compliant with the 2006/42/EC: Machinery Directive, regardless of the other deployment parameters (site angles, inter-enclosure angles, etc.)

The **maximum limit** gives the maximum number of elements for which the safety factor can be compliant with the 2006/42/EC: Machinery Directive, when the other deployment parameters provide the best mechanical conditions.

### X8

Configuration	Rigging accessory	Maximum / Safe limit
Ground-stacked	No rigging accessory	1
Flown	X-UTILT /X-UL8 /X-US8 /X-BAR	1

### SB15m

Configuration	Rigging accessory	Maximum / Safe limit
Ground-stacked	No rigging accessory	4



### Mechanical safety of the rigging system

Before any installation, always model the system in Soundvision and check the **Mechanical Data** section for any stress warning or stability warning.



## Assessing mechanical safety

In order to assess the actual safety of any array configuration before implementation, refer to the following warnings:



### **Rated working load limit (WLL) is not enough**

The rated WLL is an indication of the element resistance to tensile stress. For complex mechanical systems such as loudspeaker arrays, WLLs cannot be used per se to determine the maximum number of enclosures within an array or to assess the safety of a specific array configuration

### **Mechanical modeling with Soundvision**

The working load applied to each linking point, along with the corresponding safety factor, will depend on numerous variables linked to the composition of the array (type and number of enclosures, splay angles) and the implementation of the flying or stacking structure (number and location of flying points, site angle). This cannot be determined without the complex mechanical modeling and calculation offered by Soundvision.

### **Assessing the safety with Soundvision**

The overall safety factor of a specific mechanical configuration always corresponds to the lowest safety factor among all the linking points. Always model the system configuration with the Soundvision software and check the **Mechanical Data** section to identify the weakest link and its corresponding working load. By default, a stress warning will appear when the mechanical safety goes beyond the recommended safety level.

### **Safety of ground-stacked arrays in Soundvision**

For ground-stacked arrays, a distinct stability warning is implemented in Soundvision. It indicates a tipping hazard when the array is not secured to the ground, stage or platform. It is user responsibility to secure the array and to ignore the warning.

### **Additional safety for flown arrays**

When flying an array, use the M8 DIN580 threaded insert to implement a secondary safety.

### **Considerations must be given to unusual conditions**

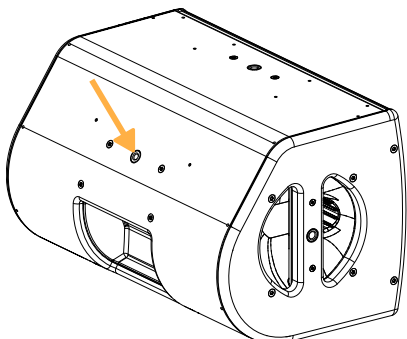
Soundvision calculations are based on usual environmental conditions. A higher safety factor is recommended with factors such as extreme high or low temperatures, strong wind, prolonged exposition to salt water, etc. Always consult a rigging specialist to adopt safety practices adapted to such a situation.

## Rigging system description

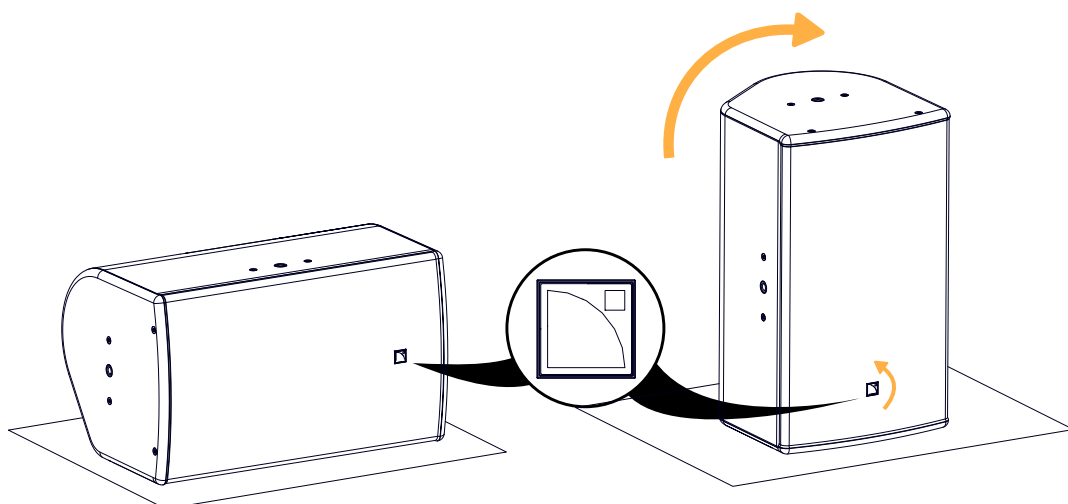
### X8

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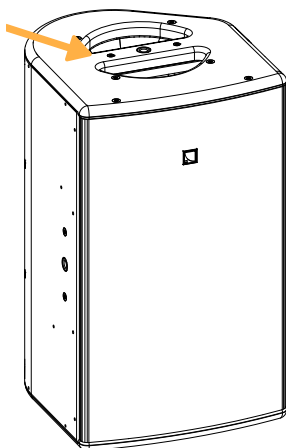
X8 features a M8 DIN580 threaded insert designed to implement a secondary safety.



The logo on the enclosure front can be rotated to adapt to every configuration.



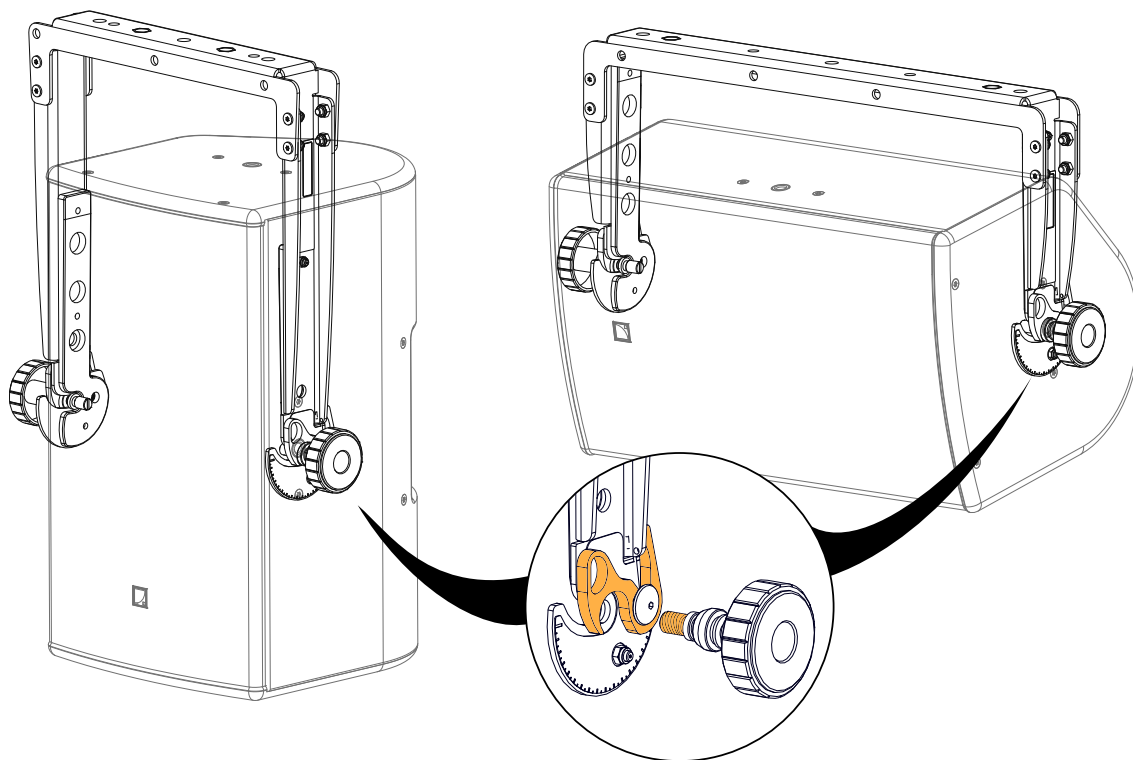
X8 features an ergonomic handle for easy transportation.



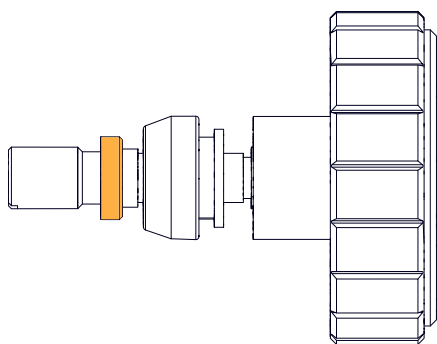
## Elements for flying and wall-mounting

### X-US8 and X-UL8

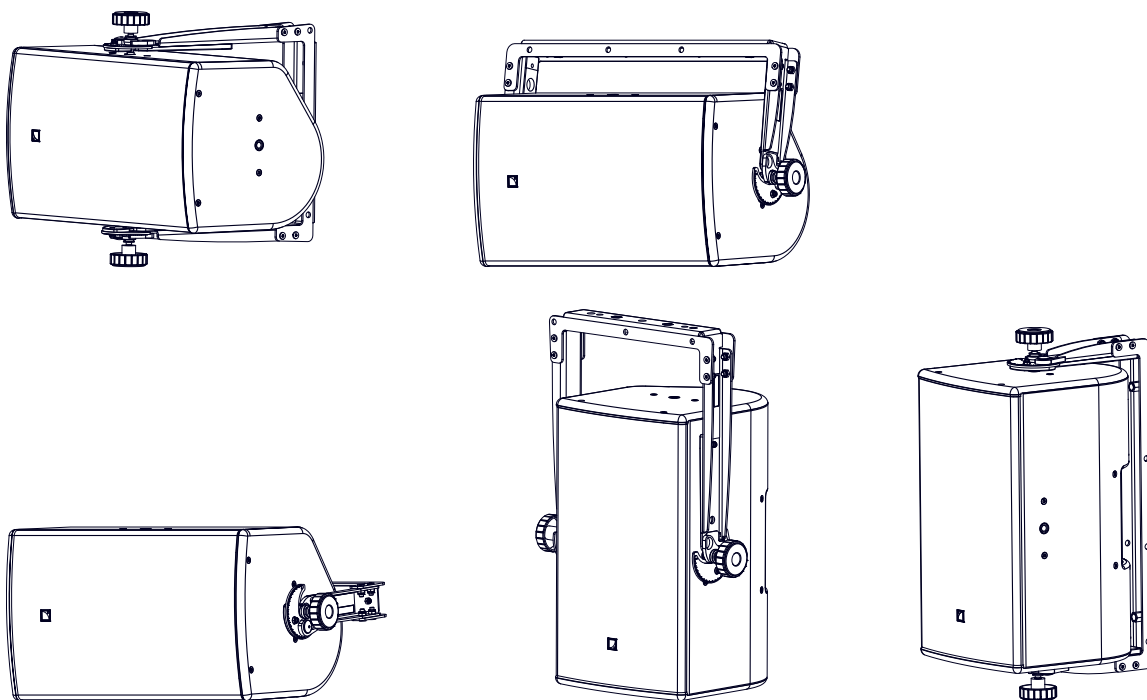
X8 can be fitted with a short U-bracket, X-US8, or a long U-bracket, X-UL8. The brackets are secured in the enclosure inserts with two threaded knobs. A spring-lock safety mechanism secures the knobs in the U-brackets.



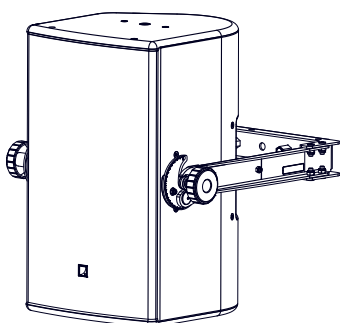
The threaded knobs feature a washer as a safety to avoid the accidental loosening of the knob.



X-US8 and X-UL8 can be used for wall-mounting, ceiling-mounting or flying X8.



**!** With the short U-bracket in horizontal position, the enclosure applies a diagonal force of 179 dekanewtons on the anchoring points.  
Apply the appropriate safety factor.

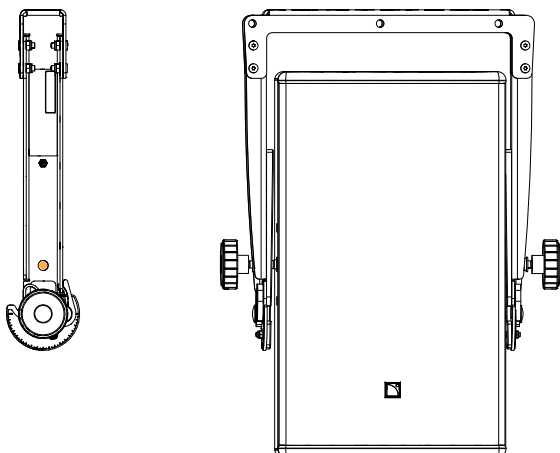


X-US8 features an additional hole on the sides to closely fit the enclosure and to optimize visual impact.

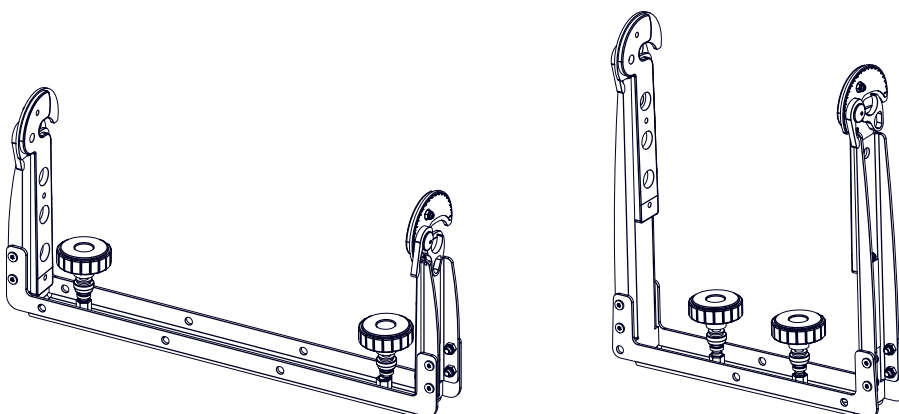


**When using the additional hole, consider the maximum site angle available.**

See [Maximum angles](#) (p.34).



The knobs shall be stored in the U-brackets.

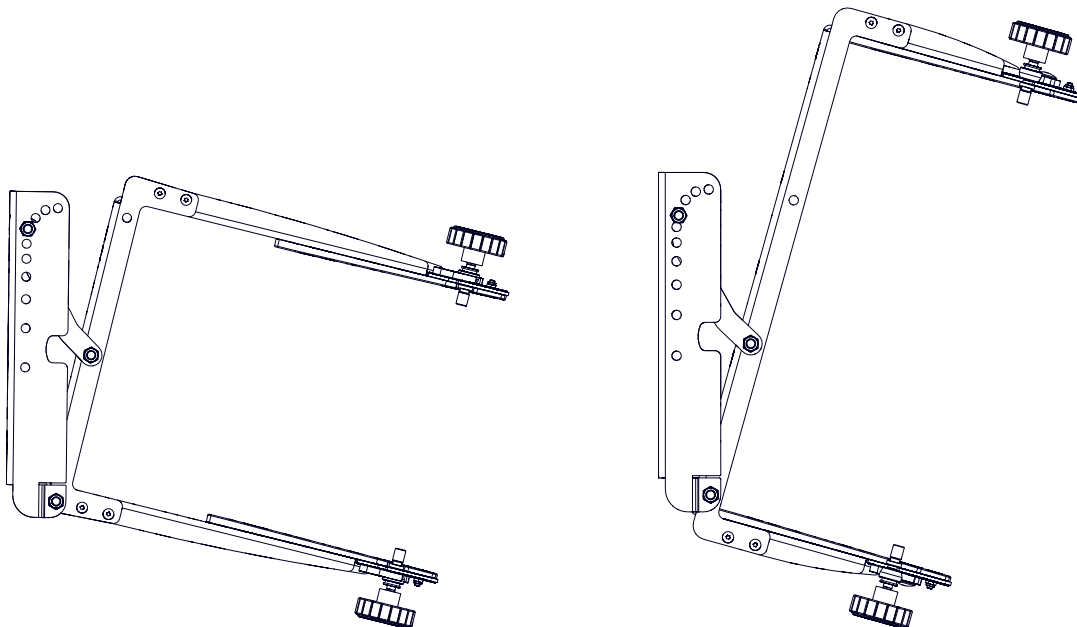


## X-UTILT

X-UTILT is a tilt adjustment accessory compatible with X-US8 and X-UL8. X-UTILT provides negative site angle setting combined with azimuth angle setting capabilities in a wall-mount configuration. The site angle can be set from 0° to -45° in 5° steps. The azimuth angle can be adjusted with the U-bracket.

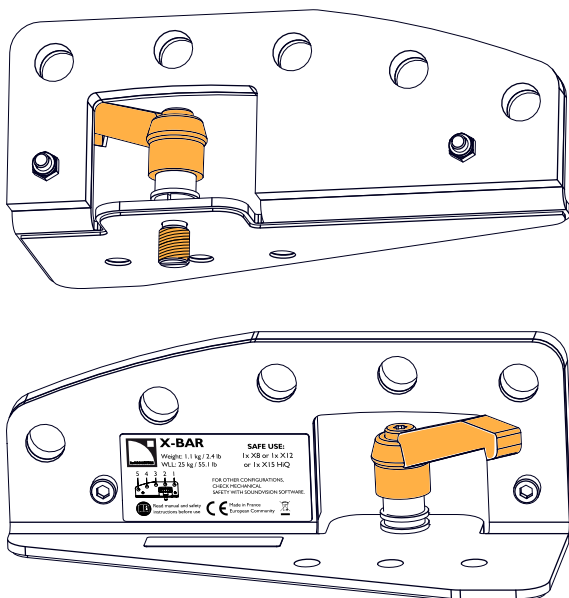


**X-UTILT shall only be used vertically.**

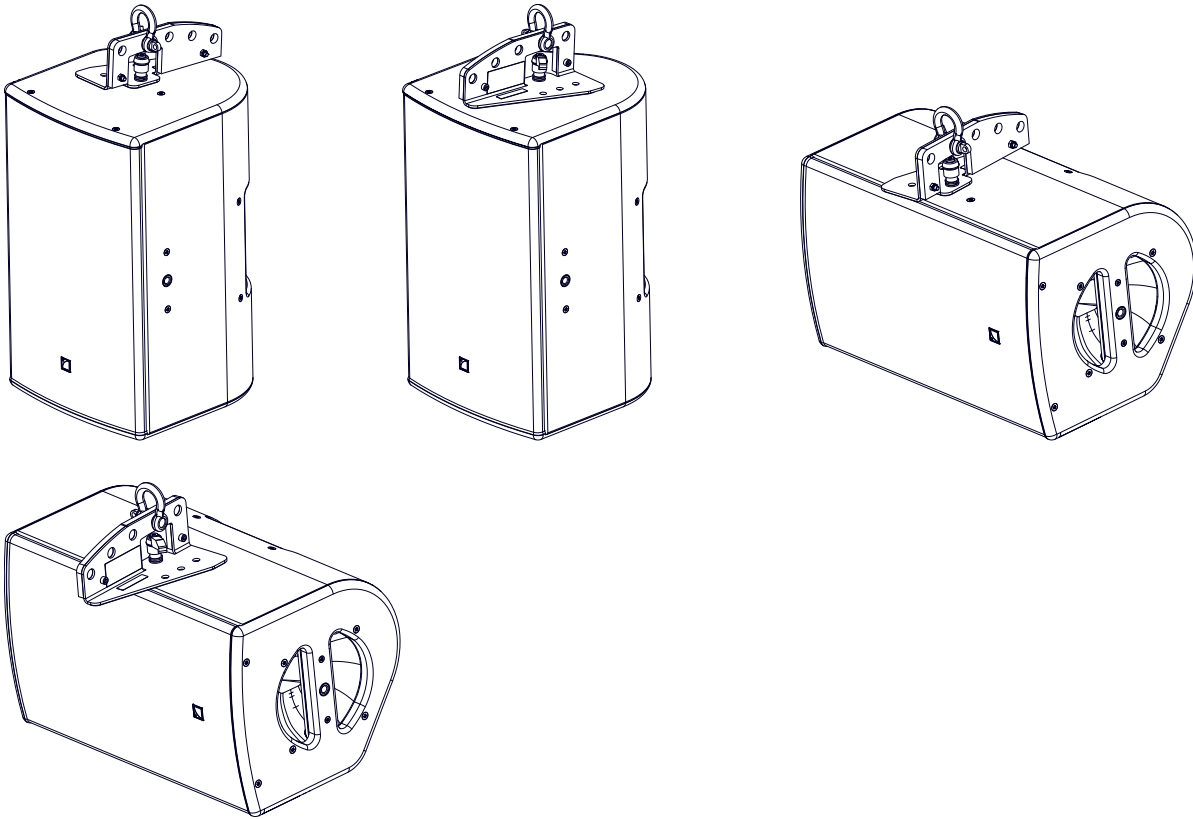


## X-BAR

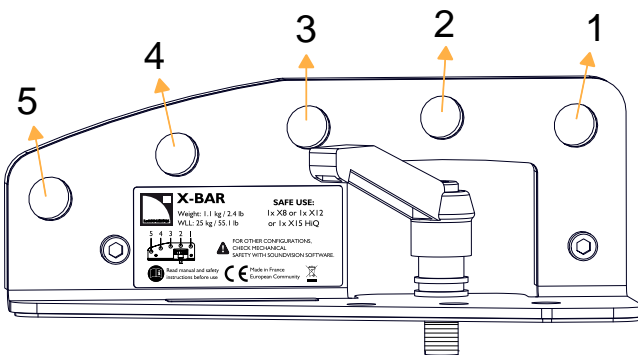
X-BAR is a rigging bar for flying the X8. The rigging system consists of a threaded axis with a cam lever.



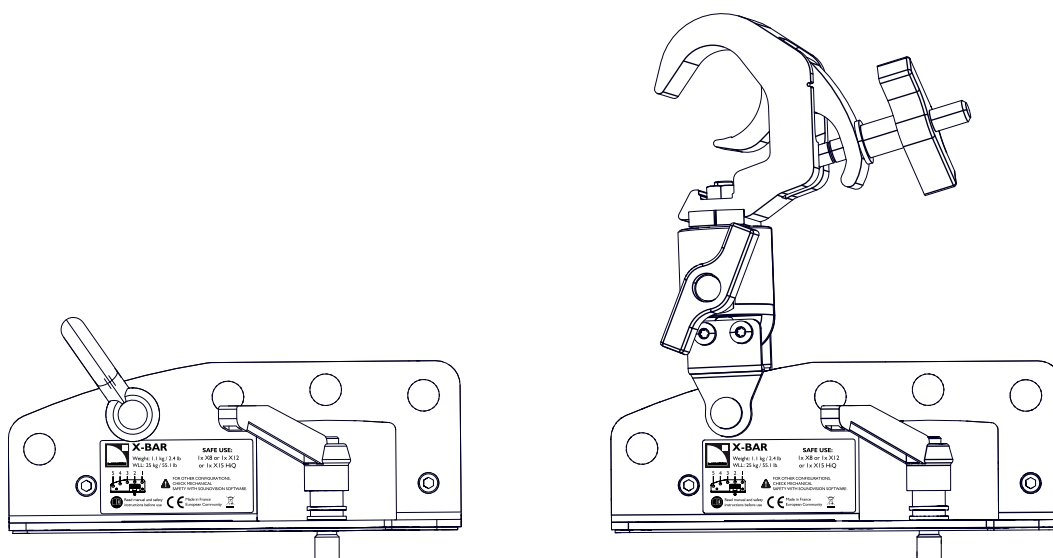
X-BAR shall be secured to the inserts on the enclosure, perpendicular to the front.



Five angulation holes are available.



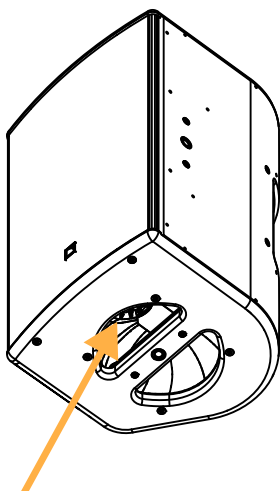
X-BAR is compatible with a CMU 1 T 12 mm shackle (provided) and with CLAMP250.



## Elements for pole-mounting

### Pole socket

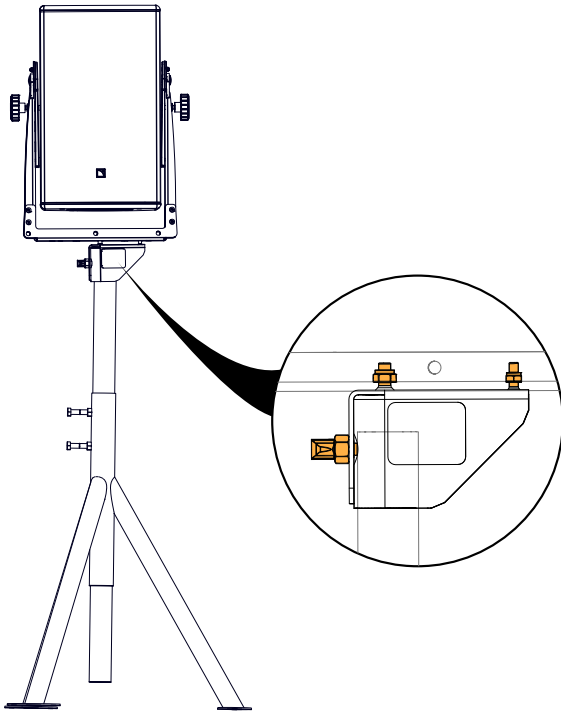
X8 features a 35 mm pole-socket integrated in the handle.





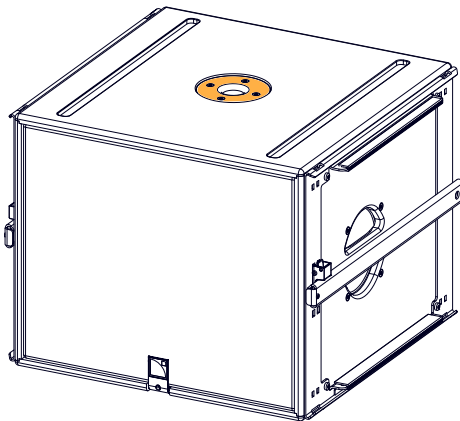
## EMBi

EMBi is a pole-mount adapter for X-US8 (35 mm pole). The site angle can be adjusted with the U-bracket.



## Subwoofer

SB15m features a 35 mm pole socket.



# Rigging procedures

## Mounting on a U-bracket

type of deployment	wall-mounting
	ceiling-mounting
rigging accessories	X-US8 or X-UL8
additional material	3 x M10 screws
	electric screwdriver
min number of operators	1 or 2



### **Additional safety for flown arrays**

When flying an array, use the M8 DIN580 threaded insert to implement a secondary safety.



### **Ceiling-mounting**

Additional holes on the short U-bracket can be used for optimal visual impact.

In this case, the rigging procedure will require 2 operators.



### **The procedure is shown with X-UL8 in horizontal position.**

The same procedure applies for X-UL8 in vertical position or in ceiling-mounting configuration and X-US8 in vertical position or in ceiling-mounting configuration.

## Assembly

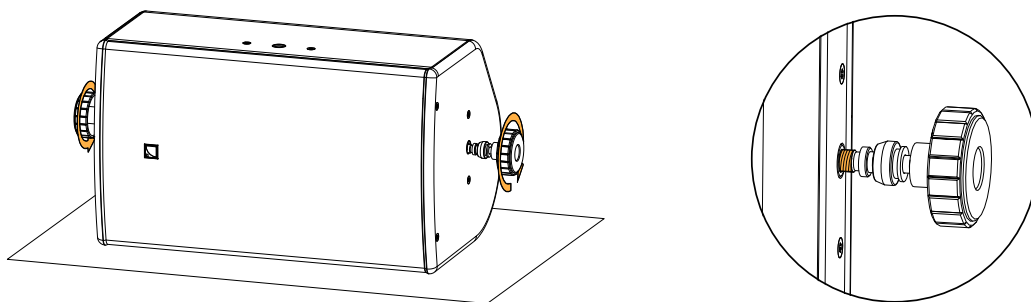
### About this task

- !** With the short U-bracket in horizontal position, the enclosure applies a diagonal force of 179 dekanewtons on the anchoring points.  
Apply the appropriate safety factor.

### Procedure

- 1.** Drive the knobs in the inserts on the enclosure.

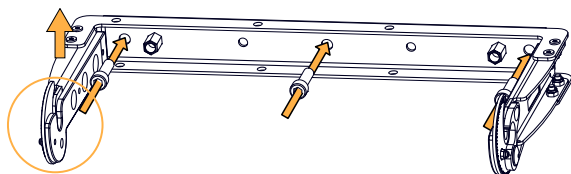
Stop when the threading is halfway in.



- 2.** Secure the U-bracket to the wall using M10 screws.

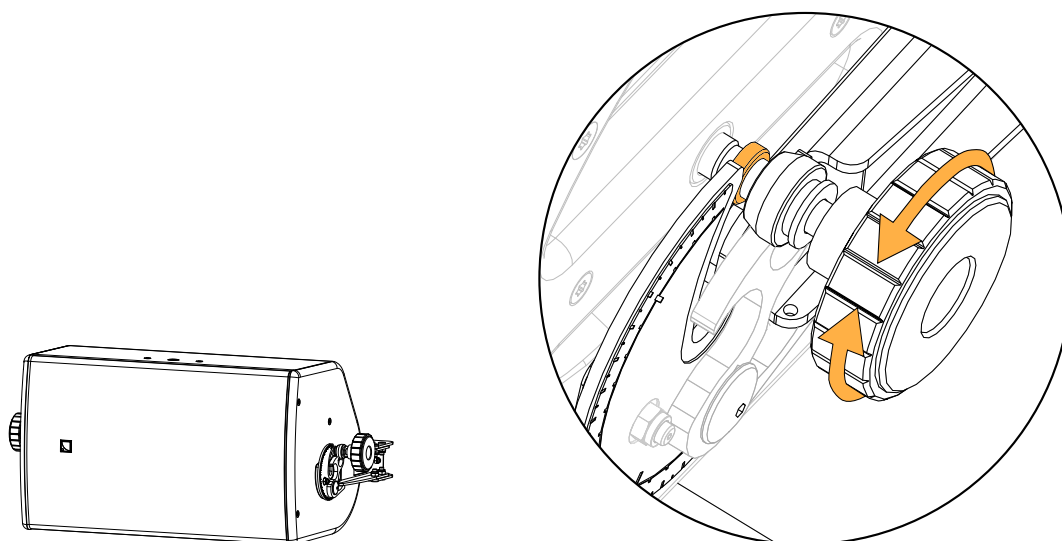


When securing the U-bracket horizontally, make sure the hooks are oriented upwards.

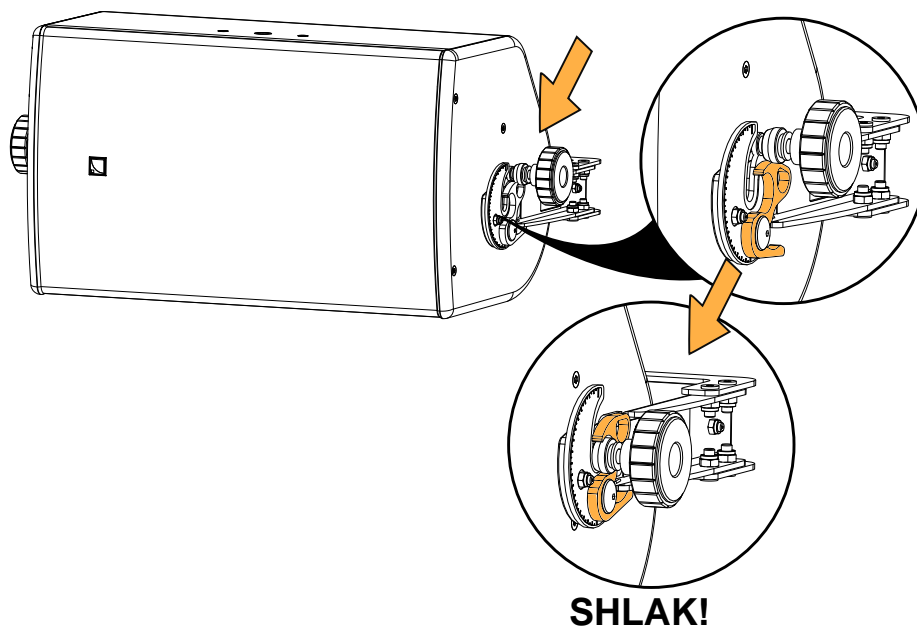


- 3.** Lift the enclosure by the knobs and place it inside the U-bracket.

Adjust the knobs on both sides so that the safety washer is between the hook and the enclosure.

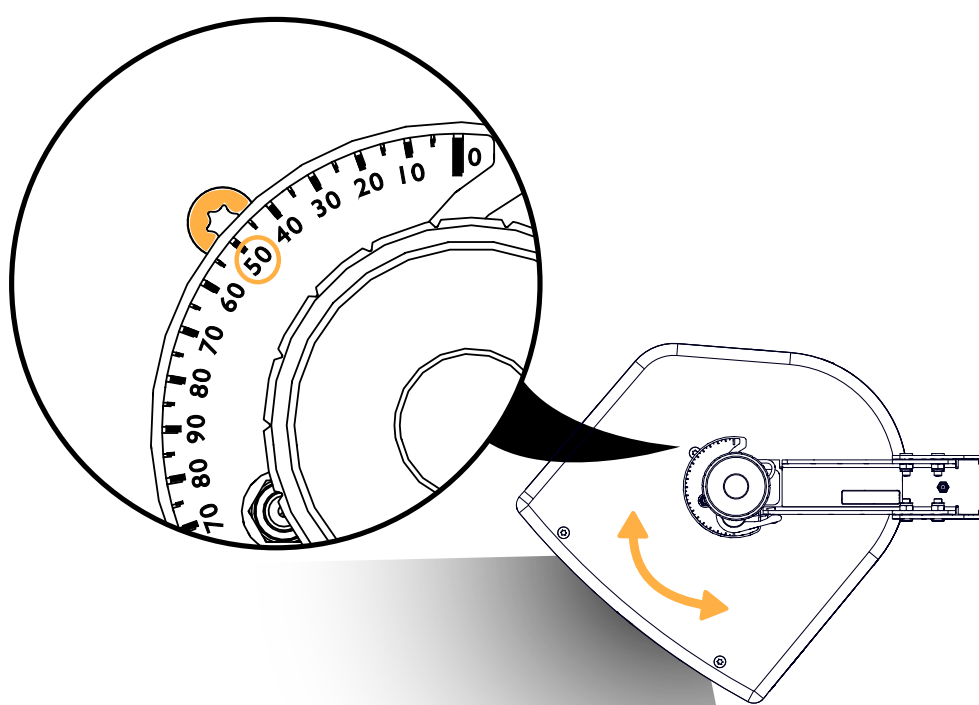


- 4.** Push until the knobs are locked inside the spring-lock safety mechanism.



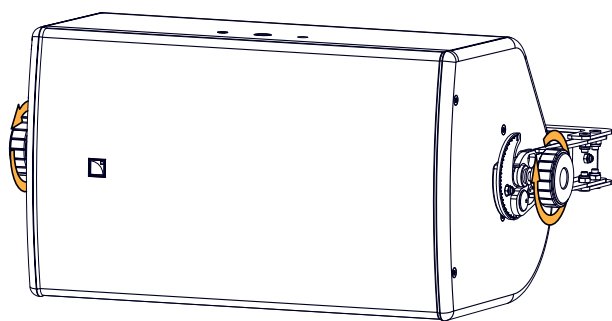
- 5.** Set the site angle.

Use the screw as a reference point to read the label.



**6.** Tighten the knobs.

Make sure the enclosure is steady.



## Disassembly

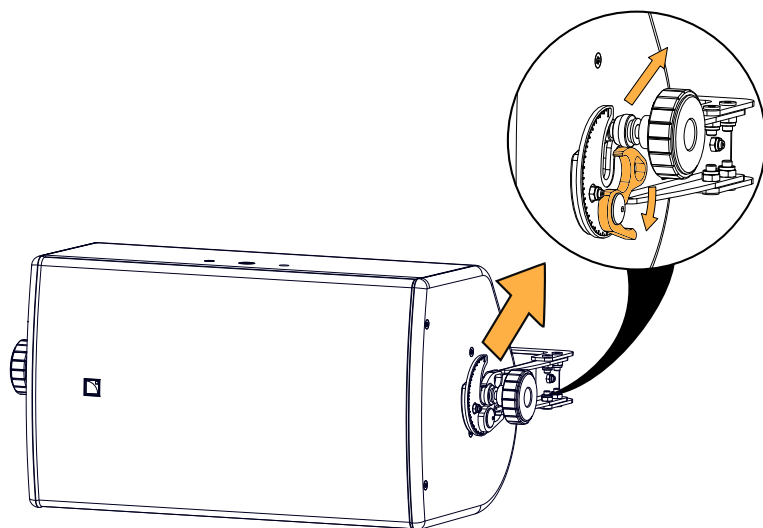
### Procedure

1. Loosen the knobs until the enclosure can rotate freely.



Do not unscrew the knobs all the way.

2. On both sides, pull on the safety mechanism while lifting the enclosure by the knobs to release it.



3. Remove the U-bracket from the wall.

## Using a U-bracket with X-UTILT

type of deployment	wall-mounting
rigging accessories	X-US8 or X-UL8
	X-UTILT
additional material	2 x M10 screws
	electric screwdriver
min number of operators	1



### **Additional safety for flown arrays**

When flying an array, use the M8 DIN580 threaded insert to implement a secondary safety.



### **The procedure is shown with X-UL8**

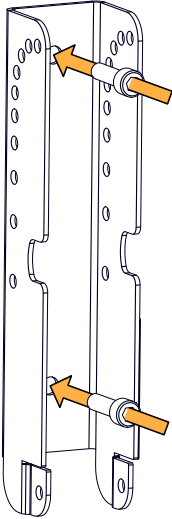
The same procedure applies for X-US8.

## Assembly

### Procedure

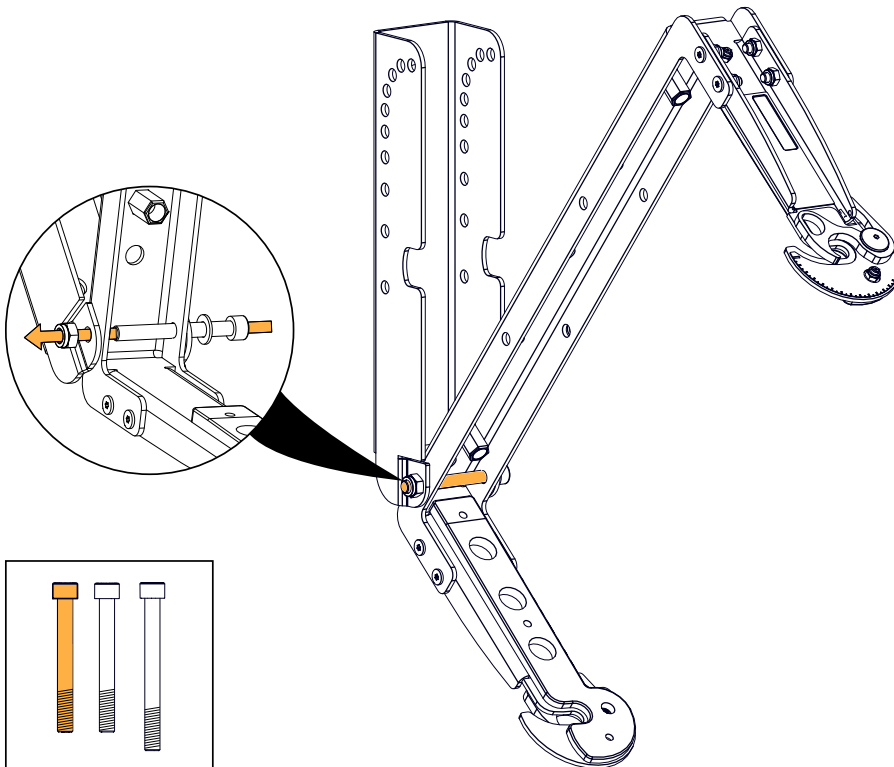
**!** X-UTILT can only be used vertically.

1. Secure X-UTILT to the wall using M10 screws.



2. Secure the U-bracket to X-UTILT.

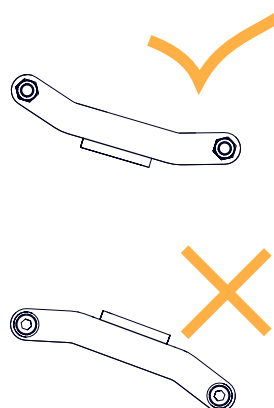
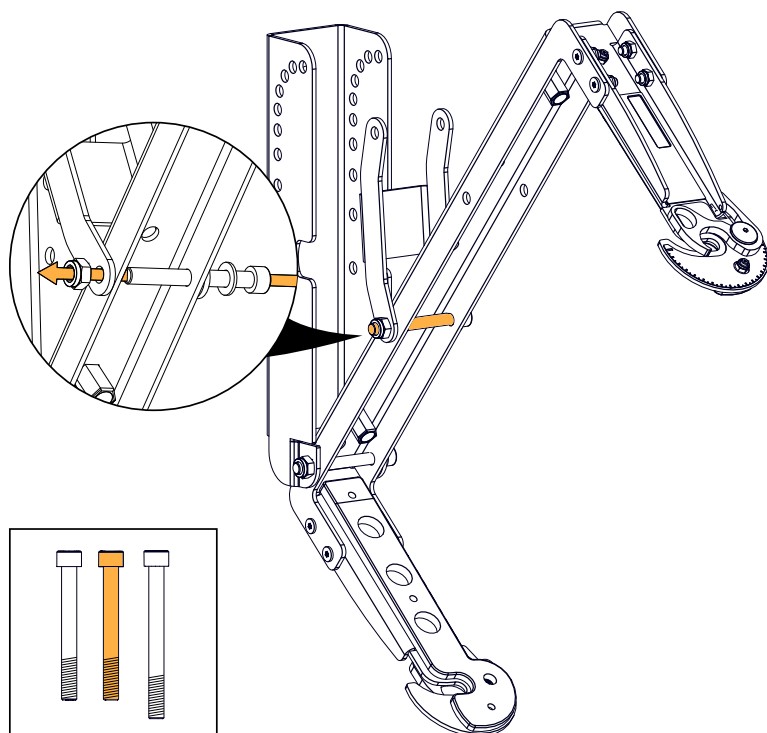
**!** When using X-US8, the bracket must be secured with the label on top.





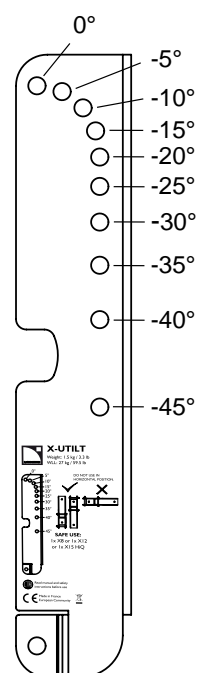
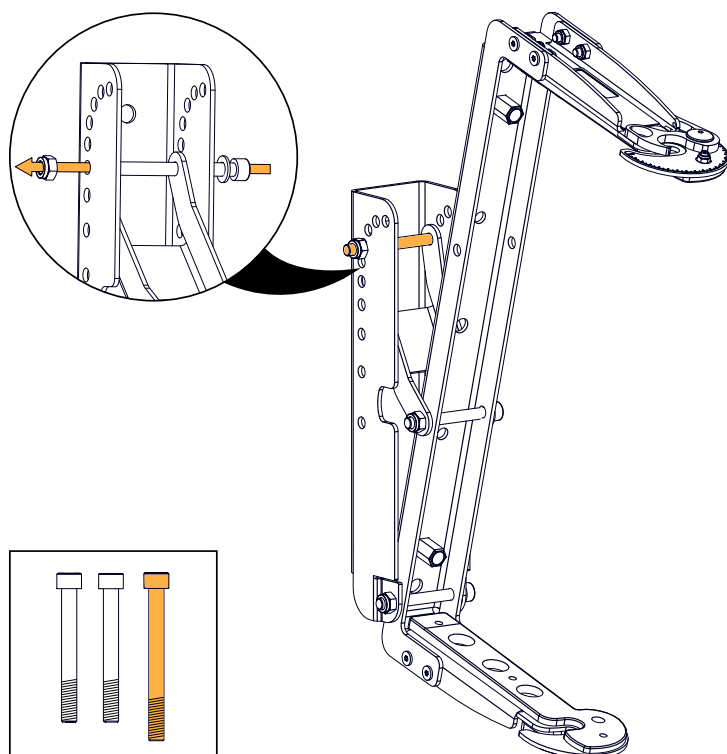
### 3. Secure the rigging arm to the U-bracket.

- ! Make sure the rigging arm is in the right position.
- ! Always use the central insert.



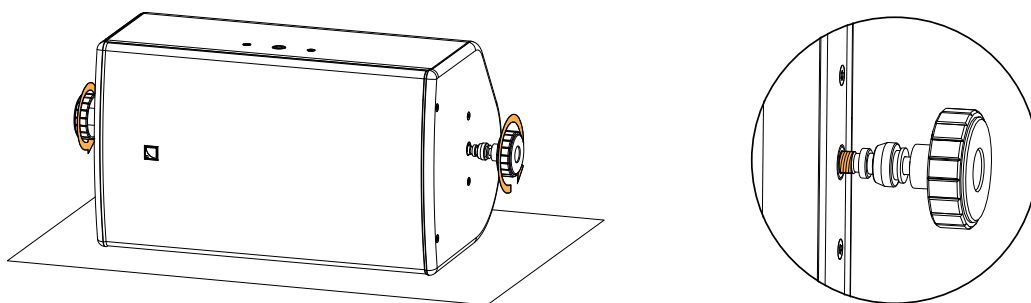
### 4. Choose the site angle and secure the rigging arm to X-UTILT.

Refer to the angles on the label.



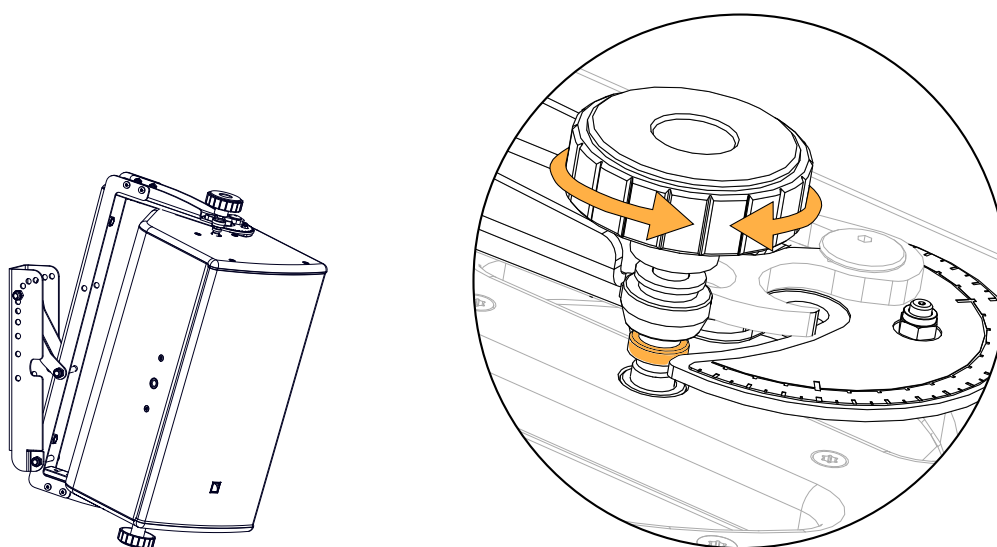
**5.** Drive the knobs in the inserts on the enclosure.

Stop when the threading is halfway in.

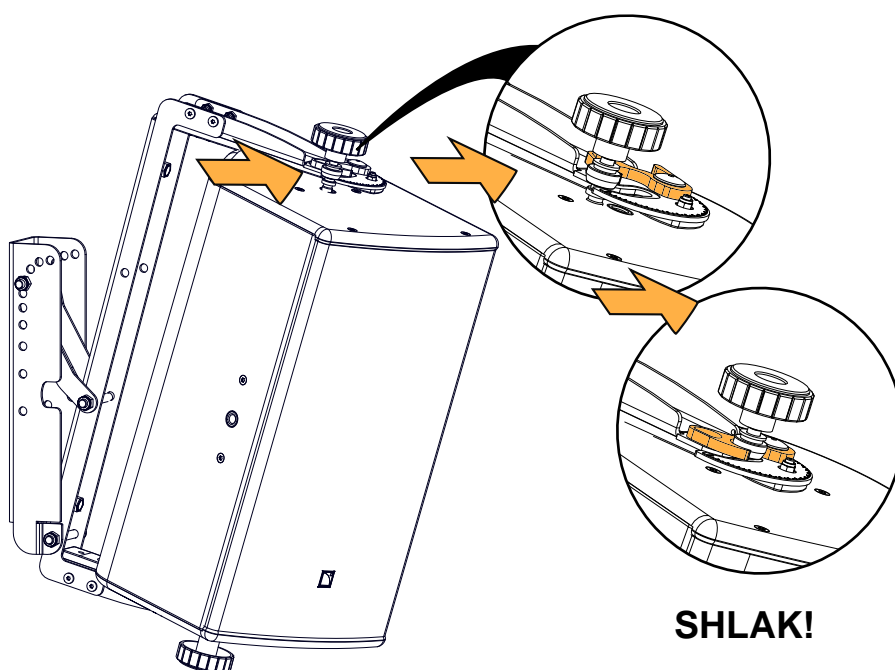


**6.** Lift the enclosure by the knobs and place it inside the U-bracket.

Adjust the knobs on both sides so that the safety washer is between the hook and the enclosure.

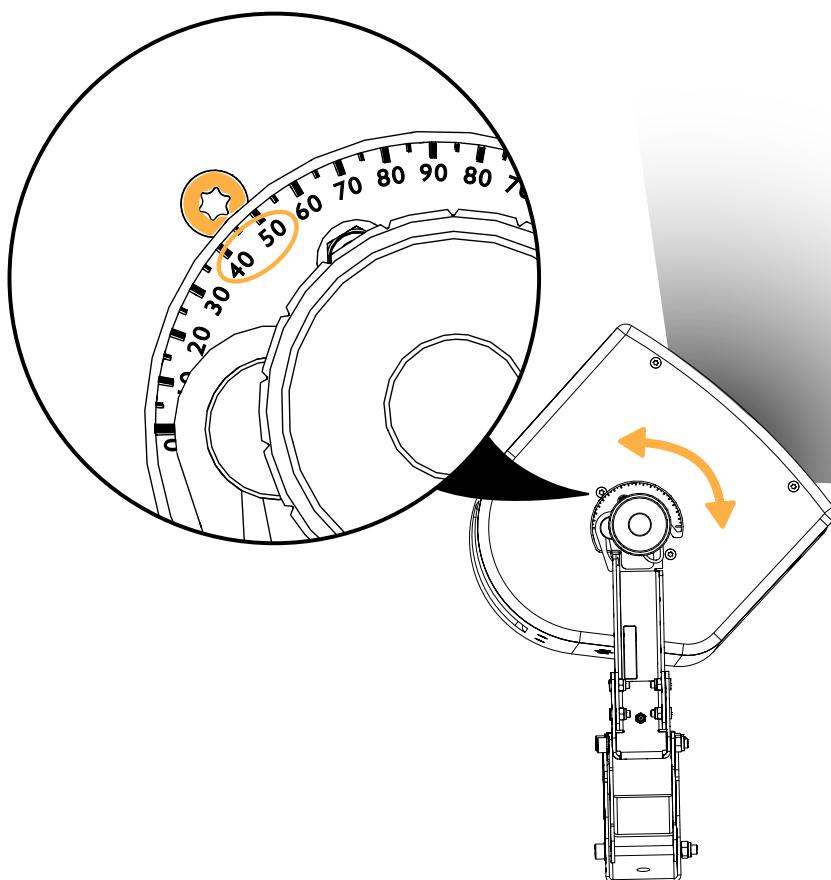


**7.** Push until the knobs are locked inside the spring-lock safety mechanism.

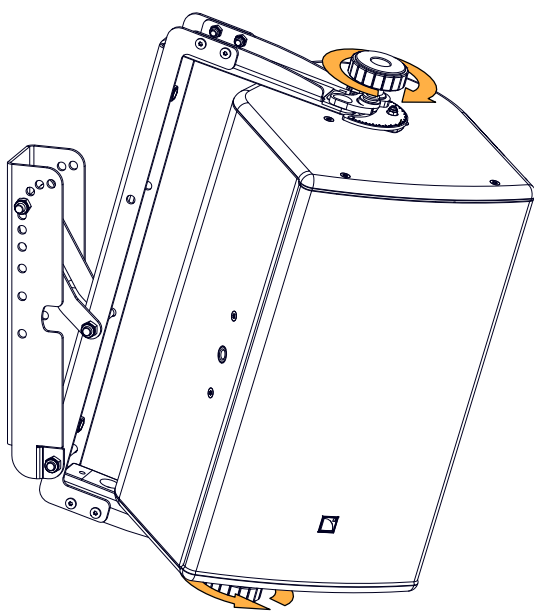


**8.** Set the azimuth angle.

Use the screw as a reference point to read the label.

**9.** Tighten the knobs.

Make sure the enclosure is steady.



## Disassembly

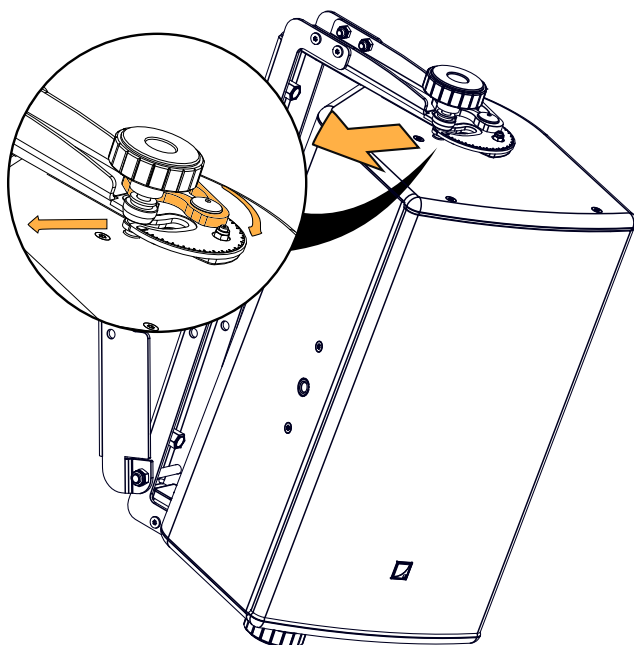
### Procedure

1. Loosen the knobs until the enclosure can rotate freely.



Do not unscrew the knobs all the way.

2. On both sides, pull on the safety mechanism while sliding the enclosure out of the U-bracket.



3. Remove the U-bracket and X-UTILT from the wall.

## Flying with a U-bracket

type of deployment	flying
rigging accessories	X-US8 or X-UL8
additional material	truss clamp
min number of operators	1



### **Additional safety for flown arrays**

When flying an array, use the M8 DIN580 threaded insert to implement a secondary safety.



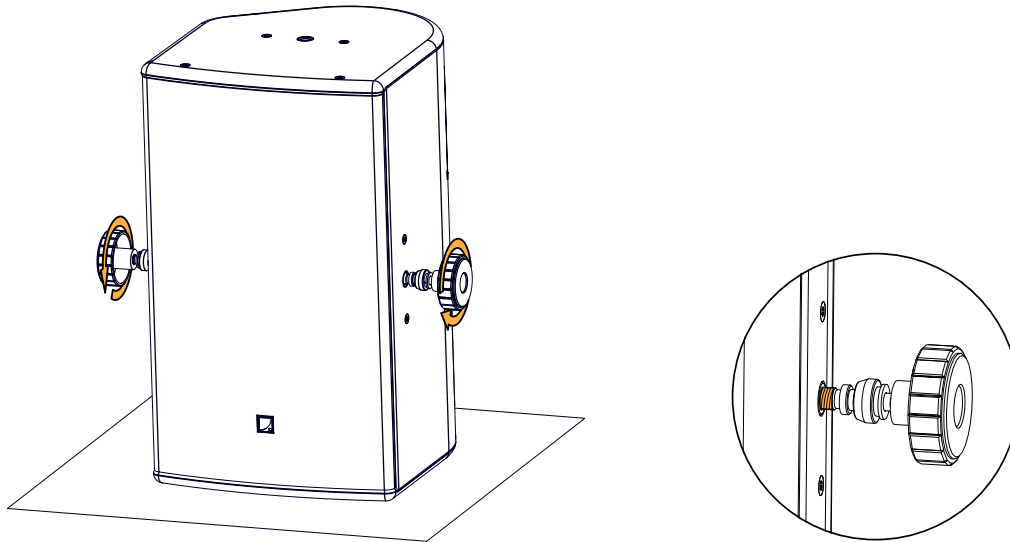
### **The procedure is shown with X-US8.**

The same procedure applies for X-UL8.

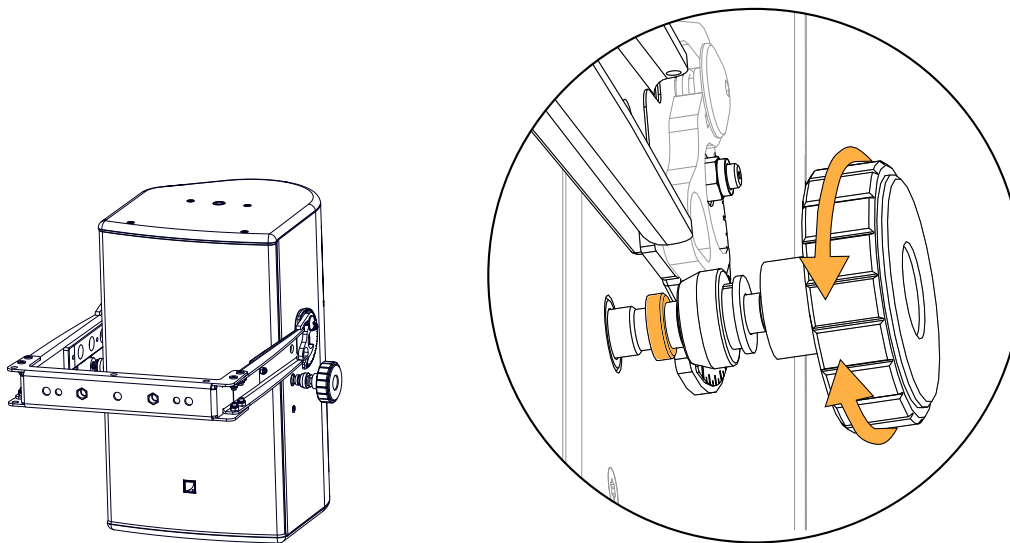
## Assembly

### Procedure

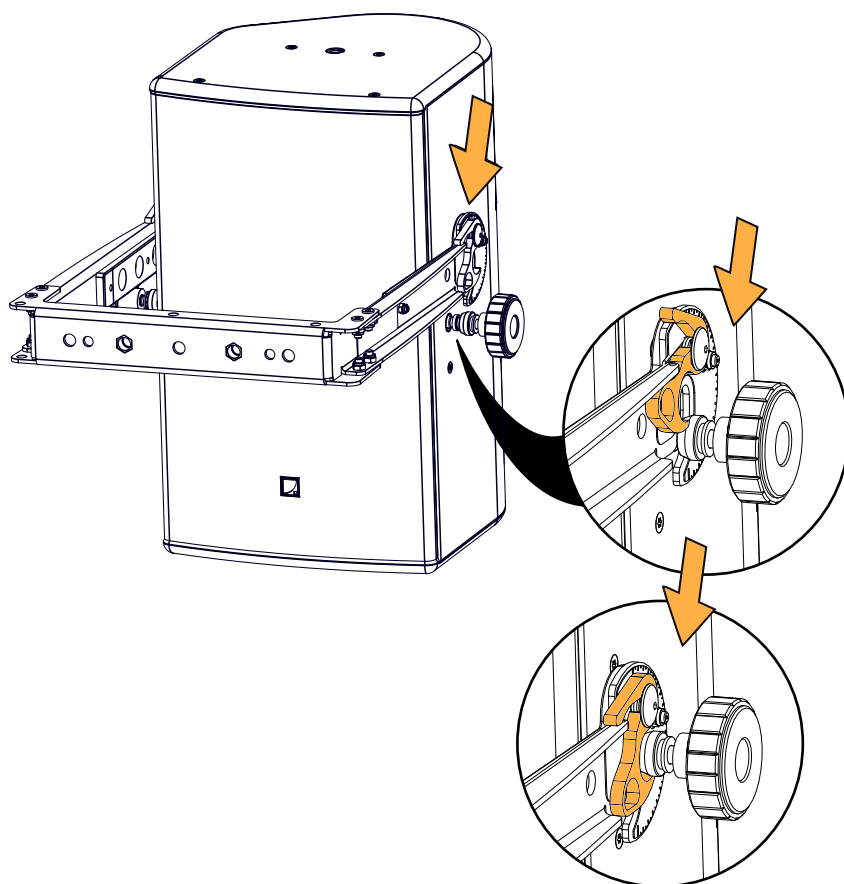
1. Drive the knobs in the inserts on the enclosure.  
Stop when the threading is halfway in.



2. Place the U-bracket around the assembly.  
Adjust the knobs on both sides so that the safety washer is between the hook and the enclosure.



**3.** Push down until the knobs are locked inside the spring-lock mechanism.

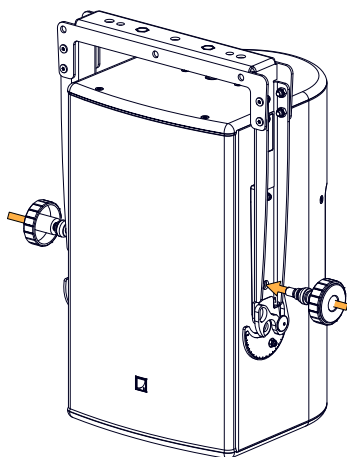


**SHLAK!**

Alternatively, use the additional hole on the U-bracket.

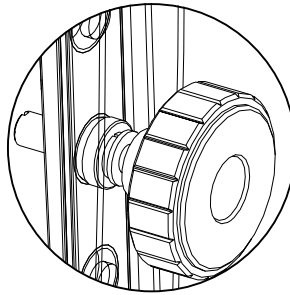
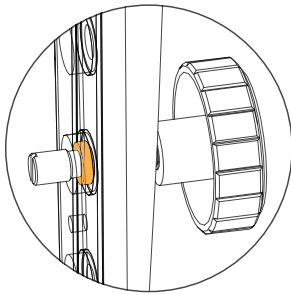


The hooks on the bracket must be oriented towards the front of the enclosure.

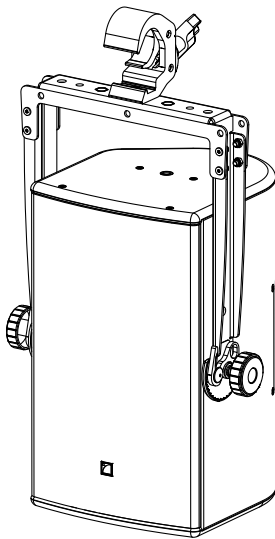




Make sure the flat washer goes through the hole on the bracket .



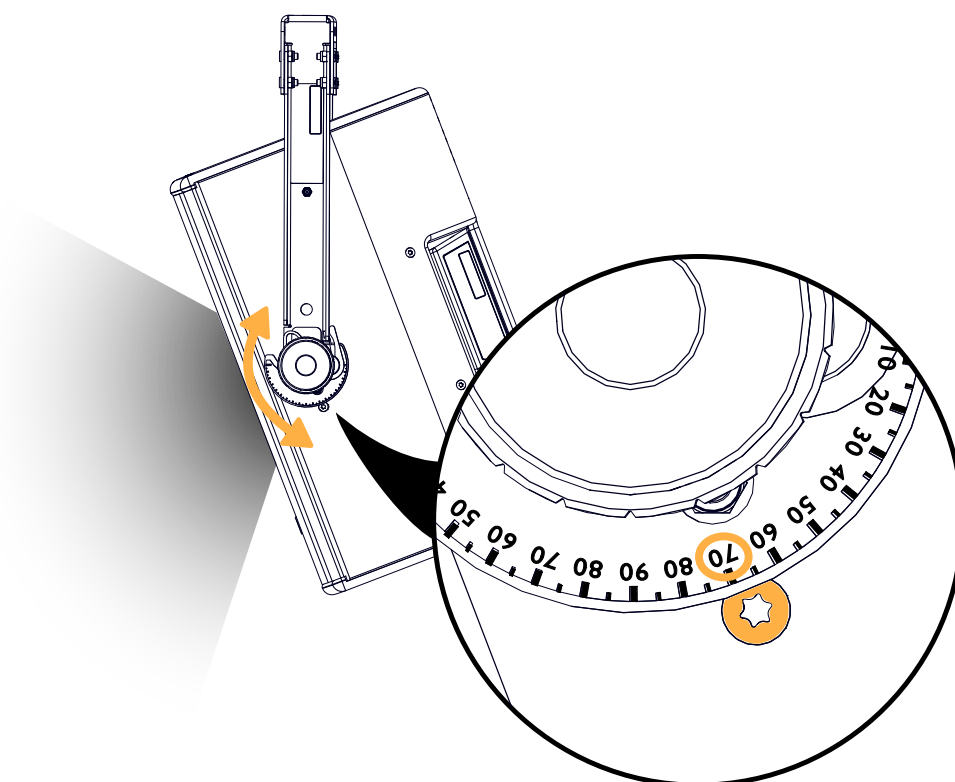
**4.** Tighten the knobs and fly the enclosure with a clamp.



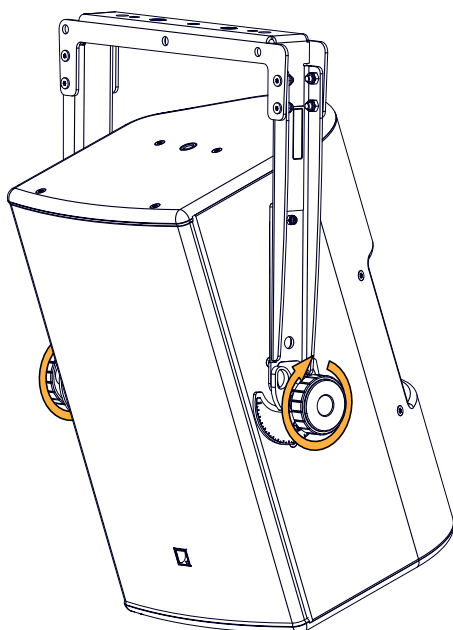


**5.** Loosen the knobs to set the site angle.

Use the screw as a reference point to read the label.

**6.** Tighten the knobs.

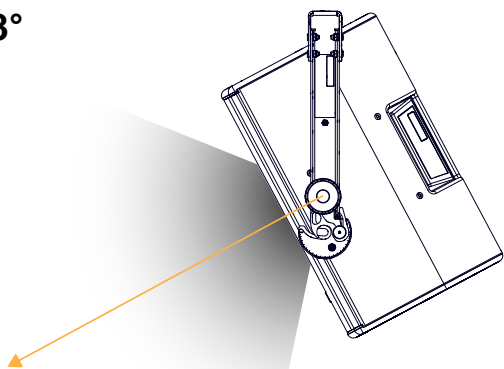
Make sure the enclosure is steady.



## Maximum angles

When using the additional hole on the U-bracket, consider the maximum negative site angle available.

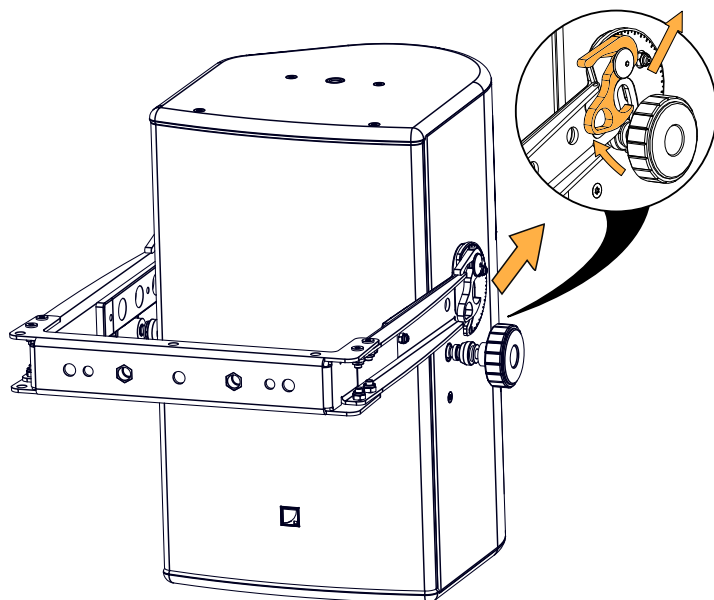
**-28°**



## Disassembly

### Procedure

1. Place the enclosure on a flat surface.
2. Loosen the knobs.
3. Pull on the safety mechanism and remove the U-bracket from the enclosure.



## Flying with X-BAR

type of deployment	flying
rigging accessories	X-BAR
additional material	CMU 1 T 12 mm shackle
	CLAMP250 (optional)
min number of operators	1



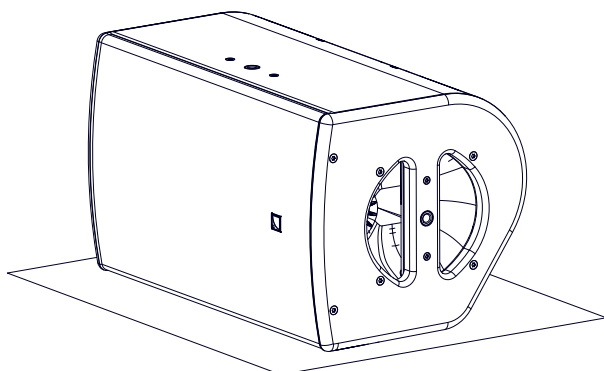
### **Additional safety for flown arrays**

When flying an array, use the M8 DIN580 threaded insert to implement a secondary safety.

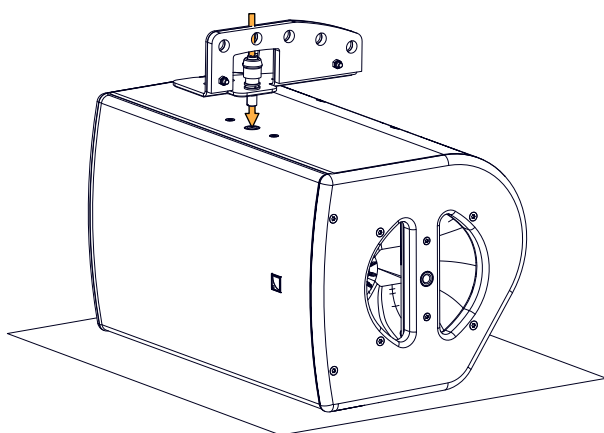
## Assembly

### Procedure

1. Lay the enclosure on a flat surface.

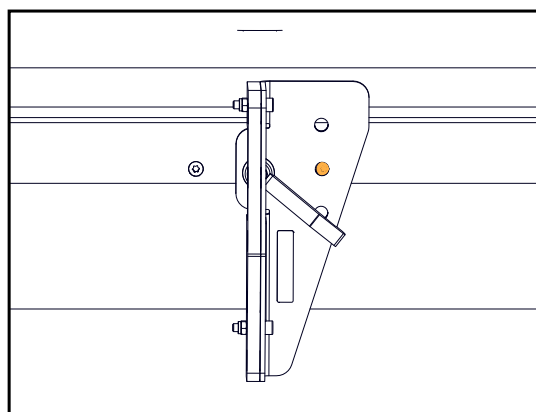
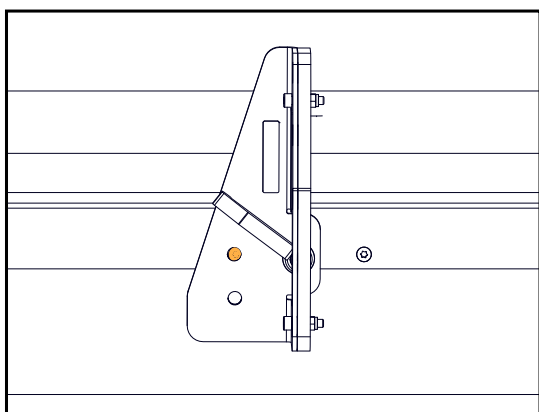


2. Drive the X-BAR in the insert.



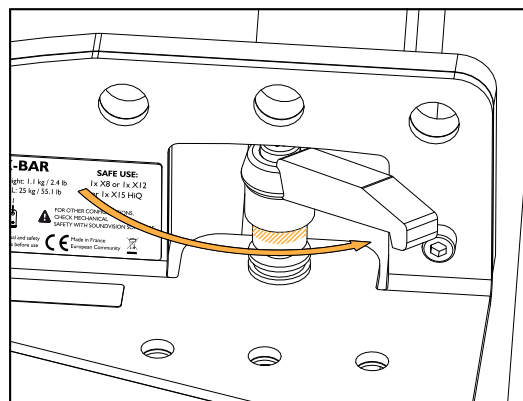
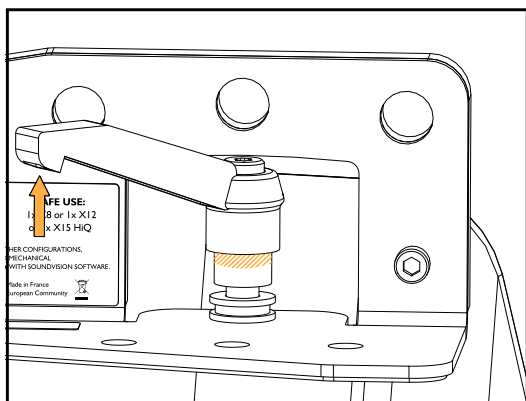
3. Rotate the X-BAR until perpendicular to the front grill.

Use the screws as reference points.

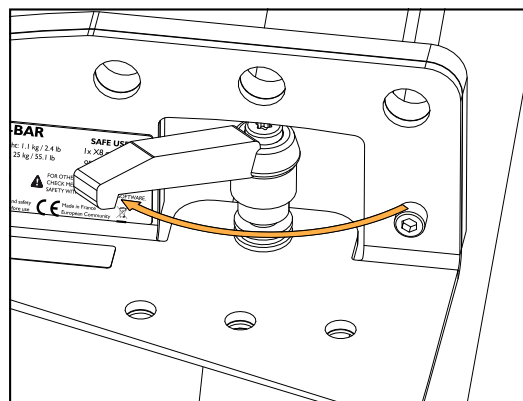
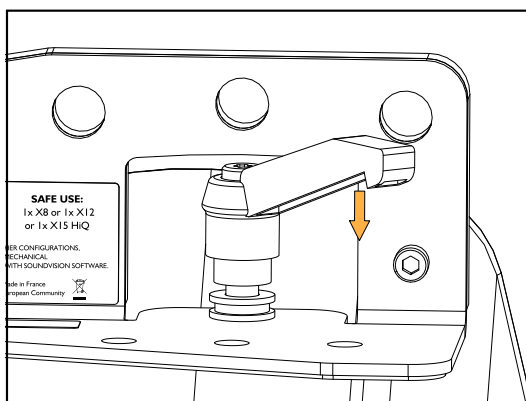


#### 4. Tighten the X-BAR.

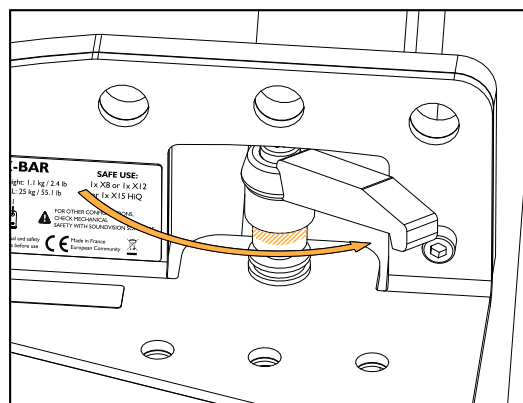
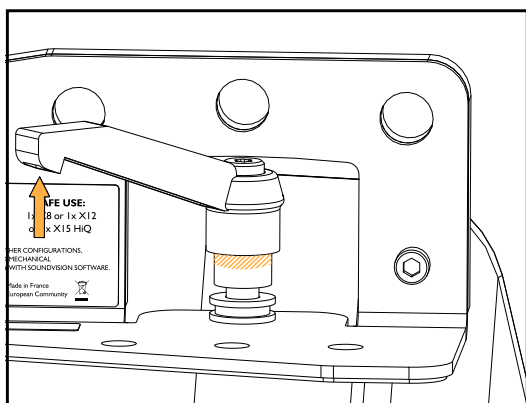
- a) Lift the lever and rotate it counter-clockwise.



- b) Release the lever and rotate it clockwise.

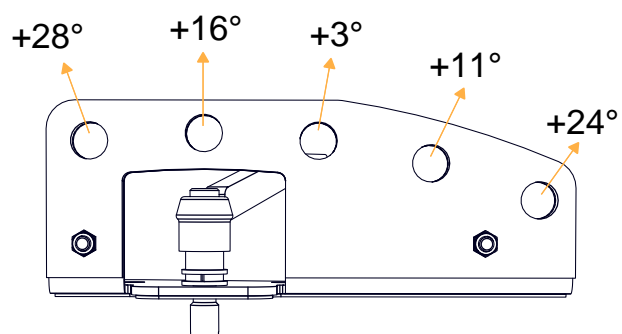


- c) Repeat until the X-BAR is tightly secured.  
d) Finally, store the lever on the right.

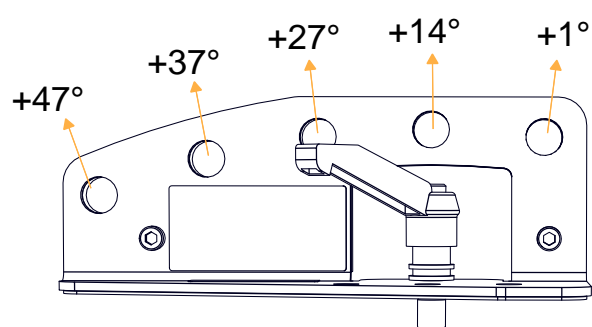


**5. Position the shackle or CLAMP250 to select the site angle.**

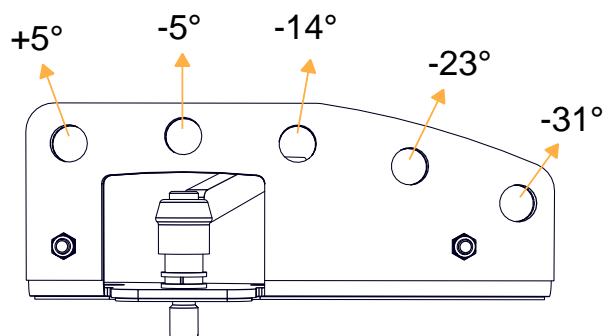
- Rear extension on horizontal enclosure



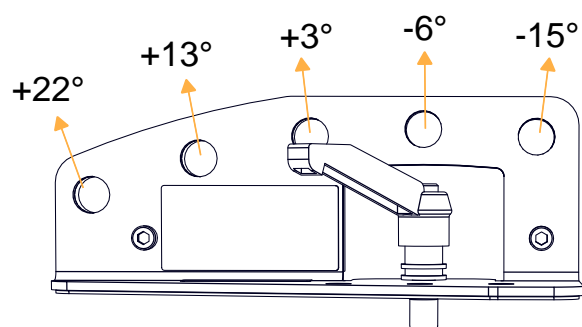
- Front extension on horizontal enclosure



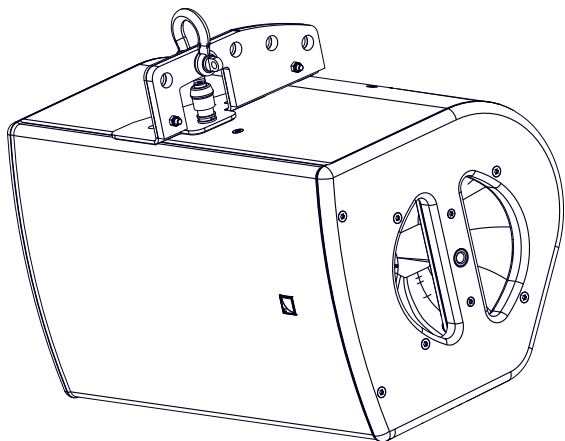
- Rear extension on vertical enclosure



- Front extension on vertical enclosure



**6.** Lift the assembly.

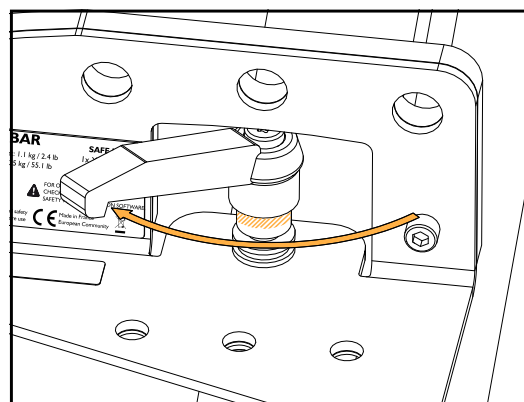
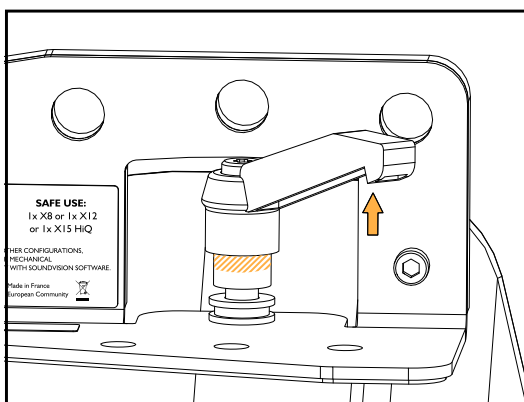




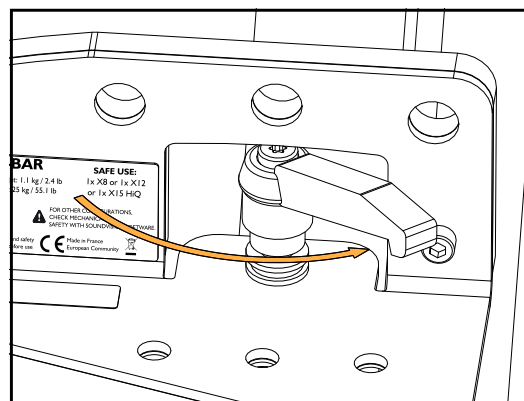
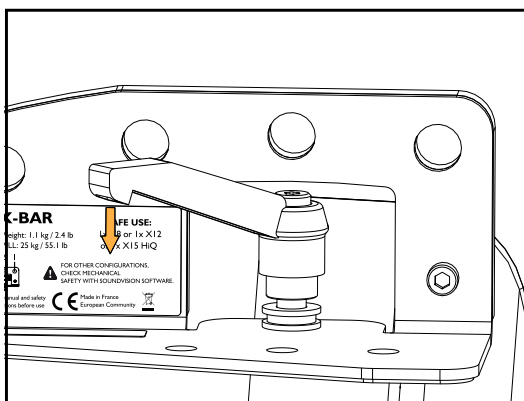
## Disassembly

### Procedure

1. Take down the assembly.
2. Lift the lever and rotate it clockwise.



3. Release the lever and rotate it counter-clockwise.



4. Repeat until the X-BAR can be removed.

## Pole-mounting with a U-bracket

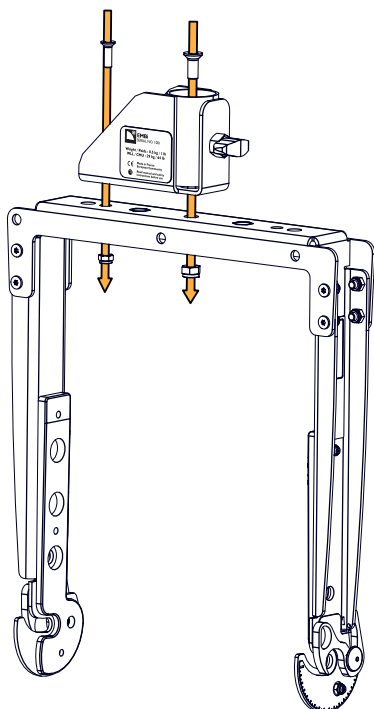
---

type of deployment	pole-mounting
rigging accessories	X-US8
	EMBi
additional material	35 mm pole
min number of operators	1

## Assembly

### Procedure

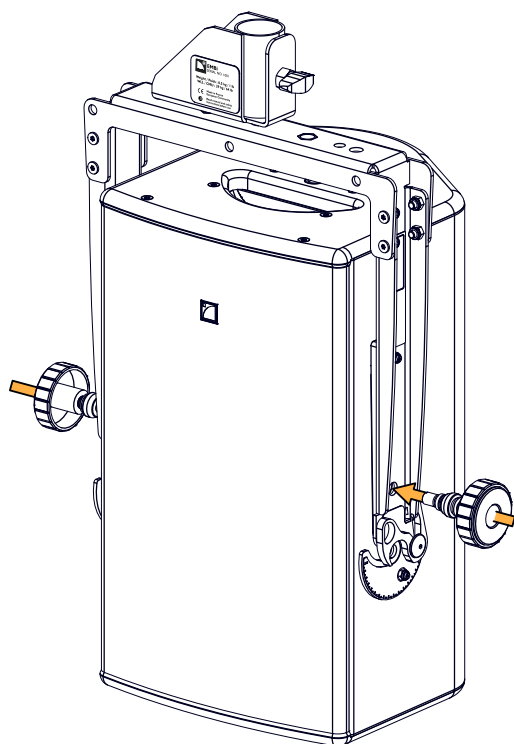
1. Secure EMBi to the U-bracket with the provided bolts and nuts.



2. Secure the U-bracket to the enclosure using the additional holes.

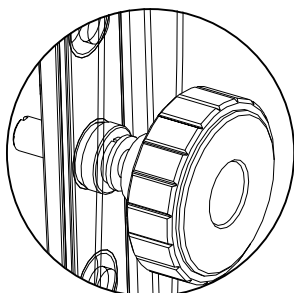
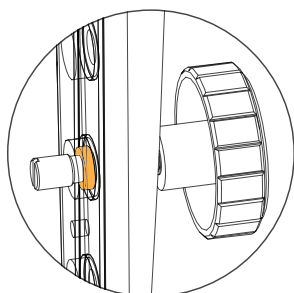


The hooks on the bracket must be oriented towards the front of the enclosure.

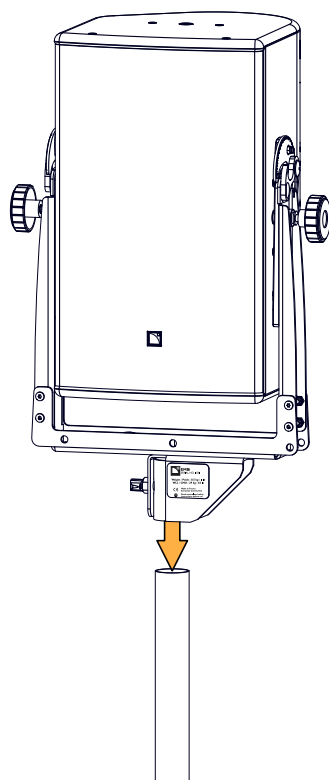




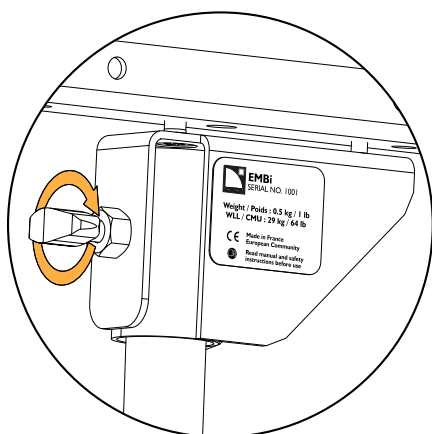
Make sure the flat washer goes through the hole on the bracket.



**3.** Tighten the knobs, reverse the assembly and mount it on a pole.



**4.** Tighten EMBi.

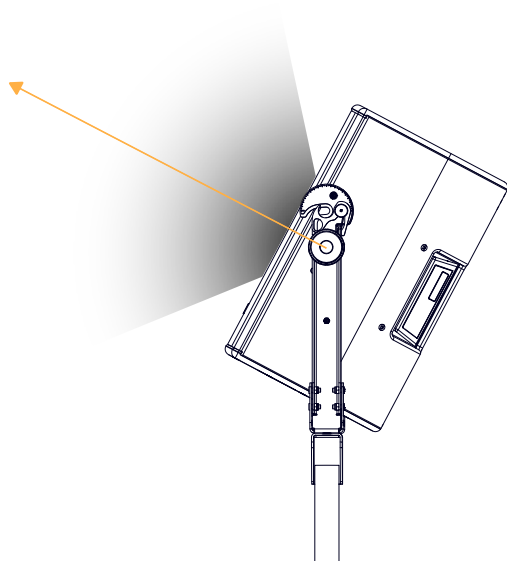


**5.** Loosen the knobs to set the site angle.



Consider the maximum positive site angle available.

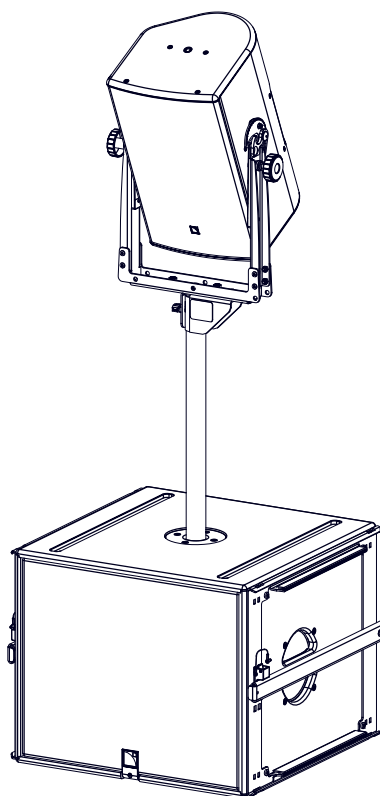
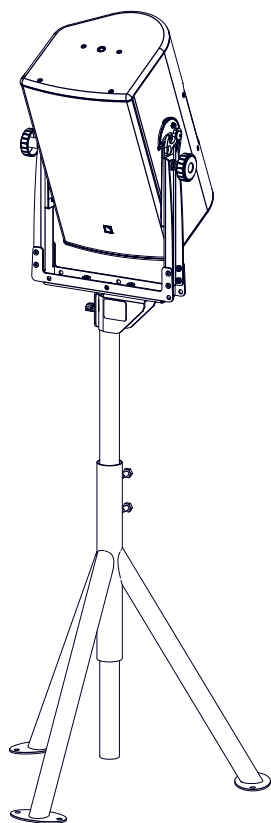
**+28°**



**6.** Tighten the knobs.

Make sure the enclosure is steady.

The assembly can be mounted on a tripod or on a subwoofer.



## Disassembly

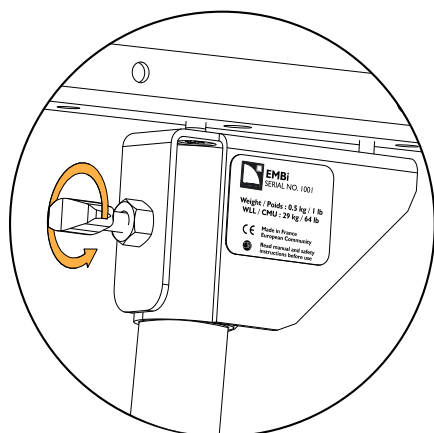
### About this task



Remove the assembly from the pole before disassembling the enclosure and the bracket.

### Procedure

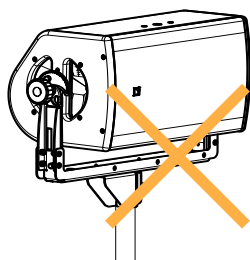
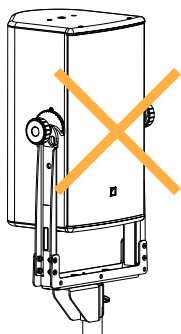
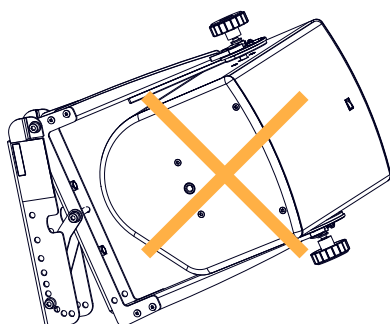
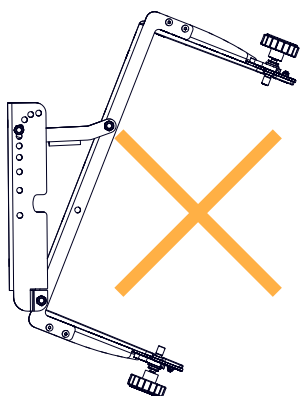
1. Loosen EMBi to remove the assembly from the pole.



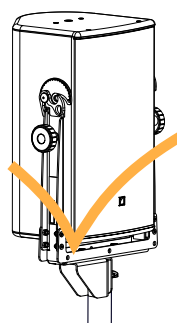
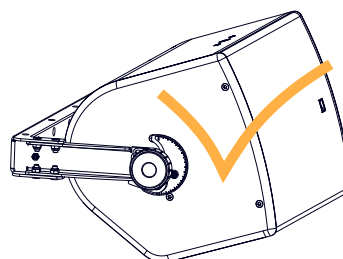
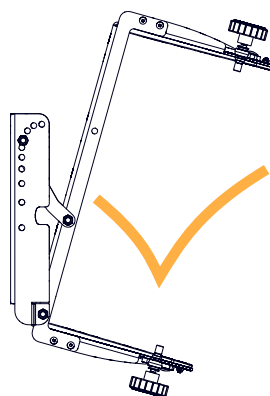
2. Remove the bracket from the enclosure.

# Forbidden configurations

## Forbidden



## Authorized



## Illustrations

### Loudspeaker enclosures

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**X8**

passive 2-way coaxial enclosure



**SB15m**

high power compact subwoofer

### Rigging elements

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**CLAMP250**

Clamp certified for 250 kg



**EMBi**

Pole mount socket





**X-UTILT**

U-bracket wallmount for X series with tilt adjustment



**X-BAR**

Rigging bar for X series



**X-UL8**

Long U-bracket for X8

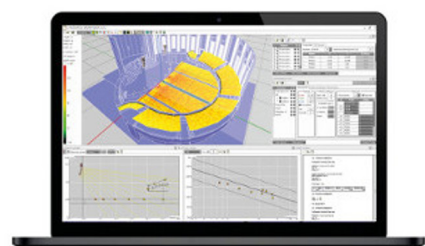


**X-US8**

Short U-bracket for X8

## Software applications

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**Soundvision**

3D acoustical and mechanical modeling software

# Specifications

## X8 specifications

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<b>Description</b>	X8 passive 2-way coaxial enclosure, amplified by LA4X / LA8.
<b>Usable bandwidth (-10 dB)</b>	60 Hz - 20 kHz
<b>Maximum SPL <sup>1</sup></b>	127 dB ([X8])
<b>Nominal directivity</b>	Vertical: Axisymmetric 100°
<b>Monitoring angle</b>	35°
<b>Transducers</b>	1 × 8" weather-resistant, bass-reflex laminar vents. 1 × 1.5" compression driver, neodymium, weather-resistant, partial horn.
<b>Nominal impedance</b>	LF: 8 Ω HF: 8 Ω
<b>Connectors</b>	IN: SpeakON LINK: SpeakON
<b>Rigging and handling</b>	1 × handles DIN580-compatible M8 threaded insert 4 × M10 threaded inserts 1 × 35 mm pole sockets
<b>Weight (net)</b>	12 kg / 26.5 lb
<b>Cabinet</b>	First grade Baltic beech and birch plywood
<b>Finish</b>	Dark Grey brown PANTONE 426C Pure white RAL 9010 Custom RAL code on special order
<b>IP</b>	IP43

<sup>1</sup> Peak level at 1 m under free field conditions using 10 dB crest factor pink noise with specified preset.

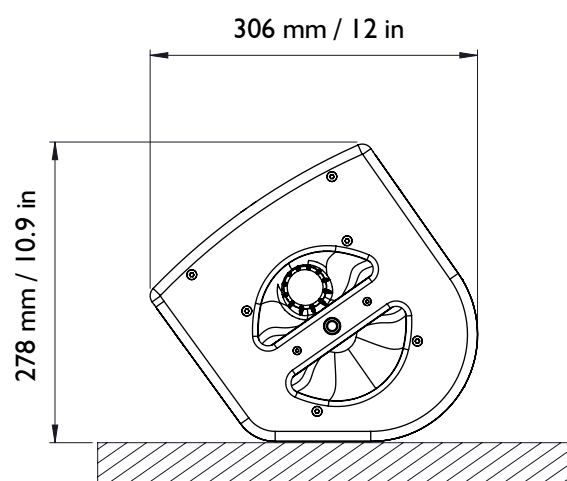
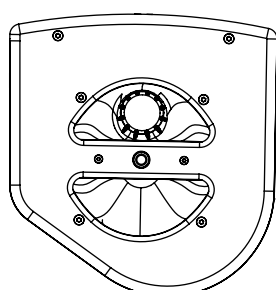
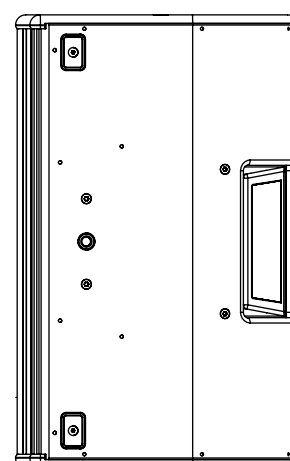
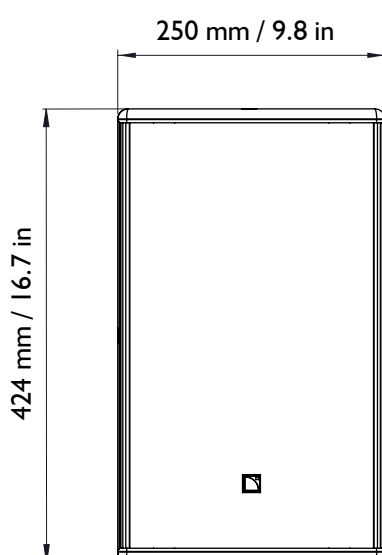
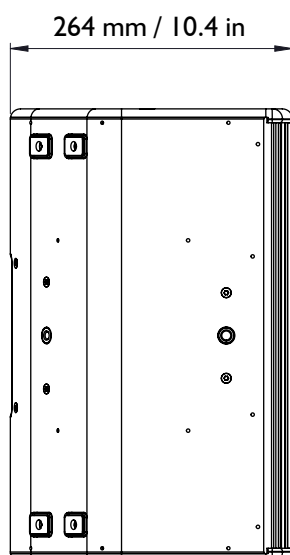
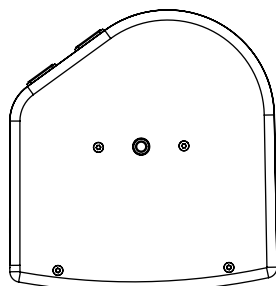
## X8 dimensions

### On-end H/W/D

424 mm / 250 mm / 264 mm  
16.7 in / 9.8 in / 10.4 in

### Monitor H/W/D

278 mm / 424 mm / 306 mm  
10.9 in / 16.7 in / 12 in



## X-UL8 specifications

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**Description**

Long U-bracket for X8

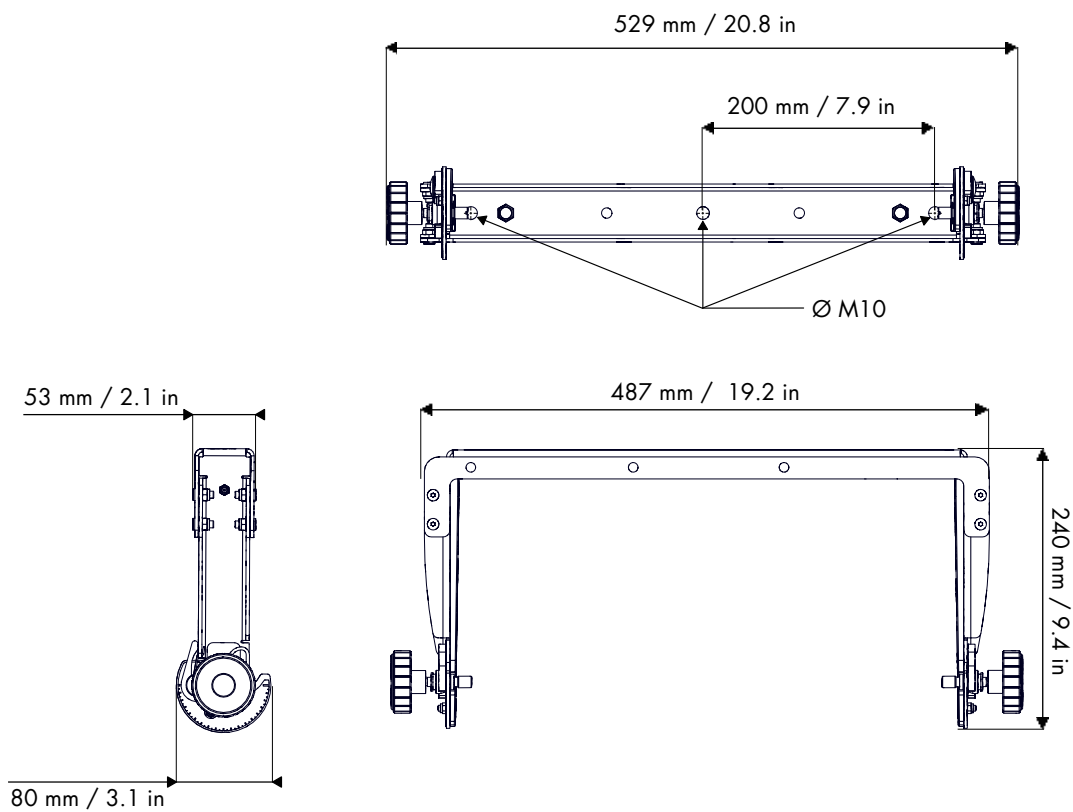
**Weight (net)**

2.3 kg / 5 lb

**Material**

High grade steel with anti-corrosion coating

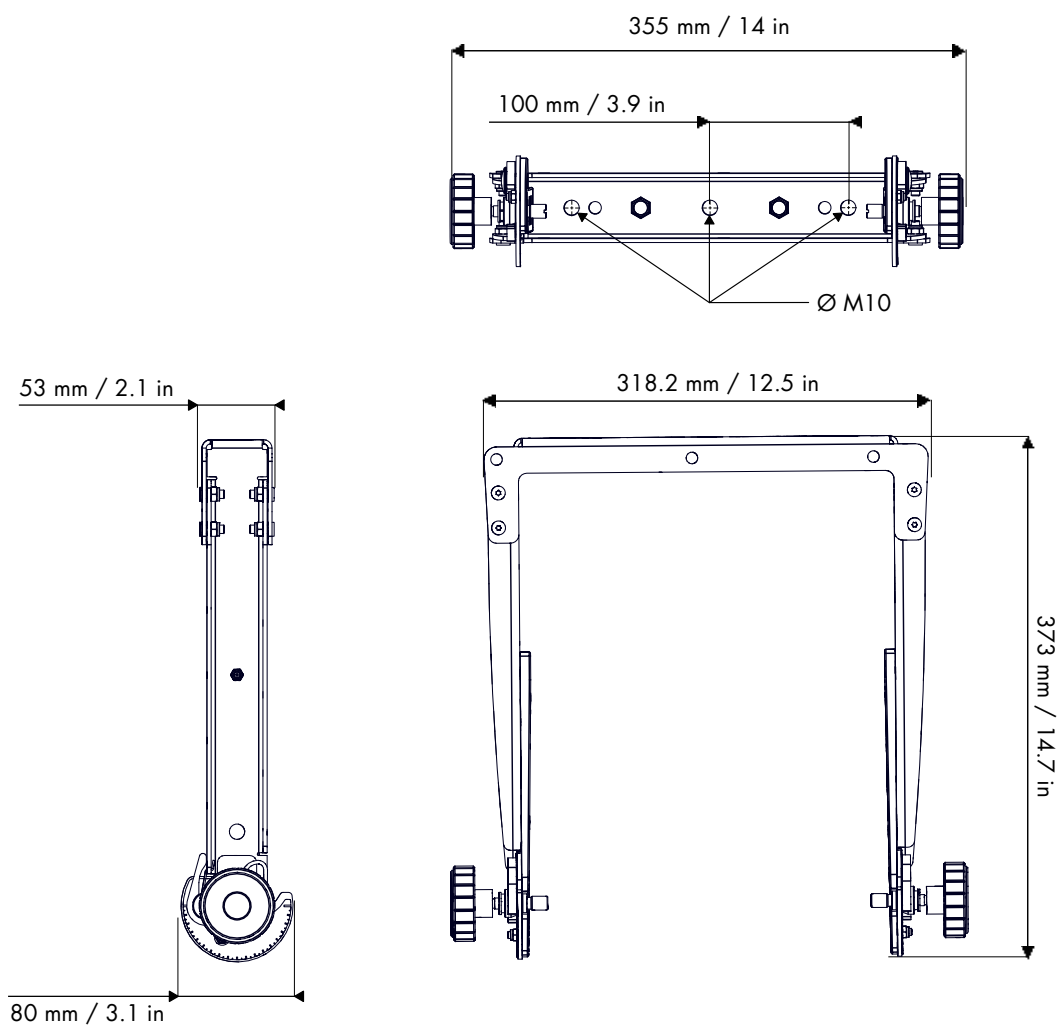
## X-UL8 dimensions



## X-US8 specifications

<b>Description</b>	Short U-bracket for X8
<b>Weight (net)</b>	2.3 kg / 5 lb
<b>Material</b>	High grade steel with anti-corrosion coating

## X-US8 dimensions



## X-BAR specifications

### Description

Rigging bar for X series

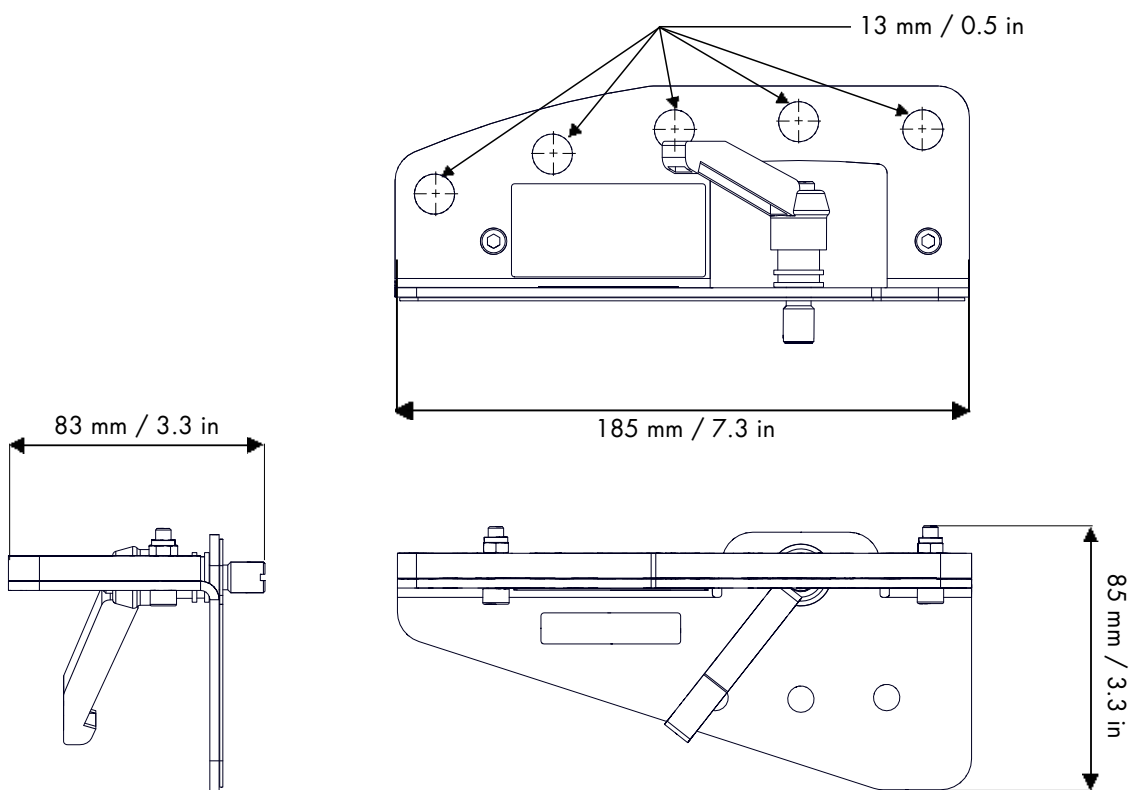
### Weight (net)

1.1 kg / 2.4 lb

### Material

High grade steel with anti-corrosion coating

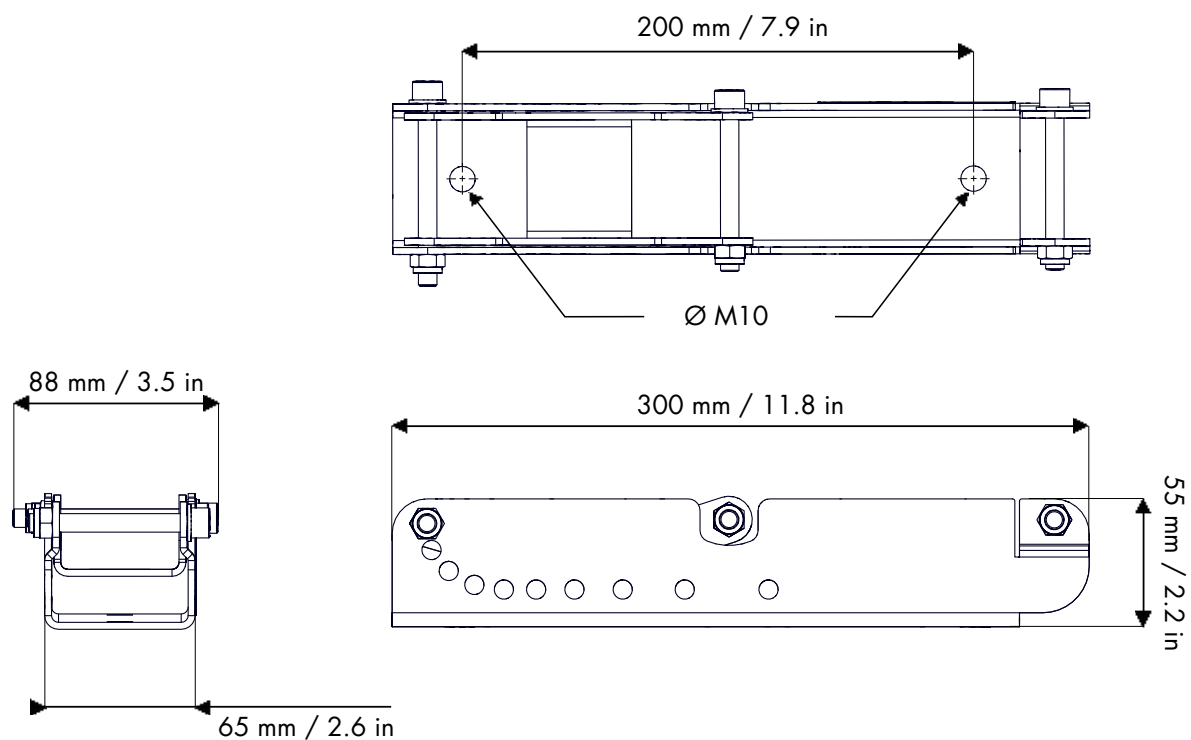
## X-BAR dimensions



## X-UTILT specifications

<b>Description</b>	U-bracket wallmount for X series with tilt adjustment
<b>Weight (net)</b>	1.5 kg / 3.3 lb
<b>Material</b>	High grade steel with anti-corrosion coating

## X-UTILT dimensions



## EMBi specifications

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**Description**

Pole-mount socket

**Weight (net)**

0.5 kg / 1.1 lb

**Material**

High grade steel with anti-corrosion coating

## EMBi dimensions

