








X 28 L

TWO-WAY LINE ARRAY MODULE

1. SAFETY PRECAUTIONS AND GENERAL INFORMATION

The symbols used in this document give notice of important operating instructions and warnings which must be strictly followed.

	CAUTION	Important operating instructions: explains hazards that could damage a product, including data loss
	WARNING	Important advice concerning the use of dangerous voltages and the potential risk of electric shock, personal injury or death.
	IMPORTANT NOTES	Helpful and relevant information about the topic
	SUPPORTS, TROLLEYS AND CARTS	Information about the use of supports, trolleys and carts. Reminds to move with extreme caution and never tilt.
	WASTE DISPOSAL	This symbol indicates that this product should not be disposed with your household waste, according to the WEEE directive (2012/19/EU) and your national law.

IMPORTANT


This manual contains important information about the correct and safe use of the device. Before connecting and using this product, please **read this instruction manual carefully** and **keep it on hand for future reference**. The manual is to be considered an integral part of this product and must accompany it when it changes ownership as a reference for correct installation and use as well as for the safety precautions. The company will not assume any responsibility for the incorrect installation and / or use of this product.

All the precautions, in particular the safety ones, must be read with special attention, as they provide important information.

SAFETY PRECAUTIONS

GENERAL SAFETY PRECAUTIONS

- Protect loudspeaker AC and signal lines from damage. Make sure they are positioned in a way that they cannot be stepped on or crushed by objects.
- To prevent the risk of electric shock, never open this product: there are no parts inside that the user needs to access. Never attempt to carry out any operations, modifications or repairs that are not expressly described in this manual.
- If this product begins emitting any strange odours or smoke, in case of an active speaker immediately switch it off and disconnect the power cable; in case of a passive speaker switch the amplifier off and remove it from the line.
- Contact your authorized service centre or qualified personnel if any of the following occur:
 - The device does not function (or works in an anomalous way).
 - The cable has been damaged.
 - Objects or liquids are inside the loudspeaker.
 - The loudspeaker has been damaged due to heavy impacts or fire.
- Make sure that no objects or liquids can get into this product, as this may cause a short circuit. This apparatus shall not be exposed to dripping or splashing. No objects filled with liquid, such as vases, shall be placed on this apparatus. No naked sources (such as lighted candles) should be placed on this apparatus.
- Do not connect this product to any equipment or accessories not foreseen. For suspended installation, only use the dedicated anchoring points and do not try to hang this product by using elements that are unsuitable or not specific for this purpose. Also check the suitability of the support surface to which the product is anchored (wall, ceiling, structure, etc.), and the components used for attachment (screw anchors, screws, brackets not supplied by RCF etc.), which must guarantee the security of the system / installation over time, also considering, for example, the mechanical vibrations normally generated by transducers. To prevent the risk of falling equipment, do not stack multiple units of this product unless this possibility is specified in the user manual.
- The company strongly recommends to install this product only by professional qualified installers (or specialised firms) who can ensure correct installation and certify it according to the regulations in force. The entire audio system must comply with the current standards and regulations regarding electrical systems.

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Supports, trolleys and carts: The equipment should be only used on supports, trolleys and carts, where necessary, that are recommended by the manufacturer. The equipment / support / trolley / cart assembly must be moved with extreme caution. Sudden stops, excessive pushing force and uneven floors may cause the assembly to overturn. Never tilt the assembly.
- Hearing loss:** Exposure to high sound levels can cause permanent hearing loss. The acoustic pressure level that leads to hearing loss is different from person to person and depends on the duration of exposure. To prevent potentially dangerous exposure to high levels of acoustic pressure, anyone who is exposed to these levels should use adequate protection devices. When a transducer capable of producing high sound levels is being used, it is necessary to wear ear plugs or protective earphones. See the technical specifications in the instruction manual for the maximum sound pressure the loudspeaker can produce.

ACTIVE DEVICES: ACTIVE SPEAKERS and AMPLIFIERS

- The mains voltage is sufficiently high to involve a risk of electrocution; install and connect this product before plugging it in.
- Before powering up, make sure that all the connections have been made correctly and the voltage of your mains corresponds to the voltage shown on the rating plate on the unit, if not, please contact your dealer.
- The metallic parts of the unit are earthed through the power cable. An apparatus with CLASS I construction shall be connected to a mains socket outlet with a protective earthing connection by a 3-pole power cord.
- Protect the power cable from damage; make sure it is positioned in a way that it cannot be stepped on or crushed by objects.
- If the product is not used for a long period, disconnect the power cable.
- Ensure that no children have access to the installation materials and components.
- Before powering up, make sure that all the connections have been made correctly and the voltage of your mains corresponds to the voltage shown on the rating plate on the unit. If not, please contact your dealer.
- Always make sure the power cord and all plug assemblies are certified and suitable for the use in the particular countries where the product shall be installed.
- Use the mains plug to disconnect the apparatus from the mains.
- If the device is provided with internal fuse or if it requires operations, contact your authorized service centre or qualified personnel as defined in the IEC 62368-1 3rd Ed. Interfaces at ES3 level present.
- If the device is provided with power socket with accessible fuse holder, or accessible independent fuse holder, disconnect mains cable device before fuse replacement. The fuse on the AC mains input may be on the neutral, the AC mains shall be disconnected to de-energize the phase.

PASSIVE DEVICES and ACCESSORIES

- Loudspeaker lines (amplifier outputs) can have a sufficiently high voltage to involve a risk of electrocution: never install or connect this loudspeaker when amplifiers are switched on.
- Make sure all connections have been made correctly and the loudspeaker input impedance is suitable for the amplifier output.
- To ensure a correct sound reproduction, loudspeaker phase is to be respected (loudspeakers are connected respecting the amplifier polarity). This is important when loudspeakers are installed adjacent one another, for instance, in the same room.
- To prevent inductive effects from causing hum, noise and a bad system working, loudspeaker lines should not be laid together with other electric cables (mains), microphone or line level signal cables connected to amplifier inputs.
- The loudspeaker cable shall have wires (twisted, if possible, to reduce inductive effects due to surrounding electro-magnetic fields) with a suitable section and a sufficient electrical insulation. Refer to local regulations since there may be additional requirements about cable characteristics.
- Do NOT connect loudspeaker low impedance (8 - 4 Ω) inputs to 100 / 70 V constant voltage lines.

SUSPENDED DEVICES

1. Suspending any object is a potentially dangerous operation and should only be attempted by individuals who have a thorough knowledge of the techniques and regulations of rigging objects overhead.
2. The company strongly recommends that all devices should be suspended taking into account all current national, federal, state and local regulations. It is the responsibility of the installer to ensure that all devices are safely installed in accordance with all such regulations.
3. The company strongly recommends to inspect the system at least once a year. If any sign of weakness or damage is detected remedial actions should be taken immediately.
4. The user is responsible for making sure that the supporting surfaces and any additional hardware used is capable of supporting the system. Any hardware used to suspend a loudspeaker array that is not provided by or associated with the company is not recommended and is under the responsibility of others.


OPERATING PRECAUTIONS


- Install the product in accordance with manufacturer's instructions.
- Mechanical and electrical factors need to be considered when installing a professional audio system (in addition to those which are strictly acoustic, such as sound pressure, angles of coverage, frequency response, etc.).
- If the product needs to be used in a cold environment, slowly warm up the voice coils by sending a low-level signal for about 15 minutes before sending high-power signals.
- Place this product far from any heat sources and always ensure an adequate air circulation around it.
- Do not overload this product with too much power or for a long time.
- Never force the control elements (keys, knobs, etc.).


IMPORTANT

To prevent the occurrence of noise on line signal cables, use screened cables only and avoid putting them close to:


- Equipment that produces high-intensity electromagnetic fields
- Power cables
- Loudspeaker lines

 **WARNING! CAUTION!** To prevent the risk of fire or electric shock, never expose this product to rain or humidity.

 **WARNING!** To avoid the risk of electric shock, do not connect to the mains supply if the device is open or, in the case of speakers, while the grille is removed.

 **WARNING!** To reduce the risk of electric shock, do not disassemble this product unless you are qualified. Refer servicing to qualified service personnel.

CORRECT DISPOSAL OF THIS PRODUCT

 This product should be handed over to an authorized collection site for recycling waste electrical and electronic equipment (EEE). Improper handling of this type of waste could have a possible negative impact on the environment and human health due to potentially hazardous substances that are generally associated with EEE. At the same time, your cooperation in the correct disposal of this product will contribute to the effective usage of natural resources. For more information about where you can drop off your waste equipment for recycling, please contact your local city office, waste authority or your household waste disposal service.

CARE AND MAINTENANCE

To ensure a long-life service, this product should be used following these advices:

- If the product is intended to be set up outdoors, be sure it is under cover and protected to rain and moisture.
- In the case of fixed installations, it is recommended to schedule periodic checks of the entire system and all its parts for the entire duration of the installation.
- All personnel involved in the installation must be adequately trained and educated on safety procedures and equipped with appropriate personal protective equipment (PPE).
- If it is necessary to replace a part, always contact authorized centers only or use only parts supplied by RCF.
- RCF is not responsible for problems or malfunctions encountered in the case of replacements of parts or modifications to the system initiated by the user.
- Do not use abrasives, cleaning solvents, alcohol, benzene or other volatile substances for cleaning the external parts of this product. Always use a dry cloth to clean the exterior surfaces of the speaker and always do it when the power is turned off.

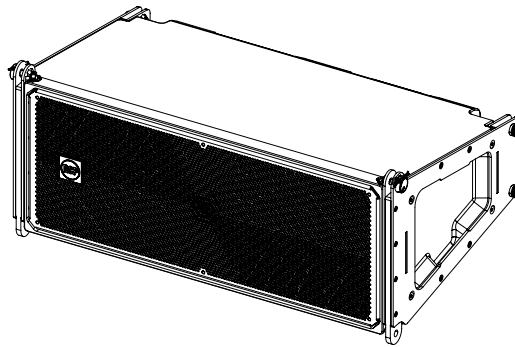


WARNING! CAUTION! For powered devices, clean only when the power is turned off.

2. DESCRIPTION

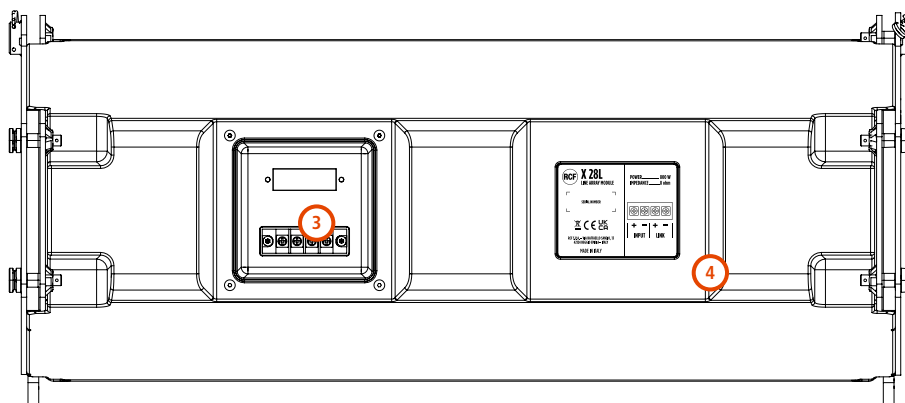
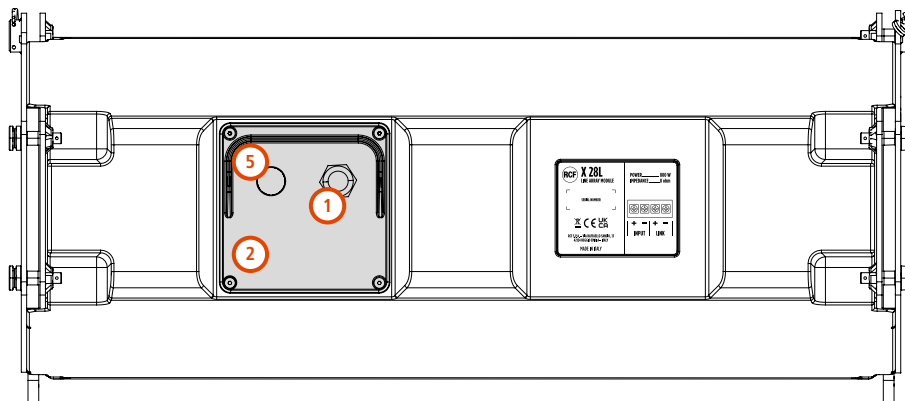
X 28 L - TWO-WAY LINE ARRAY MODULE

X 28L is a line array module designed for fixed indoor and outdoor installations requiring high audio quality and extreme durability. Thanks to the two 8" woofers and the 3" voice coil compression driver it offers a powerful and clear sound with constant 110° x 20° directivity. The cabinet is made of high-density polyurethane, while the aluminum grille guarantees protection from dust and rain, thanks to a waterproof fabric layer. X 28L is equipped with array mechanics that allow angle adjustment between modules from 0° to 20° with 2° steps.



X 28 L

2 x 8" neo woofer
1 x 3.0" v.c. neo compression driver
140 dB Max SPL
Directivity H 110° x V 20°

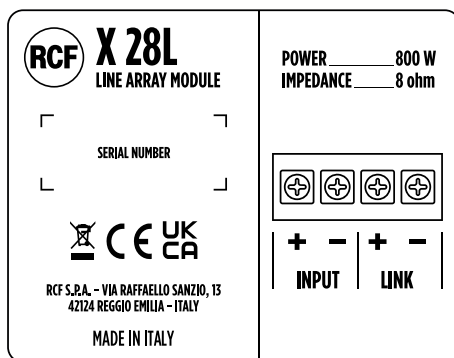


THE REAR PANEL

The rear side displays a cable gland (1) mounted on a panel (2).

Remove the panel to show the contact holder (3). The connections are shown on the model label (4) on the side.

The panel has a knockout hole (5) which can be opened to mount an additional cable gland (6) (included).



⚡ ⚠ WARNING! CAUTION! Loudspeaker connections should be only made by qualified and experienced personnel having the technical know-how or enough specific instructions (to ensure that connections are made correctly) in order to prevent any electrical danger.

To prevent any risk of electric shock, do not connect loudspeakers when the amplifier is switched on.

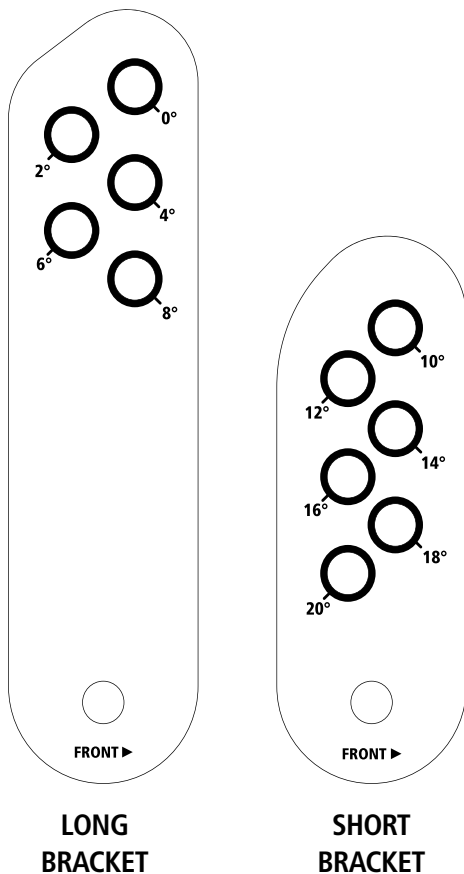
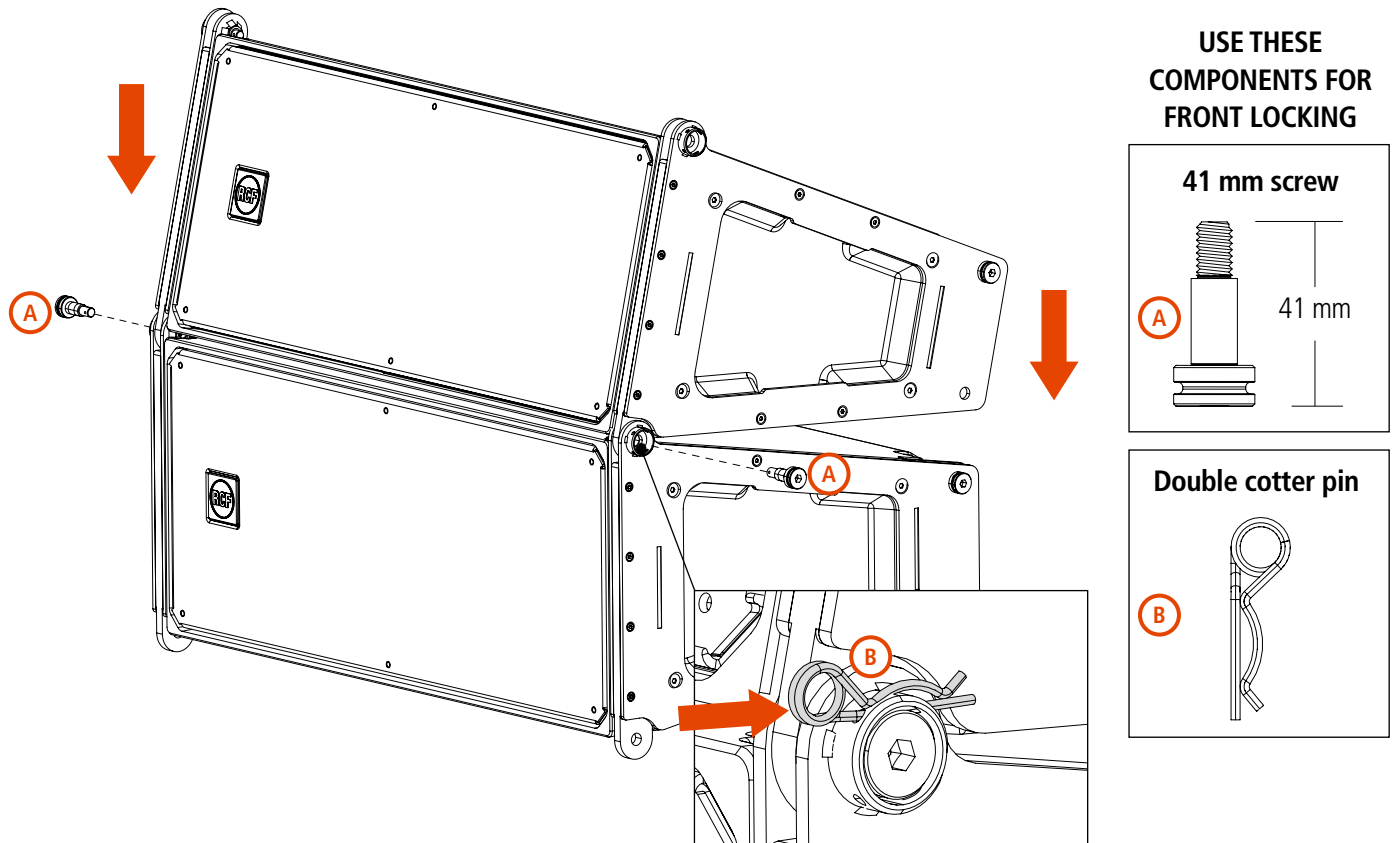
Before turning the system on, check all connections and make sure there are no accidental short circuits.

The entire sound system shall be designed and installed in compliance with the current local laws and regulations regarding electrical systems.

4. INSTALLATION

4.1 CONNECTING TWO OR MORE SPEAKERS

To connect two modules together place one on top of the other making the front brackets match each other and fix them by screwing two 41 mm M8 screws **(A)** on both sides. Once the screws have been tightened, insert a double cotter pin **(B)** on both sides as shown in the picture.

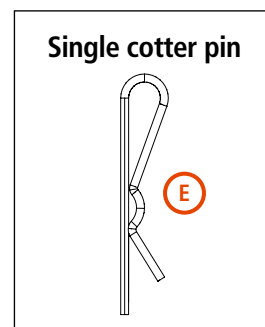
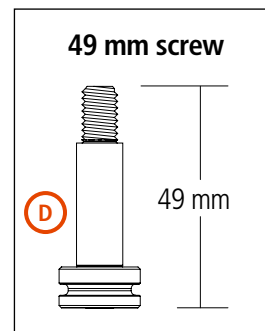
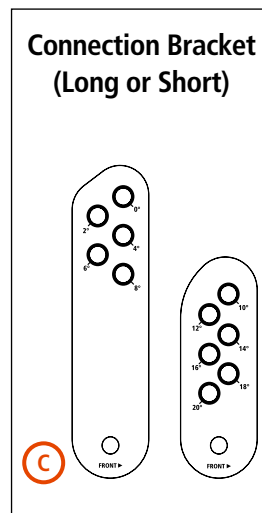
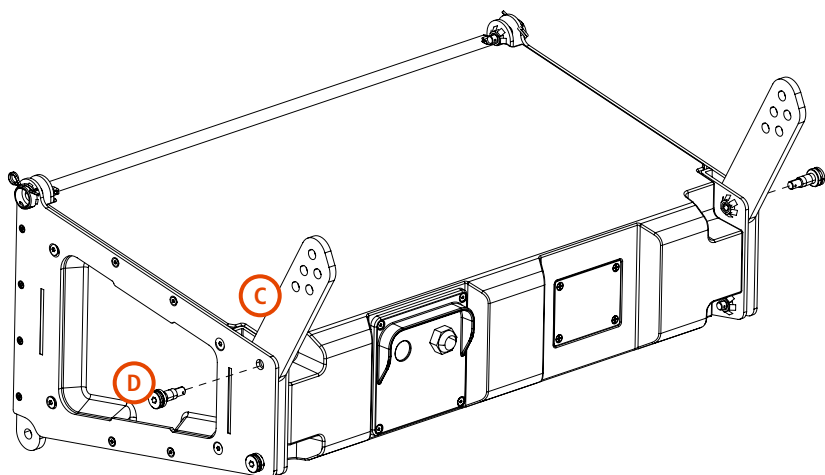


For the rear connection, two different brackets are provided; depending on the desired inclination, you can either choose to use the long bracket (angles from 0° to 8°) or the short bracket (angles from 10° to 20°).

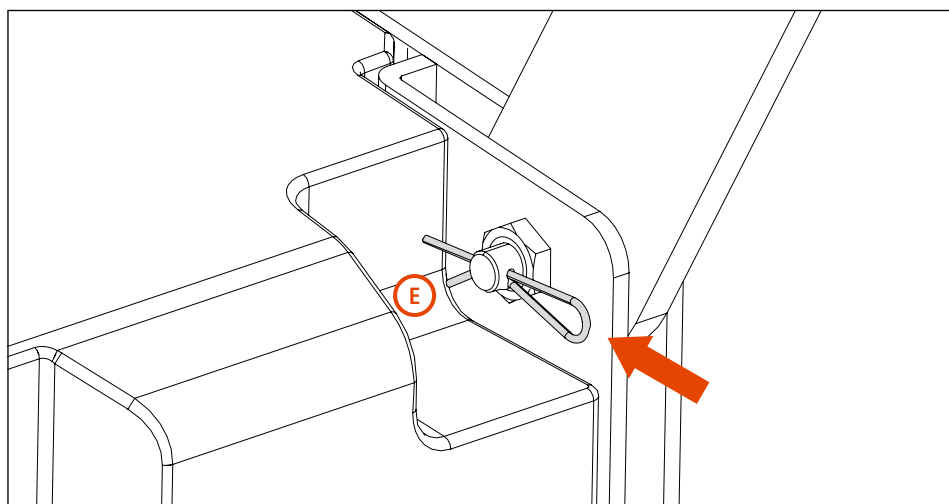
Make sure to fix the bracket with the FRONT arrow pointing to the speaker front side.

Fix the rear connection bracket **C** on the cabinet rear bracket with a 49 mm M8 screw **C**.

USE THESE COMPONENTS FOR REAR LOCKING



Once the screws have been tightened, insert a single cotter pin **E** on the screws as shown in the picture.

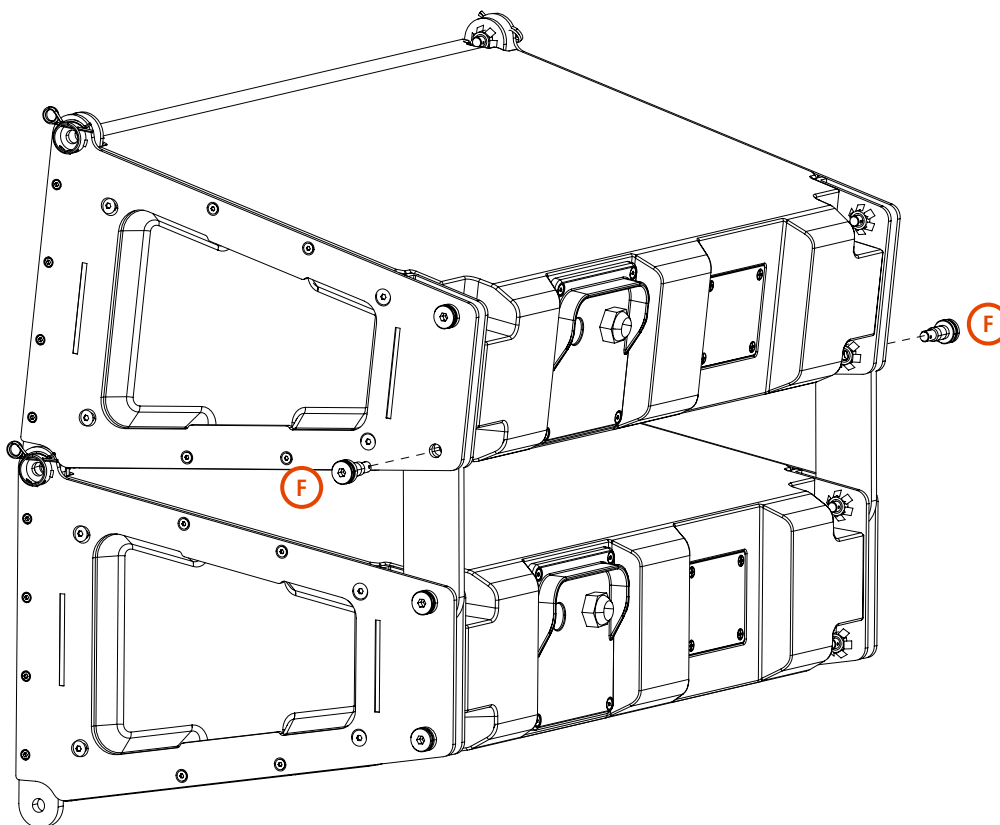


i **IMPORTANT NOTE:** All screws and nuts used to connect modules and flybars must be blocked with a threadlocker like LOCTITE 243 (or another product with similar characteristics).

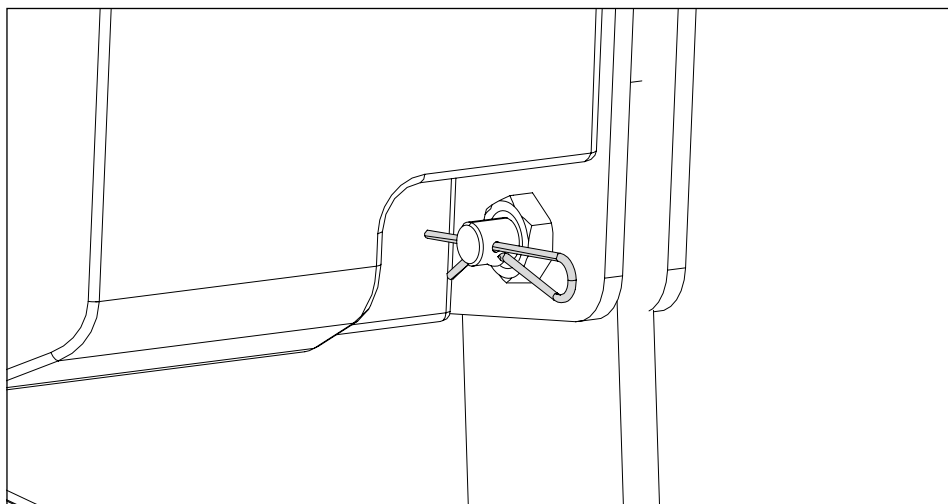
⚡ ⚠ **WARNING! CAUTION!** The system should always be installed by qualified and experienced personnel having the technical know-how or enough specific instructions in order to prevent any danger.

4. INSTALLATION

Once chosen the right angle, lift up the top speaker and fix them by screwing a 49 mm M8 screw **F** on both sides.



Once the screws have been tightened, insert a single cotter pin **E** on the screws as shown in the picture.

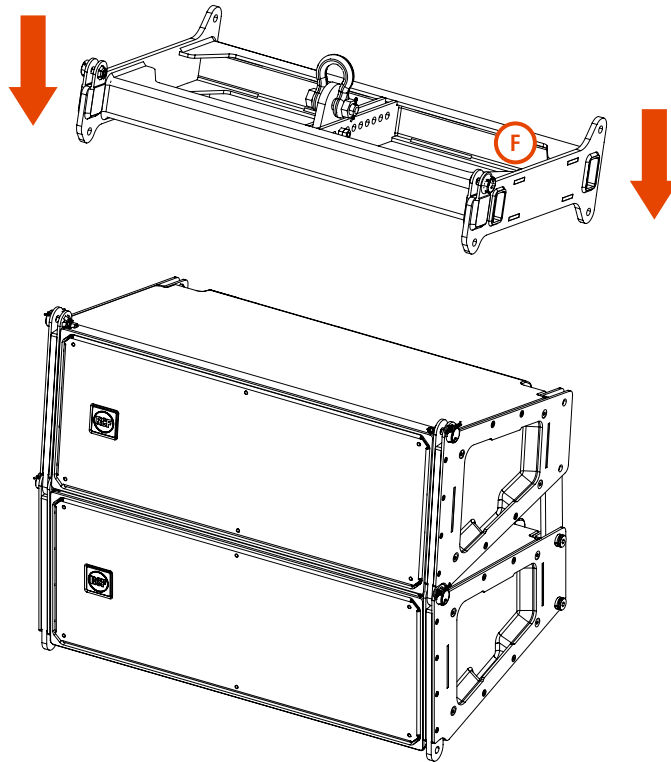


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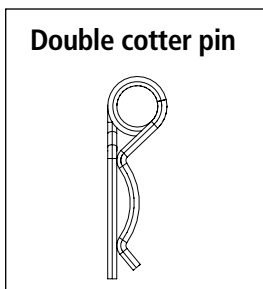
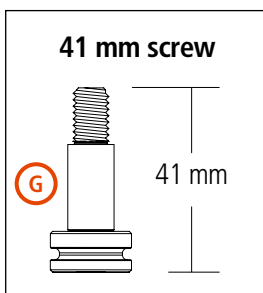
4.2 INSTALLING THE FLYBAR

Place the flybar **F** over the top module making the front holes and the rear holes match each other.

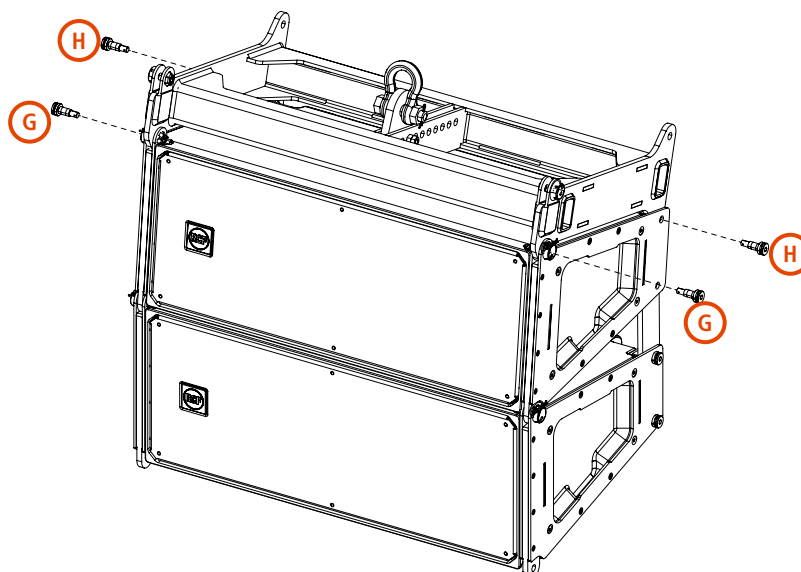
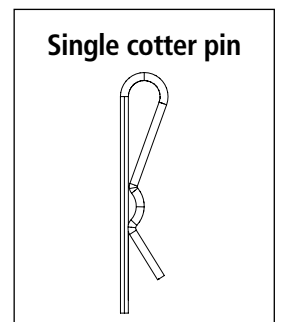
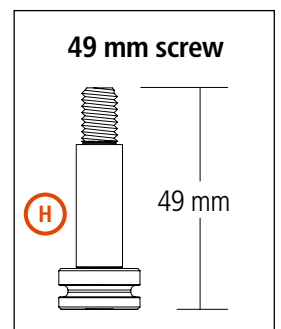


Fix the flybar to the speaker by screwing two 41 mm M8 screws **G** for the front connection and two 49 mm M8 screws **H** for the rear connection. Secure all screws with the specific cotter pin (double cotter pin for the front, single cotter pin for the rear).

USE THESE COMPONENTS FOR FRONT LOCKING



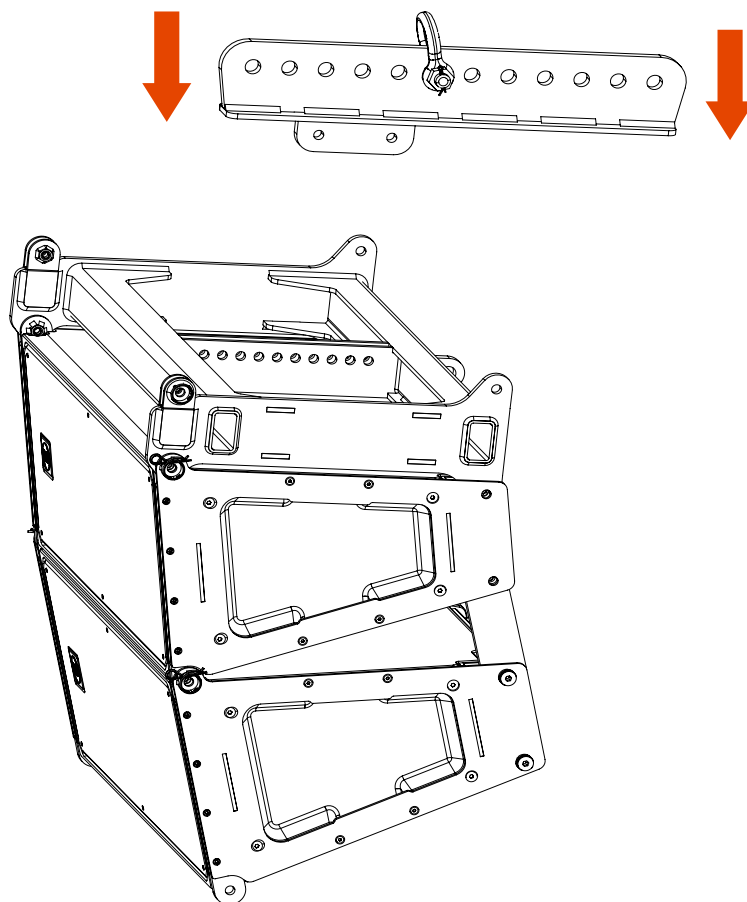
USE THESE COMPONENTS FOR REAR LOCKING



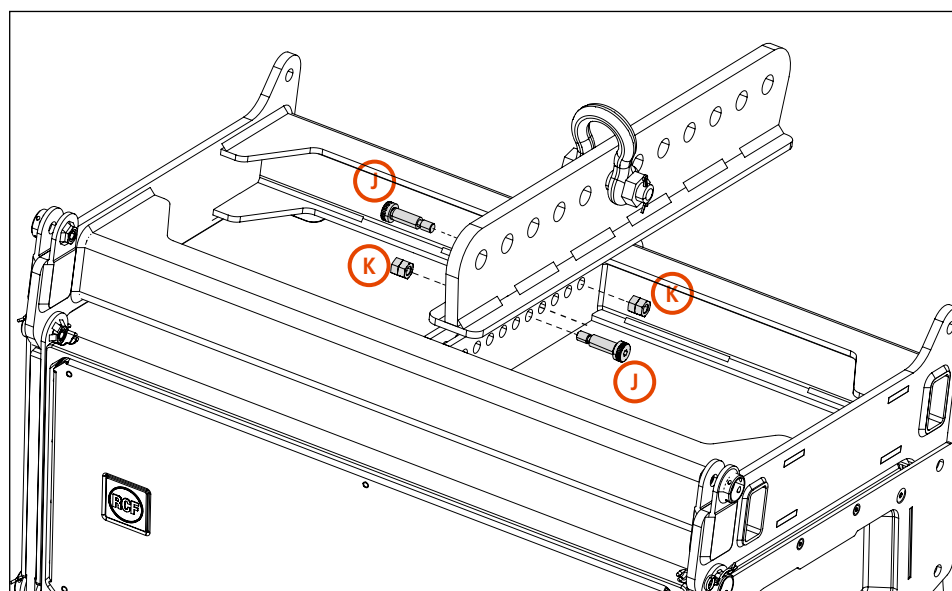
4. INSTALLATION

4.3 INSTALLING THE EXTENSION BAR

With the use of the specific extension bar it is possible to increase the rear extension of the flybar.
Place the extension bar **I** over the flybar.



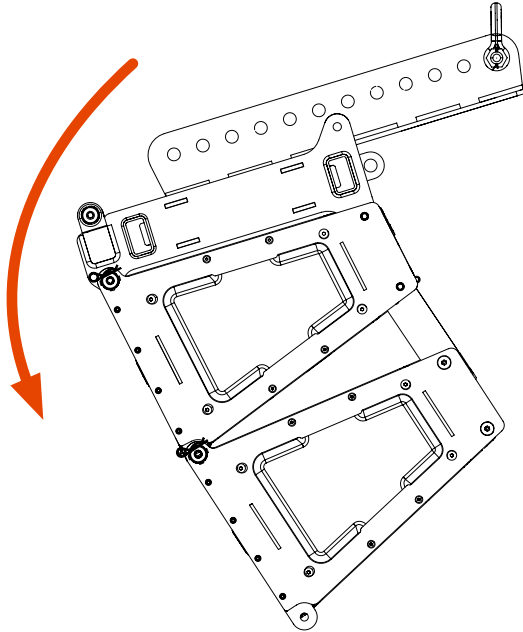
Fix the extension bar to the flybar by screwing the two screws **J** and nuts **K** removed earlier from the shackle bracket.



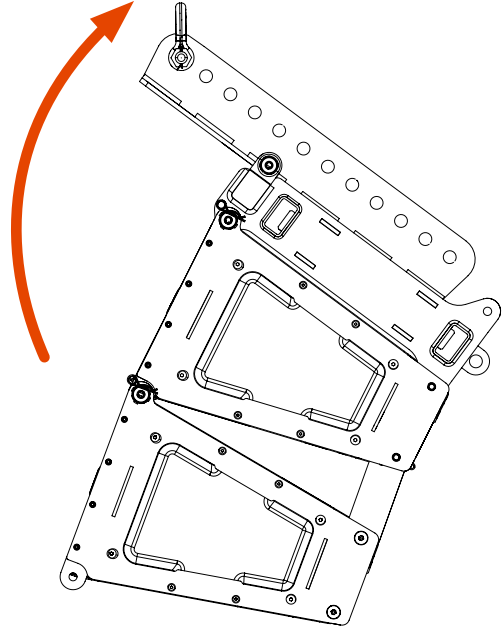
4. INSTALLATION

Depending on the position of the extension bar on the flybar and on the hole used as suspension point, the system can be tilted either upward or downward.

**EXTENSION BAR
IN REAR POSITION
(DOWNWARD TILT)**



**EXTENSION BAR
IN FRONT POSITION
(UPWARD TILT)**

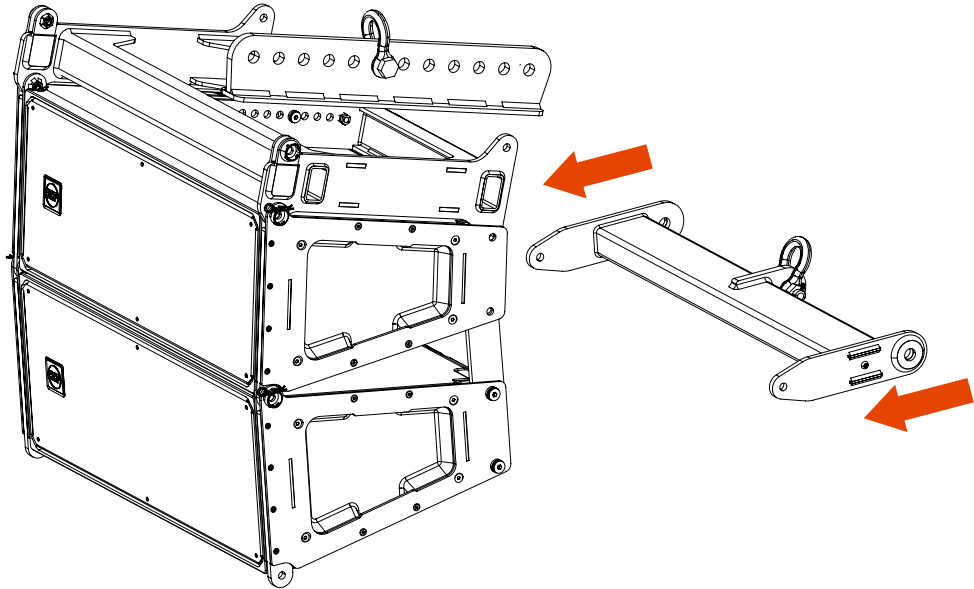


4. INSTALLATION

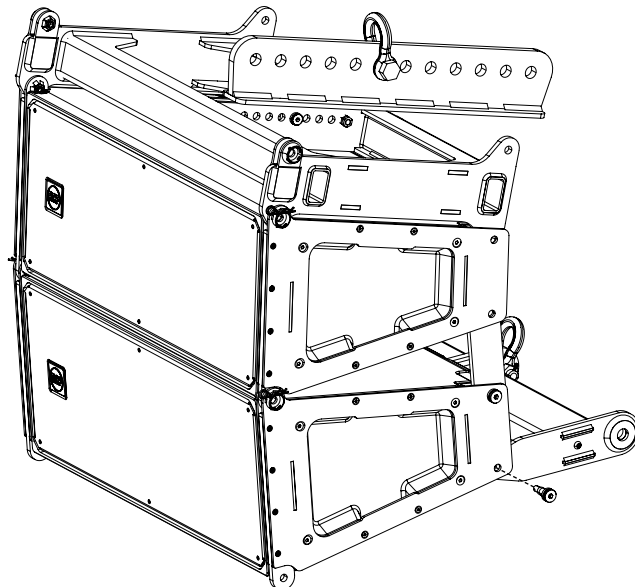
4.4 INSTALLING THE LIGHT FLYBAR

With the use of the specific light flybar it is possible to have an additional suspension point on the rear side of the system to be used as pullback.

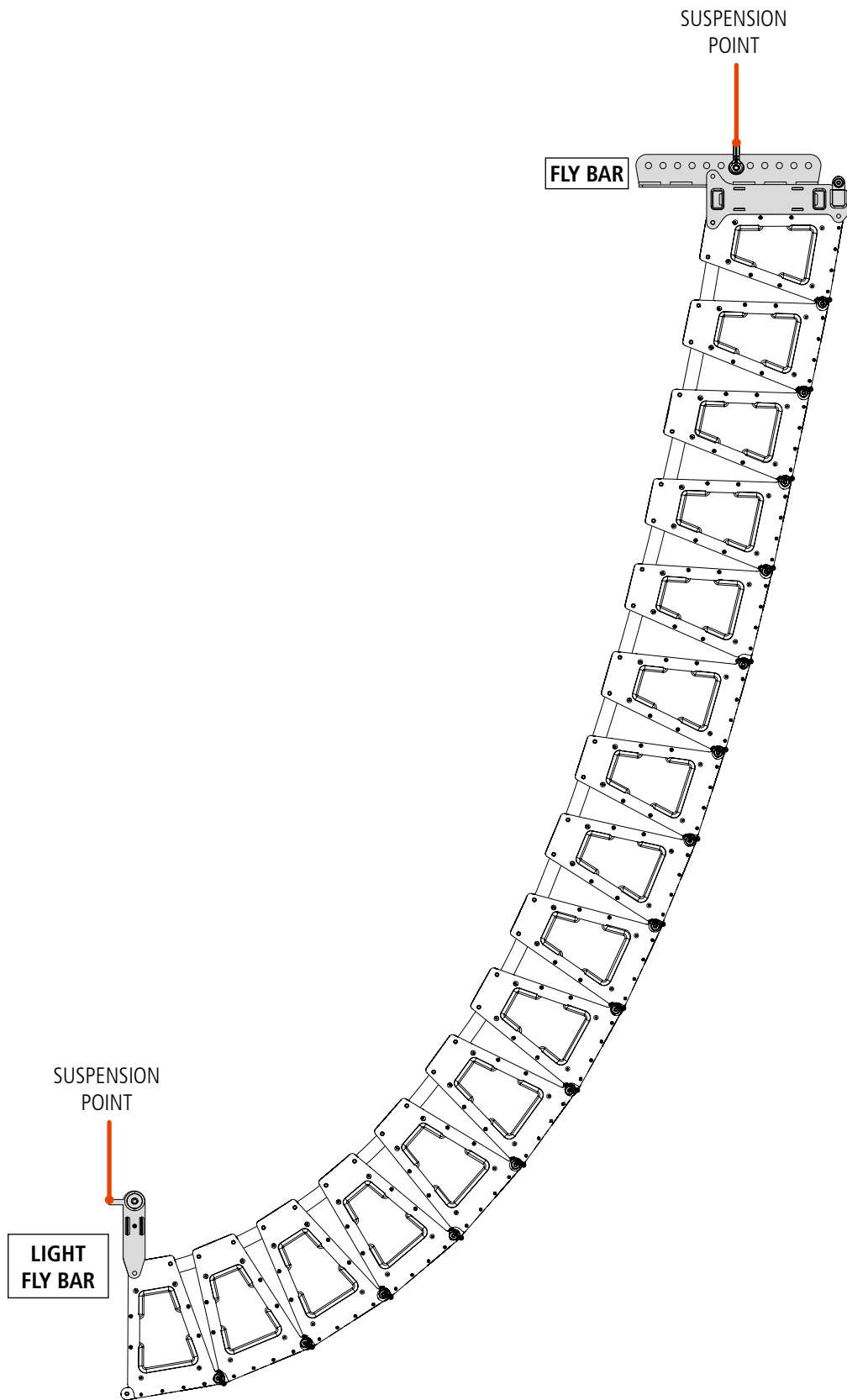
Place the light Flybar on the rear side of the bottom speaker making the flybar front holes match with the speaker rear bottom holes.



Fix the light Flybar to the speaker on both sides with the dedicated screws (on the outer side) and nuts (on the inner side).

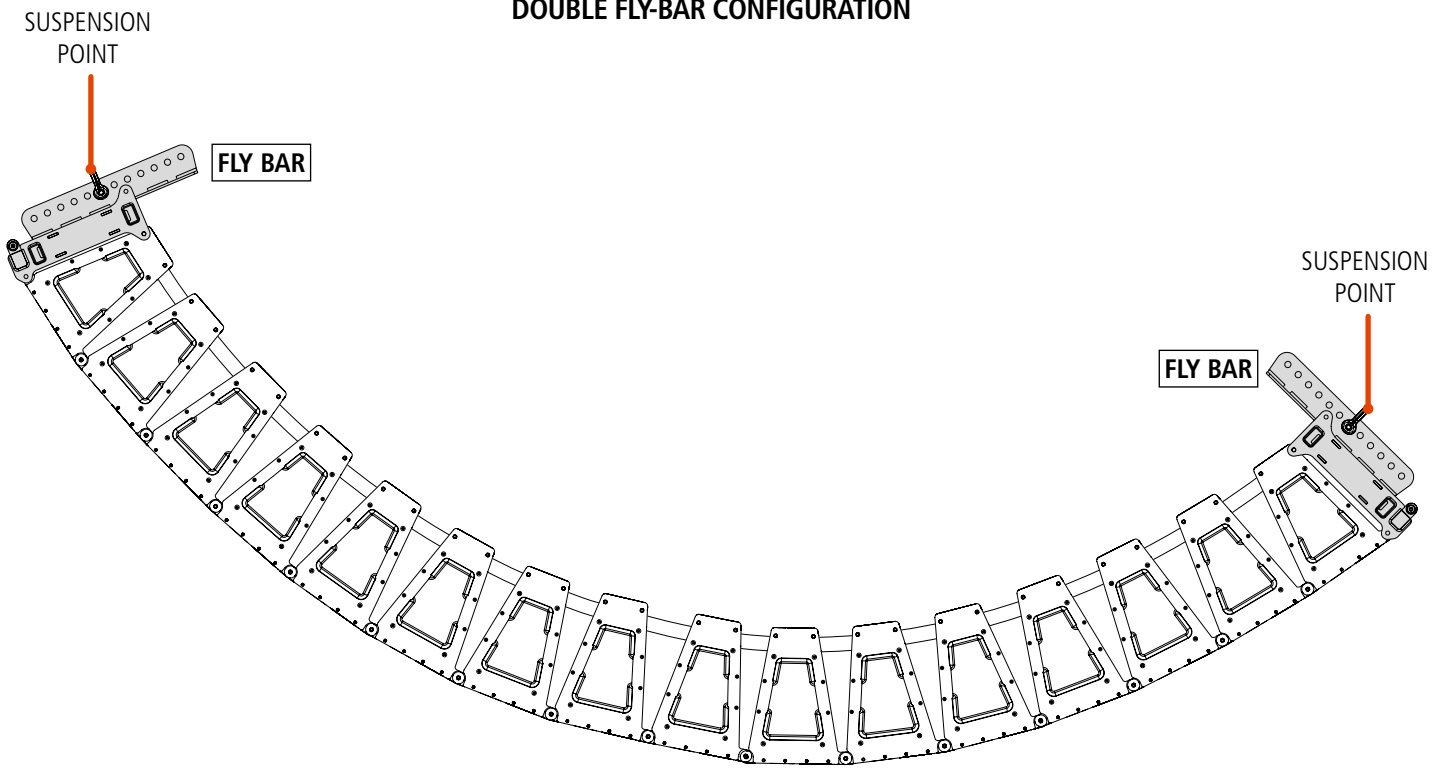


FLY-BAR + LIGHT FLY-BAR CONFIGURATION

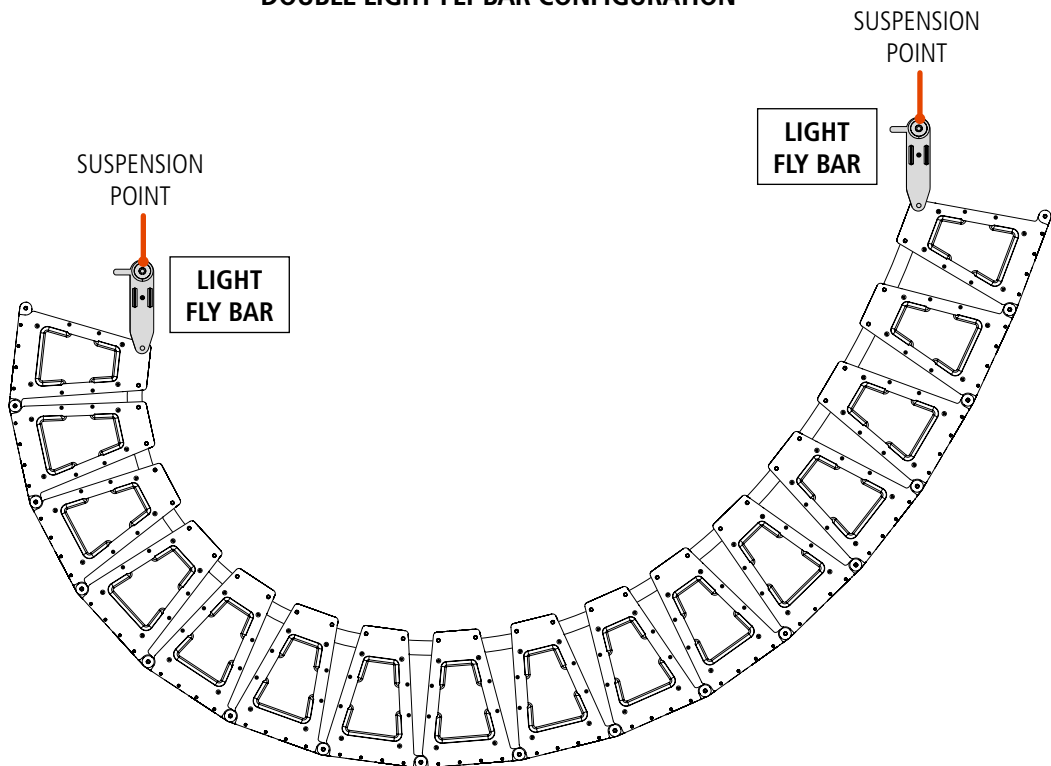


5. CONFIGURATIONS

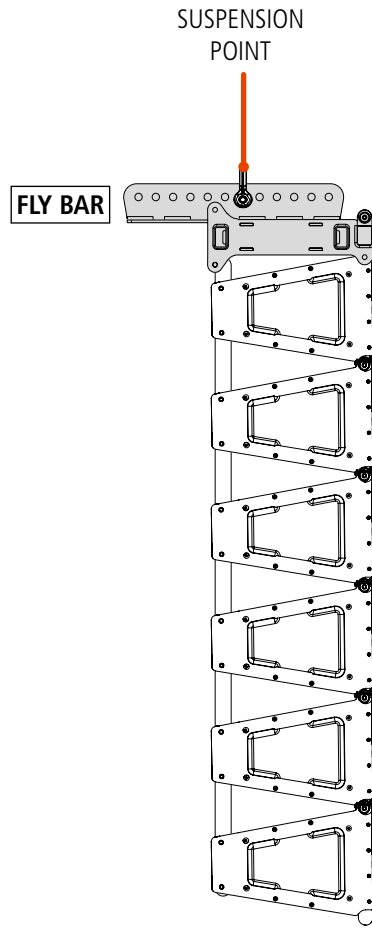
DOUBLE FLY-BAR CONFIGURATION



DOUBLE LIGHT FLY-BAR CONFIGURATION



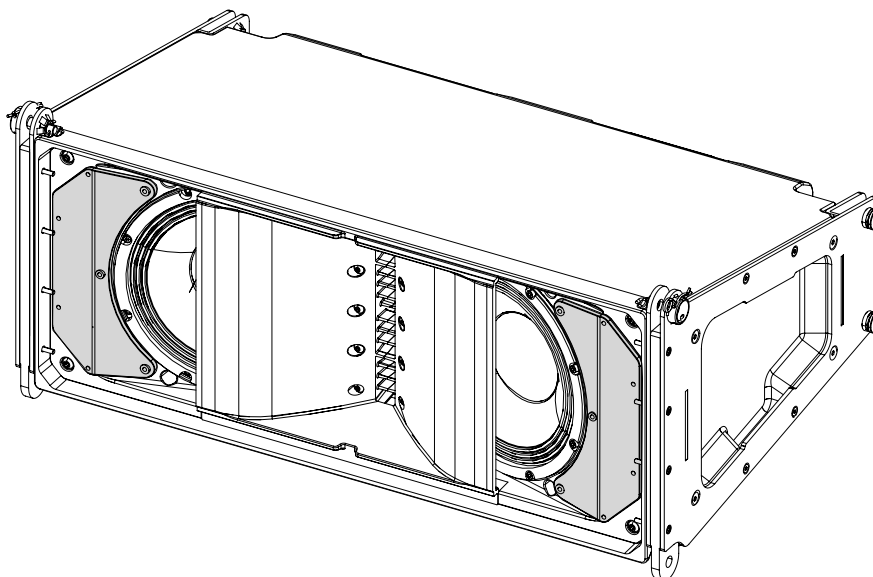
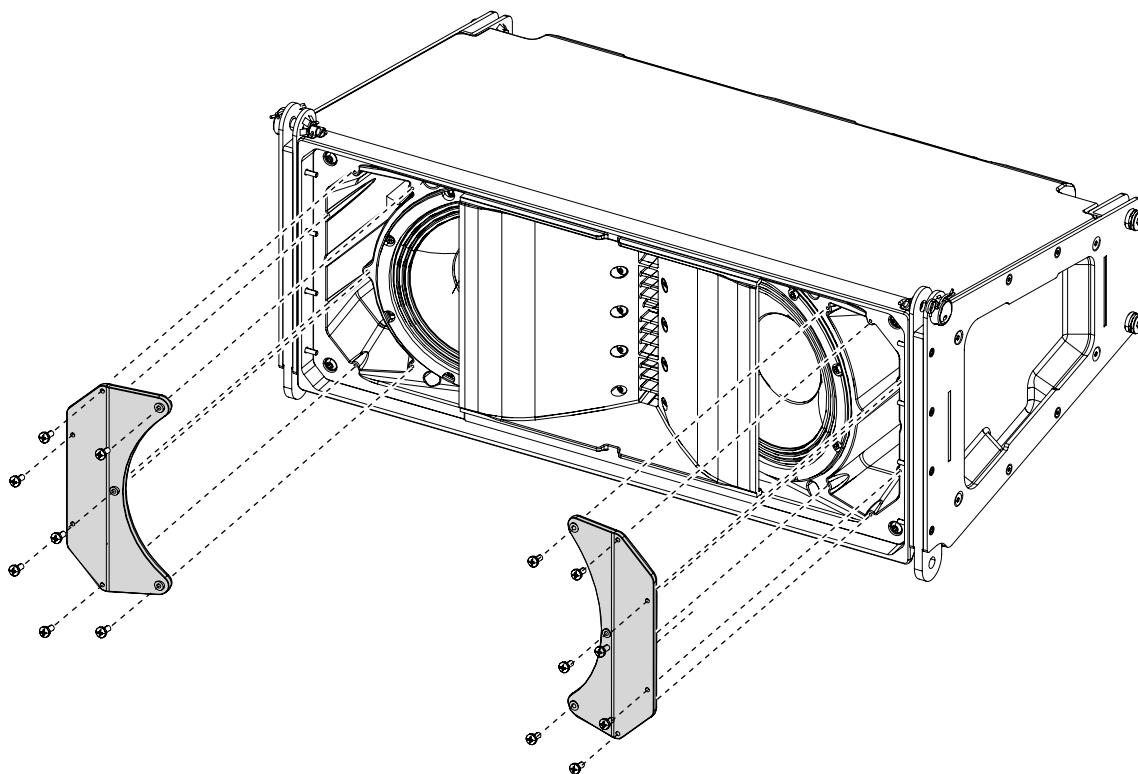
STRAIGHT SINGLE FLY-BAR CONFIGURATION



6. IP 55 PROTECTION

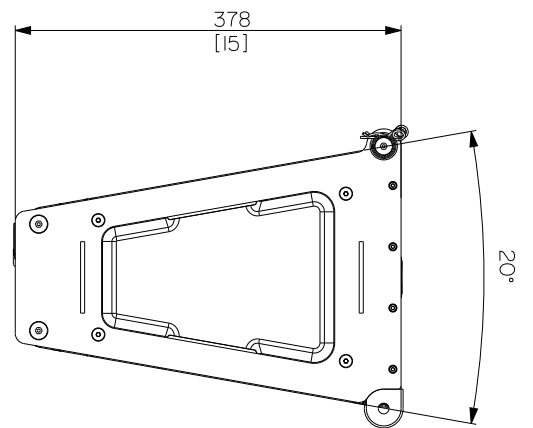
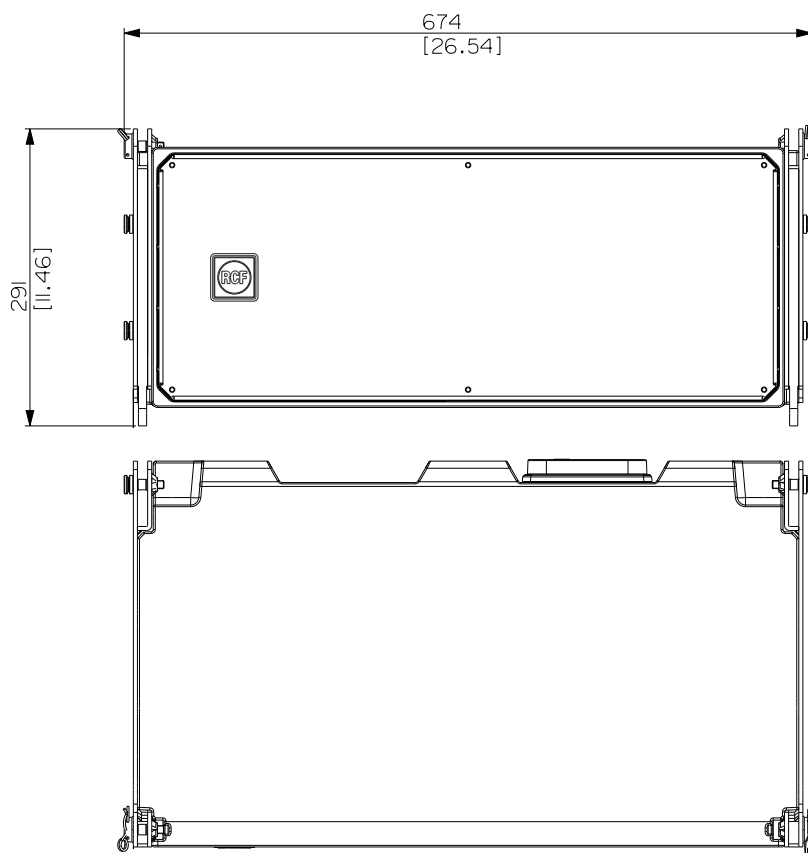
IP55 protection is achieved by screwing the provided reflex caps on their position.

1. Remove the front grille and screw the reflex caps.



2. Once the reflex caps have been screwed on their position and the grille has been reassembled, the speaker can be used under IP55 conditions.

DIMENSIONS



TECHNICAL SPECIFICATIONS		
Acoustical specifications	Frequency Response (-10dB)	50 Hz ÷ 20000 Hz
	Max SPL @ 1m	140 dB
	Horizontal coverage angle	110°
	Vertical coverage angle	20°
Power section	Amplification	Full Range
	Nominal Impedance	8 ohm
	Power Handling	800 W RMS
	Peak Power Handling	3200 W PEAK
	Protections	Dynamic active mosfet
	Crossover Frequencies	750 Hz
Transducers	Recommended Amplifiers	XPS 16K, XPS 16KD
	Compression Driver	1 x 1.4" neo, 3.0" v.c
Input/Output section	Woofers	2 x 8" neo, 2.5" v.c
	Input connectors	Screw Terminals
Standard compliance	Output connectors	Screw Terminals
	IP protection grade	IP 55
Physical specifications	Safety agency	CE compliant
	Cabinet/Case Material	Structural Polyurethane
	Hardware	Array fittings
	Grille	Aluminum with water-repellent protection
Size / Weight	Color	Black - RAL 9005
	Height	290 mm / 11.42 inches
	Width	658 mm / 25.91 inches
	Depth	378 mm / 14.88 inches
	Weight	24 kg / 52.91 lbs