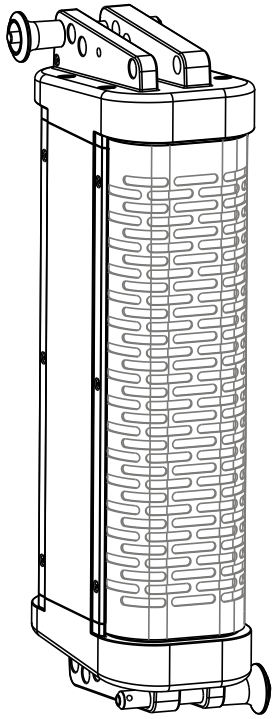
AX4CL

High Output Column Array Loudspeaker



USER MANUAL

revision 2023-08-08

AXIOM

IMPORTANT SAFETY INSTRUCTIONS

Watch for these symbols:

The lightning flash with arrowhead symbol within an equilateral triangle is intended to alert the user to the presence of uninsulated “dangerous voltage” within the product’s enclosure, that may be of sufficient magnitude to constitute a risk of electric shock to persons.

The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

1. Read these instructions.
2. Keep these instructions.
3. Heed all warnings.
4. Follow all instructions.
5. Do not use this apparatus near water.
6. Clean only with dry cloth.
7. Do not block any ventilation openings. Install in accordance with the manufacturer’s instructions.
8. Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
9. Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding-type plug has two blades and a third grounding prong. The wide blade or the third prong are provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
10. Protect the power cord from being walked on or pinched, particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.

11. Only use attachments/accessories specified by the manufacturer.
12. Use only with the cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with the apparatus. When a cart is used, use caution when moving the cart/apparatus combination to avoid injury from tip-over.
13. Unplug this apparatus during lightning storms or when unused for long periods of time.
14. Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.
15. Warning: to reduce the risk of fire or electric shock, do not expose this apparatus to rain or moisture.
16. Do not expose this equipment to dripping or splashing and ensure that no objects filled with liquids, such as vases, are placed on the equipment.
17. To completely disconnect this apparatus from the ac mains, disconnect the power supply cord plug from the ac receptacle.
18. The mains plug of the power supply cord shall remain readily operable.
19. This apparatus contains potentially lethal voltages. To prevent electric shock or hazard, do not remove the chassis, input module or ac input covers. No user serviceable parts inside. Refer servicing to qualified service personnel.
20. The loudspeakers covered by this manual are not intended for high moisture outdoor environments. Moisture can damage the speaker cone and surround and cause corrosion of electrical contacts and metal parts. Avoid exposing the speakers to direct moisture.
21. Keep loudspeakers out of extended or intense direct sunlight. The driver suspension will prematurely dry out and finished surfaces may be degraded by long-term exposure to intense ultra-violet (UV) light.
22. The loudspeakers can generate considerable energy. When placed on a slippery surface such as polished wood or linoleum, the speaker may move due to its acoustical energy output.
23. Precautions should be taken to assure that the speaker does not fall off a stage or table on which it is placed.
24. The loudspeakers are easily capable of generating sound pressure levels (SPL) sufficient to cause permanent hearing damage to performers, production crew and audience members. Caution should be taken to avoid prolonged exposure to SPL in excess of 90 dB.

This marking shown on the product or its literature, indicates that it should not be disposed with other household wastes at the end of its working life. To prevent possible harm to the environment or human health from uncontrolled waste disposal, please separate this from other types of wastes and recycle it responsibly to promote the sustainable reuse of material resources. Household users should contact either the retailer where they purchased this product, or their local government office, for details of where and how they can take this item for environmentally safe recycling. Business users should contact their supplier and check the terms and conditions of the purchase contract. This product should not be mixed with other commercial wastes for disposal.

DECLARATION OF CONFORMITY

The product is in compliance with:
RoHS Directive 2011/65/EU and 2015/863/EU, WEEE Directive 2012/19/EU.

The product is in compliance with:
S.I. 2012/3032 The Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment Regulations 2012

LIMITED WARRANTY

Proel warrants all materials, workmanship and proper operation of this product for a period of two years from the original date of purchase. If any defects are found in the materials or workmanship or if the product fails to function properly during the applicable warranty period, the owner should inform about these defects the dealer or the distributor, providing receipt or invoice of date of purchase and defect detailed description. This warranty does not extend to damage resulting from improper installation, misuse, neglect or abuse. Proel S.p.A. will verify damage on returned units, and when the unit has been properly used and warranty is still valid, then the unit will be replaced or repaired. Proel S.p.A. is not responsible for any “direct damage” or “indirect damage” caused by product defectiveness.

- This unit package has been submitted to ISTA 1A integrity tests. We suggest you control the unit conditions immediately after unpacking it.
- If any damage is found, immediately advise the dealer. Keep all unit packaging parts to allow inspection.
- Proel is not responsible for any damage that occurs during shipment.
- Products are sold “delivered ex warehouse” and shipment is at charge and risk of the buyer.
- Possible damages to unit should be immediately notified to forwarder. Each complaint for package tampered with should be done within eight days from product receipt.

CONDITIONS OF USE

Proel do not accept any liability for damage caused to third parties due to improper installation, use of non-original spare parts, lack of maintenance, tampering or improper use of this product, including disregard of acceptable and applicable safety standards. Proel strongly recommends that this loudspeaker cabinet be suspended taking into consideration all current National, Federal, State and Local regulations. The product must be installed be qualified personal. Please contact the manufacturer for further information.

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INTRODUCTION

The AX4CL Line Array is a passive system equipped with four 2.5” neodymium transducers with waterproof cones, designed for portable and permanently installed applications where high power and clarity are needed. The aluminum frame box structure ensures lightweight and strength, while the shape features a back-loaded transmission line design with clean mid-bass reproduction and natural cardioid behaviour. The wide horizontal dispersion make the system flexible and adaptable to many different applications.

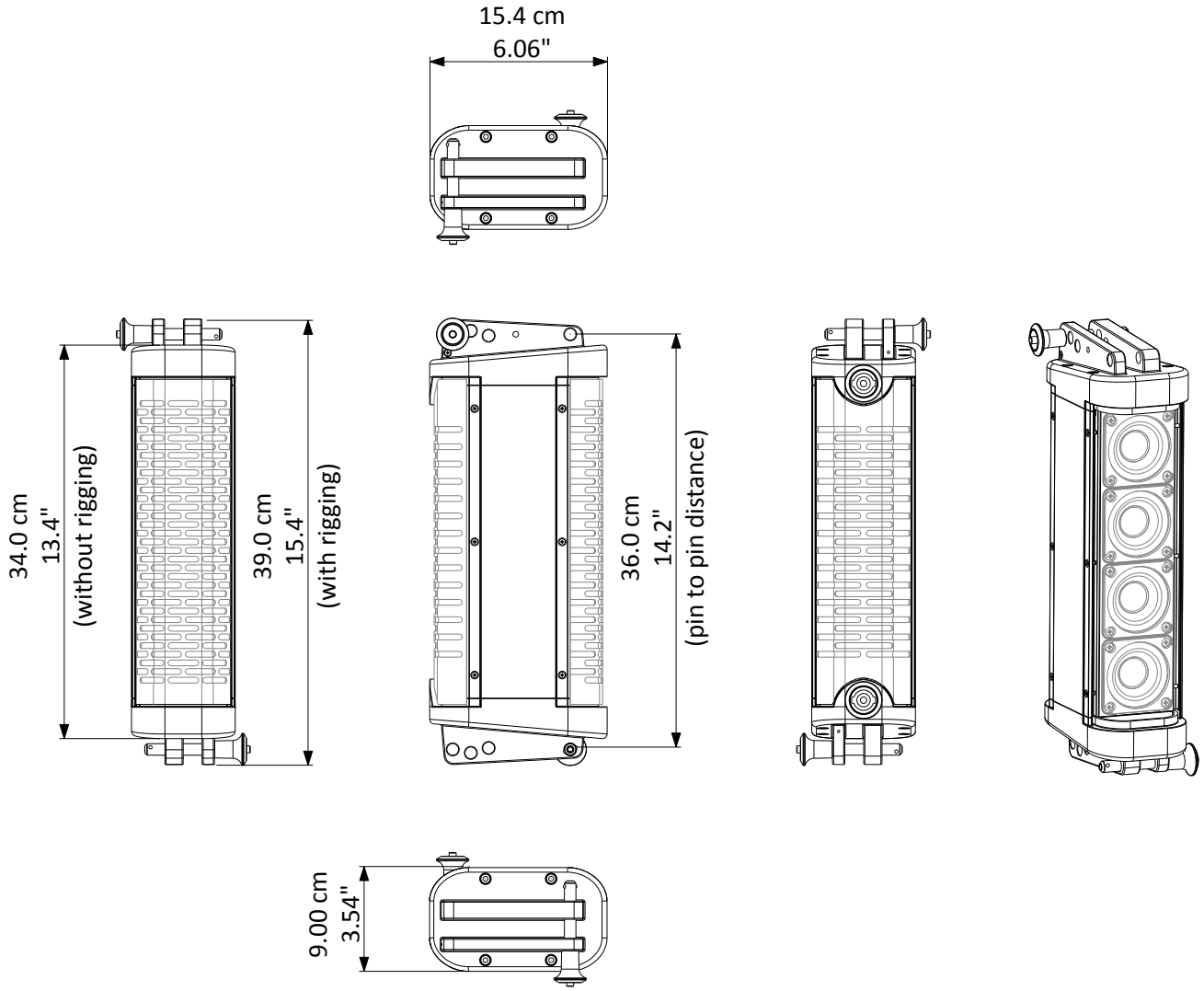
The AX4CL line array module has been designed to be used as a stand-alone or multiple column system in fixed or mobile installations, frontfill applications and low-profile stage monitoring solutions.

TECHNICAL SPECIFICATION

SYSTEM	
System’s Acoustic Principle	Line Array Element Short Transmission Line Back Loading
Frequency Response (±3dB)	200 Hz - 16 KHz (Processed)
Nominal Impedance	32 Ω
Minimum Impedance	23.7 Ω
Horizontal Coverage Angle	80° (-6 dB)
Sensitivity (4V) SPL @ 1m*	91 dB
Maximum Peak SPL @ 1m	116 dB
**measured @4 m and scaled @1 m*	
TRANSDUCERS	
Type	4 x 2.5" (66mm) Neodymium magnet, full range, 0.8" (20mm) VC
Cone	Waterproof Cone
Voice Coil Type	Ventilated voice coil

INPUT CONNECTIONS	
Connector Type	Neutrik® Speakon® NL4 x 2 (1+/1- signal IN & LINK ; 2+/2- thru)
POWER HANDLING	
Continuous AES Pink Noise Power	80 W
Program Power	160 W
ENCLOSURE & CONSTRUCTION	
Width	90 mm (3.54")
Height (AX16CL)	390 mm (15.4")
Depth	154 mm (6.06")
Enclosure Material	Aluminum
Paint	High resistance, water based paint, black or white finish
Flying system	Aluminum Fast Link structure with dedicated pins
Net Weight	4 kg / 8.8 lbs

AX4CL MECHANICAL DRAWING



OPTIONAL ACCESSORIES

KPTWAX16CLL	Wall bracket for 1 or 2 units	**DHSS10M20**	ø35mm 1-1.7m Pole with Handle and M20 screw
KPTFAX16CL	Floor stand	**ESO2500LU025**	25 cm SPEAKON linking cable 4x4mm
KPTPOLEAX16CL	Pole adapter	**KP210S**	ø35mm 0.7-1.2m Pole with M20 screw
KPTFAXCL	Foam adapters for stage monitor or frontfill application	**NL4FX**	Neutrik Speakon® PLUG

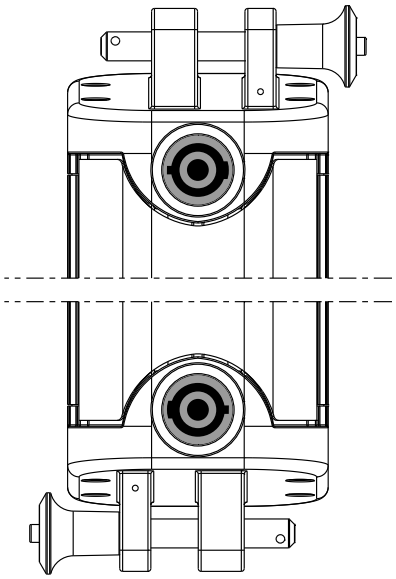
*see **http://www.axiomproaudio.com** for detailed description and other available accessories.*

SPARE PARTS

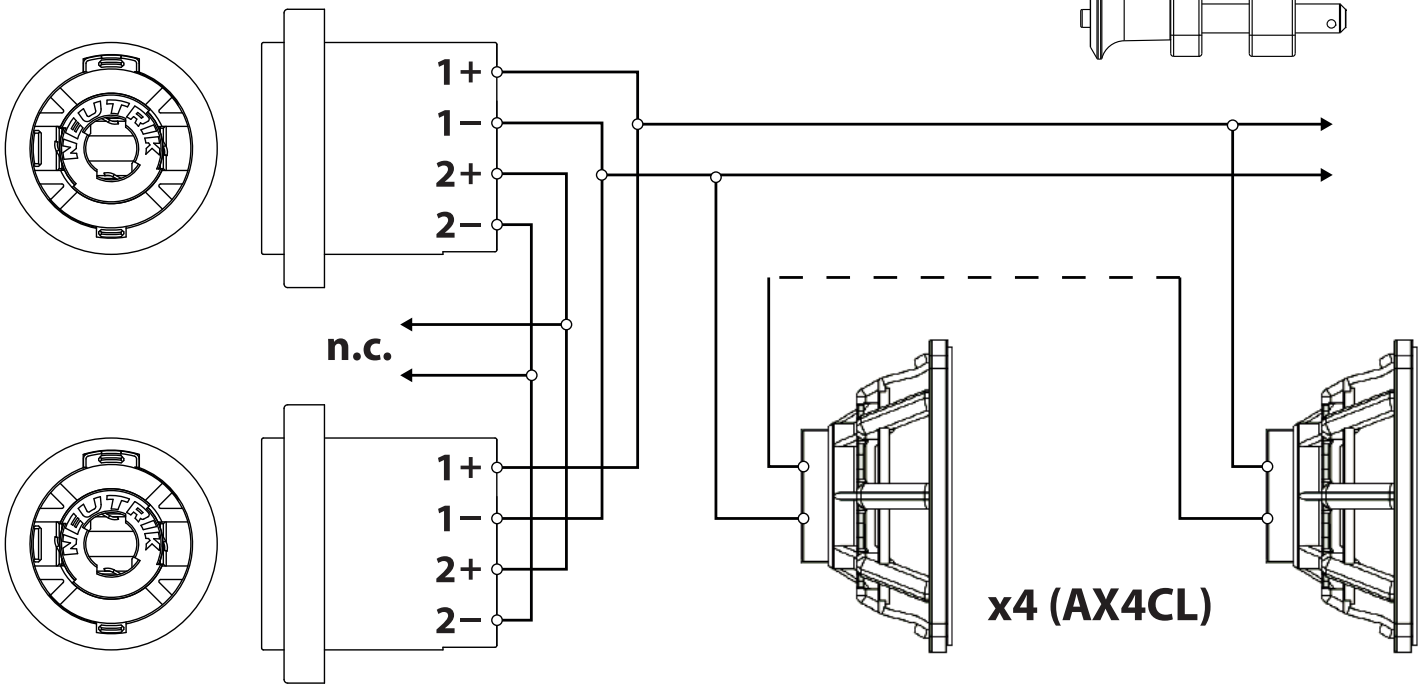
94SPI10555	Locking Pin	**NL4MP**	Neutrik Speakon® panel socket
		98ALT200009	2.5'' speaker - 0.8" VC - 8 ohm

REAR PANEL

INPUT & LINK - Both connectors at the top and the bottom of the AX4CL can operate as input or link, to connect an appropriated processed amplifier or to link the column to a second one. The AX4CL does not include an internal passive crossover for filtering the signal, but only an internal protection that excludes the internal speaker to protect them from excessive input power. The protection should not trip with a typical music program, but only with a massive and constant power signal, like a feedback. The connections are the following:



INPUT - LINK	
NL4 pin number	**internal connection**
1+	**+ speakers (pass thru link speakon)**
1-	**- speakers (pass thru link speakon)**
2+	**+ no connection (pass thru link speakon)**
2-	**- no connection (pass thru link speakon)**



WARNING:
The maximum quantity of AX4CL that can be linked together depends by the load capacity of the appropriate processed amplifier.

BASIC INSTALLATION INSTRUCTIONS

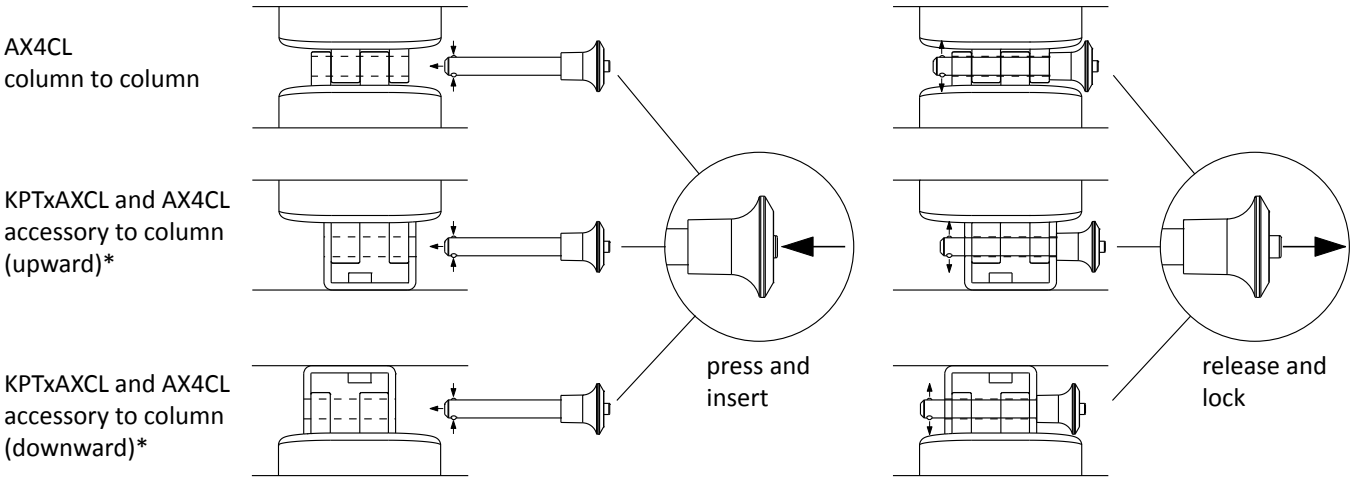
WARNING! CAREFULLY READ THE FOLLOWING INSTRUCTIONS AND CONDITION OF USE:

- This loudspeaker is designed exclusively for Professional audio applications. The product must be installed by qualified personal only.
- Proel strongly recommends that this loudspeaker cabinet be suspended taking into consideration all current National, Federal, State and Local regulations. Please contact the manufacturer for further information.
- Proel do not accept any liability for damage caused to third parties due to improper installation, lack of maintenance, tampering or improper use of this product, including disregard of acceptable and applicable safety standards.
- During assembly pay attention to the possible risk of crushing. Wear suitable protective clothing. Observe all instructions given on the rigging components and the loudspeaker cabinets. When chain hoists are in operation ensure that there is nobody directly underneath or in the vicinity of the load. Do not under any circumstances climb on the array.

PIN LOCKING AND SPLAY ANGLES SET UP

The figure below shows how to insert correctly the locking pin and how to set up the splay angle between loudspeakers.

LOCKING PIN INSERTION

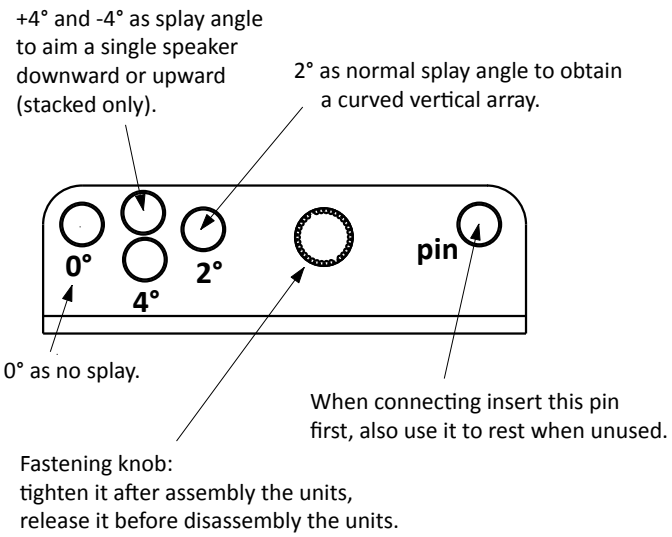


* all accessories have similar insertion and locking

SPLAY ANGLE SET UP

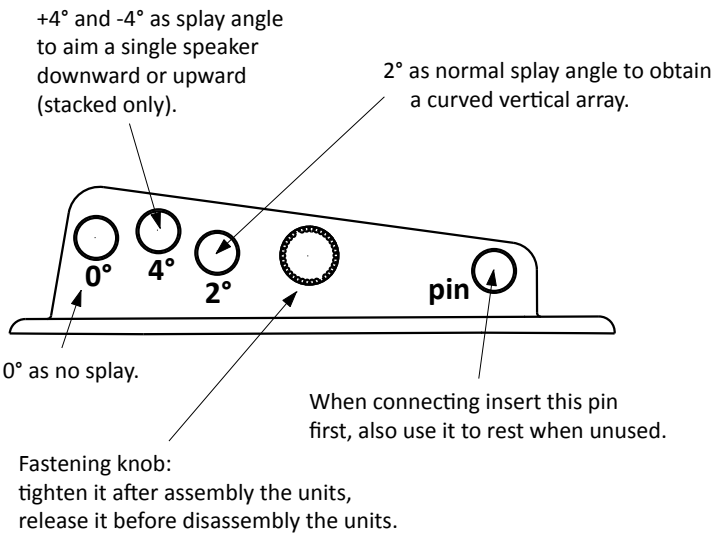
KPT ACCESSORIES

Use these holes for the accessories splay angle:



AX4CL

Use these holes for the column speaker splay angle:



Each of the following examples has some symbols at the connection points: these symbols indicate if a splay angle is allowed or is prohibited for safety or acoustical reason:

4° convex angle is prohibited

4° upward angle is prohibited

2° concave angle is allowed

0° is allowed

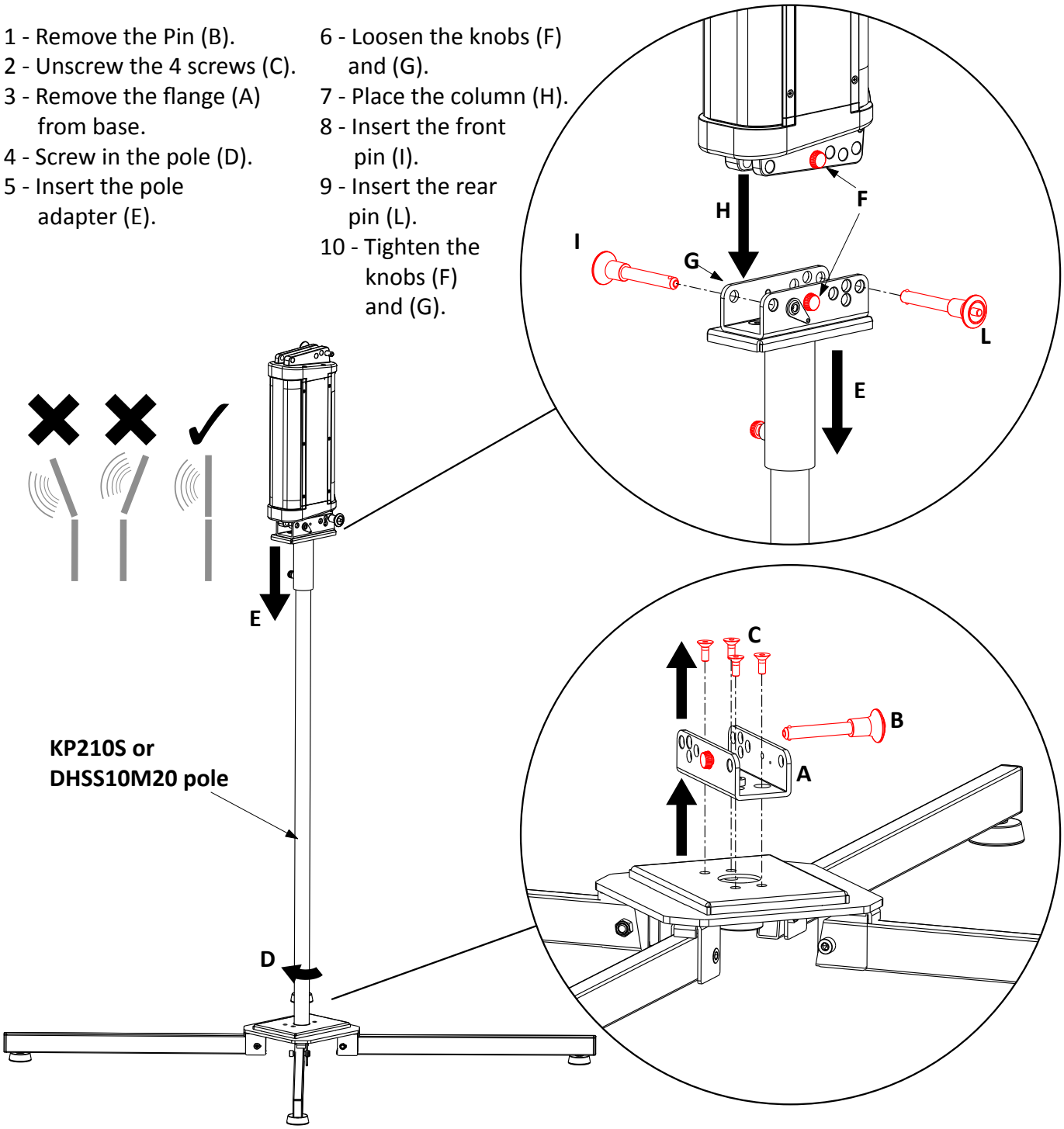
FLOOR INSTALLATION WITH KPTPOLEAX16CL POLE ADAPTER

The KPTPOLEAX16CL is used in combination with the KP210S or DHSS10M20 pole on the KPTFAX16CL floor stand as base.

WARNINGS:

- The ground where the KPTFAX16CL floor stand is placed needs to be stable and compact.
- Adjust the feet so to put the KTPFAX16CL perfectly horizontal. Use a spirit level to obtain the best result.
- Always secure ground stacked setups against movement and possible tipping over.
- A maximum of 4 x AX4CL speakers are allowed to be installed over a KPTFAX16CL with pole serving as ground support.
- The column must be setup with 0° aiming.

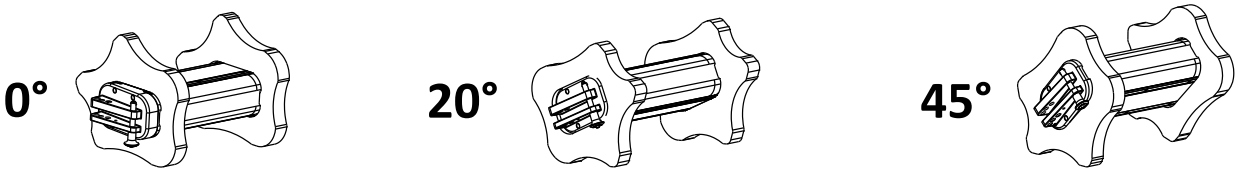
1 - Remove the Pin (B).
2 - Unscrew the 4 screws (C).
3 - Remove the flange (A) from base.
4 - Screw in the pole (D).
5 - Insert the pole adapter (E).
6 - Loosen the knobs (F) and (G).
7 - Place the column (H).
8 - Insert the front pin (I).
9 - Insert the rear pin (L).
10 - Tighten the knobs (F) and (G).



FLOOR AND FRONT FILL INSTALLATION USING KPTFAXCL FOAM STAND

WARNINGS:

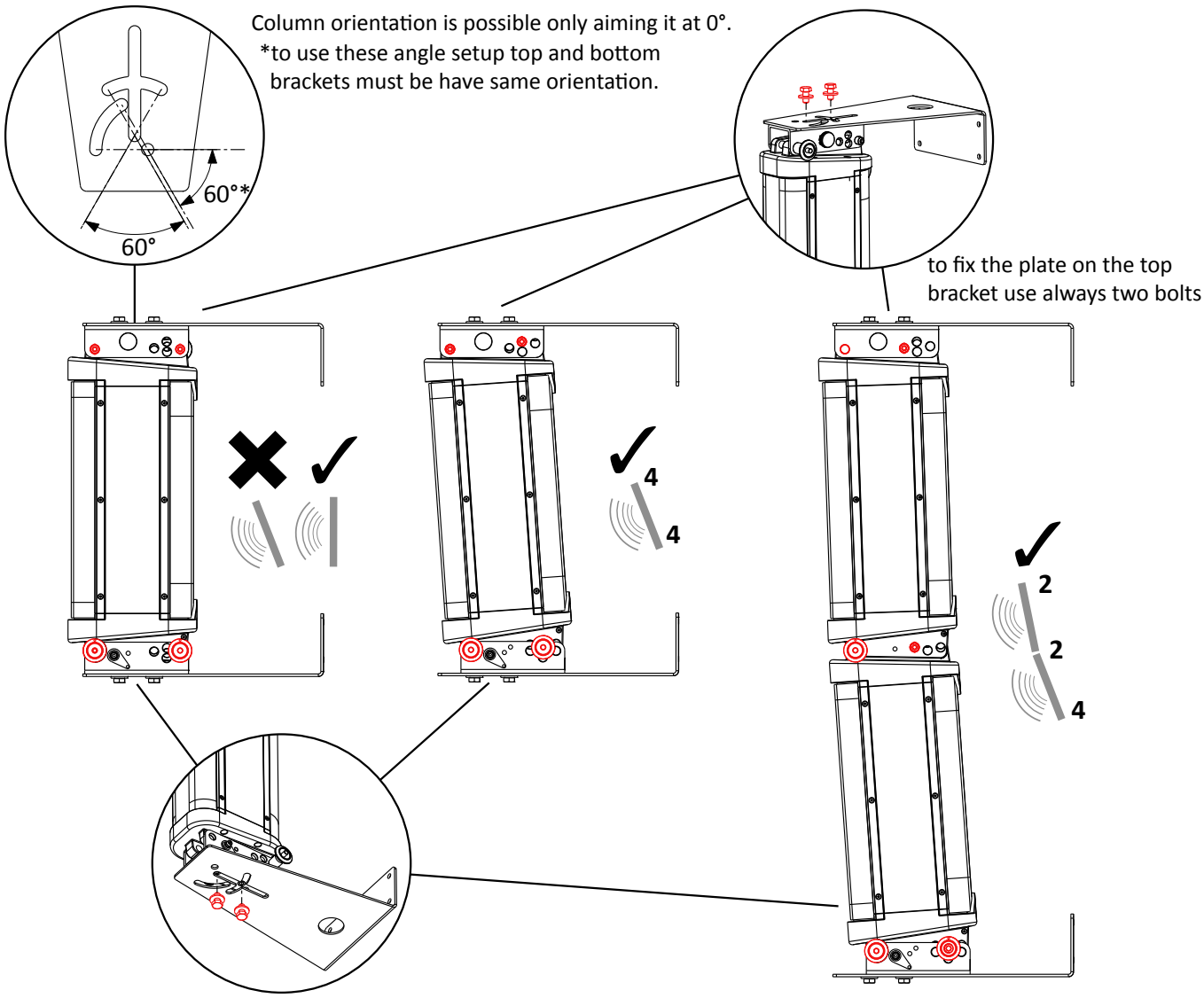
- KPTFAX4CL can be used in front-fill or monitor applications on stage.
- The ground where the KPTFAXCL foam stand is placed needs to be stable and compact.
- When using this support for frontfill application, place it on a stable surface. If it is placed on a front line subwoofer, it must be secured to it using a strap, because the subwoofer vibrations could cause it to fall to ground.



WALL INSTALLATION USING KPTWAX16CLL BRACKETS

WARNINGS:

- No hardware is supplied to install the KPTWAX16CLL to the walls: the hardware to be used depends on the wall structure. Use always the best hardware available, taking in consideration the whole weight of loudspeakers and accessories.
- Brackets MUST be installed by qualified personnel in accordance with safe installation practices.
- A single AX4CL or 2x AX4CL speakers can be installed using the KPTWAX16CLL as top and bottom wall brackets.



To fix the plate on the bottom bracket use two bolts or a single bolt.

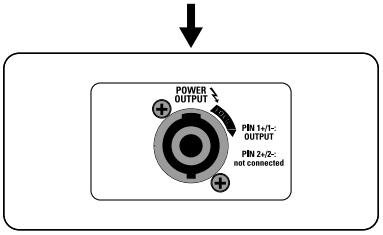
AX4CL CONNECTION EXAMPLES

The following examples shows all the possible connections between a dedicated amplifier and the AX4CL column speaker, please note the amplifier must be equipped with a DSP and specifically designed preset.

1 x AX4CL

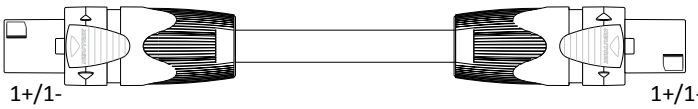
ESO1500LU2 - lenght 2m
ESO1500LU5 - lenght 5m
ESO1500LU10 - lenght 10m
ESO1500LU15 - lenght 15m
ESO1500LU20 - lenght 20m

Power amplifier capable of delivering:
80 W to a 32 ohm load.

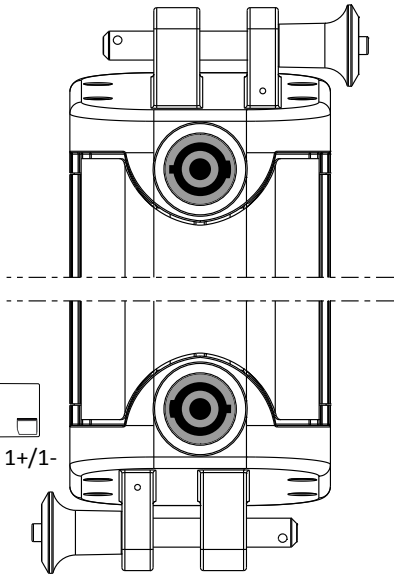


2 x 4mm² speaker cable

1+/1-



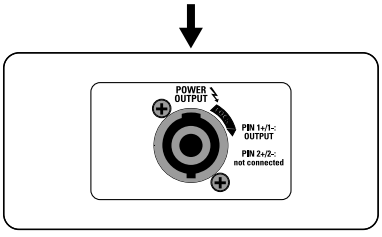
1+/1-



2 x AX4CL

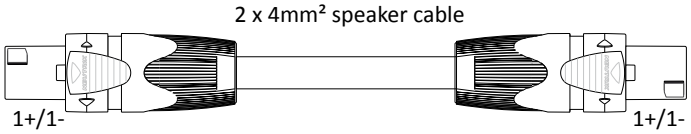
ESO2500LU05 - lenght 0,25m
ESO1500LU2 - lenght 2m
ESO1500LU5 - lenght 5m
ESO1500LU10 - lenght 10m
ESO1500LU15 - lenght 15m
ESO1500LU20 - lenght 20m

Power amplifier capable of delivering:
160 W to a 16 ohm load.

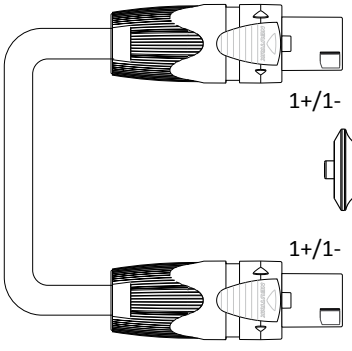


2 x 4mm² speaker cable

1+/1-

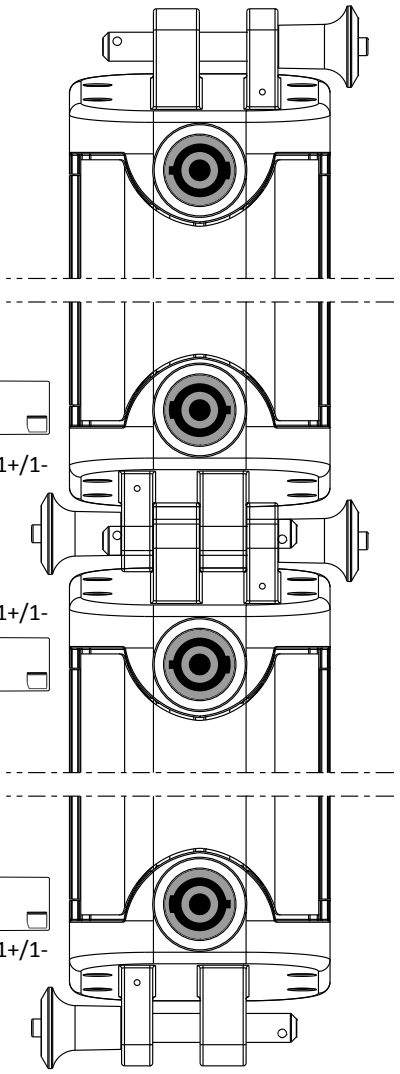


1+/1-

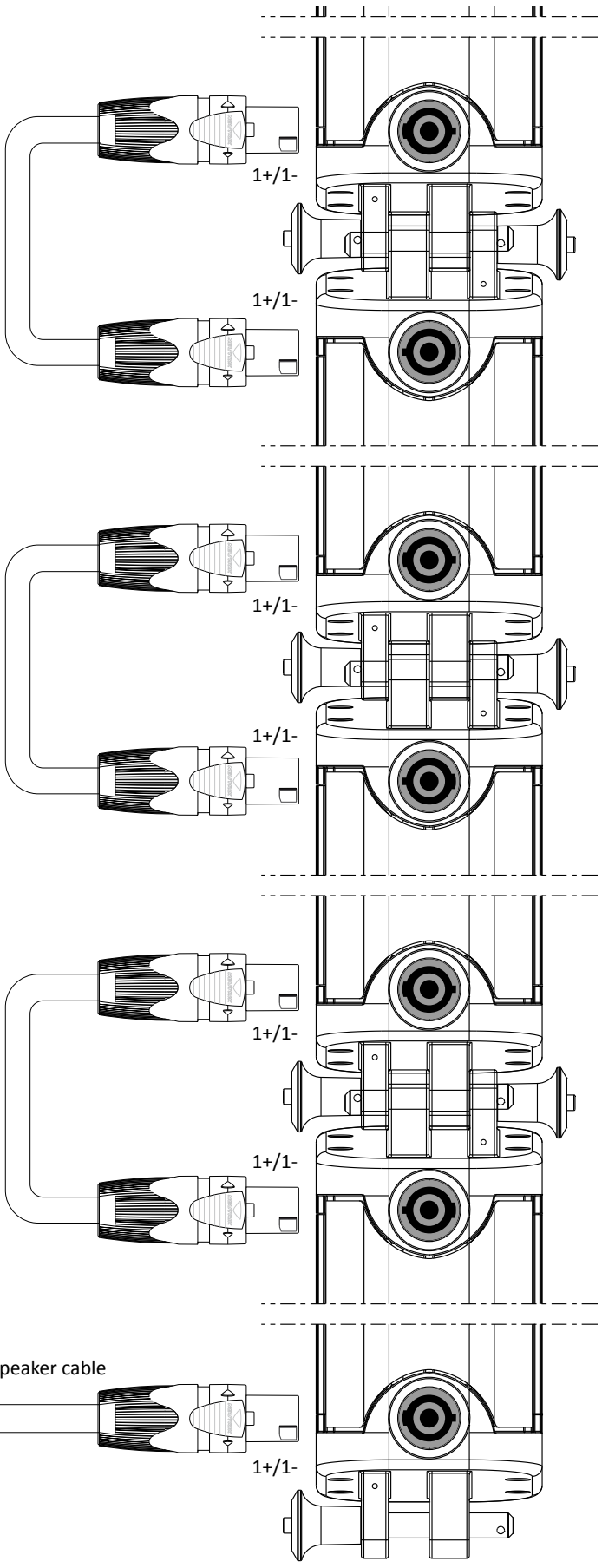


1+/1-

1+/1-

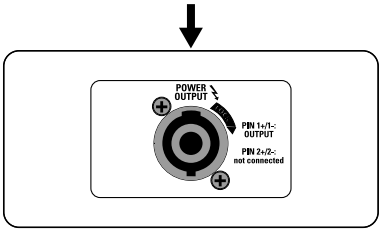


4 x AX4CL



ESO2500LU05 - lenght 0,25m
ESO1500LU2 - lenght 2m
ESO1500LU5 - lenght 5m
ESO1500LU10 - lenght 10m
ESO1500LU15 - lenght 15m
ESO1500LU20 - lenght 20m

Power amplifier capable of delivering:
320 W to a 8 ohm load.



2 x 4mm² speaker cable

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