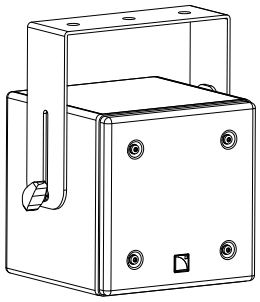
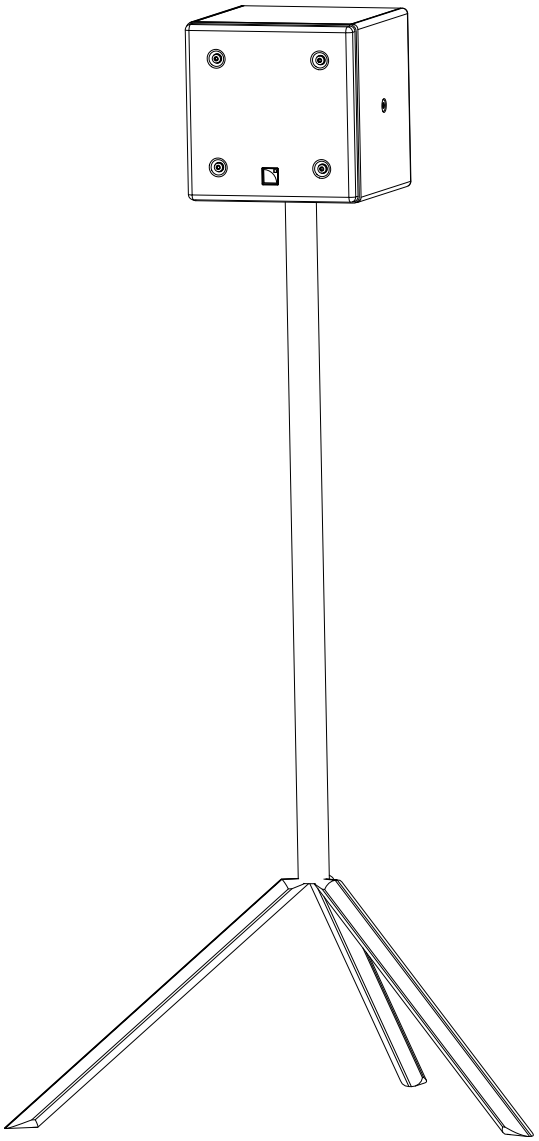
5XT

owner's manual (EN)





Document reference: 5XT owner's manual (EN) version 3.0
Distribution date: February 16, 2022
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Safety

Instructions

Inspect the system before any deployment.

Perform safety related checks and inspections before any deployment.

Perform preventive maintenance at least once a year.

Refer to the preventive maintenance section for a list of actions and their periodicity.

Insufficient upkeep of the product can void the warranty.

If any safety issue is detected during inspection, do not use the product before performing corrective maintenance.

Check for issues. A rigging system part or fastener is missing or loose. A rigging system part exhibits: bends, breaks, broken parts, corrosion, cracks, cracks in welded joints, deformation, denting, wear, holes. A safety cue or label is missing.

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.

Beware of sound levels.

Do not stay within close proximity of loudspeakers in operation.

Loudspeaker systems are capable of producing very high sound pressure levels (SPL) which can instantaneously lead to permanent hearing damage to performers, production crew and audience members. Hearing damage can also occur at moderate level with prolonged exposure to sound.

Check the applicable laws and regulations relating to maximum sound levels and exposure times.

Work with qualified personnel for rigging the system

Installation should only be carried out by qualified personnel that are familiar with the rigging techniques and safety recommendations outlined in this manual.

Ensure personnel health and safety

During installation and set-up personnel must wear protective headgear and footwear at all times. Under no circumstances is personnel allowed to climb on a loudspeaker assembly.

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.

Before installing/raising the product, check each individual element to make sure that it is securely fastened to the adjacent element. Always verify that no one is standing underneath the product when it is being installed/raised. Never leave the product unattended during the installation process.

As a general rule, L-Acoustics recommends the use of secondary safety 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.

Risk of falling objects

Verify that no unattached items remain on the product or assembly.

Risk of tipping

Remove all rigging accessories before transporting a product or an assembly.

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 product or the assembly.

Intended use

This system is intended for use by trained personnel for professional applications.

As part of a continuous evolution of techniques and standards, L-Acoustics reserves the right to change the specifications of its products and the content of its documents without prior notice.

Check www.l-acoustics.com on a regular basis to download the latest document and software updates.

Long term exposure to extreme conditions may damage the product.

For more information, refer to the **Products weather protection** document, available on the website.

Read the maintenance section of this document before servicing the product.

Contact L-Acoustics for advanced maintenance.

Any unauthorized maintenance operation will void the product warranty.

This marking indicates that this product should not be disposed of with other household waste throughout the EU. To prevent possible harm to the environment or human health from uncontrolled waste disposal, recycle it responsibly to promote the sustainable reuse of material resources. To return your used device, please use the return and collection systems or contact the retailer where the product was purchased. They can take this product for environmentally safe recycling.

Introduction

5XT ultra compact enclosure

5XT is an ultra-compact coaxial system designed for short throw sound reinforcement applications requiring minimum visual impact.

5XT features a 1" diaphragm compression driver coaxially loaded by a 5" low-mid frequency transducer mounted in a bassreflex cabinet. 5XT operates from 95 Hz to 20 kHz. The coaxial transducer arrangement produces a 110° axisymmetric directivity output with a smooth tonal response free of secondary lobes over the entire frequency range.

The internal passive crossover network uses custom filters. The L-Acoustics amplified controllers L-Drive parameters ensure the linearization and protection of the transducers.

How to use this manual

The 5XT owner's manual is intended for all actors involved in the system design, implementation, preventive and corrective maintenance of the 5XT system. It must be used as follows:

1. Read the technical description for an overview of all system elements, their features, and their compatibilities.
   - Electro-acoustical description (p.10)
   - Rigging system description (p.12)
2. Prepare the system configuration. Consider the mechanical limits and the available acoustical configurations.
   - Mechanical safety (p.13)
   - Loudspeaker configurations (p.13)
3. Before rigging the system, perform mandatory inspections and functional checks.
   - Inspection and preventive maintenance (p.17)
4. To deploy the system, follow the step-by-step rigging instructions and refer to the cabling schemes.
   - Rigging procedures (p.23)
   - Connection to LA amplified controller (p.26)

The Corrective maintenance (p.30) section contains the operations authorized for the end user.
Performing another operation exposes to hazardous situations.
For advanced maintenance, contact your L-Acoustics representative.

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

Contact information

For information on advanced corrective maintenance:
- contact your Certified Provider or your L-Acoustics representative
- for Certified Providers, contact the L-Acoustics customer service: customer.service@l-acoustics.com (EMEA/APAC), laus.service@l-acoustics.com (Americas).

Symbols

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.

Revision history

version number	publication date	modification
1.0	Aug. 2020	Migrated to owner's manual version.
2.0 / 2.1	Mar. 2021	Added information on 5XT-SEALPLATE.
3.0	Feb. 2022	• Added Corrective maintenance (p.30) section. • Added stage monitor configurations.

System components

Loudspeaker enclosures

5XT	2-way passive coaxial enclosure: 5'' LF + 1'' HF diaphragm
SB15m	High power compact subwoofer : 1 x 15''

Powering and driving system

LA2Xi / LA4X / LA8 / LA12X	Amplified controller with DSP, preset library and networking capabilities

Refer to the LA2Xi / LA4X / LA8 / LA12X owner's manual for operating instructions.

Cables

SP cables	SpeakON loudspeaker cables (4-point, 4 mm^2 gauge)
	Come in different sizes: SP.7 (0.7 m / 2.3 ft), SP5 (5 m / 16.4 ft), SP10 (10 m / 32.8 ft), and SP25 (25 m / 82 ft)
SP-Y1	Breakout cable for two passive enclosures (2.5 mm^2 gauge)
	4-point speakON to 2 × 2-point speakON, provided with a CC4FP adapter
DO cables	PA-COM loudspeaker cables (8-point, 4 mm^2 gauge)
	Come in different sizes: DO.7 (0.7 m / 2.3 ft), DO.10 (10 m / 32.8 ft), and DO.25 (25 m / 82 ft)
DOSUB-LA8	Breakout cable for four passive enclosures (4 mm^2 gauge)
	8-point PA-COM to 4 × 2-point speakON
2 × 2.5 mm^2 cable	Speaker cable used to connect enclosures in parallel.
	Adapt the cable length to the installation.

Information about the connection of the enclosures to the LA amplified controllers is given in this document.

Refer to the LA2Xi / LA4X / LA8 / LA12X owner's manual for detailed instructions about the whole cabling scheme, including modulation cables and network.

Rigging elements

ETR5	Adjustable U-bracket: 5XT
5XT-SEALPLATE	Connector sealing plate for 5XT

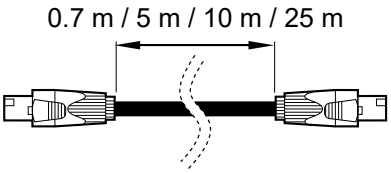
Software applications

Soundvision	3D acoustical and mechanical modeling software
LA Network Manager	Software for remote control and monitoring of amplified controllers

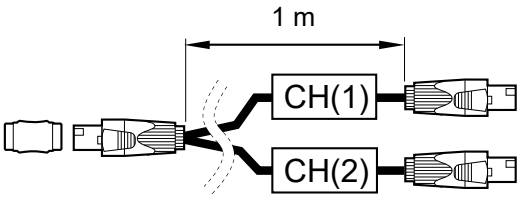
Refer to the **Soundvision** help.
Refer to the **LA Network Manager** help.

System component illustrations

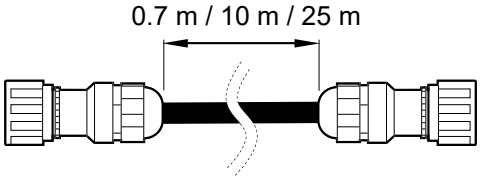
Cables



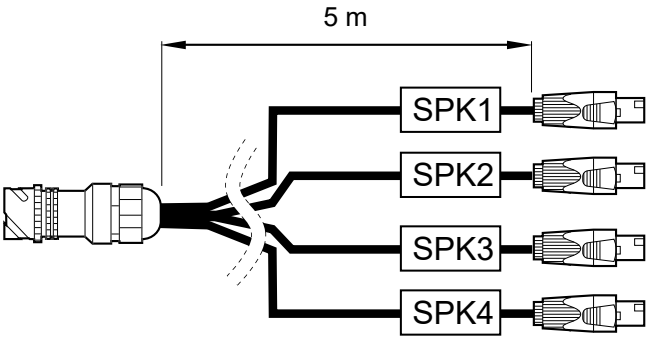
SP cables



SP-Y1



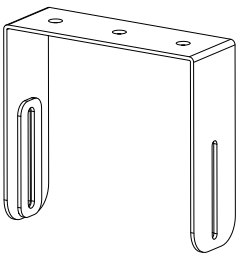
DO cables



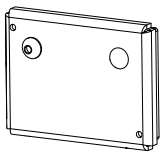
DOSUB-LA8

2 × 2.5 mm² cable

Rigging accessories



ETR5



5XT-SEALPLATE

Electro-acoustical description

Preset description

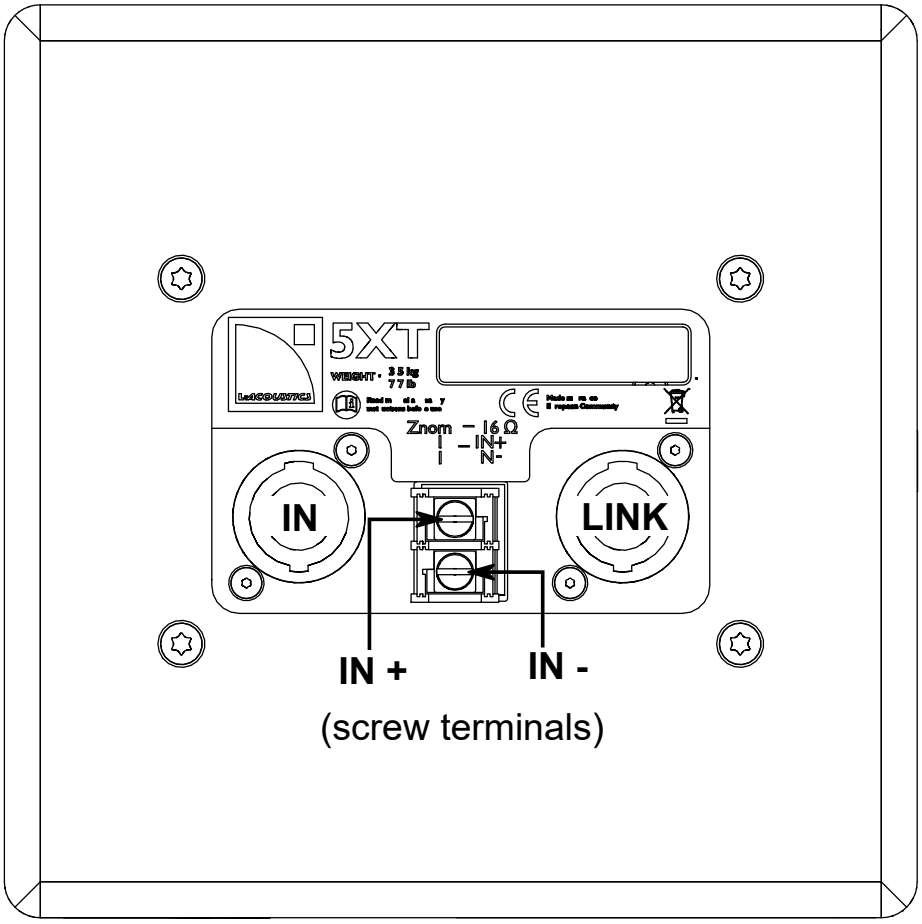
[5XT] [5XT_MO]

outputs	channels	routing	gain	delay	polarity	mute
OUT 1	PA	IN A	0 dB	0 ms	+	ON
OUT 2	PA	IN A	0 dB	0 ms	+	ON
OUT 3	PA	IN B	0 dB	0 ms	+	ON
OUT 4	PA	IN B	0 dB	0 ms	+	ON

[SB15_100]

outputs	channels	routing	gain	delay	polarity	mute
OUT 1	SB	IN A	0 dB	0 ms	+	ON
OUT 2	SB	IN A	0 dB	0 ms	+	ON
OUT 3	SB	IN A	0 dB	0 ms	+	ON
OUT 4	SB	IN A	0 dB	0 ms	+	ON

Connectors



The 5XT is a 2-way passive enclosure equipped with two 4-point speakON connectors wired in parallel and 2 screw terminals.

The IN connector allows receiving the audio signals. The LINK connector allows routing them to another 5XT enclosure in parallel.

Each screw terminal acts as IN and LINK. SpeakON connectors can be used interchangeably as IN or LINK connectors.

ELECTRICAL HAZARD

Risk of electrical injuries.

Do not touch the screw terminals when they are connected to a powered amplified controller.

Turn off the amplified controller before any operation on the terminals.

Internal pinout for L-Acoustics 2-way passive enclosures

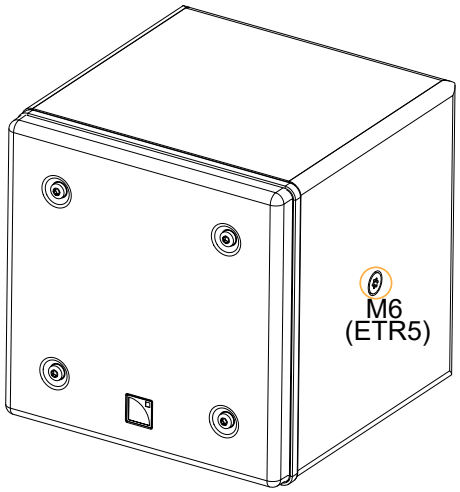
speakON points	1 +	1 -	2 +	2 -
Transducer connectors	+	-	Not linked	Not linked

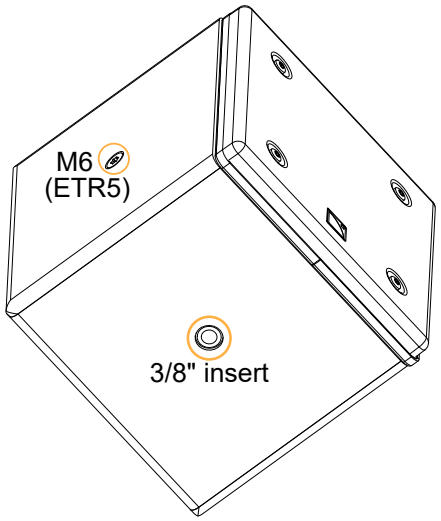
Rigging system description

5XT

5XT features one M6 insert and screw on each side to connect ETR5.

One 3/8" microphone-stand insert is available on the bottom face of 5XT for pole-mounted configurations.

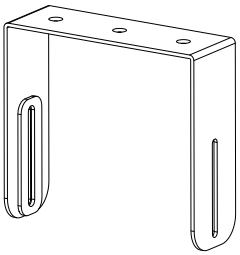




Always put the placeholder screws back in place to avoid leaks.

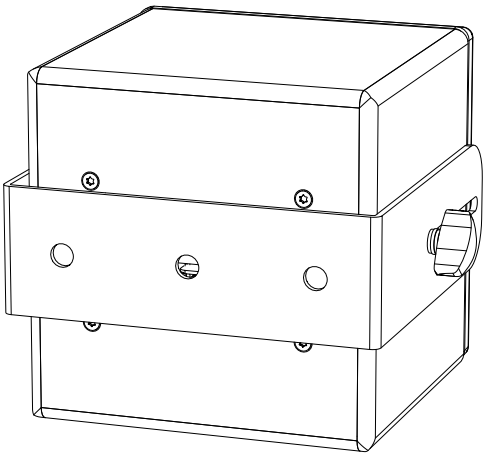
ETR5

ETR5 is a U-bracket compatible with 5XT.



It can be used to mount one 5XT on the wall or under the ceiling, with site angle adjustment.

When the 5XT is stored, the ETR5 can be used to protect the connectors at the back of the enclosure as illustrated below.



Mechanical safety

The 5XT rigging system complies with EN 62368-1: 2014 Audio/video, information and communication technology equipment — Part 1: Safety requirements.

The deployments described in this manual achieve a safety factor of **5**.

5XT

Configuration	Rigging accessory	Maximum / Safe limit
Wall-mounted / ceiling-mounted	ETR5	1
Pole-mounted	microphone stand	1

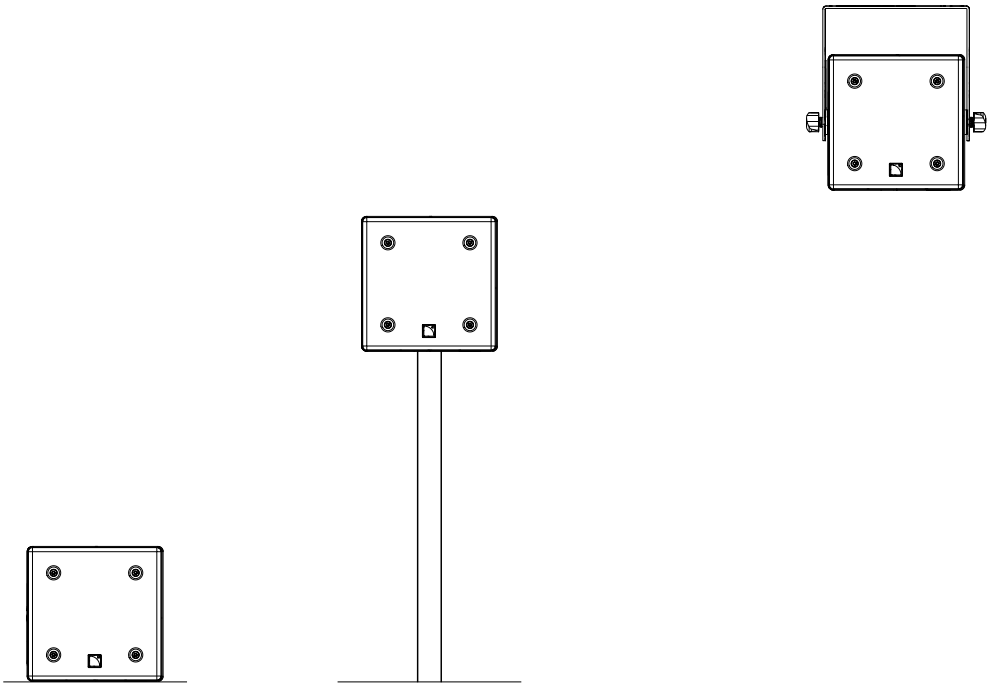
Loudspeaker configurations

5XT point source

Deployed as a standalone point source, the 5XT system operates over the nominal bandwidth of the 5XT enclosure.

The [5XT] preset delivers a reference frequency response in short throw applications.

5XT is driven by the LA2Xi / LA4X / LA8 / LA12X amplified controllers.



Enclosure	5XT
Preset	[5XT]
Frequency range (-10 dB)	95 Hz - 20 kHz

5XT point source with low-frequency element

Deployed as a point source with SB15m subwoofers, a 5XT system operates with augmented LF resources.

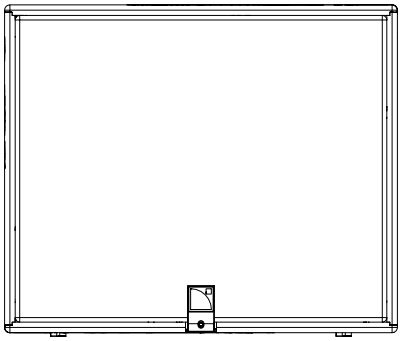
The [5XT] preset delivers a reference frequency response in short throw applications.

The [SB15_100] preset provides SB15m with an upper frequency limit at 100 Hz for an optimal frequency coupling with 5XT.

5XT and SB15m are driven by the LA2Xi / LA4X / LA8 / LA12X amplified controllers.

5XT with SB15m

With SB15m, the 5XT system contour is reinforced by 10 dB at 100 Hz and the bandwidth is extended down to 40 Hz.



Enclosure	5XT	SB15m
Preset	[5XT]	[SB15_100]
Frequency range (-10 dB)	40 Hz - 20 kHz	

Grouping subwoofers
Place the subwoofer enclosures side by side. If not possible, the maximum distance between two adjacent acoustic centers must be 1.7 m if the upper frequency limit of the subwoofer system is at 100 Hz.

Use [xxxx_xx_C] or [xxxx_xx_Cx] on a reversed subwoofer in a cardioid configuration
The cardioid configuration consists in reversing 1 element in an array of 4 subwoofers.
Refer to the subwoofer owner's manual and to the **Cardioid configurations** technical bulletin.

Do not forget to add the geometric delays depending on the configuration.

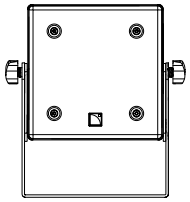
No pre-alignment delay values are required for this configuration.

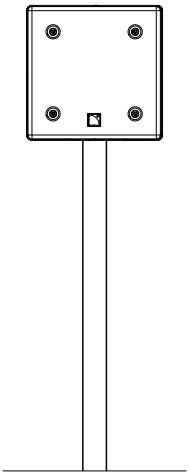
5XT stage monitor

Deployed as a stage monitor, the 5XT system operates over the nominal bandwidth of the 5XT enclosure.

The [5XT_MO] preset delivers a reference frequency response in stage monitoring applications.

5XT is driven by the LA2Xi / LA4X / LA8 / LA12X amplified controllers.





Enclosure	5XT
Preset	[5XT_MO]
Frequency range (-10 dB)	95 Hz - 20 kHz

Low-latency preset

A low-latency preset is available for the 5XT enclosure used as a monitor ([5XT_MO]). It reduces latency from 3.84 ms down to 1.18 ms (LA8) and 0.84 ms (LA2Xi / LA4X / LA12X). If the monitor is combined with a subwoofer, a custom preset must be used.

5XT stage monitor with low-frequency element

Deployed as a stage monitor with SB15m subwoofers, a 5XT system operates with augmented LF resources.

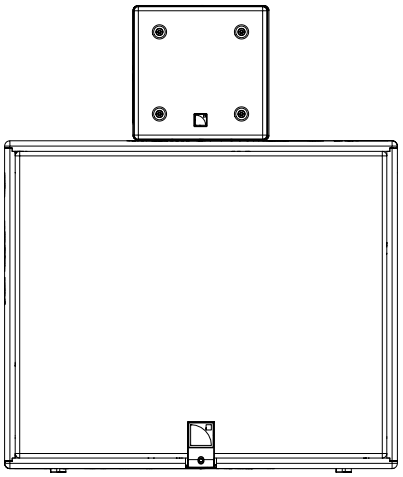
The [5XT_MO] preset delivers a reference frequency response in stage monitoring applications.

The [SB15_100] preset provides SB15m with an upper frequency limit at 100 Hz for an optimal frequency coupling with 5XT.

5XT and SB15m are driven by the LA2Xi / LA4X / LA8 / LA12X amplified controllers.

5XT stage monitor with SB15m

With SB15m, the 5XT system contour is reinforced by 16 dB at 100 Hz and the system bandwidth is extended down to 40 Hz.



Enclosure	5XT	SB15m
Preset	[5XT_MO]	[SB15_100]
Frequency range (-10 dB)	40 Hz - 20 kHz	

Delay values
Do not forget to add the pre-alignment and geometric delays depending on the configuration.

Pre-alignment delays

presets	**pre-alignment delay values and polarity settings**	
[5XT_MO] + [SB15_100]	5XT = 0.6 ms +	SB15m = 0 ms +

[*xx*_MO] presets for the X series use the amplified controller low latency operating mode. When used along with subwoofers, it is recommended to use the subwoofers in low latency operating mode. To achieve this, create custom presets combining low latency channel sets and subwoofer channel sets.

If the subwoofers are driven from a dedicated amplified controller using a subwoofer factory preset, they are operated in normal latency mode. Therefore, an additional delay should be set to the [*xx*_MO] low latency channels to align them: 2.66 ms on LA8 or 3.00 ms on LA2Xi, LA4X, and LA12X.

Inspection and preventive maintenance

How to do preventive maintenance

Inspect the system before any deployment and after any corrective maintenance operation.

Perform preventive maintenance at least once a year.

Refer to the maintenance manuals for advanced maintenance.

Rigging and hardware

Refer to the Mechanical system overview (p.17) to identify critical parts of the system.

Acoustics

Perform the Enclosure check (p.19).

Perform the Listening test (p.21) to detect any degradation in sound quality.

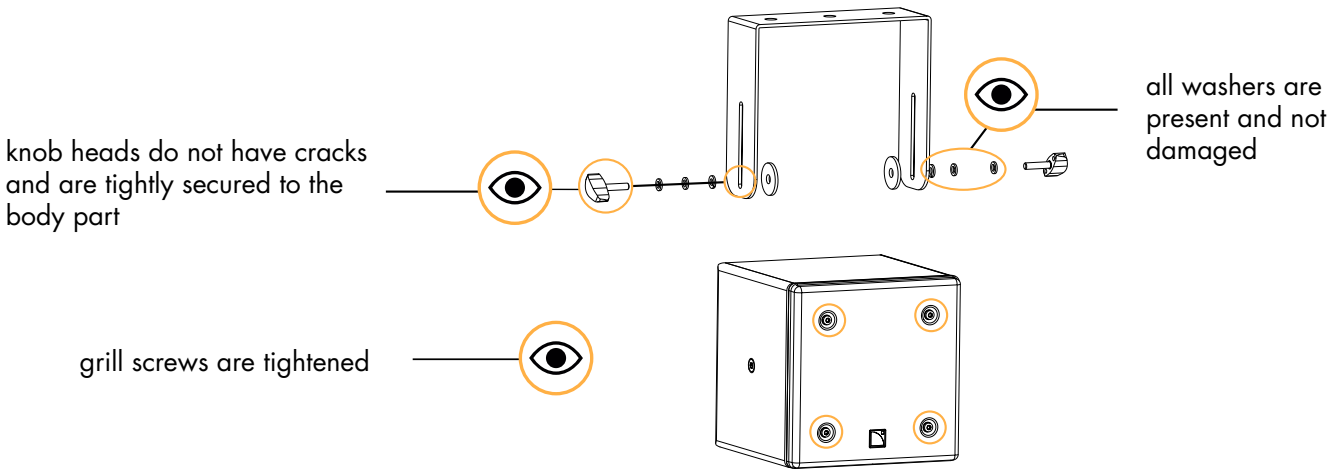
Mechanical system overview

Critical parts of the lifting chains are highlighted.

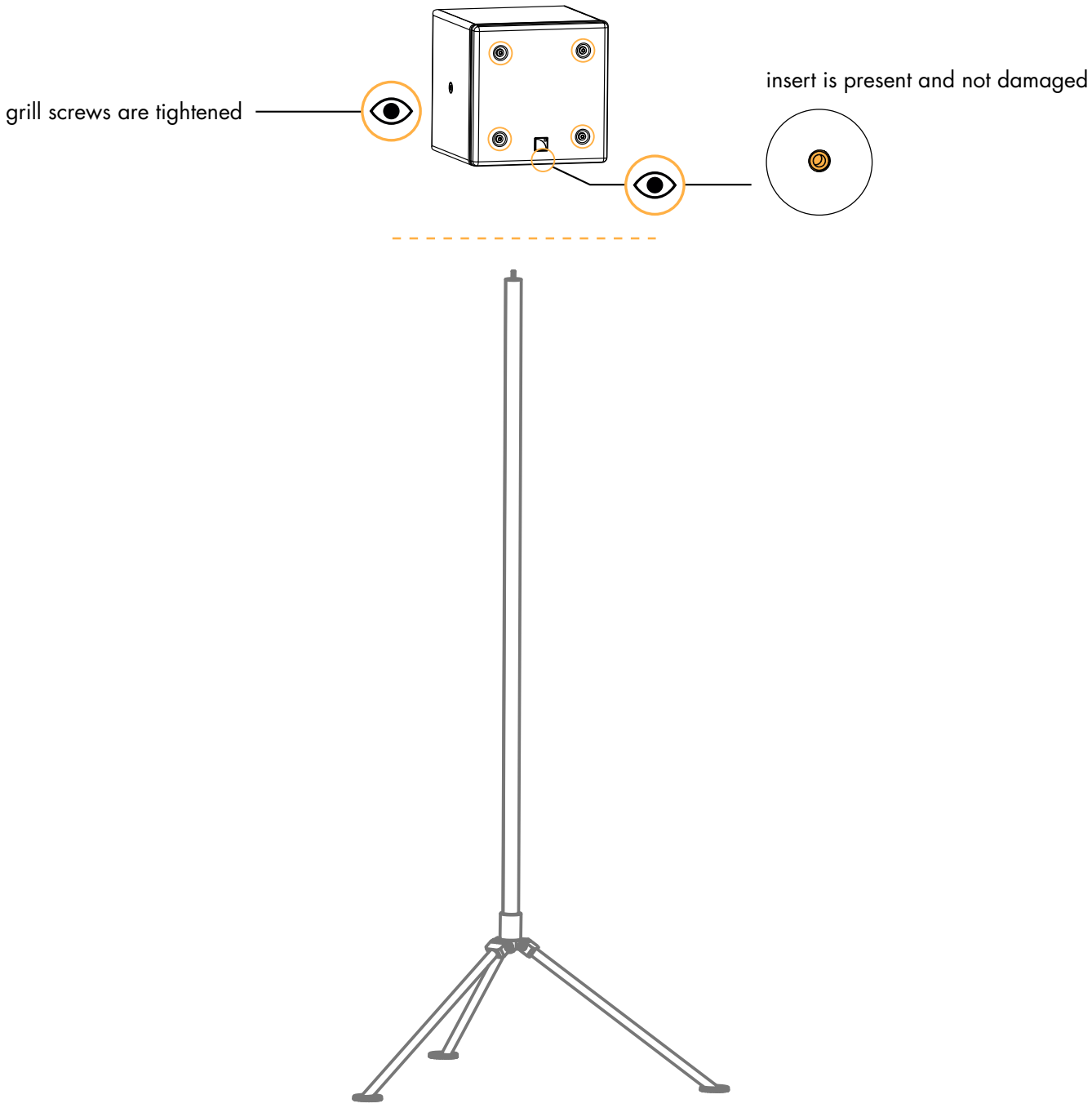
The indicates a visual inspection. The indicates a functional check.

Replacing screws
If a screw is loose, remove and replace it.
Always use the new screws provided in the repair kit.
If no new screw is available, add blue threadlocker before reusing the screw.
Do not apply more than the indicated torque.

5XT flown with ETR5



5XT pole-mounted



Acoustical check

Enclosure check

This feature is available on:
LA4X
LA12X

ENCLOSURE CHECK measures impedance at the reference frequencies for the connected loudspeaker family. The measured impedance is compared to the expected range allowing for fast detection of loudspeakers presenting circuit continuity issues.

The results can be used for preliminary diagnosis but cannot replace a comprehensive quality control.

Prerequisite

ENCLOSURE CHECK measurements can only be reliable if the following requirements are met:

Environment and temperature:
- Ambient temperature must be comprised between 0 °C / 32 °F and 40 °C / 104 °F. Ideal temperature is 20 °C / 68 °F.
- Enclosures must be at room temperature. If warm from a recent high level use or recently moved from a cold environment, let the loudspeakers reach room temperature before starting.

Enclosures:
- Enclosures must be included in the embedded factory preset library.
- Enclosures must be in nominal operating conditions:
  - Remove covers or dollies obstructing the loudspeakers or the vents.
  - Check for obvious physical damage or air leak: visually inspect the grill, gasket, cabinet, and connector plate for loose, missing or damaged parts.

Connection:
- Use only 10 m / 30 ft 4 mm^2 / AWG 11 speaker cables.
- Do not connect enclosures in parallel.

Amplified controllers:
- LA4X must run at least firmware version 1.1.0.
- LA4X load sensors must be calibrated. Refer to the **Load Sensor Calibration Tool** technical bulletin for more information.
- LA4X must warm up for at least 10 minutes after power up. Do not power off, reboot or switch to standby mode to avoid resetting the countdown.
- Load a preset corresponding to the connected loudspeaker's family. Presets from the user memories may be used on condition they are made of presets supported in the embedded factory preset library.

Procedure

1. Power up the amplified controller. Let LA4X warm up for at least 10 minutes.
2. Connect the loudspeaker enclosures to the amplified controller.
3. Load a preset from or built from the embedded library corresponding to the connected loudspeaker family.
4. On the amplified controller, use the encoder wheel to select **MONITORING & INFO**. Press the OK key or the encoder wheel to validate.
5. Use the encoder wheel to select **ENCLOSURE CHECK**.

   Beware of sound levels.
   Although the sound pressure levels generated for the ENCLOSURE CHECK are moderate, do not stay within close proximity of the loudspeakers and consider wearing ear protection.
6. Press the OK key or the encoder wheel to launch the ENCLOSURE CHECK.

   The amplified controller generates short sinusoidal signals simultaneously for each connected output.

   The amplified controller displays the results for each output.

7. Depending on the displayed results, follow the instructions in the table.

result	interpretation	instructions
OK	measured impedance is within expected range	enclosure is in working order electrically
?	unsupported preset family	only supported enclosures should be tested
NC	Not Connected	if cables are connected: **a.** inspect the cables and connections **b.** go to step 8 (p.20)
NOK	measured impedance is not within expected range	**a.** check that all the prerequisites are met, in particular that the loaded preset corresponds to the connected speaker's family **b.** inspect the cables and connections **c.** go to step 8 (p.20)
UNDEF	measured impedance is undefined	

8. Under NC, NOK and UNDEF results, press and hold the corresponding OUT key.

The amplified controller displays:

- the tested frequencies,
- information on the measured impedance:
  - OPEN for open circuit (found in NC results),
  - SHORT for short circuit (found in NOK results), or
  - a percentage of variation from the expected range (found in NOK and UNDEF results)
- the number of operational transducers out of the total

Low variations from the expected range are acceptable: displayed percentage can be different from 0 and all transducers considered operational.

Listening test

enclosure	preset	usable bandwidth
5XT	[5XT]	95 Hz - 20 kHz

Procedure

1. Load the preset on an LA2Xi / LA4X / LA8 / LA12X amplified controller.
2. Connect a sinus generator to the amplified controller.

   Risk of hearing damage
   Set a low sound level to start and use ear protection to adjust before testing.
3. Scan the bandwidth focusing on the usable range.
   The sound should remain pure and free of unwanted noise.

Troubleshooting for LF speakers

One or more LF speaker produces distorted, buzzing, rubbing, clicking, muffled or weak sound.

Possible causes

- The screws are not tightened with the appropriate torque.
- There is an air leak in the gasket.
- There is dust on the cone.
- The cone is damaged.
- The surround is torn or delaminated.
- The voice coil or the spider is damaged.

Procedure

1. Perform the speaker disassembly procedure.
2. Visually inspect the cables and the connectors.
3. Visually inspect the speaker cone, the voice coil and the spider.

   If any damage is visible, replace the speaker.
4. Carefully clean the speaker with a dry cloth.
5. Perform the reassembly procedure.
   Replace the speaker gasket and the screws.
   Apply the recommended torque.
6. Repeat the listening test.

   If the problem persists, replace the speaker.

Troubleshooting for HF drivers

One or more HF driver produces high-frequency harmonic distortions, strange vibrations or weak sound.

Possible causes

- There are foreign particles on the air gap.
- The diaphragm is not centered correctly.
- The screws used for reassembly are too loose.
- The diaphragm is damaged.

Procedure

1. Perform the diaphragm disassembly procedure.
2. Visually inspect the diaphragm and the voice coil.

   If any damage is visible, replace the diaphragm.
3. Clean the air gap thoroughly.

   Use double-face adhesive tape to remove any particles.
4. Perform the diaphragm reassembly procedure.

   Apply the recommended torque.
5. Repeat the listening test.

   If the problem persists, replace the driver.

Rigging procedures

Flying 5XT

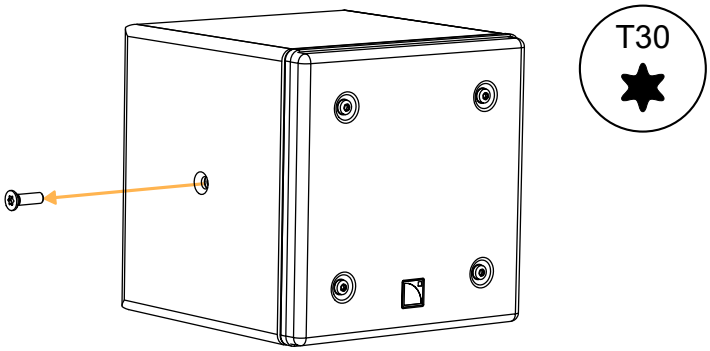
type of deployment	wall-mounting
	ceiling-mounting
rigging accessories	ETR5
additional material	2 x ∅10 mm / M10 screws and anchors (depending on the support material)
tools	torque screwdriver
	T30 Torx bit

Fasteners for ceiling-mounting.
Select screw length and anchors applicable to the ceiling properties.

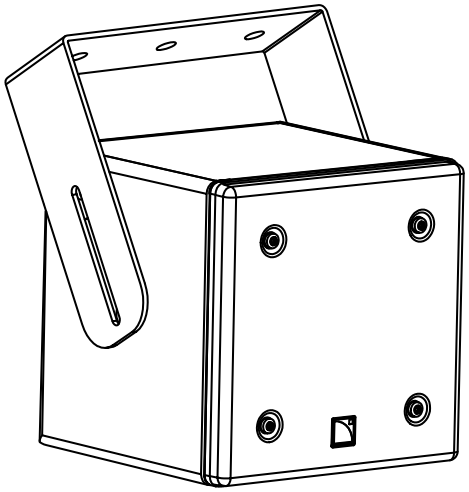
Assembly

Procedure

1. On both sides of the enclosure, remove the screws.

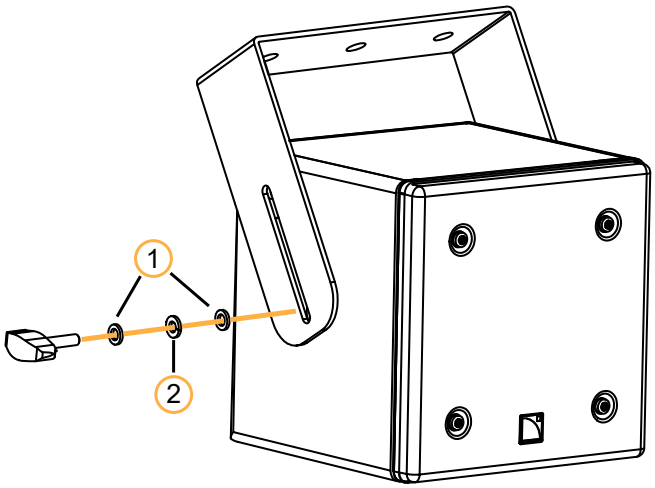


2. Secure the ETR5 to the wall or the ceiling using two ∅10 mm/M10 screws.
3. Position the enclosure inside the ETR5 bracket.

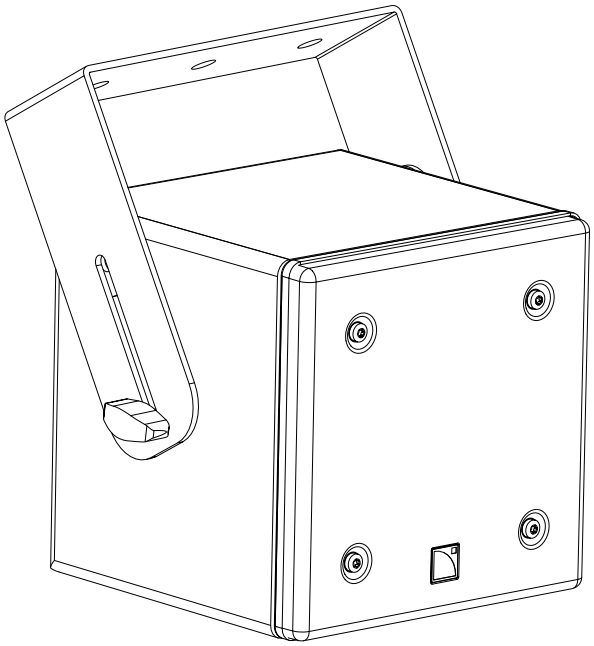


4. On both sides, secure the assembly with the knobs.
Order the washers as indicated.

1	plain washer
2	grower washer



5. Adjust the angle and tighten the knobs.



Pole-mounting

About this task

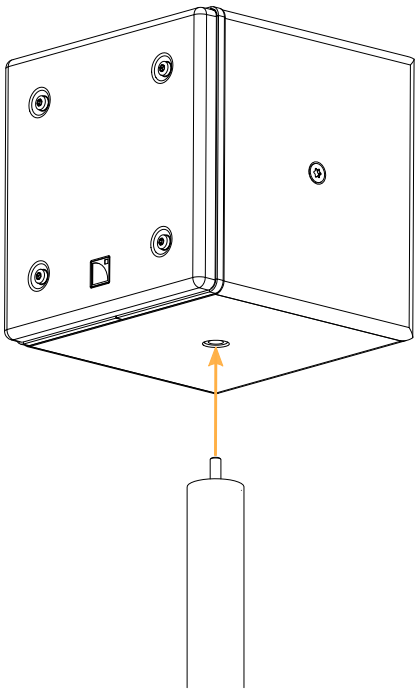
type of development	pole-mounting
rigging accessory	microphone stand (3/8" thread)

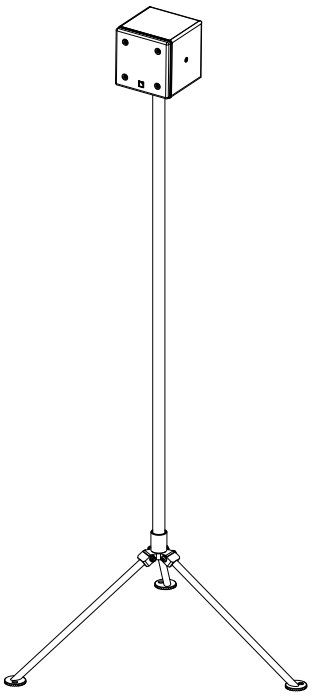
Risk of damaging the insert
Do not overtighten the screw.

5XT has a 3/8" insert. Use a 5/8" to 3/8" thread adapter for the microphone stand if necessary.

Procedure

Screw the enclosure onto the microphone stand.





Connection to LA amplified controller

Enclosure drive capacity per amplified controller

Make sure the total number of connected enclosures does not exceed the maximum number of enclosures per controller (refer to the footnotes).

Refer to the **Amplification reference** technical bulletin for the latest information on compatibility with amplified controllers and cabling schemes for all enclosure types.

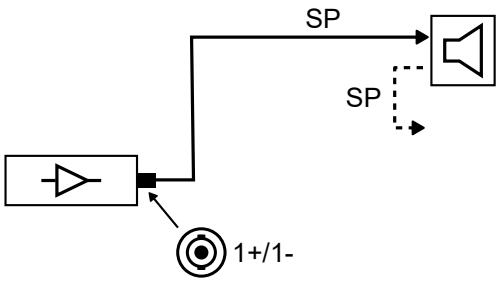
	LA2Xi per output* / total	**LA4X per output* / total**	**LA8 per output* / total**	**LA12X per output* / total**
5XT	4 / 16 (SE)	4 / 16	6 / 24	6 / 24

Cabling schemes for 5XT

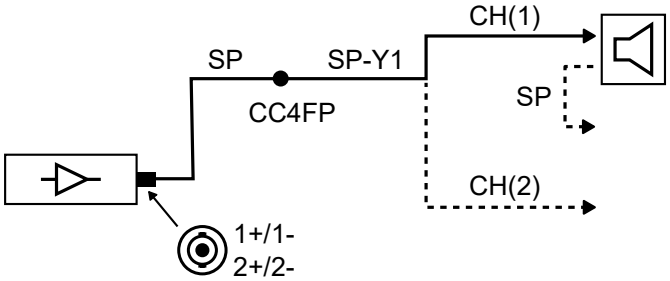
Refer to the cabling schemes to connect the enclosures to different types of output connectors.

On 5XT, each screw terminal is used for both IN and LINK, but are represented as two different connectors on the cabling schemes by convention.

One-channel speakON output

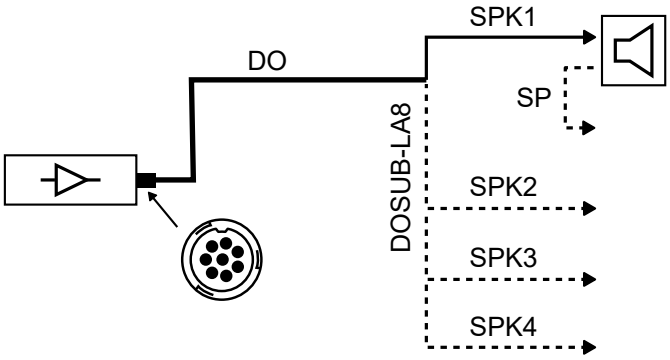


Two-channel speakON output

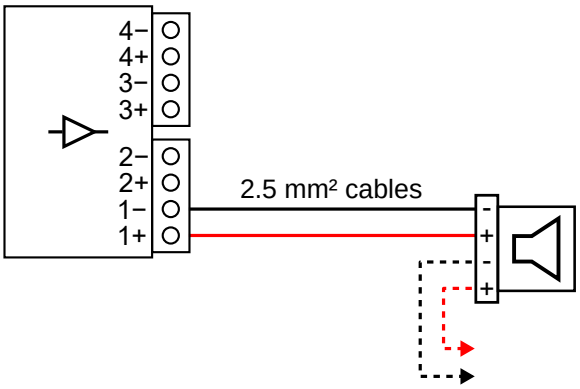


* For passive loudspeakers, the value corresponds to the number of enclosures in parallel on the output. For active loudspeakers, the value corresponds to the number of sections in parallel on the output.

Four-channel CA-COM output



Terminal block output (LA2Xi)



Cabling 5XT using screw terminals

Accessories	5XT-SEALPLATE (optional)
	2 M4x30 screws (provided with 5XT-SEALPLATE)
Tools	3 mm slotted screwdriver
	T20 Torx bit and torque screwdriver (optional)

The procedure is shown with 5XT-SEALPLATE.
5XT-SEALPLATE is an optional accessory, and is sold separately.

Assembly

Prerequisite

- Refer to APPENDIX: Recommendation for speaker cables (p.41).
- Refer to Cabling schemes for 5XT (p.26).

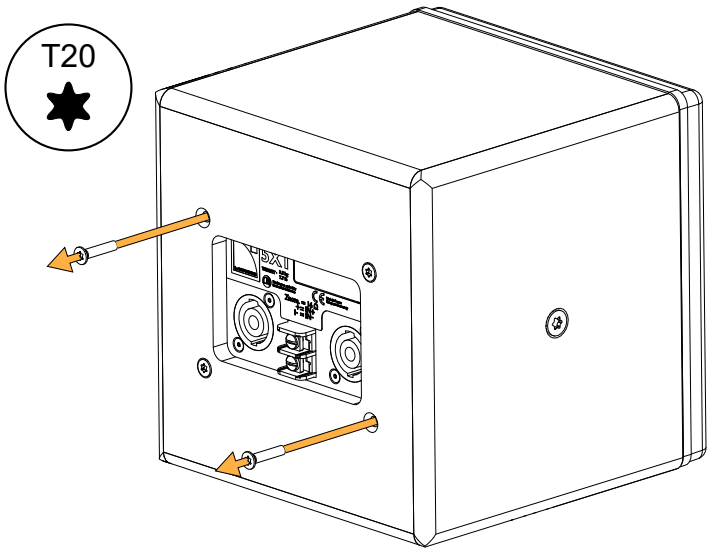
About this task

5XT-SEALPLATE has two cable glands: one for the input cable and one for the cable connecting to the next enclosure in parallel. The second cable gland is equipped with a protective plug. This procedure describes how to connect the input cable to the enclosure. If the enclosure must be connected in parallel, remove the protective plug from the second cable gland and proceed identically for both cables.

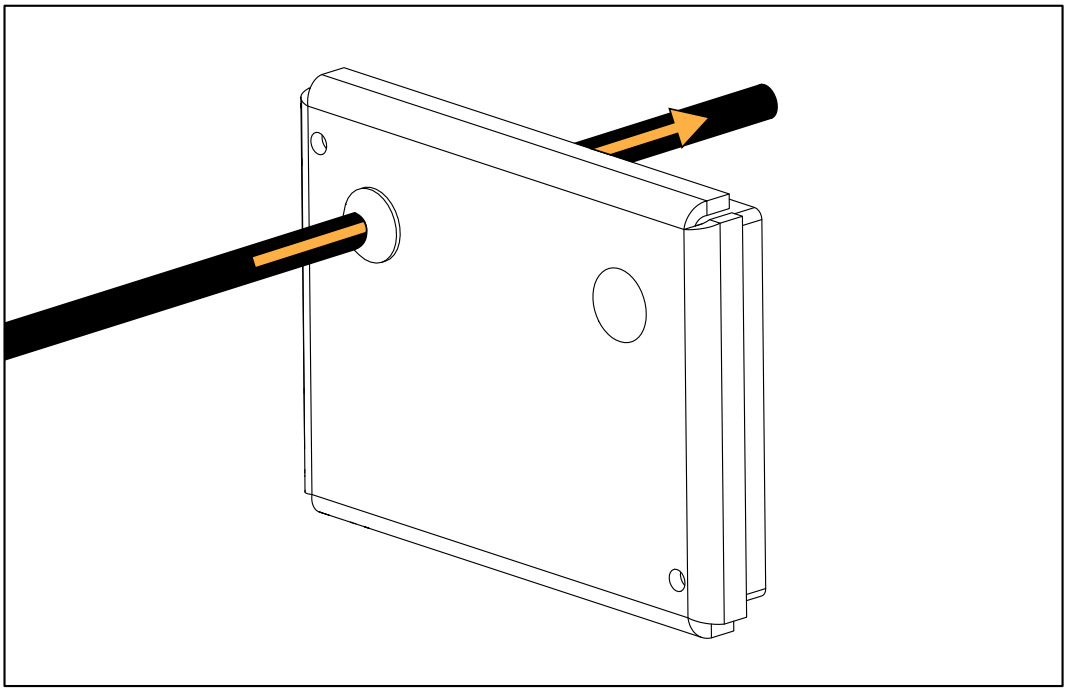
The cable gland only fits cables with a gauge of up to 4 mm².

Procedure

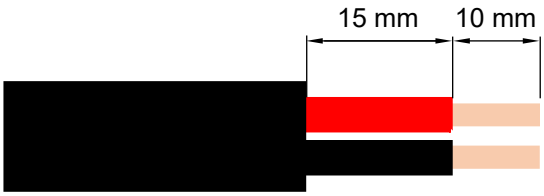
1. Remove the two screws from the back of 5XT.



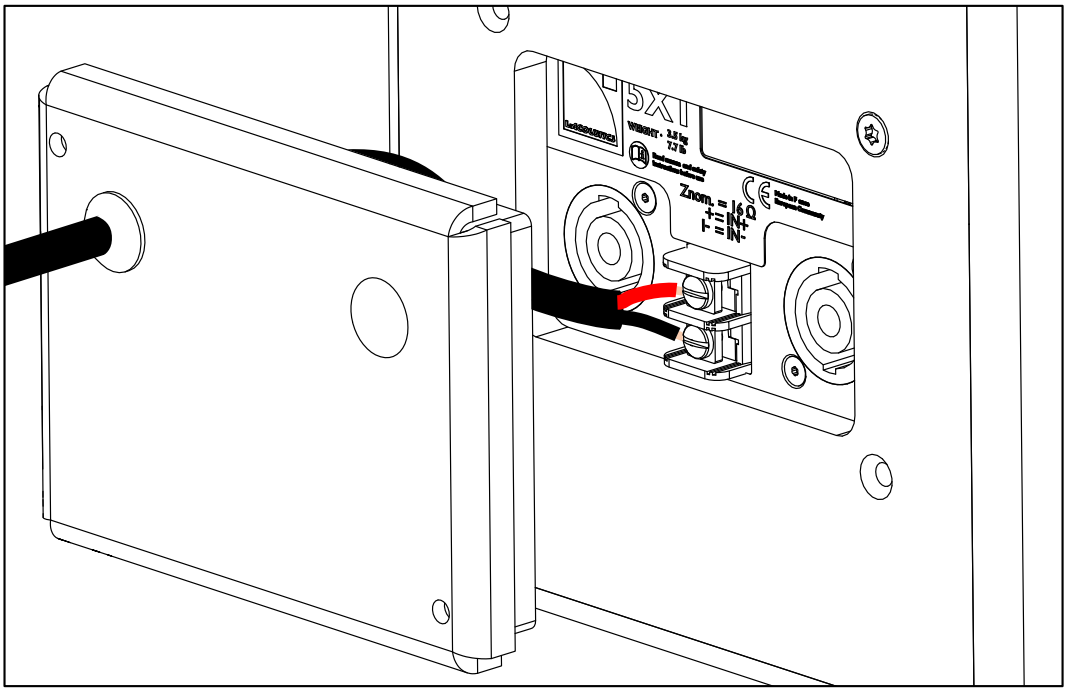
2. Insert the cable in the cable gland.



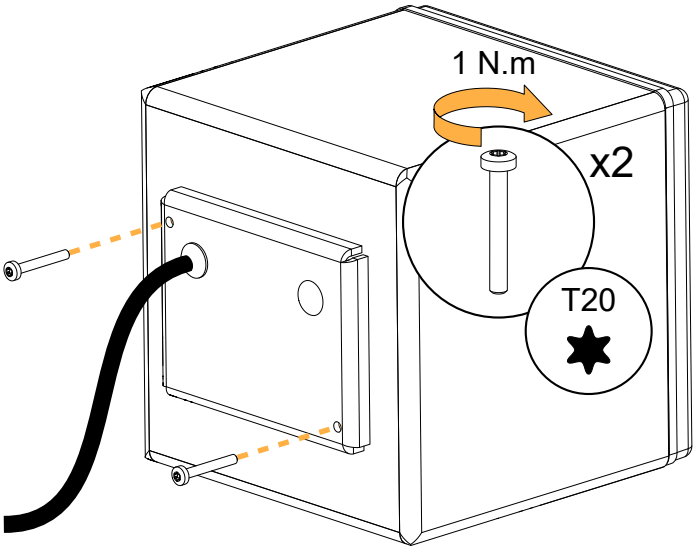
3. Strip the wires of the cable.

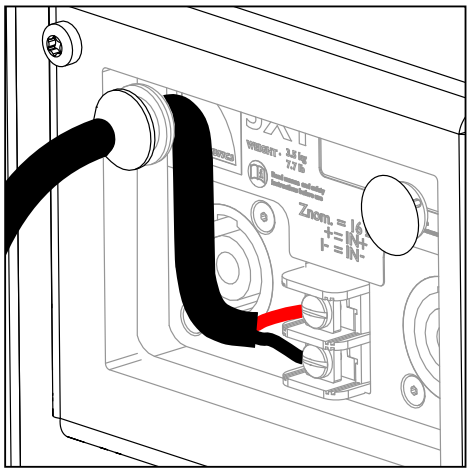


4. Secure the wires in the connectors and tighten the screw terminals.



5. Secure 5XT-SEALPLATE to 5XT.





Corrective maintenance

Introduction

This section contains the following maintenance procedures:

5XT

- D/R - Grill (p.32)
- D/R - Coaxial loudspeaker (p.33)
- D/R - HF diaphragm (p.34)

For advanced maintenance, contact your L-Acoustics representative.

Tools and consumables

Before performing maintenance on this product, make sure all the tools listed are available. References are given for FACOM® products in this table. Other manufacturers can be used.

name	reference	distributor
Set of 6-point 1/4" sockets *	RL.NANO1 / R.360NANO	FACOM
Torque screwdriver (2 - 10 N.m) *	A.404	FACOM
3 mm hex wrench	-	-
compressed air blower	-	-
double face adhesive tape	-	-

* included in the L-Acoustics Maintenance Toolcase.

Maintenance Toolcase

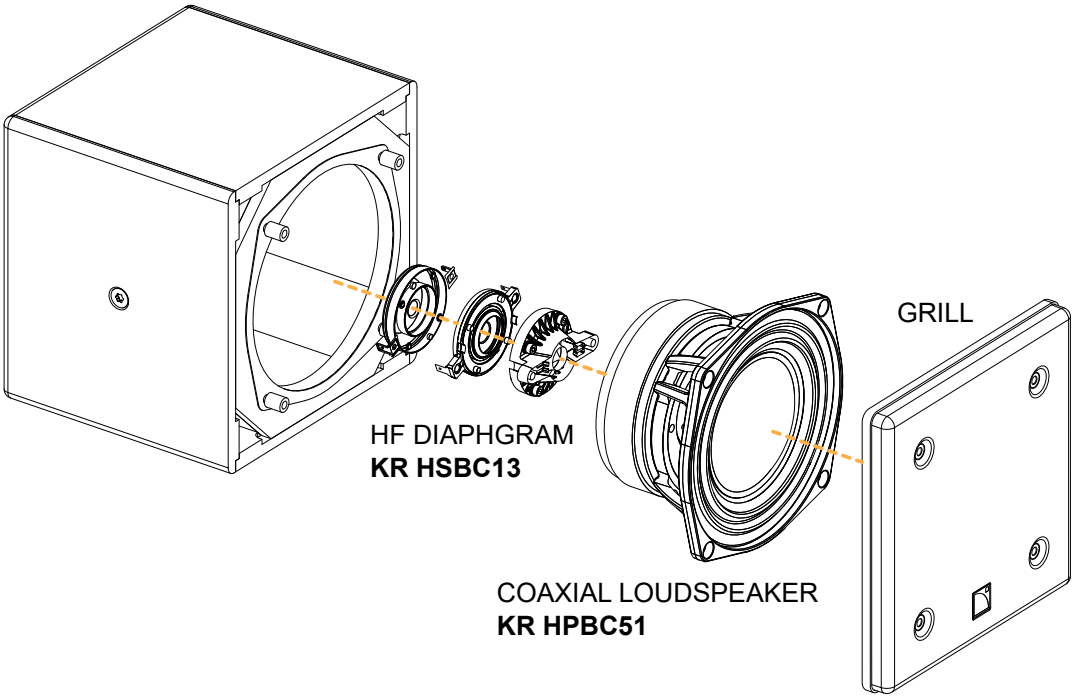
The Maintenance Toolcase is a carry-on suitcase that includes all the tools required to perform maintenance on L-Acoustics products. This toolcase is aimed at Certified Providers.

The Maintenance Toolcase uses a Peli™ 1510 Protector case that features three pre-cut layers of foam to safely fit the tools. The Maintenance Toolcase includes tools manufactured by FACOM®, Fluke®, Tohnichi, ABUS, and Würth.

All third-party trademarks, registered trademarks, or product names are the property of their respective owners.

Disassembly and Reassembly procedures

In order to operate, follow the order outlined here. Each assembly refers to the corresponding Disassembly/Reassembly (D/R) procedure and the necessary repair kit.



D/R - Grill

Tools

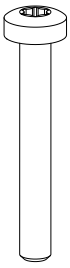
- torque screwdriver
- T20 Torx bit

Consumables

- blue threadlocker

Repair kit

KR HPBC51 - Kit HP BC51 Speaker 5" or
KR HSBC13 - Kit diaphragm for 1" driver - 8 ohms



×4

S100037

M4×30 Torx

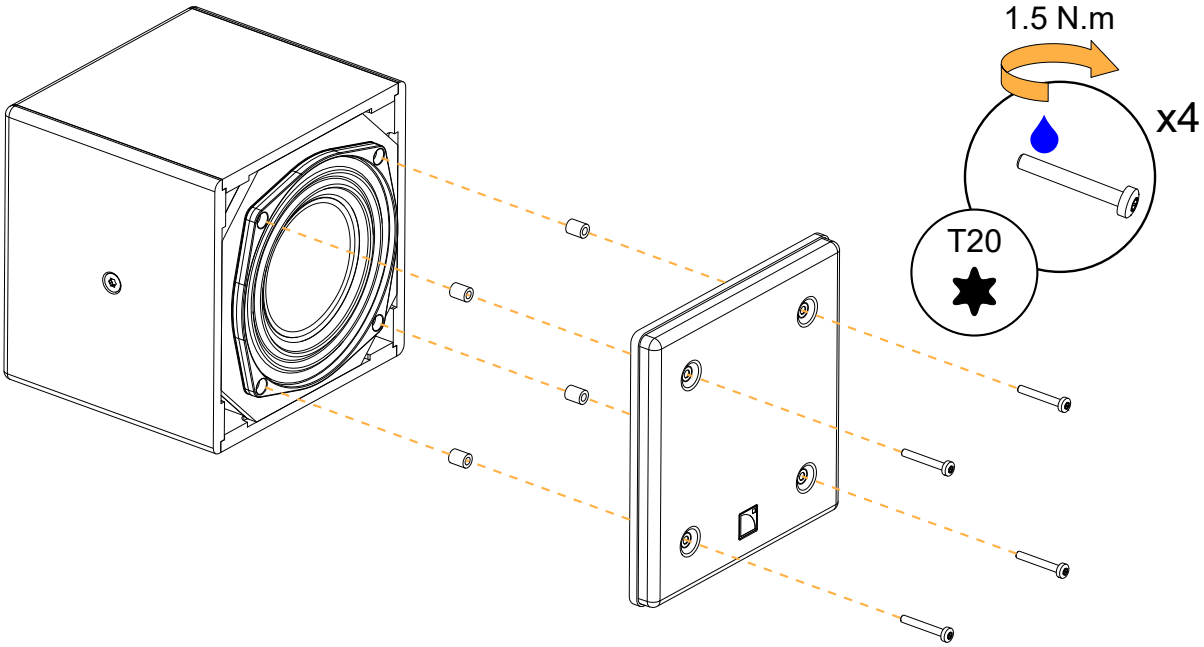
Exploded view

For safety reasons, always use the new screws and spare parts provided in the KR.

Gradually tighten the screws following a star pattern.

Save the spacers for reassembly.

Use blue threadlocker.

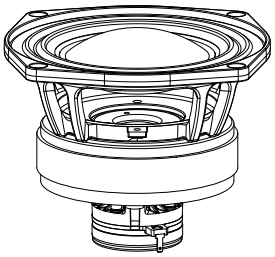


D/R - Coaxial loudspeaker

Repair kit

KR HPBC51

Kit HP BC51 Speaker 5''



×1

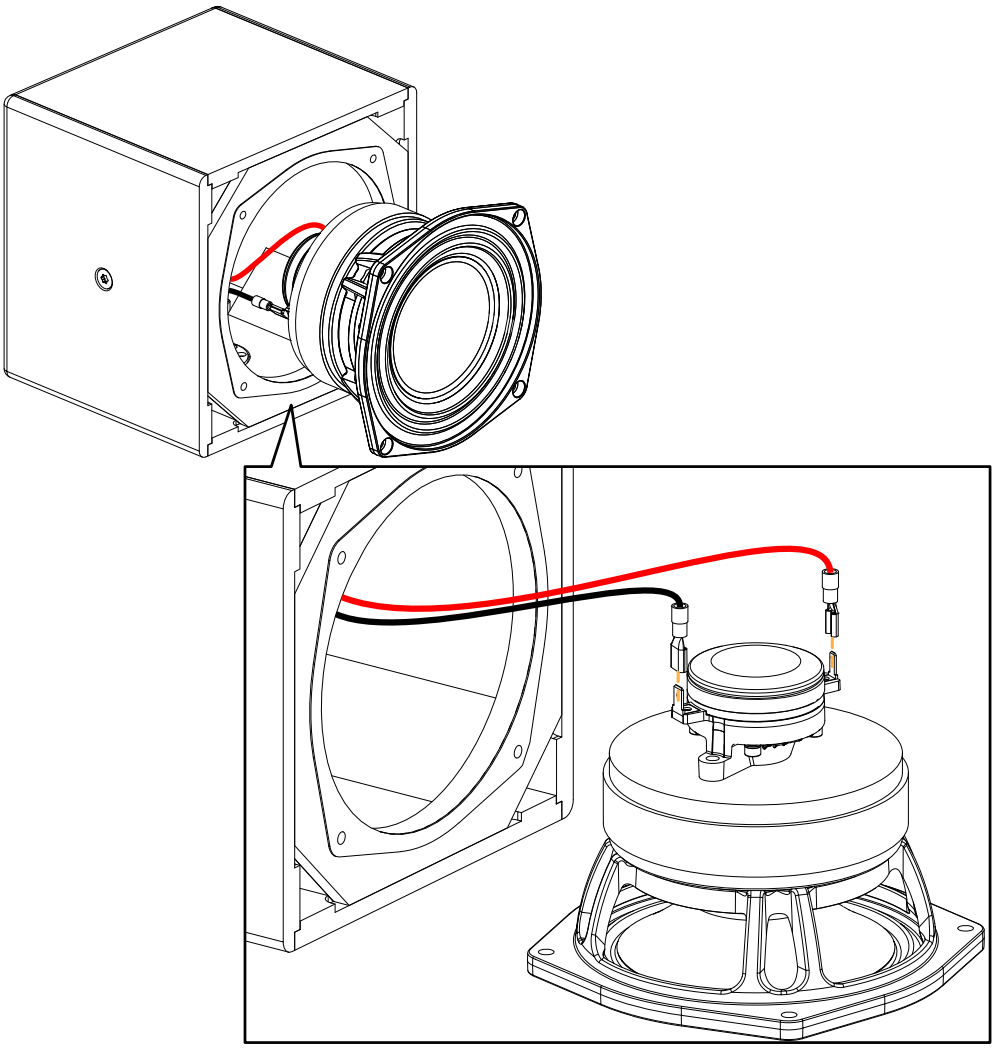
1297

5" coaxial speaker - 16 ohms

Prerequisite

Grill removed. See D/R - Grill (p.32).

Exploded view



What to do next

Perform the Acoustical check (p.19) procedures.

D/R - HF diaphragm

Tools

- torque screwdriver
- 3 mm hex bit
- 3 mm hex wrench
- compressed air blower

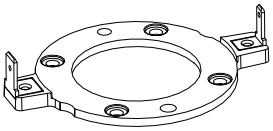
Consumables

- double face adhesive tape

Repair kit

KR HSBC13

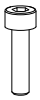
Kit diaphragm for 1'' driver - 8 ohms



×1

1458

1" driver - 16 ohms



×4

SDT00447

M3×12 hex

×2

SDT00448

M4×12 hex

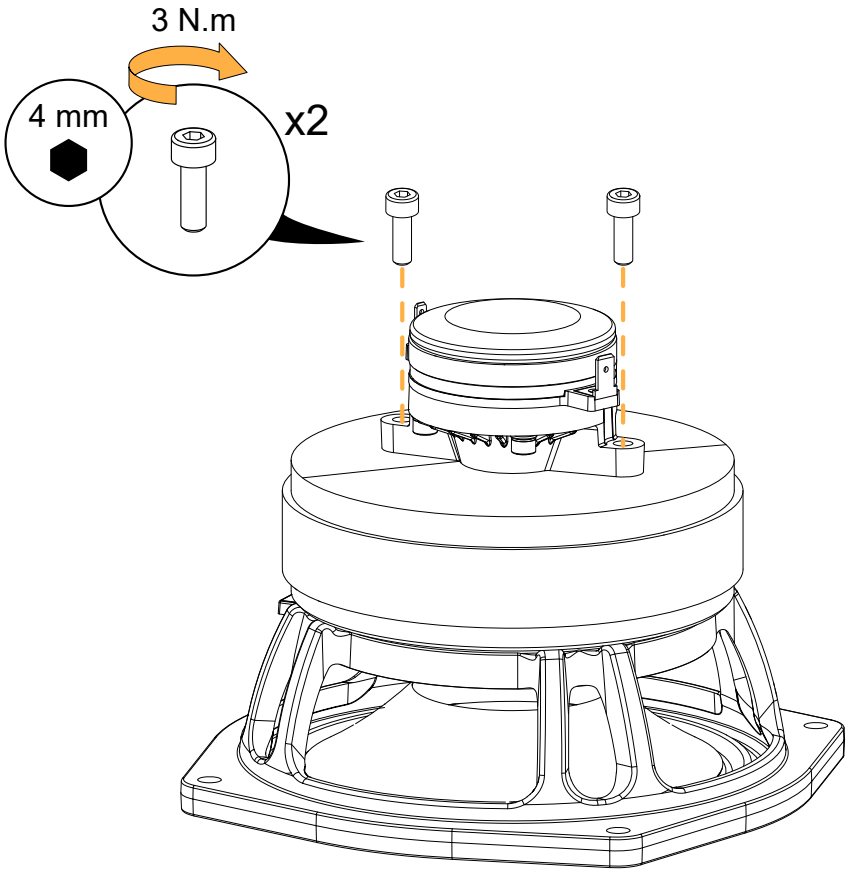
Prerequisite

Grill disassembled.	See D/R - Grill (p.32).
Coaxial speaker removed.	See D/R - Coaxial loudspeaker (p.33).
The coaxial loudspeaker is placed on a flat surface in a dust-free environment.	

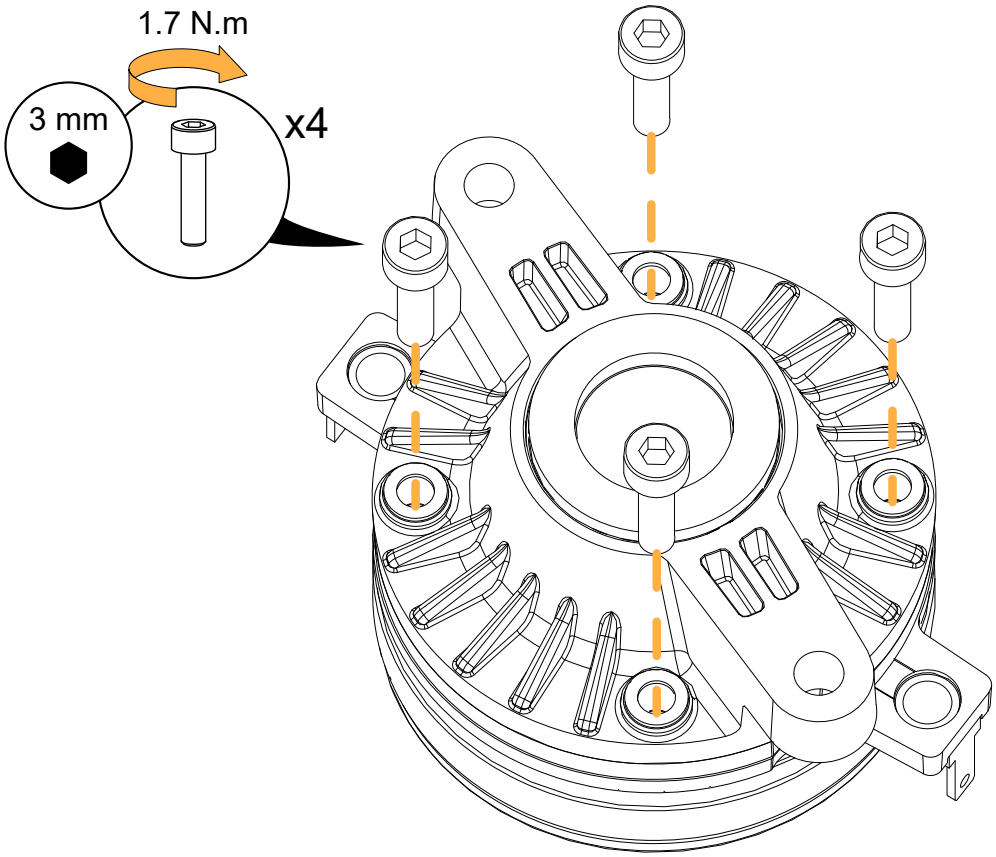
Disassembly

Procedure

1. Remove the HF loudspeaker from the LF loudspeaker.



2. Place the HF driver on a flat surface.
3. Remove the four screws securing the cover and remove the cover.



4. Pierce the label and carefully remove the center screw while holding the cone in place.
   Use the 3 mm hex bit.

   Discard the paper disk to avoid parasitic vibrations.
5. Remove the cone.
6. Carefully remove the diaphragm holding it by the connectors.
7. If there are black spacers on the air gap, do not remove them.

Reassembly

About this task

For safety reasons, always use the new screws and spare parts provided in the KR.

Procedure

1. Clean the driver and the air gap.
   Use a blower or double face adhesive tape to clean any particle.

   Make sure the air gap is perfectly clean before moving to the next step.
2. Carefully place the diaphragm.
   If there are black spacers, make sure they remain in place.
3. Position the diaphragm using the screw holes as reference points.
   The connectors must be positioned halfway between two screw holes.
4. Place the cone in the middle.
5. While holding the cone in place, manually drive the center screw using the 3 mm hex wrench.
6. Secure the cover with the four SDT00447 provided in the KR.
   a) Gradually secure by hand each screw with the 3 mm hex wrench.
      Follow a star pattern.
   b) Tighten the screws in the same order with the torque screwdriver.
      Use the 3 mm hex bit. Set the torque to 1.7 Nm.
7. While holding the cone in place, tighten the center screw with the torque screwdriver.
   Use the 3 mm hex bit. Set the torque to 1.7 Nm.
8. Carefully position the HF loudspeaker on the LF loudspeaker.
   Use the connectors as reference points. When facing the HF loudspeaker connectors, the small connector must be on the left, and the larger one on the right.
9. Secure the HF loudspeaker on the LF loudspeaker with the two SDT00448 provided in the KR.
   Use the 4 mm hex bit. Set the torque to 3 Nm.

Specifications

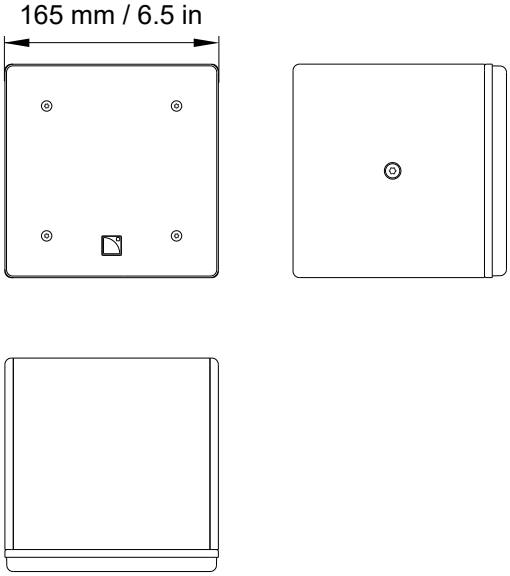
5XT specifications

Description	2-way passive coaxial enclosure: 5'' LF + 1'' HF diaphragm, amplified by LA2Xi / LA4X / LA8 / LA12X
Usable bandwidth (-10 dB)	95 Hz - 20 kHz ([5XT])
Maximum SPL[1]	121 dB ([5XT])
Nominal directivity (-6 dB)	110° axisymmetric
Transducers	LF: 1 × 5" cone driver
	HF: 1 × 1" diaphragm compression driver
Acoustical load	LF: bass-reflex
Nominal impedance	16 Ω
Connectors	IN: 1 × 4-point speakON
	LINK: 1 × 4-point speakON
	IN/LINK: 2 × 2-point screw terminals
Rigging and handling	2 M6 inserts for ETR5
	1 × 3/8" insert for microphone stand
Weight (net)	3.5 kg / 7.7 lb
Cabinet	premium grade Baltic birch plywood
Front	steel with anti-corrosion coating
Finish	dark grey brown Pantone 426 C
	pure white RAL 9010
	custom RAL code on special order
IP	IP30 / IP54[2]

[1] Peak level measured at 1 m under free field conditions using pink noise with crest factor 4 (preset specified in brackets).

[2] IP54 is achieved with the 5XT-SEALPLATE connector sealing plate and a down-tilt angle of 20° and more.

5XT dimensions

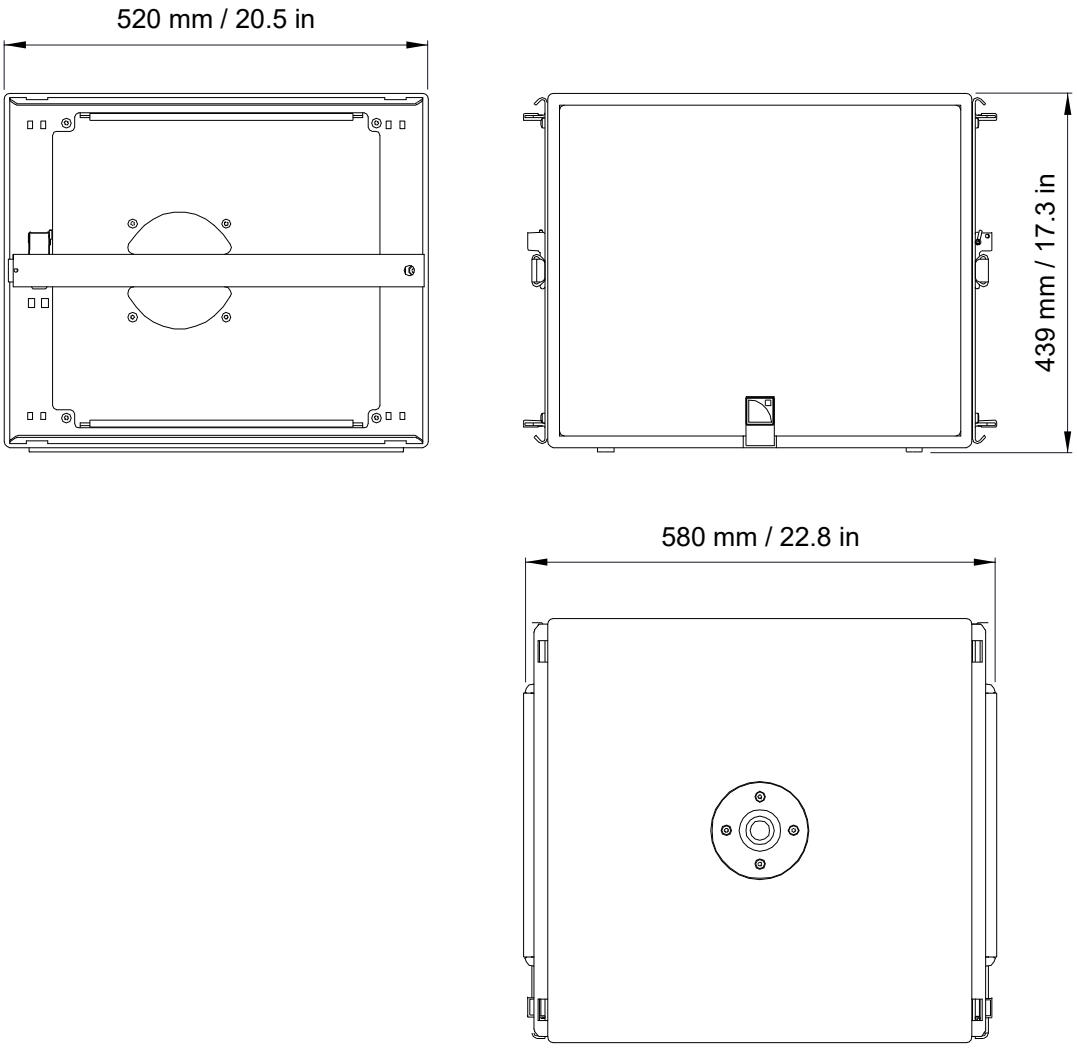


SB15m specifications

Description	High power compact subwoofer : 1 x 15'' , amplified by LA2Xi / LA4X / LA8 / LA12X
Low frequency limit	40 Hz ([SB15_100])
Maximum SPL[1]	137 dB ([SB15_100]) with LA2Xi (bridge mode) / LA4X / LA8 / LA12X
	131 dB ([SB15_100]) with LA2Xi
Directivity	standard or cardioid
Transducers	1 x 15" cone driver
Acoustical load	bass-reflex, L-Vents
Nominal impedance	8 Ω
Connectors	IN: 1 × 4-point speakON
	LINK: 1 × 4-point speakON
Rigging and handling	2 handles
	2 coupling bars and 2 locking tabs
	1 × 35 mm pole socket
Weight (net)	36 kg / 79.4 lb
Cabinet	premium grade Baltic birch plywood
Front	coated steel grill
	acoustically neutral 3D fabric
Rigging components	high grade steel with anti-corrosion coating
Finish	dark grey brown Pantone 426 C
	pure white RAL 9010
	custom RAL code on special order
IP	IP55

[1] Peak level at 1 m under half space conditions using pink noise with crest factor 4 (preset specified in brackets).

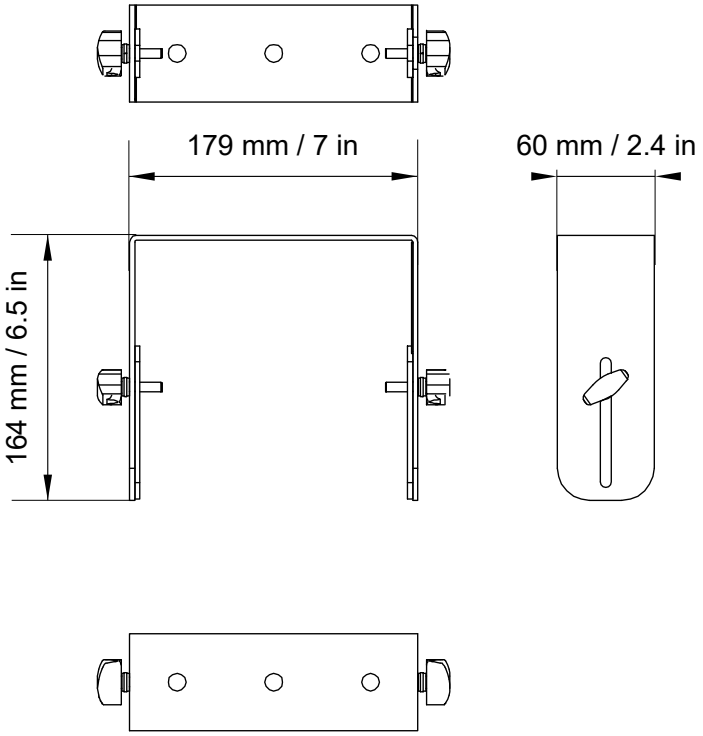
SB15m dimensions



ETR5 specifications

Description	Adjustable U-bracket: 5XT
Weight (net)	0.7 kg / 2 lb
Material	high grade steel with anti-corrosion coating

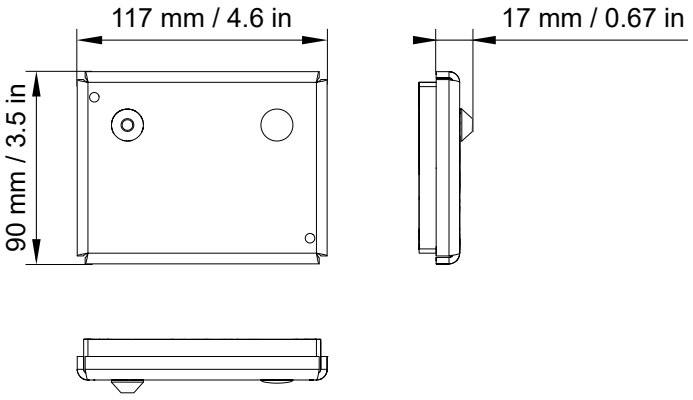
ETR5 dimensions



5XT-SEALPLATE specifications

Description	Connector sealing plate for 5XT
Weight (net)	0.3 kg / 0.7 lb
Material	steel with anti-corrosion coating

5XT-SEALPLATE dimensions



Recommendation for speaker cables

Follow the recommended maximum length for loudspeaker cables to ensure minimal SPL attenuation.

Cable quality and resistance

Only use high-quality fully insulated speaker cables made of stranded copper wire.

Use cables with a gauge offering low resistance per unit length and keep the cables as short as possible.

The table below provides the recommended maximum length for loudspeaker cables depending on the cable gauge and on the impedance load connected to the amplifier.

cable gauge			**recommended maximum length**					
			8 Ω load		**4 Ω load**		**2.7 Ω load**	
mm^2	SWG	AWG	m	ft	m	ft	m	ft
2.5	15	13	30	100	15	50	10	33
4	13	11	50	160	25	80	17	53
6	11	9	74	240	37	120	25	80

Use the more detailed L-Acoustics calculation tool to evaluate cable length and gauge based on the type and number of enclosures connected. The calculation tool is available on our website:

https://www.l-acoustics.com/installation-tools/

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