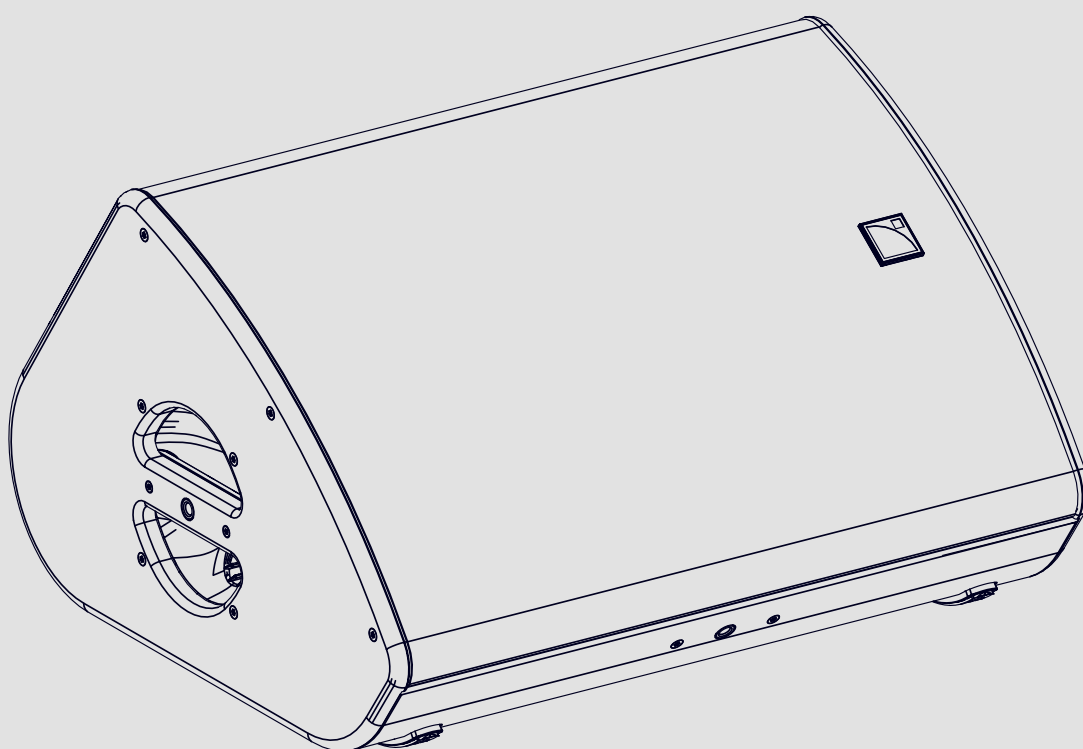


X15 HiQ

user manual 2.1 (EN)



Document reference: X15 HiQ user manual (EN) version 2.1

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Safety

Instructions



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.



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.



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



Read the RIGGING MANUAL before installing the system.

Use the rigging accessories described in the rigging manual and follow the associated procedures.



Do not expose the product to extreme conditions.

Do not expose the product to rain or sea spray.

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

Symbols

The following symbols are used in this document:



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

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



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



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

Welcome

Thank you for purchasing the L-Acoustics X15 HiQ.

This document contains essential information on using the system properly. Carefully read this document in order to become familiar with the system.

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.

X15 HiQ reference stage monitor

The X15 HiQ is an active coaxial system designed as a reference stage monitor. The enclosure features a 3" diaphragm compression driver coaxially-loaded by a 15" low frequency transducer in a bass-reflex cabinet. The L-Vents laminar vented ports reduce turbulence and port noise at high levels to increase LF efficiency.

The X15 HiQ operates from 55 Hz to 20 kHz. The coaxial transducer arrangement and its ellipsoid waveguide produce a 40° x 60° directivity pattern with a smooth tonal response free of secondary lobes over the entire frequency range. As a result, X15 HiQ boasts an exceptional immunity to feedback.

The L-Acoustics amplified controllers ensure the advanced crossover functions, time alignment, linearization and L-Drive protection of the transducers.

With a cabinet combining the properties of birch and beech plywood, X15 HiQ weighs a mere 21 kg and features ergonomic handles for a solid grip and efficient handling. Its elegance and ultra-low profile make for an easy integration into the set. It provides a stage monitoring angle setting of 35° with regard to vertical or 55° thanks to its built-in risers. For special narrow fill applications, the X15 HiQ can be pole-mounted using the integrated socket or flown and tilted in various orientations using its rigging accessories.

The X15 HiQ combines all the qualities of a reference stage monitor. It offers power (SPL) in beamwidth, an excellent acoustic isolation with its narrow ellipsoid directivity of 40° x 60°, a high immunity to feedback, an ultra-low profile and low weight for integration and handling, a rugged build and an active design with low latency preset. In addition, sound designers can take advantage of its directivity for narrow fill applications.

The X15 HiQ can be pole-mounted using the integrated socket. Other deployments such as wall-mounted, ceiling-mounted or flown are quick and easy, with a complete range of rigging accessories that offer multiple set-up options and various orientations.

System components

Loudspeaker enclosures


X15 HiQ	active 2-way coaxial enclosure
SB18	high power compact subwoofer

SB18 / SB18i / SB18m

In this document, the SB18 term and illustrations refer equally to SB18, SB18i or SB18m.

Powering and driving system

LA4X / LA8	amplified controller with DSP, preset library and networking capabilities
LA-RAK	touring rack containing three LA8, for power, audio and network distribution
L-Case	protection case for L-Acoustics 2U electronics

 Refer to the LA4X / LA8 user manual for operating instructions.


Loudspeaker cables

SP cables	4-point speakON loudspeaker cables (4 mm ² gauge) SP cables come in four 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) provided with a CC4FP adapter 4-point speakON to 2 × 2-point speakON
DO cables	8-point PA-COM loudspeaker cables (4 mm ² gauge) DO cables come in three sizes: DO.7 (0.7 m/2.3 ft), DO10 (10 m/32.8 ft) and DO25 (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
DOFILL-LA8	breakout cable for two 2-way active enclosures (4 mm ² gauge). 8-point PA-COM to 2 × 4-point speakON.
DO3WFILL	breakout cable for one 2-way active enclosure and two passive enclosures (4 mm ² gauge) 8-point PA-COM to 1 × 4-point speakON and 2 × 2-point speakON.

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

Refer to the LA4X / LA8 user manual for detailed instructions about the whole cabling scheme, including modulation cables and network.

Rigging elements

 Rigging elements or procedures are not presented in this document.
Refer to the X15 HiQ rigging manual.

Software applications

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



Refer to the **LA Network Manager video tutorial**.

Refer to the **Soundvision** help.

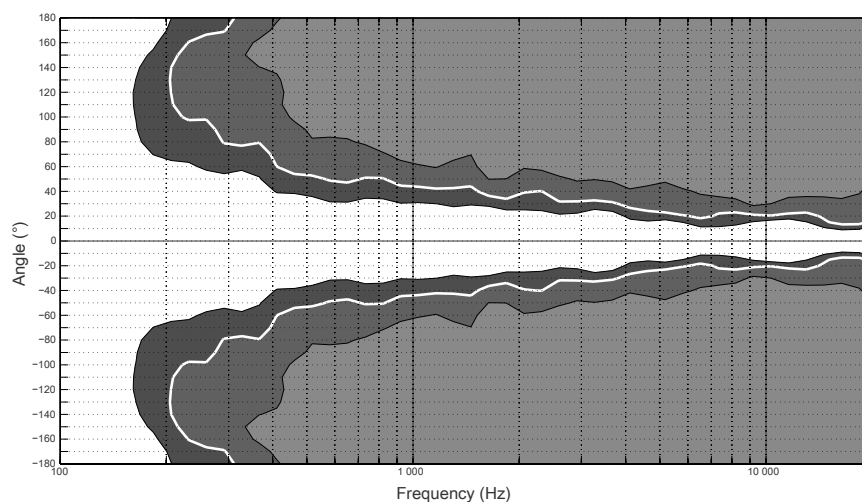
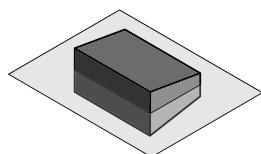
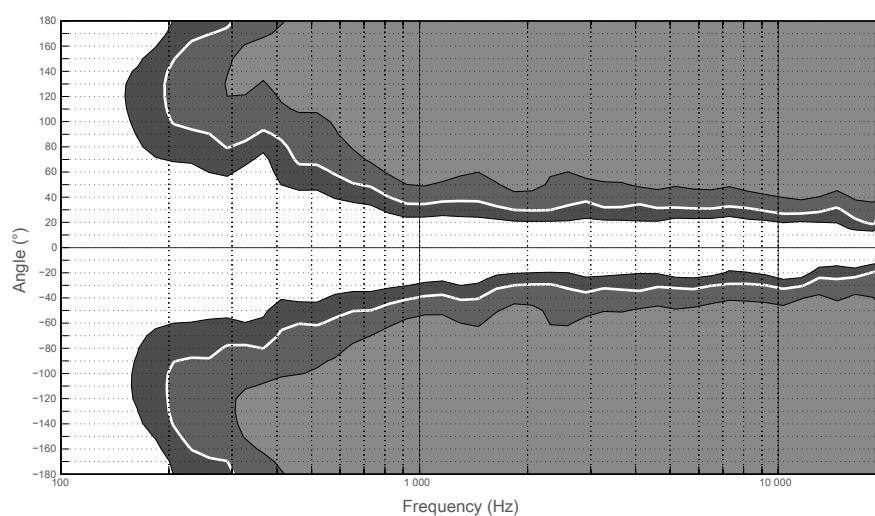
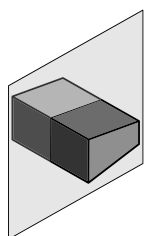
Technical description

Low-latency preset

A low-latency preset is available for the X15 HiQ enclosure used as a monitor ([X15_MO]). It reduces latency from 3.84 ms down to 1.19 ms (LA8) and 0.76 ms (LA4X). If the monitor is combined with a subwoofer, a custom preset must be used.

Directivity

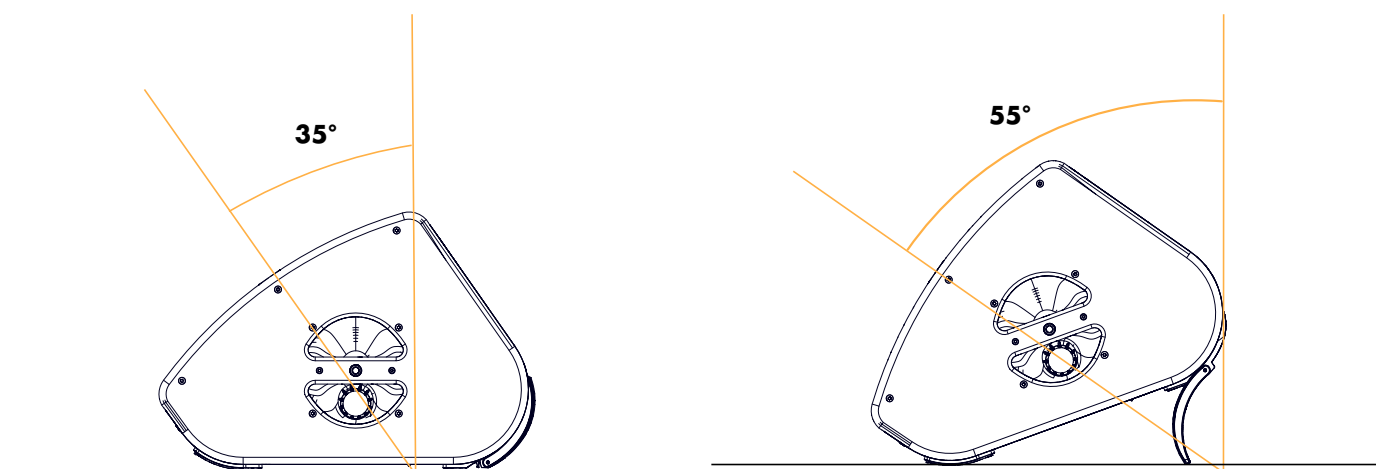
X15 HiQ features a coaxial transducer arrangement coupled with an ellipsoid waveguide that generates an H/V directivity pattern of 40° x 60°.



Dispersion angle diagram of a single X15 HiQ using lines of equal sound pressure at -3 dB, -6 dB, -12 dB.

Monitor angles

X15 HiQ features risers that allow to change the monitor angle from 35° to 55°.



Loudspeaker configurations

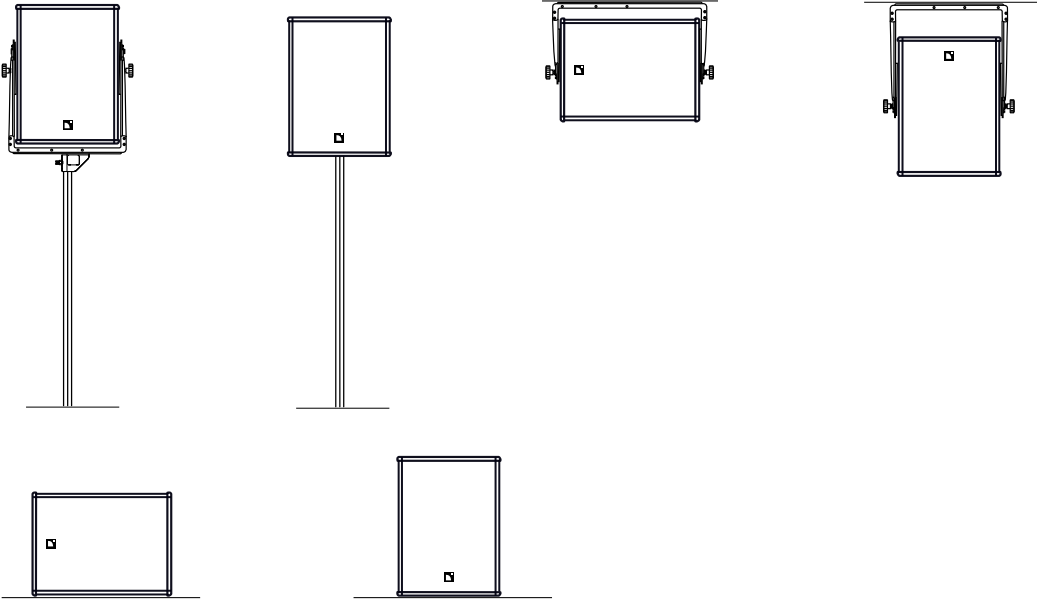
X15 HiQ point source

Deployed as a standalone point source, a X15 HiQ system operates over the nominal bandwidth of the X15 HiQ enclosure.

The [X15] preset allows for a reference frequency response in short throw applications.

The X15 HiQ enclosure is driven by the LA4X / LA8 amplified controllers.

Standalone X15 HiQ



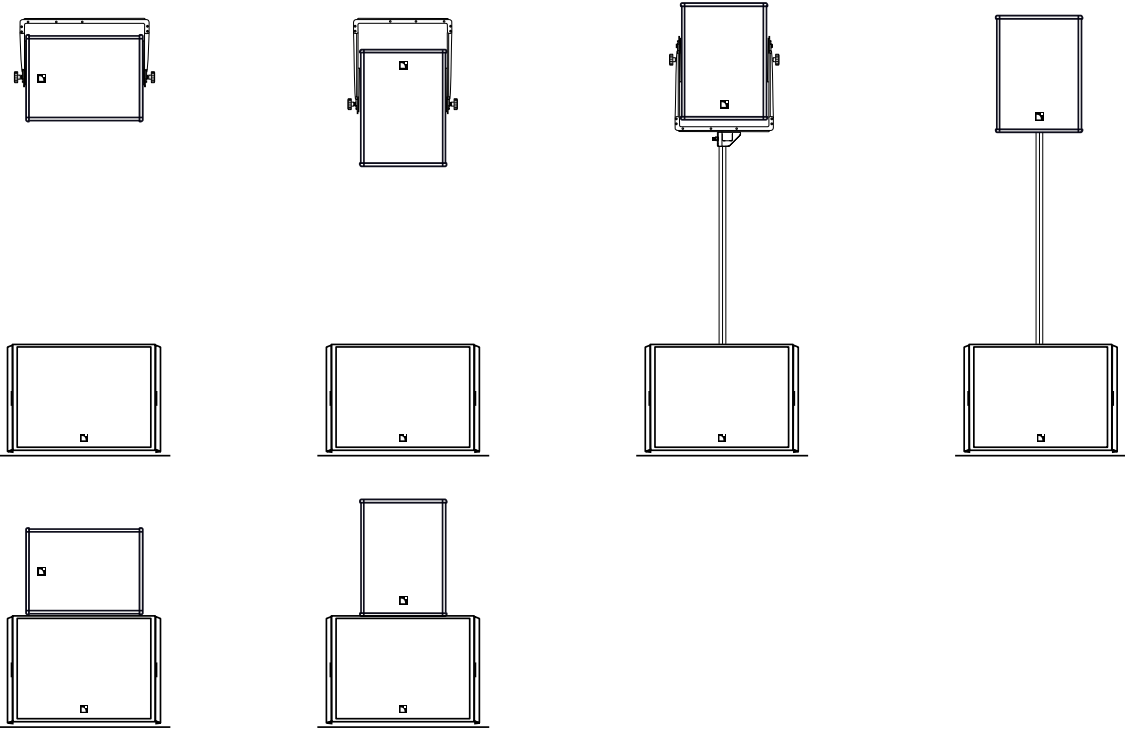
Enclosure	Preset
X15 HiQ	[X15]
Frequency range (-10 dB)	55 Hz - 20 kHz

X15 HiQ point source with LF


Deployed as a point source with SB18 subwoofers, an X15 HiQ system operates with augmented LF resources. The [X15] preset allows for a reference frequency response in short throw applications. The [SB18_100] preset provides the SB18 with an upper frequency limit at 100 Hz for an optimal frequency coupling with the X15 HiQ. The X15 HiQ and SB18 enclosures are driven by the LA4X / LA8 amplified controllers.

X15 HiQ with SB18

With SB18, the X15 HiQ system contour is reinforced by 8 dB at 100 Hz and the system bandwidth is extended down to 32 Hz.



Enclosure	Preset
X15 HiQ	[X15]
SB18	[SB18_100]
Frequency range (-10 dB)	32 Hz - 20 kHz
Enclosure ratio	1 X15 HiQ : 1 SB18




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

[X15] + [SB18_100]	X15 HiQ = 0	SB18 = 0
--------------------	-------------	----------

X15 HiQ stage monitor

Deployed as a stage monitor, an X15 HiQ system operates over the nominal bandwidth of the X15 HiQ enclosure. The [X15_MO] preset allows for a reference frequency response in stage monitoring applications. The X15 HiQ enclosure is driven by LA4X / LA8.

Standalone X15 HiQ

<div><div>35°</div><div>55°</div><div></div></div>	
Enclosure	Preset
X15 HiQ	[X15_MO]
Frequency range (-10 dB)	52 Hz - 20 kHz

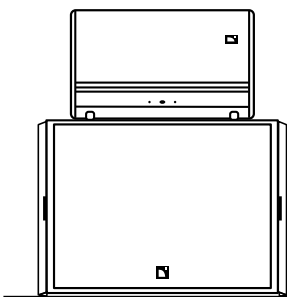
X15 HiQ stage monitor with LF

Deployed as a stage monitor with SB18 subwoofers, an X15 HiQ system operates with augmented LF resources. The [X15_MO] preset allows for a reference frequency response in stage monitoring applications. The [SB18_100] preset provides the SB18 with an upper frequency limit at 100 Hz for an optimal frequency coupling with the X15 HiQ. The X15 HiQ and SB18 enclosures are driven by the LA4X / LA8 amplified controllers.

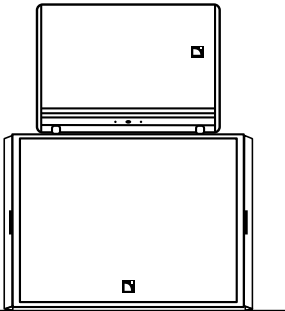
X15 HiQ with SB18

With SB18, the X15 HiQ system contour is reinforced by 8 dB at 100 Hz, and the system bandwidth is extended down to 32 Hz.

35°



55°



Enclosure	Preset
X15 HiQ	[X15_MO]
SB18	[SB18_100]
Frequency range (-10 dB)	32 Hz - 20 kHz
Enclosure ratio	1 X15 HiQ : 1 SB18

- !

Delay values

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

[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.

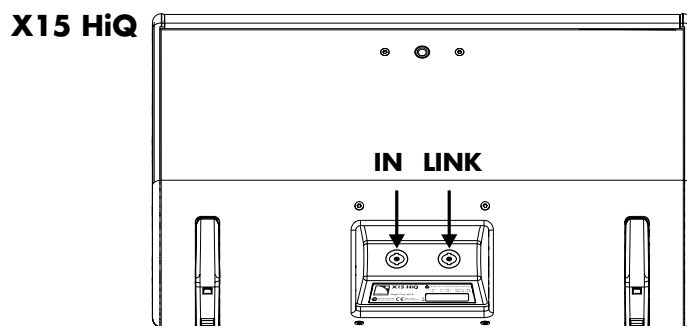
If the subwoofers are driven from a dedicated amplified controller using a subwoofer factory preset, they are operated in normal latency mode. Therefore, an additional delay should be set to the [xx_MO] low latency channels to align them: 2.65 ms on LA4 and LA8 or 3.08 ms on LA4X.

[X15_MO] + [SB18_100]	X15 HiQ = 0	SB18 = 0
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Loudspeaker connection

Connectors

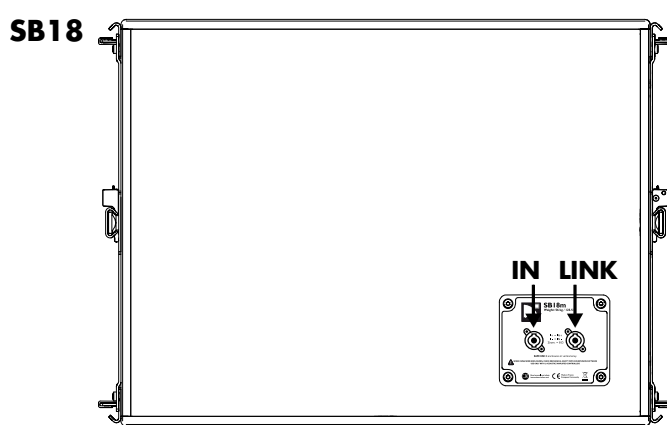
The X15 HiQ is equipped with two 4-point speakON connectors.



Internal pinout for L-ACOUSTICS 2-way active enclosures

speakON points	1 +	1 -	2 +	2 -
Transducer connectors	LF +	LF -	HF +	HF -

The SB18 is equipped with two 4-point speakON connectors.



Internal pinout for L-ACOUSTICS subwoofers

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

Connection to LA4X

Maximum number of enclosures per LA4X

enclosure	max enclosures in parallel	max enclosures per controller
X15 HiQ	1	2
SB18	1	4

Impedance load

SB18

1 enclosure: 8 Ω

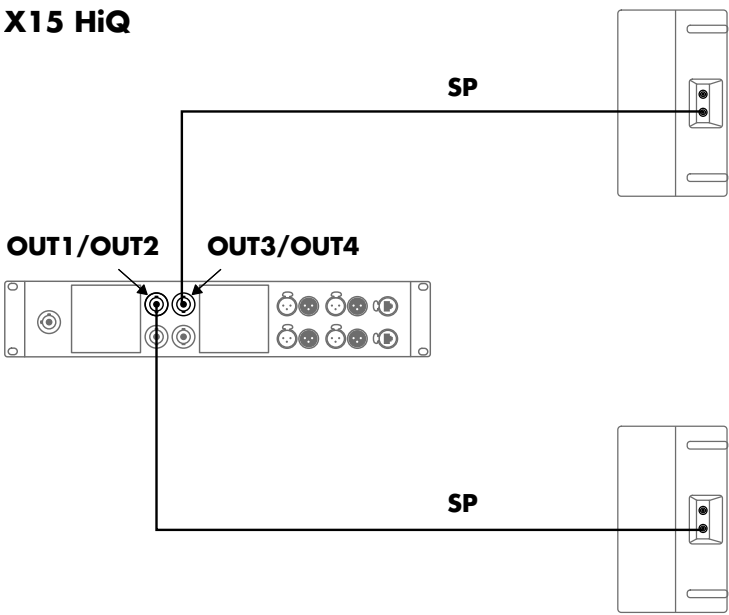
X15 HiQ

1 enclosure: LF 8 Ω; HF 8 Ω

Using SP cables with active enclosures

- Use SP cables (SP.7, SP5, SP10 or SP25) to connect one enclosure to the OUT1/OUT2 and OUT3/OUT4 speakON connectors of the amplified controller.
- If necessary, use SP cables to connect identical enclosures in parallel with the first ones.

Refer to the cabling schemes below for more instructions.

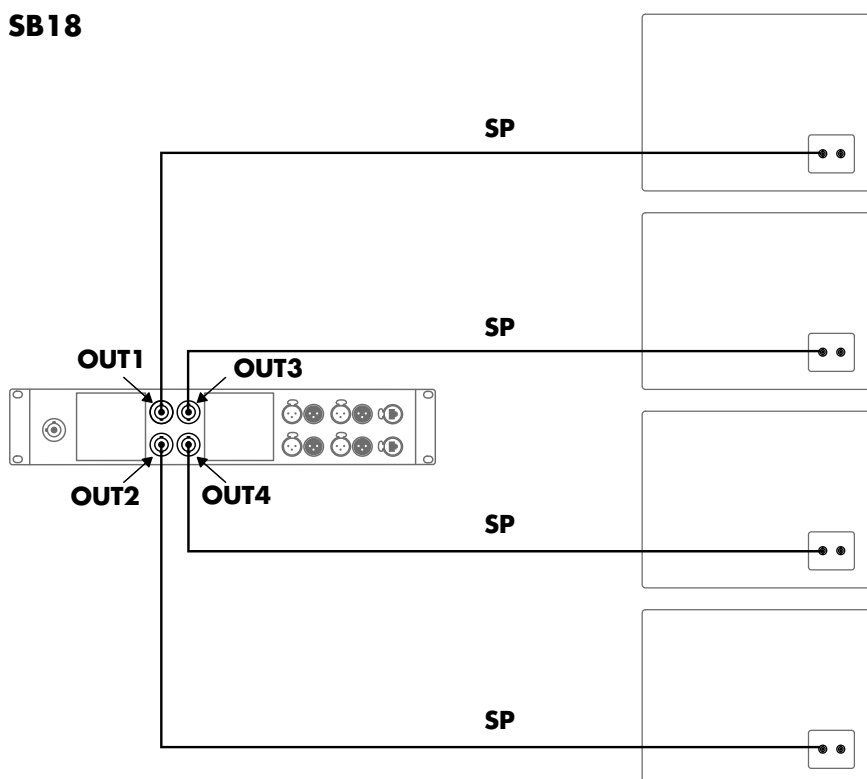


Using SP cables with passive enclosures

- Use SP cables (SP.7, SP5, SP10 or SP25) to connect one enclosure to each of the four speakON connectors of the amplified controller.
- If necessary, use SP cables to connect identical enclosures in parallel with the first ones.

Refer to the cabling schemes below for more instructions.

SB18

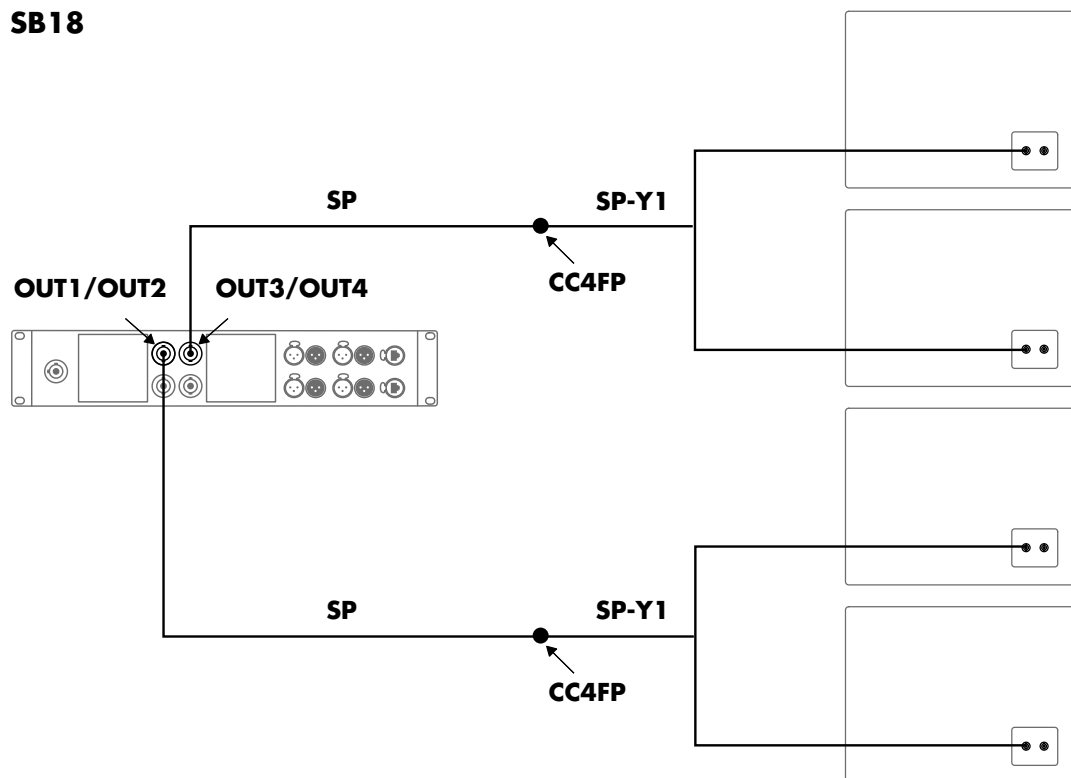


Using SP-Y1 cables

- Connect an SP cable (SP.7, SP5, SP10 or SP25) to the OUT1/OUT2 and OUT3/OUT4 speakON connectors of the amplified controller.
- Use the CC4FP adapter of an SP-Y1 cable to split the signal into two channels, each feeding one enclosure.
- If necessary, use SP cables to connect identical enclosures in parallel with the first ones.

Refer to the cabling schemes below for more instructions.

SB18



Connection to LA8

Maximum number of enclosures per LA8

enclosure	max enclosures in parallel	max enclosures per controller
X15 HiQ	2	4
SB18	2	8

Impedance load

SB18

- 1 enclosure: 8 Ω
- 2 enclosures in parallel: 4 Ω

X15 HiQ

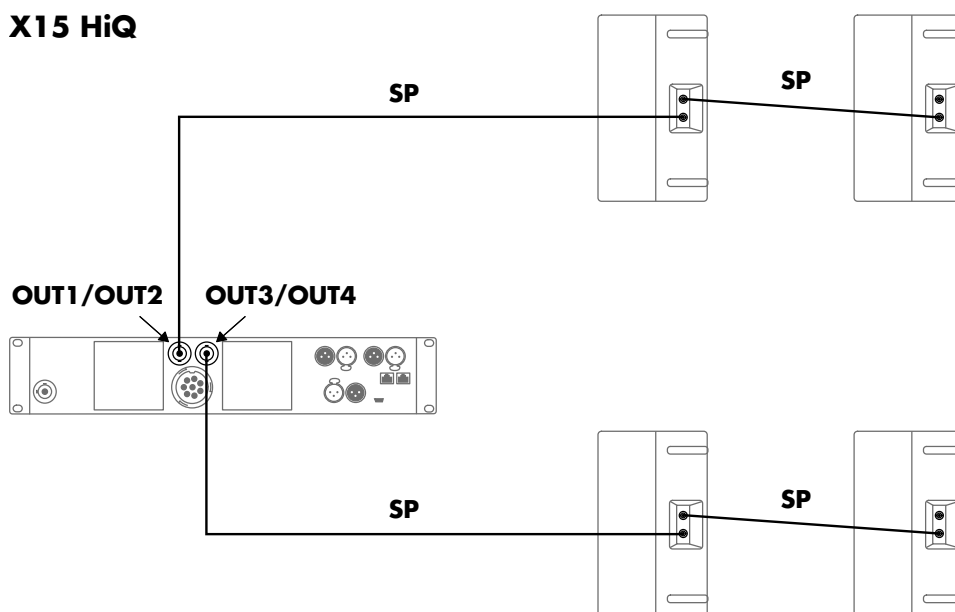
- 1 enclosure: LF 8 Ω ; HF 8 Ω
- 2 enclosures in parallel: LF 4 Ω ; HF 4 Ω

Using SP cables with active enclosures

- Use SP cables (SP.7, SP5, SP10 or SP25) to connect one enclosure to the OUT1/OUT2 and OUT3/OUT4 speakON connectors of the amplified controller.
- If necessary, use SP cables to connect identical enclosures in parallel with the first ones.

Refer to the cabling schemes below for more instructions.

X15 HiQ

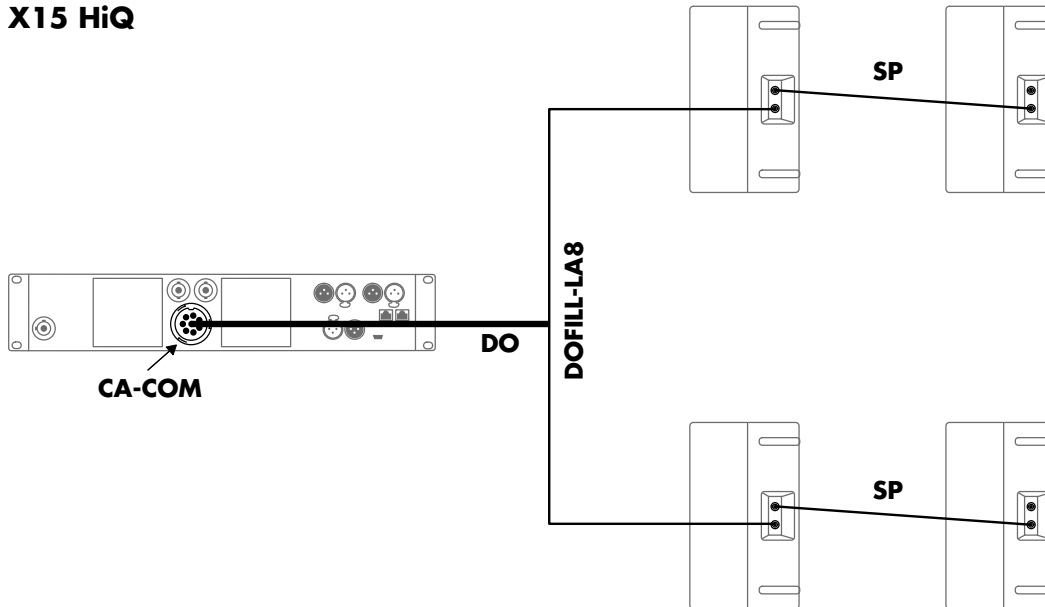


Using a DO cable with a DOFILL-LA8

- Connect a DO cable (DO.7, DO10 or DO25) to the CA-COM[®] connector of the amplified controller.
- Use a DOFILL-LA8 to split the signal into two channels pairs, each feeding one enclosure.
- If necessary, use SP cables to connect identical enclosures in parallel with the first ones.

Refer to the cabling schemes below for more instructions.

X15 HiQ

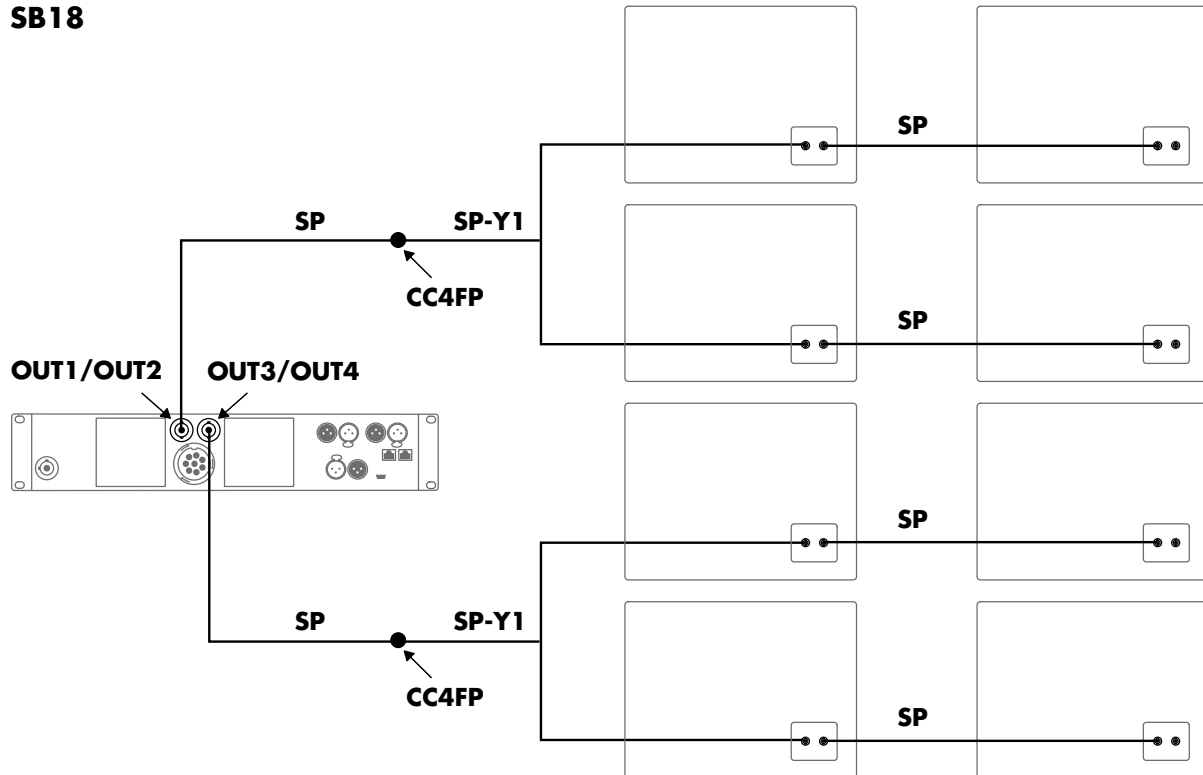


Using SP-Y1 cables

- Connect SP cables (SP.7, SP5, SP10 or SP25) to the OUT1/OUT2 and OUT3/OUT4 speakON connectors of the amplified controller.
- Use the CC4FP adapter of an SP-Y1 cable to split the signal into two channels, each feeding one enclosure.
- If necessary, use SP cables to connect identical enclosures in parallel with the first ones.

Refer to the cabling schemes below for more instructions.

SB18

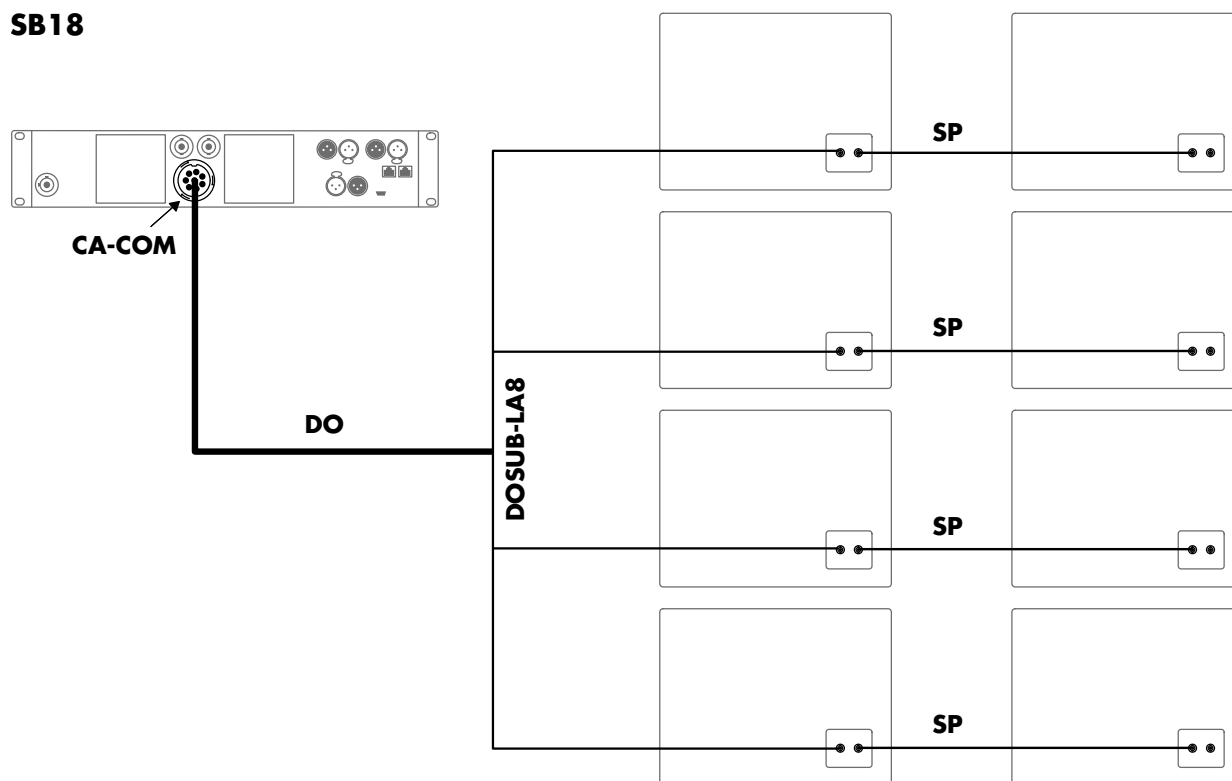


Using a DO cable with a DOSUB-LA8

- Connect a DO cable (DO.7, DO10 or DO25) to the CA-COM[®] connector of the amplified controller.
- Use a DOSUB-LA8 to split the signal into four channels, each feeding one enclosure.
- If necessary, use SP cables to connect identical enclosures in parallel with the first ones.

Refer to the cabling schemes below for more instructions.

SB18



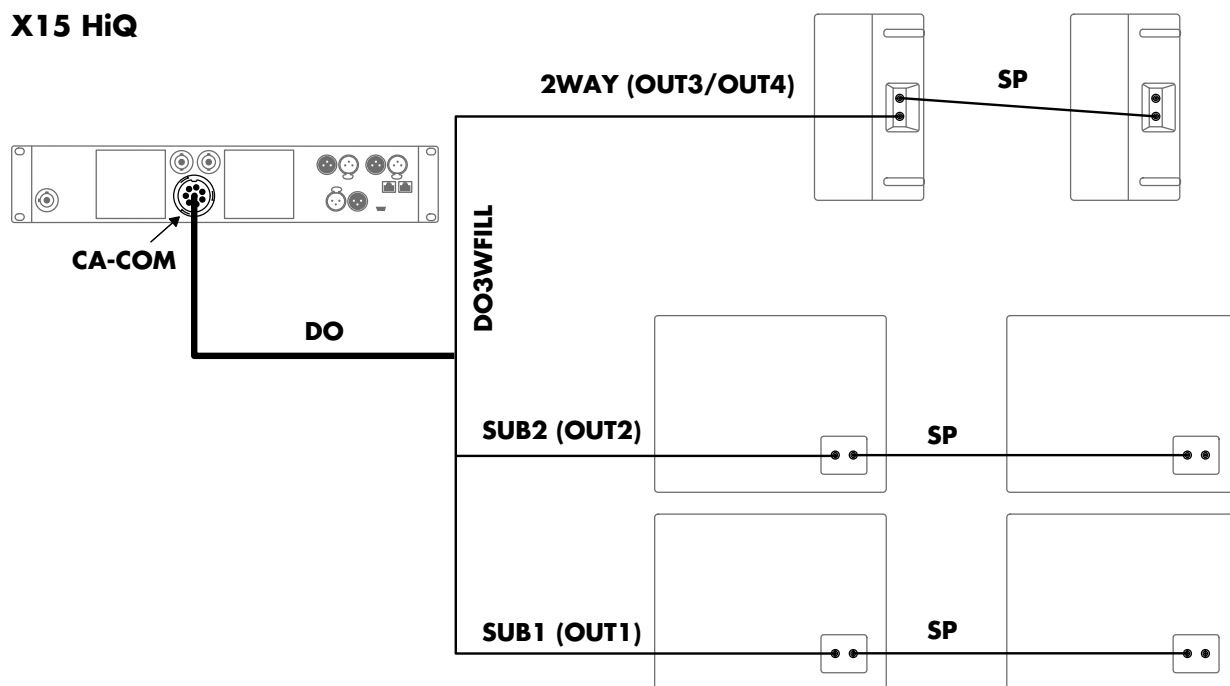
Using a DO cable with a DO3WFILL

! This cabling scheme requires a custom preset.

- Connect a DO cable (DO.7, DO10 or DO25) to the CA-COM[®] connector of the amplified controller.
- Use a DO3WFILL to split the signal into one channel pair (2WAY) and two single channels (SUB1 and SUB2).
- Connect the 2WAY connector to the IN connector of the enclosure.
- Connect the SUB1 and SUB2 connectors to the IN connectors of the subwoofers.
- If necessary, use SP cables to connect identical enclosures in parallel with the first ones.

Refer to the cabling schemes below for more instructions.

X15 HiQ



Preset description

[X15] [X15_MO]

enclosure	loudspeaker elements	outputs	channels	routing	gain	delay	polarity	mute
X15HiQ	LF	OUT 1	LF	IN A	0 dB	0 ms	+	ON
	HF	OUT 2	HF					ON
X15HiQ	LF	OUT 3	LF	IN B	0 dB	0 ms	+	ON
	HF	OUT 4	HF					ON

[SB18_100]

enclosure	outputs	channels	routing	gain	delay	polarity	mute
SB18	OUT 1	SB	IN A	0 dB	0 ms	+	ON
SB18	OUT 2	SB	IN A	0 dB	0 ms	+	ON
SB18	OUT 3	SB	IN A	0 dB	0 ms	+	ON
SB18	OUT 4	SB	IN A	0 dB	0 ms	+	ON

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

For your installation projects, you can 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:

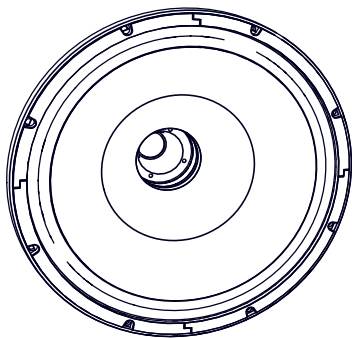
<http://www.l-acoustics.com/installation-outils-de-calcul-1367.html>

Maintenance

Repair kits

G03210

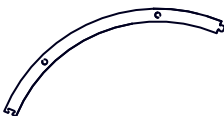
KR coaxial speaker X15 HiQ



1630



100286



1245



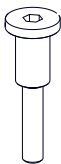
S100054



100547



S100033



100546



S100082

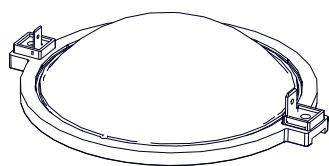


100214

code	description	qty
1630	15" coaxial speaker - 8 ohms	1
100286	Lexan™ screw cover	2
1245	driver gasket	4
S100054	M6x30 Tuflok coated hex socket head cap screw	4
100547	M5x50 hexagon socket head shoulder screw	2
S100033	M5x25 Tuflok coated flat countersunk head machine screw	6
100546	M6x17 hexagon socket head shoulder screw	4
S100082	M4x14 hexagon socket head cap screw	4
100214	waveguide gasket	1

G03176

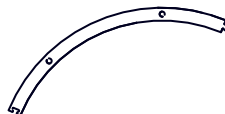
KR diaphragm X15 HiQ



17581

0

100286



1245



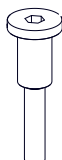
S100054



100547



S100033



100546



S100082

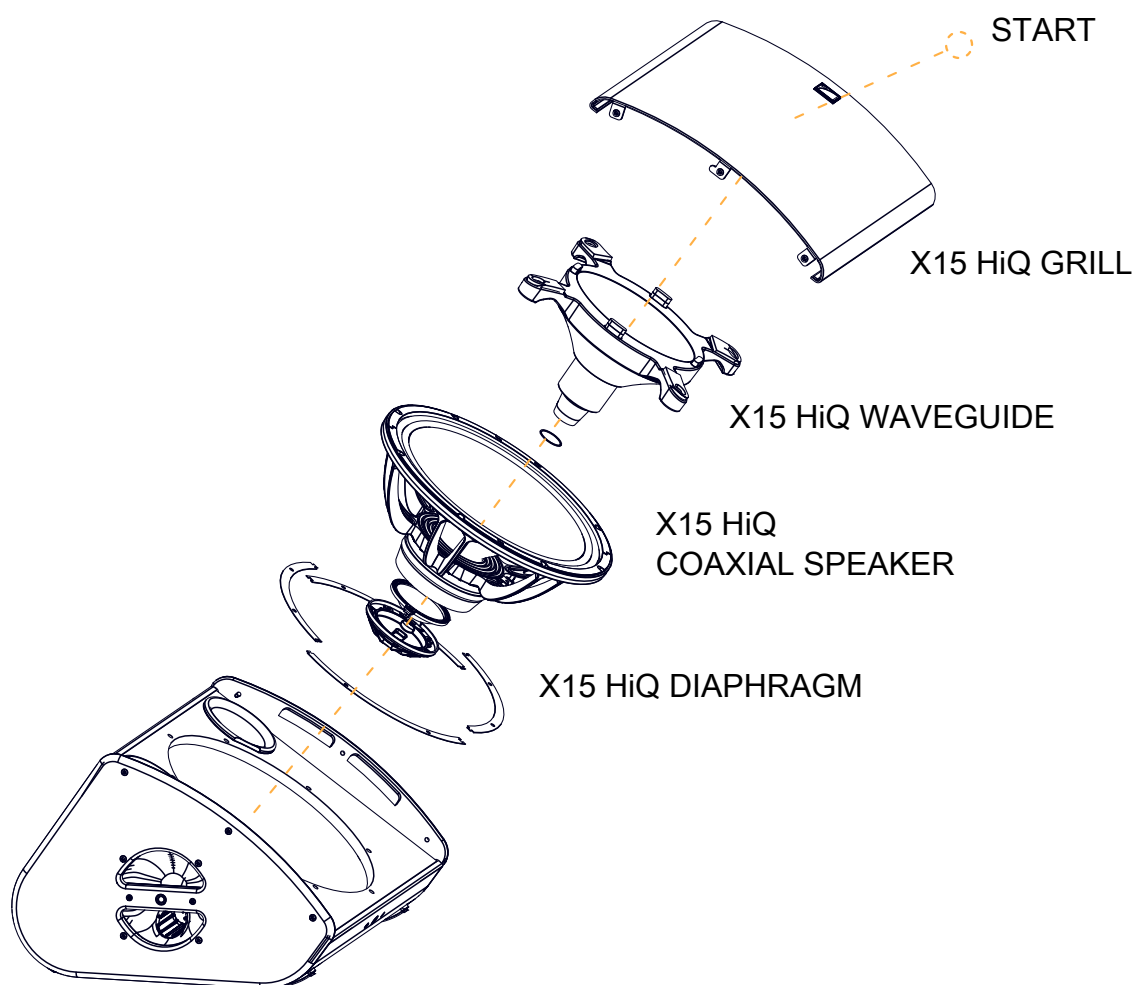


100214

code	description	qty
17581	diaphragm assembly (with 2 shims)	1
100286	Lexan™ screw cover	2
1245	driver gasket	4
S100054	M6x30 Tuflok coated hex socket head cap screw	4
100547	M5x50 hexagon socket head shoulder screw	2
S100033	M5x25 Tuflok coated flat countersunk head machine screw	6
100546	M6x17 hexagon socket head shoulder screw	4
S100082	M4x14 hexagon socket head cap screw	4
100214	waveguide gasket	1

Disassembly and Reassembly procedures

In order to operate, follow the order outlined here.



D/R - X15 HiQ GRILL

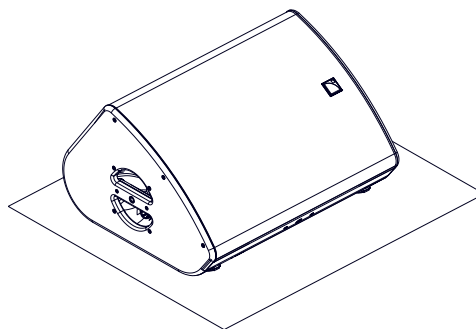
How to remove and reassemble the X15 HiQ grill.

Tools

Name	Reference	Distributor
electric screwdriver with torque selector	-	-
T25 Torx bit	EX.625	FACOM

Pre-requisite

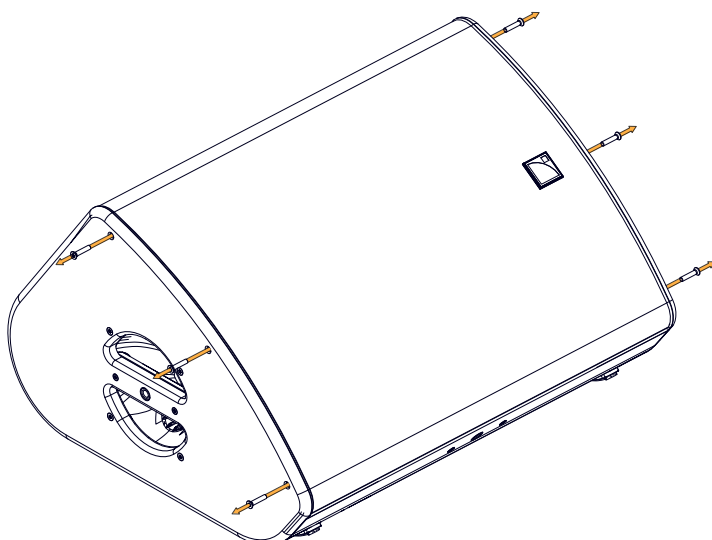
The enclosure is placed on its bottom face, as illustrated.



X15 HiQ grill disassembly procedure

Procedure

1. Remove the screws securing the grill.



2. Remove the grill from the enclosure.

X15 HiQ grill reassembly procedure

Pre-requisite

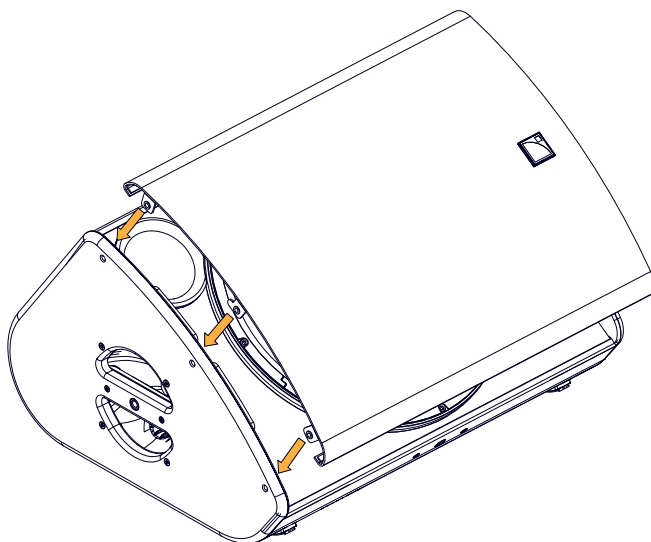


For safety reasons, always use the new screws and spare parts provided in the KR.

Procedure

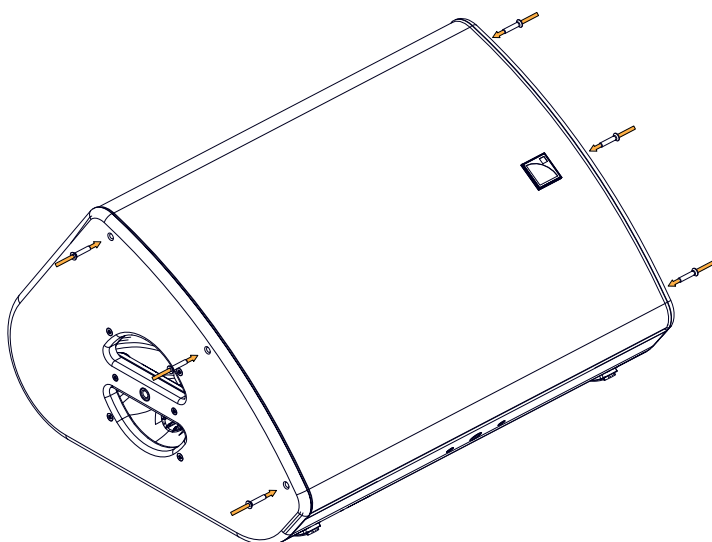
1. Position the grill.

Make sure the logo is on the right hand side.



2. Secure the grill with the S100033 screws.

Set the torque to 5 N.m.



D/R - X15 HiQ WAVEGUIDE

How to remove and replace the waveguide in the X15 HiQ speaker assembly.

Tools

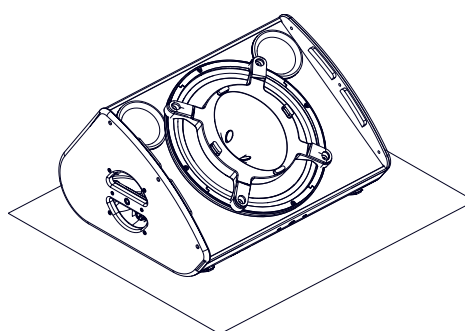
Name	Reference	Distributor
electric screwdriver with torque selector	-	-
4 mm hex bit	EH.604	FACOM
5 mm hex bit	EH.605	FACOM
Cyanoacrylate glue	-	-

Pre-requisite

Grill disassembled.

See [X15 HiQ GRILL](#) (p.29).

The enclosure is placed on its bottom face, as illustrated.

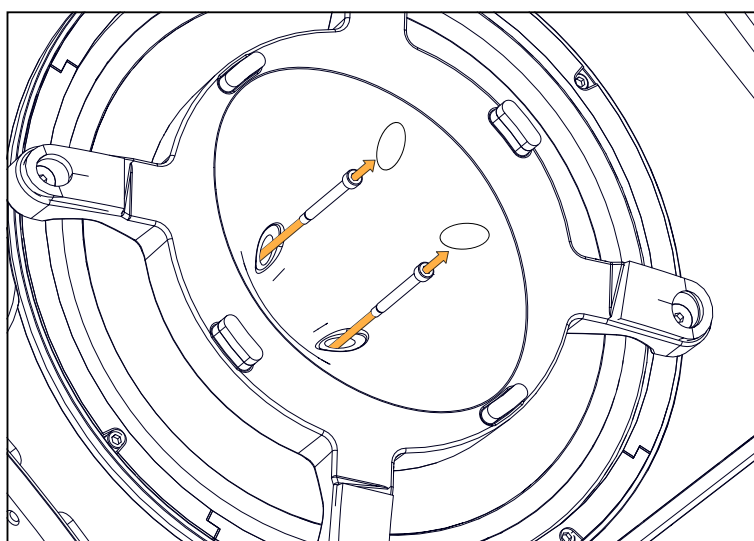


X15 HiQ waveguide disassembly procedure

Procedure

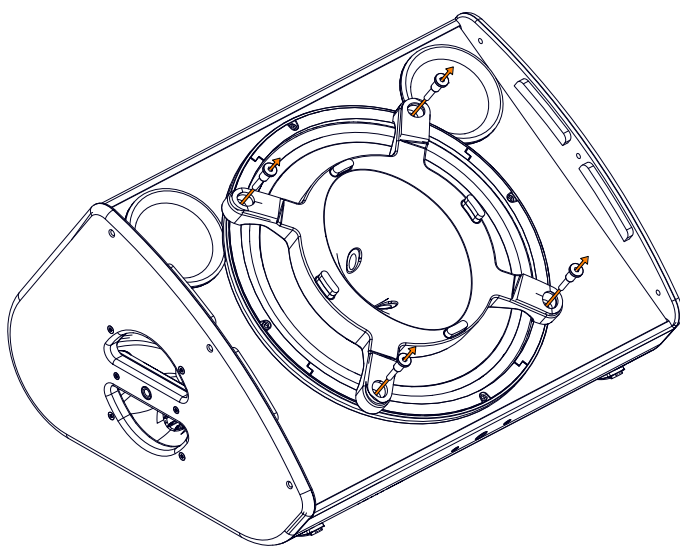
1. Remove the Lexan screw covers.
2. Remove the two screws securing the waveguide to the speaker.

Use the 5 mm hex bit.

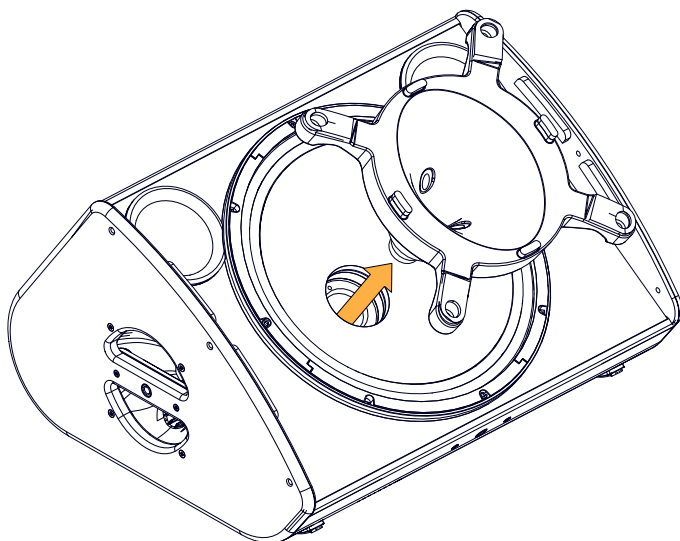


3. Remove the four remaining screws.

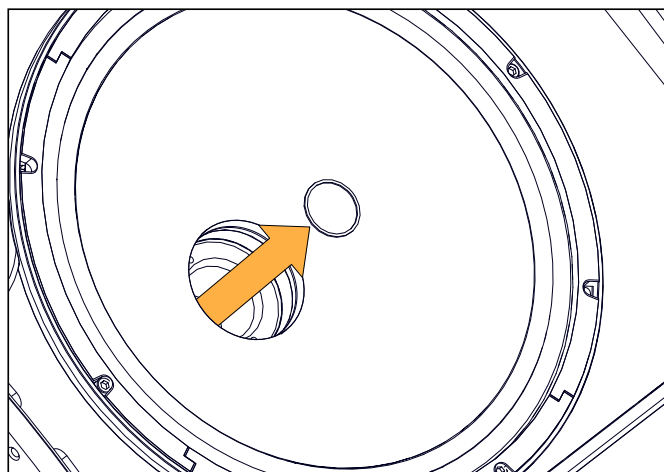
Use the 4 mm hex bit.



4. Carefully remove the waveguide.



5. Remove the waveguide gasket.



X15 HiQ waveguide reassembly procedure

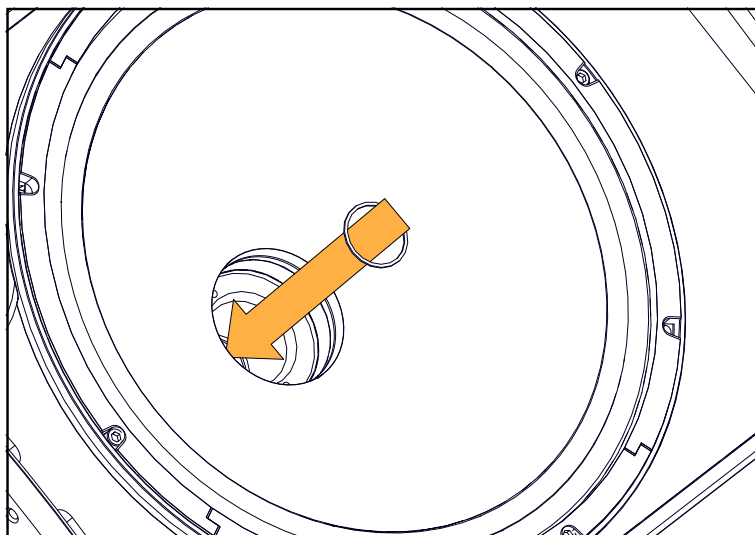
Pre-requisite



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

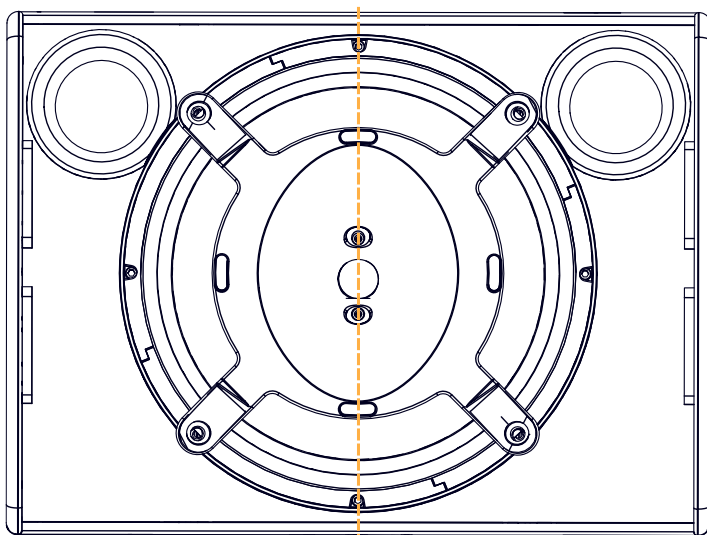
Procedure

1. Place the gasket inside the throat of the speaker.



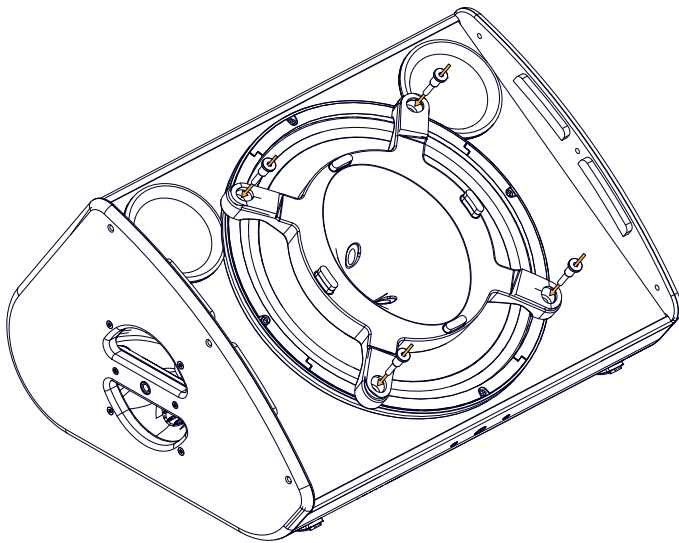
2. Position the waveguide.

The center holes are aligned with the connectors.



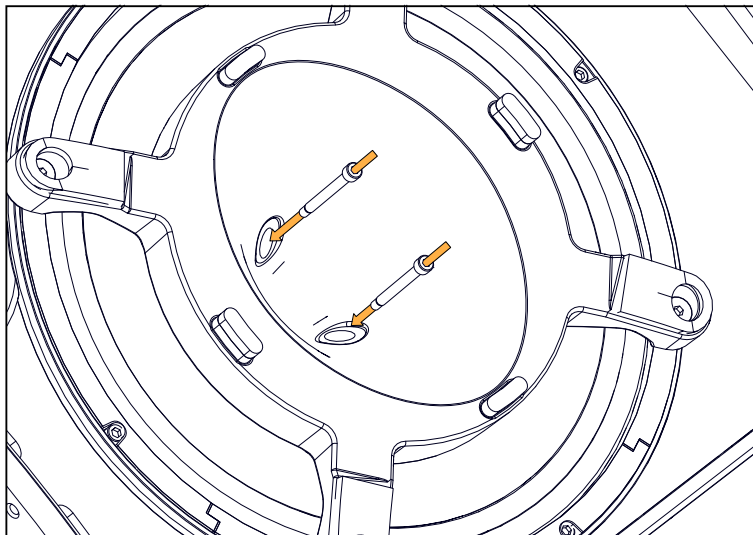
- 3.** Secure the waveguide to the cabinet with the provided 100546 screws.

Use the 4 mm hex bit. Set the torque to 5 N.m.

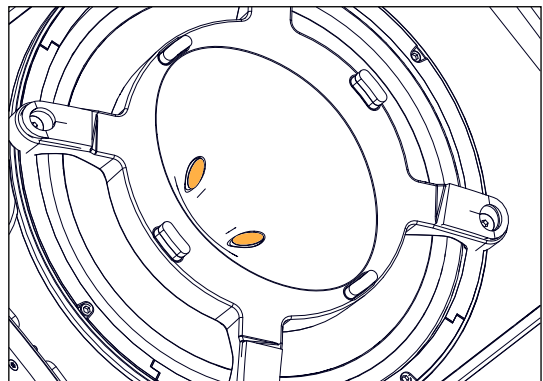
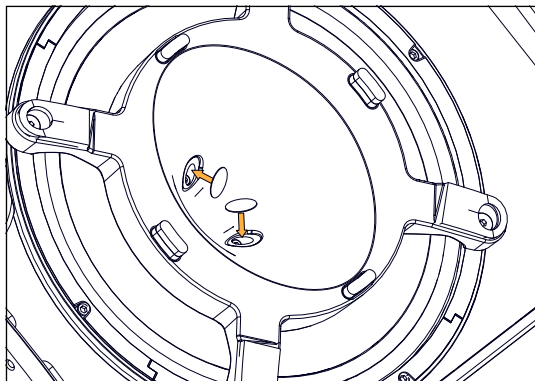


- 4.** Secure the waveguide to the speaker with the provided 100547 screws.

Use the 5 mm hex bit. Set the torque to 5 N.m.



- 5.** Stick the Lexan screw covers with the cyanoacrylate glue.



D/R - X15 HiQ COAXIAL SPEAKER

How to remove and replace the X15 HiQ coaxial speaker.

Tools

Name	Reference	Distributor
electric screwdriver with torque selector	-	-
5 mm hex bit	EH.605	FACOM

Pre-requisite

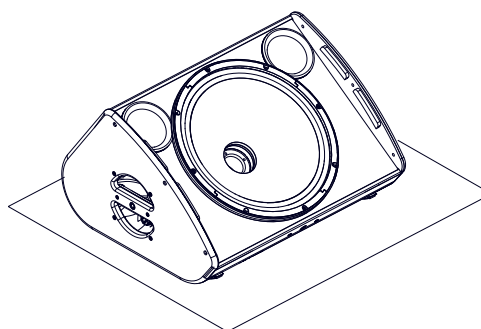
Grill disassembled.

See [X15 HiQ GRILL](#) (p.29).

Waveguide removed.

See [X15 HiQ WAVEGUIDE](#) (p.31).

The enclosure is placed on its bottom face, as illustrated.

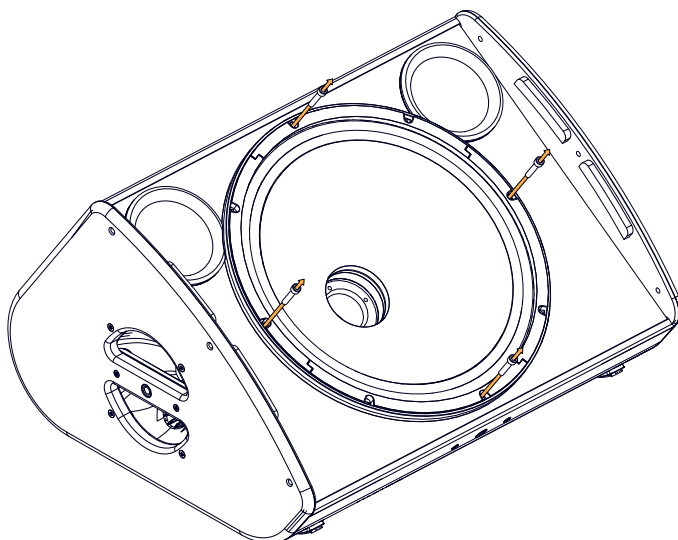


X15 HiQ speaker disassembly procedure

Procedure

1. Remove the screws securing the speaker.

Use the 5 mm hex bit.



2. Carefully remove the speaker and disconnect the speaker cables.
3. Remove the speaker gaskets.
4. Clean any remaining glue from the cabinet.

X15 HiQ speaker reassembly procedure

Pre-requisite

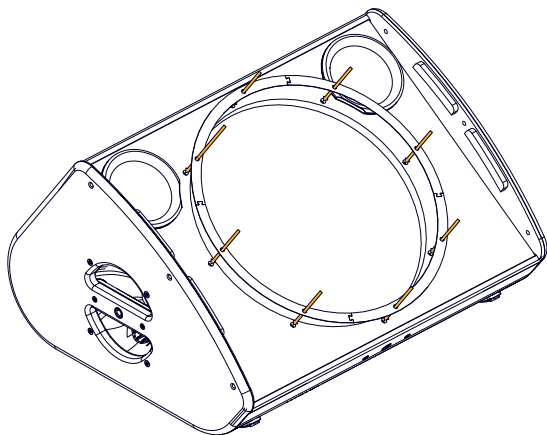


For safety reasons, always use the new screws and spare parts provided in the KR.

Procedure

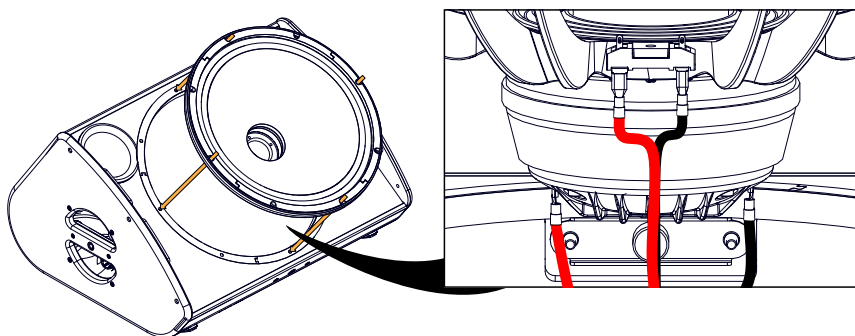
1. Stick the four gaskets on the cabinet.

Use the inserts as a reference to position the gaskets.



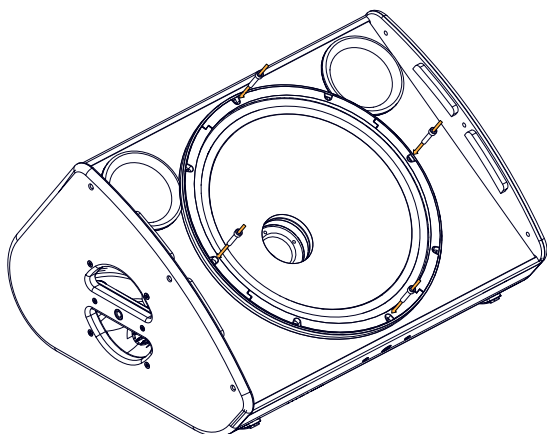
2. Connect the speaker cables and position the speaker.

The LF speaker connectors are positioned downwards.



3. Secure the speaker with the provided S100054 screws.

Use the 5 mm hex bit. Set the torque to 5 Nm.



D/R - X15 HiQ DIAPHRAGM

How to remove and replace the X15 HiQ speaker diaphragm.

Tools

Name	Reference	Distributor
electric screwdriver with torque selector	-	-
3 mm hex bit	EH.603	FACOM
Allen wrench n°3	-	-

Pre-requisite

Grill disassembled.

Waveguide removed.

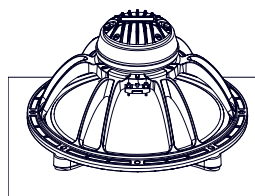
Coaxial speaker removed.

The speaker is placed on a flat surface in a dust-free environment.

See [X15 HiQ GRILL](#) (p.29).

See [X15 HiQ WAVEGUIDE](#) (p.31).

See [X15 HiQ COAXIAL SPEAKER](#) (p.35).



X15 HiQ diaphragm disassembly procedure

Procedure

1. Remove the four screws securing the cover.
Use the 3 mm hex bit.
2. Remove the cover.
3. Carefully remove the diaphragm.
4. If there are shims on the dome, carefully remove them.
Take note of how many and what kind of shims are present.


X15 HiQ diaphragm reassembly procedure

Pre-requisite



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

Procedure

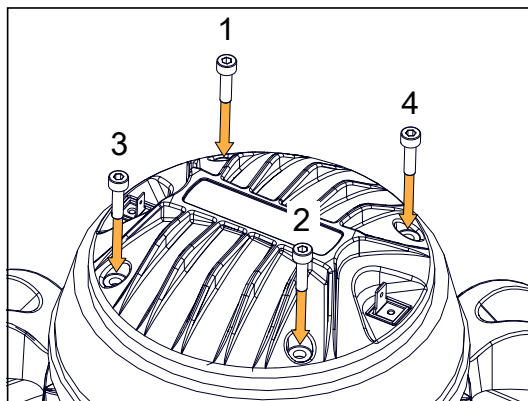
1. Clean the dome and the air gap.
Use a blower or double face adhesive tape to remove any particle.
- 

Make sure the air gap is perfectly clean before moving to the next step.
2. Place the same kind and number of shims that were initially present.
 3. Carefully place the diaphragm.
 4. Position the diaphragm using the cable connectors as reference points.
Facing the LF cable connectors, the small HF cable connector must be on the left, and the larger one on the right.

5. Secure the cover to the speaker using four S100082 screws.

a) Gradually secure each screw manually with the Allen wrench n°3.

Follow a cross scheme.



b) Tighten the screws in the same order with the electric screwdriver.

3 mm hex bit. Set the torque to 3.5 Nm.

Acoustical check

It is necessary to do an acoustical check to verify the correct installation of the diaphragm.

Procedure

1. Load a FLAT preset on an LA4X / LA8 amplified controller.
2. Connect a low frequency generator to the active input of the amplified controller.
3. Connect a voltmeter to the output of the amplified controller and check the output voltage.



Risk of damaging the HF driver

The output voltage must not exceed 1 Vrms.

4. Connect the HF driver to the output of the amplified controller.



Use ear protection to set the sound level before testing.

5. Send a test signal of 1.5 kHz at 1 Vrms for 5 seconds.
The sound should remain pure and free of unwanted noise.

Troubleshooting

The sound resulting from the test is not pure and high-frequency harmonic distortions or strange vibrations are audible.

Possible causes

- There are foreign particles on the air gap.
- The number of shims is wrong.
- The screws used for reassembly are too loose.

Procedure

1. Repeat the disassembly procedure.
2. Clean the air gap thoroughly.
3. Repeat the reassembly procedure.
Pay close attention to the number of shims and the position of the diaphragm.
Apply the recommended torque.
4. Repeat the acoustical check.



If a buzzing sound is still audible, it might be necessary to add an extra shim on the air gap.

Illustrations

Loudspeaker cables



SP.7



SP5



SP10



SP25



DO.7



DO10



DO25



DO3WFILL



DOFILL-LA8



DOSUB-LA8



SP-Y1

X15 HiQ specifications

Description	active 2-way coaxial enclosure, amplified by LA4X / LA8
Usable bandwidth (-10 dB)	55 Hz - 20 kHz ([X15])
Maximum SPL¹	136 dB ([X15])
Nominal directivity	vertical: 60° horizontal: 40°
Monitoring angle	35° without risers 55° with risers
Transducers	LF: 1 × 15" weather-resistant, bass-reflex, laminar vents HF: 1 × 3" compression driver neodymium, weather-resistant, ellipsoidal waveguide
Nominal impedance	LF: 8 Ω HF: 8 Ω
Connectors	IN: speakON LINK: speakON
Rigging and handling	2 × handles DIN580-compatible M8 threaded insert 4 × M10 threaded inserts 2 × 35 mm pole sockets
Weight (net)	21 kg / 46.3 lb
Cabinet	first grade Baltic beech and birch plywood
Finish	dark grey brown PANTONE 426C pure white RAL 9010 custom RAL code on special order
IP	IP43

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

X15 HiQ dimensions

On-end H/W/D

580 mm / 430 mm / 375 mm
22.8 in / 16.9 in / 14.8 in

Monitor H/W/D

341 mm / 580 mm / 500 mm
13.4 in / 22.8 in / 19.7 in

Monitor with risers H/W/D

403 mm / 580 mm / 471 mm
15.9 in / 22.8 in / 18.5 in

