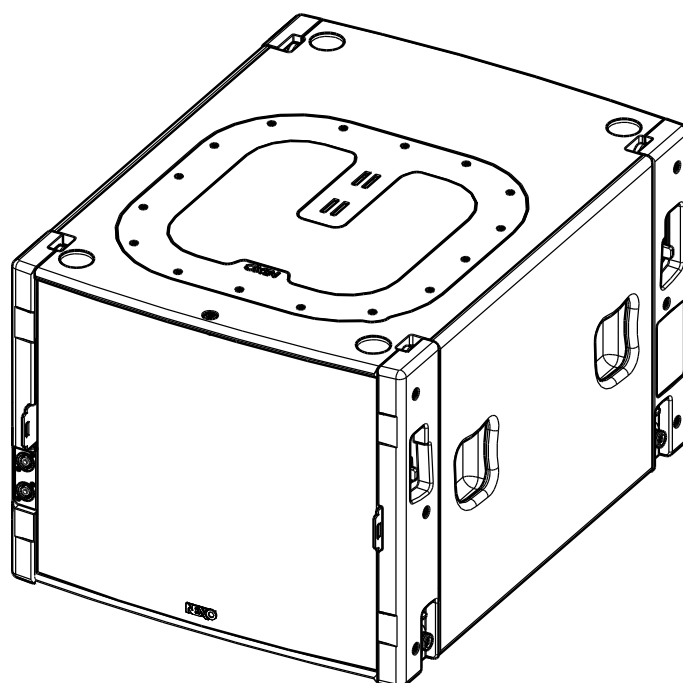


MSUB15

DP2658-03b-DI

NEXO

MSUB15



User Manual



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WARNINGS

PRECAUTIONS

Do not open the speaker, do not try to disassemble it neither to modify it in any way. The system doesn't include any user-repairable part. If the system seems to be malfunctioning or damaged, stop using it at once and have it repaired by a NEXO qualified technician.

Do not expose the system directly to the sun or to the rain, do not immerse it into fluids, do not place objects filled with liquid on the system. If a liquid gets into the system, please have it inspected by a NEXO qualified technician.

When flying outdoor systems ensure that the system is not exposed to excessive wind or snow loads and is protected from rainfall.

In case of wind greater than 8 on Beaufort scale (72km/h – 45mph), a touring system has to be landed or an additional securing has to be implanted.

For fixed installations, wind loading has to be taken into account in accordance to the national standards

The connection should be performed by qualified technician, by ensuring that power is off.

Operating temperature with temperate climate: 0°C to +40°C (+32°F to +104°); -20°C à +60°C (-4°F to +140°F) for storage.

SAFETY INFORMATION

Read this manual before using the speaker.

Keep this manual available for further reference.

Observe all warnings and cautions.

Please check the NEXO Web site nexo-sa.com to get the most up-to-date version of this manual.

Ensure you are aware of the safety rules applying to rigging, stacking or installing on tripod or speaker stand. Failure to observe these rules may expose persons to potential wounds or even death.

Only use the system with accessories specified by NEXO.

Please always consult a NEXO-accredited technician if the installation needs architectural works and observe following precautions:

Mounting Precautions:

- Please select screws and mounting location supporting 4 times the system weight.
- Do not expose the system to excessive dust, vibrations, to extreme cold or hot temperatures, to reduce the risk of damaging components.
- Do not place the system in an unstable position: it could fall accidentally.
- If the system is used on a tripod, please ensure the tripod's specifications are adapted and that its height does not exceed 1.40m/55". Do not move the tripod with the system in position.

Connection and Powering Precautions:

- Unplug connected cables before moving the system.
- Power off the system before connecting the system.
- When switching on the installation, the amplifier must be powered last; when switching the installation off, shut off the amplifier first.
- If you work by cold temperatures, progressively raise the level to nominal value during the first minutes of use, to allow the system components to stabilize.

Please check regularly the system condition.

HIGH SOUND PRESSURE LEVELS

Exposure to very high sound pressure levels may cause permanent hearing losses. Degrees of hearing losses may be different from one person to another, but almost everybody will be affected if exposed to high sound pressure levels during a long period of time. The OSHA (Occupational Safety and Health Administration) American Agency specified the following maximal exposures:

Number of Hours	Sound Pressure Level (dBA), Slow Response
8	90
6	92
4	95
3	97
2	100
1 ½	102
1	105
½	110
¼ or less	115

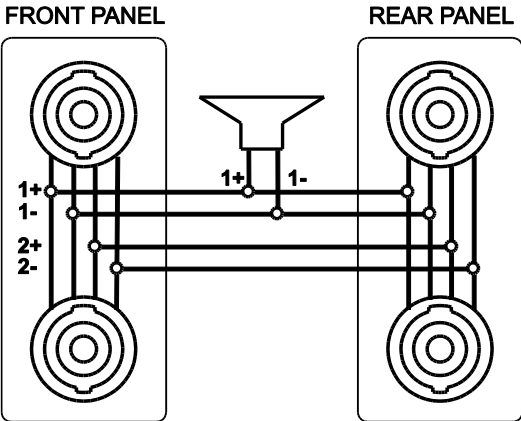
WASTE OF ELECTRIC OR ELECTRONIC EQUIPMENT



This symbol on the product or its packaging indicates that this product must not be treated as household waste. Instead, it is your responsibility to hand it over to a designated collection point for the recycling of waste electrical and electronic equipment. By ensuring your waste equipment is recycled, you will help prevent potential negative consequences for the environment and human health, which could appear if this product was not recycled. Recycling helps spare natural resources. For more information about the recycling of this product, please contact your local city office, your household waste disposal service or your reseller.

DESCRIPTION

- The MSUB15 is a compact high technology arrayable sub, the ideal companion for the GEOM10 line array element, sharing same aesthetic design and arrayable in the same flown or stacked cluster.
- Versions:
- MSUB15: for Touring applications; Black
 - MSUB15-PW: for Touring applications; White
 - MSUB15-I and MSUB15-I-PW: for fixed installations (see user manual MSUB15-I)
- Connectors:
- MSUB15: 2 connectors panels (one in front and one at back) with 2 NL4 sockets, the 4 pins of the 2 sockets are connected in parallel within the enclosure.
 - MSUB15 use 1+/1-, (2+/2- through).



- Amplification:
- The MSUB15 Must be used with a NEXO processor to handle EQ, phase alignment, crossover and excursion/thermal protection for the system loudspeakers. There are two NEXO processor series supporting the MSUB15 subwoofer: NXAMP (4-channel) amplified processors and DTD processors (stereo + sub).
 - The following table shows the number of MSUB15 subwoofers usable with each solution.

	DTD + DTDAMP4x1.3
MSUB15	1 per channel

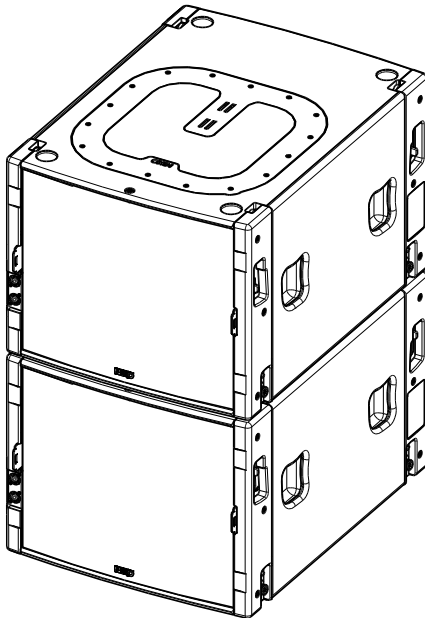
	microNXAMP4x1	NXAMP4x1mk2 (bridged)	NXAMP4x2mk2	NXAMP4x4mk2
MSUB15	1 per channel	Up to 2 per channel	Up to 2 per channel	Up to 4 per channel
			Recommended	

SETTING RANGE

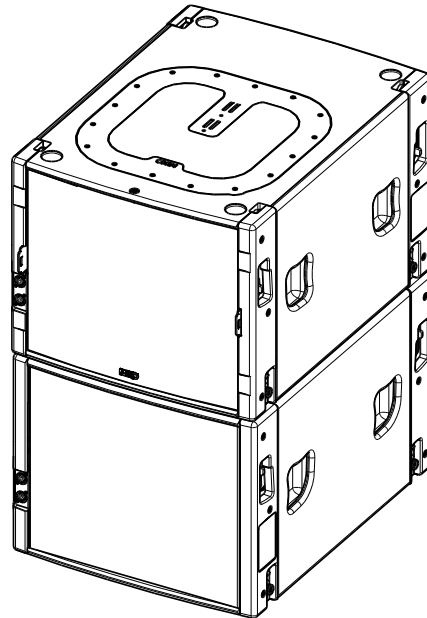
Please consult nexo-sa.com for NEXO TD Controllers firmware information.

There are two setting ranges for surrounding speaker MSUB15:

- « OMNI » setups (available on NXAMP and DTD); For a traditional use of the subwoofer in omnidirectional radiation (require at least one subwoofer and a channel of amplifier).
 - Omnidirectional Main setup, with low-pass at 63, 75, 85, 95 or 120 Hz.
 - Omnidirectional Monitor setup, with low-pass at 63, 75, 85, 95 or 120 Hz.
- « CARDIO » setups (only available on NXAMP); For a directional use (cardioid) of subwoofers (require at least two subwoofers and two channels of amplifier):
 - Cardioid back and front setups, with low-pass at 63, 75, 85, 95 or 120 Hz.
 - Setup « FR » (Front) for the subwoofer pointed at the audience.
 - Setup « BA » (Back) for the subwoofer turned around.
 - The ideal ratio for a directional use is 2 x MSUB15 in CARDIO FRONT mode on top of 1x Reversed MSUB15 in CARDIO BACK mode. From 1:1 to 4:1 ratio can be used.



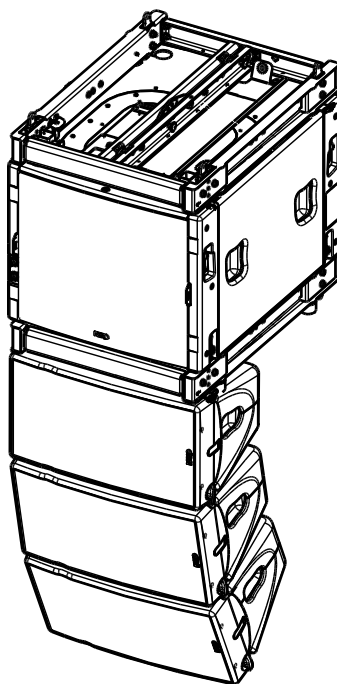
« OMNI » Assembly



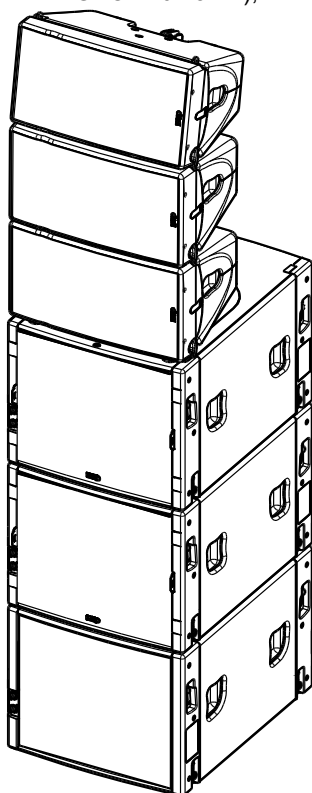
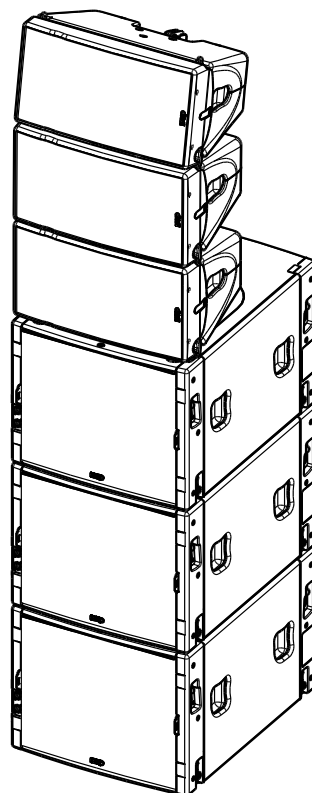
« CARDIO » Assembly

➤ **With 1 to 3 GEOM10**

- For these configurations, crossover frequency 85Hz is recommended (85 Hz also for pour GEOM10).

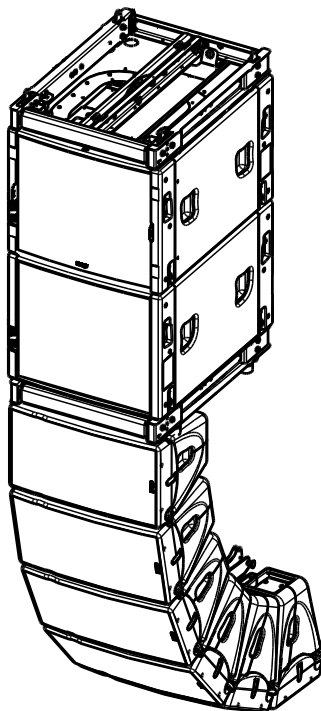


- For stack configuration using MSUB15 in OMNI or CARDIO mode with 1 Back and 2 Front and GEOM10 on top of them, cross over 85Hz is recommended (85 Hz also for GEOM10). A small overlap could have impact if needed, for example (MSUB15 120 Hz and GEOM10 75 Hz);

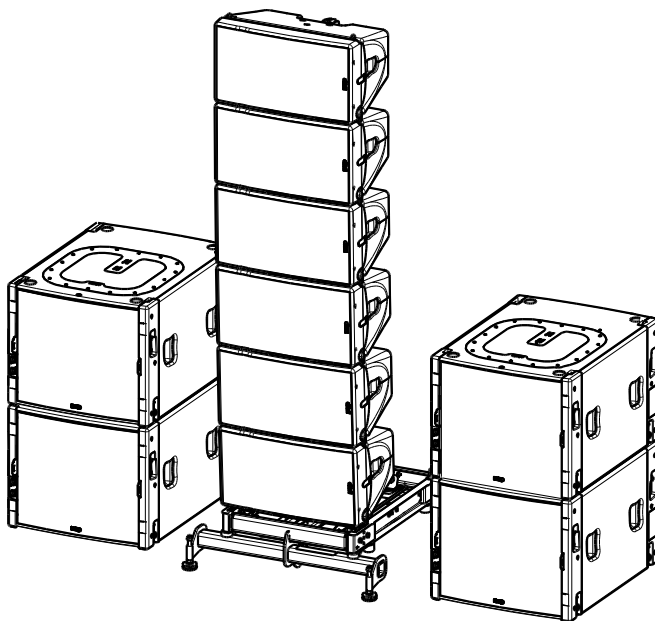


➤ **With 4 to 6 GEOM10**

- For long throw flying application, crossover 95 Hz is recommended (CARDIO mode).

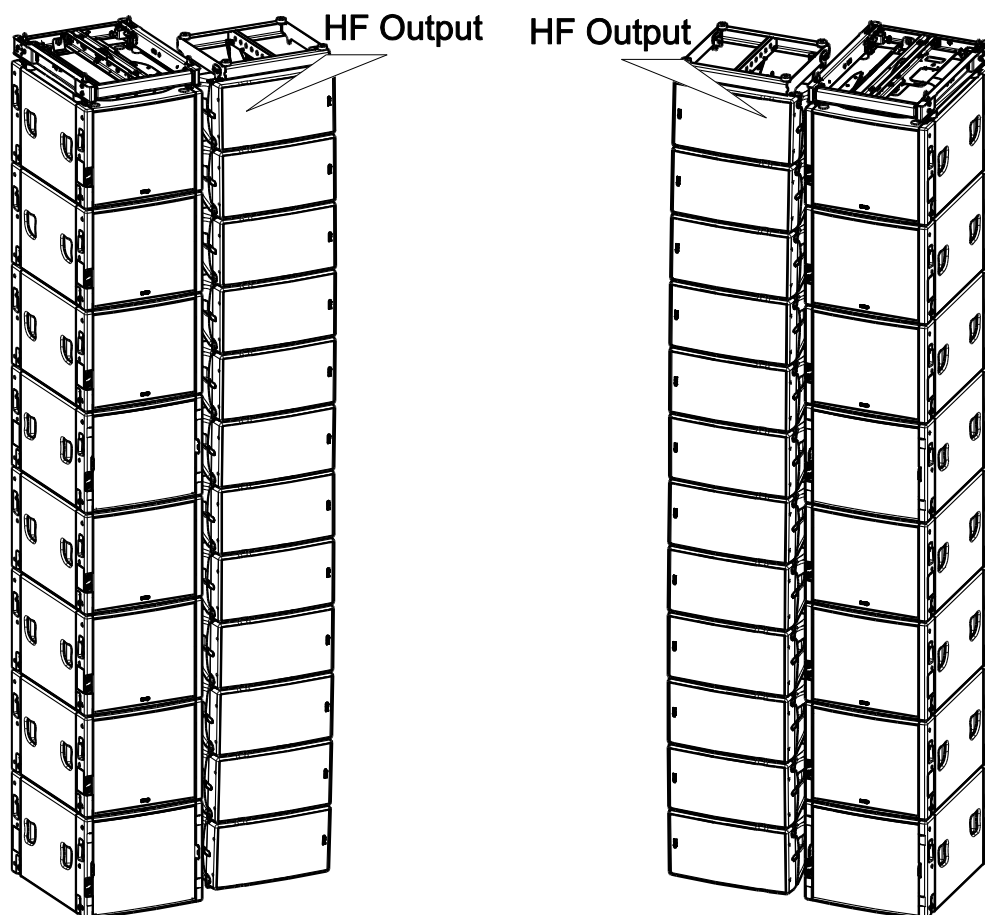


- For long throw stacking application, up to 6 GEOM10, crossover 85 Hz is recommended (also for GEOM10).

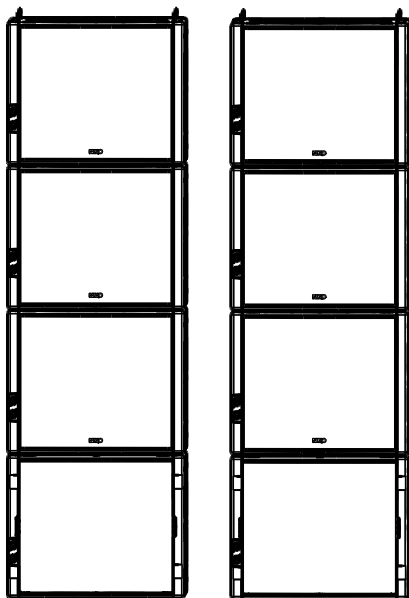


➤ **With 7 to 12 GEOM10**

- For very long throw application, with flowned or stacked MSUB15, recommended MSUB15 cardioid mode, cross over MSUB15 95 HZ and 12 GEOM10 cross over 75Hz for maximum impact.



- Ground Stack Sub design is:



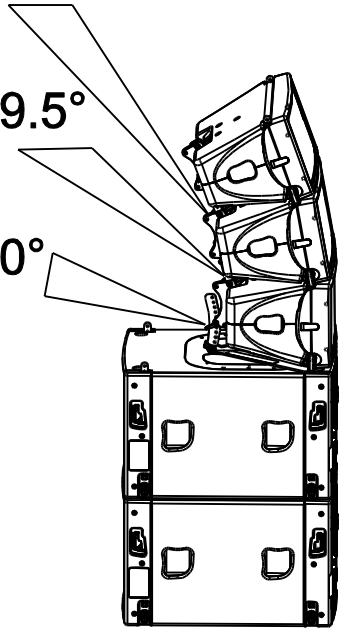
➤ **GEOM10 MON and MSUB15 MON**

- Minimum phase setup not compatible with others.
- Used for high power stage Monitor, DJ Monitor, Drum Fill, Stack side.
- Always use same cross over between GEOM10 and MSUB15, no overlap possible without doing phase adjustment by yourself.
- Very high LF headroom.
- Clarity adjustment using -3dB on ArrayEQ – 75 Hz crossover default.

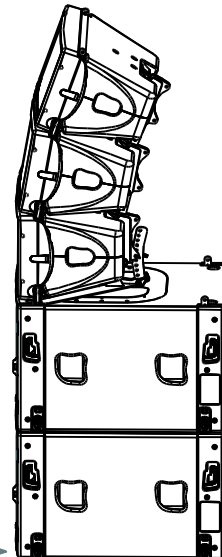
D: 6.3°

E: 9.5°

S: 0°



2 to 3 GEOM10



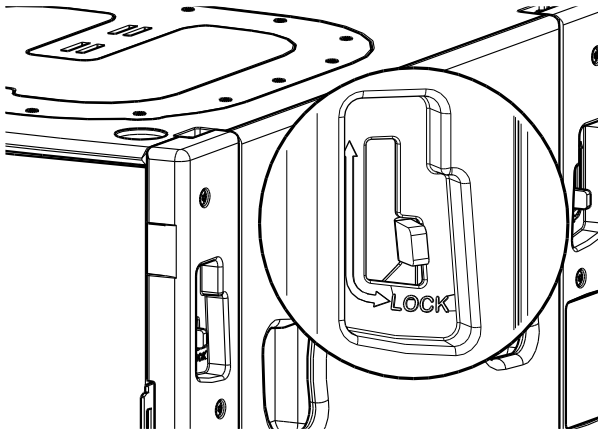
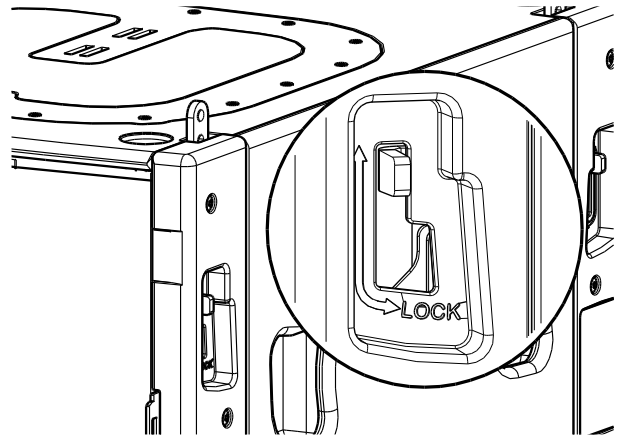
4 to 6m

2x MSUB15 OMNI

MSUB15 RIGGING

Upper retractable rigging link

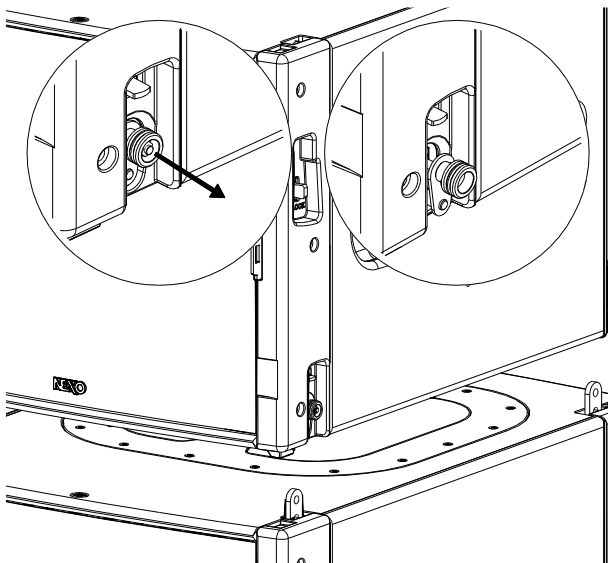
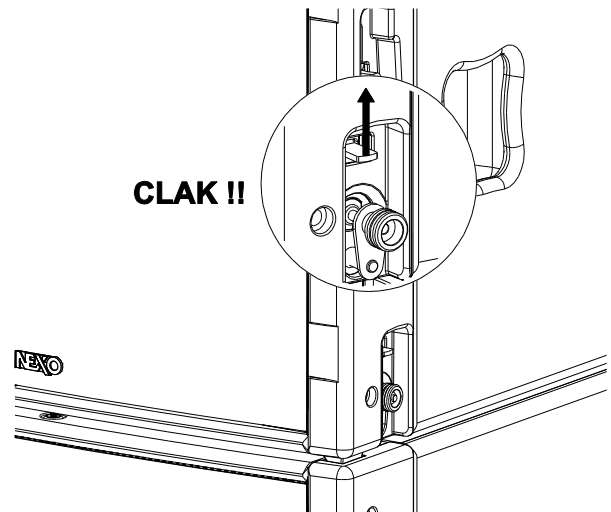
At each upper corner, a lever allows to take out or to bring in the rigging link. LOCK position allows to keep the link inside



Lower semi-auto lock system

At each lower corner, you have a semi-auto lock system.

- Pull the knob in OPEN position.
- Pull the lever up to lock the 2 MSUB15 together once in place.
- Proceed the same way for the disassembly.



MSUB15 - ACCESSORIES

WARNINGS

All MSUB15 accessories are specifically rated in agreement with structural computations.

Never use other accessories – including push-pins – when assembling MSUB15 cabinets than the ones provided by NEXO: NEXO will decline responsibility over the entire MSUB15 accessory range if any component is purchased from different supplier.

All MSUB15 accessories have been designed so that cabinet are arrayed vertically.

VNI/VNT-BUMPM10

Rated for a maximum of 12 GEOM10 or 8 MSUB15.

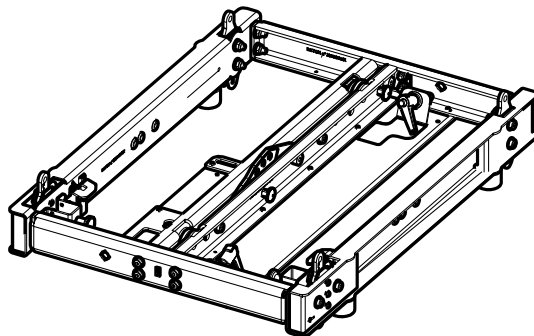
Maximum quantity for flown vertical cluster is:

$$N_{\text{GEOM10}} + 1.5 \cdot N_{\text{MSUB15}} \leq 12$$

2 rigging points 2 points with retractable rings.

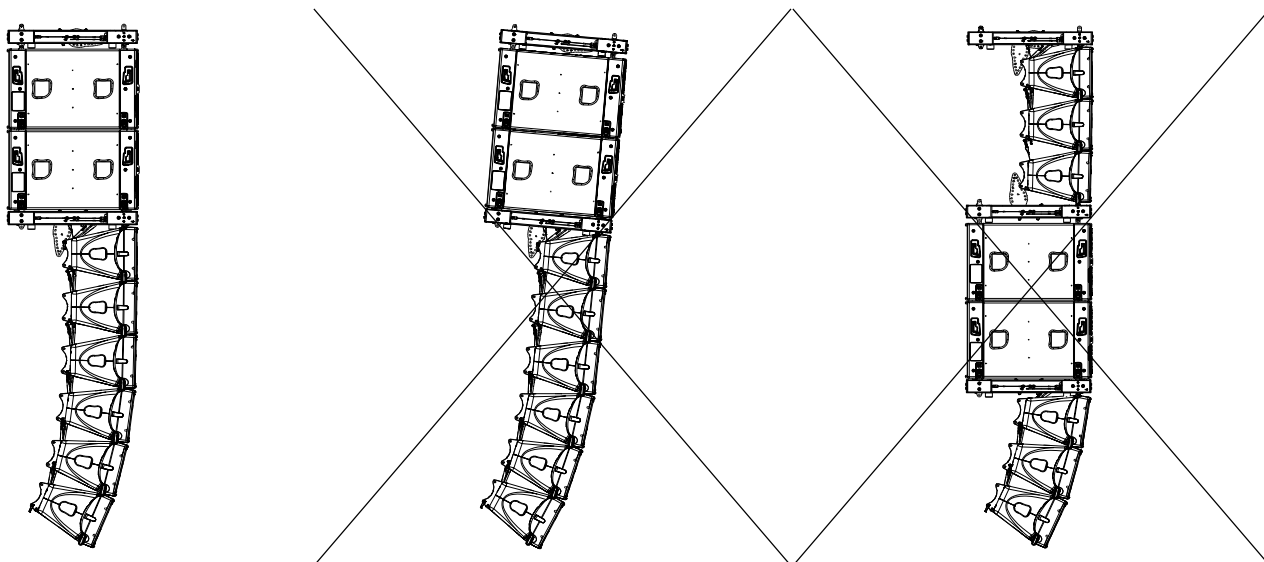
Usable with VNT-EXBARM10 for a one rigging point.

Ground stack assembly alone, or with VNT-GSTKM10S / VNT-GSTKM10M12S / VNT-GSTKM10L / VNT-GSTKM10M12L.



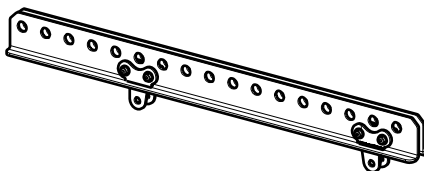
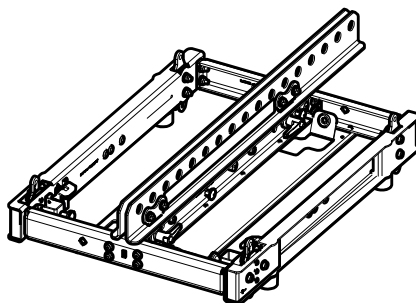
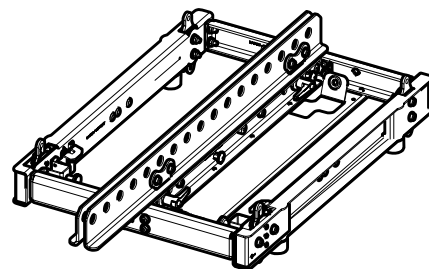
Refer to the Product Data Sheet

NO TILT – MSUB15 MUST ALWAYS BE POSITIONED STRAIGHT AND ON THE TOP THE ARRAY



VNT-EXBARM10

Extension bar for VNI/VNT-BUMPM10



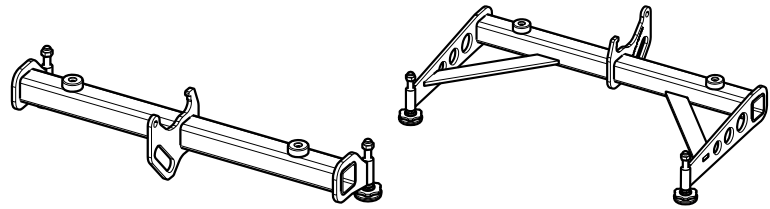
Refer to the Product Data Sheet

VNT-GSTKM10S

VNT-GSTKM10L

Stacking accessories for MSUB15 on
VNI/VNT-BUMPM10

Refer to the Product Data Sheet

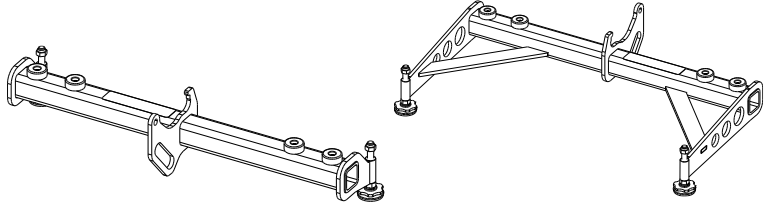


VNT-GSTKM10M12S

VNT-GSTKM10M12L

Stacking accessories for MSUB15 on
VNI/VNT-BUMPM10

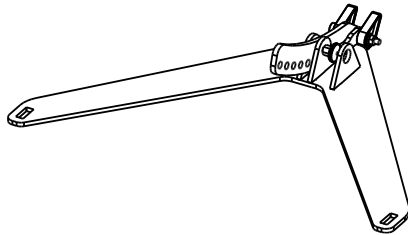
Refer to the Product Data Sheet



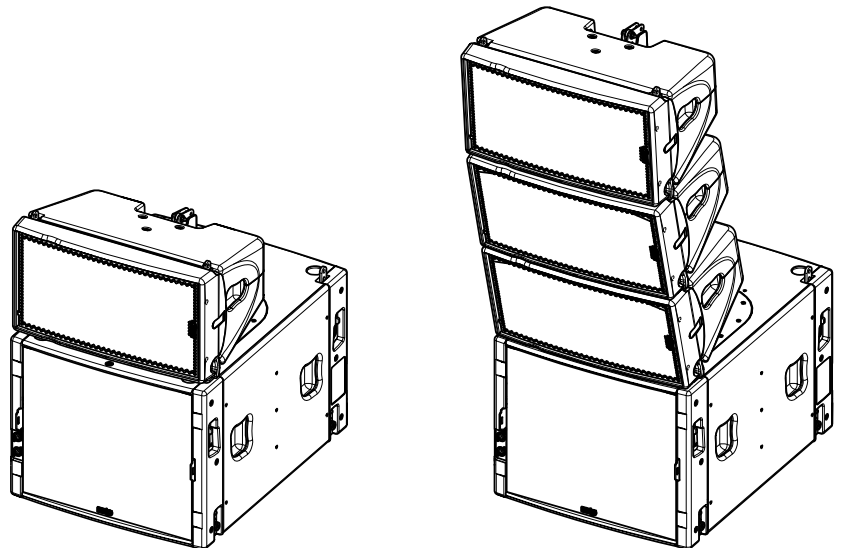
VNT-MNSTKM10

Max 3 GEOM10.

Use for stack on MSUB15.

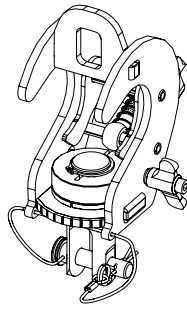


Refer to the Product Data Sheet



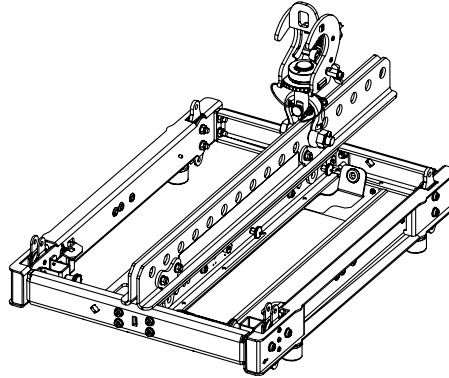
VNT-TCBRK3551

Rotary Truss Clamp



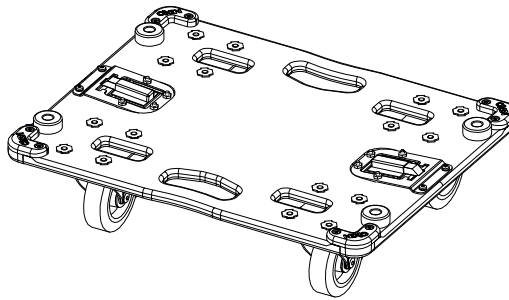
Place VNT-TCBRK3551 on
VNT-EXBARM10 at the desired hole.

Refer to the Product Data Sheet



MST-WBMSUB15

Wheelboard for MSUB15

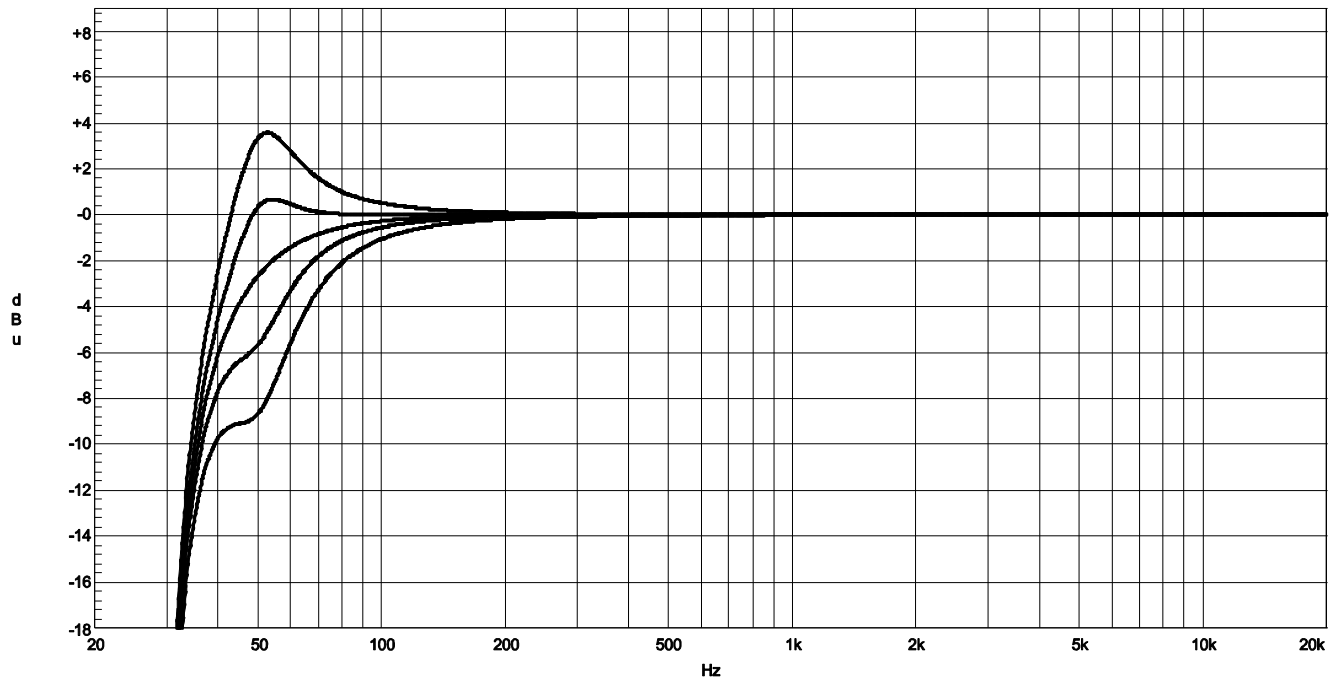


MST-COVMSUB15: Cover for 1x MSUB15

MST-2CASEMSUB15: Flight case for 2x MSUB15

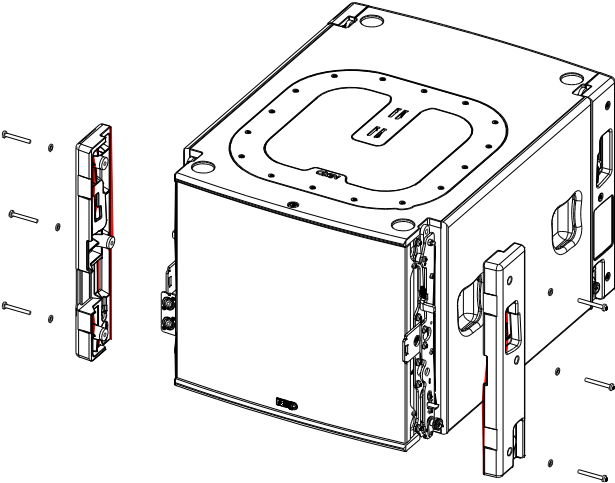
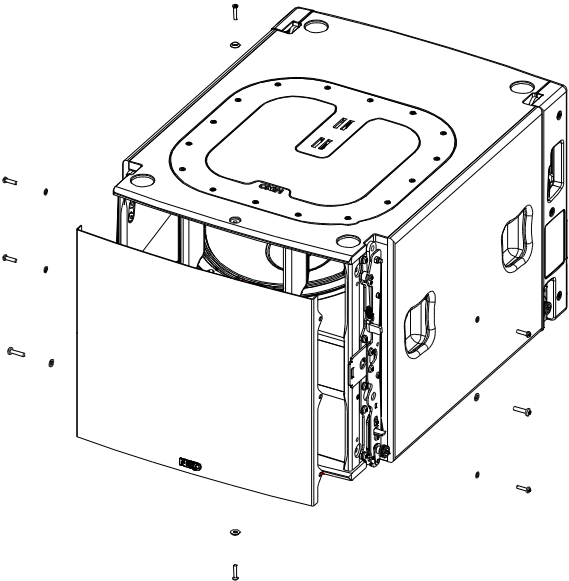
ARRAY EQ

The ArrayEQ allows to adjust the system frequency response in its lower range (see curves below, with different ArrayEQ values):

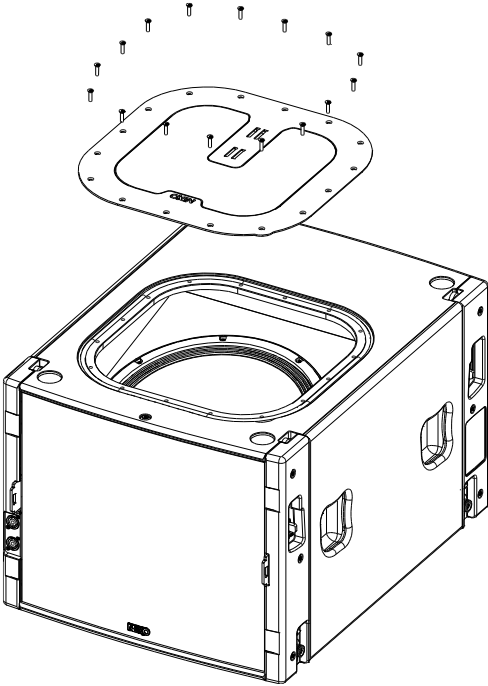
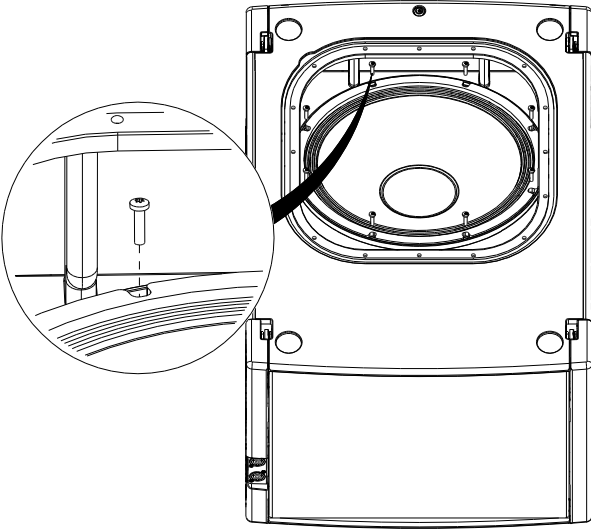


MAINTENANCE

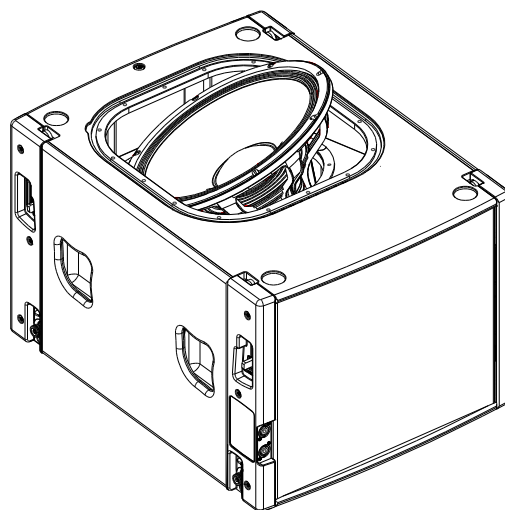
Grille changing

Remove 6 screws (Tx30) and the bumper.	Remove 8 screws (TX25) on the side, top and below to remove the grille.
	

15'' Driver

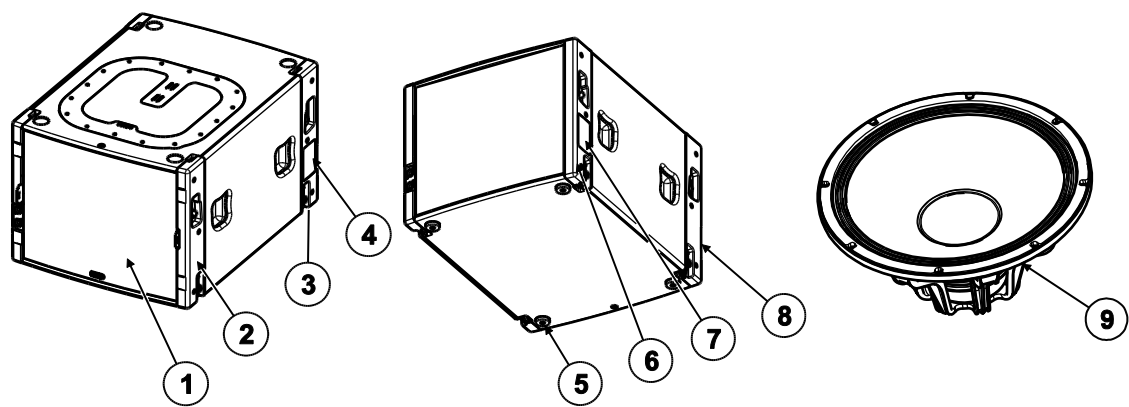
Remove 16 screws (Tx25) to remove the trap.	Remove 8 screws (TX25), use a TX25 wrench to unscrew the 2 screws located at the front.
	

To pull out the driver :
Lift up and pull it to the back.
Shift it to pass through the opening.



Red (+) / Black (-)

Spare parts



MARK	QUANTITY	REFERENCE	DESIGNATION
1	1	05MSUB15UA	Complete grille touring Black (with fasteners)
	1	05MSUB15UA-PW	Complete grille touring White (with fasteners)
2	1	05MS15CATAVR	Bumper FR Black (with screws)
	1	05MS15CATAVR-PW	Bumper FR White (with screws)
3	1	05MS15CATARR	Bumper RR Black (with screws)
	1	05MS15CATARR-PW	Bumper RR White (with screws)
4	1	05MSUB15LEX	Lexan MSUB15
5	4	05FTCC38X10	Plastic pad 38x10 (with screw)
6	1	05MS15CATARL	Bumper RL Black (with screws)
	1	05MS15CATAR-PW	Bumper RL White (with screws)
7	1	05MSUB15LEX-WAR	Lexan Warning
8	1	05MS15CATAVL	Bumper FL Black (with screws)
	1	05MS15CATAVL-PW	Bumper FL White (with screws)
9	1	05HPB15NF-078	15'' Driver (with screws)
	1	05HPB15NF-078R/K	Recone kit HPB15NF (with screws)

NOTE:

Speakers and Grills can be sent back to NEXO for recycling

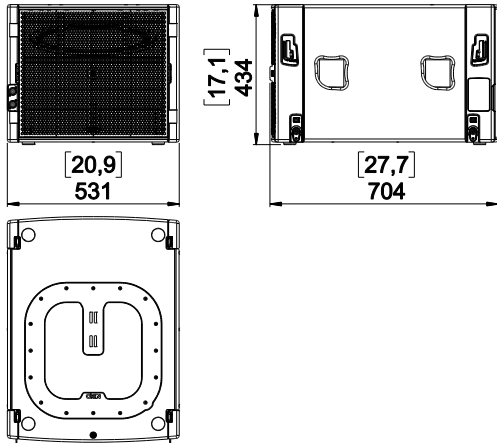
TECHNICAL SPECIFICATIONS

MSUB15 WITH NEXO ELECTRONICS

Frequency range (± 6 dB)	40Hz – 120Hz
Sensibility (1W / 1m)	101dB SPL Nominal
Peak SPL Level (1m)	136dB Peak
Operating voltage	40 Vrms (180 Vpeak)
Crossover Frequency	40-65 ; 40-75 ;40-85 ;40-95 ;40-120 Hz
Nominal Impedance	8 Ω
Recommended Amplification	900 W per cabinet

SPECIFICATIONS

Model	MSUB15
Components	1x 15 " – 8 Ohms – Long excursion – Neodymium driver
Material	Baltic birch plywood
Finish	Black or white structural paint
Front finish	Steel front grille Black or white paint Black or white mesh
Fittings	4x Side handles Retractable rigging Semi-auto lock
Connectors	4x NL4, 4 poles connectors
Weight	40 kg – 88 lb

Dimensions	 <p>The technical drawing shows three views of the MSUB15 subwoofer: <ul style="list-style-type: none"> Front View: Shows a rectangular grille with a central circular cutout. Dimensions are 20,9 inches (531 mm) wide and 17,1 inches (434 mm) high. Top View: Shows the top of the cabinet with two side handles. Dimensions are 27,7 inches (704 mm) wide and 17,1 inches (434 mm) high. Side View: Shows the side profile of the cabinet, highlighting the retractable rigging and semi-auto lock mechanism. </p>
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USER NOTES

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