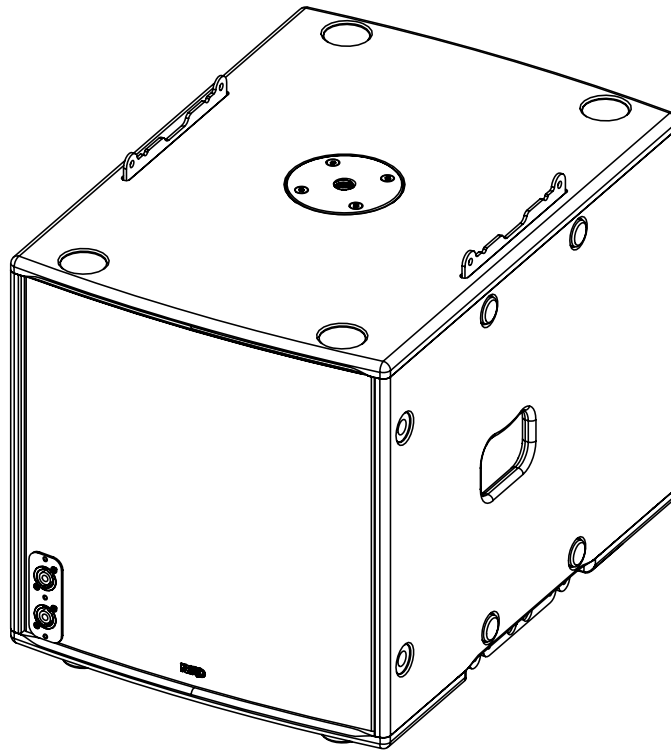


MSUB12



User Manual



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EU Conformity declaration	
	<p>We, NEXO SA ZA DU PRE DE LA DAME JEANNE 60128 PLAILLY – France</p>
<p>Declare under our sole responsibility that the product</p>	<p>Loudspeaker</p>
	<p>Type MSUB12</p>
	<p>Serial number On the product</p>
<p>Is in conformity with the provisions of the following directive including all applicable amendments:</p>	<p>2014/35/UE (Low Voltage Directive)</p>
<p>Applied rules and standards:</p>	<p>EN 13155, EN 62368</p>
<p>Plailly, August 2020</p>	<p>Joseph CARCOPINO, R&D Director</p>
	

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.

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 INFORMATIONS

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 it's 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 ACOUSTIC 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

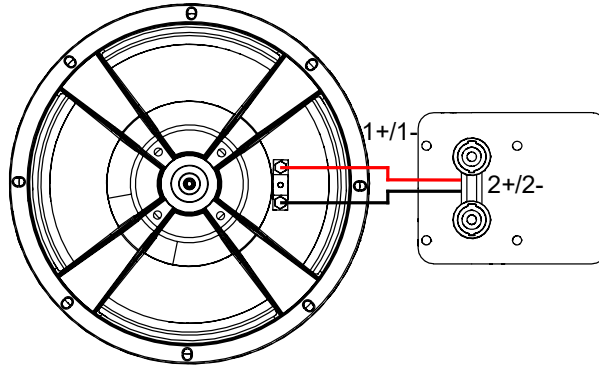


This symbol on the product or its packaging indicates that this product must not be treated as household waste. Instead, it is your responsibility to hand it over to a designated collection point for the recycling of waste electrical and electronic equipment. By ensuring your waste equipment is recycled, 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

DESCRIPTION

- The MSUB12 is a compact high technology arrayable sub, the ideal companion for the GEOM6 line array element, sharing same aesthetic design and arrayable in the same flown or stacked cluster.
- Versions:
 - MSUB12: for Touring applications; Black
 - MSUB12-PW: for Touring applications; White
- Connectors:
 - MSUB12: 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.



- Amplification:
 - The MSUB12 must be used with a NEXO processor to handle EQ, phase alignment, crossover and excursion/thermal protection for the system loudspeakers.
 - The following table shows the number of MSUB12 subwoofers usable with each solution.

	DTD + DTDAMP4x0.7	DTD + DTDAMP4x1.3	NXAMP4x1MK2	NXAMP4x2MK2	NXAMP4x4MK2
GEOM620	Up to 2 per channel	Up to 2 per channel	Up to 3 per channel	Up to 4 per channel	Up to 4 per channel
GEOM6B	Up to 2 per channel	Up to 2 per channel	Up to 3 per channel	Up to 4 per channel	Up to 4 per channel
MSUB12	1 per channel	1 per channel	Up to 2 per channel	Up to 3 per channel	Up to 3 per channel
			Recommended		

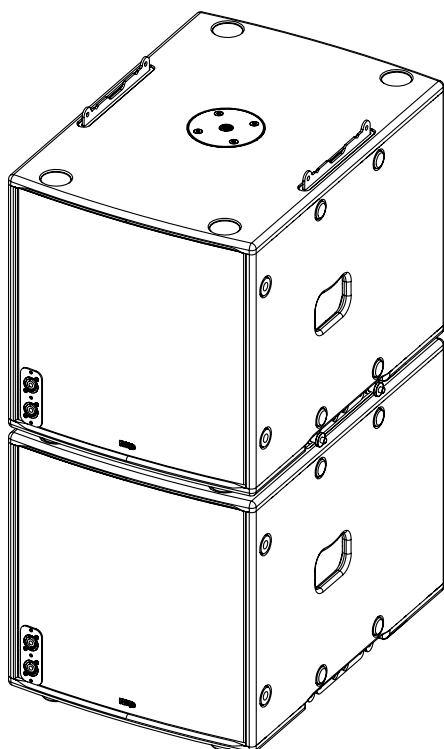
SETTING RANGE

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

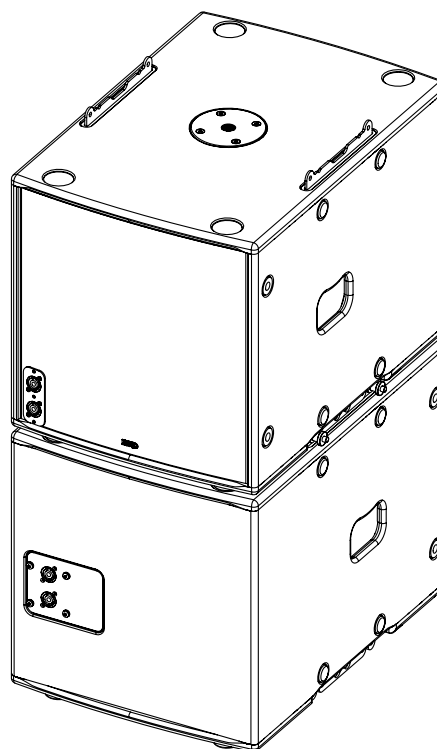
There are two setting ranges for surrounding speaker MSUB12:

- « OMNI » setups; For a traditional use of the subwoofer in omnidirectional radiation (require at least one subwoofer and a channel of amplifier).
 - 55 – 85 Hz
 - 55 – 120 Hz
 - 55 – 150 Hz
 - 63 – 120 Hz
 - 63 – 150 Hz

- « CARDIO » setups; For a directional use (cardioid) of subwoofers (require at least two subwoofers and two channels of amplifier):
 - Setups « FR » (Front)
 - 55 – 85 Hz
 - 55 – 120 Hz
 - 55 – 150 Hz
 - Setups « BA » (Back)
 - 55 – 85 Hz
 - 55 – 120 Hz
 - 55 – 150 Hz
 - The ideal ratio for a directional use is 2 x MSUB12 in CARDIO FRONT mode on top of 1x Reversed MSUB12 in CARDIO BACK mode. From 1:1 to 4:1 ratio can be used



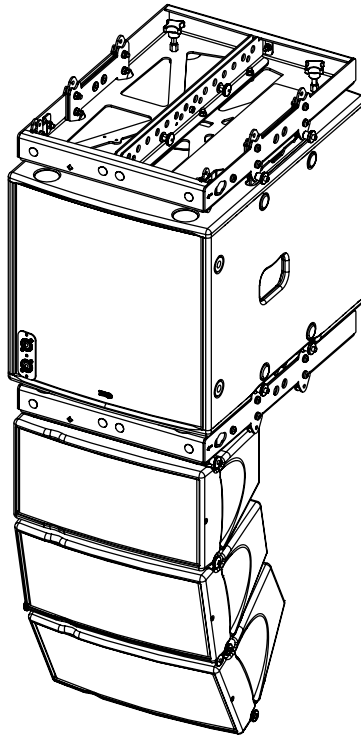
OMNI Assembly



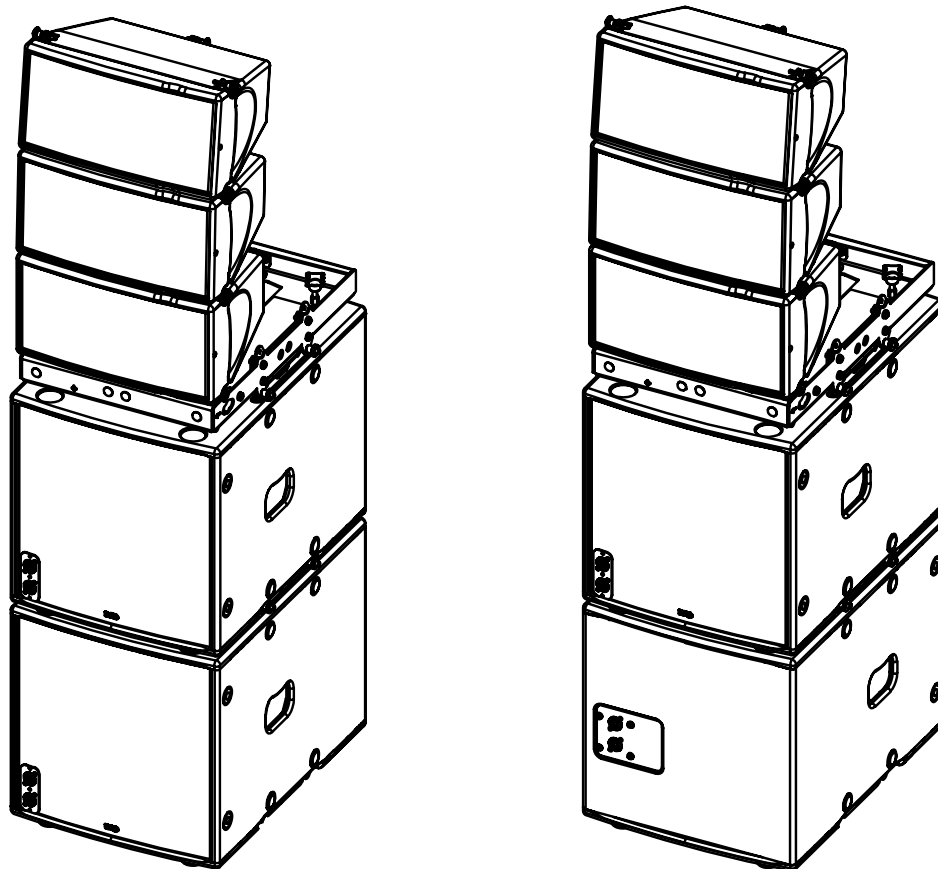
CARDIO Assembly

SETTING RANGE

With 1 to 3 GEOM6

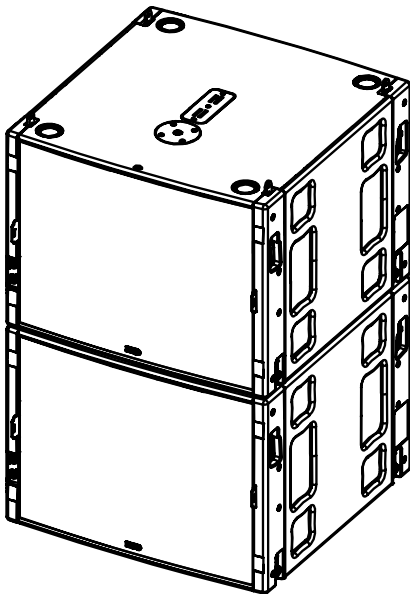
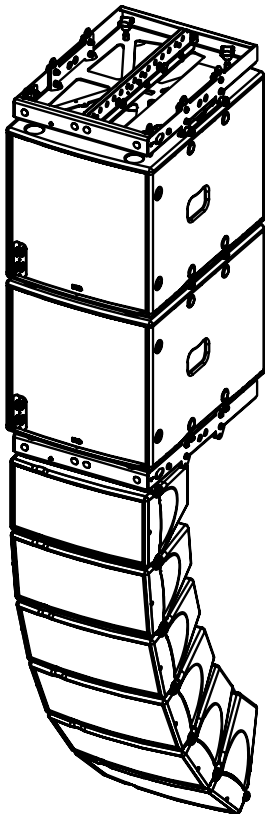


For these configurations, MSUB12 should use the 55-85 Hz setup (85 Hz crossover should be used for GEOM6 as well).



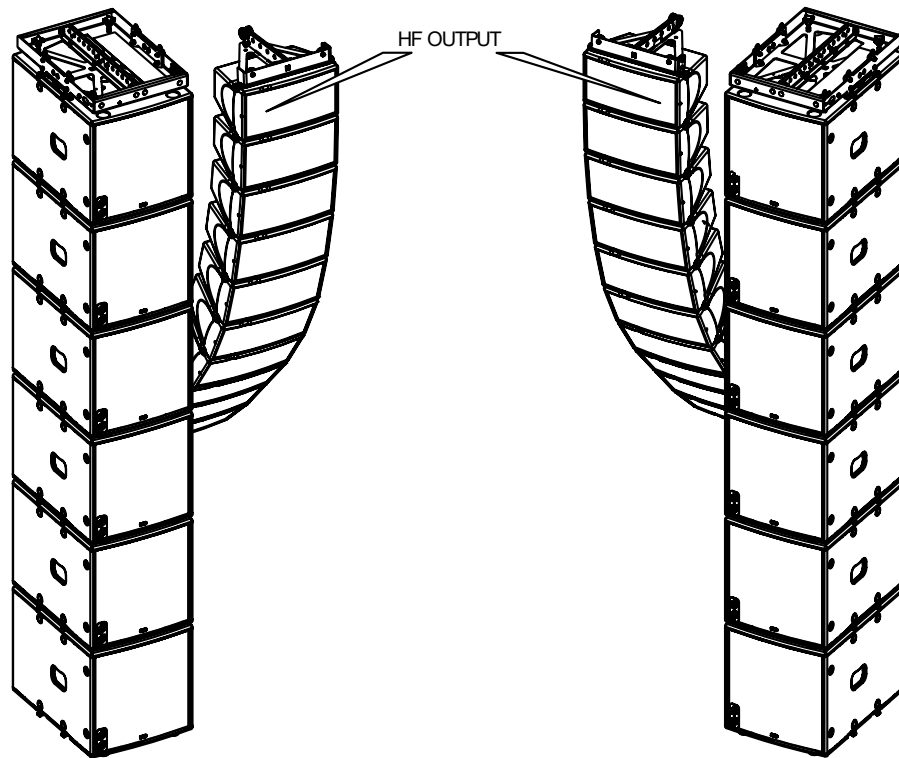
For stack configuration using MSUB12 in OMNI or CARDIO mode with 1 Back and 2 Front and GEOM6 on top of them, MSUB12 should use the 55-85 Hz setup (85 Hz crossover should be used for GEOM6 as well). A small overlap could have impact if needed, for example use MSUB12 with 55-120 Hz setup.

With 4 to 6 GEOM6

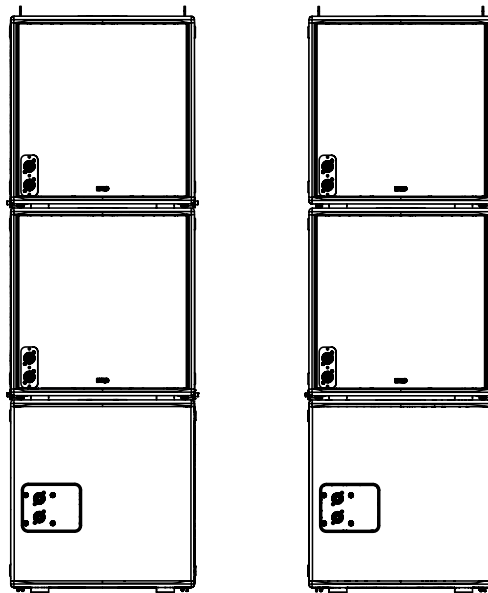


For long throw application, MSUB12 should use the 55-120 Hz setup (120 Hz crossover should be used for GEOM6 as well). If a larger stacked Sub is used all together, MSUB12 should use the 63-120 Hz setup.

With 7 to 12 GEOM6



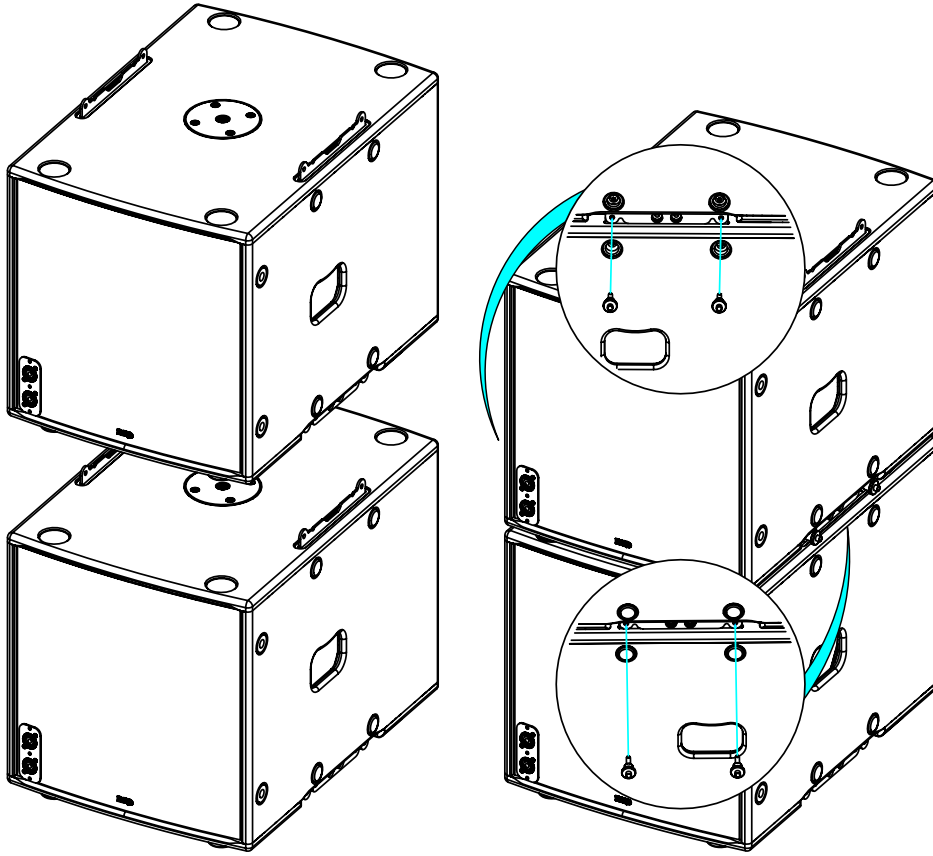
For very long throw application, MSUB12 should be deployed using the 55-120 Hz setup (120 Hz crossover should be used for GEOM6).



Ground Stack Sub design

MSUB12 RIGGING

Place MSUB12 on the top of a second MSUB12.
Insert 4 quick release pins 6x15mm (2 on both sides), VXT-BL615.



MSUB12 - ACCESSORIES

WARNINGS

All MSUB12 accessories are specifically rated in agreement with structural computations.

Never use other accessories – including push-pins – when assembling MSUB12 cabinets than the ones provided by NEXO: NEXO will decline responsibility over the entire MSUB12 accessory range if any component is purchased from different supplier.

All MSUB12 accessories have been designed so that cabinet are arrayed vertically.

VNT-BUMPM6

Rated for a maximum of 12 GEOM6 or 8 MSUB12, or a combination with a maximum of 4 MSUB12 and 6 GEOM6.

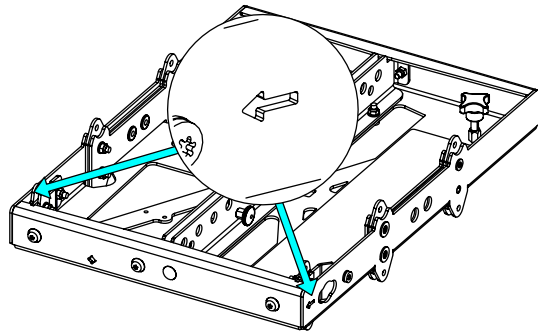
Flown on 1 or 2 rigging points.

Usable with VNT-EXBARM6 for extra tilt angle and flown on one or two rigging points.

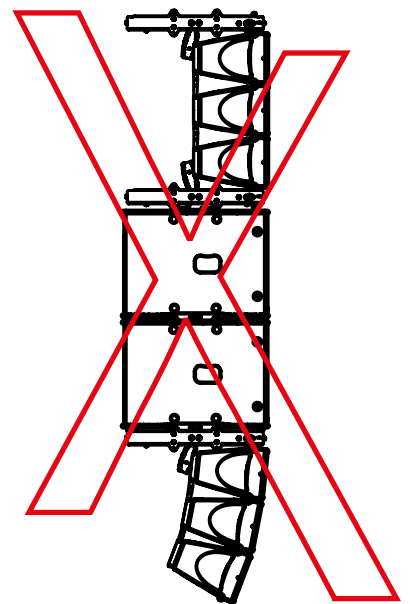
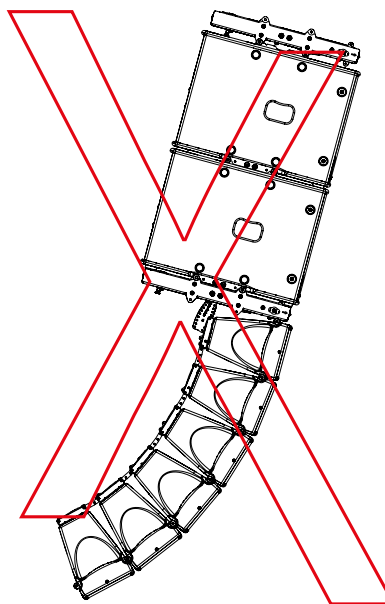
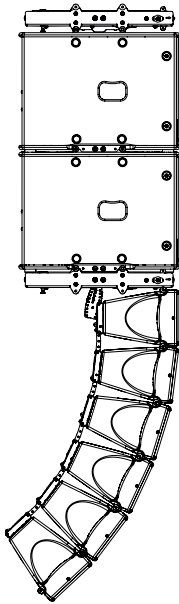
1 location for laser/clinometer.

Use VXT-BL615 or VNI-FIXBUMPM6 with MSUB12.

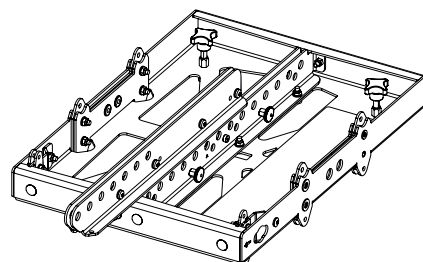
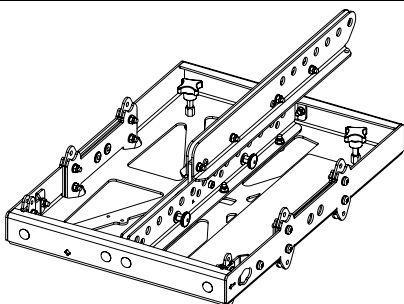
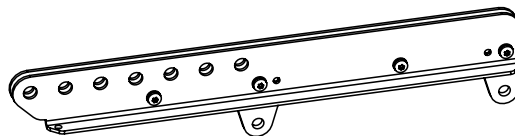
Use VXT-BL515 or GMI-BNFIK with GEOM6.



NO TILT – MSUB18 MUST ALWAYS BE POSITIONED STRAIGHT AND ON THE TOP THE ARRAY



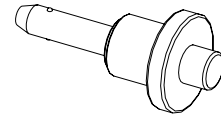
VNT-EXBARM6



VXT-BL615

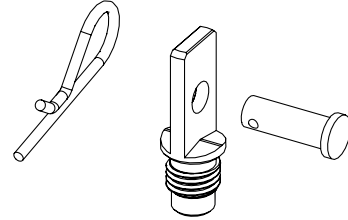
Quick release pin 6x15mm for touring application.

- MSUB12 – MSUB12
- MSUB12 – VNT-BUMPM6



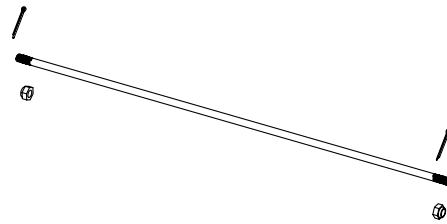
VNT-MNSTKM6

Stacking option for GEOM6 on top of MSUB12 (with GMT-BUMPER).



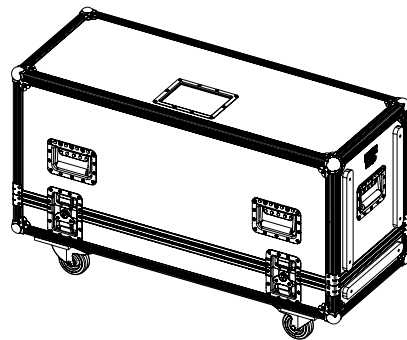
VNI-FIXBUMPM6

Fixing kit for VNT-BUMPM6 – MSUB12.



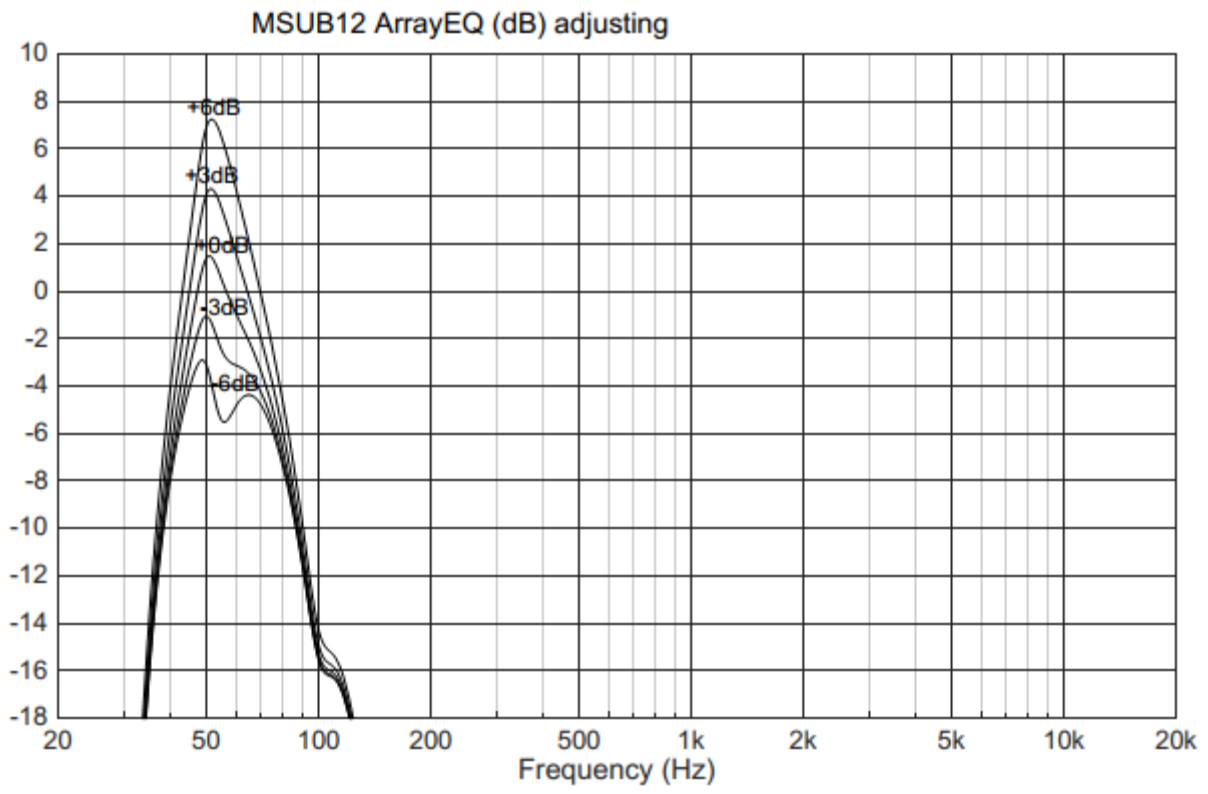
MST-2CASEMSUB12

For 2xMSUB12 and VNT-BUMPM6 / VNT-EXBARM6



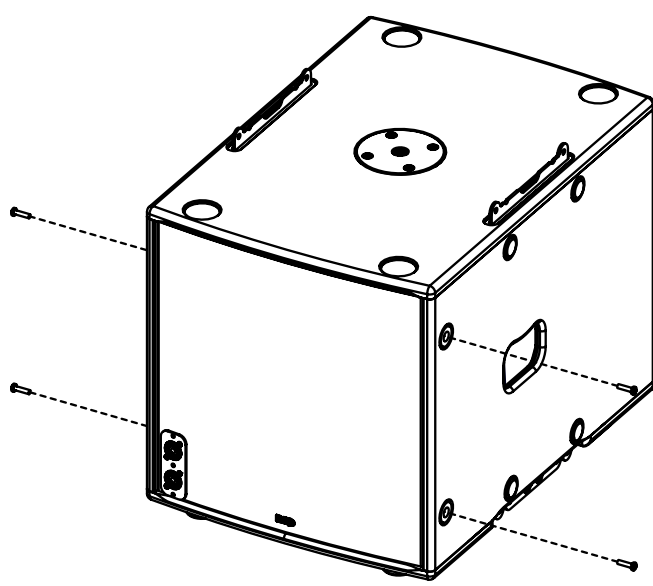
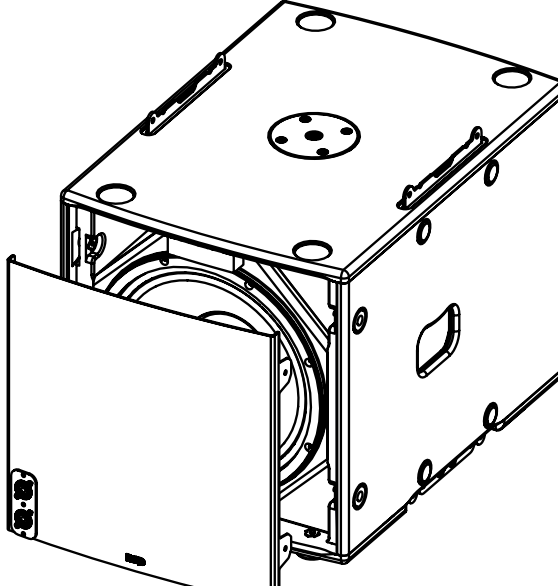
ARRAY EQ

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

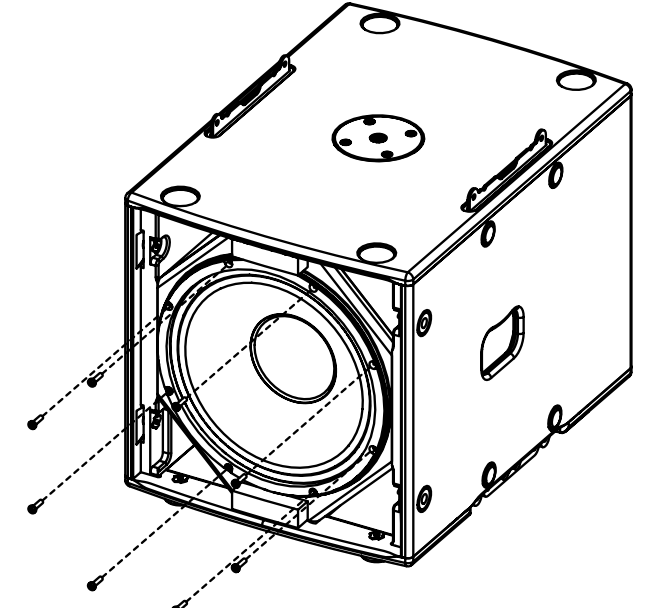
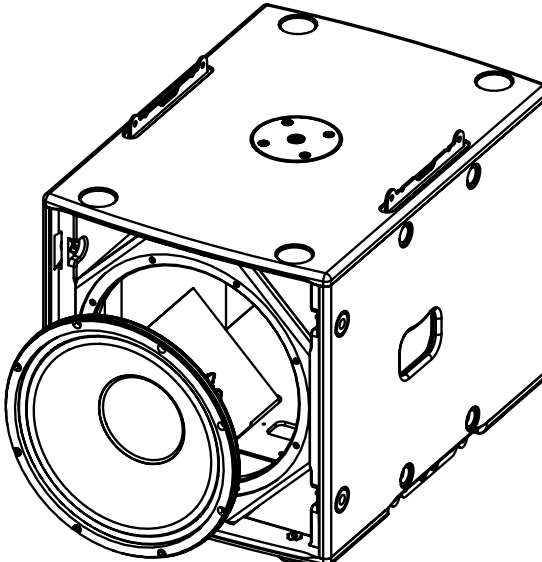


MAINTENANCE

Grille changing

<p>Remove 4 screws (Tx25).</p>	<p>Remove the grille.</p>
 <p>A perspective view of a rectangular speaker enclosure. Four screws are indicated by dashed lines and arrows, showing their removal from the top and side panels. The screws are located at the corners of the top panel and along the side panel.</p>	 <p>A perspective view of the same speaker enclosure with the front grille removed. The grille is shown as a separate piece, and the internal speaker components are visible through the opening.</p>

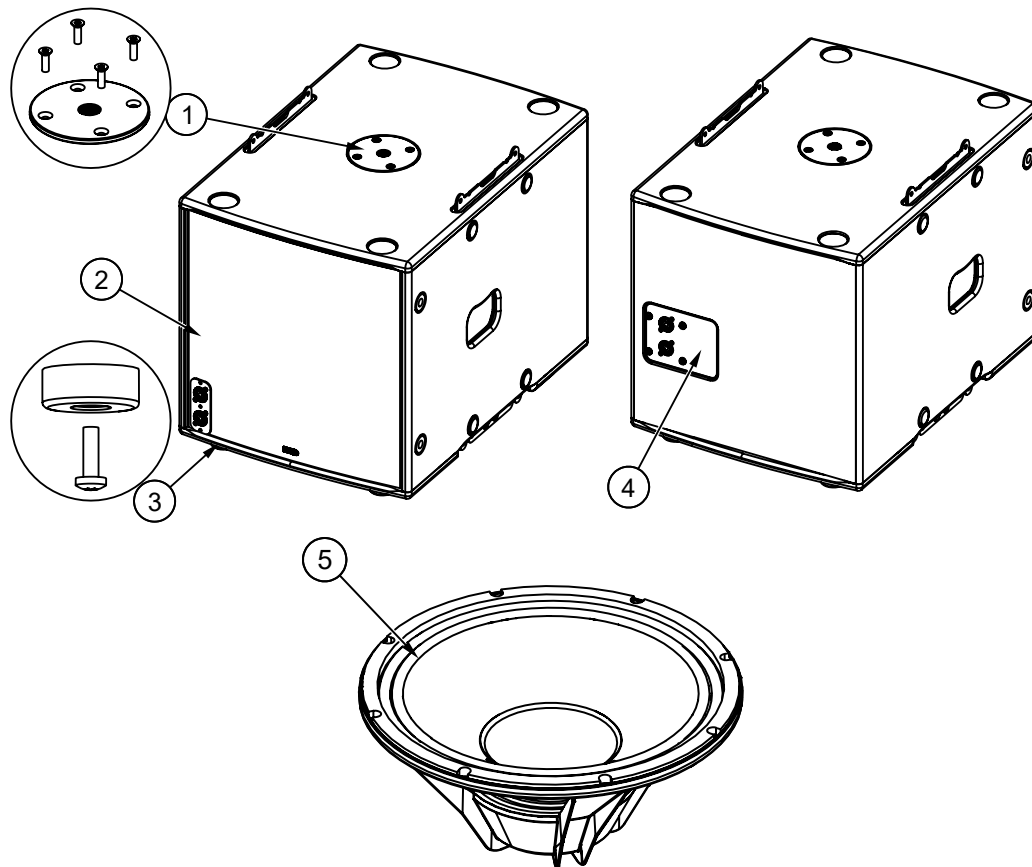
12" Driver

<p>Remove 8 screws (Tx25) to remove the Driver.</p>	<p>Remove the driver.</p>
 <p>A perspective view of the speaker enclosure with the grille removed. Eight screws are indicated by dashed lines and arrows, showing their removal from the driver area. The screws are located around the perimeter of the driver's mounting frame.</p>	 <p>A perspective view of the speaker enclosure with the driver removed. The driver is shown as a separate circular component, and the internal mounting structure is visible.</p>

Red (+) / Black (-)

MAINTENANCE

Spare parts



MARK	QUANTITY	REFERENCE	DESIGNATION
1	1	05DOUJLM20	Connector Plate M20 Black (with screws)
	1	05DOUJLM20W	Connector Plate M20 White (with screws)
2	1	05MSUB12-UA	Complete grille touring Black (with fasteners)
	1	05MSUB12-UAPW	Complete grille touring White (with fasteners)
3	4	05FTCC38x15	Pad 15/38 (x10)
4	1	05MS12-FPA	CNX complete Black (with screws and lexan)
	1	05MS12-FPA-PW	CNX complete White (with screws and lexan)
5	1	05HPB12ND	12" Driver (6 ohms)
	1	05N12ND-4R/K	Recone Kit 12" (6 ohms)

NOTE:

Speakers and Grills can be sent back to NEXO for recycling

TECHNICAL SPECIFICATIONS

MSUB12 WITH NEXO ELECTRONICS

Frequency range (± 6 dB)	55Hz – 150Hz
Sensibility (1W / 1m)	102dB SPL Nominal
Peak SPL Level (1m)	130 dB
Operating voltage	35 Vrms
Crossover Frequency	55-85; 55-120; 55-150 Hz / 63-120; 63-150 Hz
Nominal Impedance	6 Ω
Recommended Amplification	450 to 700 W / 6 Ω (requires a 700 to 1000 W / 4 Ω amplifier)

SPECIFICATIONS

Model	MSUB12
Components	1x 12" – 6 Ohms – Long excursion – Neodymium driver
Material	Baltic birch plywood
Finish	Black or white structural paint
Front finish	UV Resistant acoustic fabric fitted Magnelis® front grille
Fittings	2x Side handles Stand fitting M20
Connectors	4x NL4, 4 poles connectors
Weight	23 kg – 51 lb

Dimensions	

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