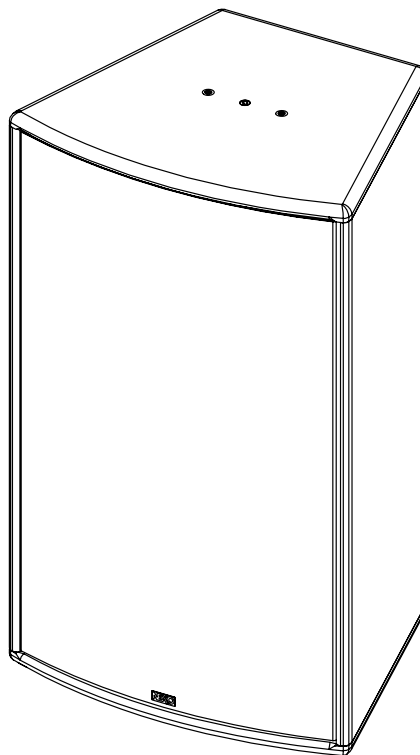


## ePS12-EN54



## User manual

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**COMPLIANCE**

ePS12-EN54 is certified EN54-24 by AFNOR Certification

**NEXO**

Parc du Pré de la Dame Jeanne BP5 - FR 60128 PLAILLY – France

Tel : +33 3 44 99 00 70 – Fax : +33 3 44 99 00 30 – email : info@nexo.fr – nexo-sa.com

**EN54-24 :2008**

Voice alarm loudspeaker for fire detection and fire alarm systems for buildings

DoP NX-0333-CPR-075633

Type B

Technical data and setup instructions included in this manual

**ePS12-EN54**

## WARNINGS

### 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: -40°C to +70°C (-40°F to +158°F). For use in temperature below 0°C (+32°F), powered with a weak signal.

Storage temperature: -20°C à +60°C (-4°F to +140°F).

#### 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](http://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.

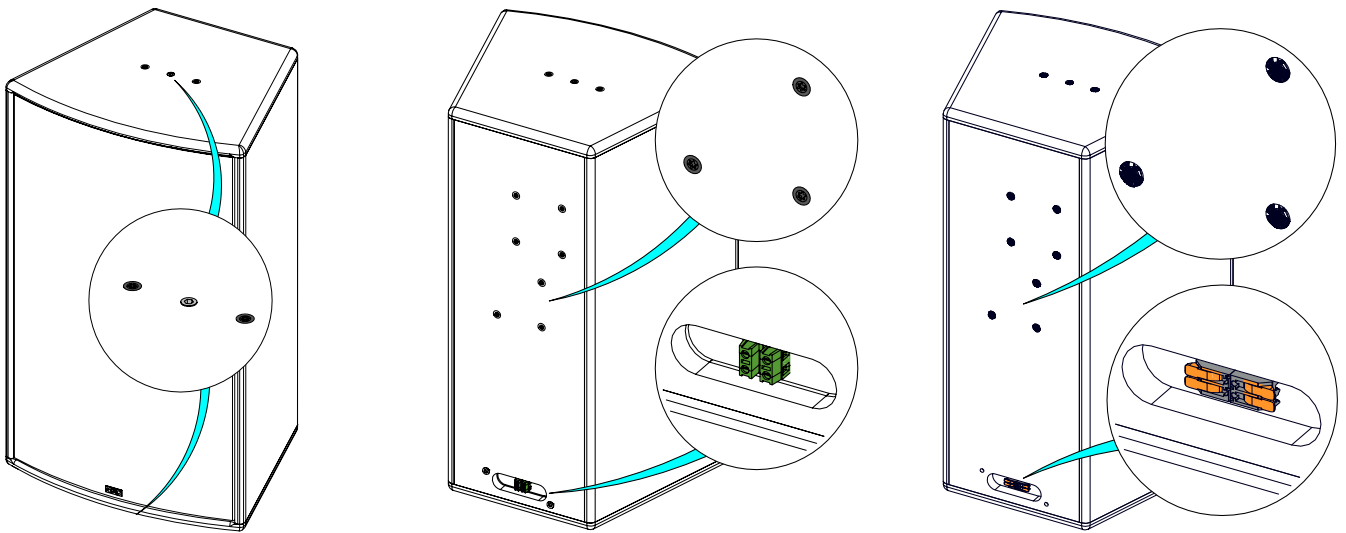
## EQUIPMENT

On each side of the cabinet, two M6 with 80 mm pitch plus one M10 fittings will connect the ePS12-EN54 to accessories (VNI-HCPL600, VNU-BUMP, VNU-HBRK600, or eyebolts).

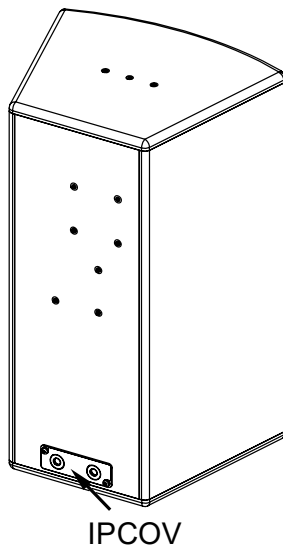
The back of the speaker is fitted with 3x M6 (70mm pitch) to connect wallmount in both vertical and horizontal positions (VNI-WM02).

2 pairs (In/Out) of 7.62 mm pitch screw terminal blocks. Cables from 0.75 mm<sup>2</sup> to 3.31 mm<sup>2</sup> (12 to 15 AWG) copper section.

Up to N° 213453110001 (black) – 213455110001 (white) 2 fast connectors. Permissible cables from 0.2 mm<sup>2</sup> to 4 mm<sup>2</sup> (12 to 24 AWG).



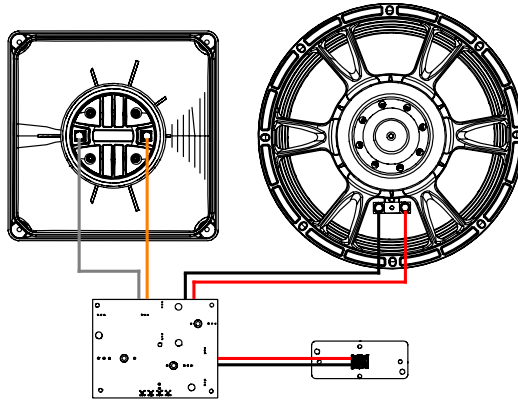
ePS12-EN54 with IPCov



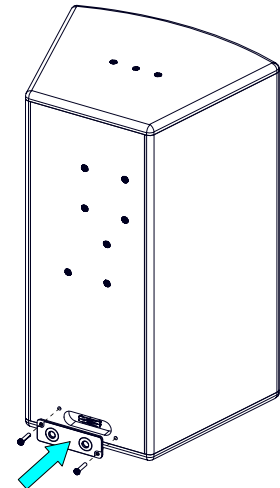
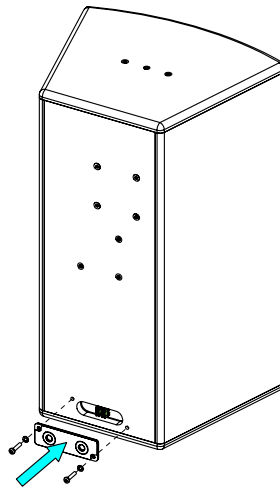
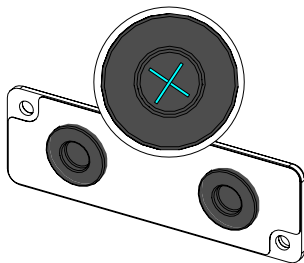
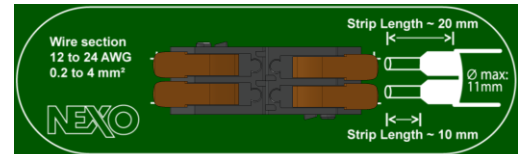
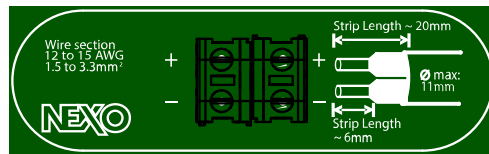
## DESCRIPTION

### DESCRIPTION

- The ePS12-EN54 is a compact full-range 2 ways speaker
- Asymmetrical HF dispersion "PS" type.
- ePS12-EN54 can be used alone or with eLS18 subwoofer
- The speaker is equipped with 2 pairs (In/Out) of screw terminal blocks, permissible cables from 0.75 mm<sup>2</sup> to 3.31 mm<sup>2</sup> (12 to 15 AWG) copper section. Cable with maximum outside diameter of 11mm.



- To wire ePS12-EN54, slit the membrane of the grommet crosswise, pass the cable through and make the connection to the screw terminals. Place the IPCOV.
- Up to N° 213453110001 (black) – 213455110001 (white) slit the membrane of the grommet crosswise, pass the cable through and make the connection to the fast connectors. Permissible cables from 0.2 mm<sup>2</sup> to 4 mm<sup>2</sup> (12 to 24 AWG). Place the IPCOV



- IP55: be careful to place the IPCOV correctly.
- Amplification
  - The ePS12-EN54 speakers must be used with a NEXO processor to handle EQ, phase alignment, crossover and excursion/thermal protection for the system loudspeaker.
  - The following table shows the number of ePS12-EN54 speakers and eLS18 subwoofers usable with each solution.

	DTD + DTDAMP4X0.7	DTD + DTDAMP4X1.3	NXAMP4X1mk2	NXAMP4X2mk2	NXAMP4X4mk2
ePS12-EN54	1 per bridged channels	Up to 2 per channel	1 per channel *	Up to 4 per channel	Up to 4 per channel
eLS18	1 per bridged channels	1 per bridged channels	2 per bridged channels	1 per channel *	Up to 4 per channel

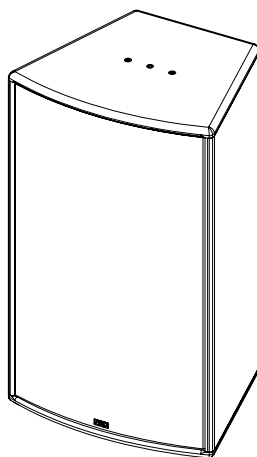
\* Recommended powering solution

Please consult [nexo-sa.com](http://nexo-sa.com) for NEXO TD Controllers firmware information.

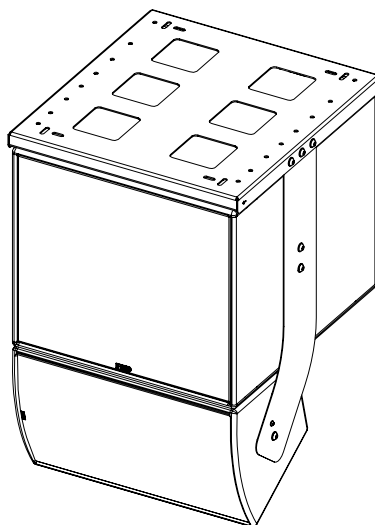
For the ePS12-EN54, the following setups are available:

- ePS12 MAIN PA, 60-120kHz
- ePS12 MAIN PA, 85-120kHz.
- ePS12 MAIN PA, 120-120kHz.

➤ **ePS12-EN54**



➤ **ePS12-EN54 + eLS18**



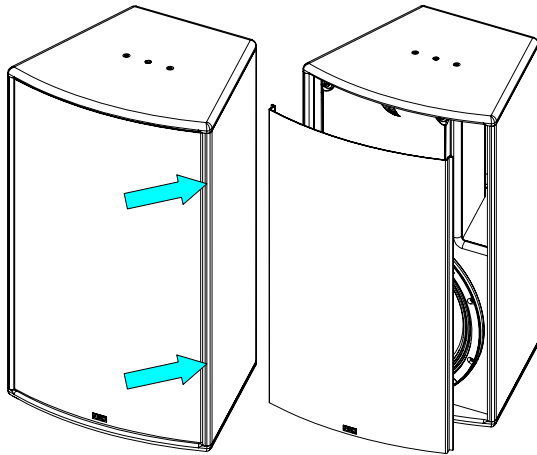
## HF DIRECTIVITY

### HF DIRECTIVITY

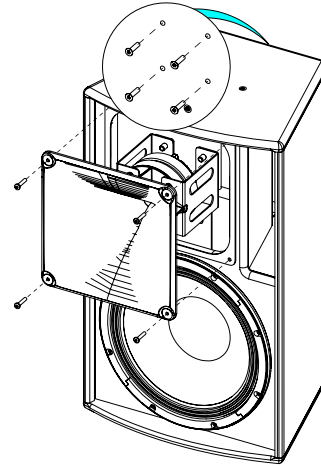
- The ePS12-EN54 speaker can be used in horizontal or vertical position.
- It's easy to change the HF dispersion to deal with every request.

Place a flathead screwdriver in the space between the grille and the cabinet to release the grille.

Remove the grille.

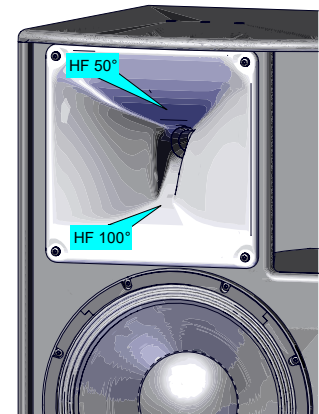
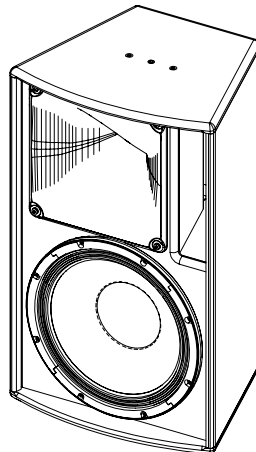
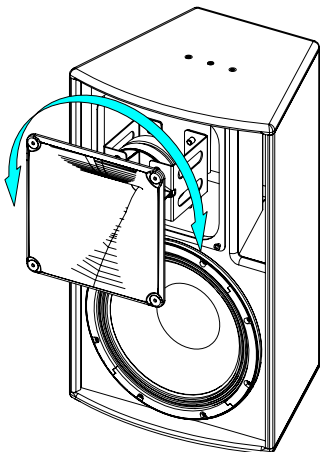


Remove the 4 screws at the front, 4 screws at the back that hold the horn. Remove it.



Position the horn according to the desired HF dispersion.

Narrow aperture = widest Dispersion



Reassemble the assembly and replace the grille.

### CROSSOVER FREQUENCY

- 60 Hz: Full range application.
- 85, 120 Hz: Use with eLS18.



## ACCESSORIES

## WARNINGS

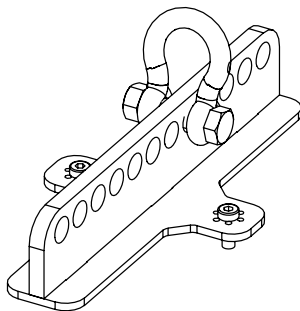
All ePS accessories are specifically rated in agreement with structural computations.

Never use other accessories when assembling ePS12-EN54 cabinets than the ones provided by NEXO: NEXO will decline responsibility if any component is purchased from different supplier.

**PROHIBITED: ePS12-EN54 below ePS12-EN54 or ePS12-EN54 below eLS18 without dedicated accessory**

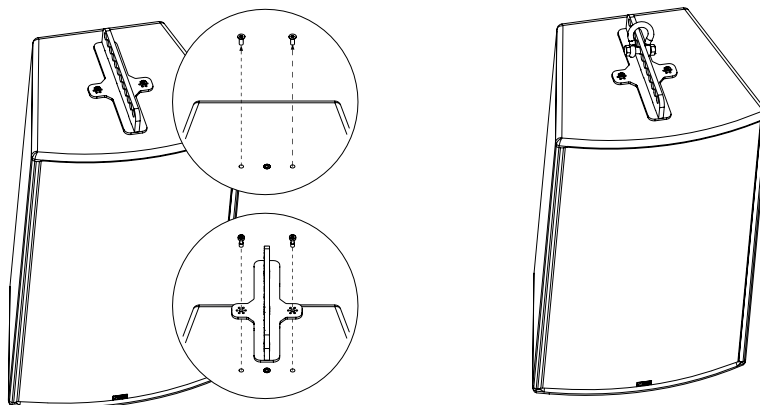
## VNU-BUMP

LiftBar, can be used with VNI-WMADAPT.



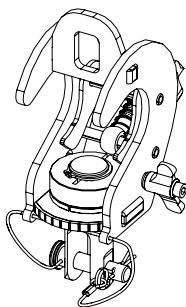
Remove 2 screws on the top  
Screw VNU-BUMP to ePS12-EN54 (use only screws provided with VNU-BUMP).  
Tight properly.

Refer to the Product Data Sheet



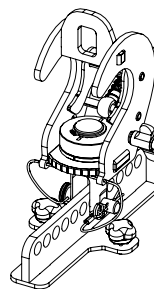
## VNT-TCBRK3551

Rotary Truss Clamp



Place VNT-TCBRK3551 on VNU-BUMP at the desired hole.

Refer to the Product Data Sheet



## ACCESSORIES

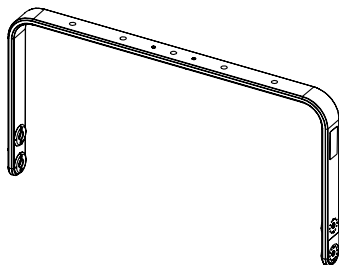
### VNU-HBRK600

Horizontal Cradle, usable with:

VNI-CLADAPT.

VNI-WM380.

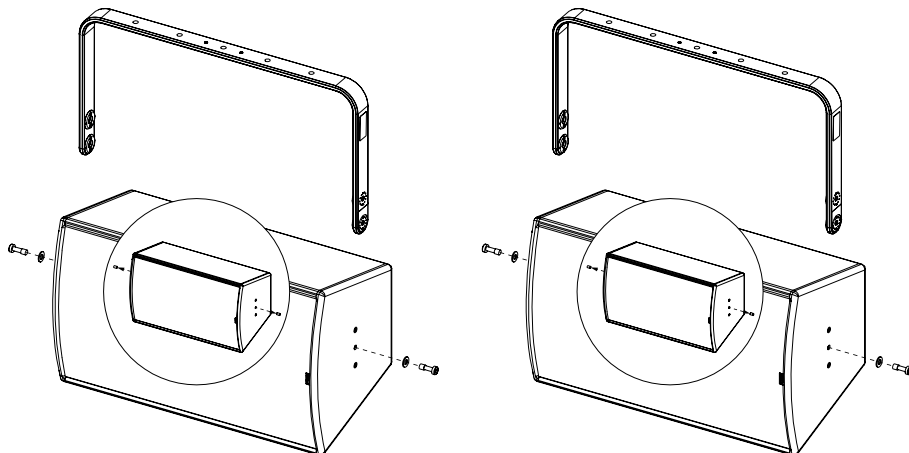
VNU-PLADAPT



Remove the M10 inserts from each side.

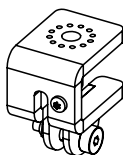
Place HBRK600 on ePS12-EN54, use only fasteners provided. Tight properly.

Refer to the Product Data Sheet



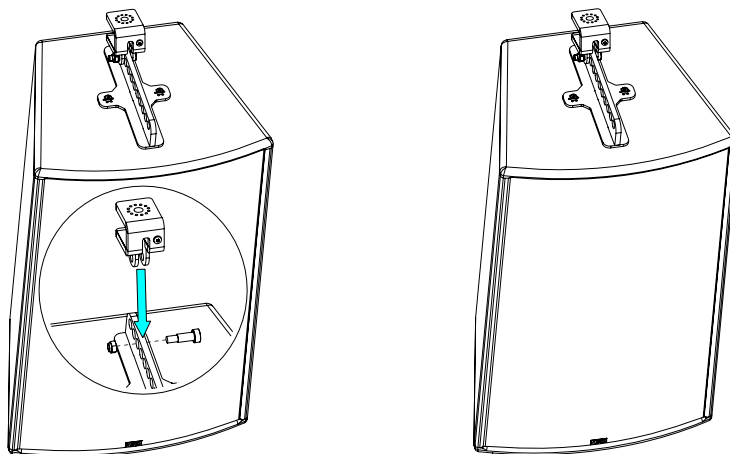
### VNI-WMADAPT

Wall mount adapter



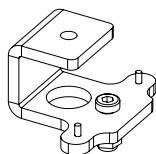
Place VNI-WMADAPT on VNU-BUMP, use only fasteners provided. Tight properly.

Refer to the Product Data Sheet



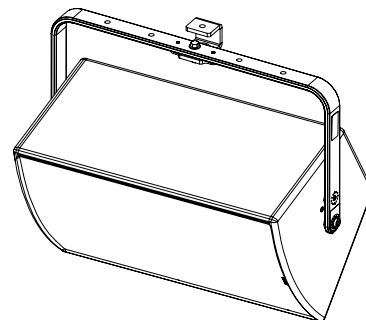
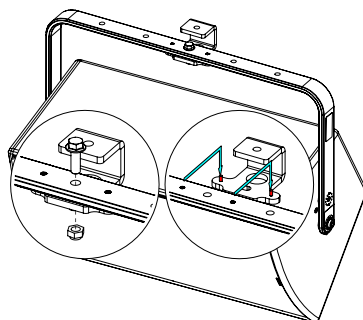
**VNI-CLADAPT**

Ceiling Adapter, use with VNU-HBRK600.



Screw VNI-CLADAPT to the ceiling (fasteners not provided).

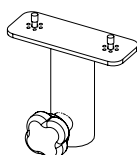
Place the assembly on VNI-CLADAPT, use the 2 guides. Tight with the fasteners provided with VNI-CLADAPT.



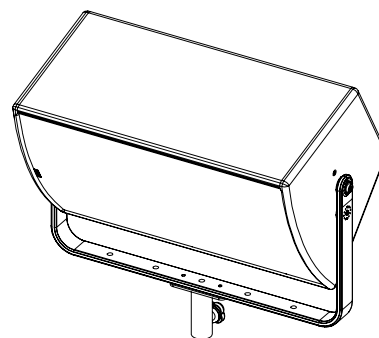
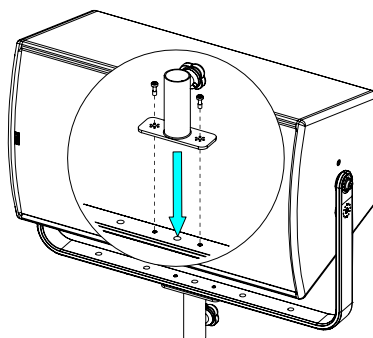
Refer to the Product Data Sheet

**VNU-PLADAPT**

Pole adapter



Place VNU-PLADAPT on VNU-HBRK600, use only fasteners provided. Tight properly.

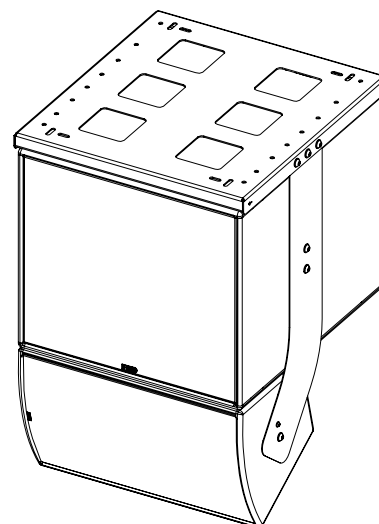
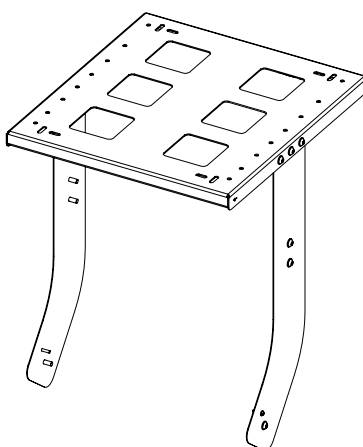


Refer to the Product Data Sheet

**VNI-HCPL600**

Coupler ePS12-EN54 under horizontal eLS18

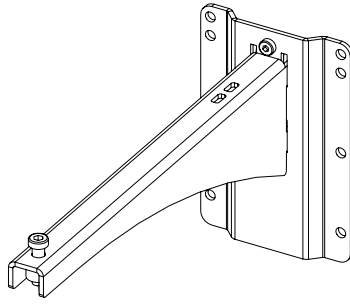
Refer to the Product Data Sheet



## ACCESSORIES

### VNI-WM380

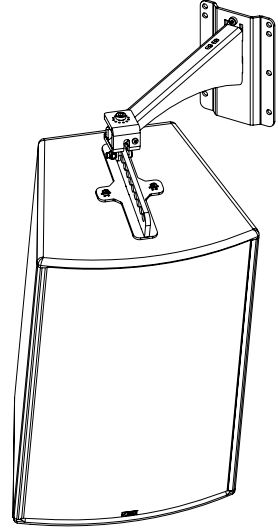
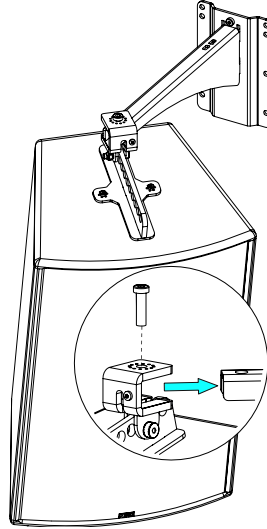
Wallmount, usable with:  
VNI-WMADAPT / VNU-BUMP  
VNU-HBRK600



### ePS12-EN54 / BUMP / WMADAPT

Place the assembly on VNI-WM380. Tight with the fasteners provided with VNI-WM380.

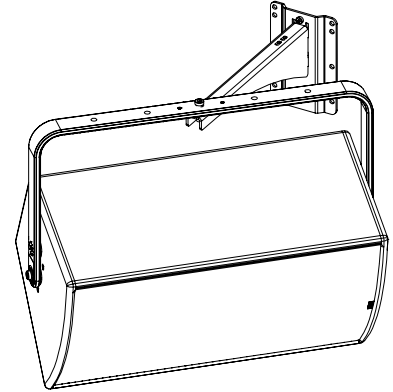
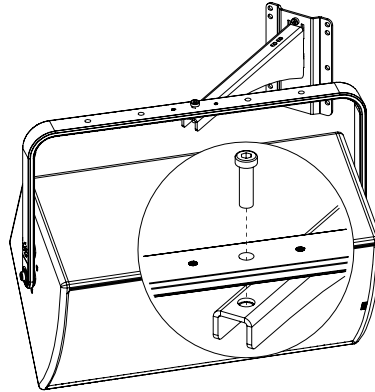
Refer to the Product Data Sheet



### ePS12-EN54 / HBRK600

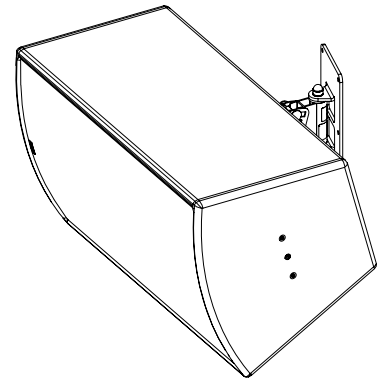
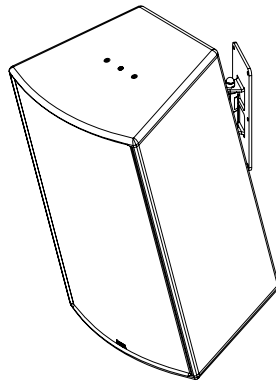
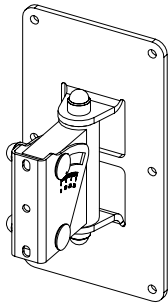
Place the assembly on VNI-WM380. Tight with the fasteners provided with VNI-WM380.

Refer to the Product Data Sheet



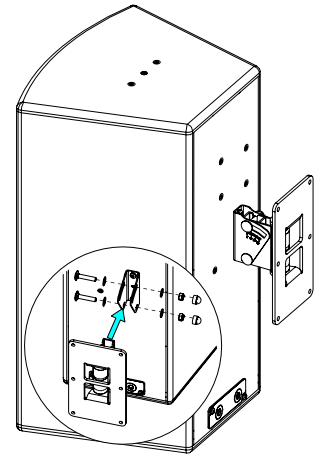
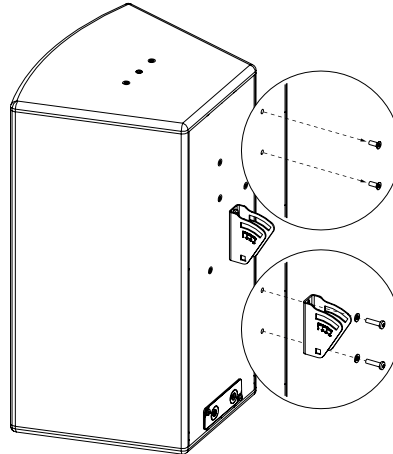
**VNI-WM02**

Wall mount adapter 25kg max



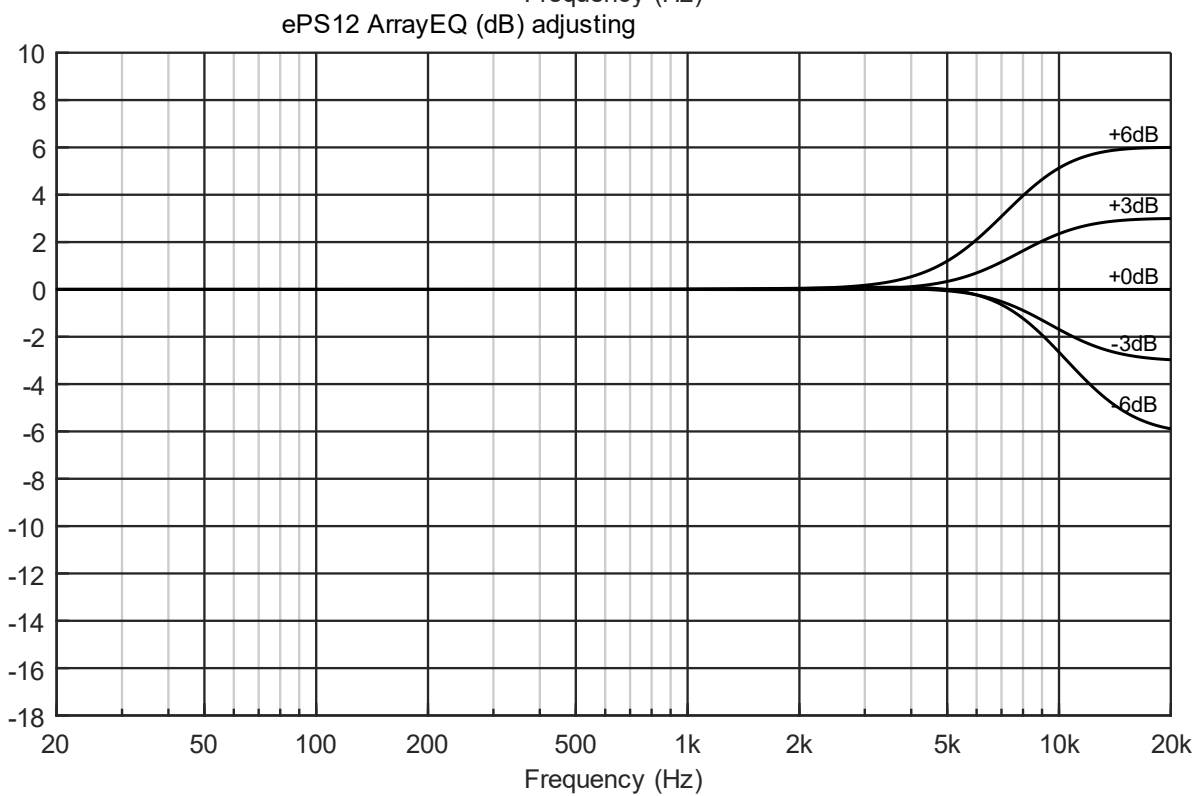
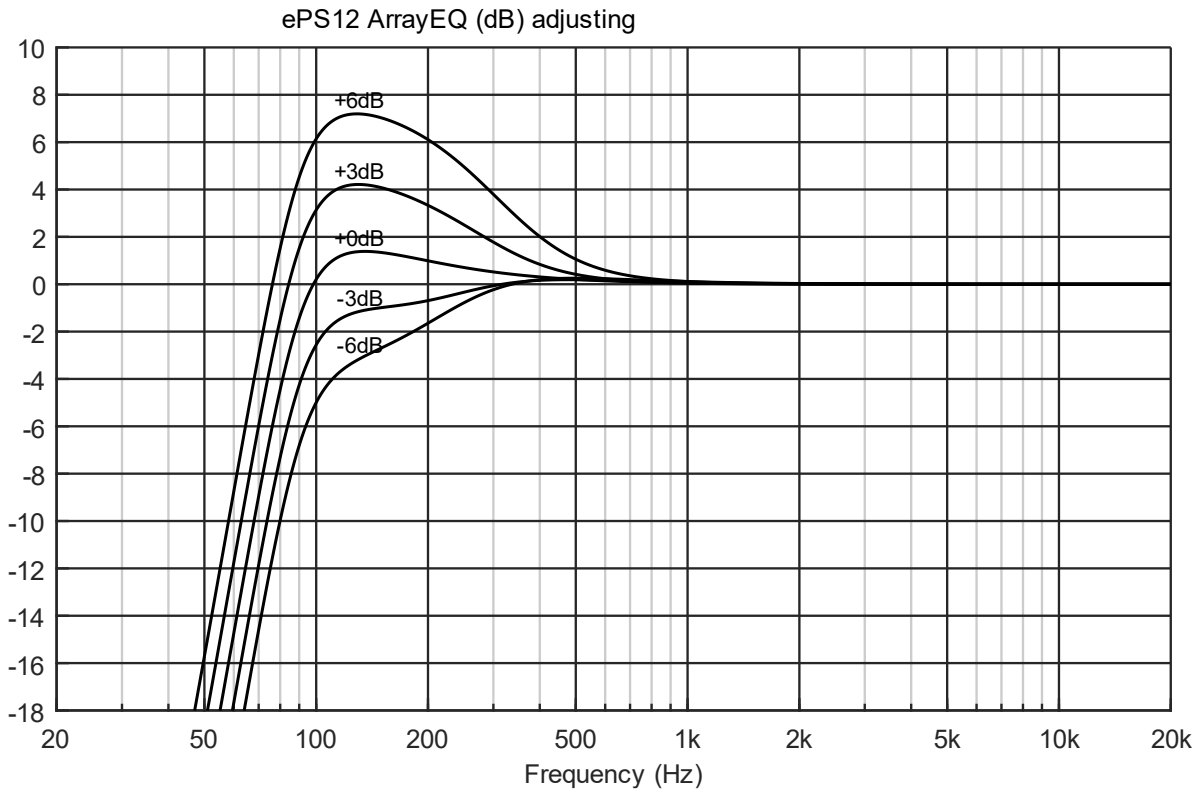
Remove 2 of the 3 screws on the back.  
Screw speaker plate to ePS12-EN54 (use only screws provided with ePS12-EN54).  
Place the speaker holder with ePS12-EN54 into wall bracket. Fix by tightening bolted assembly.

Refer to the Product Data Sheet



**ARRAY EQ**

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



**MAINTENANCE**

**NOTE:**  
Speakers and Grills can be sent back to NEXO for recycling

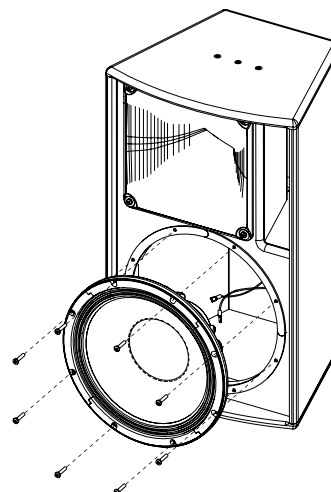
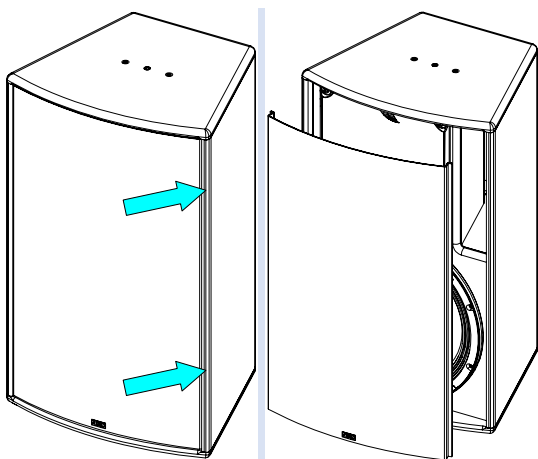
**Driver access**

Place a flathead screwdriver in the space between the grille and the cabinet to release the grille.

Remove the grille.

Remove the 4 screws to access the LF driver.

Tightening torque: 3.5 Nm (Thread Locker: Loctite 242)

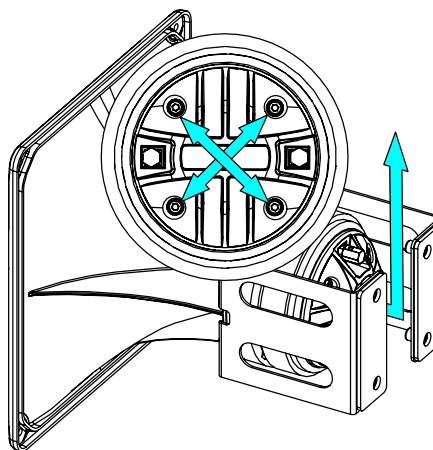
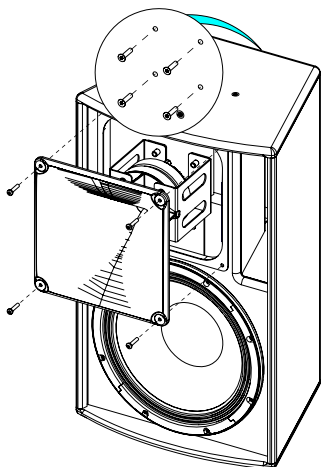


Remove the 4 screws at the back of ePS12-EN54 and the 4 screws that hold the horn. Remove it.

Tightening torque: 2.5 Nm (Thread Locker: Loctite 242)

To access the HF diaphragm, remove the 4 screws.

Tightening torque: 2.5 Nm



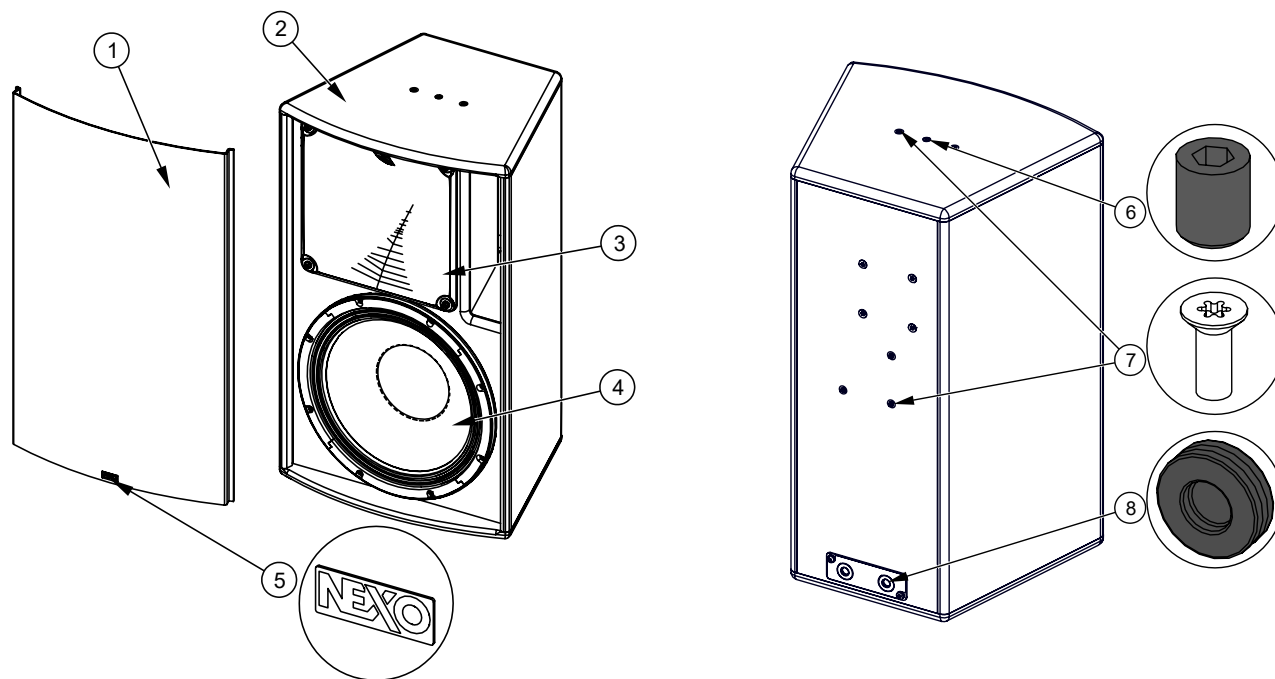
Reassemble the assembly and replace the grille.

**LF: red (+) / black (-)**

**HF: orange (+) / grey (-)**

# MAINTENANCE

## Spare parts



MARK	QUANTITY	REFERENCE	DESIGNATION
1	1	05EPS12EN54-UA	ePS12-EN54 complete grille Black
	1	05EPS12EN54-UAPW	ePS12-EN54 complete grille White
2	1	05EBEPS12	ePS12 Cabinet Black
	1	05EBEPS12-PW	ePS12 Cabinet White
3	1	05PAVEPS12	ePS12 Horn sub-assembly
	1	05HPADE250-16	DE250 Driver HF 16 ohm
	1	05NH25-16R/K	DE250-16 diaphragm (with screws)
4	1	05HPB12ND8	Bass driver 12" neodymium 8 ohms (with screws)
	1	05HPB12ND8R/K	Recone Kit for HPB12ND8 (with screws)
5	1	05LOGNEXO3	Logo NEXO
6	2	05VXTSTHC1012N	HEADLESS Screw M10x12 Black (x10)
		05VXTSTHC1012	HEADLESS Screw M10x12 White (x10)
7	7	05VXTCFX616N	VXFX 6x16 Black (x10)
		05VXTCFX616	VXFX 6x16 White (x10)
8	2	05PASF-DG9E1	Grommet DG11 Ø15.5mm (x2)
		05PASF-DG11PW	Grommet DG11 White Ø15.5mm (x2)



**TECHNICAL SPECIFICATIONS**

**WITH NEXO ELECTRONICS**

<b>Model</b>	<b>ePS12-EN54</b>
Frequency range (±6dB)	60 Hz – 20 kHz
Sensitivity 1W@1m	103 dB SPL Nominal
Peak SPL Level (1m)	133 dB Peak
Operating voltage	35 Vrms
Vertical Dispersion	+25°/-30°
Horizontal Dispersion:	50° to 100° asymmetrical
Crossover Frequency	60 Hz, 85 Hz, 120 Hz
Nominal Impedance	8 ohms

**SPECIFICATIONS**

<b>Model</b>	<b>ePS12-EN54</b>
<b>Components</b>	LF 12" Neodymium long excursion 8 ohms HF 1.7" diaphragm – 8 ohms
<b>Material</b>	Baltic birch plywood 15mm
<b>Finish</b>	Black or White structural paint (Custom RAL upon request)
<b>Front finish</b>	Black acoustic fabric fitted back steel front grille
<b>Fittings</b>	2x M6 and 1x M10 on the top and bottom for rigging accessories. 3x M6 on the back for rigging accessories (70mm pitch).
<b>Connector</b>	2 pairs (In/Out) of 7.62 mm pitch screw terminal blocks. Cables from 0.75 mm <sup>2</sup> to 3.31 mm <sup>2</sup> (12 to 15AWG) copper section. From Serial number 213453110001 (black) – 213455110001 (white) Fast connectors Cables from 0.2 mm <sup>2</sup> to 4 mm <sup>2</sup> (12 to 24 AWG) copper section. Cable with maximum outside diameter of 11 mm.
<b>Weight</b>	18 kg / 40 lb
<b>ID Classification</b>	IP55 with IPCOV
<b>Operating temperature</b>	-40°C to +70°C (-40°F to +158°F). For use in temperature below 0°C (+32°F), powered ePS12-EN54 with a weak signal.

<b>Dimensions</b>	
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**TECHNICAL SPECIFICATIONS**  
**DATA ACCORDING TO EN54-24 : 2008**

Nominal Continuous Power	400 W
Operating Voltage	35 Vrms
Nominal Impedance	3 $\Omega$
Sensitivity 1W@4meters	78 dB
Max Continuous Sound Pressure @4meters	104 dB SPL

Frequency Band	100	125	160	200	250	315	400	500	630	800	1000
Sound Pressure Level per band / Total 1W @ 4 meters (dBSPL)	66	67	64	68	66	64	65	65	66	63	61
Frequency Band	1250	1600	2000	2500	3150	4000	5000	6300	8000	10000	
Sound Pressure Level per band / Total 1W @ 4 meters (dBSPL)	62	60	61	62	63	63	63	65	66	68	

Sound Pressure Level per band / Total 1W @ 4 meters (dBSPL)

100 Hz à 10 kHz 78

Directivity

Frequency Band	500	1000	2000	4000
Horizontal directivity averaged per octave on-axis normalized -6 dB (Positive Angle)	75	50	50	40
Horizontal directivity averaged per octave on-axis normalized -6 dB (Negative Angle)	-75	-50	-50	-40
Vertical Directivity averaged per octave on-axis normalized -6 dB (Positive Angle)	90	65	60	40
Vertical Directivity averaged per octave on-axis normalized -6 dB (Negative Angle)	-80	-65	-40	-20

All above specifications are for free-field measurements.  
 Reference axis is the line orthogonal to the grill, intersecting the grill in the middle.  
 Reference plane is aligned on cabinet front grill.  
 Horizontal plan is perpendicular to the reference plane in the width direction.

**USER NOTES**

**NEXO S.A.**

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