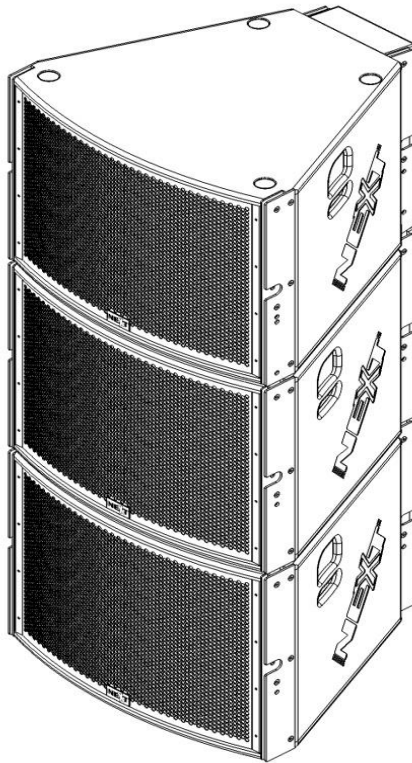


# NEXT

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## **CX Series**

### **Professional Point-Source System**

# **USER MANUAL**

V012015

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## INTRODUCTION

Thank you for purchasing a NEXT CX Series Point Source system. This manual will provide you with useful and important information about your NEXT CX Series element. Please devote some time reading this manual, and keep it at hand for future reference. NEXT-Proaudio is concerned with your safety and well-being, so please follow all instructions and heed all warnings. Also, a better understanding of some specific features of the CX Series system will help you to operate it to its' full potential.

## UNPACKING

NEXT CX Series systems are built in Europe (Portugal) by NEXT-Proaudio, according to the highest standards and thoroughly inspected before they leave the factory. When unpacking NEXT CX Series systems' elements, examine them carefully for any signs of possible transit damage and inform your dealer immediately if any such damage has occurred.

It is suggested that you retain the original packaging so that the elements can be repacked in the future if necessary. Please note that NEXT-Proaudio and its' authorized distributors cannot accept any responsibility for damage to any returned product through the use of non-approved packaging.

## CX SERIES OVERVIEW

The NEXT CX loudspeaker series were designed for applications requiring high impact sound reinforcement over large distances with class leading pattern control and outstanding sonic performance such as large corporate AV systems, stadiums, large dance clubs, live concert halls, theatres, houses of worship and open-air venues. The enclosures are trapezoidal in shape and constructed from multi-ply hardwood with integrated, angle adjustable, flying hardware. This cleverly engineered hardware permits easy adjust of vertical angles, both positive and negative, in suspended or ground-stacked applications.

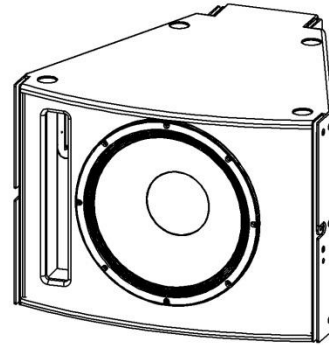
The CX Series is comprised of two main elements, the CXL151 bass enclosure and the CXH64, which is responsible for the Mid and High frequencies reproduction.

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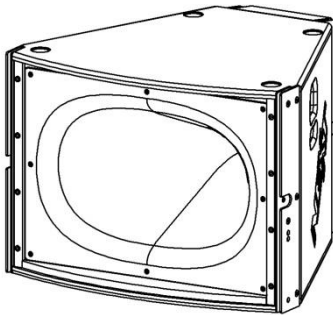
## NEXT CXL151 - Vented Bass Enclosure

The CXL151 is a high power bass enclosure developed to complement NEXT CXH64 (mid-high) enclosures within flown or ground stacked vertical full-range arrays. This unit uses a single direct radiating 15" high excursion, low frequency, neodymium transducer that offers high power handling and low power compression for high continuous SPL capability. It shares the same modular enclosure format as the CXH64 module, allowing the systems designer to create tightly packed arrays or clusters including the use of multiple bass devices for impressive bass impact and improved vertical pattern control at low frequencies. The addition of two or more CXL151 devices to the array will extend the vertical pattern down to the 250Hz range and lower by taking advantage of the basic acoustical principles of spaced sources. The result is outstanding directional control across the entire frequency spectrum along with exceptionally high output levels and reference quality reproduction. Although subwoofer units are available, the CXL151, when used in pairs, avoid the need for large format ground-stacked subwoofer enclosures in most cases.



CXL151 without the front grille

## NEXT CXH64 - Point Source Mid-High Enclosure



CXH64 without the front Grille

The CXH64 incorporates a unique driver to radiate a coherent single point source, perfectly time aligned, without the associated problems of multi-source interference. This mid/high frequency two-way Neodymium driver uses two concentric ring shaped diaphragms. The larger of the two has a 5" composite cone which offers superior damping properties and reproduces frequencies from 400 Hz to 8 kHz. Another major advantage is that there is no crossover anywhere near the vocal region ensuring the most natural and phase coherent reproduction in this critical area. The annular HF diaphragm takes over at 8 kHz and up to 20 kHz through a passive crossover. The external casting features extensive heat-sinking, ensuring good heat transfer for high power handling and very low power compression.

The perfectly combined high and mid frequencies energy, generated by the two-way driver, feed a complex, large and proprietary designed, 60° H by 40° V waveguide that uses our optimized coupling technology for improved driver to horn transition, providing a single point source wavefront, perfectly coherent across its frequency range, with very low levels of distortion, specially the annoying third harmonic. The waveguide contour is free from the use of the common diffraction techniques and the consequent

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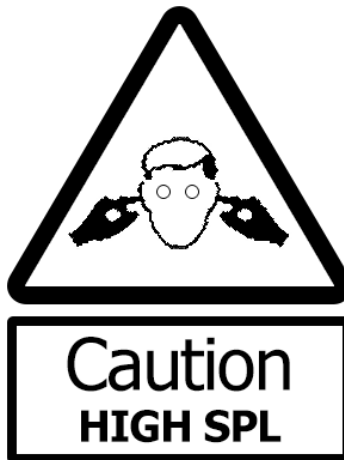
internal interferences. Being without diffraction slots, the CXH64 waveguide is also free from problems with apparent apex. The novel feature of this new waveguide is that its apparent apex for the horizontal and vertical planes are in the same physical location making it perfectly functional as an array as needed for public address purposes.

The CXH64 achieves an optimum balance of extremely well controlled coverage, high sensitivity, smooth frequency response, and very natural sound with exceptional clarity in the vocal range.

## SAFETY FIRST

Please pay close attention to this chapter. Failure to comply with these instructions may result on injury or death.

### DANGER – HEARING DAMAGE



CX Series systems are capable of producing extremely high sound pressure levels and should be used with care. Hearing loss is cumulative and can result from levels above 90dB if people are exposed for a long period. Never stand close to loudspeakers driven at high levels.

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## GROUND STACKING SAFETY CONSIDERATIONS

- Always ensure that the floor or structure where the stack will take place is even and can withstand the weight of the complete stack.
- Do not stack more than four CX Series elements.
- Place cables in a way that they do not present a trip hazard.
- Do not place any objects on top of the stack, they can fall accidentally and cause injuries.
- Do not attempt to move the enclosures while connected.
- Try not to operate the CX Series systems under heavy rain or moisture, it is weather-resistant but not completely “weather-proof”.
- Do not expose the systems to extreme heat or cold conditions to prevent component damage.

## RIGGING AND SUSPENSION SAFETY CONSIDERATIONS

- Before rigging or suspending NEXT CX Series systems, inspect all components and all hardware for any signs of damage or missing parts. If you find any damaged, corroded or deformed parts, **do not use them**, replace them immediately.
- Do not use hardware that isn't load rated or that its' rating is not enough to handle the system's weight with a good safety factor (minimum 4:1). Don't forget that the hardware won't just hold the systems weight. It has to be sturdy enough to handle dynamic forces like winds without any part deformation. NEXT-proaudio advises customers to contact a Structural Engineer or a licensed professional rigger, regarding the equipment installation.
- CX Series system installation should only be carried out by qualified personnel.
- Always use adequate protective clothing and equipment to prevent possible injuries.
- Only install the structures which will hold the system on solid, levelled ground and isolate the surrounding area during installation, and whenever possible during operation, to prevent general public presence near the systems.
- Be sure you understand all local and national regulations regarding equipment installation

## CONNECTIONS AND WIRING DIAGRAMS

The CX Series elements are connected through Neutrik Speakon NL4FC plugs (not supplied). A wiring description is printed on the connections panels located on the back of the cabinets.



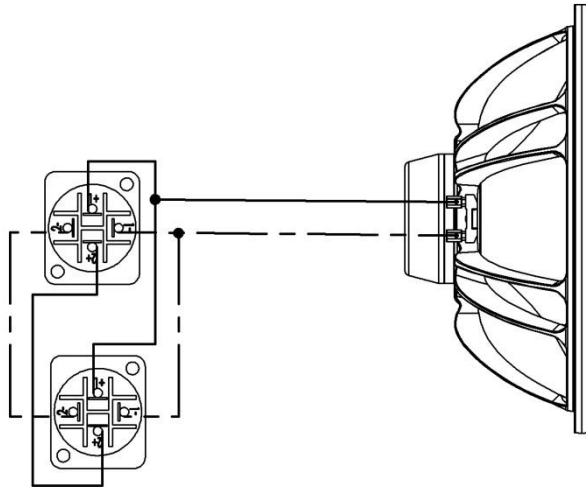
The 4 pins of the 2 Neutrik® NL4 Speakon® sockets are wired in parallel within the enclosure. Either connector can be used to connect to the amplifier or another CX Series element. As the wiring of each element is in different poles, we can use a single four wire cable to connect to the first element of choice and then link to the other elements, either bass or mid/high units, until the desired impedance is achieved. See the table and the diagrams below:

NL4 POLE	CXL151	CXH64
1+	BASS +	N.C.
1-	BASS -	N.C.
2+	N.C.	MID/HIGH +
2-	N.C.	MID/HIGH -

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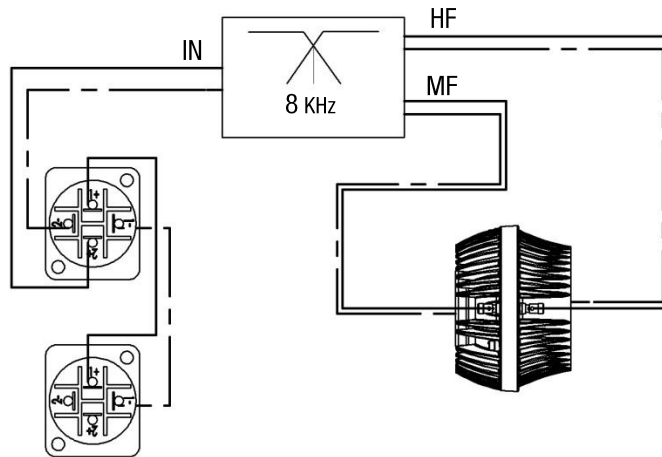
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## CXL151 Wiring Diagram



————— + ( Red Wire )  
- - - - - - ( Black Wire )

## CXH64 Wiring Diagram



————— + ( IN -> Red; MF -> Gray; HF -> Blue )  
- - - - - - ( Black Wire )



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## AMPLIFICATION

Normally, CX Series systems are also supplied with NEXT power-rack mounts already configured for optimum performance, according to the configuration chosen by the customer. NEXT-Proaudio recommends using only NEXT-Proaudio approved amplifiers and signal processing units, and only provides signal processing configuration files for approved signal processing units.



Please notice that CXH64 element can't handle frequencies below 400 Hz safely. It was not designed to be a full range element.

The CX Series is a passive two way system. The mid/high frequency band is reproduced by the CXH64 with 8Ω nominal impedance. The low frequency is reproduced by the CXL151, also with 8Ω nominal impedance. See the table below for recommended power amplifier power:

<b>CX Series standard configuration (single stack)</b>	
<b>Element</b>	<b>Recommended Amplifier Power (1 channel)<sup>1</sup></b>
1 x CXH64 / 2 x CXH64	170 W @ 8 Ω / 340 W @ 4 Ω
2 x CXL151	2400 W @ 4 Ω

## CABLE SELECTING

Selecting a cable consists of calculating the correct wire section (diameter) according to the load impedance and the required cable length. A small wire section will increase its serial resistance, which will translate in power-loss and response variations (damping factor).

The following table indicates, for 3 standard sections, the maximum cable length to achieve a serial resistance of 4% of the load impedance (damping factor = 25):

<b>Cable section</b>	<b>Maximum Length related to load impedance</b>	
	<b>8 Ω</b>	<b>4Ω</b>
1.5 mm <sup>2</sup>	12 m [40 ft]	6 m [20 ft]
2.5 mm <sup>2</sup>	20 m [64 ft]	10 m [32 ft]
4 mm <sup>2</sup>	32 m [104 ft]	16 m [52 ft]

<sup>1</sup> - Power ratings are indicated according to the specific load conditions described.

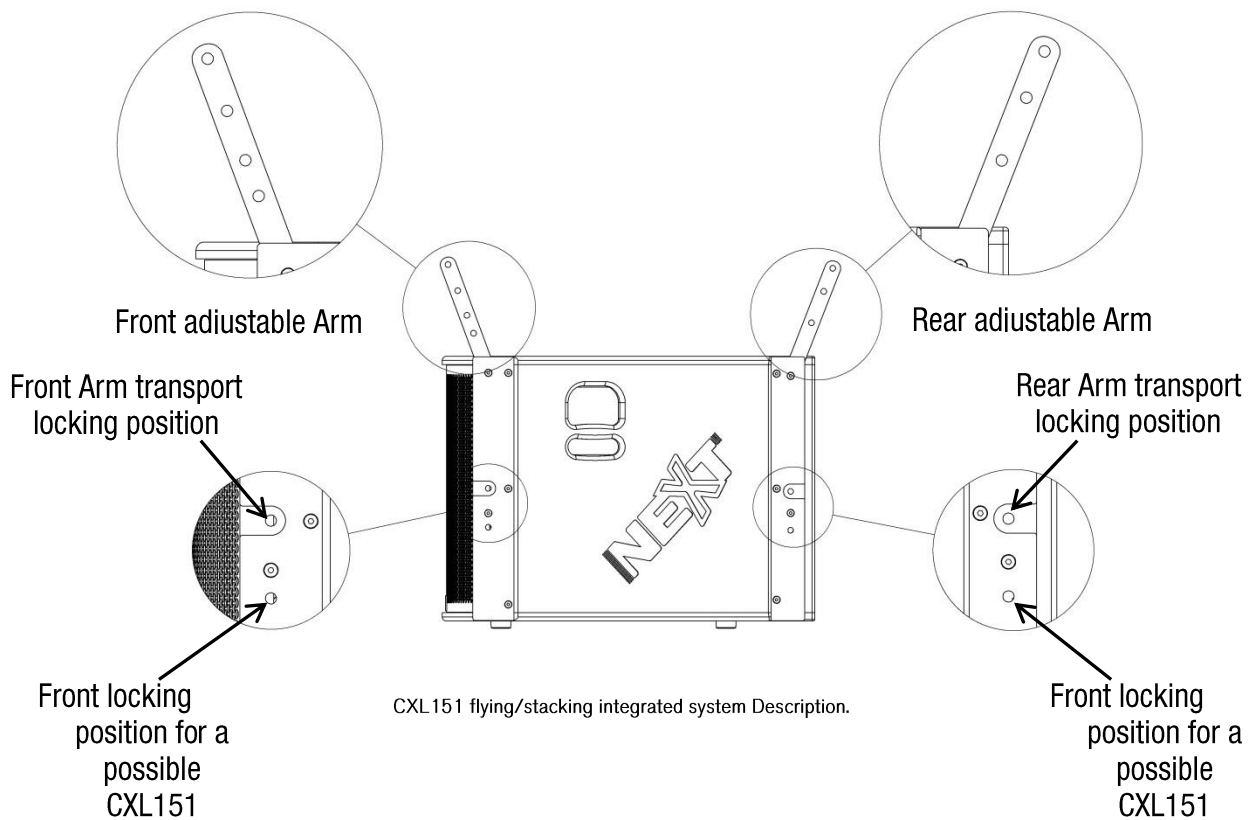
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## CX SERIES SYSTEM DEPLOYMENT

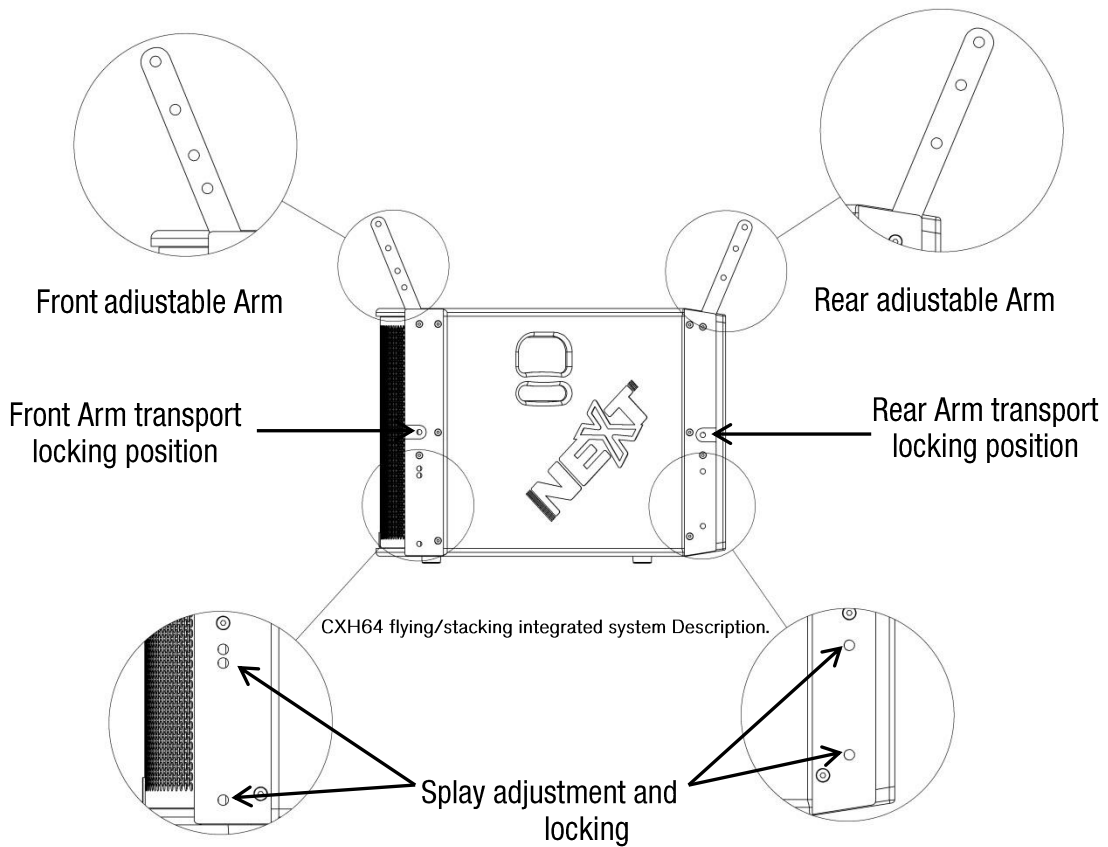
Now that we have at least a basic knowledge about the purpose and wiring of our systems' elements, it's time we learn to combine them to achieve the best performance possible, in our desired application. Let's start with learning about how the individual rigging of the CXL151 and CXH64 works. Despite having the same shape, the flying hardware is different from one element to the other.

The CXL151 is a bass unit. There's not much we can do to control its' dispersion pattern. It tends to be omnidirectional as it reproduces low frequency energy, so there was no need for introducing splay adjustment. This being said, we can predict only one assembly position, a fixed aligned position between CXL151 enclosures. The CXH64 enclosure has splay adjustment in 5° steps, both at the front and back of the enclosure. It achieves this through a combination of holes both on the adjustable arms and rigging structure.

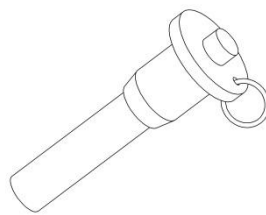


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In order to be able to lock the CX Series elements in place, whether you are stacking or flying the system, you'll need to use the NEXT VP60052 quick release locking pins.



VP60052



**Never use any lock pins but the ones supplied by NEXT-Proaudio. These pins are built to withstand the system's weight with a good safety factor. They are also built with very specific dimensions.**

# NEXT CX Series User Manual

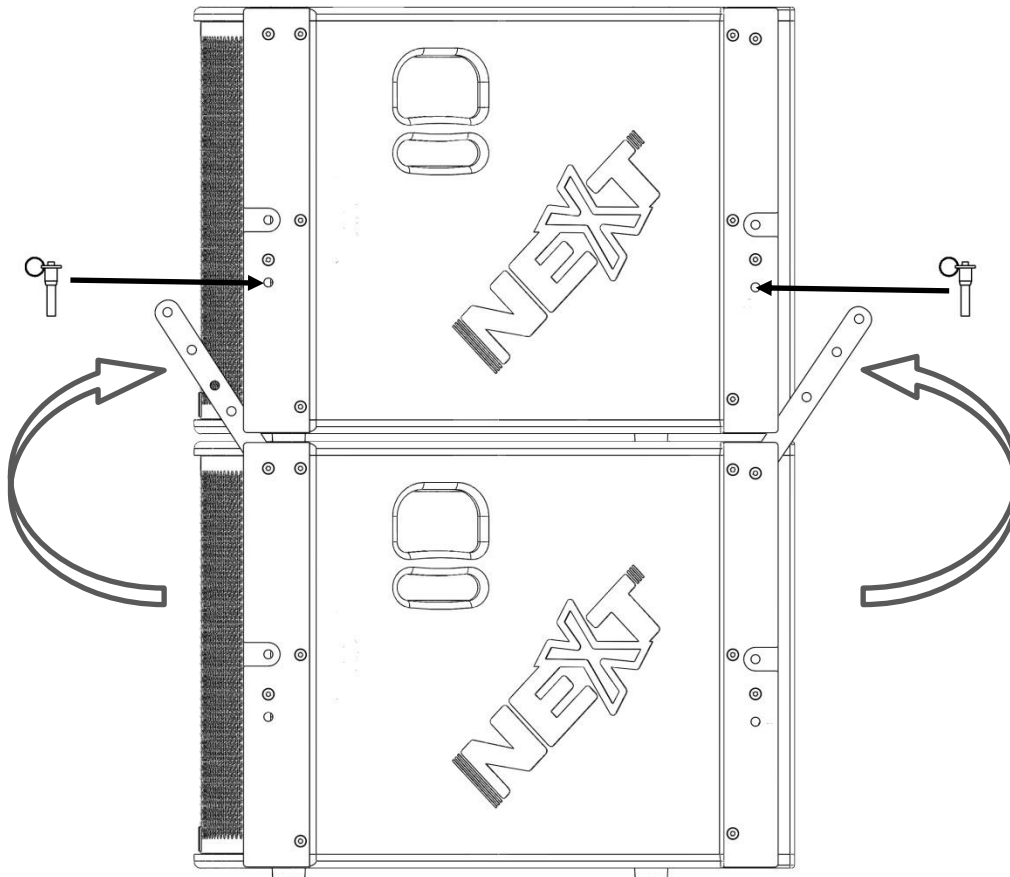
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Now we're ready to assemble a typical CX Series system. One thing you have to take into consideration is that either stacking or flying the system, it is not advised to stack more than 4 elements. The dispersion pattern and technology used on the CX Series don't make viable the assembly of many system elements in one vertical stack, especially with CXH64 elements where the interaction of the many horns with such wide vertical dispersion would create undesirable interferences.

The process used to assemble a ground stack will be the same to assemble a flown stack, and is really easy.

**Note:** For ease of communication, we'll consider frontward tilt as a positive angle and backward tilt as a negative angle. A two people team is advised to perform the stack. Follow steps 1 and 2 for an aligned stack, 1 and 3 for a frontward tilted stack and steps 1 and 4 for a backward tilted stack.

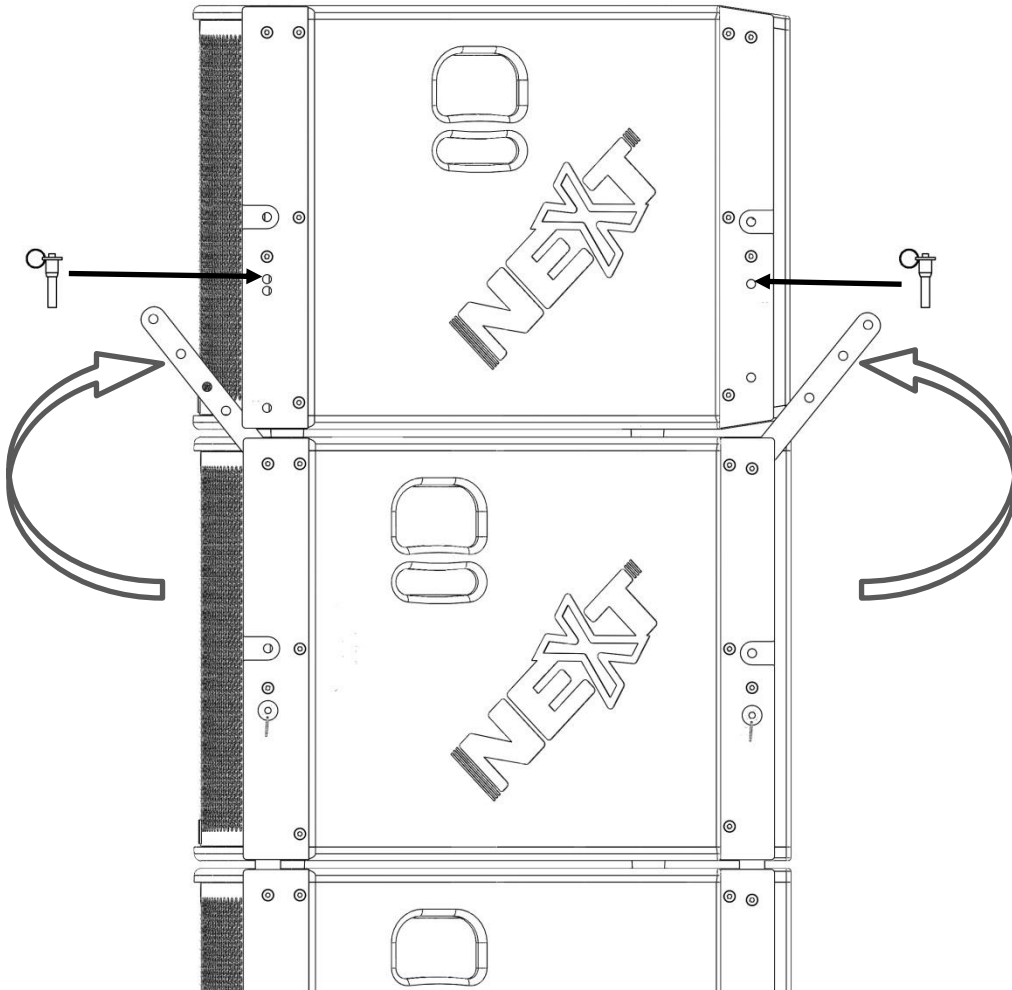
- 1.- Place a CXL151 element on top of another CXL151. Pull the arms out of the bottom CXL151 and rotate them up inside the top one's rigging. Adjust the enclosure's position if necessary and insert the quick release locking pins. **Verify that the locking pins are secure.**



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2. - Now place a CXH64 element on top of the stack. For this enclosure we have a hand full of options we can choose. We can tilt frontwards, backwards or keep it aligned. Each of these options is suited for different kinds of situations. Let's start with the aligned position. Rotate the arms until they align with the uppermost holes of the CXH64 rigging frame.

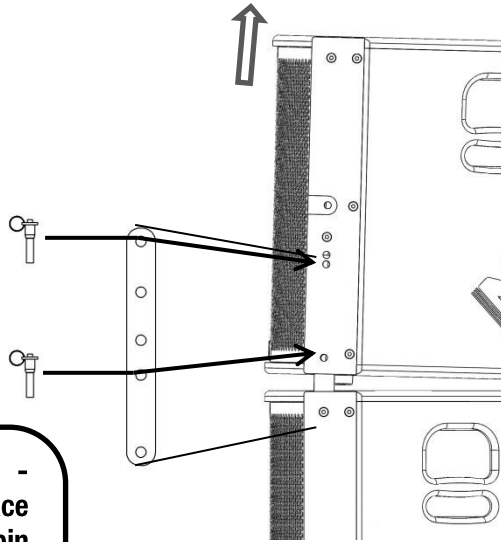


This may well be your most used configuration. It's best suited for situations where the CXH64 element will be nearly levelled with the audience. This will also be the starting point for the next two configurations.

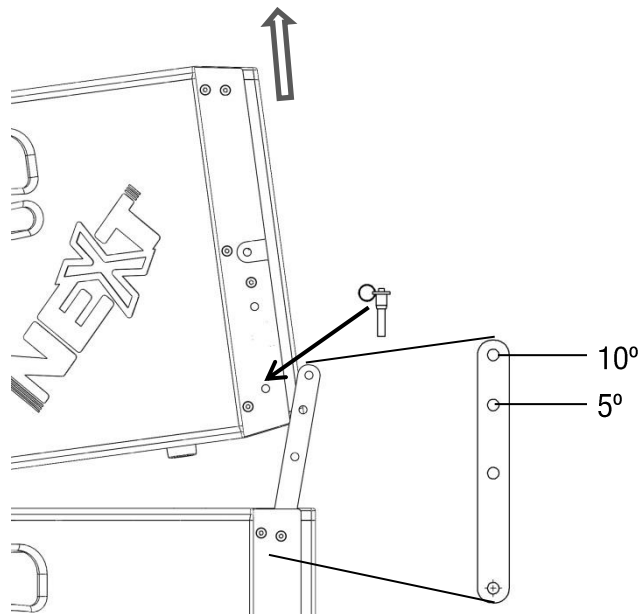
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3. - As the distance between the locking point that will serve as an axle and the outermost point of the curvature of the enclosure front is somewhat big, the CXH64 enclosure has to move upwards on the front for it to be able to curve without the elements hitting one another. This time we'll insert two quick release pins on the front arm. The second pin will lock the CXH64 element tight in place relative to the CXL151 arm, so they rotate as a whole. Then, rotate the enclosure frontward until you reach the desired angle and lock with a quick release pin.



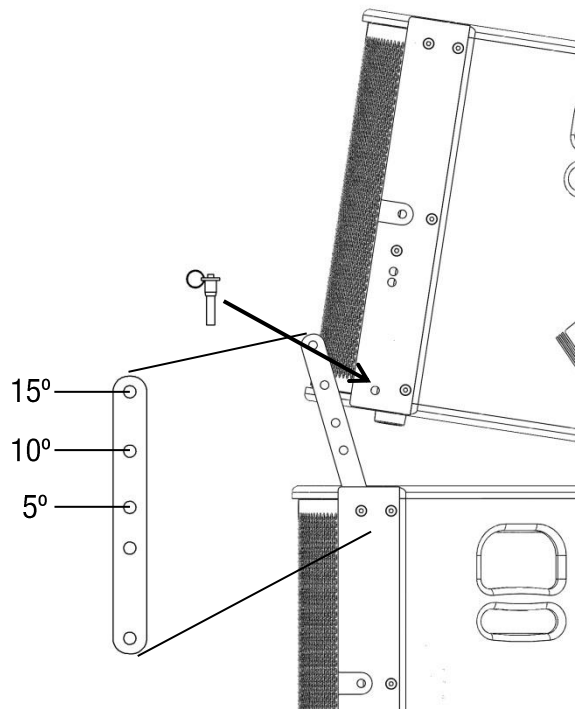
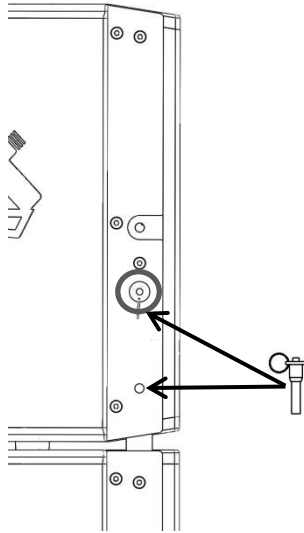
 A piece of advice - always lock in place the uppermost pin first. If you lock the second pin first, and the CXH64 slides out of control, you might get hurt.



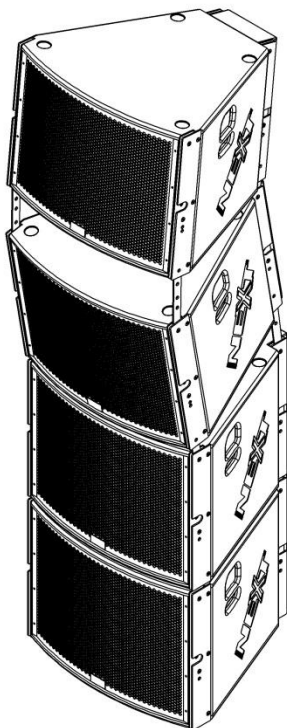
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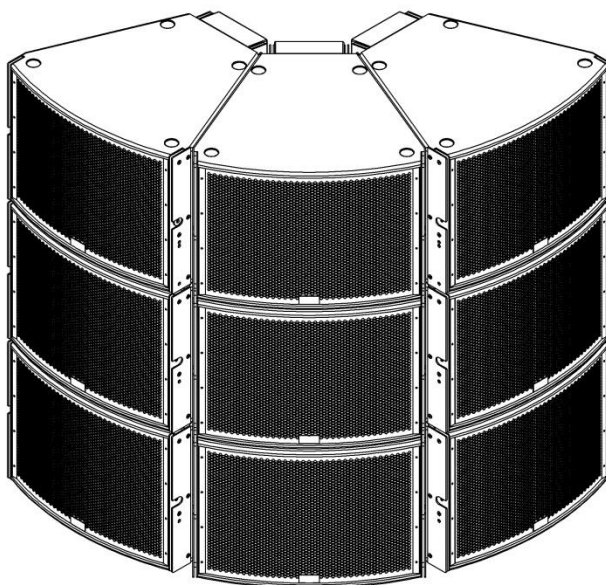
4. - In a backward tilt, the enclosure doesn't need to be lifted, because the enclosure already has an angled profile that eliminates the need. So, from the 0° position you only need to insert the second quick release pin to lock the enclosure tight to the arm, and then rotate the CXH64 up to the desired angle position, and lock with a quick release pin. **Verify that the pin is secure.**



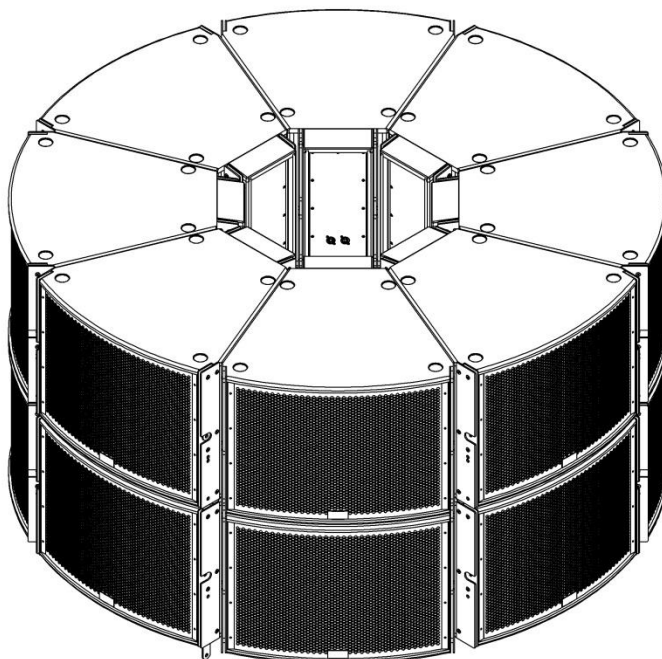
**CONFIGURATION EXAMPLES**



Vertical stack using 2 CXH64 elements



Horizontal traditional array



360° Horizontal array



## TROUBLESHOOTING

Simple troubleshooting does not require sophisticated measurement equipment and can be easily undertaken by users. The technique should be to segment the system in order to identify the faulty system component: signal source, controller, amplifier, loudspeaker or cable? Most installations are multi-channel. It is often the case that one channel works and others do not. Trying different combinations of system elements can usually help to isolate and locate the fault.

Some cabinet faults can be quite easily identified and corrected by the user. A simple sweep with a sine wave generator can be very helpful though it **MUST** be made at a fairly low level to prevent damage to the speakers. A sine wave sweep can help find:

- Vibrations due to loose screws.
- Air-leak noises: check that no screws are missing, particularly where the accessories attach to the cabinet.
- Vibrations due to a front grille badly positioned on the quick release fixings.
- Foreign object that has fallen into the cabinet after repair or through the ports.
- Internal connection wires or absorbing material touching the loudspeaker diaphragm: check by removing the bass loudspeaker.
- Loudspeaker not connected or phase reversed following a previous inspection, test or repair.

## WARRANTY

NEXT products are warranted, by NEXT-proaudio, against **manufacturing defects** in materials or craftsmanship over a period of 5 years for the loudspeakers, and 2 years for the other components, counting from the date of original purchase. The original receipt of purchase is mandatory for warranty validation purposes, and the product must have been bought from a NEXT-proaudio authorized dealer. During the warranty period NEXT-proaudio will, at its own discretion, either repair or replace a product which prove to be defective provided that the product is returned in its original packaging, shipping prepaid, to an authorized NEXT-proaudio service agent or distributor.

NEXT-proaudio cannot be held responsible for defects caused by unauthorized modifications, improper use, negligence, exposure to inclement weather conditions, act of God or accident, or any use of this product that is not in accordance with the instructions provided by this manual and/or NEXT-proaudio. NEXT-proaudio is not liable for consequential damages.

This warranty is exclusive and no other warranty is expressed or implied. This warranty does not affect your statutory rights.

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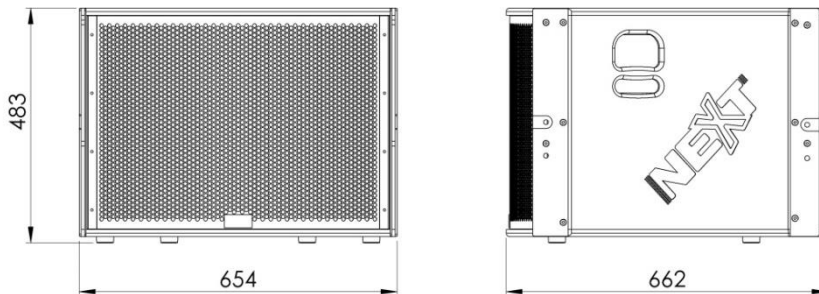
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## TECHNICAL SPECIFICATIONS

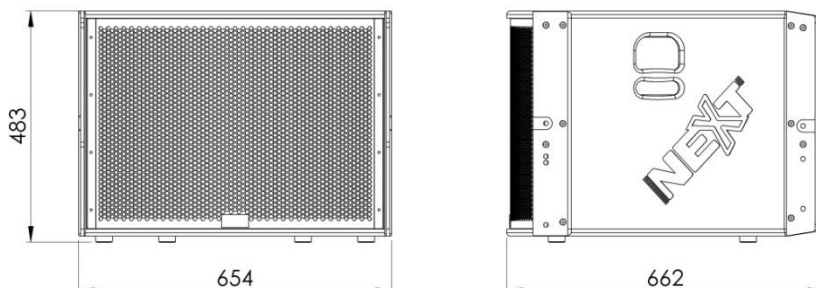
NEXT CX SERIES TECHNICAL SPECIFICATIONS		
Model	CXL151	CXH64
Design	Passive Bass Reflex	Passive 2-way point source Mid/High
Frequency Response (+/-3dB)	48 – 1000 Hz	400 – 19000 Hz
Dispersion	-	V 40 x H 60
Integrated Rigging	Fixed 0°	5° steps from -15 to +10°
Components	1 x 15" Bass Driver	1 Coaxial 5"/1" driver
Sensitivity (1w@1m half-space)	103 dB	114 dB
Max. SPL (calculated)	133 dB	136 dB
Recommended Active Crossover	LP 400 Hz 24dB/Oct.	HP 400 Hz 24dB/Oct.
Continuous Power Handling/Impedance	170W/8Ω	1200W/8Ω
Connectors	2 x NL4	
Enclosure Material	15mm 13-ply birch plywood	
Finish	Semi-matte textured paint (Black)	
Grille	Black powder coated perforated grille	
Dimension W x H x D (mm)	654 x 483 x 654 mm	654 x 483 x 654 mm
Net Weight/Gross Weight	41 Kg	42 Kg

## DIMENSIONS

### CXL151



### CXH64



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## CX SERIES SPARE PARTS

Reference	Description	CXL151	CXH64
NC01700	NEXT CXH/L Steel Grille (Black)	X	X
NC04700	NEXT CXH Passive Crossover		X
NCS05700	NEXT CXH Patch		X
NCS05701	NEXT CXL Patch	X	
NCS10700	NEXT CX Front-Left Rigging Kit	X	X
NCS20700	NEXT CX Rear-Left Rigging Kit	X	X
NCS30700	NEXT CX Front-Right Rigging Kit	X	X
NCS40700	NEXT CX Rear-Left Rigging Kit	X	X
BB05066	NEXT CXL151 15" Driver	X	
BB01260	NEXT CXH64 Coaxial Driver		X

## CONTACTS

In case of any doubts or any information just:

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