



LR14

ultra-compact line-array

user's manual



evolutionary audio solutions™

Table of contents

1	Introduction	3
2	Important safety instructions and precautions	4
3	Installation	5
4	Rigging components	6
5	Array configurations	8
6	Service and support	20
7	CE declaration of conformity	22



1. Introduction

Dear customer,

Congratulations on your purchase of an Alcons Audio LR14 line array loudspeaker and thank you for your confidence in Alcons products. We are very honoured to welcome you to the growing family of Alcons ambassadors!

For your safety, please read the Important safety instructions and the precautions section before rigging a loudspeaker array.

General features

The LR14 has the following features:

A unique seamless arrayability up to/beyond 20kHz.

a-Symmetrical 120°/90° dispersion in the non-coupling plane.

High-performance, easy handling, ultra-compact line-array system for demanding applications.

Non-compressed 1:1 HiFi-quality sound reproduction.

Intuitive predictable linear response behavior and identical tonal balance at any SPL.

4" pro-ribbon HF section with exceptional intelligibility and "throw".

Maximum dynamic headroom reserve with up to 90% less distortion.

Fully coherent pattern control in horizontal and vertical plane.

SIS™ pre-wired for very high system damping and further reduced distortion.

All Neodymium drivers for excellent performance-to-weight ratio.

LR14 rigging features

The trapezoidal cabinet is fitted with integrated mounting hardware, enabling angle-setting on the cabinets, without lifting the array, resulting in safer and faster set-up with minimal handling. The LR14 can be ordered in a left or right configuration, to enable a symmetrical system. The rigging system has a working load limit of 24x LR18 or 10x LR14B cabinets under 10:1 safety.

Manual

This manual is written in a compact and easy readable way. You can contact Alcons Audio for more in-depth information on different items or situations



2. Important safety instructions and precautions

Read this manual

1. Follow all safety instructions as well as the warning messages.
2. Never incorporate equipment or accessories not approved by Alcons Audio.
3. Read all the related product information before using the system.
4. Work with qualified personnel for rigging the system.
5. Installation should only be carried out by qualified personnel who are familiar with the rigging techniques and safety recommendations stated in this manual.
6. Ensure health and safety during installation and setup.
7. All persons must wear protective headgear and footwear at all times. Under no circumstances personnel is allowed to climb into a loudspeaker assembly.
8. Respect the Working Load Limit (WLL) of third party equipment.
9. Alcons Audio is not responsible for any rigging equipment and accessories provided by third party manufacturers. Verify that the Working Load Limit (WLL) of the suspension points, chain hoists and all additional hardware rigging accessories is respected.
10. Respect the maximum configurations and the recommended safety level.
11. For safety issue, respect the maximum configurations outlined in this manual. To check the conformity of any configuration in regards with the safety level recommended by Alcons Audio.
12. Be cautious when flying a loudspeaker array. Always verify that no one is standing underneath the loudspeaker array when it is being raised or lowered. As the array is being raised, check each individual element to make sure that it is securely fastened to the adjacent element.
13. Never leave the array unattended during the installation process. As a general rule Alcons Audio recommends the use of safety slings at all times.
14. Be cautious when ground-stacking a loudspeaker array.
15. Do not stack the loudspeaker array on unstable ground or surface. If the array is stacked on a structure, platform, or stage, always check that the latter can support the total weight of the array. As a general rule, Alcons Audio recommends the use of safety straps at all times.
16. Take into account the wind effects on dynamic load.
17. When a loudspeaker assembly is deployed in an open air environment, wind can produce dynamic stress to the rigging components and suspension points. If the wind force exceeds 6 Beaufort scale, lower down and/or secure the loudspeaker array.



The exclamation point within a triangle is intended to alert the user to the presence of important operating instructions in the literature accompanying the product.

3. Installation

Unpacking

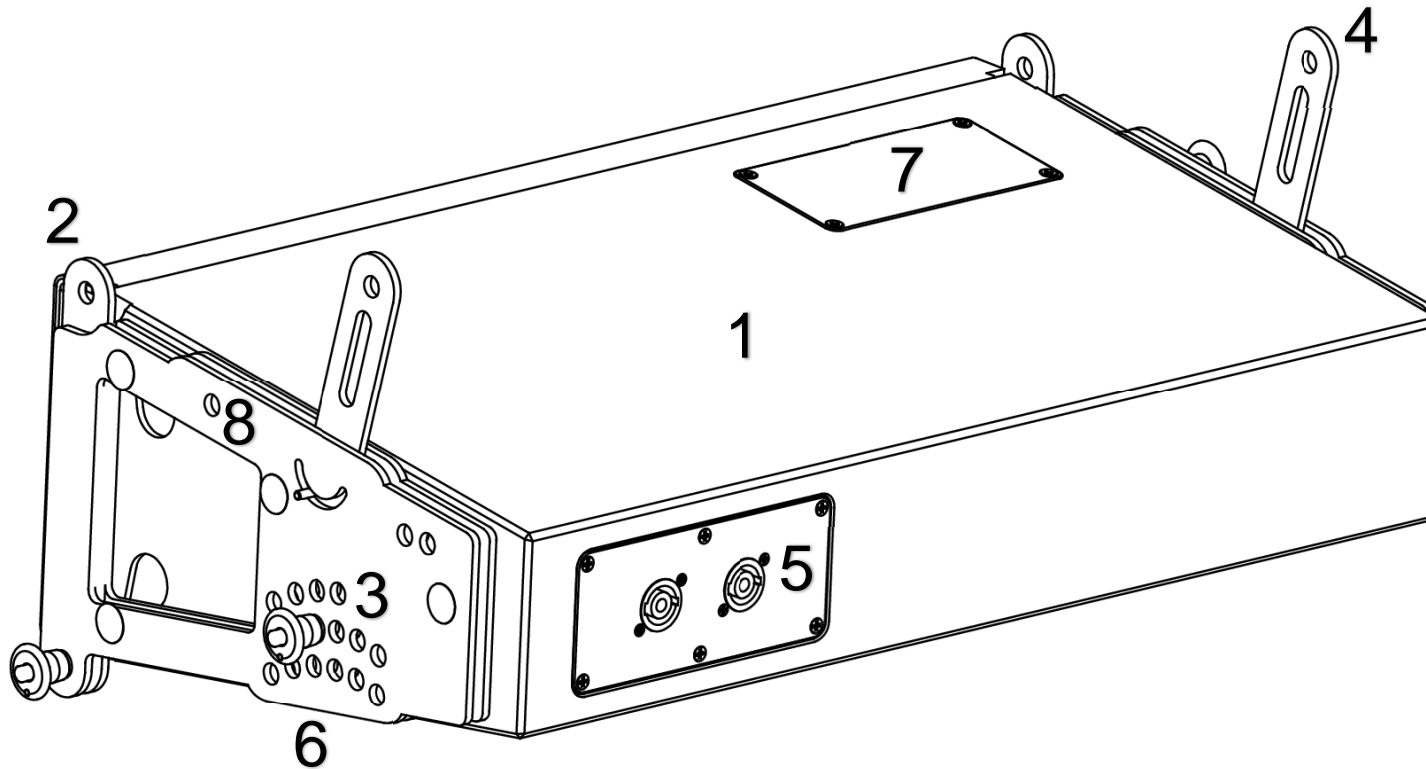
Carefully open the shipping carton and inspect all the parts. Every Alcons product is thoroughly tested and inspected before leaving the factory and should arrive in perfect condition. If you find any damage, notify the shipping company immediately. Only you, the consignee, may initiate a claim for shipping damage. Be sure to save all packing materials for the carrier's inspection.



4. Rigging components

LR14 loudspeaker

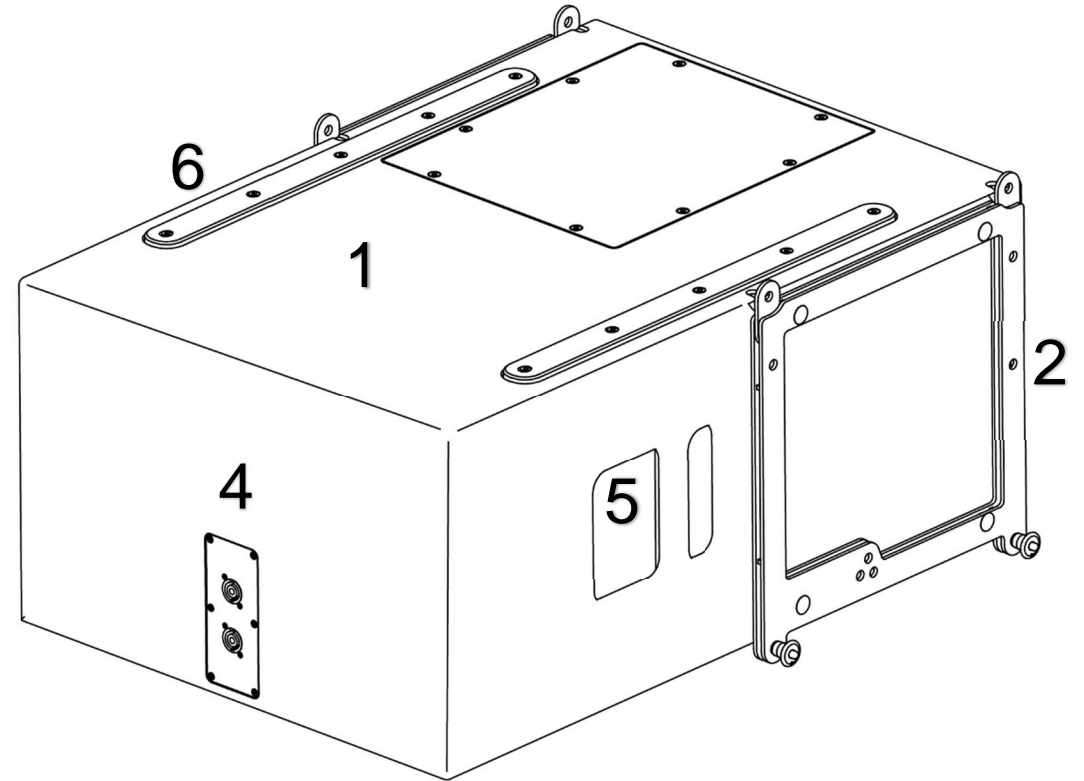
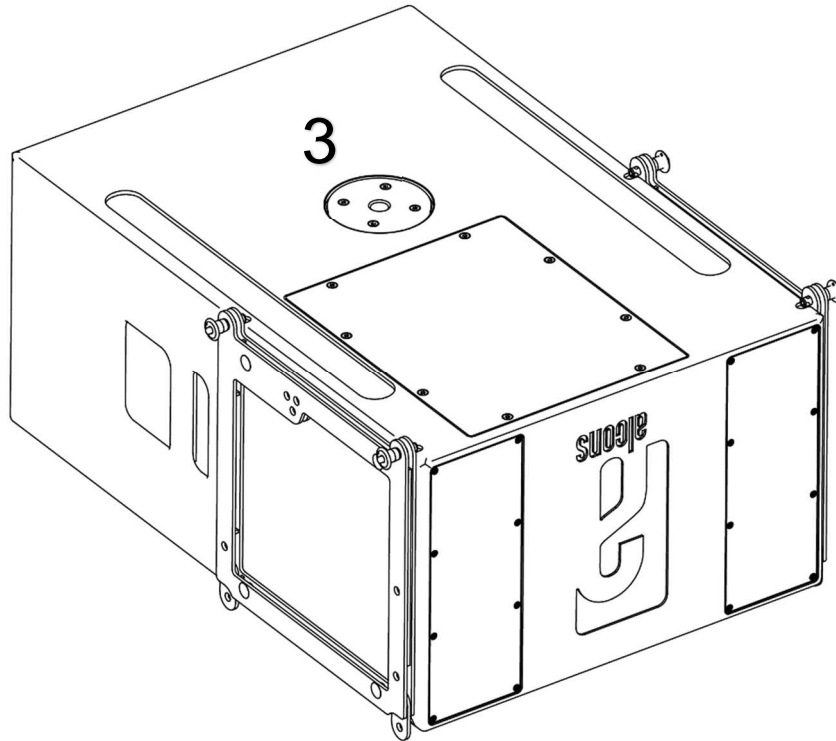
- | | |
|-----------------------|---|
| 1) LR14 cabinet | LR14 cabinet |
| 2) Front coupler | Front couplers, lockable with quick release pin |
| 3) Pin angle setting | Pin determines the angle between the cabinets |
| 4) Angle arm | Angle setting connection arm, use slot for flying and hole for stacking |
| 5) Signal input/ link | Input/ link for the audio signal |
| 6) Angle frame | Bracket holding features for the angle setting and coupling |
| 7) HF indication | HF 120°/ 90° wave-guide dispersion and "ribbon right/ ribbon left" indication |
| 8) Parking holes | 2 holes each side for parking a front coupler quick release pin |



4. Rigging components

LR14B loudspeaker

- | | |
|-----------------------|---|
| 1) LR14B cabinet | LR14B cabinet (shown) |
| 2) Coupler frame | Couplers, lockable with quick release pin |
| 3) Connector plate | Connection for M20 distance rod |
| 4) Signal input/ link | Input/ link for the audio signal |
| 5) Bar handles | Handles in the cabinet ensure easy handling |
| 6) Wear strips | Cabinet ground support when stacking |



4. Rigging components

GRD14

The GRD14 is the flying and stacking bumper of the LR14 line-array modules and the LR14B line-array bass modules. The grid can be suspended from the central “single pick-point” bar (ø 12mm / 0.5-in. (1T)), the optional STGD14 stepless tilt adjuster, as well as multiple mounting points (4) on the top of the grid (ø 26mm / 1-in. (6,5T)). It comes with all quick release pins required (attached to the frame).

The GRD14 is certified for a safety-rating of 10:1, for twenty-four (24) cabinets LR14, or ten (10) cabinets LR14B.



PNCLMP

The PNCLMP can be used to suspend a LR14 array from a single point. The PNCLMP is attached with the Quick Release pin to a GRD14 pickpoint. The load can be attached to an overhead Truss or bar with a tube diameter of 51mm (2”). It can be horizontally adjusted and fixed. The max. allowed WLL is 250kg.

4. Rigging components

BRK3LR14

The BRK3LR14 is a swivel yoke for a mini-array of three LR14 line-array modules. The yoke is connected to the middle cabinet with two connecting plates on the side of the cabinet, secured with two quick-release pins each. Up to three LR14 cabinets in stand-configuration and up to four LR14 cabinets in flown configuration can be mounted, while maintaining full line-array functionality. The bracket can be fitted with an optional truss clamp, TV-spigot or STMT stand-mount adapter, with M10 (2) or M12 (1) bolt/nut connection. The BRK3LR14 is certified for a safety-rating of 10:1, for four (4) cabinets LR14.



STGD14

The STGD14 enables a stepless adjustment of the absolute tilt of the GRD14 LR14 array bumper. It is to be mounted on the GRD14 and caters for a “one-pick-point” flying with an easy adjusting of the array tilt angle, by using a metric size 22 wrench. The modular set-up enables a “delete-option” for fixed installation applications. The STGD14 is certified for a safety-rating of 10:1, for twenty-four (24) cabinets LR14, or ten (10) cabinets LR14B.

CNVB14

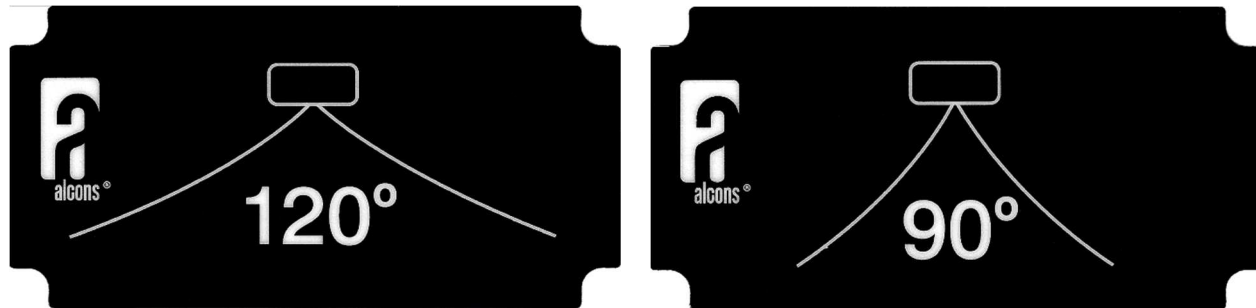
The CNVB14 conversion bracket is a transition frame to suspend a small LR14 array under a LR16 and/or LR16B array for array and/or down fill applications. It enables a maximum tilt angle of 12.5° (10° between CNVB14 and LR16 + 2.5° “pre-tilt” between LR14 and CNVB14). The CNVB14 is certified for a safety-rating of 10:1, for eleven (11) cabinets LR14.



5. Array configurations

Cabinet connections

The LR14 has 15 user selectable fly and stack angles, which can be determined by the Alcons Ribbon Calculator™ simulation program. The LR14 rigging system has a left/ right set up. This ensures a “ribbon right” or “ribbon left” mounting orientation on the GRD14. The graphical indications on the top and bottom of the LR7 cabinet also show the mounted HF wave-guide dispersion type.



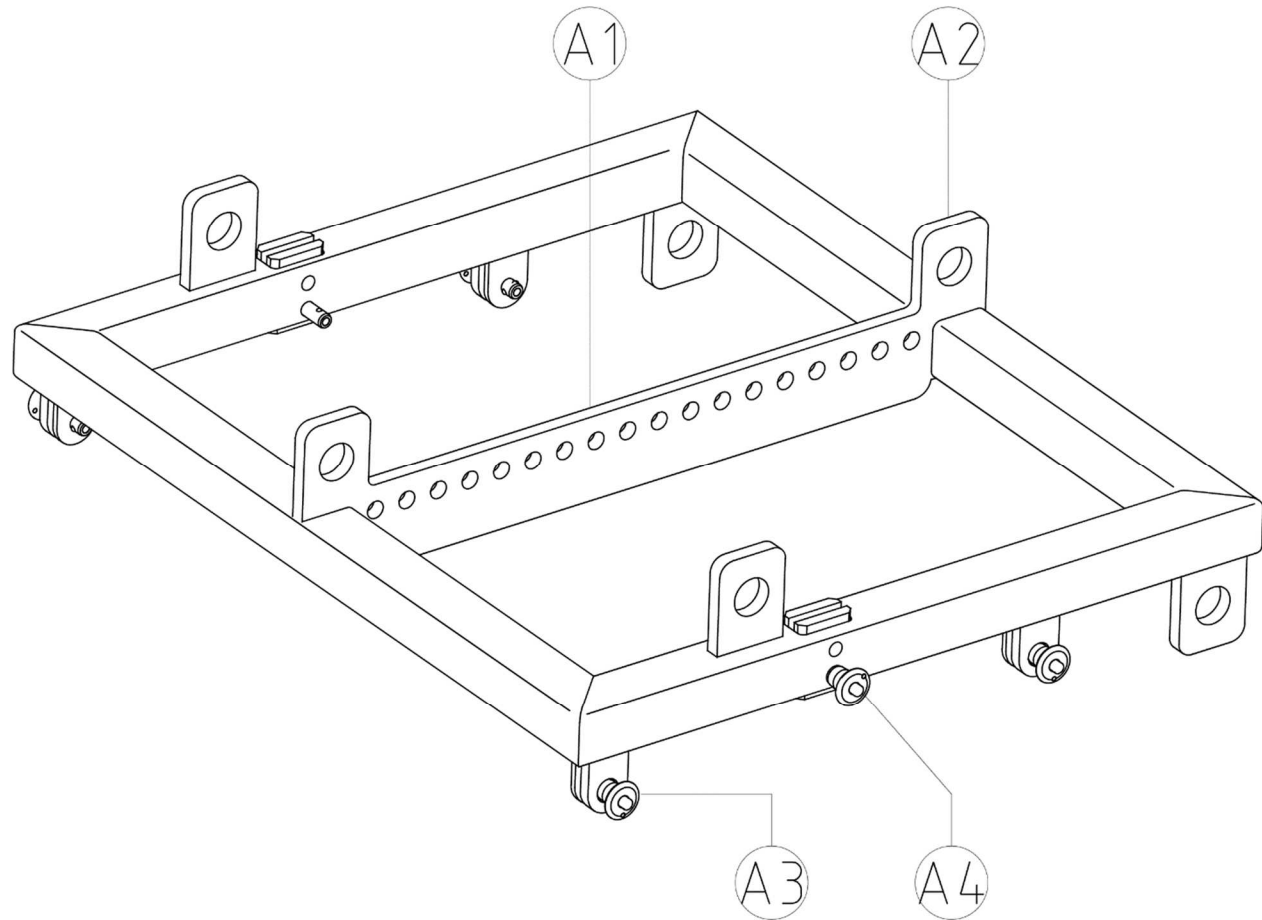
The angle pinning lay-out is pictured right. The angle indication is stated for fly and stack mode. The 0° and 2,5° holes are used to connect with the CNVB14 adapter frame



5. Array configurations

GRD14 options

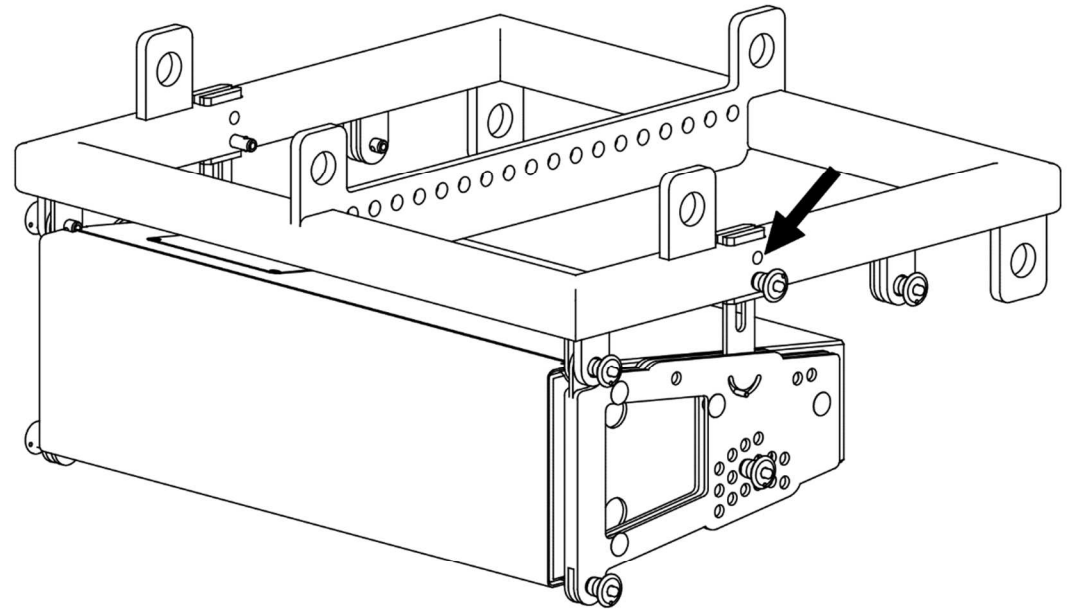
The GRD14 has multiple mounting options. The picture on the right shows the pick-points for flying an array. Use 1 or 2 pick points from the A1 linear pattern. 1x A1 pick point carries 24x LR14 or 10x LR14B cabinets. Or LR14 and LR14B combined with a max. weight of 360kg. It is advised to use 2 pick points when assembling large array lengths. Thus the array can be easier aligned and gives a more stable hang. A2 indicates the mounting position of heavy duty 6,5T shackles. A3 marks the connection points between GRD14 and LR14/ LR14B. A4 holds the ling connection pin to the LR14 cabinet (both sides).



5. Array configurations

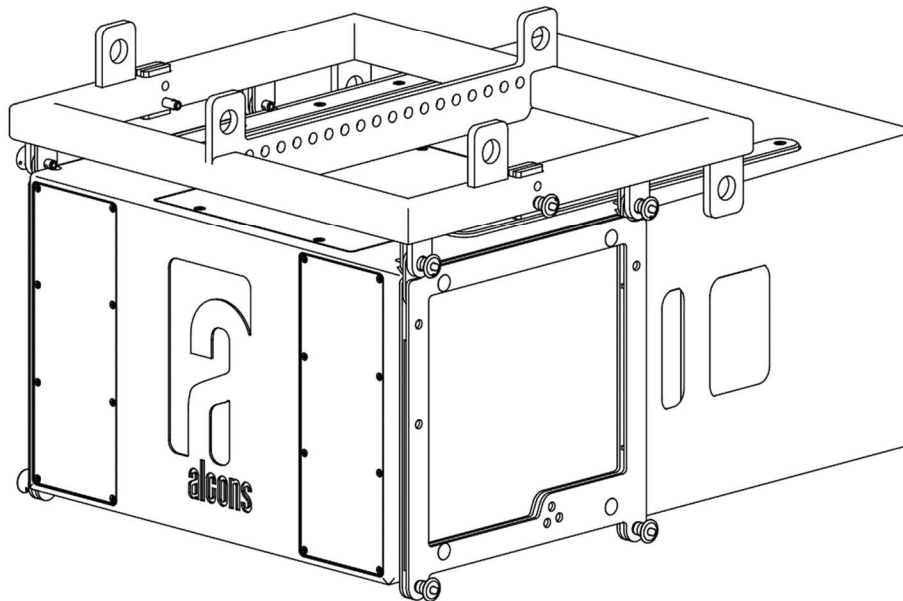
GRD14 with LR14 options

The picture on the right shows a LR14 “ribbon left” connected to GRD18, in fly mode orientation
In this situation the long pin is lined up with the slot in the angle arm of the LR14, using the bottom hole. When stacking, the top hole is used (arrow) and lined up with the hole in the LR14 angle arm



GRD14 with LR14B options

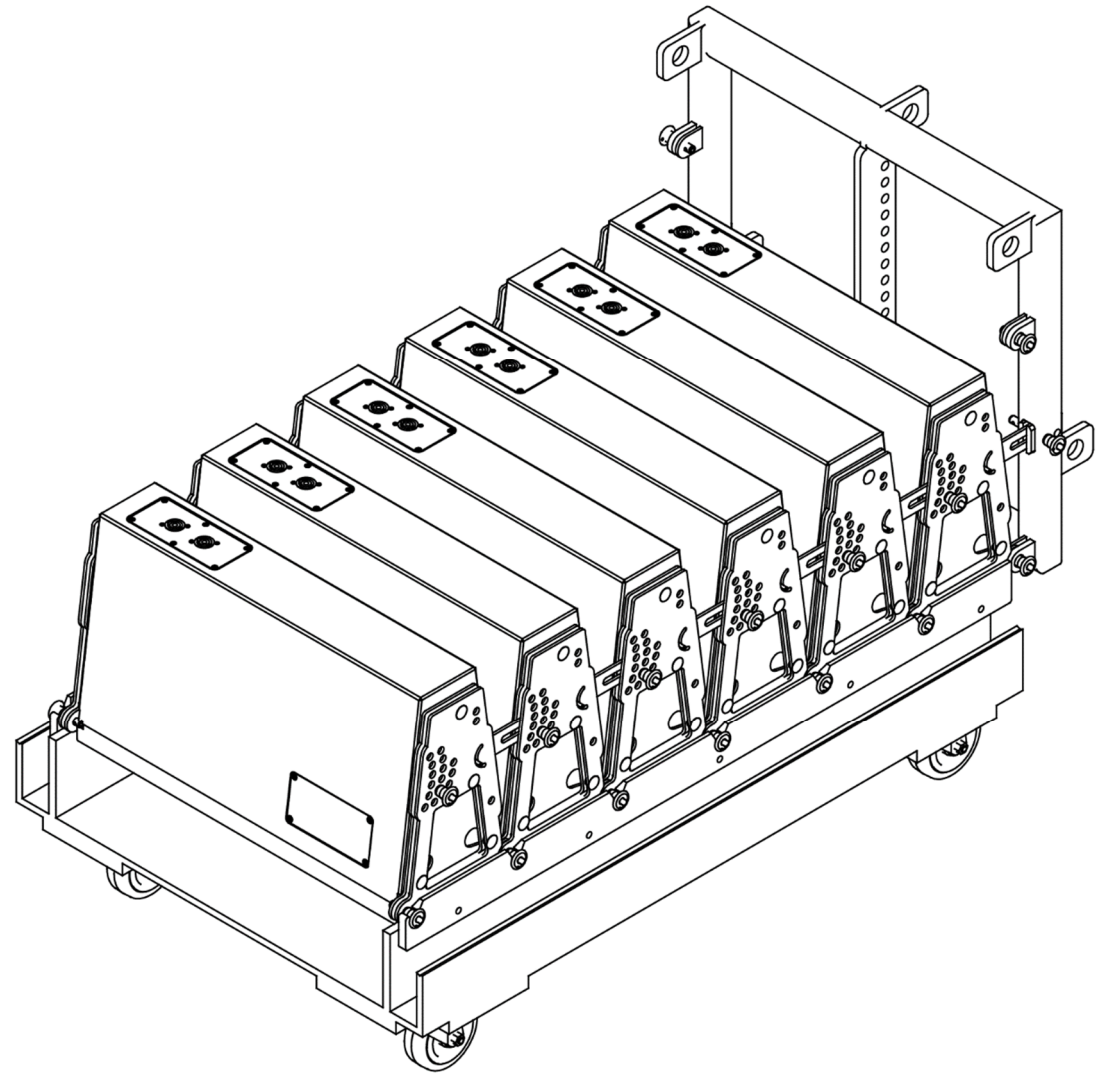
The picture below shows the connection GRD14 – LR14B using the front and rear couplers on GRD14



5. Array configurations

LR14 transport and caterpillar array assembling

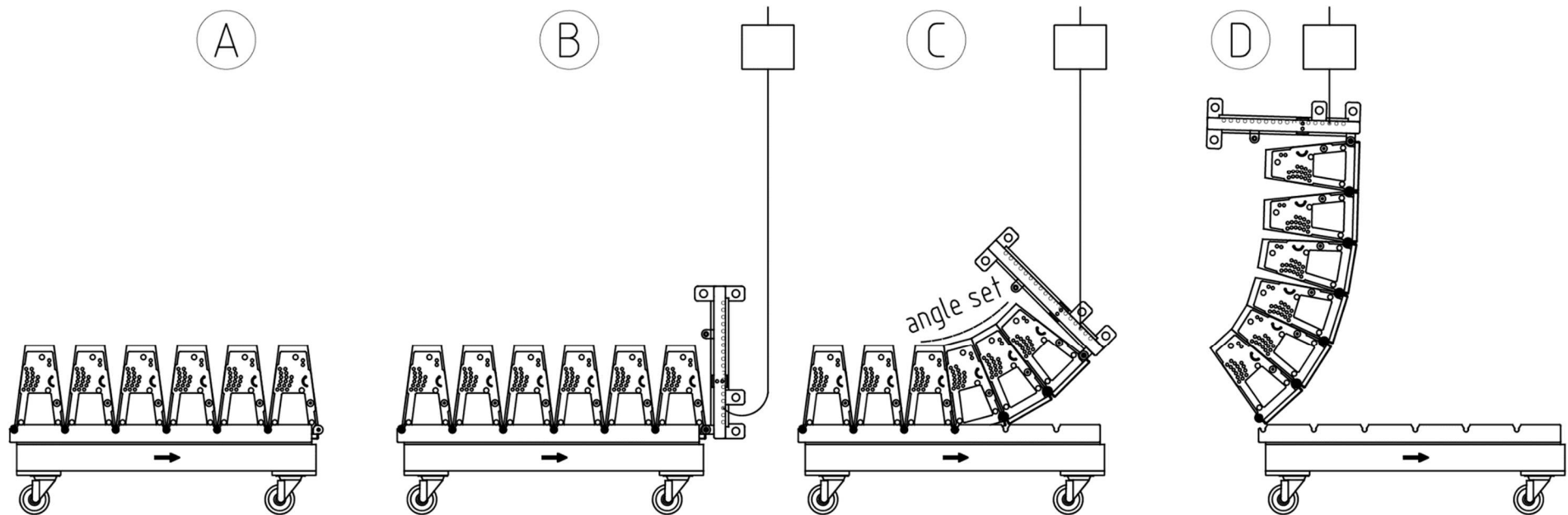
Array assembling with LR14/ LR14B is done using the so-called Caterpillar method. In this case 3 or 6 LR14's are facing downwards on transportable flight case dollies FC14/3 or FC14. LR14B can be transported with FC2LR14B and incorporated in the array assembling process.



5. Array configurations

Caterpillar style array assembling and hoisting

The numbers in the text below, correspond with the LR14 overview pictured earlier.



Shown above depicts array assembling, caterpillar style. Shown with 1 hoist, 1x GRD14 and 6x LR14 cabinets, on 1x FC14 flight case dolly. Start with attaching the GRD14 to the first cabinet on the FC14 wheel dolly (B). Make sure that any following dolly is lined up correctly with the arrow marking pointing towards GRD14 (A). Attach the hoist to the correct pick-point on the GRD14. Connect the necessary cabling to the signal input/ link (5) connectors. Use a sling from the grid for a tension free cable hang. Start hoisting until the first cabinets compress (C). Pull out the angle setting pins (3) out and make the correct angles using the angle arm (4). These angles are determined by the Alcons Ribbon Calculator™ simulation program. Continue doing this until all angles, on both sides of the cabinets, are set. Raise the entire array from the last wheel dolly (D). Be aware that wheel dollies can skate away from the assembling area as the last module detaches.

5. Array configurations



Use slow speed or speed-controllable chain hoists. Avoid any form of excessive dynamic loading to the array assembly

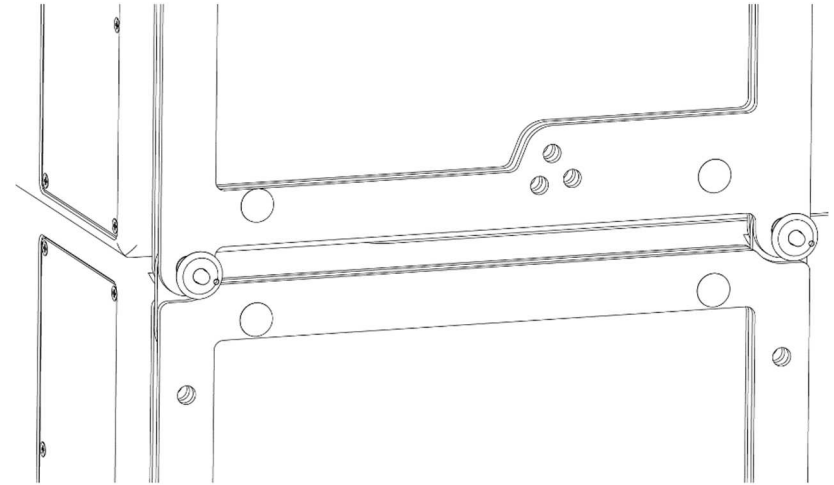
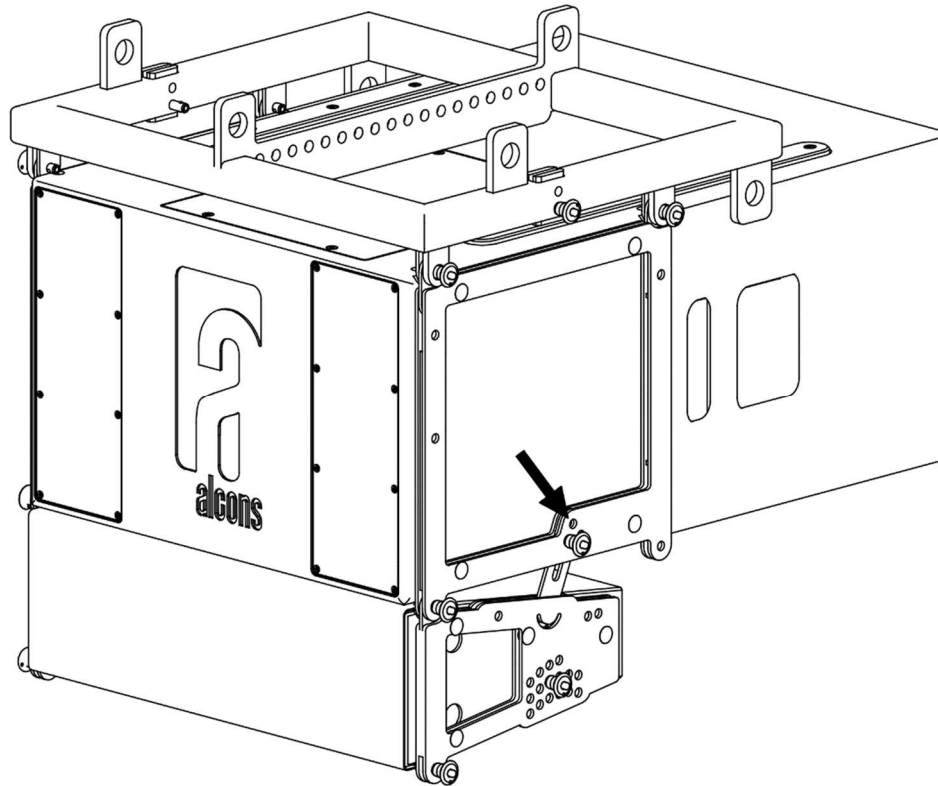
Landing the array caterpillar style

Ensure that the wheel dollies are lined up under the array. Land the bottom pins of the front couplers into the round recesses of the dolly frame. When the bottom cabinets compress, take out the angle setting pins (3). Now this array section can flatten out onto the wheel dollies. Continue doing this with all cabinets. When the complete array is stretched out horizontally, take off all cabling and pull out the front coupling pins between any attached wheel dolly. Place these pins into the parking hole (8). Then return all angle arms (4) in their parking positions. Now the (featured in this situation) FC14 case can be closed up and transported.

5. Array configurations

LR14B connection

LR14B can be added as a bass extension to a LR14 array. This module is flown directly under GRD14. When turned upside down with the wear strips on the ground, a LR14 array can be stacked on top. (max 9pcs)
The connection between 2 LR14B cabinets is done with the front and rear couplers.



LR14B/ LR14 connection

The LR14 cabinet can be mounted to the LR14B cabinet. Connect the angle arms of the LR14 (4) to the side bracket of the LR14B. Use the top hole, when stacking, see arrow. The picture on the left shows a flown situation.

5. Array configurations

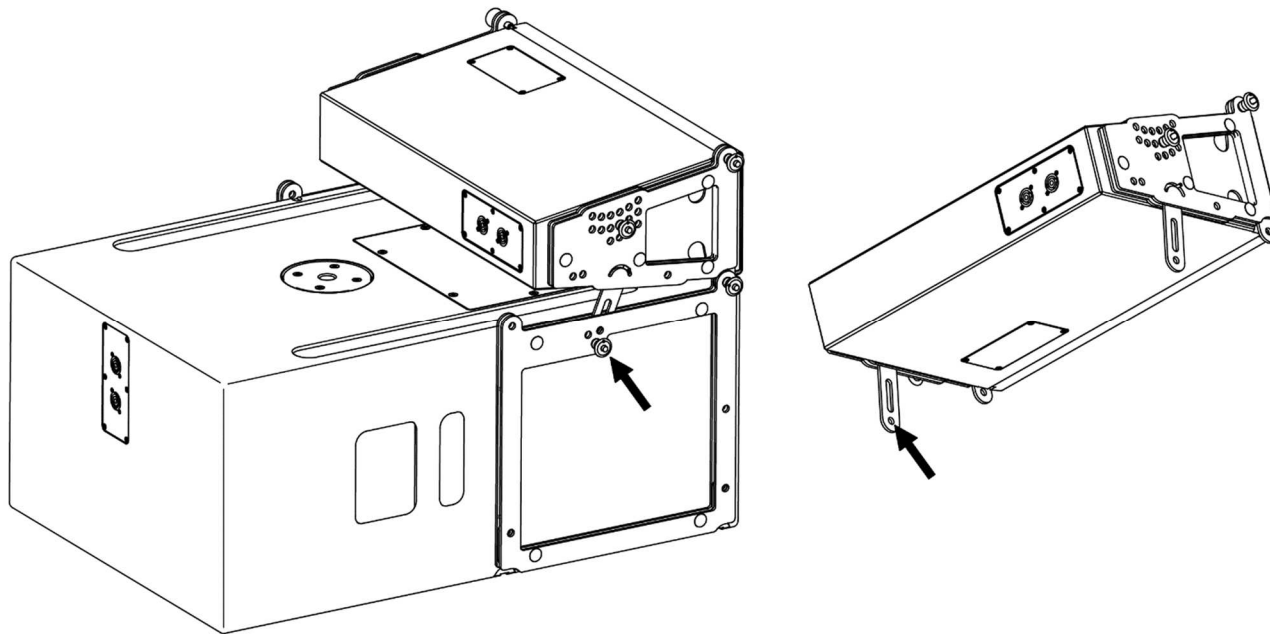
Ground stacking

This description features a LR14B as ground support with a LR14 “ribbon left” orientated cabinet . The maximum allowed number of cabinets in ground stacked mode is 9pcs mounted to GRD14 (right picture) or LR14B.



Make sure that the array is assembled on a flat and stable surface

Begin by positioning LR14B in ground stack mode, with the wear strips onto the ground. Turn the small link bars into the LR14B connection frame. Ensure that the centre of gravity will be well within the LR14B base. This can be determined by the Alcons Ribbon Calculator™ simulation program. Connect the first cabinet onto LR14B, starting with the front couplers (2). Take out the angle arms of the LR14 and line them up to the stack holes on the LR14B connection frames (arrow left picture). Secure them using the quick release pins. Connect the following LR14. Turn out the angle arms of the LR14 and line the “stack” hole (arrows) up with the desired angle hole in the angle frame. Continue this procedure for the remaining cabinets.



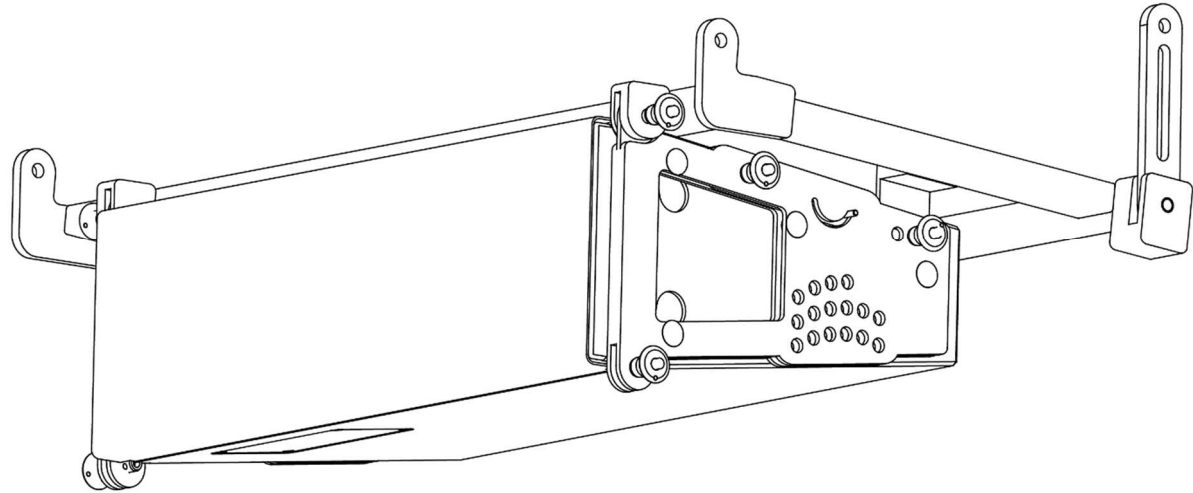
5. Array configurations

LR14 to CNVB14 connection

The picture on the right shows the attachment of the LR14 to the CNVB14 with a 0° alignment. Use the locking pins on the CNVB14 for this connection. The outermost points connect to the LR16 flight hardware. The LR14 angle pin can be taken out of the parking hole to set the angle of the next LR14 cabinet.

CNVB14 can be used in caterpillar style array assembling. It can be used between a FC14 and FC16 flight case transport dolly.

Do not use this frame as a sole ground stack base for a LR14 array. It can however be used on LR16B, with multiple LR14 cabinets stacked on top.



5. Array configurations

LR14 to BRK connection

A small array of LR14 cabinets can be connected to BRK3LR14 with 4 quick locking pins. They have to align with the angle arm parking hole and the 2.5° conversion bracket pre-tilt hole on both sides of the LR14 cabinet. For ease of handling, it is advised to build up the array with individual LR14 cabinets.

As such an array will be a combination of “fly” and “stack” mode, it is advised to use stack mode for all cabinets.

Be aware that when the Centre of Gravity moves away from the mounting pivot point, both fastening knobs needs to be tightened up firmly.

In very challenging situations it is advised to use hexagonal bolts instead of the knobs. These can be mechanically tightened.



6. Service and support

Warranty

Summary

Alcons Audio BV warrants the original purchaser and any subsequent owner of each new Alcons product, for a period of six years limited from the date of the original purchase by the original purchaser that the new Alcons product is free of defects in materials and workmanship. Alcons Audio BV warrants the new Alcons product regardless of the reason for failure, except as excluded in this warranty. In order to obtain warranty, you must keep the original sales receipt to establish the exact date of purchase.

Items excluded from warranty

Warranty does not cover any product which has been damaged because of any misuse, accident, or negligence. Warranty also does not extend to a new Alcons product if the serial number has been defaced, altered or removed.

What we will do

Alcons Audio BV will replace defective parts and repair malfunctioning products, regardless of the reason for failure (except as excluded). Warranty work can only be performed at our authorized service centres, or at our factory.

Disclaimer

Alcons Audio BV is not liable for any damage to loudspeakers, amplifiers, or any other equipment that is caused by negligence, misuse or improper installation. Alcons Audio BV is not liable for any incidental damages resulting from any defect in the new Alcons product. This includes any damage to another product or products resulting from such a defect.

Alcons Audio BV reserves the right to change specifications without notice.

6. Service and support

Contact information

Mailing address:

Alcons Audio BV
De Corantijn 69
1689 AN ZWAAG
The Netherlands

Telephone / Facsimile:

Telephone: +31 (0)229 283090
Fax.: +31 (0)229 283099

World Wide Web:

<http://www.alconsaudio.com>

E-mail:

info@alconsaudio.com



7. EC declaration of conformity

Alcons Audio BV
De Corantijn 69
1689 AN ZWAAG
The Netherlands

States that the following products:
LR14/ LR14B Rigging System

are in conformity with the provisions of the following EC directives and applicable amendments:

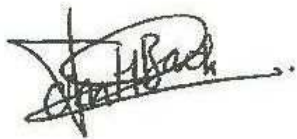
Machinery 2006/42/EC

and the national laws to enforce this directive,

National standards and technical specifications applied: *DIN EN ISO 12 100, DIN EN 1050, BGV C1*

provided the mounting components are unaltered/modified and in “factory-original” condition.

Established at Zwaag, the Netherlands,
June 1th, 2016



T.H. Back
Managing Director



Notes

