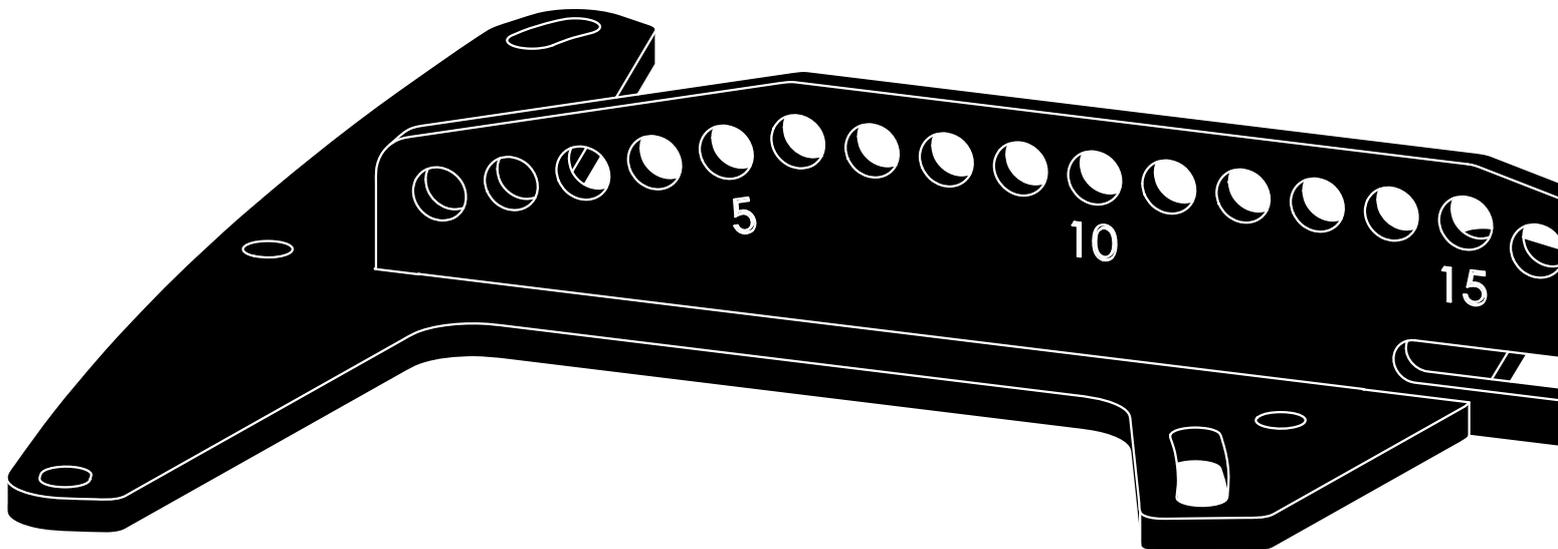




Z5456
Rigging manual 1.1 en



General information

Z5456 Rigging manual

Version: 1.1 en, 03/2021, D2747.EN .01

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Keep this document with the product or in a safe place so that it is available for future reference.

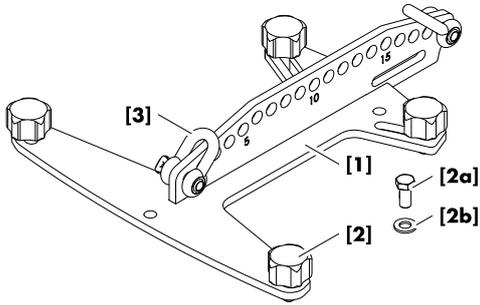
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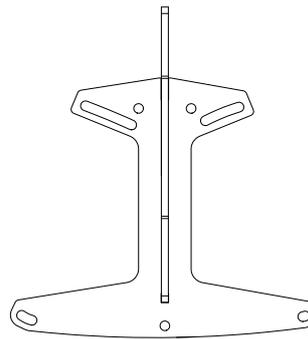
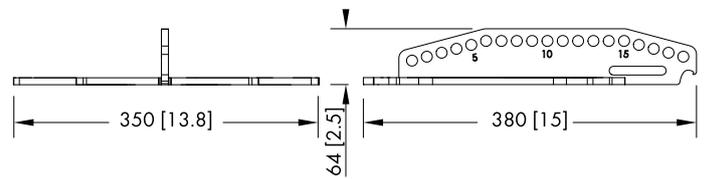


1.1 Scope of supply

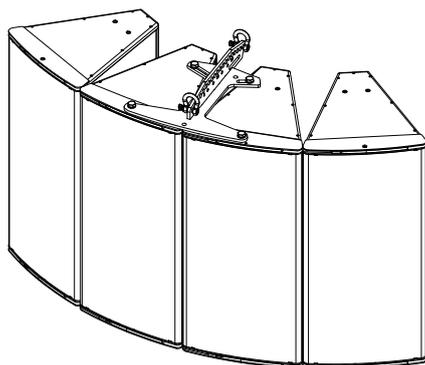
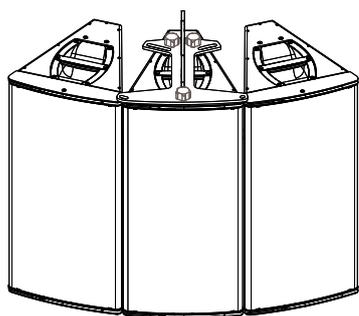
Please verify the shipment for completeness and proper condition of the items.

Qty.	d&b Code	Description
1	Z5456	d&b AL Flying adapter [1]
Including:		
4		Hand bolt M10 [2]
4		Hex head bolt M10 x 25/8.8 [2a]
4		U-washer 10.5 [2b]
2		1t shackle [3]
1	D2747.EN .01	Z5456 Rigging manual

Weight (incl. all items) 4 kg / 8.8 lb



Z5456 AL Flying adapter dimensions in mm [inch]



1.2 Intended use

The Z5456 AL Flying adapter must only be used in conjunction with the d&b A-Series AL60/AL90 and ALi60/ALi90 cabinets, as described in this manual.

1.2.1 General safety

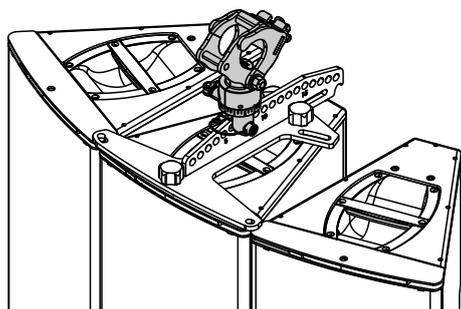
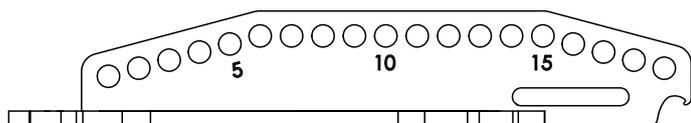
- Installation and setup should only be carried out by qualified and authorized personnel observing the valid national Rules for the Prevention of Accidents (RPA).
- It is the responsibility of the person installing the assembly to ensure that the suspension/fixing points are suitable for the intended use.
- Always carry out a visual and functional inspection of the items before use. In case there is any doubt as to the proper functioning and safety of the items, these must be withdrawn from use immediately.

Please also refer to ⇒ Chapter 4 "Care and maintenance" on page 15.

1.2.2 Load safety information

NOTICE!

The Z5456 AL Flying adapter is designed to suspend a total of 4 x AL60/AL90 or ALi60/ALi90 cabinets which corresponds to a total system weight of 100 kg (220 lb) - SWL.



2.1 Suspension options

The center bar of the Flying adapter is equipped with a total of 19 holes to allow for the suspension of the array and the setting of different vertical angles.

The holes are numbered in increments of five.

Single or dual pickpoint operation

The array can be suspended using one or two E6507 1t shackle(s) and appropriate lifting devices or steel wire ropes.

In "**Single pickpoint operation**", the overall vertical aiming of the entire array is defined by using a particular hole of the hole index on the center bar.

The corresponding hole position is calculated using the d&b ArrayCalc simulation software. For this purpose, ArrayCalc can be downloaded at www.dbaudio.com

Note: Please note that in ArrayCalc, you have to go to the «Rigging plot» page as the «Sources» page only indicates hole numbers for the Flying frame, not for the Flying adapter.

Provided the corresponding array is selected on this page, the hole closest to the pickpoint and the exact distance in cm/inch are displayed in the «Main» array section ⇒ «Pickpoints and load» (last entry).

In "**Dual pick point operation**", the vertical aiming of the entire array is set by trimming the respective lifting devices.

Z5147 Rota clamp option

Alternatively, the array can be suspended and horizontally aligned from a single pickpoint using the d&b Z5147 Rota clamp. The clamp allows the load to be attached to overhead bars or truss with a tube diameter of up to 50 mm (2").

Attachment

Choose the appropriate hole position on the center bar according to the ArrayCalc calculation and attach the clamp correspondingly.

Note: Please observe the relevant mounting instructions which are enclosed with the clamp.

2.2 Locking pins

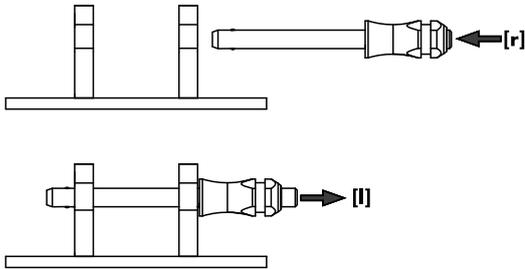
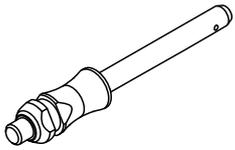


WARNING!

Potential risk of personal injury and/or damage to material!

The steel wires of the Locking pins are not intended to carry any load. The cabinet's weight must only be carried by the Front and Splay/Rear links in conjunction with the front and rear rigging strands of the loudspeaker cabinets and the rigging components.

Ensure all Locking pins are fully inserted and securely locked before lifting any load.



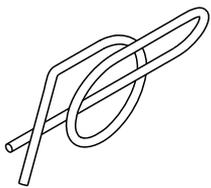
The A-Series loudspeaker cabinets and rigging components are equipped with dedicated Locking pins.

Note: The Locking pins are undetachably attached to the different rigging components on the cabinet using steel wires. Throughout this manual these steel wires are not shown in the corresponding illustrations.

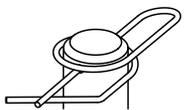
Functionality (Quick lock mechanism)

Proceed as follows:

1. Press the button to **release** the locking mechanism (← [r]).
2. Remove the Locking pin through the respective link or socket.
3. Insert the Locking pin through the respective link or socket until it is fixed in place.
4. Release the button to **lock** the pin (→ [l]).
5. Recheck the Locking pin is securely locked by briefly pulling the Locking pin towards you.



Ring cotter



Ring cotter locked

2.3 Ring cotter

In connection with the A-Series rigging system, ring cotters are used for the following items to prevent the respective item from slackening and/or loosening:

- Fixing bolt of the shackles attached to the Flying adapter.
- Fixing bolt of the cabinet's splay link.
- Fixing bolt of the Z5147 Rota clamp.

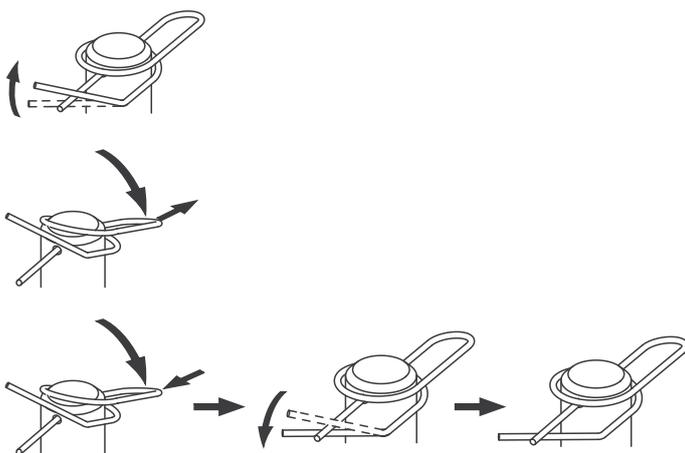
Function of the ring cotter

By default, the ring cotters are "locked" to prevent them from loosening.

For modification reasons such as altering the position of the Frame's Rear link or exchanging a shackle, it may be necessary to temporarily remove the ring cotter and reattach it afterwards.

For this purpose proceed as follows:

1. **Unlock**
Unlock the ring cotter by pushing up the front wire loop over the straight wire shaft.
2. **Release and remove**
Push down the rear wire loop until the ring cotter snaps over the edge of the bolt and remove the ring cotter.
3. **Refit and lock**
Refit the ring cotter by pushing the straight wire shaft through the hole and pressing the front wire loop underneath the straight wire shaft.



2.4 Cabinet rigging mechanism

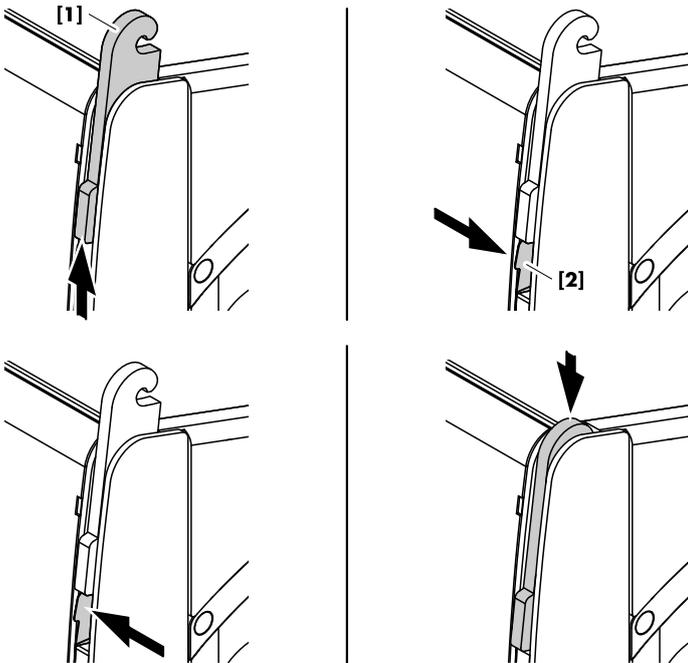
The cabinets are mechanically connected to the Flying frame and subsequent loudspeakers using the Front links on both sides of the cabinet front and the central Splay link on the rear rigging strand of the cabinet.

All necessary rigging components are mounted to the cabinet and slide out or fold out when needed.

2.4.1 Front link mechanism

To extend and/or park the Front link, proceed as follows:

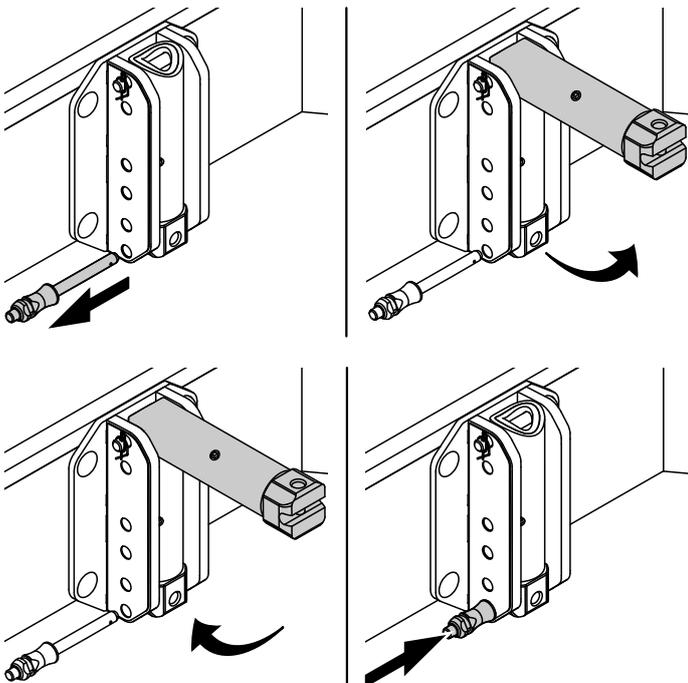
1. Slide out the Front link **[1]** up to its stop position.
 - ↳ Once the Front link is fully extended, it will be automatically fixed in place by the spring steel sheet **[2]**.
2. To slide the Front link back into its park position, press the spring steel sheet towards the front grill.
3. Slide the Front link back into its park position.

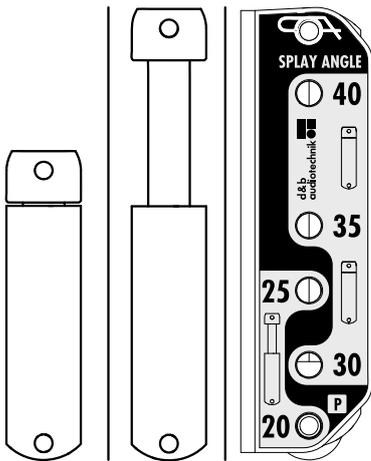


2.4.2 Splay link mechanism

The Splay link is fixed in its park position (P) by a Locking pin.

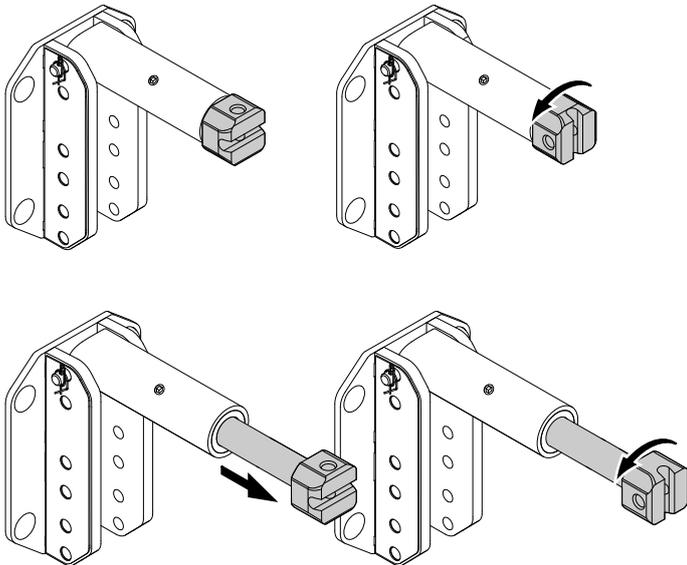
1. Release the Locking pin and fold out the Splay link.
2. To park the Splay link, proceed in reverse order and ensure the extension tube is fully pushed in and the head is aligned correspondingly, as shown in the graphic opposite.





Standard | Extended | Hole grid

Splay link lengths and correlation to the hole grid on the rear rigging strand.



2.4.3 Setting the splay angle(s)

Splay angles between adjacent cabinets can be set in the range from 20° to 40° in 5° increments resulting in a total coverage of 50° up to 70° for two cabinets, with a maximum total coverage of 150° for four cabinets.

Splay angles can also be set symmetrically or asymmetrically, depending on the application.

For this purpose, the Splay link provides two different lengths:

Standard or Extended.

Together with the corresponding **Hole grid** on the rear rigging strand, the desired splay angles can be set in the range from 20° to 40° in 5° increments.

The Splay link is constructed as a cylindrical extender (we call it the 'Trombone!').

The extension tube head can be turned counter clockwise by 90° and back again.

To change between the Standard and Extended positions, proceed as follows:

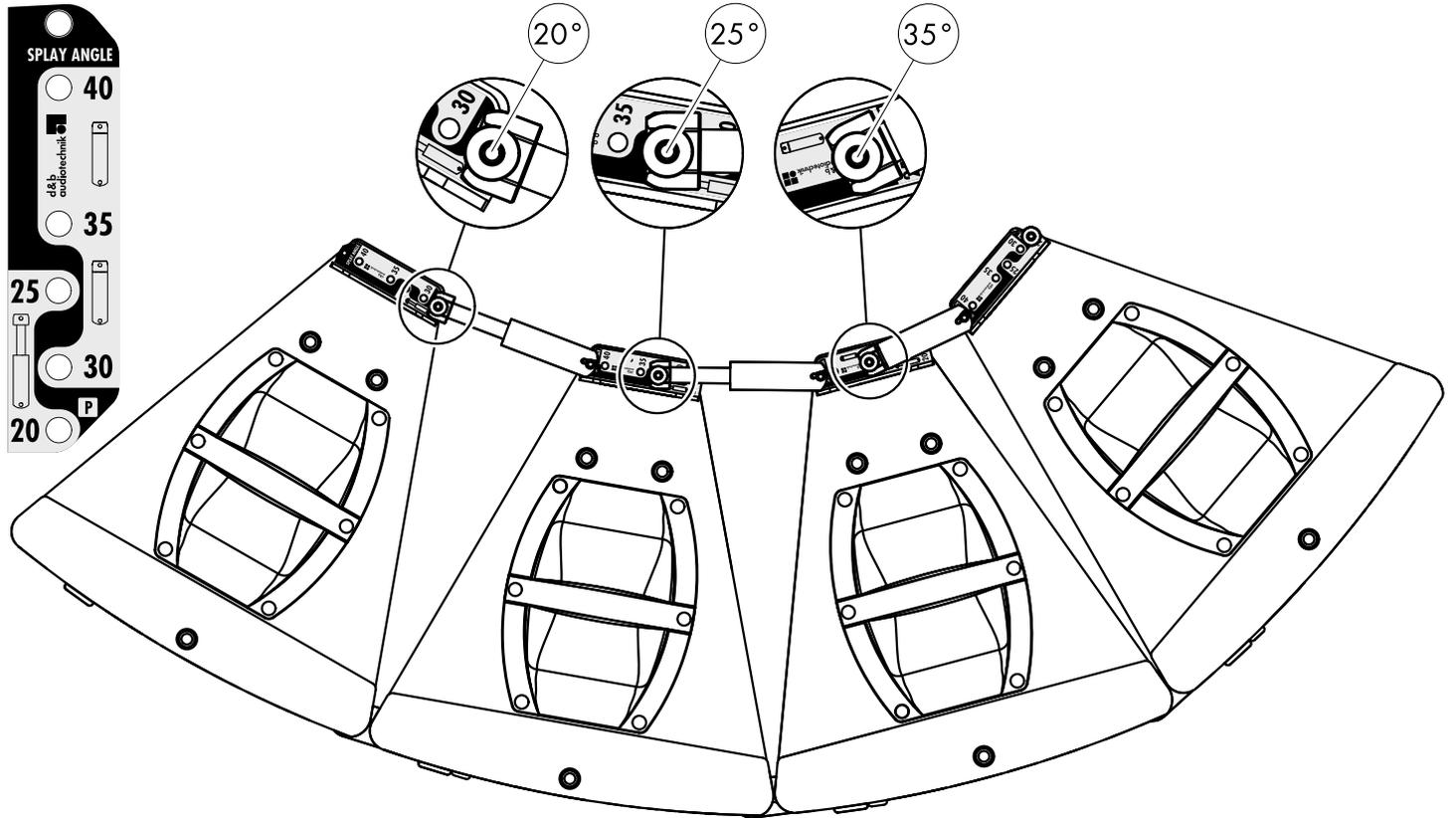
Standard length

1. Fold out the Splay link as previously described.
2. Turn the extension tube head counter clockwise by 90° to fix the standard length of the Splay link.

Extended length

1. Fold out the Splay link as previously described.
2. Pull out the extension tube to its stop position.
3. Turn the extension tube head counter clockwise by 90° to fix the extended length of the Splay link.

Overview chart - Splay angle settings



3.1 Preparing the setup

General

Check the acoustical and mechanical setup using ArrayCalc and prepare enough printouts for each array. Alternatively, the d&b ArrayCalc Viewer app can be used for this purpose.

The plan enables the riggers to set up the suspension points, the securing points, and the chain hoists.

When on site, first:

- Clear the working areas and ensure there is enough space to set up and lift the array.
- Check that the hoists are exactly in the specified position.
- Ensure the chains are not twisted.
- Prepare the cables and link cables according to the number of amplifier channels and cabinets used.

Inspections before setup

Before setting up the array, carry out a visual inspection of all system components for faults. This also includes the loudspeakers and in particular the rigging parts of the cabinets (Front and Splay/Rear links).

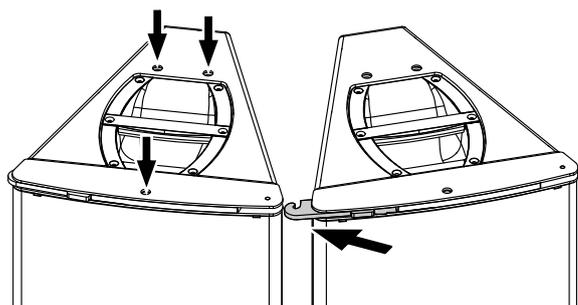
Damaged components must be withdrawn from use immediately.

Please also follow the instructions given in ⇒ Chapter 4 "Care and maintenance" on page 15.

3.2 Order of assembly

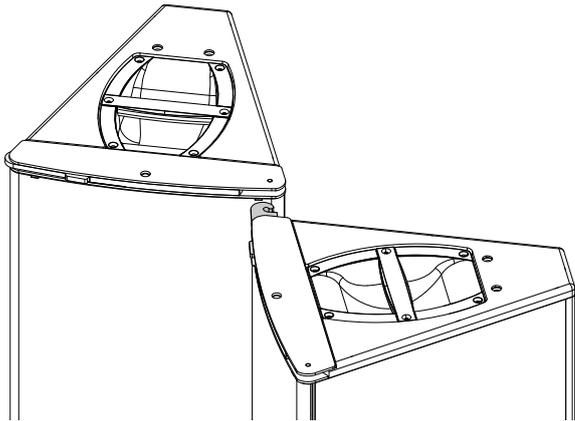
The assembly is carried out on the ground. We recommend to use the d&b E7927 Touring case 2 x AL as ground support.

In the following, the assembly of a 3-wide array is described.

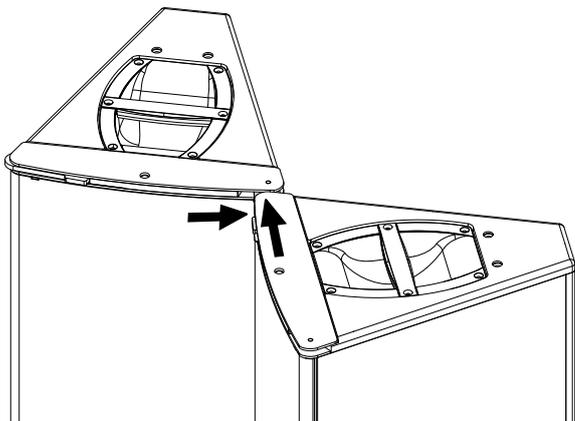


1. Join the cabinets together

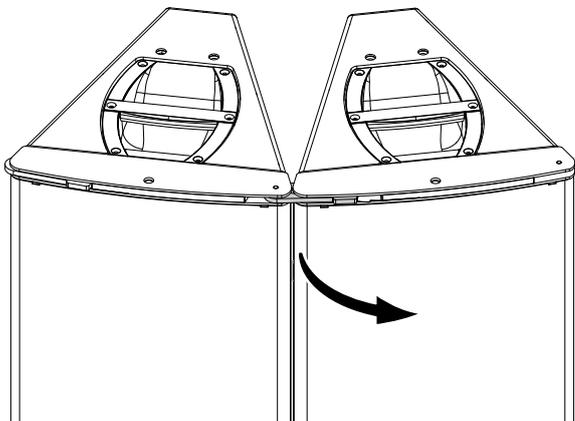
1. Position the first cabinet with the threaded inserts on top [1].
2. Place the second cabinet beside the first cabinet in the same manner.
3. Extend both Front links of the second cabinet.



4. Align the Front links of the second cabinet with the corresponding slots of the first cabinet, as shown in the graphic opposite.

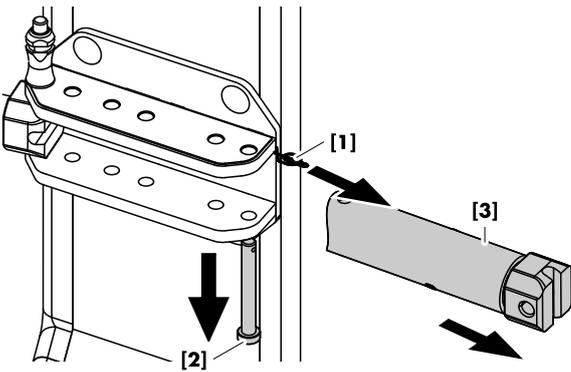
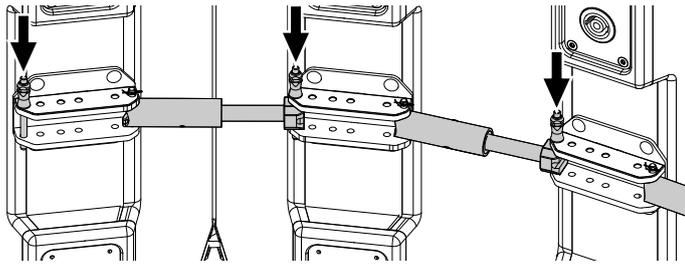
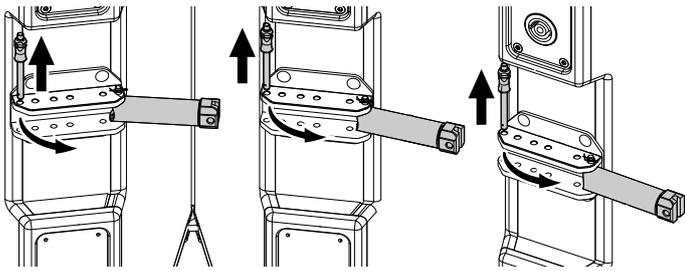


5. Insert the Front links into the slots and slightly move the second cabinet to the right until the Front links are engaged.



6. Finally turn the second cabinet counter clockwise by 90°.

To add further cabinets, proceed in the same manner until the assembly is completed.



2. Set the splay angles

The splay angles between adjacent cabinets are set on the central rear rigging strands of the cabinets and can be set in the range from 20° to 40° in 5° increments.

Select the splay angles according to your ArrayCalc simulation.

Depending on the desired splay angle, set the Splay link to the "Standard" or "Extended" length as described in ⇒ Chapter 2.4.3 "Setting the splay angle(s)" on page 9.

1. At the rear, release the Locking pins on all cabinets.
2. Fold out the Splay links.
4. Align the Splay link with the corresponding hole for the desired splay angle.
5. Insert the respective Locking pin and ensure the pin is fully inserted and properly locked.

3. Splay link of the last cabinet

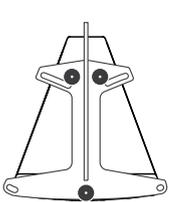
To avoid either rattling during operation or damage to the Splay link of the last cabinet, we recommend you to remove the Splay link and store it temporarily in a safe place. To remove the Splay link, proceed as follows:

1. Release and remove the ring cotter **[1]** of the fixing bolt.
2. Remove the fixing bolt **[2]** and Splay link **[3]**.

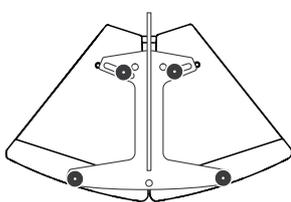
4. Attach the Flying adapter

Adapter positions

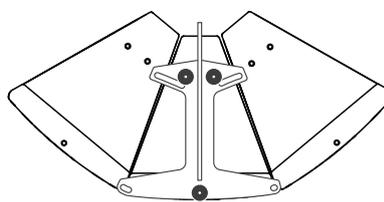
Depending on the type of assembly (single, 2-, 3-, or 4-wide) the Flying adapter is attached directly to the top panel of one cabinet (single and 3-wide) or over two cabinets (2- and 4-wide), as shown in the graphics below.



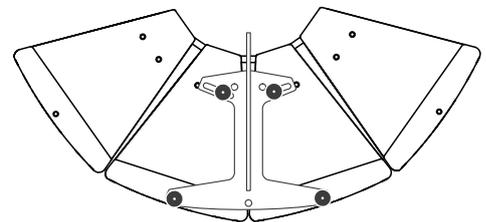
Single



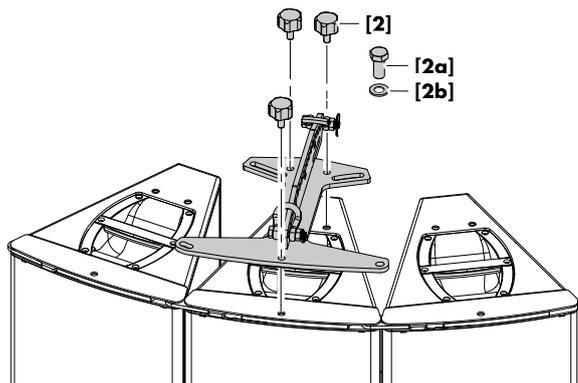
2-wide



3-wide



4-wide



1. Attach the Flying adapter according to the type of assembly (single, 2-, 3-, or 4-wide).
 - ↳ For this purpose, use the enclosed hand bolts [2] and hand-tighten them properly.

With ALi60/ALi90 cabinets use the enclosed hex head screws (M10 x 25 - Wrench SW17) [2a] and U-washers (10.5) [2b].
2. Suspend the assembly according to the desired suspension option.

5. Rig the cabling

Connect the flying cables and link cables according to the number of amplifier channels and cabinets used. Observe the related loudspeaker setups for the inner (In) and outer (Out) cabinets.

6. Check the assembly

Before hoisting the array to its operating position, recheck the entire assembly.

3.3 Hoisting and securing the array

When all the mechanical adjustments, system checks, and safety checks have been made, the array can be hoisted up to its operating position.

When hoisting the array, ensure that the loudspeaker cables do not get caught anywhere. The cables can be strapped together with the motor cable to form a loom while the system is hoisted.

The chain hoist motors must raise the system slowly and evenly so that it does not swing or move from side to side during hoisting.

When the array is in its final operating position, a secondary safety device must be applied.

3.4 Derigging

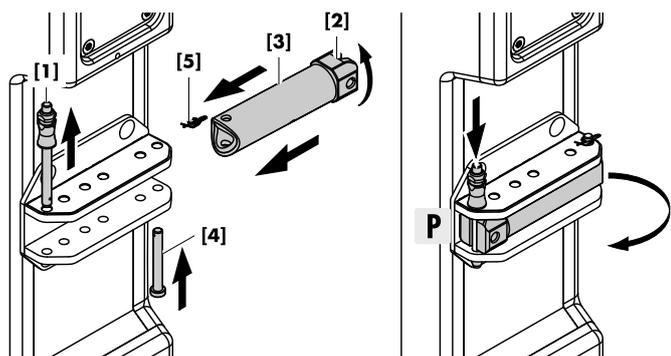
The same safety instructions apply.

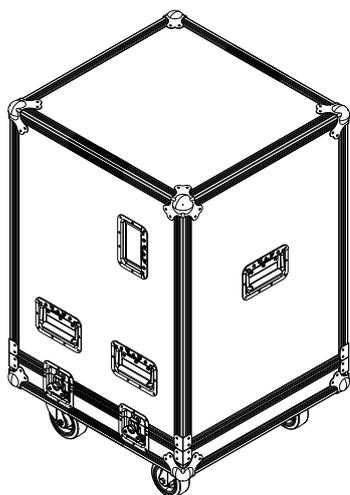
To dismantle any of the assemblies, follow the corresponding rigging and setup instructions in reverse order.

Refit the Splay link

During setup, the Splay link of the last cabinet has been removed and must be refitted to the cabinet. For this purpose, proceed as follows:

1. Release the Locking pin [1].
2. Turn the extension tube head [2] by 90°.
3. Insert the Splay link into the rigging strand [3].
4. Refit the fixing bolt [4].
5. Refit and lock the ring cotter [5].
6. Fold the Splay link back into its park position [⇒ P] and reinsert the Locking pin.





E7927 Touring case 2 x AL

4.1 Transport/storing

During transport ensure the rigging components are not stressed or damaged by mechanical forces. Use suitable transport cases.

We recommend the use of the d&b E7927 Touring case 2 x AL for this purpose. The touring case provides specific trays and fixtures for the AL Flying frame and AL Flying adapter.

Due to their surface treatment the rigging components are temporarily protected against moisture. However, ensure the components are in a dry state while stored or during transport.

4.2 Visual and functional inspection



WARNING!

Potential risk of personal injury and/or damage to material

To eliminate the potential risk of accident due to malfunctioning of a component, regularly inspect all system components.

Cabinet enclosure

- Visual inspection of all fitting plates for obvious damage (e.g. cracks or corrosion).
- Visual inspection of the rear rigging strand for obvious damage (e.g. cracks, deformation or corrosion) including all drilled holes of the component.
- Inspection of all fitting plates including front grills to ensure they are securely attached.
- Regularly lubricate the sockets using WD-40® or a similar product.

Front and Splay links

Visual inspection regarding deformation and damage (e.g. cracks and corrosion) including all drilled holes of the component.

Locking pins

- Visual inspection for deformation, cracks and corrosion of the component.
- Inspection for missing ball bearings and damage.
- Functional inspection of the release mechanism to ensure it operates properly.
- Regularly lubricate the Locking pins using WD-40® or a similar product.

Z5456 AL Flying adapter

Visual inspection regarding deformation and damage (e.g. cracks and corrosion) including all drilled holes of the component.



5.1 EU conformity (CE symbol)

This declaration applies to:

d&b Z5456 AL Flying adapter

manufactured by d&b audiotechnik GmbH & Co. KG.

All product variants are included, provided they correspond to the original technical version and have not been subject to any later design or electromechanical modifications.

We herewith declare that said products are in conformity with the provisions of the respective EC directives including all applicable amendments.

A detailed declaration is available on request and can be ordered from d&b or downloaded from the d&b website at www.dbaudio.com.

5.2 Disposal

When out of use the rigging components must be disposed of in accordance with the national environmental regulations.

Ensure that damaged rigging components are disposed of in a way that they cannot be used again.

