

Ikarray-12sp

Line-Array



Herzlichen Dank,
dass Sie ein Voice-Acoustic Produkt gekauft haben.
Seit dem Jahr 2006 entwickeln wir unsere Produkte
in der Überzeugung, dass es auf die Details ankommt.
Wir wünschen Ihnen viel Freude mit diesem Produkt.

Thank you very much,
for purchasing a Voice-Acoustic product.
Since 2006 we have been developing our
products in the firm belief that details matter.
May we wish you a lot of pleasure with this product.

Muchas gracias
por haber comprado un producto de Voice-Acoustic.
Desde el año 2006 estamos desarrollando nuestros productos
estando convencidos, que son los detalles que cuentan.
Le(s) deseamos mucha alegría usando este producto.

Merci beaucoup
d´avoir acheté un produit Voice-Acoustic.
Depuis 2006, nous développons des produits
avec la ferme conviction que les détails comptent.
Nous vous souhaitons beaucoup de plaisir à utiliser ce produit.



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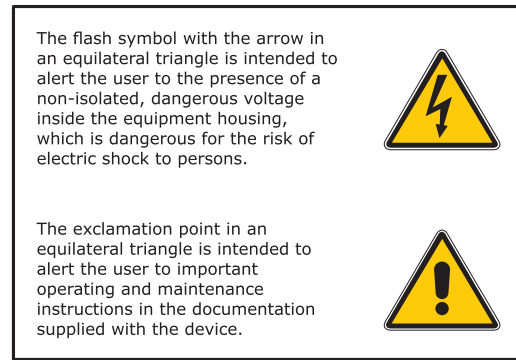
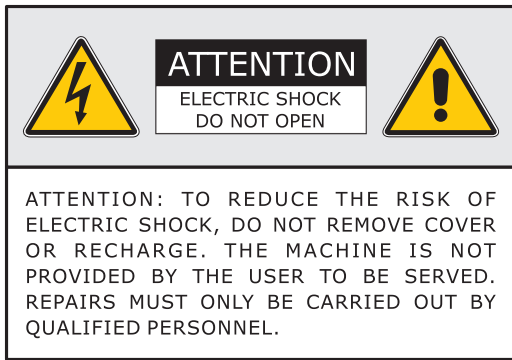
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Safety Instructions Active Electronics



Read these instructions.

Observe all warning instructions.

Follow all operating instructions.

To prevent fire hazard or risk of electric shock, do not use this device in the rain or in moist environments. Do not operate the unit nearby the water.

Clean the unit only with a dry cloth.

Observe the instructions from the manufacturer for the mounting of the unit.

Do not mount the unit in the proximity of heat sources, such as heating units, herds or other heat radiation devices.

Install the power cable at places where it cannot be damaged, especially at the sites of the socket, extension cables and where it leaves the unit.

Never remove the safety device from the two terminal or grounding-type plug. A two-pin plug has two different plug contact widths. An earth plug has two plug contacts and a third contact for earthing. The wider plug contact or additional earth contact is for your safety. If the supplied plug size does not fit in your socket box, please consult an electrician for exchanging the socket box.

Only use additional devices/accessory parts, that meet the manufacturer's instructions.

Pull the power plug out in case of storm or when you do not use your device for a longer period.

All maintenance works must be performed by qualified service staff. Maintenance is required when the unit has been damaged, objects or fluids have leaked or fallen inside, when the unit was exposed to rain or humidity, or in case of malfunctioning or when it has fallen on the floor.

General Safety Instructions:

Loudspeakers produce a static magnetic field even if they are not connected or are not in use. Therefore make sure when erecting and transporting loudspeakers that they are nowhere near equipment and objects which may be impaired or damaged by an external magnetic field. Persons with cardiac pacemakers must maintain a safe distance.

The minimum recommended safety clearance is 1 m.

Never stand in the immediate vicinity of loudspeakers driven at a high level. Professional loudspeaker systems are capable of causing a sound pressure level detrimental to human health. Seemingly non-critical sound levels (from approx. 90 dB SPL) can cause hearing damage if people are exposed to it over a long period.

All connected cables must be laid in such a way that they cannot be crushed by objects and that nobody can step on them! Replace damaged cables immediately and do not use them!

Use only accessory parts specified by Voice-Acoustic or original accessory parts from Voice-Acoustic. Check all cabinets and accessories regularly for wear and replace them if necessary.

Do not set up the loudspeakers in places where they are permanently exposed to moisture, dust, dirt or direct sunlight.

Care

Wipe the surface of loudspeakers only with a damp cloth and pure water. In case of heavy pollution, repeat the above procedure several times if necessary. Do not use any chemical additives or aggressive detergents, as these may harm and damage the surfaces.

Transport and storage

When transporting and storing the unit, it is important to ensure that the surface and front grill of the loudspeaker are not damaged. Moisture can penetrate through exposed wood surfaces and cause the wood to swell. A bent or broken front grill will no longer adequately protect the sensitive speaker membranes. In addition, appreciable dust deposits may considerably impair the functionality of a loudspeaker membrane. For this reason, the loudspeakers should be transported and stored in a safe, careful, dry and largely dust-free manner.

The following accessory parts for transport and storage are available from Voice-Acoustic:

- Transport and rain cover for 4 x Ikarray-12 in ground stacking (Art.-Nr. 501201000)
- Dolly for transport up to 4 x Ikarray-12 (Art.-Nr. 501204000)

Note: *The original packaging is unsuitable as permanent storage and transport packaging!*

Warranty

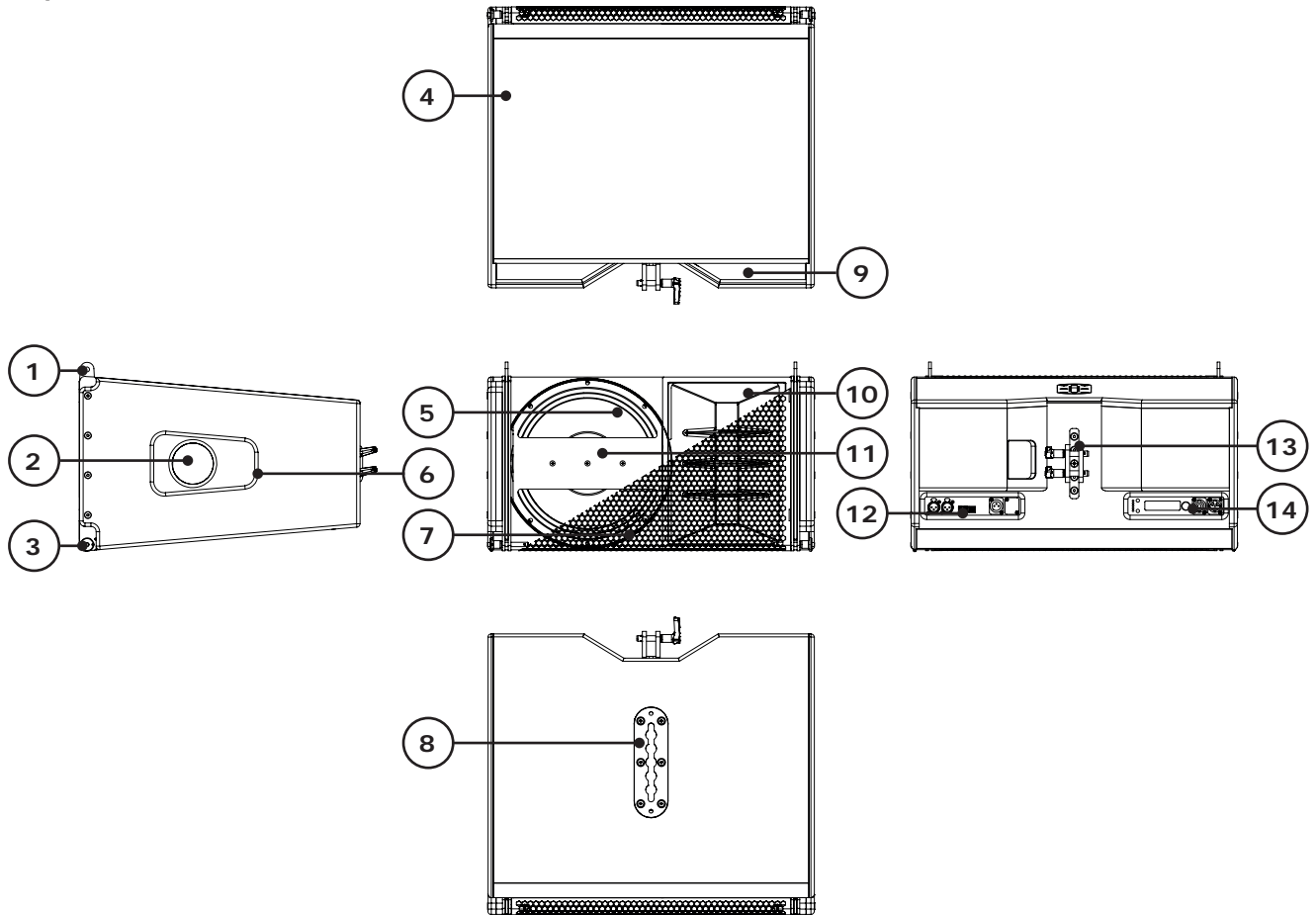
The warranty period is 24 months from date of delivery.

On our choice we will eliminate any lack of conformity with repair or with replacement of the faulty goods. The place of performance for warranty services is Voice-Acoustic headquarters in Dörverden. In case of remedy of defects, the buyer shall bear all costs resulting from transportation of the goods to Voice-Acoustic headquarters in Dörverden.

The ordering party is not entitled to remedy the defect by itself or to organise a replacement and to charge such activities to Voice-Acoustic. In case of self remedy by the ordering party the warranty given by Voice-Acoustic becomes void.

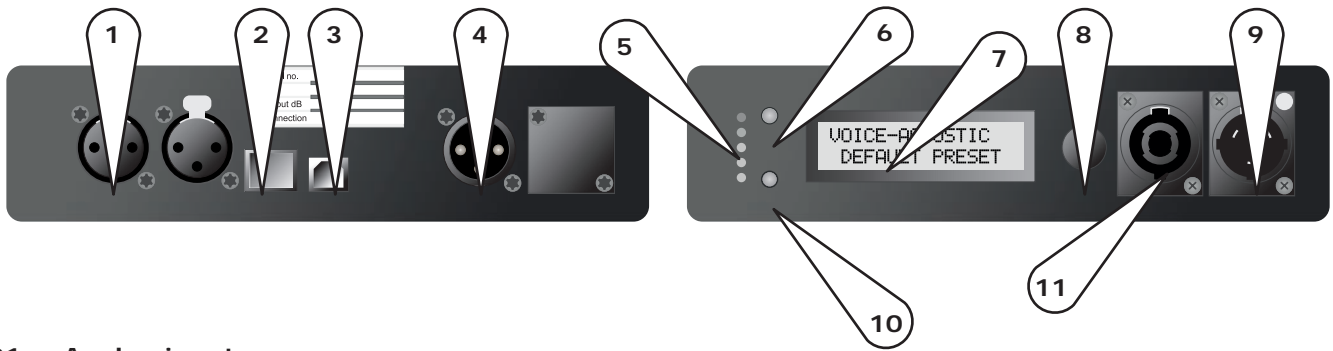
Warranty doesn't apply to parts of wear and tear, such as threaded points and the SpeakON® connectors.

Components



1. Upper connection point flight mechanics
2. Bass reflex port
3. Lower connection point flight mechanics
4. 30 and 15 mm multiplex cabinet, polyurea coating in RAL 9005
5. 12" Neodym woofer
6. Recessed grip on both sides
7. Front grille 1 mm with 10 mm acoustic foam
8. Flying track (operation with a maximum of two Ikarray-12 among each other)
9. Rear recessed grips
10. 1,4" Neodym compression driver on double-twin waveformer
11. V-Plug
12. Operator module* with USB, Ethernet and XLR connections, as well as type plate with serial number
13. Mounting points for thread mechanism
14. Operating module* with one SpeakON® Buchse and powerCON TRUE1 connection

Connections Operating module



- 01. Analog input**
2 x separate 3-Pin connector for Audio-input. Each input is a symmetric XLR-connector
- 02. Ethernet connection**
RJ45 jack for network connection
- 03. Standard USB Jack Type B**
The unit can connected to the PC via a traditional USB-cable.
- 04. Analog output**
1 x Separate 3-pin connector for audio output. The output is a symmetric XLR-connector.
- 05. Peak Level LEDs**
Displays the current PEAK level in 5 levels: -18 dB, -12 dB, -6 dB (green), -3 dB (yellow), Limit (red).
- 06. Button top**
To enter the system menu and browse between the configuration functions.
- 07. LCD Display**
Background lit double-space 16-Segment LCD Display, for all important edition parameters.
- 08. Encoder wheel**
You can change the parameter values with the encoder wheel. You can select different parameter values by pressing and set them by turning.
- 09. powerCON TRUE1**
Lockable device plug connection for a current carrying capacity of up to 16 A. The powerCON TRUE1 is a connector device and may therefore be plugged in and out under load and under voltage.
- 10. Button bottom**
To leave the system menu or the configuration functions.
- 11. Speaker output**
For self-powered tops also the bi-amping amplifier signal is implemented for the speak-on jack, in order to feed a non-active top bi-amping from the self-powered top. This also requires a 4-pin speak-on cable. Configuration 2+/2- bass-midrange speaker, 1+/1- tweeter.

Technical data

Components	1 x 12" Neodym woofer (LF) with 3" voice coil 1 x 1,4" Neodym compression driver (HF) with 3" voice coil
Frequency response	49 Hz - 18.5 kHz (- 10 dB) 62 Hz - 17 kHz (+/- 3 dB)
Coverage range (h x v)	100° x 6°
Powerhandling	LF: 400 W AES / 800 W program / 1.600 W peak at 16 Ω HF: 110 W AES / 220 W program / 440 W peak at 16 Ω
Sound pressure	130 dB SPL AES / 133 dB SPL program / 136 dB SPL peak
Dimensions / Weight	325 (h) x 605 (w) x 520 mm (d) / 31,90 kg
Finish	Polyurea coating in RAL 9005

Integrated 2-Way Amplifier Modul

Power output CH1 LF	2.400 W/4 Ω, 1.580 W/8 Ω, 800 W/16 Ω
Power output CH2 HF	800 W/4 Ω, 450 W/8 Ω, 200 W/16 Ω
Amplifier gain	CH1 32 dB, CH2/3 26 dB
Signal-to-noise ratio	>120 dB (20 - 20.000 Hz, 8 Ω)
Damping factor	>1.000 (8 Ω, 1 kHz)
Distortion	THD+N < 0,05 % (20 - 20.000 Hz, 8 Ω)

Integrated Loudspeaker Management System

Manual hand operation	2 button and 1 x digital encoder-wheel
Operable language	Selectable between English, German, France, Spain
Software connection	Bi-directional connection in real time via USB, Ethernet
Controllable units about software	Up to 128 self-powered Speaker & HDSP-amplifier in one network
DSP preset memory quantity	80 Presets
Processor	64 bit, 96 kHz sample rate
Dynamic range input	120 dB
Maximum input level	+ 23 dB
Latency	0,5 ms
Routing	2-input signals can mix together in one loudspeaker
EQ filter	10 parametric filter each In- and Output
X-Over	Butterworth, Bessel, Linkwitz-Riley
Limiter	In each Input and Output

Setup

The Ikarray-12sp line array is designed for vertical operation. A variety of accessories is available from Voice-Acoustic to securely attach the loudspeaker safely on tripods, distance rods or hanging it from on trusses, ceilings and walls. Ensure that the loudspeakers are securely attached to prevent personal injury and damage of property.

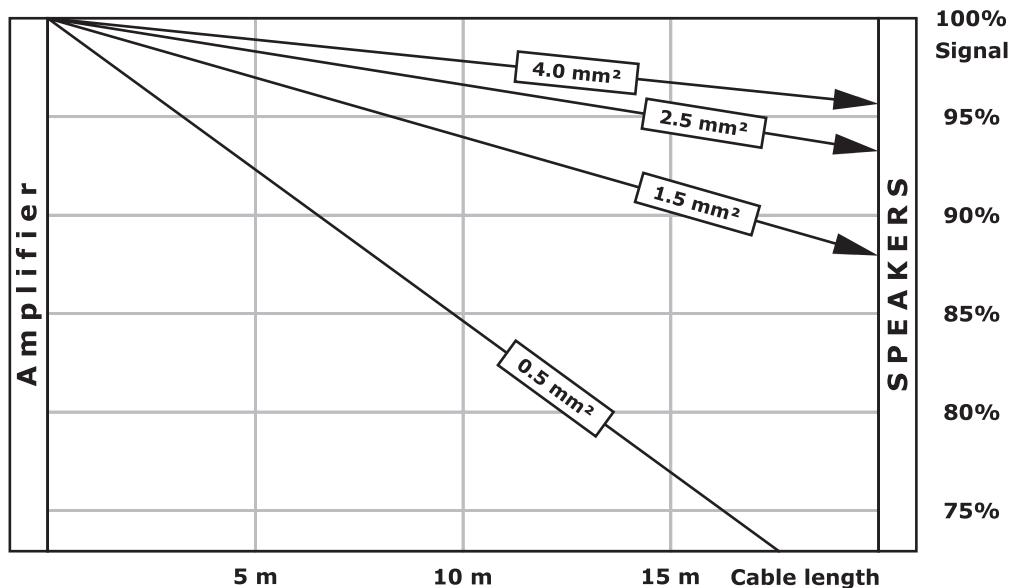
Connecting cables

When connecting the cables to the loudspeaker, ensure that the polarity (+/-) and pin assignment (1/2) is correct. Incorrect connection results in a significant change in the loudspeaker sound characteristics and may damage the compression driver.

The two connection sockets on the back of the loudspeaker can be used to link multiple loudspeakers on a single amplifier. Note that parallel connection reduces the total impedance (Ω) seen by the amplifier. The total impedance of loudspeakers connected in parallel must not drop below the minimum operating impedance of the amplifier.

Voice-Acoustic recommends to use the available 4 x 4 mm² Speakon cables for mobile use.

We recommend wiring the basses with at least 4 mm² in installations. The cables of the tops in installations must be sufficiently dimensioned according to impedance, power and cable length.



Simplified display without consideration of loudspeaker impedances

Operation

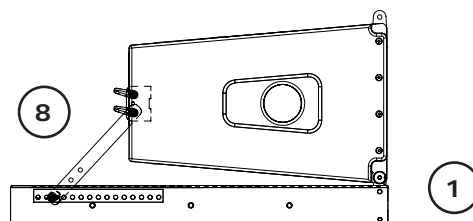
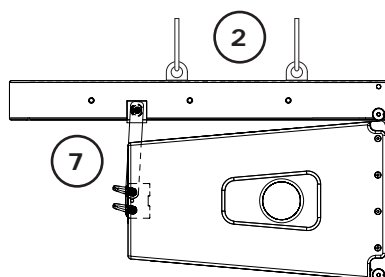
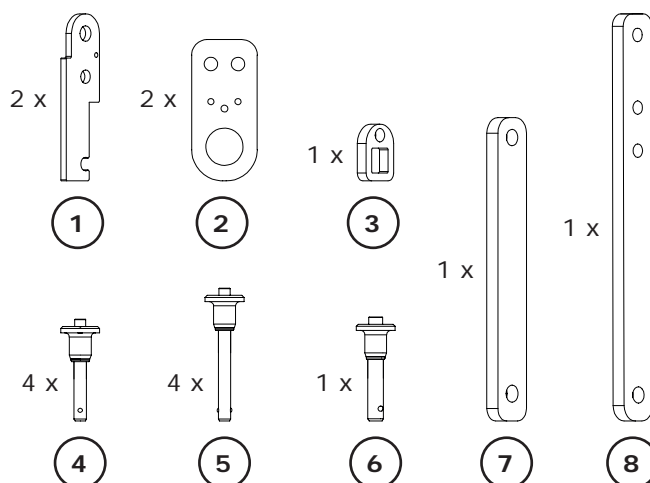
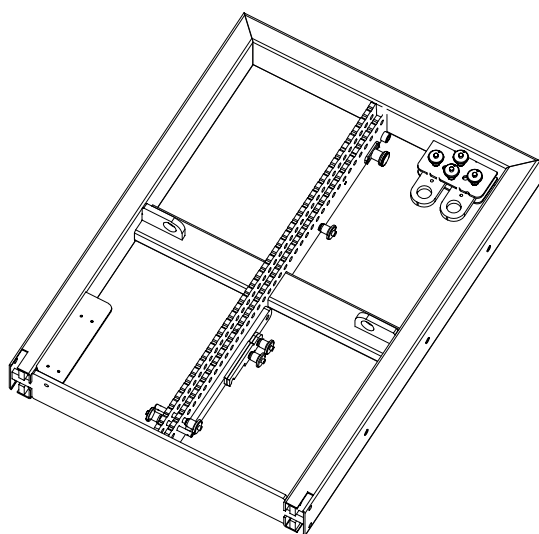
From an Ikarray-12sp bi-amping up to three further elements can be powered.

The woofer and compression driver are available in 16 Ω .

Make sure the appropriate preset has been selected before connecting the speaker to the system power amp or self-powered subwoofer.

Using the wrong preset can damage parts of the loudspeaker.

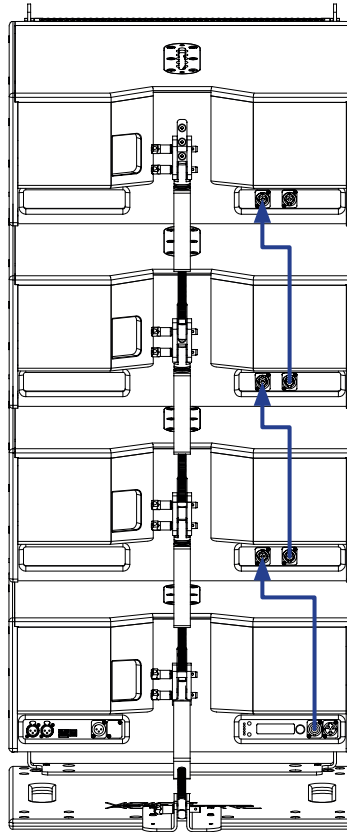
Rigging frame components



1. Groundstacking Adapter / Receptacle
2. Load anchor
3. Cable holder
4. Ball locking bolt \varnothing 8 mm / Clamping area 30 mm
5. Ball locking bolt \varnothing 8 mm / Clamping area 50 mm
6. Ball locking bolt \varnothing 10 mm / Clamping area 30 mm
7. Holding bar short for flight operation
8. Holding bar long for stack operation

Connection of 3 elements to Ikarray-12sp

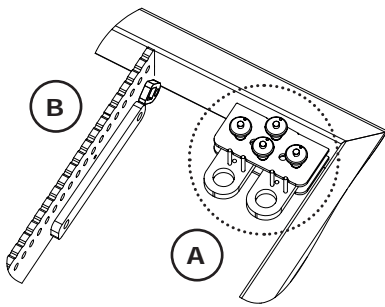
The three elements are operated bi-amping on two channels of the Ikarray-12sp. Thus, both paths can be limited separately, filtered optimally and differences in running time can be compensated. The woofer and the tweeter are designed in 16Ω . Three Ikarray-12 can be looped through with a 4-pin cable and operated in parallel from the same amplifier channels at 4Ω .



Pin assignment of the Speakon socket:

Speakon 1+/1- OUT CH2, 800 W

Speakon 2+/2- OUT CH1, 2.400 W



Assembly and dismantling

Positioning the load adapters

1. Calculate the correct position of the load adapters with the EASE Focus 3 simulation software. In this calculated position it is guaranteed that the array will later hang at the desired angle and the sound will be radiated correctly.
2. Remove one of the two load adapters from the parking position (A) and place it at the hole position (B) in the flying frame determined by the simulation software. Proceed accordingly with the second load adapter.

Note: Always secure the two load adapters with two ball locking bolts!

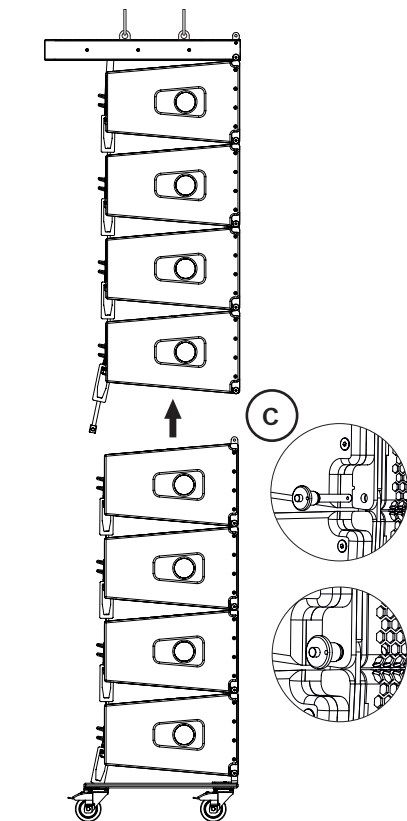
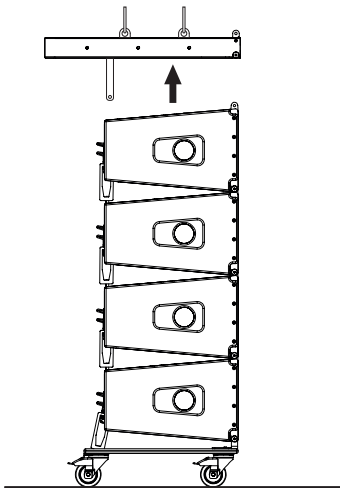
3. The rigging frame is now attached to the chain hoist with one or two sufficiently dimensioned shackles (BGV C1) according to the simulation.

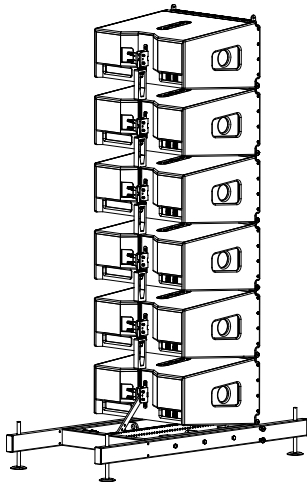
Assembling a speaker array

1. Position the dolly under the flying frame to establish a connection. Secure the connection with the ball locking bolts. Check all ball locking pins for correct seating and locking.
2. The dolly is unloaded via the chain hoist and released via the front and rear locking pins of the lowest element.
3. The setting angles of the individual Ikarray-12 elements are determined with the simulation software.
4. The spindle of the rear thread mechanism has a scale of 0° to 10° . The setting value can be taken from the corresponding printout of the calculations.
5. Once the angle has been set and the loudspeakers are wired, the row that is already hanging is raised in order to attach the next elements accordingly.
6. Always connect all elements first using the front locking bolts (C) and only make the angle when the connection is secure.

Note: For large line lengths, this procedure may be unfavorable, especially if the lowest elements are angled strongly. These elements are then individually appended to the previous line at working height from below. This also applies if no ground-level access to the flying point is possible.

7. Basically, the disassembly of the array takes place in reverse order to the assembly.
8. The strongly angled elements are removed again individually at working height.





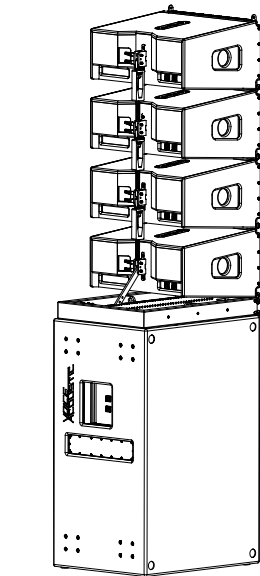
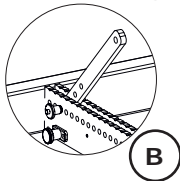
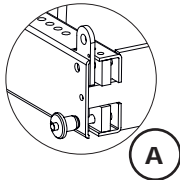
Stacked assembly (Stacking)

Stacked on rigging frame

1. The outriggers are available as optional accessories and are used to ensure stability, compensate for uneven ground and align the frame when the flying frame is not used lying on a Paveosub-118 or 218.

Note: With outriggers up to six elements can be operated on top of each other, if the flying frame lies on a bass, there must not be more than 4 elements!

2. Remove the two groundstacking adapters from their parking positions and insert them into the front of the flying frame.
3. Place the lower speaker on the two groundstacking adapters (A) and secure the connections with two ball locking bolts.
4. Lift the rear of the speaker, align the bracket with the hole for the desired angle and secure the connection with the ball lock pin (B).
5. The following Ikarray-12 elements are always first secured at the front with the ball locking bolts and then connected and aligned with the thread mechanism at the rear.
6. Wire the array.

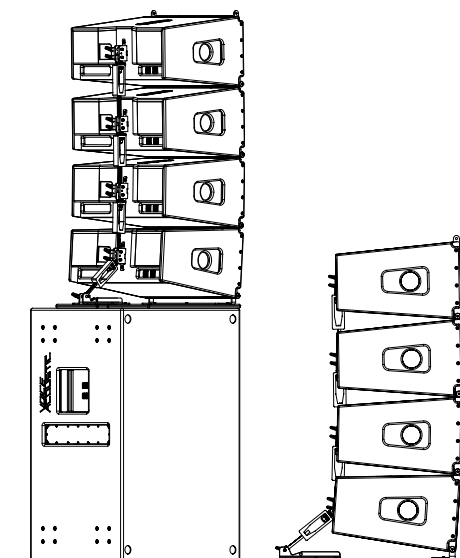
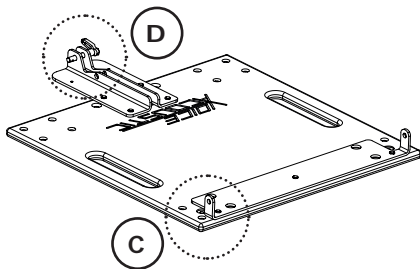


Stacked on stackboard



1. Position the stackboard on a subwoofer or where you want to place the line array.

Note: With the Stackboard up to four elements can be operated on top of each other!

2. Place the lower speaker on the two front groundstacking mounts (C) and secure the connections with two ball locking bolts.
3. Raise the rear speaker and secure the rear threaded mechanism with the ball lock pin (D).
4. The following Ikarray-12 elements are always first secured at the front with the ball locking bolts and then connected and aligned with the thread mechanism at the rear.
5. Wire the array.



Overview Accessories

	Transport and rain cover for 4 x Ikarray-12 in ground stacking (Art.-Nr. 501201000)
	Dolly for transport up to 4 x Ikarray-12 (Art.-Nr. 501204000)
	Stackboard for installation up to 4 x Ikarray-12 (Art.-Nr. 501205000)
	Rigging frame for Ikarray-12 (Art.-Nr. 401201001)
	Outriggers for rigging frame (Art.-Nr. 401201101)
	Digital dual axis angle protractor (Art.-Nr. 999936000)
	LAP-TEQ Clinometer V2 new version (Art.-Nr. 987001008)
	Self lock clamp for pipe 48-51mm, 30mm wide, max. 250 kg (Art.-Nr. 999950731)
	Easyfly mechanics (Art.-Nr. 409991001)
	Carrying bag for up to two Easyfly mechanisms with accessories (Art.-Nr. 409992000)
	Universal suspension arrangement for flight mechanics (Art.-Nr. 409992001)

Imprint

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All specifications in this manual are based on information available at the time of publishing for the features and safety guidelines of the described products. Technical specifications, measurements, weights and properties are not guaranteed.

The manufacturer reserves the right to make technical modifications according to legal regulations stipulating the continual improvement of product features. For the safe operation of the unit, this manual and all other required information must be available to all users at the time of assembly and disassembly of the unit, and during operation. Assemble or operate the unit only after reading and understanding this manual, and keeping it at hand at all times at the site.

We are happy to receive your suggestions and proposals for the enhancement of this manual.

Please send us your ideas to the following address:

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