

K&F Rotation Clamp 450



User's Manual

Translation of the original instructions

Version 1.4

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Important Information, Please Read Before Use!

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1. Introduction

Thank you for purchasing a KLING & FREITAG product. To guarantee trouble-free operation and enable the KLING & FREITAG Rotation Clamp 450 to achieve its full potential, read this manual carefully before use. This item is a quality accessory. Combining it with a suitable K&F speaker system creates an extremely versatile pro-grade tool that meets all requirements in terms of safe installation.

1.1 Icons Used



Warning



Caution



Notice



Tip

This icon indicates a risk of injury or death. Not following these instructions may result in serious health problems including potentially fatal injuries.

This icon indicates a possibly dangerous situation. Not following these instructions may cause minor injuries or damage.

This icon marks instructions for proper use of the described products. Not following these instructions may cause malfunctions or damage.

This icon marks information provided for simplified use of the described products.

1.2 About this Manual

© KLING & FREITAG GmbH. All rights reserved.

All specifications regarding the features of the described products and applicable safety guidelines provided in this manual are based on information available at the time of publishing.

We assume no responsibility for technical specifications, dimensions, weights, and properties.

All information in this manual is subject to change without notice.

To ensure safe operation, all persons using the speaker accessories must have access to this guide and all other relevant material during installation. The speaker accessories must not be set up nor operated unless this manual has been read, understood and kept readily available on site.

All KLING & FREITAG manuals are originally authored in German.

KLING & FREITAG spare manuals are separately available for order or can be downloaded from our website: www.kling-freitag.de.

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2. Product Description

The K&F rotation clamp creates a robust and safe connection between the load adapter of a suitable K&F flying frame and a standard truss or similar pipe system. It allows you to freely rotate the suspended speakers and to lock them in the desired position using a clamping lever.

Note that the half couplers of the K&F rotation clamp 450 are not interchangeable. Structures made of trusses or pipes with a diameter of 48–51 or 60 mm, respectively, can be used.

In compliance with the German DGUV regulation 17 (BGV C1), the K&F rotation clamp is capable of carrying a total load of 450 kg (speaker including flying frame and all further loads such as cabling, load adapters, etc.).

The K&F rotation clamp can be used with the following products:

- not_found
- not_found
- K&F VIDA L flying frame
- K&F SEQUENCE 5 flying frame
- K&F SEQUENCE 10 flying frame

2.1 Intended Use



Warning

The K&F rotation clamp 450 is designed for suspending KLING & FREITAG speakers indoors with no wind loads.

Always be sure to use the supplied couplers and screws only.

The rotation clamp 450 is suitable for use with K&F SPECTRA 212 Flybar, K&F SPECTRA 212 Singlebar, K&F VIDA L flying frames, K&F SEQUENCE 5 flying frames and K&F SEQUENCE 10 flying frames.

Setup involves mounting a flying frame including their load adapters between the speaker and the rotation clamp.

The admitted load of 450 kg (as per DGUV regulation 17 (BGV C1)) must not be exceeded.

Vertical lifting of loads only.

2.2 Items Included

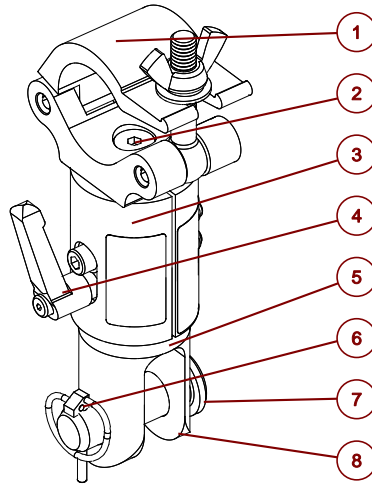
48–51-mm type:

- (1x) K&F rotation clamp 450
Includes global truss half coupler (black, item # 823-B for diameters of 48 to 51 mm) and M10 x 35 screw. Strength class 12.9, SWL 450 kg (as per DGUV regulation 17 (BGV C1)).
- (1x) User manual

60-mm type:

- (1x) K&F rotation clamp 450
Includes global truss half coupler (silver, item # 828 for diameters of 60 mm) and M12 x 35 screw. Strength class 10.9, SWL 450 kg (as per DGUV regulation 17 (BGV C1)).
- (1x) User manual

2.3 Components



1. Half coupler
2. sCustom screw
3. Clamping jaws (with ID plate)
4. Adjustable M10 clamping lever
5. Recess scale
6. Linchpin
7. Load bolt
8. Load fork



Tip

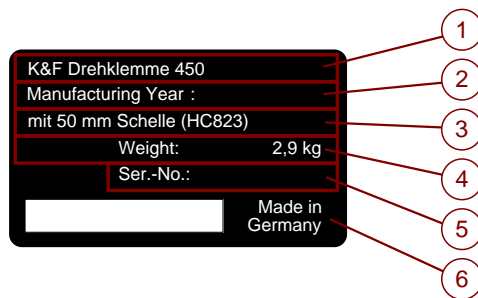
2.4 ID plates and safety labels

You can tell the 50-mm and 60-mm rotation-clamp types apart by their ID plates and the mounted half couplers: The half-coupler of the 50-mm type is black while the one of the 60-mm type is silver.

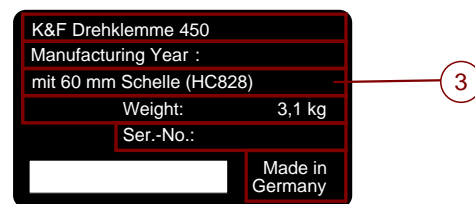
Before you start mounting a rotation clamp, always make sure you are about to use the rotation-clamp type suitable for the application at hand (i.e. the pipe diameter).

2.4.1 ID Plates

ID plate for K&F rotation clamp 450 featuring 50-mm half coupler (HC823-B):



ID plate for K&F rotation clamp 450 featuring 60-mm half coupler (HC828):



1. Product name
2. Year of manufacture
3. Type designation
4. Weight
5. Serial number
6. Country of manufacture

2.4.2 Safety Labels



1. Darf nur von qualifizierten Riggern benutzt werden!
2. Vor Gebrauch Handbuch und Sicherheitshinweise lesen!
3. Nicht benutzen, wenn Wind erwartet wird!
4. Nur mit den mitgelieferten Schellen und Schrauben benutzen!
5. Sichere Arbeitslast (WLL) @ Sicherheitsfaktor 10 (BGV C1) = 450 kg!
6. Nur vertikal belasten!

3. Safety Instructions



Warning

Suspended loads pose a safety risk.

Only qualified technicians are permitted to perform the installation steps. Be sure to use personal protective equipment at all times.

The technicians installing the speaker on site are responsible for and guarantee safe setup and use.

Never use signal cables or power cords for suspending, aligning, or securing the systems.

Note that the suspension points (i.e. trusses or pipes) must comply with the DGUV regulation 17 (BGV C1) or similar locally applicable accident-control standards. The maximum load must have been certified by an authorized expert.

Unless otherwise stated, use only KLING & FREITAG original parts for mounting the speakers. Never use other parts (in particular, parts made by third parties not listed in this manual).

Be sure to always visually inspect all safety-related speaker and accessory components before use. If there are signs of wear, cracks, or deformation, etc., replace the affected parts immediately. Visual inspection also includes checking all screwed connections of supporting components.

The information described here does not relieve the user of the duty to follow the given safety requirements and legal regulations.

Never make any modifications to the K&F Drehklemme 450 or replace individual components.

3.1 Maximum Load



Warning

Be sure to load the K&F rotation clamp 450 with the K&F SPECTRA 212 flybar, K&F VIDA L flying frame, K&F SEQUENZA 5 flying frame or K&F SEQUENZA 10 flying frame!

The maximum load including the flying frame, all speakers, and all connecting cables must never exceed **450 kg** (as required by DGUV regulation 17 (BGV C1)).

4. Mounting and Use Instructions



Tip

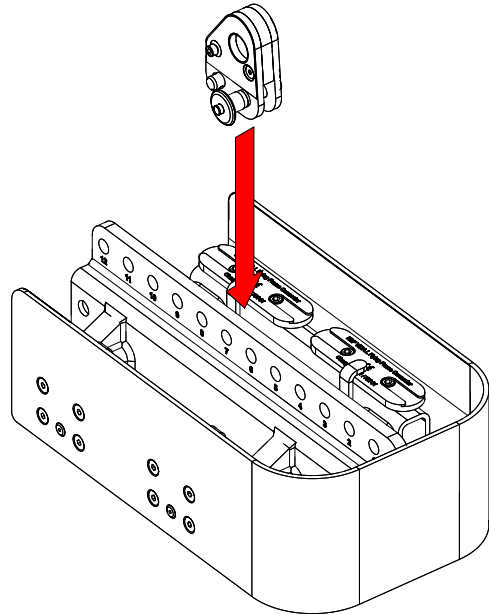
With early SEQUENZA 5 load adapters, the load bolt may not smoothly slide into the load-adapter hole. This is due to the load-adapter coating.

In this case, drive the load bolt carefully through the adapter by applying gentle blows to the bolt using a plastic hammer.

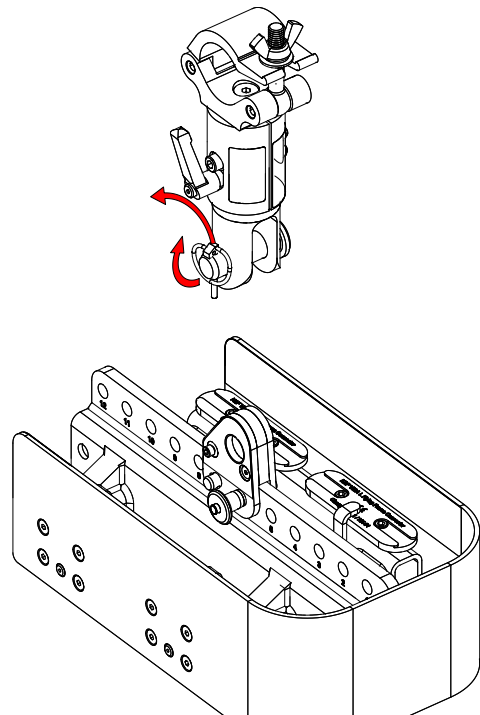
Next, pull the two components apart again and attach the flying frame to the rotation clamp as detailed below.

The following illustrations show an exemplary assembly of the K&F Rotation Clamp 450.

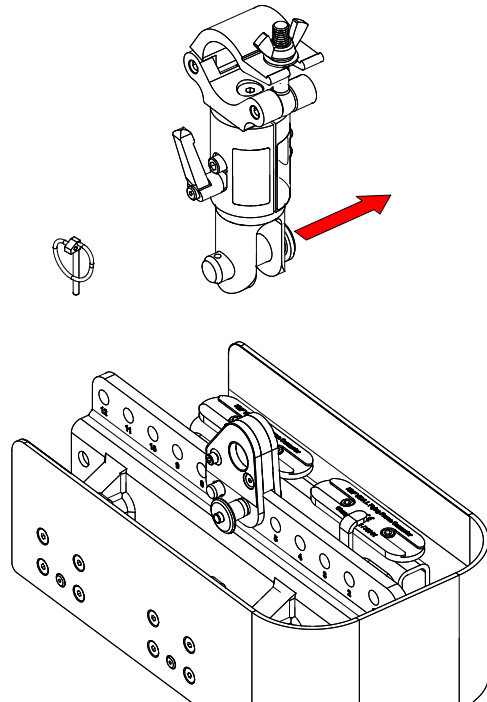
- 1) Insert the load adapter into the identified flying-frame bores.



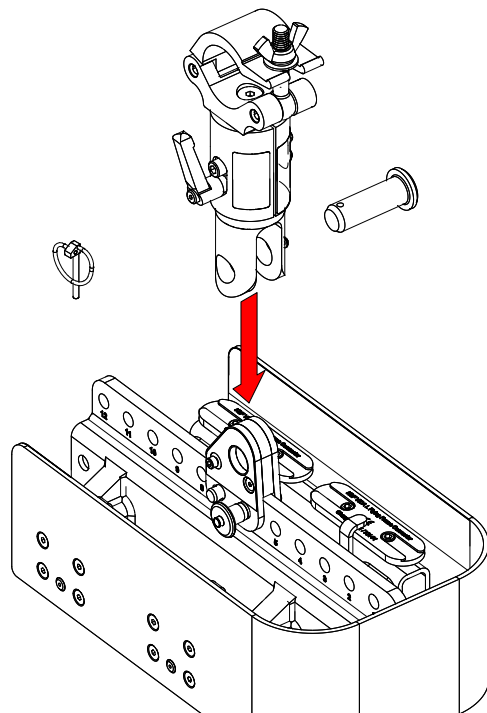
- 2) Fold back the linchpin and pull it out of the load bolt.



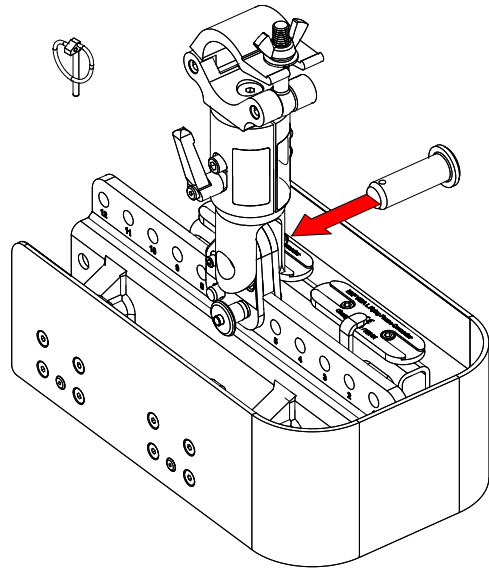
- 3) Pull the load bolt out of the load fork.



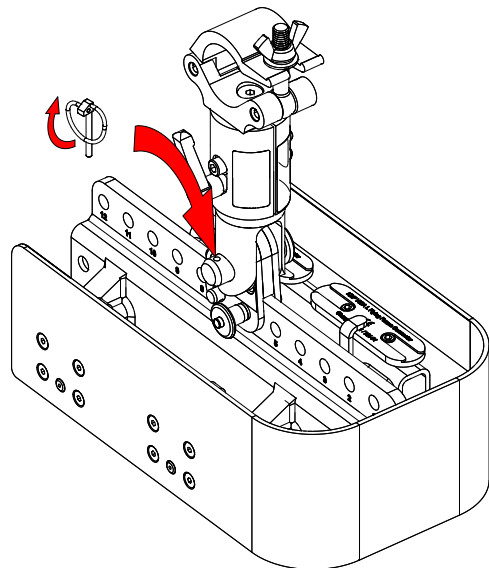
- 4) Place the rotation clamp with the load fork onto the mounted load adapter.



- 5) Fasten the load adapter by sliding the load bolt through the load fork and the load adapter.



- 6) Secure the load bolt by folding back the linchpin lock washer, inserting the linchpin into the load-bolt bore from above, and folding the lock washer back into position.



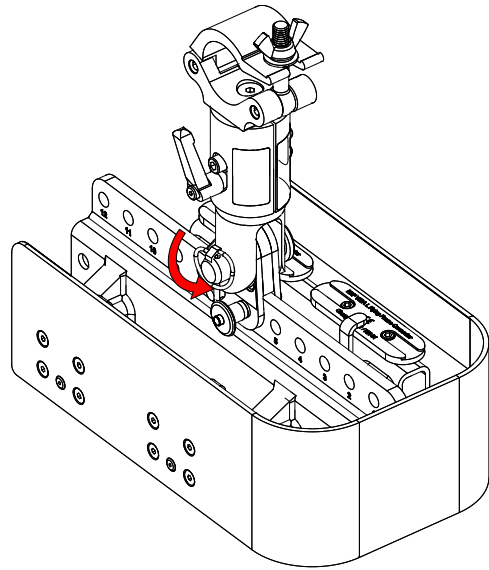
**Warning**

7) **Danger! Risk of injury from falling objects!**

Improperly assembled speaker suspension kits are not safe for speaker installation. Objects falling down impose a deadly risk for people standing near-by!

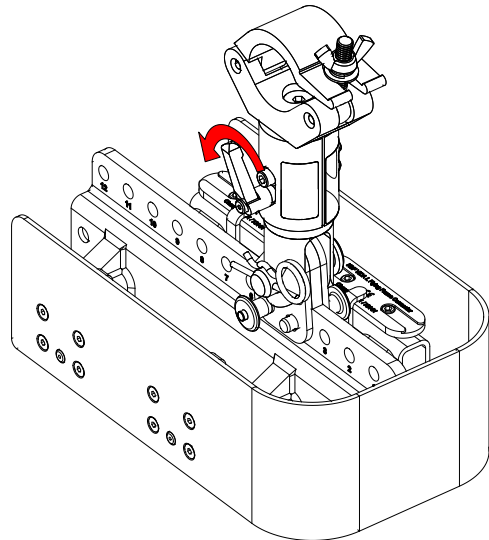
Always check all connecting components for secure fit.

Secure the return spring by folding back its safety washer.



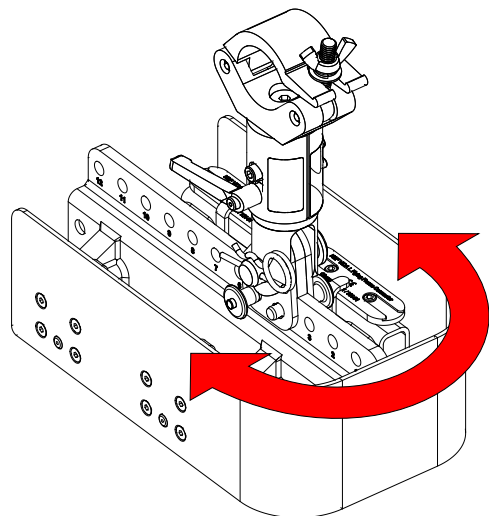
8) Next, you need to decide whether to adjust a rotation angle before suspending the array or first suspend it and then rotate it.

For threading in the array, release the clamping lever.

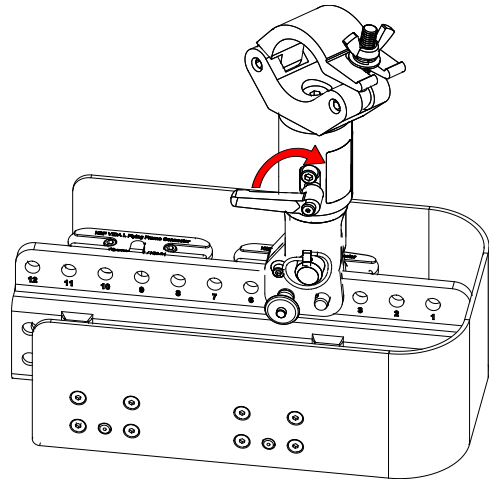


9) Rotate the array as necessary.

For precise orientation down to the degree, refer to the angle scale on the load fork.

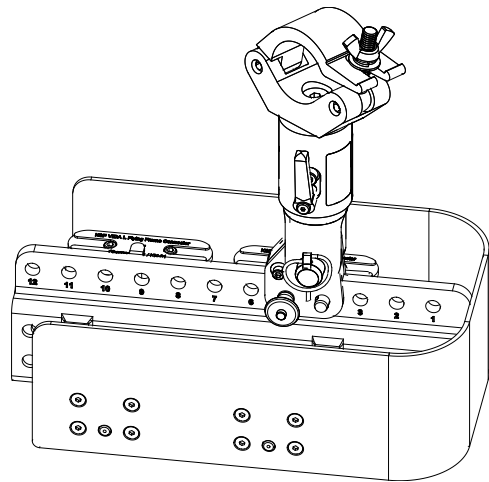


- 10) Fasten the clamping lever finger-tight.



- 11) For appearance, you can move the clamping lever into any direction without loosening the array-orientation lock.

For this purpose, pull the lever out a bit, rotate as desired, and release it when you are finished.



5. Application Examples



Warning

To prevent overloading the accessory, be sure to follow the maximum-load specifications (450 kg including the flying frame and cabling).

Note that the suspension point must comply with the DGUV regulation 17 (BGV C1) or similar locally applicable accident-control standards. The maximum load must have been certified by an authorized expert. When in doubt, request a confirmation by local authorities.

5.1 Weight of products

	Flying frame or flying accessory	Top	Bass
K&F SPECTRA 212	max. 45 kg	48 kg	-
K&F VIDA L without K&F VIDA C	12 kg	48.2 kg	-
K&F VIDA L with K&F VIDA C	12 kg	61.8 kg	-
K&F SEQUENZA 5	17.4 kg	16.3 kg	23.6 kg
K&F SEQUENZA 10	46 kg	34 kg	62 kg

5.2 Maximum setups

For cables and additional accessories, exemplary loads of 30 kg are obtained.

Depending on how the cables are laid, the load on the K&F rotary clamp 450 varies.

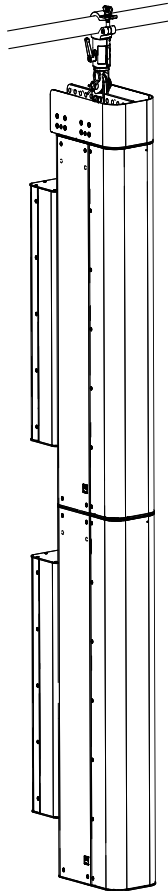
If you want to suspend SEQUENZA woofers to your SEQUENZA tops using K&F rotation clamps 450, be sure to reduce the number of specified tops accordingly.

You can suspend the following maximum setups without subwoofer using the accessory:

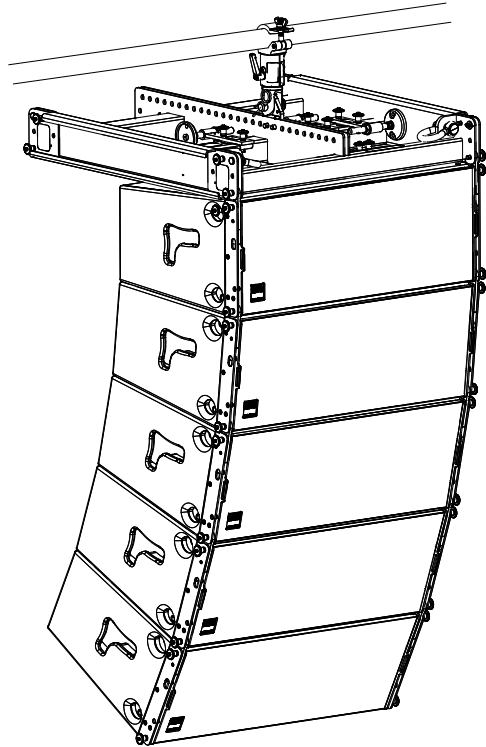
8 x K&F VIDA L without K&F VIDA C	427.6 kg	Limited by the K&F rotation clamp 450 and the rigging components of the loudspeakers
6 x K&F VIDA L with K&F VIDA C	412.8 kg	Limited by the K&F rotation clamp 450
15 x K&F SEQUENZA 5	291.9 kg	Limited by the rigging components of the loudspeakers
11 x K&F SEQUENZA 10	450.0 kg	Limited by the K&F rotation clamp 450
4 x K&F SPECTRA 212 (horizontal Array)	333 kg	Limited by the rigging components of the loudspeakers

5.3 Examples

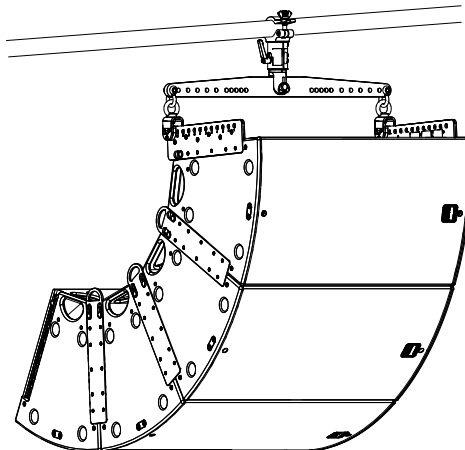
K&F VIDA L



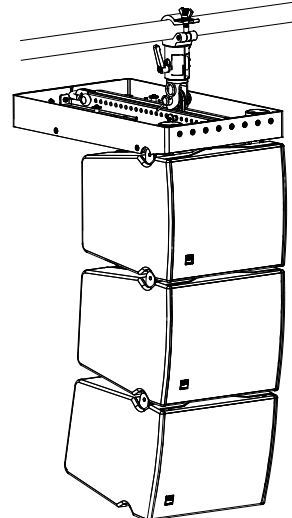
K&F SEQUENZA 10



K&F SPECTRA 212

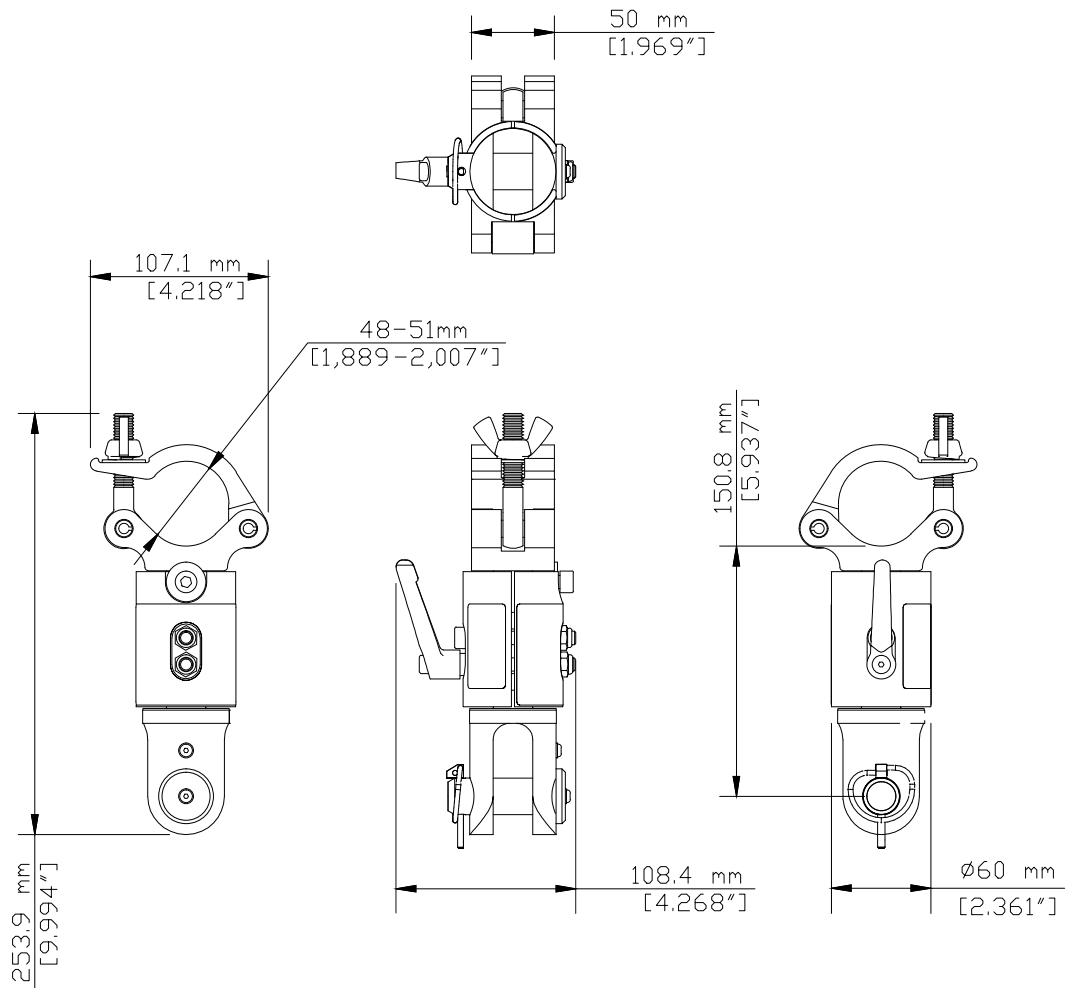


K&F SEQUENZA 5



6. Dimensions and Weight

Permanent weight: 2.9 kg (50-mm type), 3.1 kg (60-mm type)



7. EC Declaration of Conformity

EG-Konformitätserklärung

(Originalfassung)

(Declaration of EG-Conformity)

(Translation of the original)



Hersteller:

(Manufacturer)

Kling & Freitag GmbH
Junkersstraße 14
30179 Hannover
Deutschland

**Bevollmächtigter
für die Zusammenstellung der
technischen Unterlagen:**

(Authorized representative
for the compilation of technical
documents)

Kling & Freitag GmbH
Abt. Entwicklung
+49 (0)511 / 96997-50
Deutschland

Produkt:

(Product)

**Lautsprecheraufhängung
DREHKLEMMME 450**

**Loudspeaker suspension
ROTATION CLAMP 450)**

**Wir erklären, dass das genannte Produkt den aufgeführten Schutzanforderungen der
folgenden EG-Richtlinien entspricht:**

(We declare that the designated product is in conformity with the protection requirements imposed by
the following EU directives:)

- 2006/42/EG, Maschinenrichtlinie (Machinery Directive)

**Zur Beurteilung hinsichtlich der Einhaltung wurden folgende harmonisierte Normen
herangezogen:**

(Conformance of the products with the requirements is approved by compliance with the following
harmonized European standards:)

- DIN 12100 : 2011-03
- Eurocode 1/DIN EN 1991-1-1 : 12/2010
- Eurocode 3/DIN EN 1993-1-1 : 12/2010

Nationale Vorschriften:

(National regulations:)

- DGUV Vorschrift 17 und 18 (BGV C1)

Hannover, 17.2.2017


Jürgen Freitag, Geschäftsführung (CEO)

8. Care and Maintenance



Warning

1. For the owner and user, it is mandatory to be aware that speaker accessories used to fly or mount the speakers are fundamentally safety-relevant.

Note that the mains cable is supplied with either a connector appropriate for the place of delivery (see item number) or with open terminals (on the mains side).

Over time, the accessories may exhibit signs of wear, for example, from mechanical strain, transport damage, corrosion, or improper handling.

As a basic principle, you must visually inspect the speaker accessory before and after you use it. For fixed installations, you must inspect it for signs of wear at regular intervals.

When performing those checks, particularly look for deformations, cracks, dents, damage to threads, and corrosion. Also check slings and lifts (e.g. shackles, chains, and steel ropes) carefully for wear and deformation.

If as a result of these checks any uncertainty should arise with regard to safety or if specific faults are found, stop using the accessories and send in the product to KLING & FREITAG GmbH for inspection and repairs, if necessary.

Inspection regulations may vary depending on application and country of use. Observe all applicable regulations; when in doubt, contact the local authorities.

Many countries require regular inspection of mounting components and accessories. An additional annual inspection is typically required to be performed by a technical expert. Moreover, a legally certified or official authority must perform a detailed inspection every four years.

Therefore, be sure to maintain an inspection log. Enter the values determined for each speaker and accessory during the periodic checks into this log. This way, relevant data are always at hand in case of inspection. The log should also document maintenance measures and inspection intervals and contain parts lists.

2. Clean this speaker accessory regularly using a corrosion-prevention penetrating oil (for example, WD-40).
3. The half-coupler fixing screws are high-strength and have undergone special surface treatment. In the event of loss, replace with Kling & Freitag original screws only.

9. Transportation and Storage

The K&F Rotation Clamp 450 is protected against the effects of unfavorable temporary weather conditions, etc.; Despite, be sure to store, transport, and use the accessories in dry environments only. Speaker accessories are not designed for prolonged use in corrosive environments.

Make sure that the system is adequately ventilated during longer storage periods so any residual moisture can escape from the equipment.

10. Disposal

Dispose of this product according to local ordinance regulations.

Ensure that the product cannot be re-used or used otherwise after disposal.

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