15/11/2024

OPERATING MANUAL

Mobile Fall Protection Anchor for PPE **V21-2**

Type B anchor devices according to EN 795:2012

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Germany

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1.0 General

1.1 This operating manual is valid for

Definition	Type designation	Version	Article no.:
Mobile Fall Protection Anchor for attaching personal protective equipment (PPE against falling) combined with an adapter plate for reinforcing lattice girders in slab segments Anchoring device type B according to EN 795:2012	FreeFalcon – Mobile Fall Protection Anchor combined with an adapter plate	V21-2	12001

1.2 Validity of the documentation

Version no.:	Rev.		Reason	Valid from	ID from
B-208-35-EN	R0		First edition	24/11/2018	No. 2470
B-208-35-EN	R0	1	Page D7 and D23 changed	15/02/2019	No. 2499
B-208-35-EN	R1		Change of design and deletion	15/09/2020	
B-208-35-EN	R1	1	Pages A2 / B3 / B6 / D3 – D5 / F1 / F2 updated	01/07/2024	
B-208-35-EN	R2	2	Pages A2 / B3 / C1 / D3 / D4 / D14 / D16 updated	15/11/2024	

The operational safety and reliable functioning of the FreeFalcon – Mobile Fall Protection Anchor V21-2 for PPE against falling can only be guaranteed if the statutory general safety regulations and the safety instructions in these operating instructions are observed.
The manufacturer assumes no liability whatsoever for damage resulting from improper use or incorrect handling.

NOTE	
	This operating manual is regarded as a English translation of the original German operating manual as of 24.11.2018 which has the number 208-35-D. Each device must have an Instruction Manual provided in the language of the country in which the device is being used. • **Upon delivery** • **When used for the first time** Is the Instruction Manual not in the language of a country where the device is being used, it is the responsibility of the person who distributed the device or distribution partner who distributed the device to that country to provide a copy of the Instruction Manual in the language of that country. For technical reasons, with regard to FreeFalcon – Mobile Fall Protection Anchor V21-2, it is recommended that it will be referred to as “device” for the rest of this manual.

DANGER	
	These operating instructions are an integral part of the device and it must be ensured that all persons who are instructed to use this device have read and understood these instructions. These operating instructions must be kept in a safe place and must be accessible at all times to ensure they are available when needed. A manual which is incomplete or not up-to-date loses its validity with immediate effect and must be corrected or replaced immediately.

1.3 EU Declaration of conformity

according to PPE regulation

The manufacturer

FreeFalcon GmbH
Johanniterstrasse 50
D-72160 Horb am Neckar

hereby declares that the device **FreeFalcon – Mobile Fall Protection Anchor V21-2 for the attachment of PPE against falling combined with an adapter plate for reinforcing lattice girders in slab segments**

with the type designation **FreeFalcon – Mobile Fall Protection Anchor V21-2**

complies with the basic safety requirements of the PPE regulation (EU) 2016/425.

The device also complies with the relevant

EU regulations:	PPE regulation	(EU) 2016:425
Applied standards:	(CEN)	DIN EN 795:2012 – 10 Anchor device type B

The notified body DEKRA Testing and Certification GmbH, identification number 0158, has issued the EU type-examination certificate (ZP/B312/18).

The PPE is subject to the following conformity procedure: Conformity to type based on internal production control plus supervised product checks at random intervals (module C2).

The technical documentation of this device has been prepared in accordance with DIN EN 795:2012-10 and DIN EN 365:2004-12. The manufacturer agrees to submit technical documentation to national authorities as needed.

Authorised representative for the compilation of the technical documentation:

Horb am Neckar
24/11/2018

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TRANSLATION

(1) EU-Type Examination Certificate

according to Module B Paragraph 6.1 of PPE Regulation (EU) 2016/425

(2) Regulation of the European Parliament and of the Council of 9 March 2016 relating to personal protective equipment (PPE) - Regulation (EU) 2016/425

(3) No. of EU-Type Examination Certificate: **ZP/B312/18**

(4) Product: **Anchor device type B**
Type: FreeFalcon V21-2

(5) Manufacturer: **FreeFalcon GmbH**

(6) Address: **Johanniterstr. 50, 72160 Horb am Neckar, Germany**

(7) Risk category: **III**

(8) The design and construction of this personal protective equipment and any acceptable variation thereto are specified in the appendix to this EU type-examination certificate.

(9) The certification body of DEKRA EXAM GmbH, Notified Body No. 0158 according to Chapter V of Regulation (EU) 2016/425 of 9 March 2016, certifies that this personal protective equipment has been found to comply with the essential Health and Safety Requirements given in Annex II to the Regulation. The evaluation results are recorded in report PB 18-275.
Other possibly applicable Union legislations applicable to the specified personal protective equipment have not been taken into account in this EU-type examination certificate.

(10) The essential Health and Safety Requirements are assured in consideration of

DIN EN 795:2012

(11) This EU type-examination certificate relates only to the design, examination and tests of the specified personal protective equipment in accordance to Regulation (EU) 2016/425.
For category III personal protective equipment, this EU type-examination certificate may only be used in conjunction with one of the conformity assessment procedures referred to Article 19 (c).

(12) When applying the CE Marking according to Article 16 and 17 of Regulation (EU) 2016/425 to the products that conform to the types examined, the client is obliged to add, in accordance with the attached pattern, the identification number of the Notified Body engaged in the conformity assessment according to Module C2 or D.
Furthermore, the manufacturer is obliged to issue an EU declaration of conformity in accordance with Article 15 of Regulation (EU) 2016/425 and to enclose it with the personal protective equipment, or to indicate the Internet address in the manual and in the instructions in Annex II, point 1.4., at which the EU declaration of conformity can be accessed.

(13) This EU-Type Examination Certificate is valid until 2023-12-13

DEKRA EXAM GmbH
Bochum, 2018-12-14

Signed: Wiegand
Certification body

Signed: Mühlenbruch
Special services unit

We confirm the correctness of the translation from the German original.
In the case of arbitration only the German wording shall be valid and binding.

Certification body

Special services unit

DEKRA EXAM GmbH, Dinnendahlstrasse 9, 44809 Bochum, Germany
Telephone +49.234.3696-105, Fax +49.234.3696-110, zs-exam@dekra.com

TRANSLATION

(14) Appendix to

(15) **EU-Type Examination Certificate**
ZP/B312/18

(16) 16.1 Subject and type

Anchor device type B
Type: FreeFalcon V21-2

16.2 Description

The anchor device type FreeFalcon V21-2 (Fig. 1) is used to protect one person against falls from a height. The device is used on lattice girders in ceiling segments.
The corrosion-resistant anchor device is made of a base pedestal with a pivoted swivelling arm. Four transport eyelets are screw-fastened to the pedestal; these eyelets are used to transport the anchor device to its intended place of use. Four segment adapters which include a lashing strap on a roll are screw-fastened to the pedestal. The lashing straps are used to fix the anchor device firmly to the ceiling segments.
Prior to the use, the swivelling arm is erected by means of an integrated hydraulic cylinder and the lifting rod intended for that purpose, applying a pressure of 90 bars against a pressure spring. To do so, a pressure gauge is provided at the pressure chamber. At the top end of the swivelling arm, there is a swaged wire-rope eyelet with a thimble. The wire-rope eyelet is the anchor point to which the user connects his PPE to protect himself against falls from a height.
In the case of a fall from a height or a tensile load of more than >100 kg is exerted on the anchor point, the safety valve of the hydraulic unit is triggered: this causes the pivoted swivelling arm to retract, pulling the anchor point towards it. Moreover, a locking mechanism engages which prevents the swivelling arm from rotating freely.
The anchor device has a weight of 595 kg.

Fig. 1: Anchor device, type: FreeFalcon V21-2

(17) Report

PB 18-275, 2018-12-14

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Notes

1.4 Contents

4 Operation

5 Service and maintenance

6 Appendices

2.0 Safety instructions

2.1 Symbols and legends in this manual

In this operating manual, safety-relevant sections of text are classified according to their danger level and designated with corresponding symbols according to ASR A1.3 / ISO 7010.

DANGER	
	**Indicates an imminent danger** **Failure to comply will result in death, disability or serious injury**

WARNING	
	**Indicates a potential danger** **Failure to comply will result in death, disability or serious injury**

CAUTION	
	**Indicates a potential danger** **Failure to comply could result in minor or moderate personal injury or property damage**

NOTE	
	**Indicates useful information within this operating manual**

2.2 Basic safety instructions

The safety instructions in this operating manual serve as a basis for the safe use of the device (FreeFalcon – Mobile Fall Protection Anchor **V21-2**).

In all cases, to avoid accidents, all applicable statutory regulations, rules and standards must be observed at the place of use.

This operating manual and the inspection logbook must be available at all times to ensure accessibility when needed.
All persons who are instructed to use this device must confirm in the inspection logbook that they have carefully read and understood this instruction manual.

DANGER	
	• The FreeFalcon – Mobile Fall Protection Anchor **V21-2** is only designed to protect one person. • Using it to protect more than one person is prohibited.

WARNING	
	The device and its equipment are always exposed to the risk of wear or damage, depending on the load and/or operating conditions. For safe operation, it is essential that the device and the equipment used are always in the condition required. When operating under extreme operating conditions such as *temperature, humidity or contamination*, the legally required inspection time intervals **Chapter 4.6** must be shortened appropriately and implemented by the operating company.

2.3 Intended use of version V21-2

The FreeFalcon – Mobile Fall Protection Anchor version V21-1 and V21-2 is a device specifically designed for overhead anchorage of CE-approved PPE fall arresters with a maximum cable length of 8 metres.

By attaching an adapter plate to the underside of the base plate of a basic **FreeFalcon – Mobile Fall Protection Anchor V21-1** device, it is possible to convert the device to type **V21-2**.

Converted devices of type **V21-2** are intended exclusively for use on **reinforcing lattice girders in slab segments**. The conversion enables the device to be anchored to the structure using 4 integrated tension straps.

Use on surfaces other than reinforcing lattice girders in slab segments is **strictly prohibited** for converted devices of the type **V21-2**.

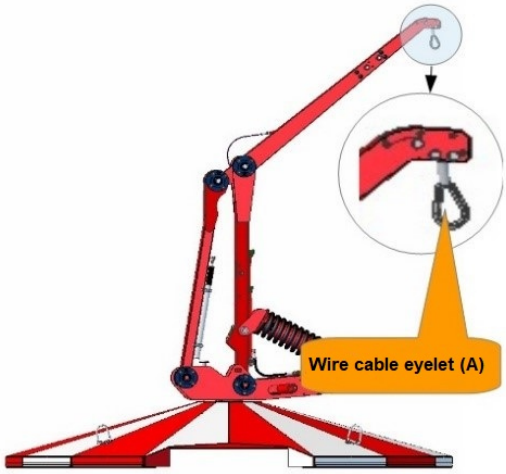
For this reason, the FreeFalcon – Mobile Fall Protection Anchor **V21-2 cannot** be moved by means of a hand pallet truck due to its design.

The device can be moved by crane and approved loading belts or 4-bar hangers using the four load attachment points on the base plate.

Anchor point

The FreeFalcon – Mobile Fall Protection Anchor V21-2 has a wire cable eyelet **(A)** for the attachment of a retractable fall arrester in accordance with EN 360 / FPrEN 360:2022.

Only carabiner hooks as per EN 362-B are permitted as basic connectors.



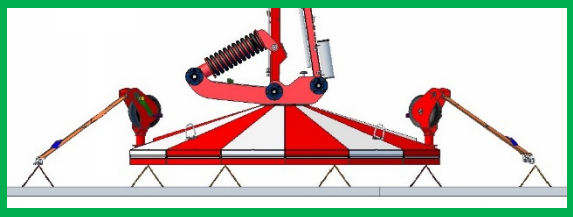
DANGER	
	The attachment of a fall arrester with prohibited connector elements or to anything other than the wire cable eyelet (A) is strictly prohibited.

2.4 Prohibitions on operation

DANGER	
	• Operation of the device on surfaces with an inclination of more than 5° is prohibited. • The installation surface must have a specific load capacity of at least 120 kg/m². • The reinforcing lattice girders in slab segments used to attach the device must be permissible for securing purposes. • The device and the reinforcing lattice girders in slab segments intended for attachment must be checked for their proper condition before and after each relocation. • The device must only be used on lattice girders in slab segments. • Use on other surfaces is **prohibited**. • Use **without** proper anchoring to the lattice girders (building) is **strictly prohibited**.

CORRECT USE

Tensioned at 4 points with reinforcement type V21-2



DANGER

Unsecured on formwork panels, securing not guaranteed with type V21-2.

Prohibitions on operation

DANGER

- The FreeFalcon – Mobile Fall Protection Anchor V21-2 is only designed to protect one person.
- Using it to protect more than one person is prohibited.
- Only approved PPE fall arresters may be attached.
- Technical changes or the removal or deactivation of components of the device are prohibited.
- The device may only be used as personal fall protection equipment. Use as lifting or rescue equipment is prohibited.
- Any use for purposes other than those specified in Chapter 2.3 (Intended use) is prohibited.
- Relocation with a person secured on the device to be relocated is prohibited.
- It is forbidden to stand on or place objects on the base plate or for persons to be present in the work area (contour of the base plate).

WARNING	
	• The safety lifeline between the fall protection anchor and the person to be secured must always be taut. • Operation of the device in the activated safety position is prohibited. • When moving the device with a crane, sufficient safety distances to persons and objects must be observed. • Devices with an expired accident prevention regulation inspection must be removed from service. • Except for cleaning and care work, conversions, repairs and maintenance work are only permitted by qualified persons authorised by the manufacturer. • Conversion of the device from type **V21-1** to **V21-2** is only permitted by a qualified person authorised by the manufacturer. • The FreeFalcon – Mobile Fall Protection Anchor **V21-2** must not be used near combustion sources. • The FreeFalcon – Mobile Fall Protection Anchor **V21-2** must not be used at temperatures below -25 or above +50 °C. • The FreeFalcon – Mobile Fall Protection Anchor **V21-2** must not be used in the vicinity of live cables. • The FreeFalcon – Mobile Fall Protection Anchor **V21-2** must not be used in atmospheric conditions with a tendency to cause thunderstorms (lightning hazard). • The user must be at least 18 years old. Apprentices may only use the device if they are at least 16 years of age and under constant supervision. • The user must be familiar with the contents of the manual and have fully understood them. • The user must not be under the influence of alcohol, drugs, medications or other substances that could impair their perception. • In order to avoid injuries caused by a swing fall, the provisions specified in **Chapter 4.5.4** (Swing fall) must be observed. • Before using the device, a rescue plan must be prepared for the event of a fall. The rescue plan must be available at all times and must comply with the local conditions and national statutory regulations.

CAUTION	
	• The nameplate and the safety instructions on the device must not be removed or covered. • When moving the device, appropriate protective clothing (PPE) must be worn (safety shoes, gloves, safety helmet). • The device may only be relocated and transported using suitable and permitted means of transport. • When walking on the bevelled base plate for service or maintenance work required, a considerable risk of slipping must be expected.

NOTE	
	• Proper maintenance and cleaning, as described in **Chapter 5.1 / 5.2**, not only has a positive effect on the service life of the device, it also ensures safe operation when needed. • Due to its weight of 595 kg, the device may damage or scratch sensitive surfaces such as marble, parquet or tiles during storage or transport. • Storage over extended periods of time in damp atmospheres increases the risk of corrosion. This can be avoided by covering with a protective cover (e.g. a truck tarpaulin). • Storage over extended periods of time in locations exposed to direct UV radiation reduces the service life of all the device's rubber components and components containing plastic. This can be avoided by covering with a protective cover (e.g. a truck tarpaulin).

2.5 General safety instructions

All persons involved in the assembly, commissioning, operation and maintenance of the device must:

- **Have the necessary qualifications**
- **Comply strictly with these operating instructions**

WARNING	
	• The device may only be put into operation in a condition that complies with applicable regulations. • The device must not be used if it is determined that safety-relevant components are faulty, damaged or disassembled. • Equipment that is not in proper condition must be removed from the work area and marked with a "**Defect**" sign on the Fall Protection Anchor. • The decommissioning of the device must be documented immediately in the inspection logbook**.** • Re-commissioning of the device is only permitted after restoration of proper condition by qualified personnel and must also be documented in the inspection logbook. • An adapter plate for a basic device of type V21-1 must only be added by qualified persons and documented in the inspection logbook.

2.6 Qualifications and responsibilities

Before commissioning the device, clearly determine who is responsible for the three activities listed below.

- **Operating company**
- **User(s)**
- **Personnel for maintenance, retrofitting, testing and servicing (qualified person)**

2.6.1 Area of responsibility of the operating company

- The operating company is obliged to comply with and monitor all applicable statutory regulations and safety regulations at the place of use.
- Training of personnel.
- Instruction of the personnel at regular intervals regarding all safety regulations concerning the device (at least once a year).
- Checking the level of knowledge of the personnel.
- Documentation of training/instruction.
- Confirmation of participation in the training/instruction with signatures.
- Checking whether the staff work in a safety- and hazard-conscious manner and observe the operating instructions.

2.6.2 Users

- Users are persons who have received instruction from a **qualified instructor or training instructor** about the tasks assigned to them and possible dangers.
- Confirm to the operating company that they have read and understood the operating manual.

Users are entitled to:

- Use the device within the scope of their instruction.
- Perform configuration changes on the device.
- Carry out required inspections within the scope of their authorisation.
- Remove damaged or defective devices as well as additional equipment from service.

2.6.3 Personnel for maintenance, servicing and APR inspections (Qualified person)

- Qualified persons are persons who have acquired in-depth knowledge of the functioning, safety equipment, circuit diagrams, machine sequences and links to other technologies (mechanical, hydraulic) of the FreeFalcon – Mobile Fall Protection Anchor **V21-1** and **V21-2** device (Certificate of Expertise) as a result of training by the manufacturer.
- Qualified personnel are entitled, on the basis of their technical training and their knowledge of the relevant regulations, to independently perform and document the work and inspections assigned to them.

3.0 Device description

3.1 General

The FreeFalcon – Mobile Fall Protection Anchor **V21-2** is a device specifically designed and tested for overhead anchorage of CE approved PPE extendible fall arresters with a maximum cable length of 8 metres.

In the default position of the **V21-2** device, the anchor point is 2.39 metres above the installation surface.

To increase safety, a safety device is activated even before the maximum load is exceeded. This independently results in a displacement of the anchor mast while simultaneously securing the anchor mast against rotation.

In this configuration, persons secured with a PPE fall arrester according to **DIN EN 795:2012** can still be safely caught from a distance of up to 8 metres.

The safety concept of the **V21-2** device comprises the device geometry, the automatic activation of the safety equipment and the anchoring by means of 4 tension straps to the structure (reinforcing lattice girders in slab segments).

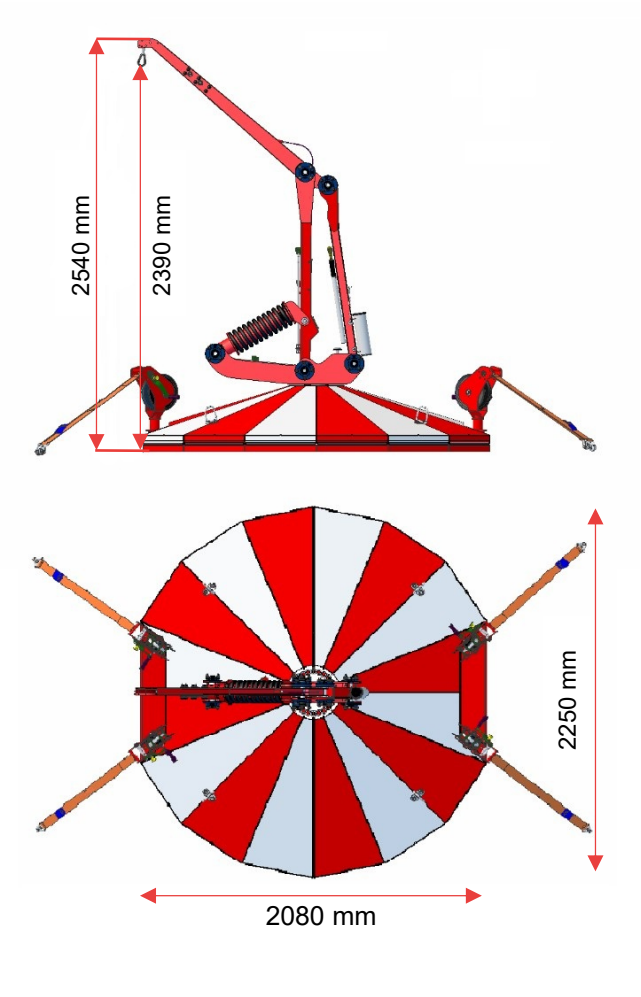
The applied test procedures comply with the standard **DIN EN 795:2012 – 10**.

3.2 Technical specifications

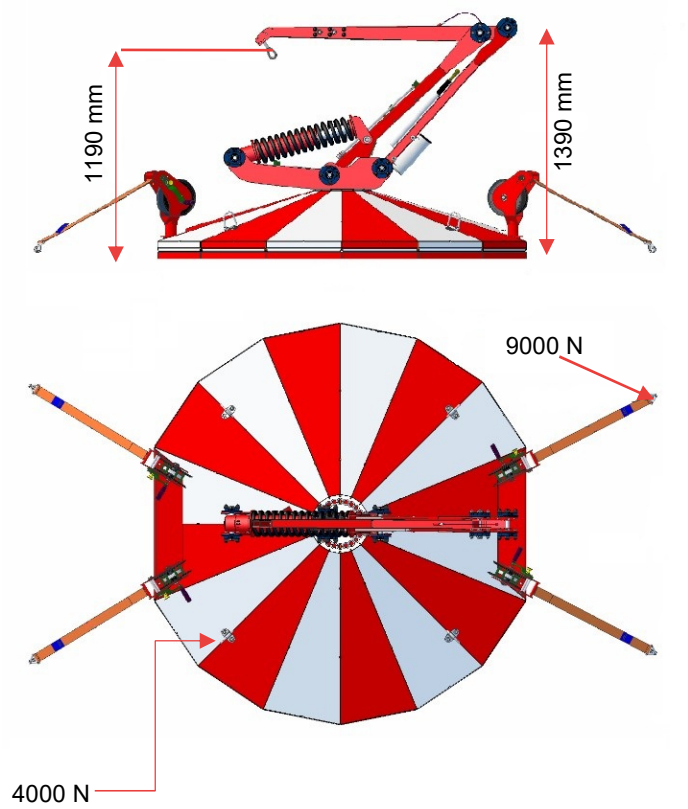
Definition		
Device weight	*Min. 595 kg*	
Anchor point height in the default state	*2390 mm*	
Anchor point height in safety configuration	*1190 mm*	
Lowest base diameter	*2080 mm*	
Largest base diameter	*2250 mm*	
Tension straps for anchoring to the structure	*4 units*	
Tractive force per tension strap	*Max. 8 kN*	
Strap extension length	*Max. 4 m*	
Pressure force of the safety unit	*Min. 29050 N*	*Max. 30327 N*
Triggering time of safety unit	*Min 1.5 sec.*	*Max 2.0 sec.*
Topcoat RAL (standard)	*3001 signal red*	*9003 signal white*
Load attachment points	*4 pieces*	*4000 N each*
Trigger force of the safety device	*1.1-1.5 kN*	*Exceedance*
Hydraulic oil	*HLP-46*	

3.3 Dimensions

The graphics below show all the external dimensions of the device **V21-2** in its two configuration types (default state and safety configuration). The basic mass of the device is approx. **595 kg**.



In default state



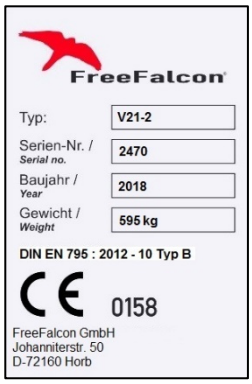
In safety configuration

3.4 Label identification

In the danger zones of the device, additional warnings are attached. These directly indicate a possible danger with a suitable text or with self-explanatory symbols.

CAUTION	
	• The nameplate and the safety instructions on the device must not be removed or covered. • Particular care should be taken in the designated danger area. • The posted instructions must be obeyed.

3.4.1 Nameplate



- The information on the nameplate allows each device to be clearly identified by its ID-no. / Serial-no.
- All documents included with the device, such as the inspection logbook and the operating manual, refer to the ID-no. / Serial-no. noted on the device in order to avoid confusion.

3.4.2 Validity period of the accident prevention regulations inspection

WARNING

Month validity expires

Year validity expires

Example: Accident prevention regulations valid until 07/2018

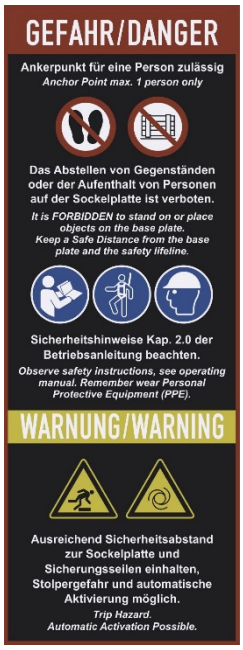
- The APR inspection plate clearly shows the guidelines according to which the inspection was carried out.
- The validity of the accident prevention regulations inspection is made clearly visible by the stamped areas (month/year) on the outer ring of the label.

WARNING

- **Devices without a valid APR inspection must be immediately removed from the working area and marked with a "Defect" sign on the Fall Protection Anchor.**
- **The decommissioning of the device must be documented immediately in the inspection logbook.**
- **Re-commissioning of the device is only permitted after the device has been restored to its default state by qualified personnel and must also be documented in the inspection logbook.**

3.4.3 Warning field

WARNING



The FreeFalcon – Mobile Fall Protection Anchor V21-2 is for 1 Person only.

- A warning field uses plain text and clear symbols to warn of possible sources of danger during operation of the device.

Danger

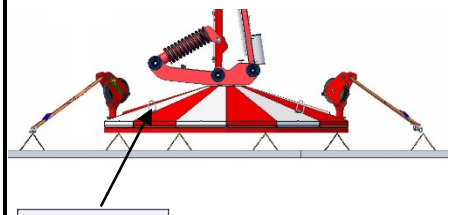
- It is forbidden to stand on or place objects on the base plate. Keep a safe Distance from the base plate and safety lifeline.
- Observe the operating instructions and wear personal protective equipment.

Warning

- Trip hazard and automatic activation possible.

3.4.4 Warnings related to the base plate

WARNING



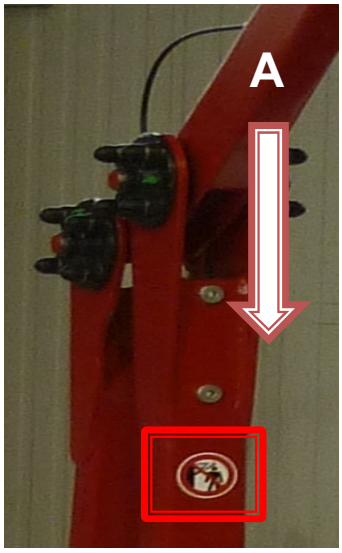
Load attachment points only for relocation with crane systems

Not an anchor point

- Walking on the base plate is prohibited.
- Depositing objects on the base plate may obstruct the end position of the security configuration and is prohibited.
- Increased risk of tripping (maintain sufficient safety distance).
- Danger due to automatic activation of the safety device (maintain sufficient safety distance).

3.4.5 Extension arm warning sign

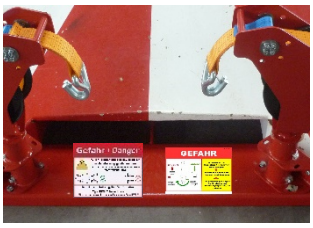
WARNING

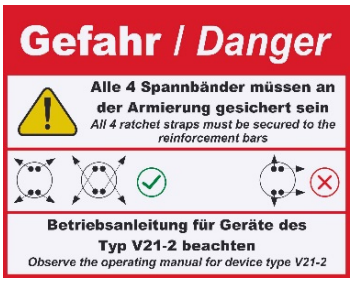


- When activated by the safety function, the extension arm **(A)** moves at high speed and with high force in the direction of the base plate.
- Being present (also during cleaning or maintenance work) below the extension arm is expressly forbidden.
- Independent activation of the safety function may occur under certain conditions at any time.

3.4.6 Adapter plate warning sign

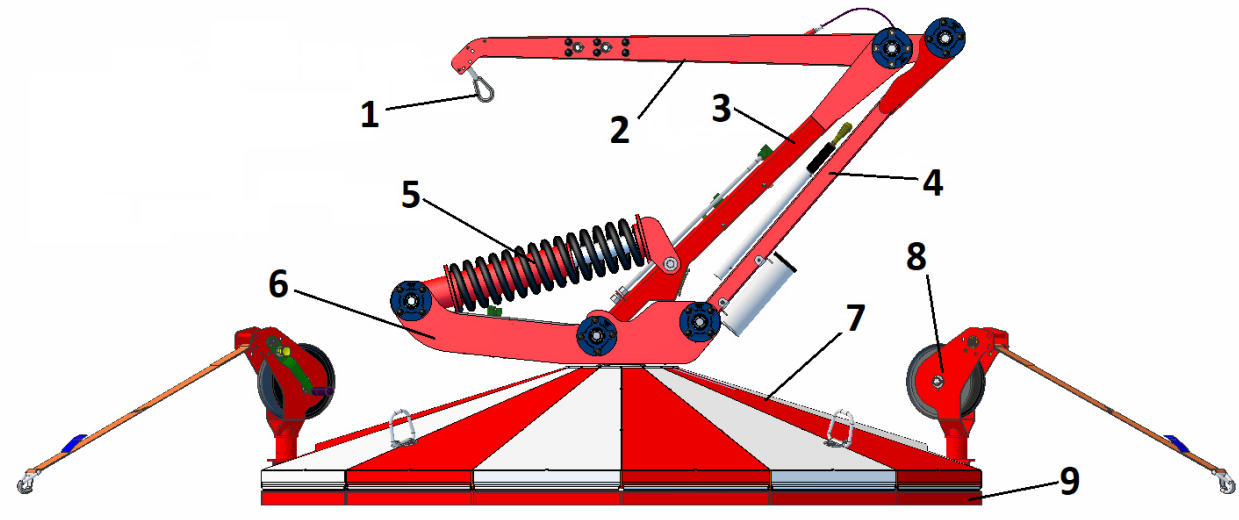
WARNING





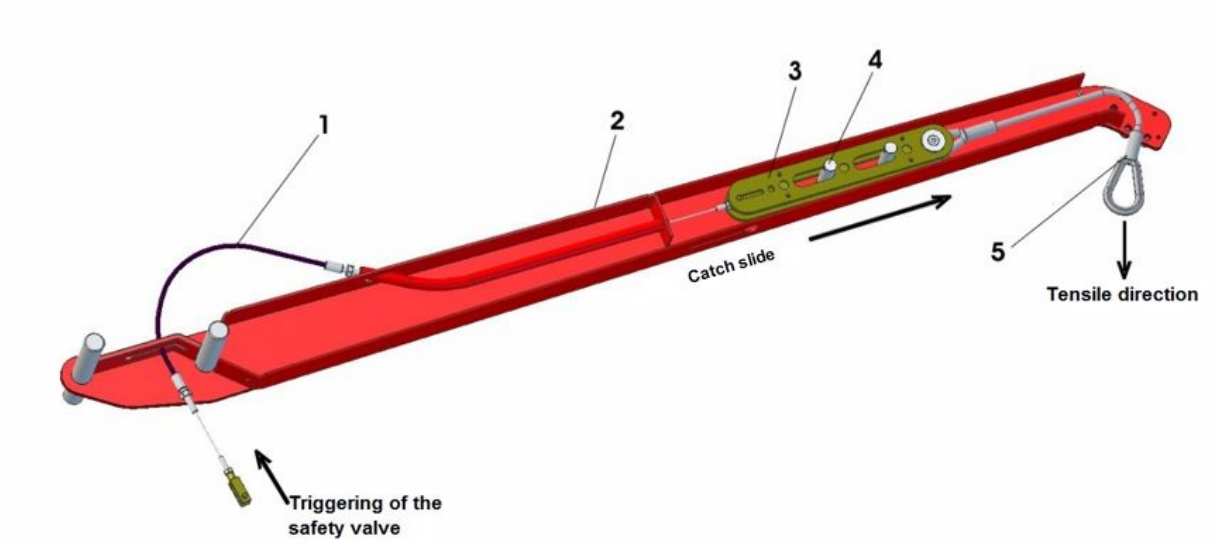
- In order to ensure safety in the event of a fall, the device must always be firmly attached to the lattice girders with all 4 tension straps.
- The crank of the tensioning device must always be mechanically secured.
- At least 4 complete revolutions of the crank are required for secure tensioning of the straps.
- Use on surfaces other than slab segments with reinforcing lattice girders is prohibited.
- Use as a type E device (securing by means of its own weight) is prohibited.

3.5 Assembly description



Item 1	**Anchor point**
Item 2	**Extension arm**
Item 3	**Base mast**
Item 4	**Push rod**
Item 5	**Safety unit**
Item 6	**Swivel head**
Item 7	**Base plate**
Item 8	**Tension pulleys**
Item 9	**Adapter plate**

3.5.1 Extension arm and anchor point



The extension arm serves as a support and protection for the integrated fall indicator. It also increases the height of the anchor point at the end of the safety line **item 5**.
In the event that a person falls while secured to the anchor with PPE, the design will absorb some of the resulting impact forces due to dynamic deformation and activation of the safety function.

In the case of a fall, the force acting in the tensile direction on the safety line increases greatly. This force is transmitted unhindered via the guided safety line to the catch slide **item 3**.

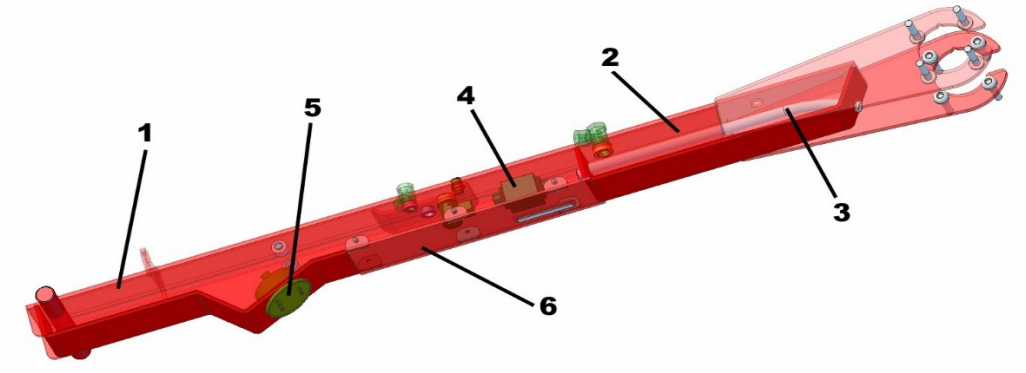
The catch slide is frictionally engaged in its normal position with a blocking force of min. 100 kg to max. 150 kg by spring-loaded pressure pads in its position in the carrier of the catch boom **item 2**.

With an increase of more than 150 kg of the force on the catch slide transmitted by the safety line, the catch slide is moved to the stop of the guide pins **item 4** and form-fit locked with the extension arm.

As a result of this displacement, the trigger cable **item 1** connected to the catch slide is actuated, and a valve in the base load activates the safety function.

DANGER	
	• **Failure or damage to components of the extension arm assembly no. 32300 would result in death, disability or at least serious injury.** • **Adjustment and maintenance work may only be performed by qualified specialist personnel trained by the manufacturer.**

3.5.2 The base mast



The most relevant assembly of the device in terms of safety is the base mast **item 1**.
Thanks to its design, it provides several characteristics required for the function of the device.

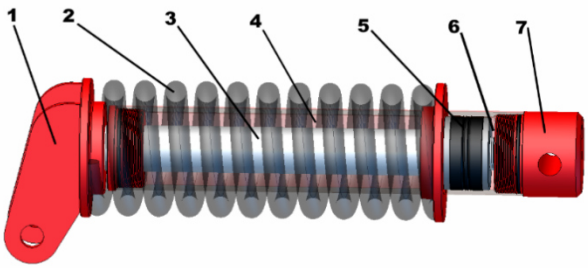
The upper part of the base mast **item 2** serves as a reservoir for the hydraulic oil needed for the safety unit. The release cable connected to the catch slide leads through the tube **item 3** and is connected to the activation valve for the safety function **item 4**.

If the safety function is activated, it assumes the geometric control function between safety unit, push rod, extension arm and swivel head.

The angled protrusion at **item 5** serves as a pressure plunger for the locking pin of the rotary locking device and as a receptacle for the pressure monitoring indicator.

DANGER	
	• **All hoses and tubes inside and outside the base mast are constantly under high pressure.** • **In the event of damage or improper loosening of tubes or lines, there is a risk of self-triggering of the safety function.** • **Improper handling of the activation valve will lead to self-triggering of the safety function.** • **Maintenance work and removal of the cover (ITEM 6) may only be performed by qualified specialist personnel trained by the manufacturer.**

3.5.3 The safety unit



Item 1 Release half on base mast
Item 2 Compression spring
Item 3 Cylinder rod
Item 4 Pressure oil side
Item 5 Separation piston
Item 6 Suction oil side
Item 7 Fixed half on swivel head

The safety unit serves as an actuator and energy storage to perform the safety function.

The device is kept in its default state via the connection from the release half on the base mast **item 1** to the fixed half on the swivel head **item 7**.

In the default state, using hydraulic pressure on the pressure oil side **item 4**, the pre-loaded spring **item 2** is contracted and held in place (see hydraulic diagram in appendix).

By opening the trigger valve in the base mast, the oil on the pressure oil side **item 4** flows through the hydraulic system and through the reservoir in the base mast to the suction oil side **item 6** of the safety unit.

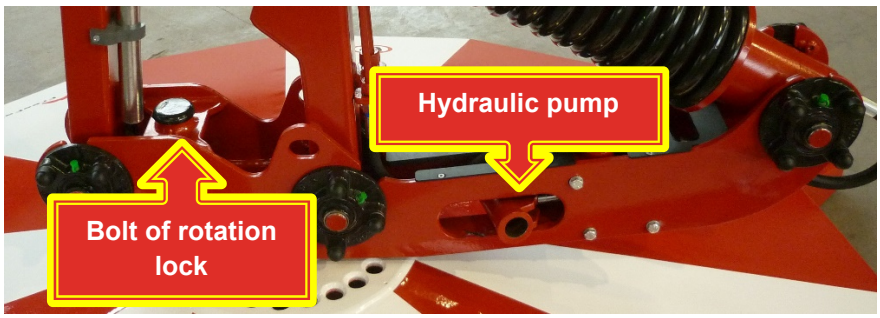
In this process, by relieving the compression spring **item 2**, the base mast is pushed back and the device moves downwards into the safety configuration.

DANGER	
	• **In the event of damage or improper loosening of pipes or lines, there is a risk of self-triggering of the safety unit.** • **Improper handling of the safety unit can lead to automatic activation.** • **Maintenance work and disassembly may only be performed by qualified specialist personnel trained by the manufacturer.**

3.5.4 The push rod

- Together with the base mast, the push rod ensures a structurally specified movement geometry in the event of activation of the safety function.
- Through the push rod, a large portion of the impact forces is diverted onto the anchor point to the swivel head.
- Due to its geometry, under load the push rod supports the anchor mast to move into the safety configuration.
- The outside of the push rod serves as a mounting surface for the nameplate and the warnings.

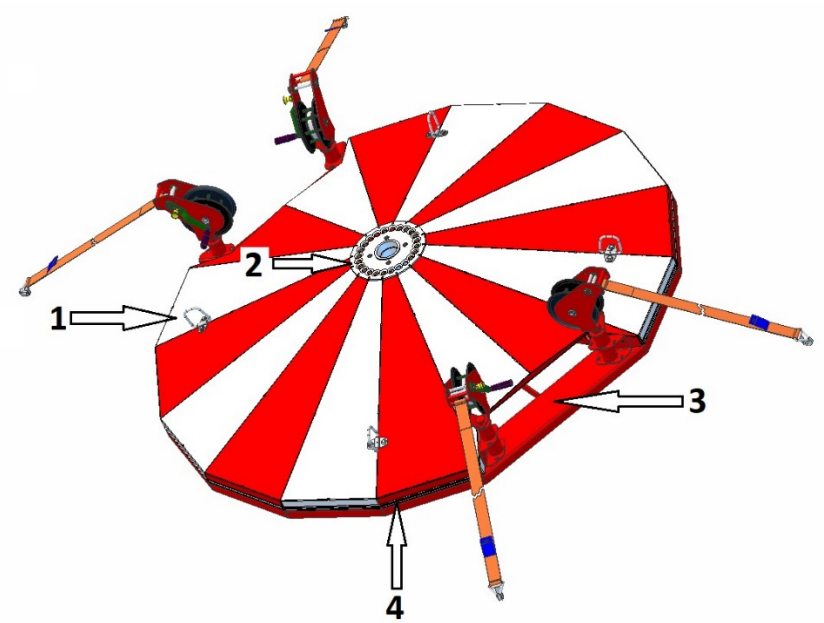
3.5.5 The swivel head



- The swivel head serves as a rotating interface between the base plate and device structure.
- The guide of the locking pin of the rotation lock is firmly integrated into the swivel head.
- The swivel head also serves as a mount for the hydraulic pump required for tensioning the safety unit.

DANGER	
	• **In the event of damage or improper loosening of pipes or lines, there is a risk of automatic activation of the safety unit.** • **Maintenance work and disassembly may only be performed by qualified specialist personnel trained by the manufacturer.**

3.5.6 The base plate including adapter plate



The base plate is used to hold the complete safety-device structure and, in the device version **V21-2 (type B anchor devices)**, also to support the bolted-on adapter plate.

For relocation using crane systems, the base plate **item 1** is fitted with suitable load attachment points.

In the safety configuration, the holes **item 2** arranged around the centre of the base plate serve as a holder for the locking pin of the swivel head.

In the case of the recess on the underside of the base plate **item 3**, access is **blocked and unusable** for converted version **V21-2** devices.

Anti-slip segments **item 4** have no function on converted version **V21-2** devices.

DANGER	
	• **Severe to fatal injuries from damaged or insufficiently dimensioned lifting gear and slinging equipment.** • **Severe to fatal injuries from device overturning due to the use of unsuitable forklifts or transport vehicles.**

3.5.7 Additional adapter plate

The purpose of the adapter plate **item 1** is to protect the twelve anti-slip segments bolted to the underside of the base plate of a **V21-1**standard device.

Thanks to its design, the adapter plate **item 1** ensures uniform support on the reinforcing lattice girders of slab segments.
In addition, relocation by means of hand-operated pallet trucks is prevented to avoid confusion with **V21-1 devices (type E anchor devices)**.

The **V21-2** device is braced and secured to the structure (reinforcing lattice girders in slab segments) in the event of a fall and against displacement by means of four swivelling winch supports **item 2** bolted to the adapter plate and the base plate, and by means of integrated tensioning straps **item 3**.

DANGER	
	• **Unsecured** use of a device converted to version **V21-2** on flat slab formwork is **strictly prohibited** due to unproven securing resulting from displacement of the device. • The conversion of a version **V21-1** device (type E anchor devices) to use as a **version V21-2 device anchored to the structure** (type B anchor devices) must only be carried out by **qualified** personnel trained by the manufacturer. • The conversion of the device must be documented immediately in the inspection logbook.

4.0 Operation

4.1 General safety information

WARNING	
	**The device may only be put into operation if the following conditions are met:** • **The device is in proper and tested condition** • **All information in the V21-2 operating manual is observed** • **Applicable statutory regulations are complied with** • **The device is used as intended** • **Personnel have the necessary qualifications** • **The place of use has the required surface load and properties** • **The location of the equipment and the type of work to be performed shall be such that, in the event of a fall, the free fall is kept to a minimum** • **The daily checks were carried out and documented** • **It is only operated in conjunction with tested and approved PPE equipment** • **A rescue plan tailored to the location has been prepared** • **Before each use, it must be ensured that, in the event of a fall, it is not possible to impact the ground or an obstacle** (for the calculation of the minimum clearance, **refer to Chapter 4.1.2)** • **Operation of the device is strictly prohibited if the minimum clearance below the operator is not sufficient**

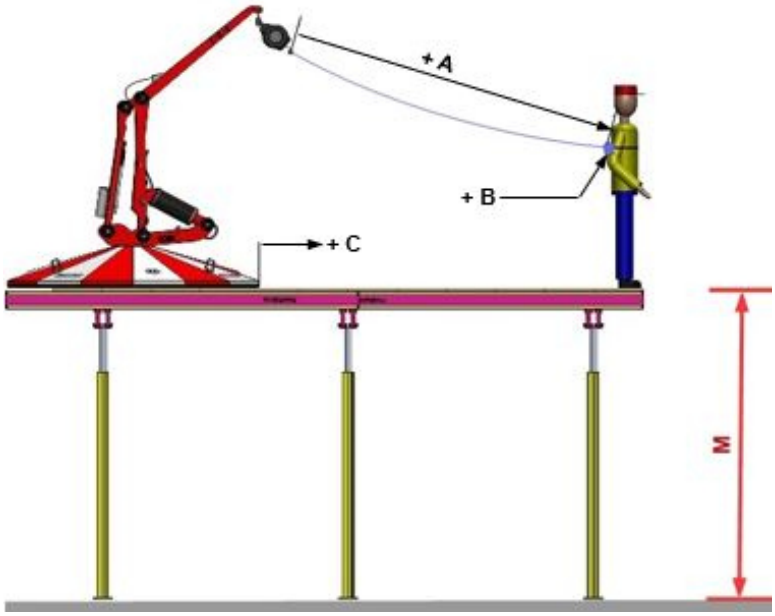
DANGER	
	• Severe to fatal injuries due to non-compliance with the minimum clearance below the edge of the fall. • There must be no persons or objects (such as machines, tools, building materials, etc.) in the area of the minimum clearance. • No objects such as beams or projections may protrude into the minimum clearance.

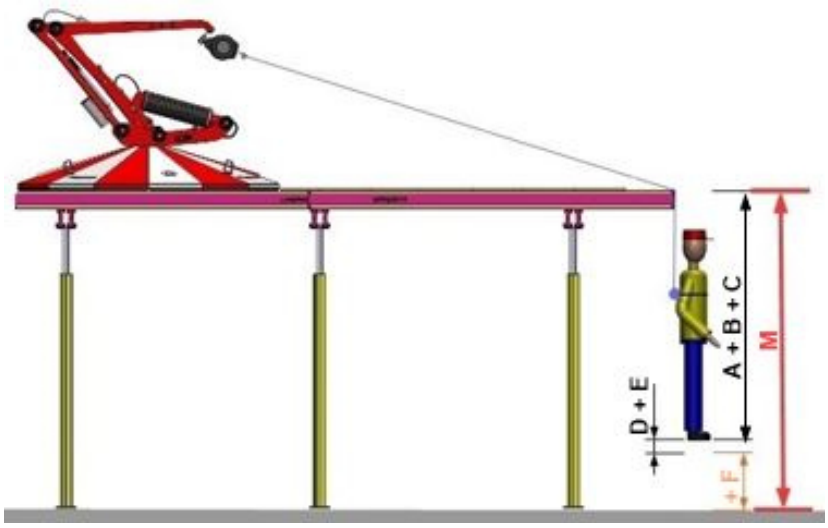
4.1.1 Calculation of minimum clearance

To calculate the minimum clearance, the following factors **A** to **F** must be added together, taking into account the corresponding application situation, and/or with the individual components combined on the device (see table on page D3 – D4).

WARNING	
	For the calculation of the minimum clearance, the relevant values of the manufacturer of the individual components A to F to be combined shall be applied.

Factors to be taken into account for the minimum clearance calculation (Horizontal use)





A — Resulting free-fall distance, dependent on the tightening of the connection equipment and the reaction time of the fall arrester between the device and the fall edge

Manufacturer of the fall arrestor system	Type and designation of the fall arrestor system		Reachable distance from the center of the device to the fall edge: (depending on the extension length of the fall arrestor system)		
	Type/designation	Standards fulfilled	4 m	7 m	9 m
IKAR	Fall arrestor 8.00 m Type: HWS 8	EN 360:2002	**1,10 m**	**1,20 m**	**1,35 m**
		FprEN 360:2022			

B — Additional free fall distance, depends on the tightening of a properly positioned safety harness

Manufacturer of the safety harness	Type and designation of the safety harness		Value to be added between loosely (max.) or tightly (min.) applied body restraint device	
	Type/designation	Standards fulfilled	Loose	Tight
IKAR	Safety harness with belt extension Type: IK G 20 B / B 38 D	EN 361	**0,35 m**	**0,20 m**

C — Distance to be added, depends on the displacement of the device towards the fall edge (determined by drop tests in accordance with national standards)

Manufacturer	Type/designation	Applied standards	Maximum value to be added
FreeFalcon	V21-2	EN 795:2012-10 Typ E	**0,10 m**

D — Minor influence of the user's body size on the minimum clearance to be calculated

Minimum body size	Maximum body size	Value to be added
1,4 m	1,8 m	**0,00 m**
1,8 m	2,1 m	**0,06 m**

E — Extension of the free-fall distance due to any personal protection equipment PPE, fall arrester additionally combined with the device (see manufacturer requirements)

Manufacturer	Type/designation	Applied standards	Value to be added

F	Recommended or legally required additional safety distance		
Manufacturer	**Type/designation**	**Applied standards**	**Maximum value to be added**
FreeFalcon	V21-2	DGUV	**1,00 m**
		EN 795:2012-10 type E	**0,00 m**

Table for calculation of the minimum clearance

A	Resulting free-fall distance	According to Table A	
B	Additional free-fall distance	According to Table B	
C	Distance to be added	According to Table C	
D	Influence of user body size	According to Table D	
E	Consideration of further personal protection equipment against falling	According to Table E	
F	Additional safety distance	According to Table F	
M	**Minimum clearance to be maintained**		

NOTE

The fall arresting device IKAR type HWS 8 has been successfully tested for horizontal application and a fall over the edge simulated from this. Based on this test, the fall arresting device IKAR type HWS 8 is suitable for use over edges with a radius of r ≥ 0.5 mm according to EN and of r ≥ 0.13 mm according to ANSI and are typically present on rolled steel, concrete and wooden beams or panels.

When fitting the safety harness IKAR type IK G 20 B / B 38 D, users must ensure:

- That all webbing and straps must lie flat against the body with no twists or turns
- The leg loops are adjusted in length so that they fit snug into the groin (do the two finger test)
- All buckles are connected correctly

WARNING	
	• The use or combination of the FreeFalcon – Mobile Fall Protection Anchor V21-2 with components from manufacturers other than those listed under A to E can lead to much higher values or unforeseeable deviations in the minimum clearance calculation. • When using or combining the FreeFalcon – Mobile Fall Protection Anchor V21-2 with components other than those listed under A to E, their manufacturer or the operator must provide proof of suitability and effects on minimum clearance. • All information about the minimum clearance is based on a free fall from a standing position. Falls under different conditions such as swinging falls, jumping or rolling over the edge or falling backwards can lead to an increase in the required minimum free space and must be kept to a minimum. • The Connectors from manufacturers other than those listed under A to E must be limited to a maximum of 6 kN.

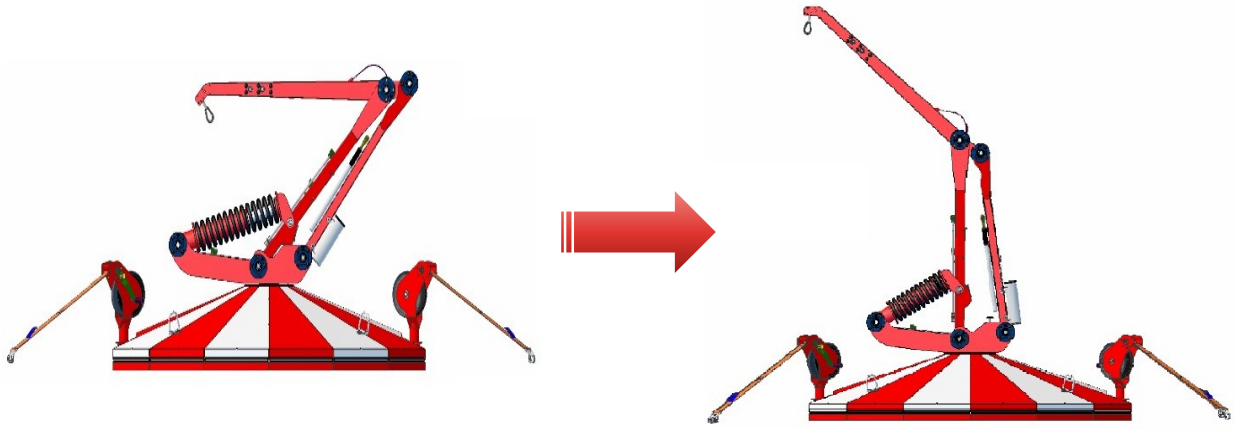
GEFAHR	
	The use or combination of the FreeFalcon – Mobile Fall Protection Anchor V21-2 with fall-absorbing connectors (EN355) from manufacturers other than those listed under A to E can lead to much higher values or unforeseeable deviations in the minimum clearance calculation.

4.2 Delivery condition

The standard delivery of a new type **V21-2** device includes:

- Completely assembled and tested **V21-2** device in safety configuration with valid accident prevention regulation marking
- Tool required for erecting the Fall Protection Anchor
- Valid operating manual for type **V21-2** device
- Valid logbook
- Valid accident prevention regulations checklists with initial certificate for accident prevention regulation inspection
- Current spare parts list for type **V21-2** device

4.3 Configuration states



Position in safety configuration **default state**

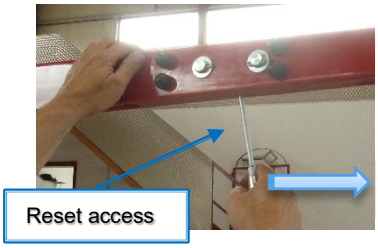
The position in the safety configuration allows the device to be transported and stored at a lower height and with a lower centre of gravity.

In normal operation, the device may be returned to its base state by the user using the integrated pumping device.

DANGER	
	• **Erecting and resetting after a fall is only permitted by qualified personnel and must be documented in the inspection logbook.** • **Intended configuration changes from the basic state to the safety configuration may only be performed by instructed users or qualified persons.** • **After an intended configuration change without a fall, the device must be checked as described in the chapter 4.6.3.**

4.3.1 Resetting the safety trigger

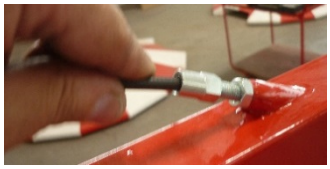
After triggering the safety function, the safety valve located in the base mast must be closed and the catch slide must be pushed back to its original position.



Insert the supplied tool, at an angle of approx. 45°, through the hole of the reset access on the underside of the extension arm to the catch slide.

By levering forward with the tool, the catch slide is pushed back. The engagement of the catch slide is indicated by a clear click on the extension arm.

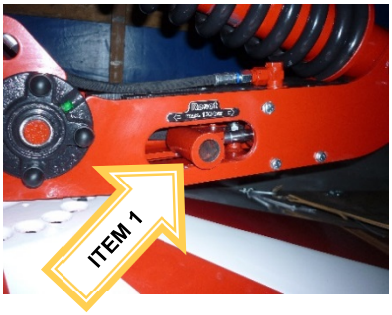
Pushing the lever upwards closes the trigger valve.
Make sure that the lever is completely in the base mast after closing the valve and cannot be pulled back any more.



After the reset, check the mechanical connection of the safety catch with the safety valve by pulling lightly on the Bowden cable sheath.
It must not be possible to pull the sheath of the Bowden cable out of the guide sleeve.

DANGER	
	• **Devices that have moved into the position of the safety configuration after a fall must be immediately removed from the work area and marked with the "Defect" sign on the Fall Protection Anchor.** • **Triggering of the safety function must always be noted immediately in the inspection logbook.** • **After the safety function is triggered due to a fall, the device may only be reset and re-erected by qualified personnel.** • **After being erected as a result of a fall, the device must undergo a full accident prevention regulations inspection.**

4.3.2 Erecting the Fall Protection Anchor



The erection of the Fall Protection Anchor can be carried out by hydraulically tensioning the safety package using an integrated pump in the swivel head.

To do this, remove the supplied pump tube on the inside of the push rod.

Insert the pump tube as far as possible into the opening of pumping lever **item 1**.

Pump the Fall Protection Anchor up slowly with full pump strokes.

As the anchor point height increases, so does the effort required for the pump strokes.

Observe the system pressure rising on Pressure gauge **item 2**.

The complete erection of the Fall Protection Anchor is achieved at a pressure of **110 to 130 bar**.

After erecting, the device must be checked as described in Chapter 4.7.4.

CAUTION	
	**When the mechanical end position of the safety unit is reached, the pressure in the hydraulic system and the required pumping force increase suddenly.** **If the pressure is increased by the user, irreparable damage to the pumping mechanism will result starting at a pressure of 150 bar.**

4.3.3 Releasing the rotation lock

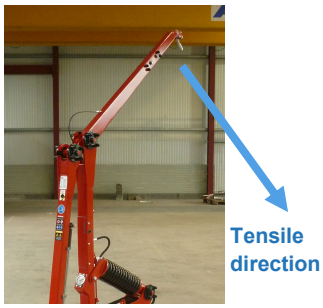
DANGER	
	**The position in the safety configuration inevitably results in the rotation lock being activated.** **In order to ensure that the resulting forces can be absorbed correctly by the device in the event of a fall, it is imperative that the rotation lock is released after the erection procedure is completed.**

Use the tool supplied to release the locking pin of the rotation lock.

Check whether the swivel head can rotate freely.

4.3.4 Lowering the Fall Protection Anchor

For the purpose of transportation or maintenance, it is possible to move the device into the safety configuration (lowering the Fall Protection Anchor).



The lowering of the Fall Protection Anchor can be forced by a strong and fast tug of the safety lifeline of the PPE against falling, even when there is no actual fall.

In contrast to lowering as a result of a fall, lower mechanical forces are generated on the device in the case of forced lowering.

Do not step behind or under the device

4.4 Relocating the device

WARNING	
 	**Severe or fatal injuries due to defective or insufficiently dimensioned lifting gear or slinging equipment.** **Slinging equipment and lifting gear must be checked for adequate load-bearing capacity and proper condition before use.** **The accident prevention regulations of the relevant professional associations and supervisory authorities must be observed.** **Walking under loads is prohibited.**

4.4.1 Relocation using a crane

NOTE	
	The base plate has four sufficiently dimensioned load attachment points with a tensile load of at least 4000 N per eyelet. To lift the device, a permissible four-strand round sling harness with sufficient load capacity and length must be used. Make sure that no strands of the harness can come into contact with components of the device structure (base mast, push rod, extension arm) when lifting the load.

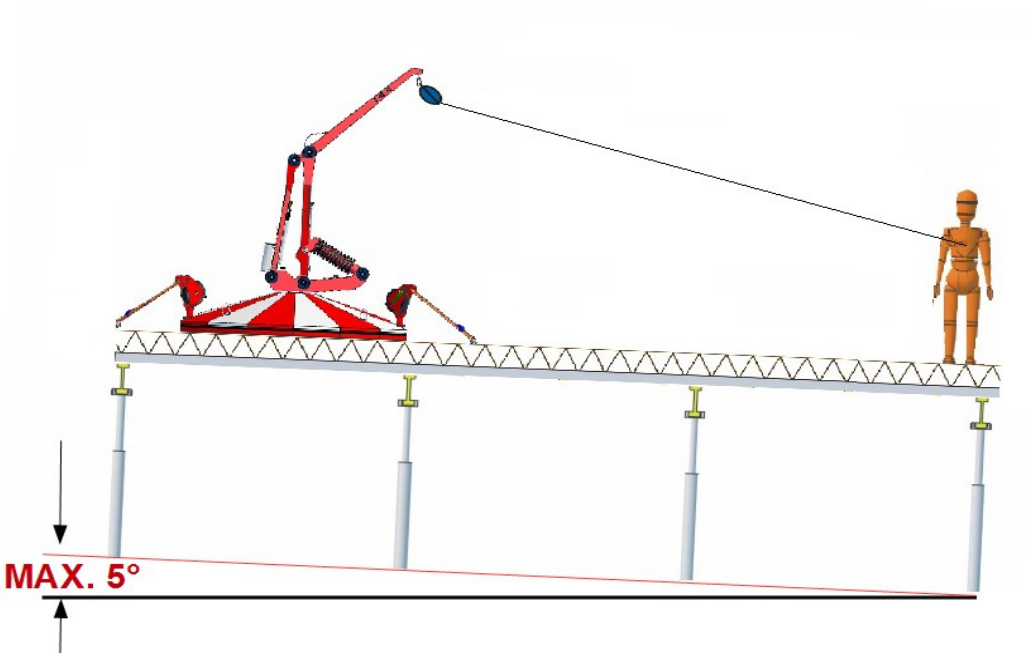
Load attachment points only for relocation with crane systems

Not an anchor point for PPE

4.5 Device location

Ensuring the operational safety of the device is also dependent on the properties of the device location during use.

4.5.1 Installation surface

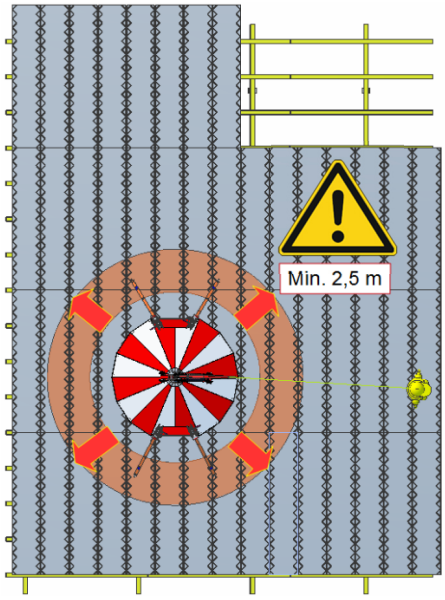


WARNING	
	• **The installation surface must be approved for securing persons.** • **The device must always be attached to the reinforcing lattice girders** (installation surface). • **The load capacity of the installation surface must be at least 120 kg².** • **The angle of the installation surface must not exceed 5°.** • **The row spacings of the lattice girders in the slab segments must be sufficiently small such that at least 4 rows of the lattice girders are below the adapter plate.** • **Possible fall areas must be freely accessible to rescue workers.**

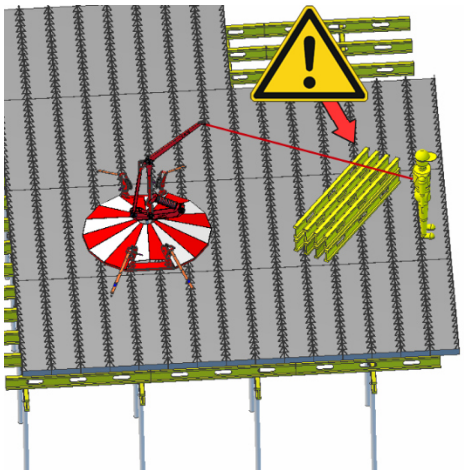
4.5.2 Safety distance

In order to ensure safe operation of the device and maximum safety for the user, a sufficient safety distance must be maintained from the device to possible fall edges or objects.

WARNING



- **Starting from the centre of the base plate, a safety distance of 2.50 metres must be maintained to all fall edges.**
- **A reduction of the safety distance increases the risk of the user falling when walking around the base plate.**
- **A smaller safety distance hinders the recovery of injured persons in the event of a fall and increases the risk of falling of rescue workers.**

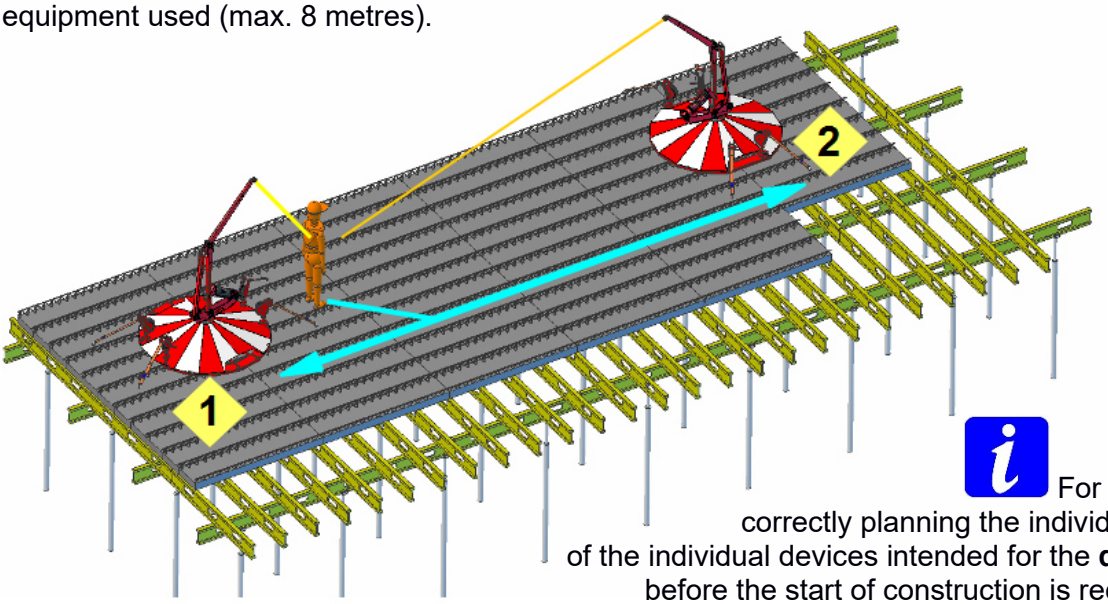


- **Under no circumstances should objects be stored between the Fall Protection Anchor and the user.**
- **Safety lifelines must always be directly connected to the anchor points and constantly tensioned.**
- **No persons other than the user themselves must be in the vicinity of the safety lifeline.**

4.5.3 Device relocation during operation

By using two devices, it is possible to secure the user to a second device and then move the first device.

By using two or more devices **(device chain)**, the working radius of the user can be increased severalfold without moving the individual devices and depending on the lifeline length of the PPE equipment used (max. 8 metres).



For larger areas, correctly planning the individual positions of the individual devices intended for the **device chain** before the start of construction is recommended.

Examples – changing the Fall Protection Anchors:

1. The user is secured with **device 2** and goes to **device 1**
2. The user now secures themselves to **device 1** and releases their connection to **device 2**
3. The user now carries the released carabiner back to the PPE on **device 2**
4. Depending on the lifeline length of the PPE equipment, the user can now move freely in the radius of **device 1** or extend **device 2** accordingly

DANGER	
	• **The user must always be secured to a Fall Protection Anchor when changing to another Fall Protection Anchor.** • **The relocation of devices used for your own or other users' security during the relocation is strictly prohibited.** • **The user must never be secured to two or more fall protection anchors at the same time while performing work.**

4.5.4 Formworking (slab formwork)

Before each use, the intended position of the equipment must be precisely planned according to the required tasks and surface conditions as well as the options for rescue or recovery.

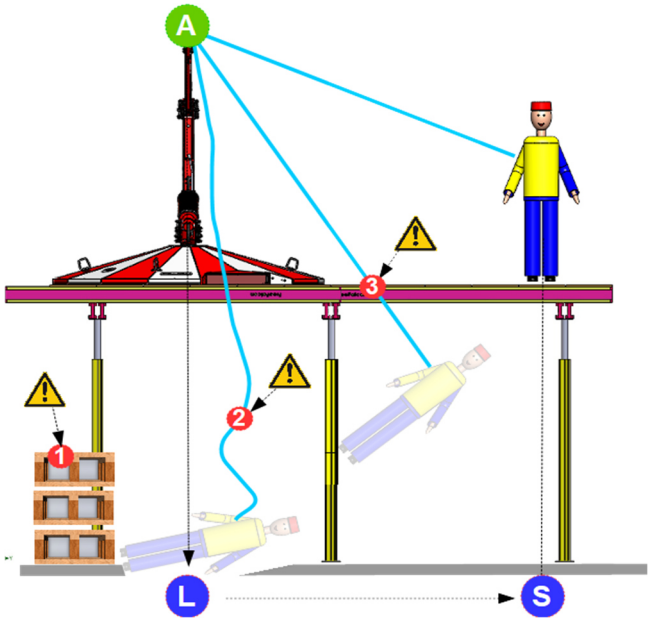
It is advisable to carry out and document a detailed risk analysis.

Swing falls

In addition to the usual known risks of a free, unhindered fall, there is also the risk of a sideways swing fall when covering slab formwork.

In this situation the user is not directly below the attachment point (A), but to the side (S).

A person who falls from this position will swing unhindered towards the perpendicular axis (L) of the anchor point.



DANGER

1. **A swing fall increases the risk of hitting an obstacle from the side.**
2. **A swing fall increases the required minimum clearance.**
3. **Abrasion at the edge caused by a swing fall can cause the lanyard to tear.**

WARNING

- **During planning, avoid creating walkways with an increased risk of swing falls.**
- **Distances where there is an increased risk of swing falls must always be limited to no more than 1.5 meters (distance between the axes L and S)**

4.5.5 Example use

	Before work starts, plan the quantity of tools and materials that will probably be needed. Plan the positioning of the device(s) to be used before work starts. Avoid creating additional hazards by inappropriate or unnecessary storage of tools or building material in the work area.

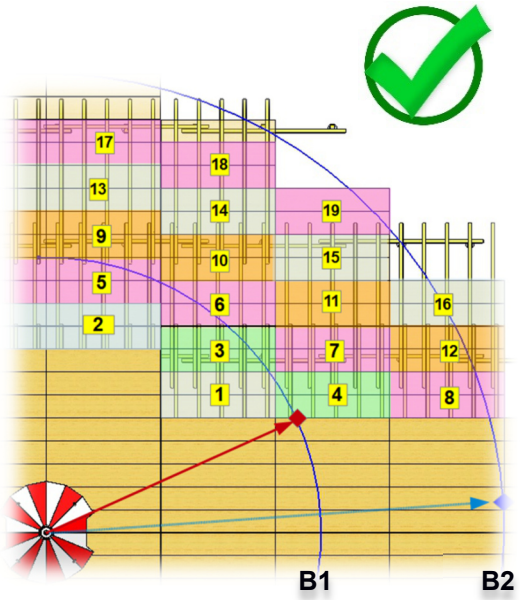
The right system

To minimize the risk of swing falls, covering should start from the center of the base plate and proceed forward in a semicircular direction.

An example is shown on the right:
The formwork sections are always laid two at a time forwards in a semi-circle starting at position 1 in sequence up to position 19.

This method of covering creates enough corners to limit swing falls.

The risk of swing falls can also be further reduced by moving the device early enough and/or by using fall arresters with shorter ropes.



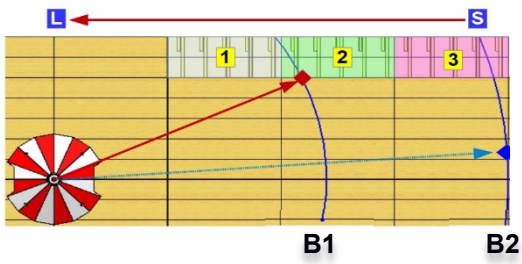
CAUTION	
	The illustrations only show half of the covering procedure and the numbering refers to a lanyard with a 8 m extension length (working radius B2) B1 Working radius of fall arrester with 6 m lanyard B2 Working radius of fall arrester with 8 m lanyard

The wrong system

An example is shown on the right:
In covering procedure shown here, the formwork sections were laid in a line from position 1 to position 3.

This creates a gangway with a high risk of swing falls along the edge from L to S.

Anyone falling from position S would swing unhindered to position L, resulting in irreversible or fatal injury.



4.6 Attaching the device

The FreeFalcon – Mobile Fall Protection Anchor **V21-2** device is an anchor device which must always be **anchored** (attached) to the **structure** (preinstalled slab segments) during operation. The following instructions and procedures must be followed to ensure safe operation of the device.

If the required procedures are changed or not followed, the person to be secured may be seriously or fatally injured in the event of a fall.

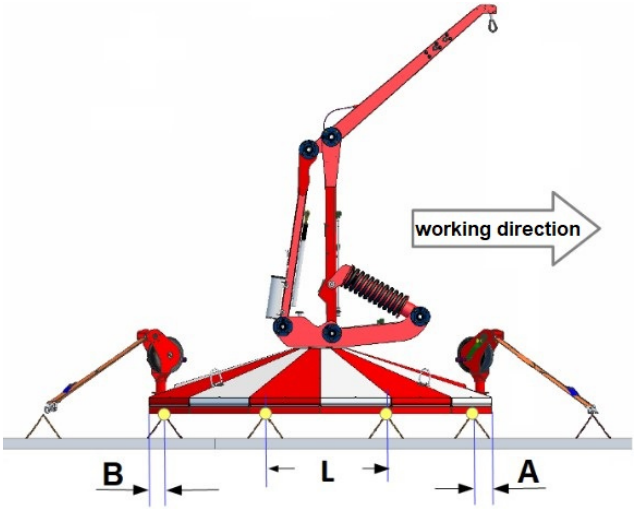
DANGER	
	• **In order to ensure safety in the event of a fall, the device must always be attached to the lattice girders in the slab segments** (structure) **with all 4 tension straps**. • **The operation of a device which is not attached in the correct manner is strictly prohibited.** • **Use on surfaces other than lattice girders in slab segments is prohibited.** • **In order to prevent the tensioning straps from slipping in the event of a fall, at least 4 complete revolutions of the tensioning device** (revolutions using the crank) are **required when tensioning the straps**. • **The crank of the tensioning device must always be mechanically secured. Operation of a device with a clamping device** (crank) **which is not mechanically secured is prohibited**. • **Operation of the device even with only partially damaged or torn straps is forbidden.** • **Operation of the device with a loose or damaged clamping device is prohibited.** • **Maintenance work and repair of the tensioning device or straps must only be carried out by specialist personnel** (qualified person) **trained by the manufacturer.**

4.6.1 Device positioning

In order to ensure stability in the event of a fall, when positioned the device must be aligned accordingly to the lattice girders in the slab segments.

The row spacings of the lattice girders **(L)** may vary considerably from one another depending on the manufacturer or type of slab segments used.

In principle, the row spacing of the lattice girders must be sufficiently small such that there are **at least 4** rows of lattice girders under the adapter plate and the maximum row spacing **(L)** of the individual lattice girders is **never larger than 550 mm**.



When positioning the device on the lattice girders, the following tolerance dimensions are prescribed

The distances from the edge of the adapter plate to the first row of lattice girders must be between

(A) min. 100 mm **(A)** max. 250 mm
(B) min. 100 mm **(B)** max. 250 mm

.

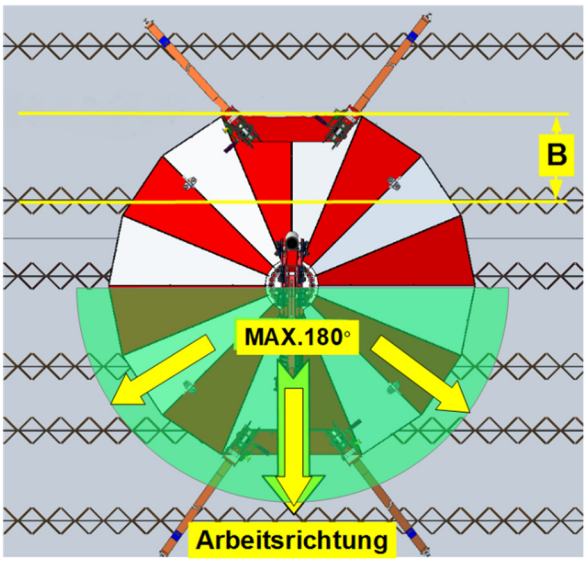
In case of unfavourable row spacings between lattice girders, a larger tolerance (dimension B) can be applied by **limiting the working radius**, (**see Chapter 4.6.2**).

DANGER	
	• **The operation of the device when exceeding the dimension in working direction (A) is strictly prohibited.** • **The operation of the device in the event of deviations of the dimension against working direction (B) is only permitted with limitation of the working radius as described in Chapter 4.6.2.**

4.6.2 Positioning with limited working radius

Since the row spacing of the lattice girders **(L)** may vary considerably from one another depending on the manufacturer or type of slab segments used, it is not always possible to position the device symmetrically in compliance with the specified dimensions **(A)** and **(B)**.

Safe use of the device can however still be ensured by **limiting the working radius**.



By **limiting the working radius** to a maximum of 180° (90° left, 90° right) to the running direction of the lattice girders, the distance of the dimension **(B)** can be extended to a maximum of 400.

The distances of the dimension **(A)** from the edge of the adapter plate in the working direction to the first row of lattice girders must not be less than **100 mm** or greater than **250 mm**.

User(s) must always **be explicitly briefed and instructed** when positioning the device with a limited working radius.

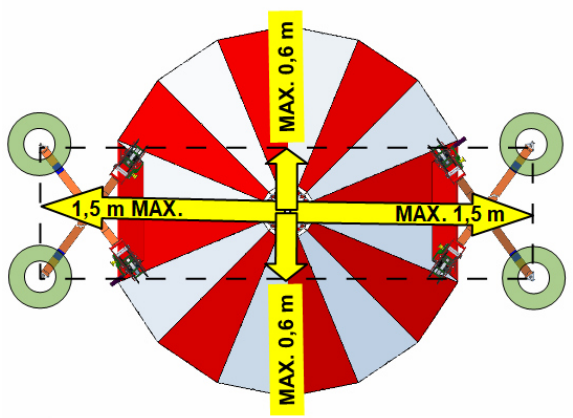
DANGER	
	• **Operation of the device with a limited working radius is only permitted if positioning is not technically applicable according to Chapter 4.6.1.** • **Operation of the device with a limited working radius is only permitted at an angle of max. 180° in the working direction.** • **Users must always be informed of a positioning with limited working radius.** • **Users must be thoroughly instructed regarding the operation and hazards of working with a restricted working radius.**

4.6.3 Attachment points on the lattice girders

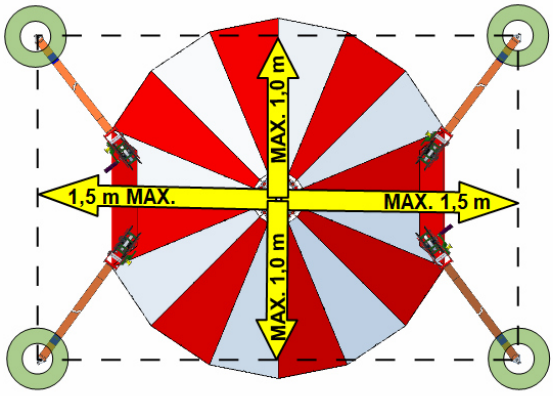
When attaching the device to the lattice girders in the slab segments, the forces must, in the event of a fall, be transmitted evenly from the device via the tension straps to the lattice girders.

In order to ensure an even distribution of the forces, only one of the **cross bracing** or **Y-bracing** shown below is suitable.

Cross bracing

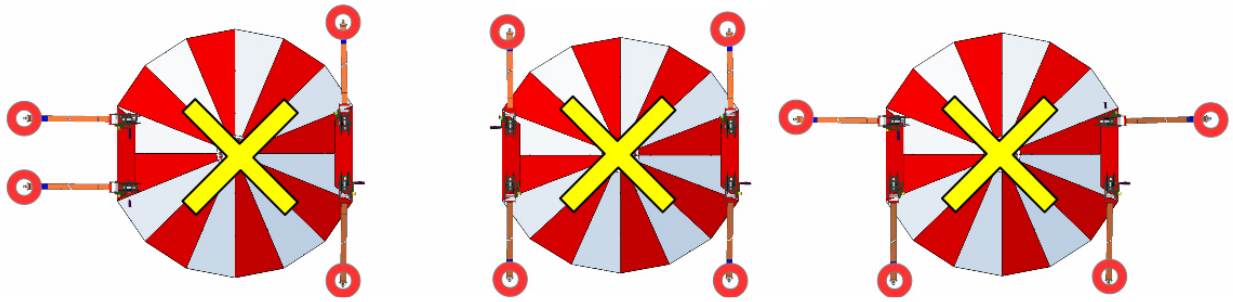


Y-bracing



WARNING

- **No methods other than cross bracing or Y-bracing may be used.**
- **Bracing the device with any of the methods shown below or similar is strictly forbidden.**



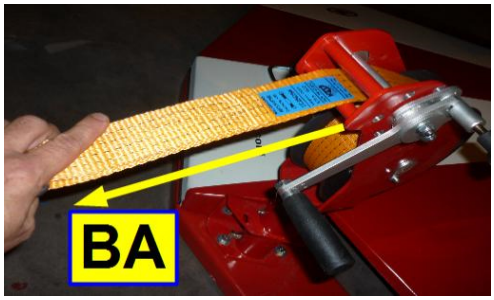
4.6.4 Bracing the device

During operation, the device must always be firmly connected to the structure (lattice girders in the slab segments).
For this purpose, there are 4 tension pulleys on the adapter plate.

A rotating bearing allows each of the 4 tension pulleys to adapt automatically to the direction of the tension straps.

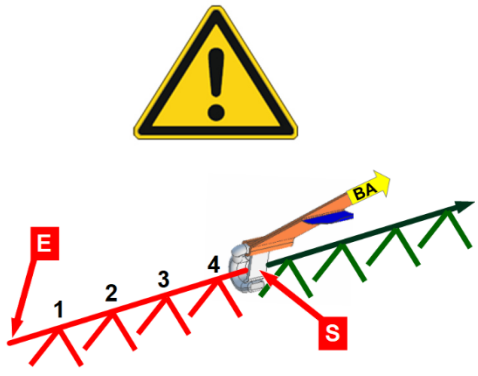
To prevent unintentional catching of loose strap ends when the device is moved, an automatic strap retraction system is integrated in each tension pulley.

The straps for attaching the device are tightened by means of an integrated tensioning device, by turning the tension strap several times and then mechanically securing the tensioning device.



To connect the device, the tension straps **(BA)** are pulled out of the automatic strap retractor and hooked into an attachment point on the lattice girders as described in **Chapter 4.6.3**.

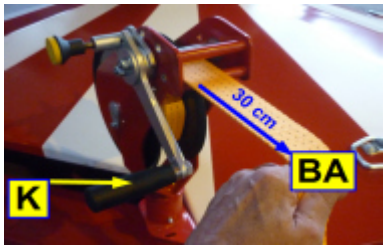
DANGER



- **The hook of the tension strap (BA) must fully enclose the lattice girder intended for attachment.**
- **The safety catch (S) of the hook must not be bent or damaged.**
- **The safety catch (S) of the hook must be closed and must securely prevent the hook from jumping off the lattice girder.**
- **In order to prevent the lattice girder from being pulled out or bent up in the event of a fall, the distance between the hook and the end of the lattice girder (E) must include at least 4 support struts.**

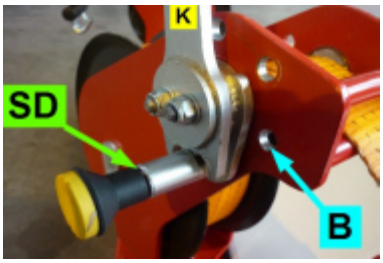
After attaching the tensioning straps **(BA)** to an attachment point as described in **Chapter 4.6.3**, all straps of the 4 tension pulleys must be tensioned evenly.

Pretensioning the straps



In order to prevent the straps from slipping under load, the straps must be pretensioned with at least **4 complete revolutions of** the crank **(K)** before the actual tensioning process.
For this purpose, the straps must also be pulled by hand out of the strap retractor by **least 30 cm** before tensioning.

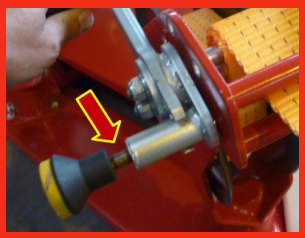
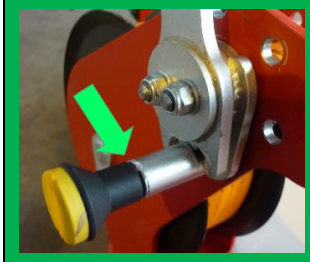
Tensioning the straps and securing the tensioning device



In the pre-tensioned state, continue turning the crank **(K)** until the locking bolt of the tensioning device **(SD)** automatically engages in one of the 6 holes of column **(B)**.

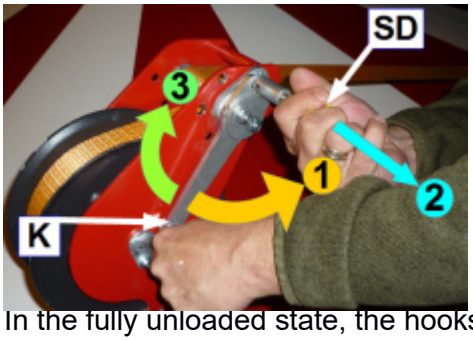
After the locking bolt has fully engaged, the tension of the straps **(BA)** corresponds to their prescribed value.

NOTE	
	**Once the locking bolt has automatically engaged, the clamping device is mechanically secured in both directions.** **Forcibly overtensioning or untwisting the straps is no longer possible and may result in damage to the tensioning device.**

DANGER		
 **Not secured**	**Operation of the device is only permitted if the tensioning devices are secured and the device is properly attached** (anchored) **to the structure (lattice girders of the slab segments) with all 4 tension pulleys**.	 **Secured**

4.6.5 Releasing the device

Before moving the device, all **4 tension straps (BA)** must first be released from the lattice girders of the slab segments.



In order to release the locking pin, the straps must first be retightened with crank **(K)** until the mechanical stop of the tensioning device **(1)** is reached.

By retightening, the locking pin **(SD)** is released and must be pulled out by hand **(2)** and held briefly.

When the locking pin **(SD)** is pulled out, the tensioning device must then be relieved by turning it anti-clockwise **(3)**.

In the fully unloaded state, the hooks of the tension straps must now be removed from the lattice girders and retracted. The speed of the automatic strap retraction can be slightly influenced by the position of the crank.

NOTE

- A two-hand unlocking system is used to prevent accidental release.
- The locking pin must remain fully tightened until the tensioning device is released.
- Releasing with untensioned straps or against the direction of tension is **not** possible without difficulty.

The intake of impurities into the strap retractor as a result of unclean straps considerably reduces the proper functioning of the strap retractor.

CAUTION

- **In order to prevent the tension straps from hooking in when moving the device, it must be ensured that the tension straps are fully retracted.**

4.7 Safety checks

In order to ensure the operational readiness and the safe operation of the **V21-2** device, inspections must be carried out and documented at various intervals or after configuration changes and relocation.

Unchecked or damaged devices must be removed from the place of use immediately and marked with a "**Defect**" sign.

Re-commissioning after a fall is only permitted after a thorough inspection by a qualified person trained by the manufacturer.

4.7.1 Group of persons authorised to perform inspections

Operators are entitled to:

- Carry out required inspections within the scope of their authorisation.
- Remove damaged or defective devices as well as additional equipment from service.
- Document daily inspections

Qualified persons are entitled to:

- Independently carry out and document all tests required on the device.
- Remove damaged or defective devices as well as additional equipment from service.

4.7.2 Daily inspection

Group of persons authorised to perform inspections	Inspection logbook entry	Inspection interval	Inspection method
Users and experts	**Required**	**Daily**	
The user must ensure that			
• On the basis of the inspection logbook, the device is ready to use			Visual check
• The accident prevention regulations inspection is still valid			=
• The inspection logbook and the operating instructions are complete and accessible at all times			=
• The markings are present on the device and easy to read			=
• The tension pulleys are functional			Action
• The system pressure is at least 110 bar			Visual check
• No hydraulic leaks are identifiable			=
• No components are loose, damaged or removed			=
• The swivel head is unlocked and easily rotatable			Action
• The welded seams do not have any fractures			=
• No components have visible deformations			=
• The Fall Protection Anchor is clear and in the correct condition			Action
• The four load attachment points are checked for tight fit and deformation			=
• The tensioning device is neither bent, loose nor damaged			=
• The tension straps are not twisted or torn			Visual check
• The PPE equipment and harness specified for the application are acceptable, suitable and in good working order			=
• No objects or contamination prevent the safety configuration			= _____
• **In case of defects or complaints, the device is taken out of service**			Action
• **The test result is recorded in the inspection logbook**			Entry

4.7.3 Special inspection before and after each relocation

Group of persons authorised to perform inspections	Inspection logbook entry	Inspection interval	Inspection method
Users and experts	• **Not required for relocation** • **Required for decommissioning**	**Before and after each relocation**	
The user must ensure that			
• The device has been properly positioned as described in **Chapter 4.6.1**			Action
• On the basis of its positioning, the device may only be operated with a limited working radius **(Chapter 4.6.2)**			=
• The attachment points of the tension straps on the lattice girders have been correctly selected **(Chapter 4.6)**			=
• The hooks of the tensioning straps are undamaged, secured from jumping off and properly attached to the lattice girders **(Chapter 4.6.4)**			=
• The tensioning device is neither bent, loose nor damaged			=
• The tension straps are not twisted or torn			Visual check
• The tensioning device is properly secured **(Chapter 4.6.4)**			=
• No components were damaged when releasing the device			=
• When loosening the tensioning straps they were cleaned and fully retracted **(Chapter 4.6.4)**			= _____
• **In case of defects or complaints, the device is taken out of service**			Action

4.7.4 Special inspection after configuration change

Group of persons authorised to perform inspections	Inspection logbook entry	Inspection interval	Inspection method
Users and experts	**Required**	**If necessary**	
The user must ensure that			
• The lowering procedure was carried out unhindered according to **Chapter 4.3.4**			Action
• The safety valve was properly closed after the lowering process			=
• No components of the safety valve have been loosened or damaged			Visual check
• The release cable on the safety valve is free and has not been damaged			=
• The turn lock, as described in **Chapter 4.3.3**, has been unlocked			=
• The system pressure has not been exceeded			=
• No hydraulic components were damaged			= _____
• **In case of defects or complaints, the device is taken out of service**			Action
• **The inspection result is documented in the inspection logbook**			Action

4.7.4 Inspection by qualified person

NOTE	
	A qualified person is a person who has acquired in-depth knowledge of the functioning and safety equipment of the device as a result of training by the manufacturer. Qualified persons are entitled, on the basis of their technical training and their knowledge of the relevant regulations, to independently perform and document the work and inspections assigned to them.

(a) Annual accident prevention regulations inspection
(b) Need-based inspection after a fall
(c) Need-based inspection after maintenance or defect

Group of persons authorised to perform inspections	Inspection logbook entry	Inspection interval	Inspection method
Qualified persons	**Required**	**(a) Annually** **(b/c) As needed**	
The activities of an inspection by a qualified person include:			
• Carrying out accident prevention regulations inspections and maintenance according to the manufacturer's specifications.			(a/b) Action
• Disassembly and inspection of the extension arm and anchor point.			(b) Action
• Comprehensive inspection and maintenance of the base mast, safety unit, swivel head, base plate and tensioning device assemblies.			(b) Action
• Regular replacement of safety-relevant components.			(a/b) Action
• Recording of the test result in the inspection logbook.			(a/b) Action
• Labelling of the device with a valid accident prevention regulations validity period.			(a/b) Action

5.0 Service and maintenance

5.1 Cleaning and lubrication

The service and maintenance work of the user is limited, if necessary, to cleaning the device and lubricating all moving parts and spherical bearings.

NOTE	
	• When cleaning, avoid the use of high pressure cleaners or steam pressure cleaners. • We recommend cleaning the device by hand, using water and commercial cleaning agents for machines. • When cleaning the device, make sure that the Bowden cables, hose lines and warnings are not damaged. • Cleaning work must always be carried out in the safety configuration.

5.2 Maintenance and repair

Any required maintenance or repairs may only be performed by qualified personnel.

Qualified persons are persons who have acquired in-depth knowledge of the functioning and safety equipment of the **V21-2** device (Certificate of Expertise) through **training by the manufacturer**.

- Maintenance work must be carried out every twelve months in conjunction with the safety inspection by a qualified person and in accordance with the maintenance manual.
- Repair or mandatory replacement of components due to faulty locations shall be performed by a qualified person and in accordance with the maintenance manual.
- Maintenance, repair and tests must be documented in the inspection logbook.

5.3 Maintaining the inspection logbook

The operating company is obliged to maintain a complete inspection logbook.

The information listed in the inspection logbook provides fundamental information about the operating status of the device.

The inspection logbook must document in principle:

- Report and date of accident prevention regulations inspection
- A shutdown after a fall
- A shutdown due to a defect
- Inspection and restart after a fall
- Inspection following configuration changes
- Confirmation of the daily inspection

WARNING	
	The inspection logbook must be accessible to **every** person responsible for the use of the device. Entries must be made by the authorised group **immediately**.

5.4 Decomissioning the device

All persons are entitled to shut down the device if there are reasonable doubts about the operational safety of the device.

Authorised persons must remove the decommissioned equipment from the place of use immediately and mark it with a “**Defect**” sign.

The shutting down of a device must be immediately reported to the operating company for further action and noted in the inspection logbook.

Re-commissioning is only permitted after an appropriate inspection by a qualified person.

5.5 Disposal

The main components of the device are made of steel and can be disposed of completely or in parts via the usual disposal procedure for steel scrap.

Special attention during disposal must be paid to the hydraulic system and the safety unit.

DANGER

- **Before disposal of the safety unit, it must be dismantled by a qualified person according to the instructions in the maintenance manual.**
- **In the assembled state, improper handling may result in hazards during disposal due to the tensioned spring.**

NOTE

- Grease, drained oils and hose lines must be disposed of separately in accordance with the applicable regulations.
- When cleaned, pumps and hydraulic pipes can be disposed of together with steel scrap.

6.0 Appendix

6.1 Safety systems

The anchor device type: FreeFalcon – Mobile Fall Protection Anchor **V21-2** is used to secure a person against falling. The wire cable eyelet **(A)** (**Chapter 2.3** Intended use) at the upper end of the extension arm of the device is permitted as an anchor point. The purpose of the anchor point is to attach the user's personal protective equipment against falls from height. To create a complete safety system, depending on the application, the device must be combined with the following equipment:

1. Use as a restraint system:

The user is secured to the FreeFalcon – Mobile Fall Protection Anchor **V21-2**, their range of motion is limited enough such that they cannot reach the fall edge(s) under any circumstances. In this case, the user must combine the following with the FreeFalcon – Mobile Fall Protection Anchor **V21-2**:

- (Sufficiently short) connection equipment according to EN 358
- Safety harness according to EN 361
- Basic connectors according to EN 362 B

2. Use as a fall arrest system:

The user is secured to the FreeFalcon – Mobile Fall Protection Anchor **V21-2**, their range of motion is large enough that they can reach the fall edge(s) while completing their work. In this case, the user must combine the following with the FreeFalcon – Mobile Fall Protection Anchor **V21-2**:

with retractable fall arrester according to EN 360 / FPrEN 360:2022
- Fall arrester according to EN 360 / FPrEN 360:2022
- Safety harness according to EN 361
- Basic connectors according to EN 362 B

DANGER	
	**The use of the FreeFalcon – Mobile Fall Protection Anchor V21-2 as a fall arrest system without retractable fall arrester is strictly prohibited.**

3. Other uses

WARNING	
	**The use of the FreeFalcon – Mobile Fall Protection Anchor V21-2 as:** • **Workplace positioning system is not allowed** • **Rescue system is not allowed** • **Rope-assisted access system is not allowed** **Connectors in accordance with EN 362 B must be used when the device is in use.** **The manufacturers instructions are to be followed when combining the FreeFalcon – Mobile Fall Protection Anchor V21-2 with individual elements and equipment.**

6.2 Tested combination options from different manufacturers

Fall arrester according to EN360 / FPrEN 360:2022	Full body belt system according to EN361	Connecting equipment EN 354	Note
IKAR / FreeFalcon	FreeFalcon		

	The use of optional equipment **not** listed in the table or changing the system variants means that the device (FreeFalcon – Mobile Fall Protection Anchor V21-2) loses its conformity with European directives and standards **(CE)**.

6.3 Manufacturer specifications and service

Designation	Address	Contact	Note
Manufacturer	FreeFalcon GmbH Johanniterstrasse 50 72160 Horb am Neckar Germany	E-mail: info@freefalcon.de Tel.: +49 7451 6240276	
Patent	FreeFalcon GmbH Johanniterstrasse 50 72160 Horb am Neckar Germany	E-mail: info@freefalcon.de Tel.: +49 7451 6240276	
Qualified training and accident prevention regulation tests	FreeFalcon GmbH Johanniterstrasse 50 72160 Horb am Neckar Germany	E-mail: info@freefalcon.de Tel.: +49 7451 6240276	
Examining body EU type examination	**CE 0158** DEKRA EXAM GmbH Dinnendahlstrasse 9 44809 Bochum Germany		
Construction / Technical Documentation	FreeFalcon GmbH Johanniterstrasse 50 72160 Horb am Neckar Germany	E-mail: info@freefalcon.de Tel.: +49 7451 6240276	

If you have any questions about the safe use of the FreeFalcon – Mobile Fall Protection Anchor **V21-2**, please contact us**.**

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