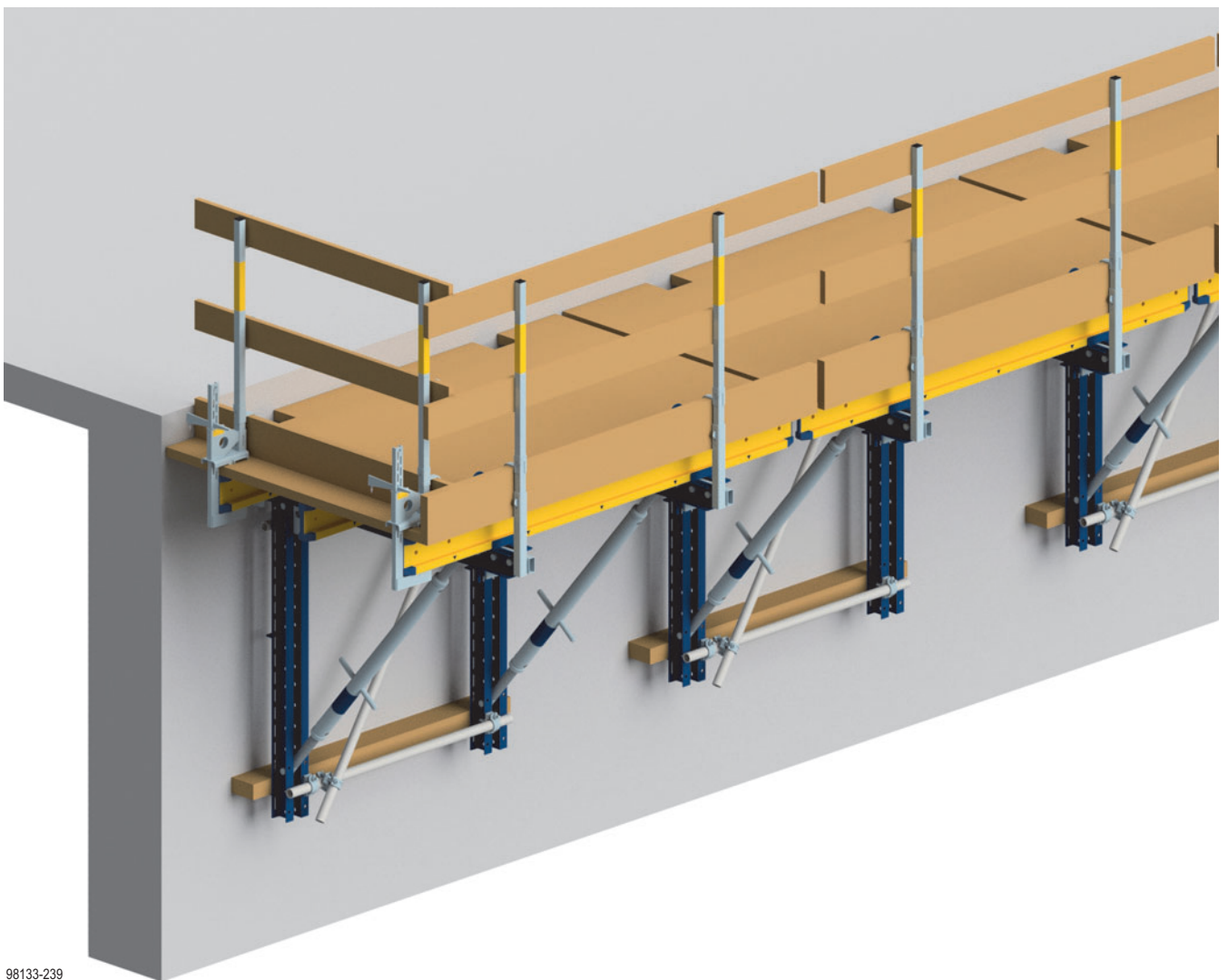


# Platforms assembled from system components

with Universal suspension head

## User Information

Instructions for assembly and use (Method statement)



98133-239

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# Introduction

## Elementary safety warnings

### User target groups

- This booklet is aimed at all persons who will be working with the Doka product or system that it describes. It contains information on the standard design for setting up this system, and on correct, compliant utilisation of the system.
- All persons working with the product described herein must be familiar with the contents of this booklet and with all the safety instructions it contains.
- Persons who are incapable of reading and understanding this booklet, or who can do so only with difficulty, must be instructed and trained by the customer.
- The customer is to ensure that the information materials provided by Doka (e.g. User Information booklets, Instructions for Assembly and Use, Operating Instruction manuals, plans etc.) are up to date and available to all users, and that they have been made aware of them and have easy access to them at the usage location.
- In the relevant technical documentation and form-work utilisation plans, Doka shows the workplace safety precautions that are necessary in order to use the Doka products safely in the usage situations shown.  
In all cases, users are obliged to ensure compliance with national laws, standards and regulations throughout the entire project and to take appropriate additional or alternative workplace safety precautions where necessary.

### Hazard assessment

- The customer is responsible for drawing up, documenting, implementing and continually updating a hazard assessment at every job-site.  
This booklet serves as the basis for the site-specific hazard assessment, and for the instructions given to users on how to prepare and utilise the system. It does not substitute for these, however.

### Remarks on this booklet

- This document can be used as general Instructions for Assembly and Use (Method Statement) or be incorporated into site-specific Instructions for Assembly and Use (Method Statement).
- **The graphics, animations and videos in this document or app sometimes depict partially assembled assemblies and may require additional safety equipment and/or measures to comply with safety regulations.**  
The customer must ensure all applicable regulations are complied with, even if they are not shown or implied in the graphics, animations and videos provided.
- **Individual sections contain further safety instructions and/or special warnings as applicable.**

### Planning

- Provide safe workplaces for those using the form-work (e.g. for when it is being erected/dismantled, modified or repositioned etc). It must be possible to get to and from these workplaces via safe access routes!
- **If you are considering any deviation from the details and instructions given in this booklet, or any application which goes beyond those described in the booklet, then revised static calculations must be produced for checking, as well as supplementary assembly instructions.**

### Regulations; industrial safety

- All laws, Standards, industrial safety regulations and other safety rules applying to the utilisation of our products in the country and/or region in which you are operating must be observed at all times.
- If a person or object falls against, or into, the side-guard component and/or any of its accessories, the component affected may only continue in use after it has been inspected and passed by an expert.

## Rules applying during all phases of the assignment

- The customer must ensure that this product is erected and dismantled, reset and generally used for its intended purpose in accordance with the applicable laws, standards and rules, under the direction and supervision of suitably skilled persons. These persons' mental and physical capacity must not in any way be impaired by alcohol, medicines or drugs.
- Doka products are technical working appliances which are intended for industrial / commercial use only, always in accordance with the respective Doka User Information booklets or other technical documentation authored by Doka.
- The stability and load-bearing capacity of all components and units must be ensured during all phases of the construction work!
- Do not step on or apply strain to cantilevers, closures, etc. until suitable measures to ensure their stability have been correctly implemented (e.g. by tie-backs).
- Strict attention to and compliance with the functional instructions, safety instructions and load specifications are required. Non-compliance can cause accidents and severe injury (risk of fatality) and considerable damage to property.
- Sources of fire in the vicinity of the formwork are prohibited. Heaters are permissible only when used correctly and situated at a correspondingly safe distance from the formwork.
- Customer must give due consideration to any and all effects of the weather on the equipment and regards both its use and storage (e.g. slippery surfaces, risk of slipping, effects of the wind, etc.) and implement appropriate precautionary measures to secure the equipment and surrounding areas and to protect workers.
- All connections must be checked at regular intervals to ensure that they are secure and in full working order.  
In particular threaded connections and wedged connections have to be checked and retightened as necessary in accordance with activity on the jobsite and especially after out-of-the-ordinary occurrences (e.g. after a storm).
- It is strictly forbidden to weld Doka products – in particular anchoring/tying components, suspension components, connector components and castings etc. – or otherwise subject them to heating.  
Welding causes serious change in the microstructure of the materials from which these components are made. This leads to a dramatic drop in the failure load, representing a very great risk to safety.  
It is permissible to cut individual tie rods to length with metal cutting discs (introduction of heat at the end of the rod only), but it is important to ensure that flying sparks do not heat and thus damage other tie rods.  
The only articles which are allowed to be welded are those for which the Doka literature expressly points out that welding is permitted.

## Assembly

- The equipment/system must be inspected by the customer before use, to ensure that it is in an acceptable condition. Steps must be taken to exclude components that are damaged, deformed, or weakened due to wear, corrosion or rot (e.g. fungal decay).
- Using our safety and formwork systems together with those of other manufacturers can create risks that may lead to injury and damage to property. This requires separate verification by the user.
- The equipment/system must be assembled and erected in accordance with the applicable laws, standards and rules by trained customer personnel whilst maintaining any applicable safety inspections that may be required.
- It is not permitted to modify Doka products; such modifications constitute a safety risk.

## Closing the formwork

- Doka products and systems must be set up so that all loads acting upon them are safely transferred!

## Pouring

- Do not exceed the permitted fresh-concrete pressures. Over-high pouring rates overload the formwork, cause greater deflection and risk breakage.

## Stripping the formwork

- Do not strip out the formwork until the concrete has reached sufficient strength and the person in charge has given the order for the formwork to be stripped out!
- When stripping out the formwork, never use the crane to break concrete cohesion. Use suitable tools such as timber wedges, special pry-bars or system features such as Framax stripping corners.
- When stripping out the formwork, do not endanger the stability of any part of the structure, or of any scaffolding, platforms or formwork that is still in place!

## Transporting, stacking and storing

- Observe all country-specific regulations applying to the handling of formwork and scaffolding. For system formwork the Doka slinging means stated in this booklet must be used – this is a mandatory requirement.  
If the type of sling is not specified in this document, the customer must use slinging means that are suitable for the application envisaged and that comply with the regulations.
- When lifting, always make sure that the unit to be lifted and its individual parts can absorb the forces that occur.
- Remove loose parts or secure them so that they cannot slip out of position and drop.
- When lifting formwork or formwork accessories with a crane, no persons must be carried along, e.g. on working platforms or in multi-trip packaging.
- All components must be stored safely, following all the special Doka instructions given in the relevant sections of this document!

## Maintenance

- Only original Doka components may be used as spare parts. Repairs may only be carried out by the manufacturer or authorised facilities.

## Miscellaneous

The weights as stated are averages for new material; actual weights can differ, depending on material tolerances. Dirt accretions, moisture saturation, etc. can also affect weight.

We reserve the right to make alterations in the interests of technical progress.

## Eurocodes at Doka

**The permissible values stated in Doka documents (e.g.  $F_{perm} = 70 \text{ kN}$ ) are not design values (e.g.  $F_{Rd} = 105 \text{ kN}$ ), unless specified!**

- It is essential to avoid confusing permissible values with design values!
- Doka documents will continue to state the permissible values.

Allowance has been made for the following partial factors:

- $\gamma_F = 1.5$
- $\gamma_{M, \text{timber}} = 1.3$
- $\gamma_{M, \text{steel}} = 1.1$
- $k_{mod} = 0.9$

Consequently, all the design values for an EC design calculation can be determined from the permissible values.

## Symbols used

The following symbols are used in this document:



### DANGER

This is a notifier drawing attention to an extremely dangerous situation in which non-compliance with this notifier will lead to death or severe, irreversible injury.



### WARNING

This is a notifier drawing attention to a dangerous situation in which non-compliance with this notifier can lead to death or severe, irreversible injury.



### CAUTION

This is a notifier drawing attention to a dangerous situation in which non-compliance with this notifier can lead to slight, reversible injury.



### NOTICE

This is a notifier drawing attention to a situation in which non-compliance with this notifier can lead to malfunctions or damage to property.



### Instruction

Indicates that actions have to be performed by the user.



### Sight-check

Indicates that you need to do a sight-check to make sure that necessary actions have been carried out.



### Tip

Points out useful practical tips.



### Reference

Cross-references other documents.

## Intended use

The Universal suspension head is a component for creating project-specific platforms from Doka system components and for their secure suspension.

The Universal suspension head is designed for repositioning pre-assembled platforms using a crane.

Any other use or use going beyond that stated above is contrary to the intended use and requires a risk assessment, revised static calculations as well as supplementary assembly instructions!

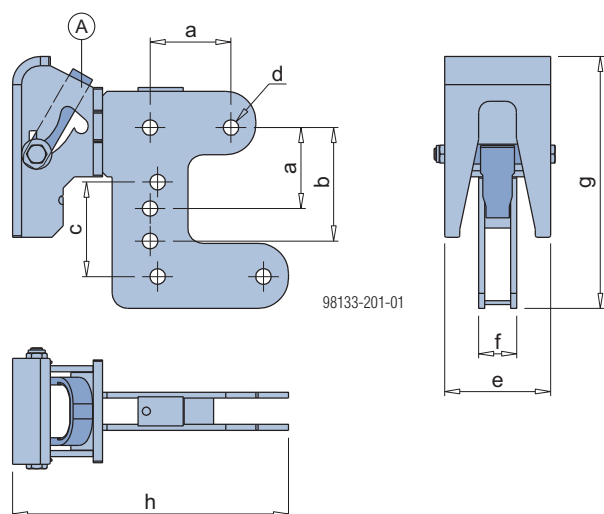
## Areas of use

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- Storage and working platforms
- Pouring platforms
- Bridge edge beam brackets
- Platforms in narrow shafts
- Special applications for inclined constructions

# Product presentation

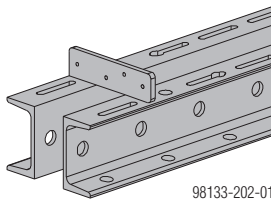
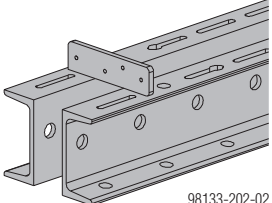
## System dimensions

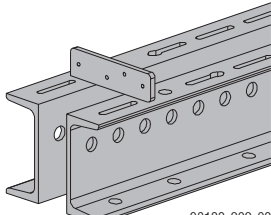
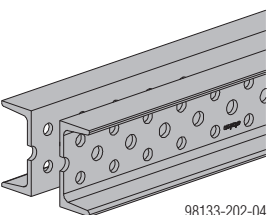


- a ... 107 mm (Multi-purpose waling WS10 and Multi-purpose waling WU12)  
 b ... 150 mm (Top100 tec waling WU14)  
 c ... 125 mm (Pair of Channels UK12)  
 d ... Diam. 20,5 mm  
 e ... 140 mm  
 f ... 50.5 mm  
 g ... 333 mm  
 h ... 365 mm

**A** Safety bow

## Usable waling systems

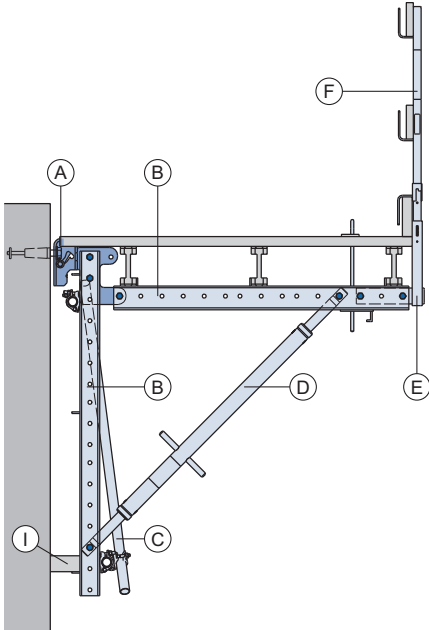
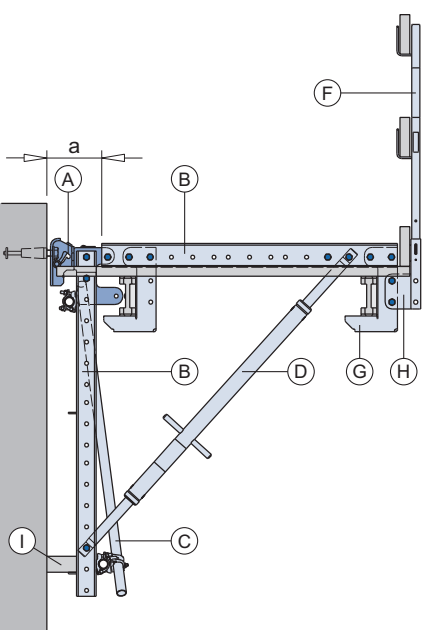
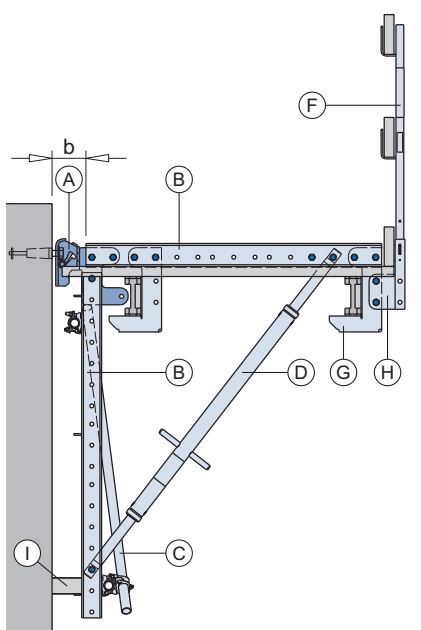
Large-area formwork Top 50	
Multi-purpose waling WS10	Multi-purpose waling WU12
	
98133-202-01	98133-202-02

Large-area formwork Top 100 tec	Doka UniKit
Top100 tec waling WU14	Pair of Channels UK12
	
98133-202-03	98133-202-04



Follow the directions in the 'Large-area formwork Top 50', 'Large-area formwork Top 100 tec' and 'Doka UniKit' User Information booklets!

## System overview

Decking above waling		Decking below waling	
Vertical waling secured		Horizontal waling secured	
Flat platform		Platform with points for connecting travelling gear, spindles,...	
			

a ... 277 mm

b ... 170 mm

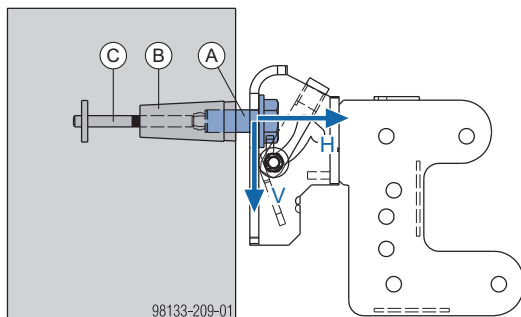
**A** Universal suspension head**B** Multi-purpose waling**C** Bracing**D** Strut or spindle strut**E** Insertion adapter XP**F** Handrail post XP 1.20m**G** Beam support WS10-WU16**H** Railing adapter XP DokaCC**I** Squared timber



# Structural design

## Structural design of the Universal suspension head

### Imposed loads



- A** Cone screw M30 SW50 7cm  
**B** Universal climbing cone 15.0 2G  
**C** Stop anchor 15.0 (consumable form-tie component)

### Reaction loads with Universal climbing cone 15.0 2G and Cone screw M30 SW50 7cm

H ... permitted horizontal load: 60 kN  
 V ... permitted vertical load: 50 kN

Observe the limitations in sections [Zulässige Lastkombinationen aus V und H](#) and [Weitere Verankerungsmöglichkeiten!](#)



### NOTICE

When creating project-specific platforms, observe the following points:

- Position brackets as symmetrically as possible and keep their cantilever short.
- Ensure that all loads are applied centrally.
- The stability of the platforms must be ensured during all phases of the construction work!



### CAUTION

Risk of platforms tipping over when **loads are applied eccentrically**.

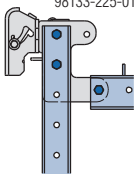
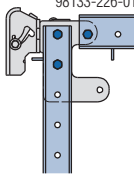
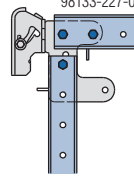
If it is unavoidable to extend a cantilever to one side, observe the following points:

- Choose the widest possible bracket centre-to-centre spacing in relation to the cantilever!
- Allow for the greater influence on the bracket in the cantilevering region!
- Contact your Doka technician for information on further measures to prevent platforms tipping over.

The anti-liftout guards are not suitable for sustaining planned forces! The anti-liftout guard is only designed to prevent the platform from being accidentally lifted out of its suspension point while work is in progress.

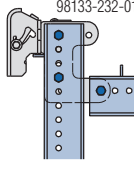
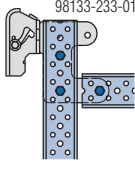
## Permissible load combination of V and H

### Multi-purpose waling WS10 and WU12

Ways of installing		
Vertical waling secured		Horizontal waling secured
Decking above waling	Decking below waling	
		
System waling pinned to the Universal suspension head		
$17 \text{ kN} \leq H < 60 \text{ kN} \Rightarrow V_{\text{perm.}} = 50 \text{ kN}$ $0 \text{ kN} \leq H < 17 \text{ kN} \Rightarrow V_{\text{perm.}} = 40 \text{ kN}$		$V_{\text{perm.}} \leq 25 \text{ kN}$ $H_{\text{perm.}} \leq 60 \text{ kN}$
System waling bolted to the Universal suspension head with Hexagon bolts M20 8.8		
$V_{\text{perm.}} = 50 \text{ kN}$ $H_{\text{perm.}} = 60 \text{ kN}$		$V_{\text{perm.}} \leq 40 \text{ kN}$ $H_{\text{perm.}} \leq 60 \text{ kN}$

Connection plates on the vertical waling must always face toward the wall.

### Multi-purpose walings WU14 and pairs of Channels UK12

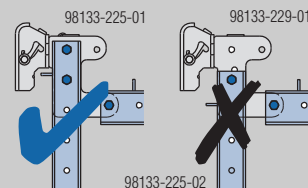
Top100 tec waling WU14 <sup>1)</sup>	Pairs of Channels UK12
	
System waling pinned to the Universal suspension head	
$V_{\text{perm.}} \leq 50 \text{ kN}$ $H_{\text{perm.}} \leq 60 \text{ kN}$	$30 \text{ kN} \leq V_{\text{perm.}} \leq 40 \text{ kN} \Rightarrow H_{\text{perm.}} = 60 \text{ kN}$
System waling bolted to the Universal suspension head with Hexagon bolts M20 8.8	
$V_{\text{perm.}} \leq 50 \text{ kN}$ $H_{\text{perm.}} \leq 60 \text{ kN}$	$V_{\text{perm.}} \leq 50 \text{ kN}$ $H_{\text{perm.}} \leq 60 \text{ kN}$

<sup>1)</sup> Connection plates on the vertical waling must always face toward the wall.



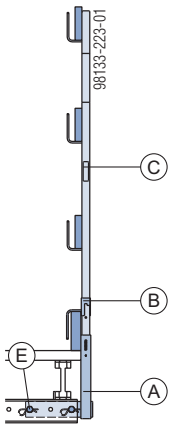
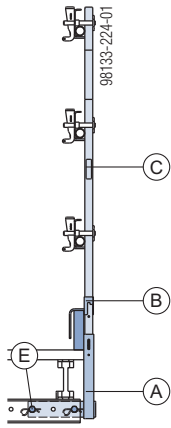
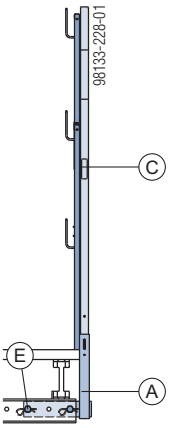
### WARNING

- The Universal suspension head must be pinned to at least one waling (vertical or horizontal waling) with 2 Connecting pins 10cm and the connecting pins must be secured with 2 spring cotters.



## Structural design of railings

### Max. influence width per handrail post

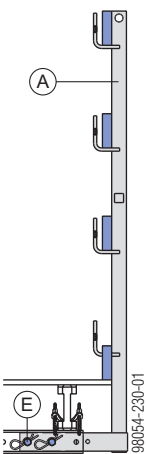
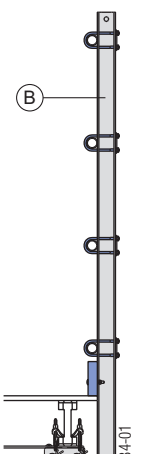
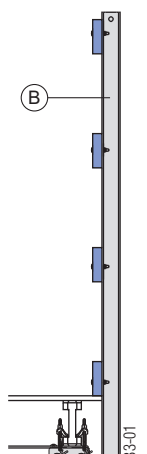
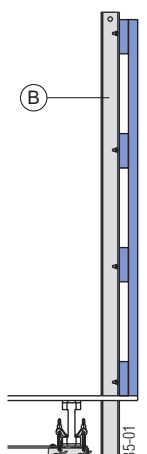
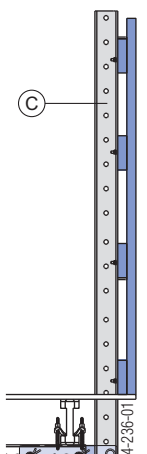
	Handrail post XP with Insertion adapter XP				
	Guardrail boards 2.4 x 15 cm	Guardrail boards 3 x 15 cm	Guardrail boards 4 x 15 cm	Scaffold tubes 48.3mm	Protective gratings XP 2.70x1.20m and 2.70x0.60m
Dynamic pressure $q_{(ze)}$					
	0.2 kN/m <sup>2</sup>	1.9 m	2.7 m	3.6 m	5.0 m
	0.6 kN/m <sup>2</sup>	1.9 m	2.7 m	2.7 m	5.0 m
	1.1 kN/m <sup>2</sup>	1.5 m	1.5 m	1.5 m	2.8 m
	1.3 kN/m <sup>2</sup>	1.2 m	1.2 m	1.2 m	2.4 m

**A** Insertion adapter XP

**B** Toeboard holder XP 1.20m

**C** Handrail post XP 1.80m or  
Handrail post XP 1.20m + Handrail post XP 0.60m

**E** Connecting pin 10cm + Spring cotter 5mm

	Handrail post T 1.80m		Universal railing SK 2.00m			Multi-purpose waling WS 10 with Corner connecting plate SK	
	Guardrail board		Scaffold tube	Guardrail board	Full enclosure	Full enclosure	
							
Dynamic pressure $q_{(ze)}$	Height of guardrail boards:			Height of guardrail boards:			
	≤15 cm	≤20 cm		≤15 cm	≤20 cm		
	≤ 1.1 kN/m <sup>2</sup>	1.83 m	1.33 m	5.0 m	3.5 m	3.1 m	1.3 m
	≤ 1.3 kN/m <sup>2</sup>	1.55 m	1.13 m	5.0 m	3.4 m	2.6 m	1.1 m
	≤ 1.7 kN/m <sup>2</sup>	1.18 m	0.86 m	5.0 m	2.6 m	2.0 m	0.8 m
							2.3 m

**A** Handrail post T 1.80m

**B** Universal railing SK 2.00m

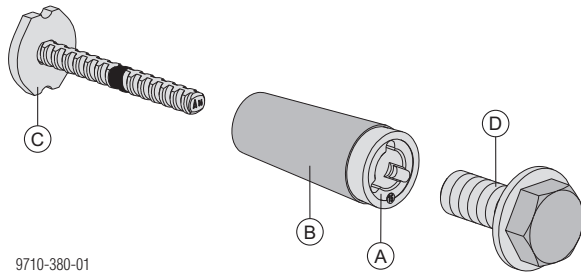
**C** Multi-purpose waling WS10 Top50 2.25m

**D** Corner connecting plate SK

**E** Connecting pin 10cm + Spring cotter 5mm

# Anchoring on the structure

## Positioning point and suspension point



9710-380-01

- A** Universal climbing cone 15.0 2G
- B** Sealing sleeve K 15.0 (consumable form-tie component)
- C** Stop anchor (consumable form-tie component)
- D** Cone screw M30 SW50 7cm

- **Universal climbing cone 15.0 2G**
  - The positioning point and the suspension point are both prepared using this one single type of cone.
- **Stop anchor 15.0**
  - Consumable form-tie component for anchoring the universal climbing cone (and thus the working platform) in the concrete from one side.
- **Cone screw M30 SW50 7cm**
  - Positioning point – for fastening the universal climbing cone.
  - Suspension point – safe means of suspending the working platform.



### NOTICE

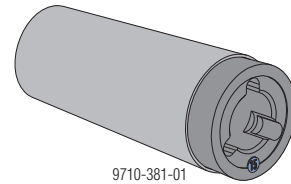
Use the Cone screw M30 SW50 7cm (head of screw is green) for the positioning point and the suspension point!



### NOTICE

- Use the Cone screw M30 SW50 7cm (head of screw is green) for the positioning point and the suspension point!
- The use of residual stocks of the Cone screw B 7cm (head of screw is red) can continue until the end of 2023.

## Universal climbing cones 15.0

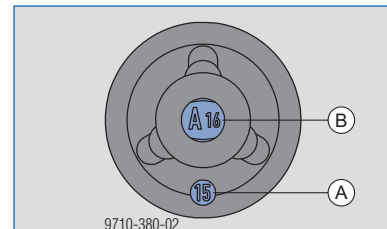


9710-381-01



### Advantages of the Universal climbing cone 15.0 2G:

- Orange mark on the end face for easy identification
- Clear view of the code on the end face with stop anchor installed



9710-380-02

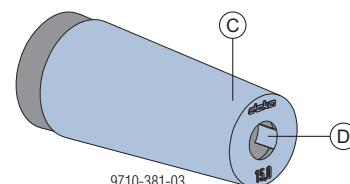
- A** Orange mark on end face
- B** Code on the stop anchor

## Sealing sleeve K 15.0



### NOTICE

Universal climbing cones are supplied with sealing sleeves K. Fit **new sealing sleeves every time** the cones are re-used.



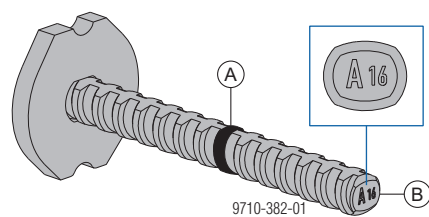
9710-381-03

- C** Sealing sleeve K 15.0 (orange)
- D** Tab on the sealing sleeve



The tab on the sealing sleeve sits against the thread of the universal climbing cone and prevents the stop anchor from working loose.

## Types of stop anchor



**A** Mark for screw-in depth

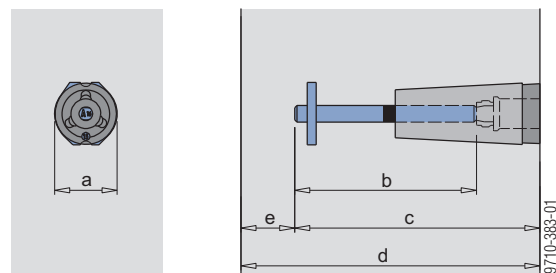
**B** Code for stop-anchor type



The stop anchor has an identification code on the end face.

- The code is a combination of a letter and a number and it unequivocally describes the features of the stop anchor:
  - Letter: Tie-rod size and size of the stop-anchor plate.
  - Number: Length of the stop anchor in cm
- Easy identification of the stop-anchor type before and after the concrete has been poured

### Stop anchor 15.0 A16 and A21



<b>A</b>	Stop anchor 15.0
<b>16</b>	a ... size of stop-anchor plate: 55 mm
	b ... tie-rod length: 16.0 cm

c ... installation depth: 21.5 cm

d ... minimum wall thickness: 23.5 cm (where the concrete cover is 2 cm)

d ... minimum wall thickness: 24.5 cm (where the concrete cover is 3 cm)

e ... concrete cover

<b>A</b>	Stop anchor 15.0
<b>21</b>	a ... size of stop-anchor plate: 55 mm
	b ... tie-rod length: 21.0 cm

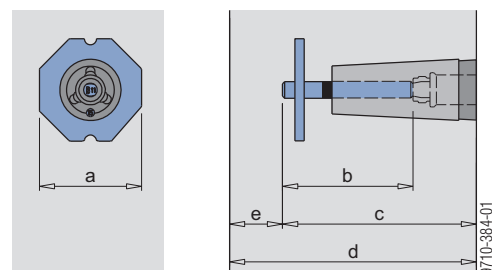
c ... installation depth: 26.5 cm

d ... minimum wall thickness: 28.5 cm (where the concrete cover is 2 cm)

d ... minimum wall thickness: 29.5 cm (where the concrete cover is 3 cm)

e ... concrete cover

### Stop anchor 15.0 B11



<b>B</b>	Stop anchor 15.0
<b>11</b>	a ... Size of stop-anchor plate: 90 mm
	b ... Tie-rod length: 11.5 cm

c ... Installation depth: 17 cm

d ... Minimum wall thickness: 19 cm (where the concrete cover is 2 cm)

d ... Minimum wall thickness: 20 cm (where the concrete cover is 3 cm)

e ... concrete cover

**WARNING**

The short **Stop anchor 15.0 B11** has a much lower load-bearing capacity than the Stop anchor 15.0 A16.

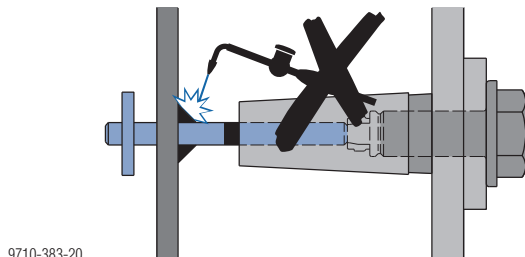
- The short stop anchor may only be used on systems with low tensile loads at the anchoring location, such as on climbing systems inside shafts.
- If the geometry will only allow installation of short stop anchors, then revised static calculations and/or extra reinforcement steel may be required where any higher tensile loads are expected.
- The Stop anchor 15.0 B11 is only permitted for wall thicknesses < 24 cm. For wall thicknesses ≥ 24 cm, the Stop anchor 15.0 A16 (or larger) must be used.

## Preparing the positioning point

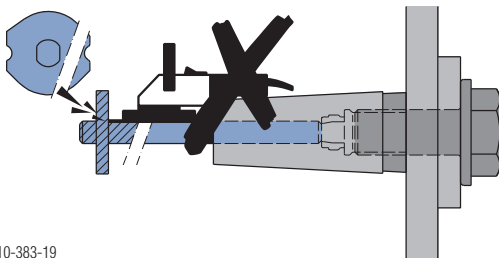
**WARNING**

Sensitive anchoring, suspension and connector components!

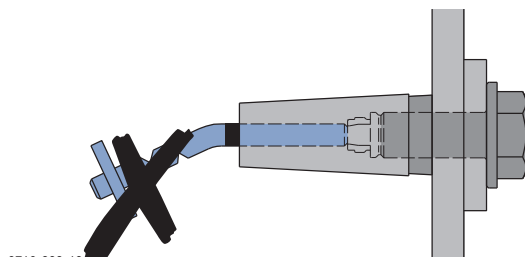
- Never weld or heat these components.
- Any components that are damaged or weakened by corrosion or wear must be withdrawn from use and destroyed.



9710-383-20



9710-383-19



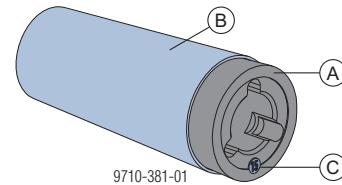
9710-383-18

## Preparing the positioning point

- Push the sealing sleeve all the way onto the universal climbing cone.



The coloured mark on the universal climbing cone and the colour of the sealing sleeve must be the same.



9710-381-01

**A** Universal climbing cone 15.0 2G

**B** Sealing sleeve K 15.0 (orange)

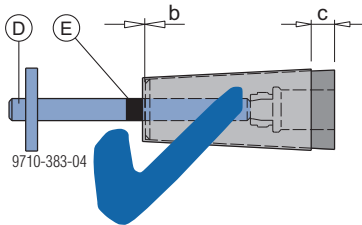
**C** Orange mark on end face

**Note:**

Do not screw the stop anchor in until the sealing sleeve is pushed fully on to the universal climbing cone.

**WARNING**

- ▶ Always screw the stop anchor into the universal climbing cone until it fully engages (up to the depth mark). Not screwing the stop anchor fully into the cone may lead to reduced load-bearing capacity and failure of the suspension point – resulting in possible injury and/or damage.



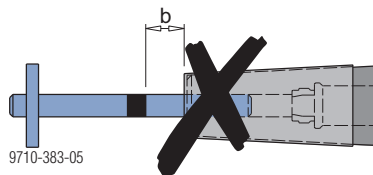
b ... 0 mm  
c ... 15 mm

**D** Stop anchor 15.0 (lost anchoring component)

**E** Depth mark

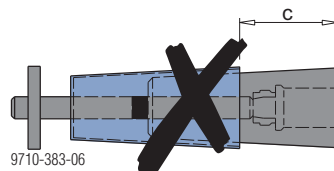


- The depth mark on the stop anchor must be right up against the universal climbing cone = must be screwed in to the full depth.



b ... > 0 mm not permitted

- The sealing sleeve must be completely pushed onto the universal climbing cone.

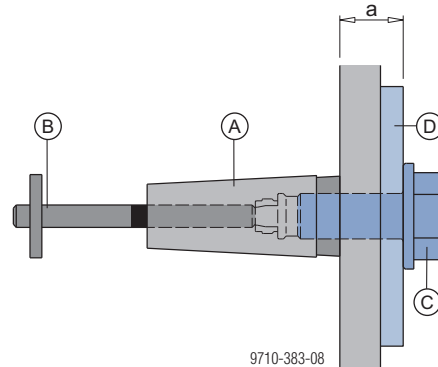


c ... > 15 mm not permitted

## Positioning point with Cone screw M30 SW50 7cm (with hole drilled through form-ply)

**Installation:**

- ▶ Fasten a packing plate (e.g. Dokaplex 15 mm) to the form-ply (position as shown in shop drawing / assembly drawing).
- ▶ Drill a diam. 30 mm hole in the form-ply (position as shown in shop drawing / assembly drawing).
- ▶ Secure the prepared positioning point to the form-ply with Cone screw M30 SW50 7cm.



a ... 35 - 45 mm

**A** Universal climbing cone 15.0 2G

**B** Stop anchor 15.0

**C** Cone screw M30 SW50 7cm

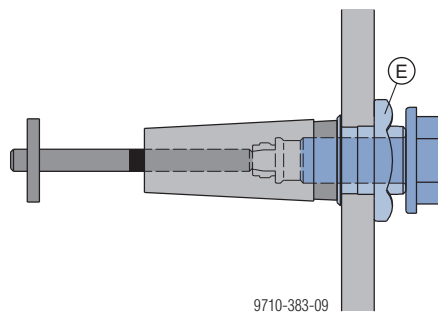
**D** Packing plate



The Form-ply protector 32mm protects the form-ply from damage around the positioning point. This is a particular advantage for form-work with high numbers of repeat uses.

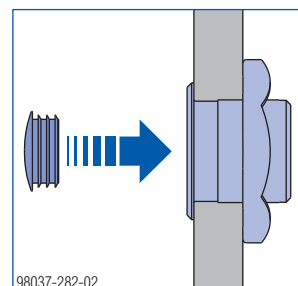
Possible thicknesses of form-ply: 18 - 27 mm

In order to fit the form-ply protector, a 46 mm diam. hole must be drilled in the form-ply first.



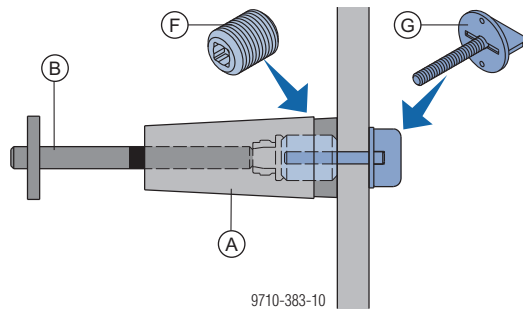
**E** Form-ply protector 32mm (width across flats 70 mm)

Where necessary, the Form-ply protector 32mm can be closed off with a Cover cap D35x3 (included with product).



## Positioning point with Positioning clamp M30 (with hole drilled through form-ply)

Because the hole is drilled with a diameter of only 9 - 10 mm, the positioning point can be relocated at smaller intervals than would be possible with the Cone screw M30 SW50 7cm.



**A** Universal climbing cone 15.0 2G

**B** Stop anchor 15.0

**F** Socket connector M30 of the Positioning clamp M30

**G** M8 wing bolt of the Positioning clamp M30

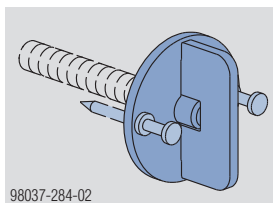
### Installation:

- ▶ Drill a diam. 9 - 10 mm hole in the form-ply (position as shown in shop drawing / assembly drawing).



Nail the M8 wing bolt onto the form-ply to make it easier to mount the cone.

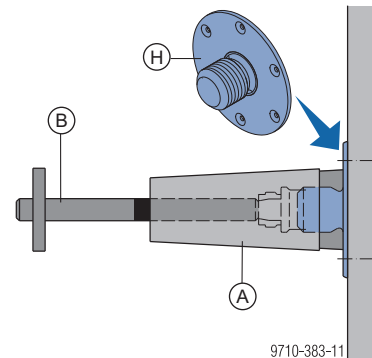
Shortened double-headed nails make it easier to remove the wing bolt.



- ▶ Screw a Socket connector M30 all the way into the universal climbing cone and tighten it.
- ▶ Screw the prepared positioning point onto the M8 wing bolt (make sure that it seals against the form-work).

## Positioning point with Positioning disk M30 (with no hole drilled through form-ply)

For special applications only, when it is not possible to drill through the form-ply (e.g. where there are Doka beams or formwork panel frame profiles directly behind the positioning point).



**A** Universal climbing cone 15.0 2G

**B** Stop anchor 15.0

**H** Positioning disk M30



### NOTICE

It is not permitted to use the Positioning disk M30 more than once in the same position, as it cannot be fixed firmly and securely in the old nail-holes.



Tightness of the contact surface between the positioning disc and the climbing cone can be further increased by applying a thin film of water-resistant grease.

### Installation:

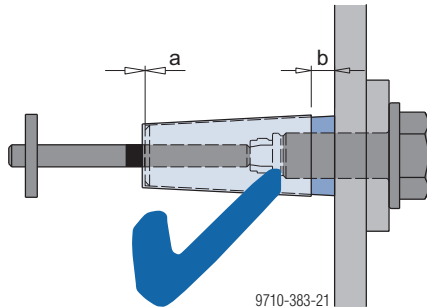
- ▶ Fix the Positioning disk M30 to the form-ply using 2.8x60 nails (position as shown in shop drawing / assembly drawing).
- ▶ Screw the prepared positioning point onto the Positioning disk M30 and tighten it.

## Check of the positioning point

- Before pouring, check all positioning points and suspension points again.



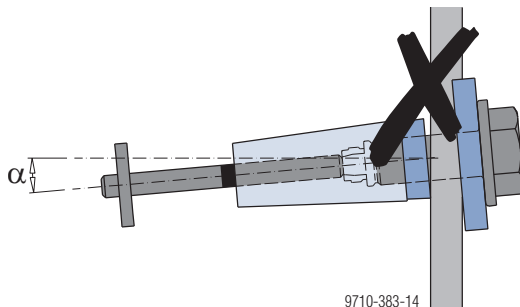
- The sealing sleeve must be completely pushed onto the Universal climbing cone.
- The depth mark on the stop anchor must be right up against the universal climbing cone = must be screwed in to the full depth.
- Tolerance for locating the positioning points and suspension points:  $\pm 10$  mm in the horizontal and the vertical.



a ... 0 mm  
b ... 15 mm



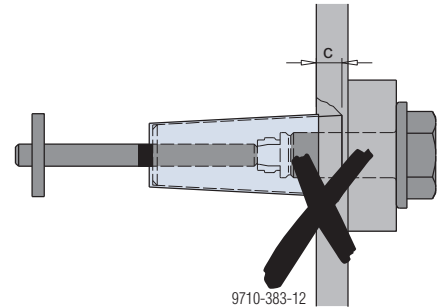
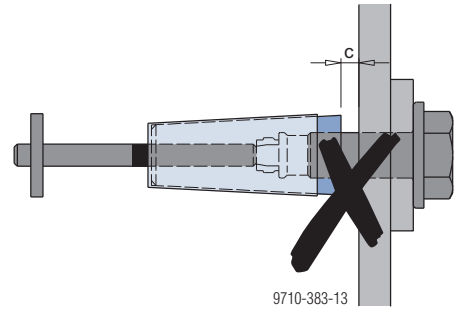
- The axis of the universal climbing cone must be at right-angles to the surface of the concrete – maximum angle of deviation:  $2^\circ$ .



$\alpha$  ... max.  $2^\circ$



- The universal climbing cone must be embedded so that it is flush with the concrete surface.



c ... > 0 mm not permitted

## Pouring



Mark the positions of the anchoring points at the top edge of the formwork to make them easier to locate when the concrete is being poured.

- Prevent the vibrator from touching the stop anchors.
- Do not place concrete from directly above the stop anchors.

These measures prevent the anchors from working loose during pouring and vibration.

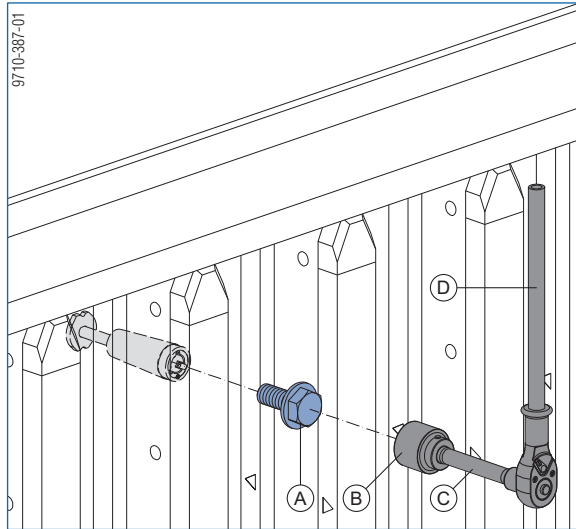


## Stripping the formwork

Remove the connecting parts holding the positioning point to the formwork either before or after stripping, depending on which connecting parts are used.

### Positioning point with Cone screw M30 SW50 7cm:

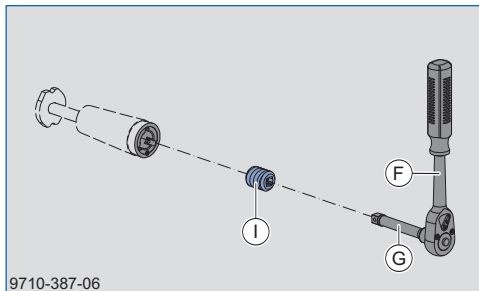
- Remove the Cone screw M30 SW50 7cm before stripping.



- A Cone screw M30 SW50 7cm
- B Box nut 50 3/4"
- C Extension 20cm 3/4"
- D Reversible ratchet 3/4"

### Positioning point with Positioning clamp M30:

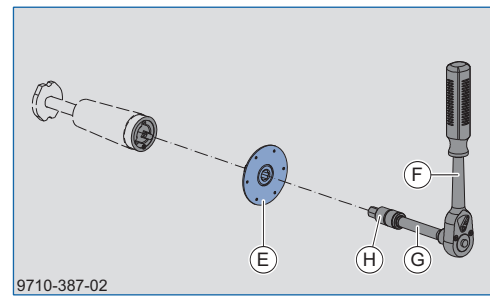
- Remove the M8 wing bolt before stripping.
- Remove the Socket connector M30 after stripping.



- F Reversible ratchet 1/2"
- G Extension 11cm 1/2"
- I Socket connector M30 of the Positioning clamp M30

### Positioning point with Positioning disc M30:

- Remove the Positioning disc M30 after stripping.



- E Positioning disc M30
- F Reversible ratchet 1/2"
- G Extension 11cm 1/2"
- H Hexagon bit socket 14mm 1/2"

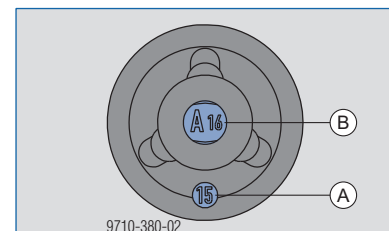
## Preparing the suspension point

### Check of the suspension point



#### NOTICE

- Stop anchor type and climbing cone must be as specified in the assembly drawing or shop drawing, as applicable.
- Check the coloured mark on the Universal climbing cone and the code on the stop anchor.

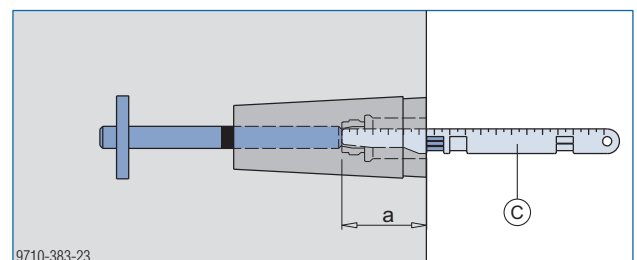


- A Orange coloured mark  
(only on Universal climbing cone 15.0 2G)
- B Code on the stop anchor

- Check the placement depth of the stop anchor.



The Safety Ruler SK permits a quick check to ensure that placement depth is within the permissible range.



a ... perm. placement depth: 55 - 65 mm

- C Safety Ruler SK

## Dimensioning the suspension point

The required **cube compressive strength** of the concrete at the time of loading must be **specified** separately for each project **by the structural designer**. It will depend on the following factors:

- load actually occurring
- length of the stop anchor
- reinforcement / extra reinforcement steel
- distance from edge

The introduction of the forces, the transfer of these forces into the structure, and the stability of the overall construction, must all be verified by the structural designer.

The required cube compressive strength  $f_{ck, cube, current}$  must be at least 10 N/mm<sup>2</sup>, however.



Follow the directions in the Calculation Guide entitled 'Load-bearing capacity of anchorages in concrete' or ask your Doka technician!

## Hanging the platform into place



### WARNING

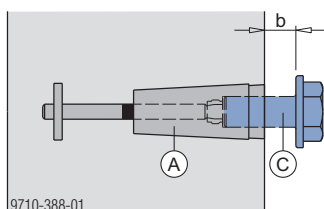
- ▶ Use only the Cone screw M30 SW50 7cm for the positioning point and suspension point (head of screw is **green**)!

- ▶ Screw the Cone screw M30 SW50 7cm into the universal climbing cone until it engages, and tighten it firmly.

A tightening torque of 100 Nm (20 kg, assuming a ratchet-length of approx. 50 cm) is sufficient.



Ensure that control dimension  $b = 28 - 32$  mm!



9710-388-01

**A** Universal climbing cone 15.0 2G

**C** Cone screw M30 SW50 7cm



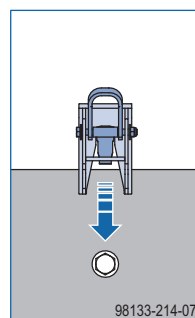
### WARNING

Overtightening (> 100 Nm) can cause damage to or even breakage of the anchor!

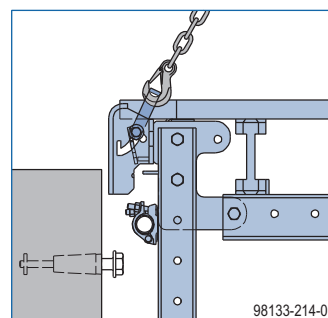
- ▶ The Reversible ratchet 3/4" must be used for screwing in and fixing the Cone screw M30 SW50 7cm into the universal climbing cone.

Reversible ratchet 3/4"	Reversible ratchet 3/4" with extension	Ratchet MF 3/4" SW50
Tr687-200-01	Tr687-200-01	Tr687-200-01

- ▶ Hang the platform into place.



98133-214-07



98133-214-01

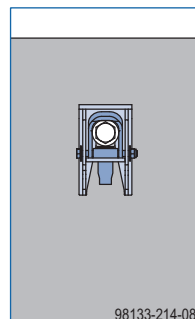


### WARNING

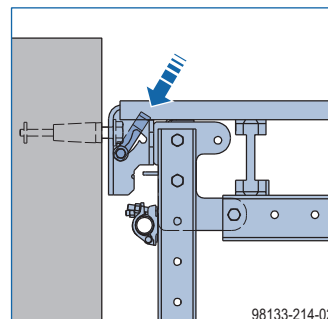
Falling hazard if the platform is not attached properly.

- ▶ Ensure that the suspension heads are properly engaged on the cone screws.

- ▶ Detach the lifting chains from the safety bows.
- ▶ Move the safety bows to the secured position.



98133-214-08



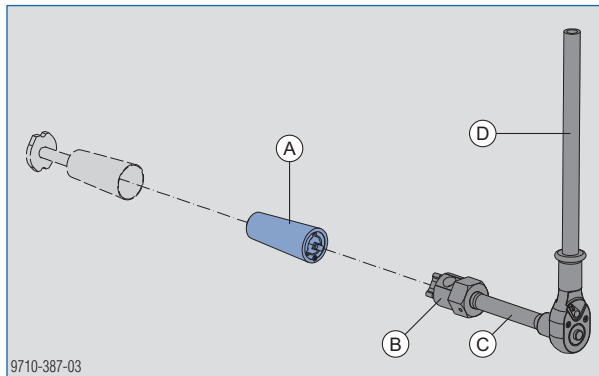
98133-214-02



Secured position = safety bow (red) fully lowered in the Universal suspension head.

## Dismounting the suspension point

- Remove the Cone screw M30 SW50 7cm.
- Remove the universal climbing cone.



- A** Universal climbing cone 15.0 2G
- B** Universal cone spanner 15.0/20.0
- C** Extension 20cm 3/4"
- D** Reversible ratchet 3/4"

## Sealing the suspension point

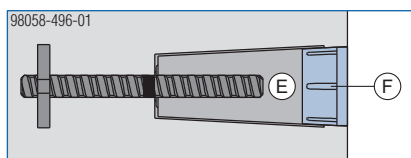
### Grout level with the rest of the surface

Sealing of the suspension points can be a requirement, for reasons of rust prevention.

- Fill the cavity of the suspension point with mortar and grout it smoothly.

### Fair-faced concrete plug 52mm plastic

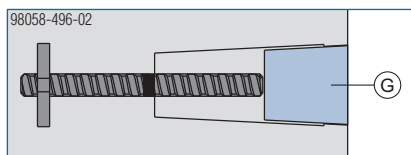
- Push the fair-faced concrete plug into the hole of the suspension point.



- E** Sealing sleeve
- F** Fair-faced concrete plug 52mm plastic

### Concrete cone 52mm

- Remove the sealing sleeve.
- Glue the concrete cone into the hole of the suspension point.



- G** Concrete cone 52mm

The concrete plug is glued into place with standard concrete adhesive.

## Other possible anchorages

### Load-bearing capacity of the steel of suitable suspension points

	V <sub>perm.</sub> [kN]	H <sub>perm.</sub> [kN]
Universal climbing cone 15.0 2G + Cone screw M30 SW50 7cm	50	60
Suspension cone 15.0 5cm	50	60
Suspension cone 15.0 f. insulation up to 11cm + Cone screw Rd28	20	55
Screw-in cone 15.0 + Bridge edge beam anchor 15.0	30	30
Suspension cone 15.0 with collar	50	55

The required **cube compressive strength** of the concrete at the time of loading must be specified separately for each project **by the structural designer**. It will depend on the following factors:

- load actually occurring
- anchoring depth  $h_{ef}$
- reinforcement / extra reinforcement steel
- distance from edge

The introduction of the forces, the transfer of these forces into the structure, and the stability of the overall construction, must all be verified by the structural designer.

The required cube compressive strength  $f_{ck, cube, current}$  must be at least 10 N/mm<sup>2</sup>, however.












Follow the directions in the Calculation Guide entitled 'Load-bearing capacity of anchorages in concrete', and/or ask your Doka technician!









#### NOTICE

Separate statics analysis is required for dimensioning of the suspension point.




### Anchorage with Suspension cone 15.0 5cm

Lost parts		Reusable parts			
Pigtail anchor 15.0 	Sealing sleeve 15.0 5cm 	Cantilever positioning cone 15.0 5cm 	Tie rod 15.0, length approx. 20 cm 	Super plate 15.0 	Suspension cone 15.0 5cm 
or Stop anchor 15.0 	or Sealing sleeve S 15.0 5cm 		or Fixing plate 15.0 		




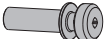
### Suspension cone 15.0 f. insulation up to 11cm

Lost parts		Reusable parts	
Pigtail anchor 15.0 	Sealing sleeve 15.0 f. insulation up to 11cm 	Suspension cone 15.0 f. insulation up to 11cm 	Cone screw Rd28 
or Stop anchor 15.0 		in addition, where needed: Positioning disc Rd28 	

### Anchorage with Screw-in cone 15.0

Lost parts		Reusable parts
Bridge edge beam anchor 15.0 	Nailing cone 15.0 	Screw-in cone 15.0 

### Subsequently drilled suspension point with Suspension cone 15.0 with collar

Lost parts	Reusable parts		
Rock anchor spreader unit 15.0 	Tie rod 15.0 	Rock anchor installation tube 	Suspension cone 15.0 with collar 

# Assembly

## Assembling platform

The modular design of the working platform assembled from system components means that many different combinations are possible.

Depending on the project, the actual design may differ significantly from that described here.



### NOTICE

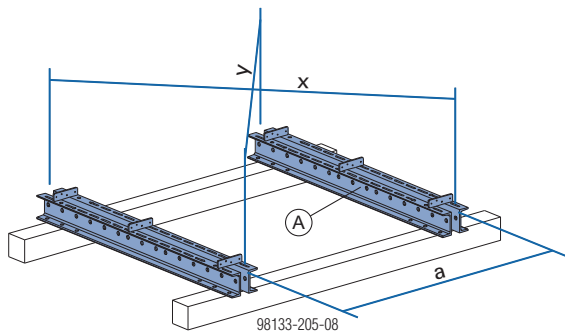
- There must be a flat, firm base capable of supporting the load.
- Prepare a sufficiently large assembly area.
- Tightening torque of the bracing tube couplers: 50 Nm
- During all assembly and dismantling work on the working platform that is carried out on the structure itself, the operators must use fall-arrest equipment (e.g. safety harness).

### Example: Decking above waling

- Follow the shop drawing / assembly plan.

## Mounting the decking supports

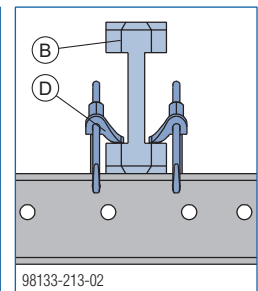
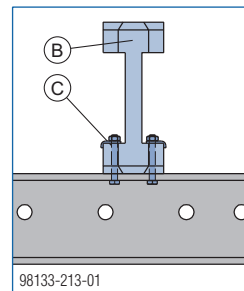
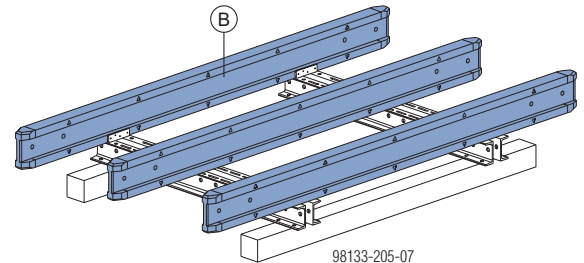
- Prepare squared timbers to place the multi-purpose walings onto (height: min. 120 mm).
- Lay down multi-purpose walings, spaced apart by the exact centre-to-centre distance.  
The connection plates must be facing upwards.



a ... centre-to-centre distance  
x = y ... diagonals

**A** Multi-purpose waling

- Secure Doka beams H20 to the multi-purpose walings using Beam screws S 8/70 or Flange clamps H20.



**B** Doka beam H20

**C** Beam screw S8/70

**D** Flange clamp H20

- Beam screw S 8/70: Width-across 13 mm Hole diameter: 10 mm
- Flange clamp H20: Width-across 19 mm

## Mounting the deck-boards



### NOTICE

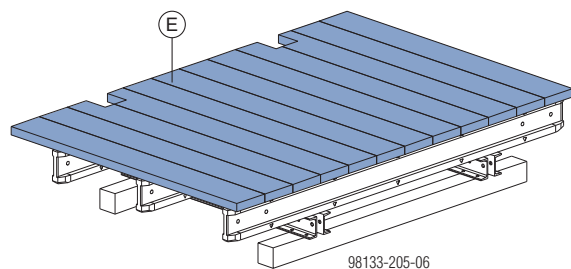
The cut-outs in the platform decking may vary, depending on the project!

- Fasten deck-boards to the Doka beams with Torx TG 6x90 A2 universal countersunk screws.

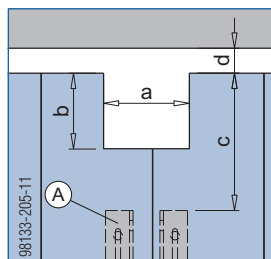


The deck-boards must be fastened to every formwork beam by 2 screws!

Do a sight-check to make sure that the deck-boards have been fixed properly!



### Cut-out needed in platform decking:



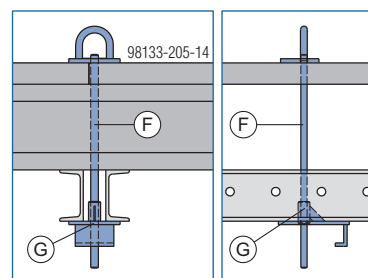
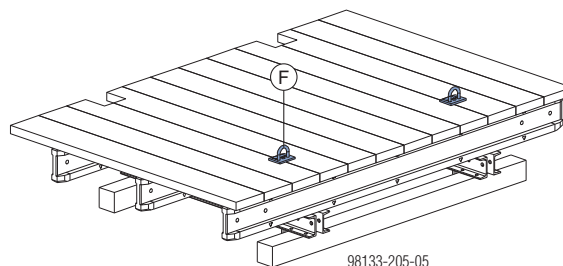
- a ... 170 mm
- b ... 150 mm
- c ... 270 mm
- d ... 50 mm

**A** Multi-purpose waling

**E** Plank 5/20 cm

## Installing crane hoisting points

- Drill the holes for the Lifting rod 15.0 in the deck-boards.  
Diameter of drilled hole: min. 20mm
- Mount the Lifting rod 15.0 and Retaining plate 15.0.



**F** Lifting rod 15.0

**G** Retaining plate 15.0



To avoid trip hazards, the Lifting rod 15.0 with Retaining plate 15.0 can be installed in the outermost Doka beam H20.



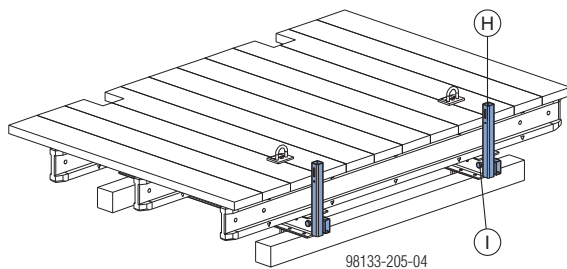
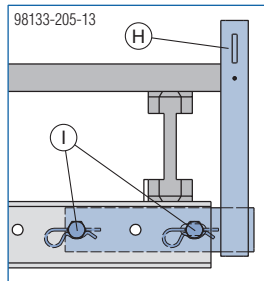
Follow the directions in the 'Lifting rod 15.0' Operating Instructions!

## Mounting the railing



Follow the directions in the 'Xsafe edge protection XP' User Information booklet!

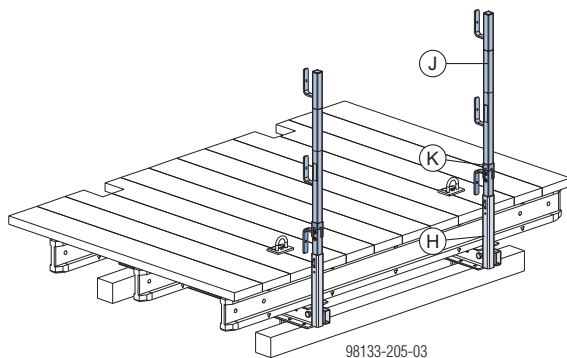
- ▶ Pin the Insertion adapter XP onto the multi-purpose walings with 2 Connecting pins 10cm, and secure with Spring cotters 5mm.



**H** Insertion adapter XP

**I** Connecting pin 10cm + Spring cotter 5mm

- ▶ Push Toeboard holder XP 0.60m onto Handrail post XP 1.20m from below (not needed when using Protective grating XP).
- ▶ Push a Handrail post XP 1.20m onto the Insertion adapter XP until it locks ('Easy-Click' function).



**H** Insertion adapter XP

**J** Handrail post XP 1.20m

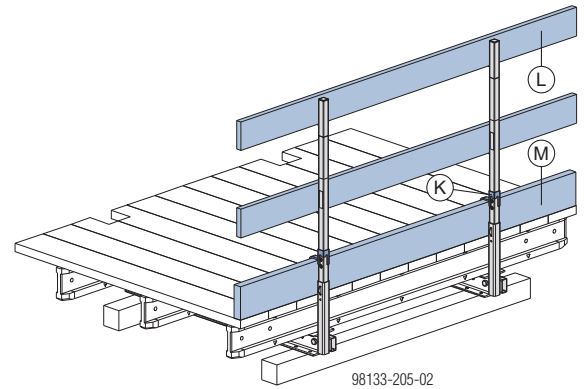
**K** Toeboard holder XP 1.20m



- The locking mechanism must engage.
- The bracket of the toeboard holder must be pointing downward, facing the platform.

## Mounting the guard-rail boards

- ▶ Insert and secure the guardrail boards.



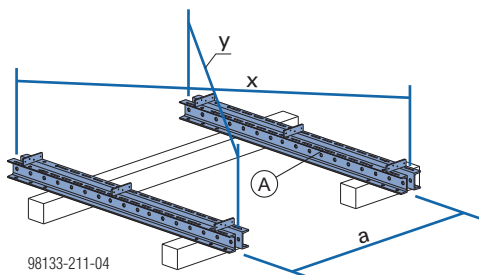
**K** Toeboard holder XP 1.20m

**L** Guardrail board

**M** Toeboard

## Pre-assembling the vertical unit

- Prepare squared timbers to place the multi-purpose walings onto (height: min. 120 mm).
- Lay down multi-purpose walings, spaced apart by the exact centre-to-centre distance. The connection plates must be facing upwards.

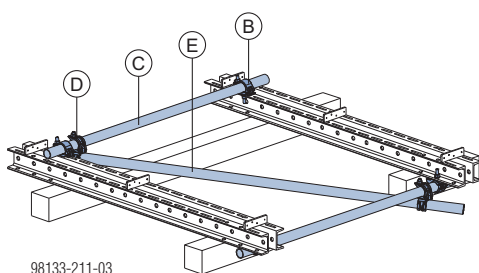


98133-211-04

a ... centre-to-centre distance  
x = y ... diagonals

### A Multi-purpose waling

- Brace the multi-purpose walings in the horizontal and the diagonal. width across flats 22 mm

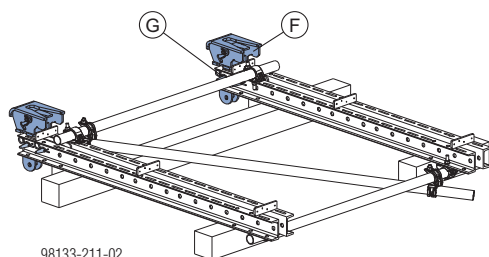


98133-211-03

- B Screw-on coupler 48mm 50
- C Scaffold tube 48.3mm (horizontal)
- D Swivel coupler 48mm
- E Scaffold tube 48.3mm (diagonal)

Distance between swivel coupler and screw-on coupler: max. 160 mm.

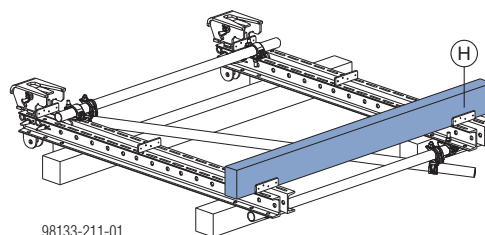
- Bolt the Universal suspension head into the multi-purpose walings with 2 Connecting pins 10cm and secure these with Spring cotters 5mm.



98133-211-02

- F Universal suspension head
- G Connecting pin 10cm + Spring cotter 5mm

- Use square bolts to secure squared timber 8x16 cm to the vertical multi-purpose walings.



98133-211-01

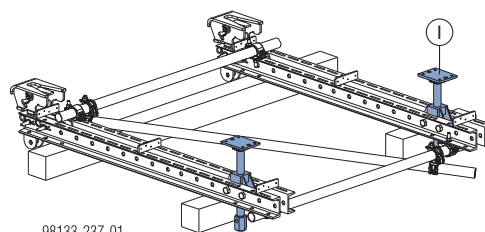
### H Squared timber 8x16 cm

Threaded-fastener material required for each multi-purpose waling:

- 1 square bolt M10x180
- 1 washer 10
- 1 hexagon nut M10



Instead of the squared timber, Facade precast member clamps V can be bolted to the multi-purpose walings.



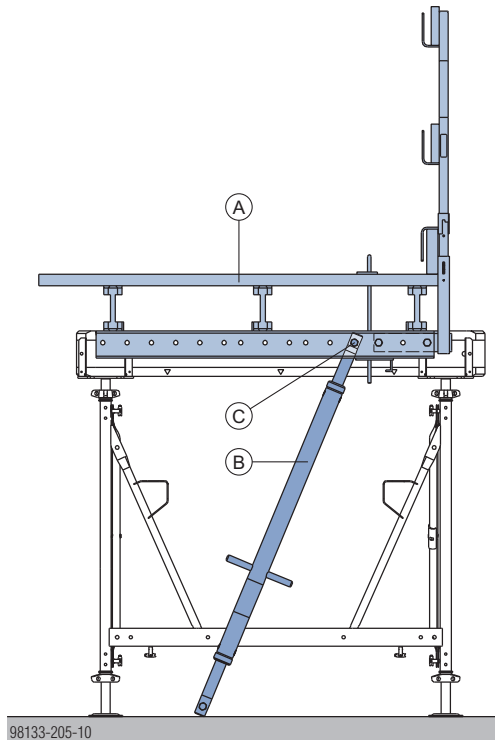
98133-237-01

### I Facade precast member clamp V



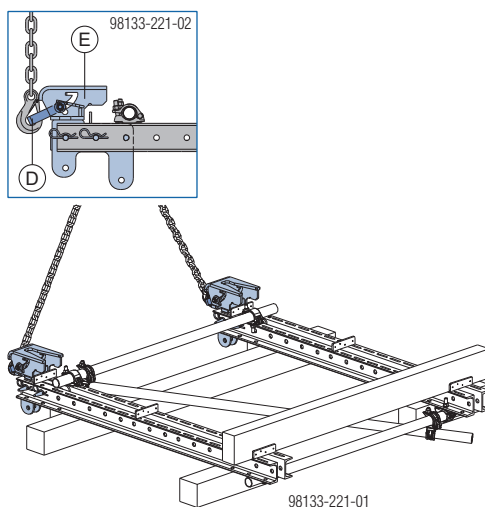
## Mounting the vertical unit onto the platform:

- Set down the platform on a temporary support.
- Pin Spindle struts T7 onto the multi-purpose walings of the platform with Connecting pins 10cm and secure these with Spring cotters 5mm.
- Adjust the Spindle struts T7 to the length shown in the shop drawing / assembly plan.



- A** Platform
- B** Spindle strut T7
- C** Connecting pin 10cm + Spring cotter 5mm

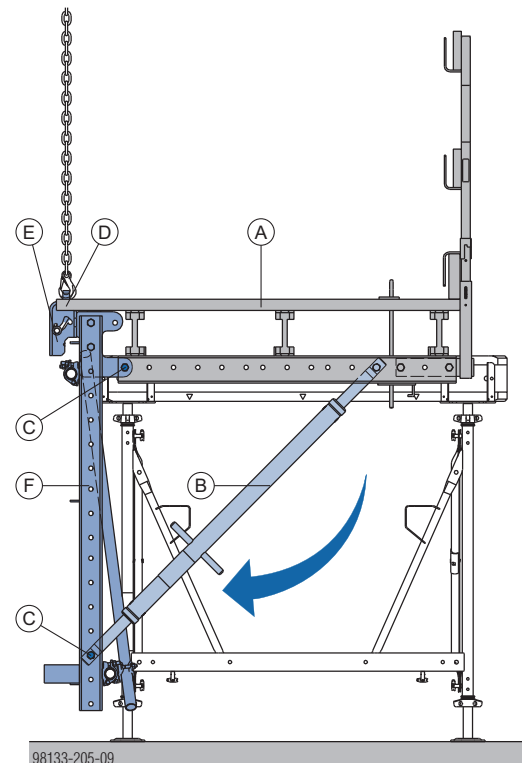
- Attach the lifting chains to the red safety bows.



- D** Safety bow (red)
- E** Universal suspension head

- Lift the vertical unit into position on the platform.

- Pin the Universal suspension heads to the multi-purpose walings of the platform with Connecting pins 10cm and secure the connecting pins with Spring cotters 5mm.
- Swing the Spindle struts T7 forward and pin them to the multi-purpose walings of the vertical unit with Connecting pins 10cm and secure the connecting pins with Spring cotters 5mm.



- A** Platform
- B** Spindle strut T7
- C** Connecting pin 10cm + Spring cotter 5mm
- D** Safety bow
- E** Universal suspension head
- F** Vertical unit

# Repositioning

## Moving the platform

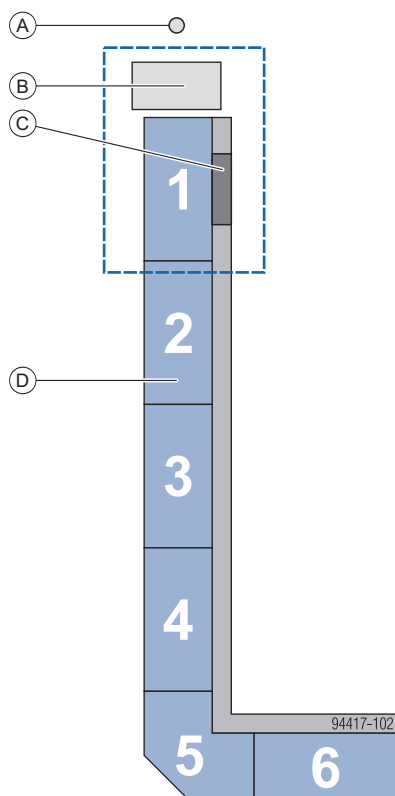
### Notes on safe repositioning



#### NOTICE

During the planning phase, consideration should also be given to the repositioning order and the removal of the last platform!

- The transport of persons is forbidden!
- Use tag-lines for safe guidance throughout the entire repositioning operation.
- In general, the last platform is where there are access and exit routes for the regular work sequence. Vertical access is usually provided by stair towers or aerial work platforms.
- If there are window or door openings in the façade, then access can also be enabled through these façade openings.



A Starting and finishing point

B Stair tower or aerial work platforms

C Façade opening

D Platform



#### NOTICE

- Local regulations, or the result of a hazard assessment carried out by the erector, may necessitate the use of personal fall-arrest systems (e.g. safety harnesses) during repositioning.



- When one platform is repositioned, this leaves exposed fall-hazard locations on the remaining units. Each of these openings has to be closed off with a side railing or a barrier set up at least 2.0 m short of the drop-off edge (see [Stirnseitiger Seitenschutz](#)).



- The personnel in charge of the repositioning operation are responsible for positioning the access prohibition barriers correctly.



The FreeFalcon mobile fall protection mast permits a secure attachment point to be created for the safety harness.



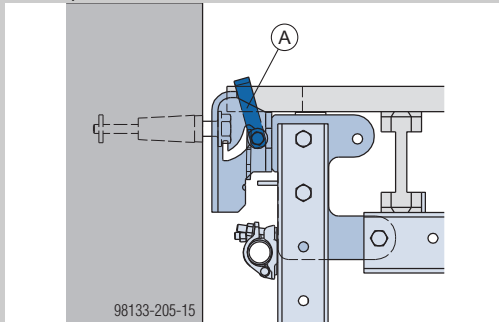
User instruction prior to use of the FreeFalcon is mandatory. Follow the directions in the 'FreeFalcon' Operating Instructions.

The platforms are normally repositioned using suitable 4-part lifting chains such as the Doka 4-part lifting chain 3.20m.

Use the Transport fork 1.3t adjustable if the platform cannot be disengaged and lifted clear with a 4-part lifting chain.



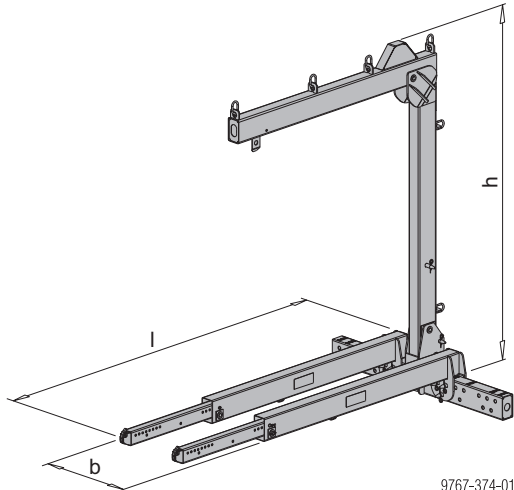
- ▶ Working from the second-last platform, disengage the anti-liftout guard of the last platform. The red lifting bow (**A**) must be shifted into the stand-by position (fixed in the short slot).



- ▶ Re-lock the anti-liftout guard.  
After hanging the platform into place, move the lifting bow back into the secured position (fixed in the long slot so that the lifting bow is flush with the deck).

## Transport fork 1.3t adjustable

- Adjustable fork width and fork length
- Integrated tag-lines
- Three attachment possibilities for 2-part lifting chains for optimum (horizontal) transport of the platforms
- Attaching/detaching the 2-part lifting chain is easy in the parking position (bracket tilts down when lowered to the ground)

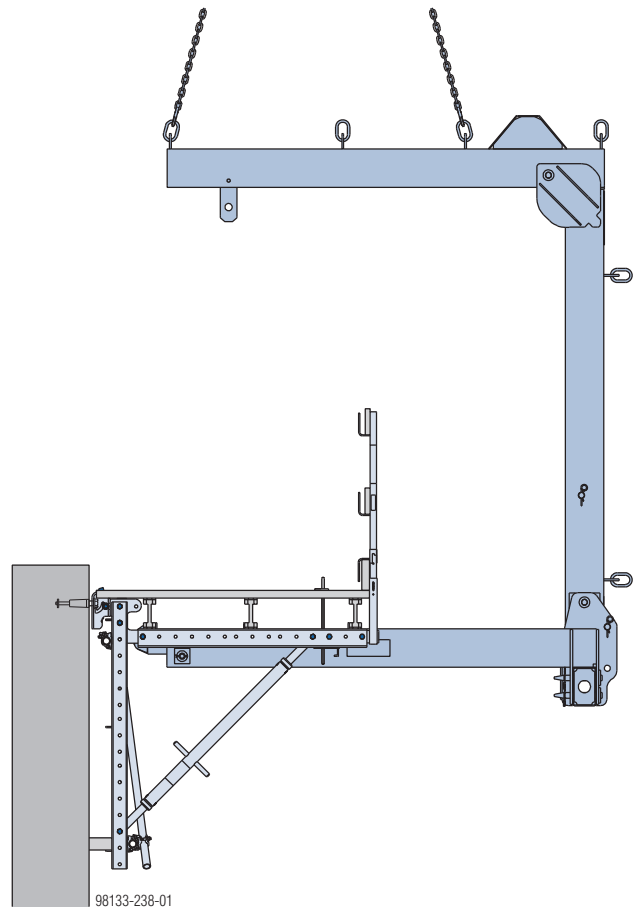


b ... 90, 137, 204 or 227 cm  
l ... 275, 324, 373 or 422 cm  
h ... 385 cm

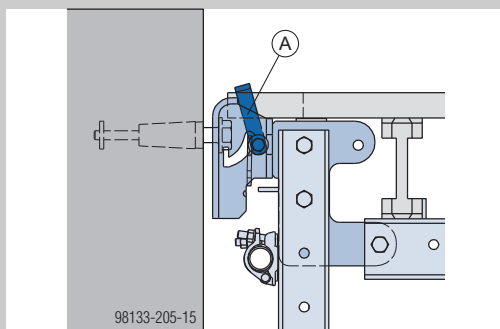
Permissible working load limit: 1300 kg (2870 lbs)



Follow the directions in the 'Transport fork 1.3t adjustable' Operating Instructions!



- ▶ Unlock the anti-liftout guard. Before the platform can be lifted off its suspension points, the red lifting bow (A) must be shifted into the stand-by position (fixed in the short slot).



# Starting up

## Hanging the platform into place



### NOTICE

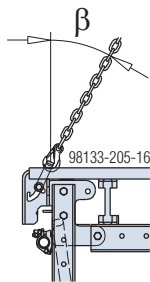
- Remove any loose items from the platforms, or secure them firmly.
- The transport of persons is forbidden!

The platforms are normally repositioned using suitable 4-part lifting chains such as the Doka 4-part lifting chain 3.20m.

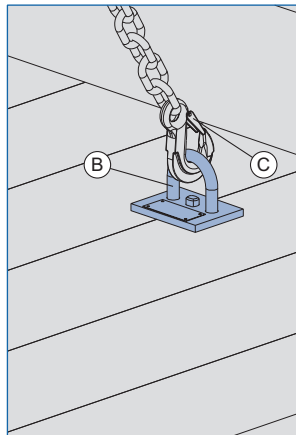
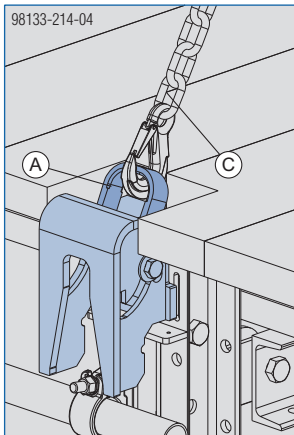


Follow the directions in the 'Doka 4-part chain 3.20m' Operating Instructions!

- Attach a 4-part lifting chain to the front and rear crane lifting points.  
Sling angle  $\beta$ : max. 30°



- Use a 4-part lifting chain to lift the platform and, using tag-lines, guide it to the place of use.

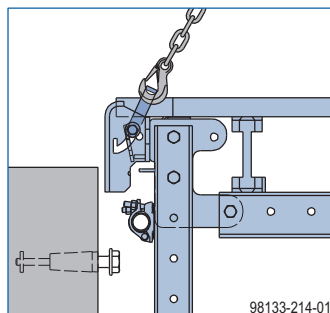
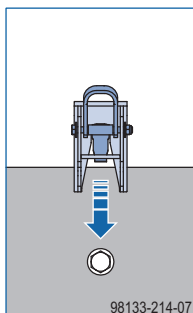


**A** Safety bow (red)

**B** Lifting rod 15.0

**C** Doka 4-part chain 3.20m

- Hang the platform into place.

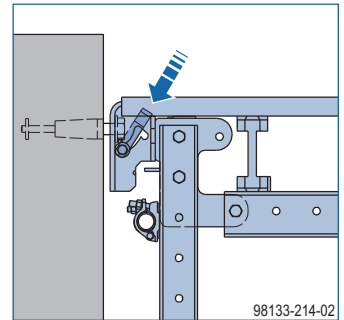
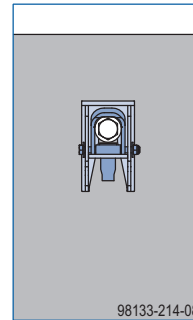


### WARNING

Falling hazard if the platform is not attached properly.

- Ensure that the suspension heads are properly engaged on the cone screws.

- Detach the lifting chains from the safety bows.
- Move the safety bows to the secured position.



Secured position = safety bow (red) fully lowered in the Universal suspension head.

# Dismantling

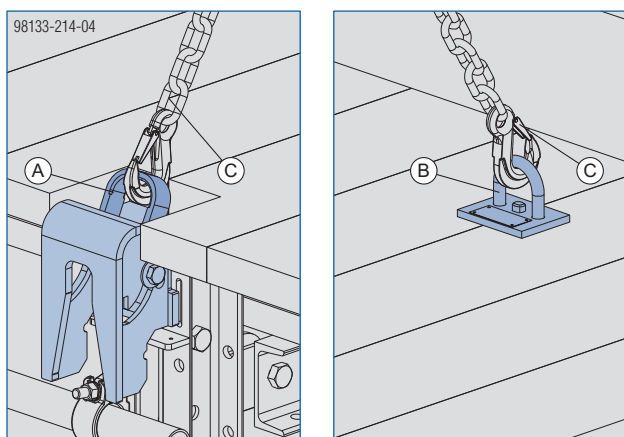


## NOTICE

- There must be a flat, firm base capable of supporting the load.
- Provide a sufficiently large dismantling space.
- Remove any loose items from the platforms, or secure them firmly.
- During all assembly and dismantling work on the working platform that is carried out on the structure itself, the operators must use fall-arrest equipment (e.g. safety harness).

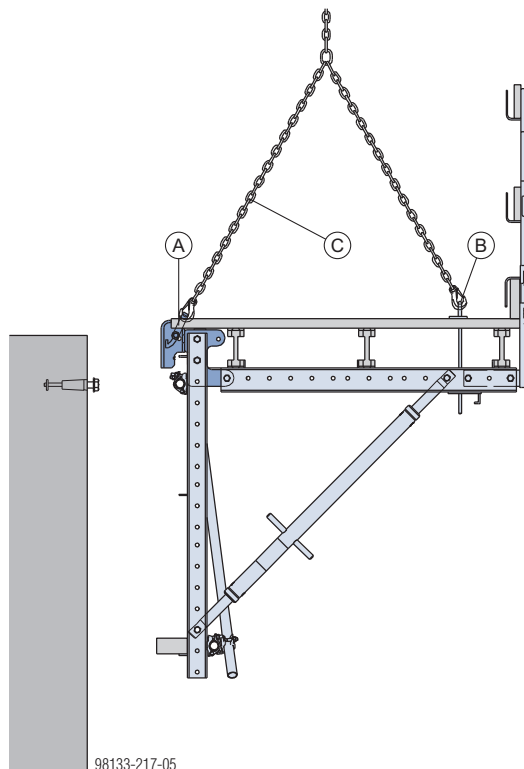
## Disassembly with four-part lifting chain

- Attach a four-part lifting chain to the front and rear crane hoisting points.



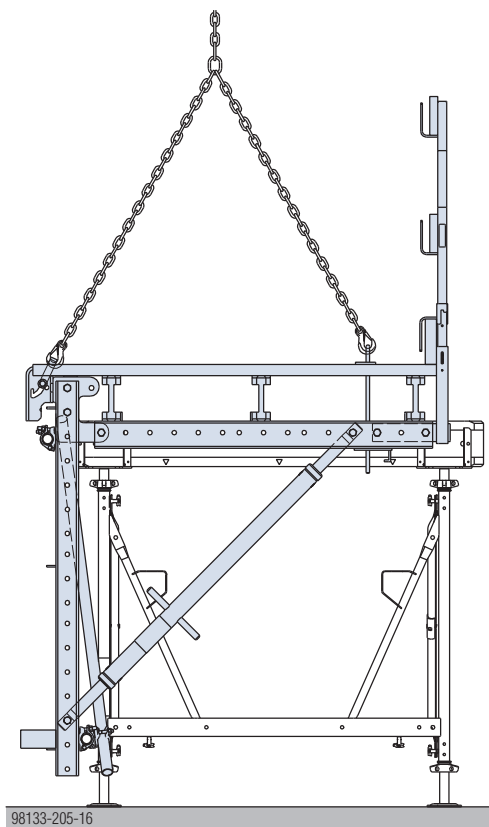
- A Safety bow (red)
- B Lifting rod 15.0
- C Doka 4-part chain 3.20m

- Lift the platform out of its suspension points.



- A Safety bow (red)
- B Lifting rod 15.0
- C Doka 4-part chain 3.20m

- Place the platform on a temporary support.

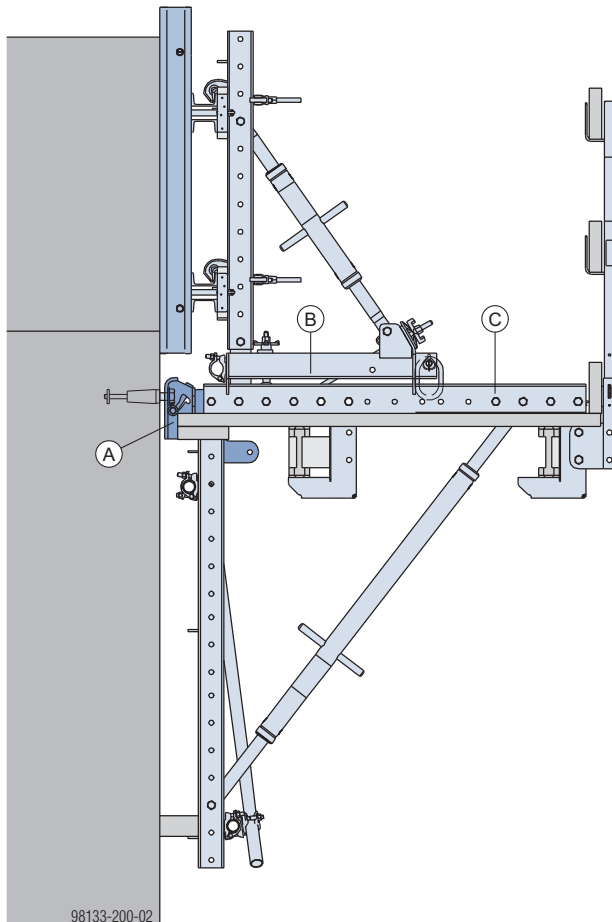


- From this point on disassembly takes place on the ground and is the reverse of the assembly procedure.

# General

## Design variants

### Use with Positioning unit DokaCC

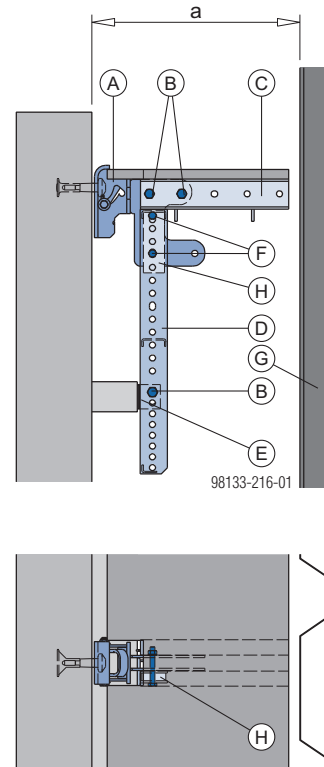


- A** Universal suspension head
- B** Positioning unit DokaCC
- C** Multi-purpose waling WU12



Follow the directions in the 'Tunnel system DokaCC' User Information booklet.

### Use in narrow shafts and against pit lining



a ... 60 - 80 cm

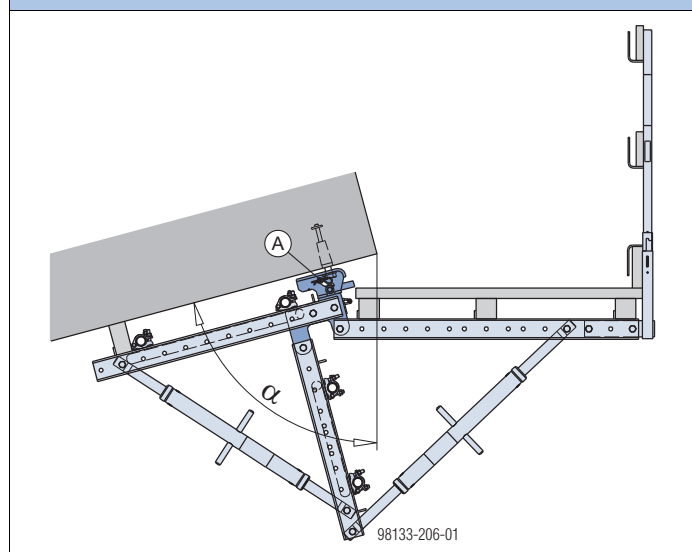
- A** Universal suspension head
- B** Connecting pin 10cm + Spring cotter 5mm
- C** Multi-purpose waling WS10
- D** Adjustable waling extension FF20/50
- E** Beam clamp Top50
- F** Hexagon bolt ISO 4014 M20x120 8.8  
2 washers ISO 7089 20 St-200 HV,  
Hexagon nut ISO 7040 M20 self-locking 8
- G** Barrier such as sheet wall, for example
- H** Hardwood packer

Threaded-fastener material required for each adjustable waling extension:

- 2 hexagon bolts ISO 4014 M20x120 8.8
- 4 washers ISO 7089 20 St-200 HV
- 2 hexagon nuts ISO 7040 M20 self-locking 8

## Use at angles of inclination

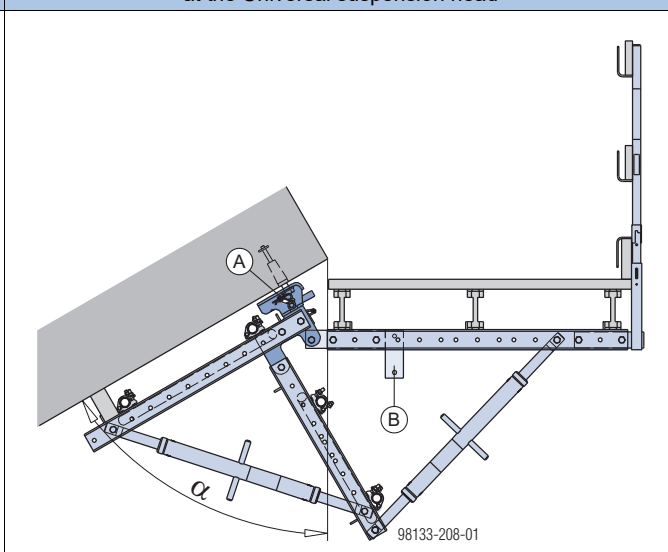
Horizontal waling directly at the Universal suspension head



A Universal suspension head

B Corner plate FF20 G

Horizontal waling with Corner plate FF20/G as spacer at the Universal suspension head



F ... permitted shear force (lift-out force): 12 kN

**WARNING**

At angles of inclination  $\alpha \geq 45^\circ$  the safety bow does not provide security against lift-out.

Falling hazard!

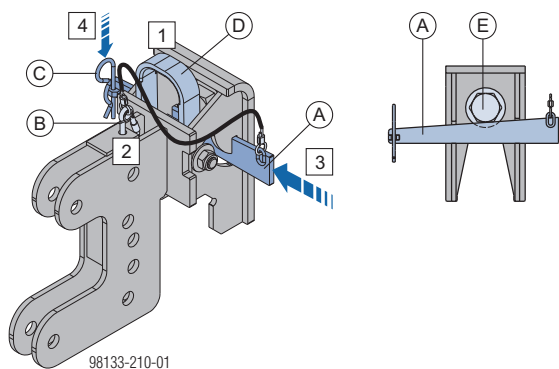
► Provide security against lift-out by fitting the safety wedge into the Universal suspension head!

**Installation of safety wedge**

- 1) Move the safety bow into the stand-by position (fixed in the short slot).
- 2) Secure the snap link of the safety wedge to the Universal suspension head.
- 3) Install the safety wedge by driving it in from right to left.
- 4) Secure safety wedge at the end by inserting Spring cotter 5mm.

**NOTICE**

- In planning, allow for accessibility of the safety wedge.
- Separate static verification is required.
- Provide suitable handling equipment.
- Check the multi-purpose waling at the universal suspension head for collision. If necessary, use a Corner plate FF20 G.



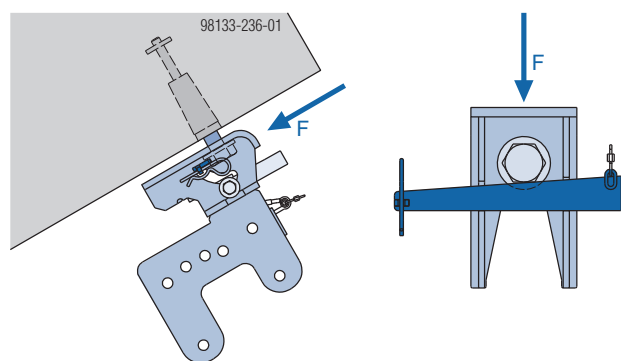
A Safety wedge for universal suspension head

B Snap link with rope

C Spring cotter 5mm

D Safety bow

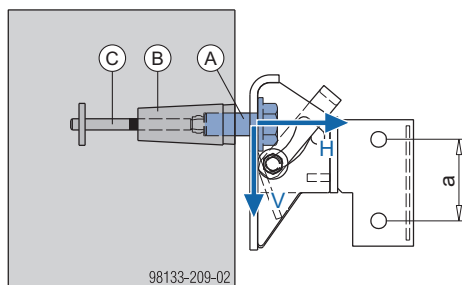
E Cone screw M30 SW50 7cm





# Suspension head WS10

## Imposed loads



a ... 107 mm (Multi-purpose waling WS10 and Multi-purpose waling WU12)

- A** Cone screw M30 SW50 7cm
- B** Universal climbing cone 15.0 2G
- C** Stop anchor 15.0 (consumable form-tie component)

### Reaction loads with Universal climbing cone 15.0 2G and Cone screw M30 SW50 7cm

H ... permitted horizontal load: 60 kN

V ... permitted vertical load: 30 kN

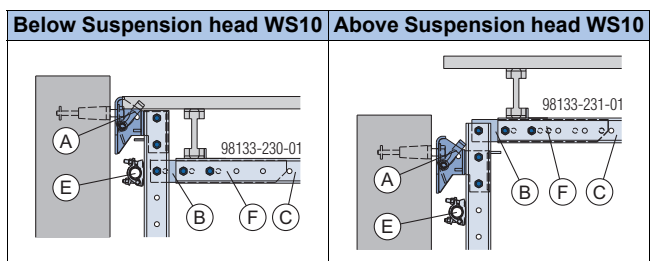
Observe the limitations in section [Weitere Verankerungsmöglichkeiten!](#)



#### NOTICE

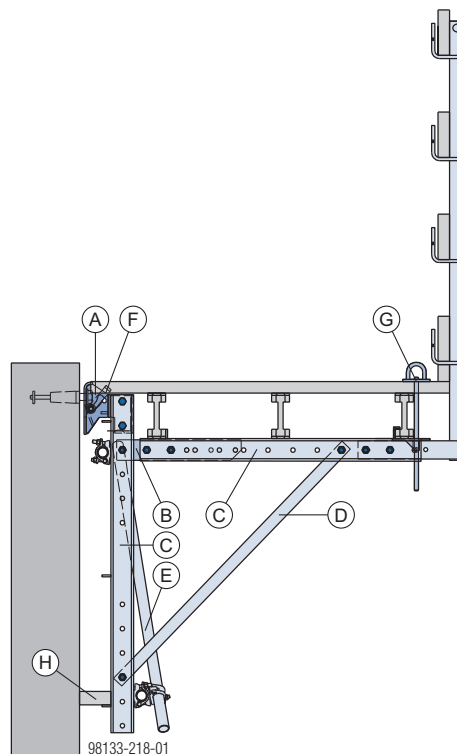
Use of the suspension point is possible up to a wall angle of inclination of max. 45°!

## Ways of installing the horizontal multi-purpose waling



- A** Suspension head WS10
- B** Formwork element connector FF20/50
- C** Multi-purpose waling
- E** Bracing
- F** Connecting pin 10cm + Spring cotter 5mm

## Practical example



- A** Suspension head WS10
- B** Formwork element connector FF20/50
- C** Multi-purpose waling
- D** Strut or spindle strut
- E** Bracing
- F** Safety bow (front crane hoisting point)
- G** Lifting rod 15.0 and Retaining plate 15.0 (rear crane hoisting point)
- H** Squared timber

## Other possible anchorages

### Load-bearing capacity of the steel of suitable suspension points

	$V_{perm.}$ [kN]	$H_{perm.}$ [kN]
Universal climbing cone 15.0 2G + Cone screw M30 SW50 7cm	30	60
Suspension cone 15.0 5cm	30	40
Suspension cone 15.0 f. insulation up to 11cm + Cone screw Rd28	20	40
Screw-in cone 15.0 + Bridge edge beam anchor 15.0	30	30
Suspension cone 15.0 with collar	30	40

The required **cube compressive strength** of the concrete at the time of loading must be specified separately for each project **by the structural designer**. It will depend on the following factors:

- load actually occurring
- anchoring depth  $h_{ef}$
- reinforcement / extra reinforcement steel
- distance from edge

The introduction of the forces, the transfer of these forces into the structure, and the stability of the overall construction, must all be verified by the structural designer.

The required cube compressive strength  $f_{ck, cube, current}$  must be at least 10 N/mm<sup>2</sup>, however.












Follow the directions in the Calculation Guide entitled 'Load-bearing capacity of anchorages in concrete', and/or ask your Doka technician!









#### NOTICE

Separate statics analysis is required for dimensioning of the suspension point.




### Anchorage with Suspension cone 15.0 5cm

Lost parts		Reusable parts			
Pigtail anchor 15.0	Sealing sleeve 15.0 5cm	Cantilever positioning cone 15.0 5cm	Tie rod 15.0, length approx. 20 cm	Super plate 15.0	Suspension cone 15.0 5cm
					
or	or		or		
Stop anchor 15.0	Sealing sleeve S 15.0 5cm		Fixing plate 15.0		
					




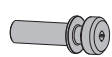
### Suspension cone 15.0 f. insulation up to 11cm

Lost parts		Reusable parts	
Pigtail anchor 15.0	Sealing sleeve 15.0 f. insulation up to 11cm	Suspension cone 15.0 f. insulation up to 11cm	Cone screw Rd28
			
or		in addition, where needed: Positioning disc Rd28	
Stop anchor 15.0			
			

### Anchorage with Screw-in cone 15.0

Lost parts		Reusable parts
Bridge edge beam anchor 15.0	Nailing cone 15.0	Screw-in cone 15.0
		

### Subsequently drilled suspension point with Suspension cone 15.0 with collar

Lost parts	Reusable parts		
Rock anchor spreader unit 15.0	Tie rod 15.0	Rock anchor installation tube	Suspension cone 15.0 with collar
			

## Sideguards on exposed platform-ends

On platforms that do not completely encircle the structure, suitable sideguards must be placed across exposed end-of-platform zones.

### Note:

The plank and board thicknesses given here comply with the C24 category of EN 338.

Observe all national regulations applying to deck-boards and guard-rail boards.

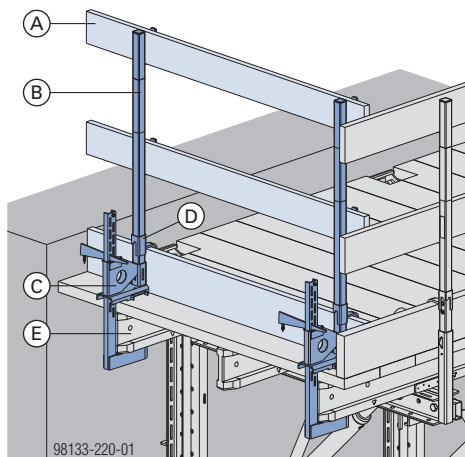
## Edge protection system XP



Follow the directions in the 'Xsafe edge protection XP' User Information booklet.

### Assembly:

- ▶ Fasten Railing clamps XP onto the decking of the working platform, by tightening the wedge (clamping range 2 to 43 cm).
- ▶ Working from below, push a Toeboard holder XP 1.20m onto the Handrail post XP 1.20m.
- ▶ Push the Handrail post XP 1.20m into the post-holding fixture on the railing clamps until the locking mechanism engages.
- ▶ Insert and secure the guardrail boards.

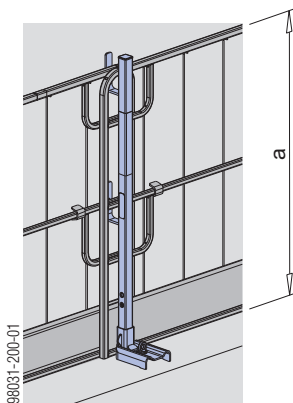


- A Guardrail board min. 15/3 cm (site-provided)
- B Handrail post XP 1.20m
- C Railing clamp XP 40cm
- D Toeboard holder XP 1.20m
- E Working platform assembled from system components

## Fall protection on the structure

### Xsafe edge protection XP

- Attached with screw-on shoe, railing clamp, hand-rail-post shoe or Step bracket XP
- Protective grating XP, guardrail boards or scaffold tubes can be used as the safety barrier



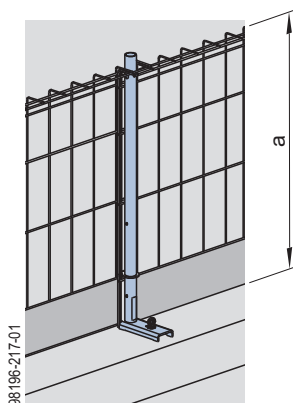
a ... > 1.00 m



Follow the directions in the 'Xsafe edge protection XP' User Information booklet.

### Xsafe edge protection Z

- Attachment by integral screw-on shoe
- Protective barrier Z can be used as the safety barrier



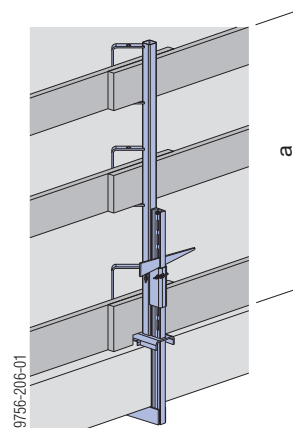
a ... > 1.17 m



Follow the directions in the 'Xsafe edge protection Z' User Information booklet.

### Handrail clamp S

- Attached with integral clamp
- Guard-rail boards or scaffold tubes can be used as the safety barrier



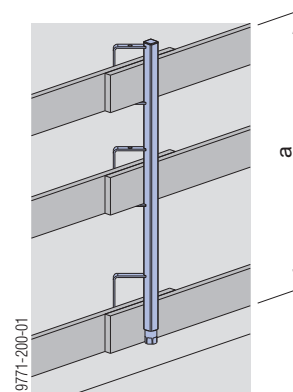
a ... > 1.00 m



Follow the directions in the "Handrail clamp S" User information!

### Handrail post 1.10m

- Fixed in a Screw sleeve 20.0 or Attachable sleeve 24mm
- Guard-rail boards or scaffold tubes can be used as the safety barrier



a ... > 1.00 m



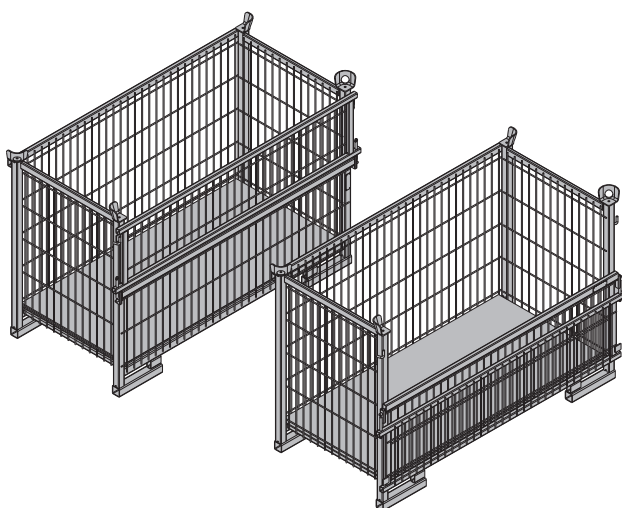
Follow the directions in the 'Handrail post 1.10m' User Information!

## Transporting, stacking and storing

### Utilise the benefits of Doka multi-trip packaging on your site.

Multi-trip packaging such as containers, stacking pallets and skeleton transport boxes keep everything in place on the site, minimise time wasted searching for parts, and streamline the storage and transport of system components, small items and accessories.

### Doka skeleton transport box 1.70x0.80m



Storage and transport device for small items. To make the Doka skeleton transport box easier to load and unload, one of its sidewalls can be opened.

Permitted load-bearing capacity: 700 kg (1540 lbs)  
Permitted imposed stacking load: 3150 kg (6950 lbs)

### Using Doka skeleton transport boxes 1.70x0.80m as storage units

#### Max. n° of units on top of one another

Outdoors (on the site) Floor gradients up to 3%	Indoors Floor gradients up to 1%
2	5
It is not allowed to stack empty pallets on top of one another!	



#### NOTICE

Stacked multi-trip boxes or pallets must have the heaviest boxes at the bottom and the lightest at the top.

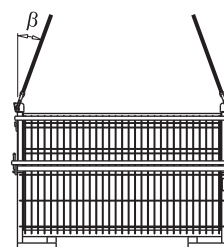
### Using Doka skeleton transport boxes 1.70x0.80m as transport devices

#### Lifting by crane



#### NOTICE

- Multi-trip packaging items must be lifted individually.
- Only lift the boxes when their sidewalls are closed!
- Use suitable lifting chains:
  - e.g. Doka 4-part chain 3.20m
  - Do not exceed the permitted working load limit of the lifting chains.
- Sling angle  $\beta$  max. 30°!



9234-203-01

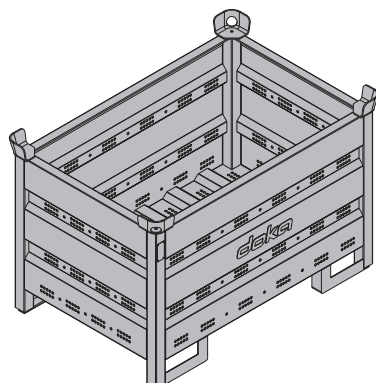
#### Repositioning by forklift truck or pallet stacking truck

The forks can be inserted under either the broadside or the narrowside of the containers.

## Doka multi-trip transport box

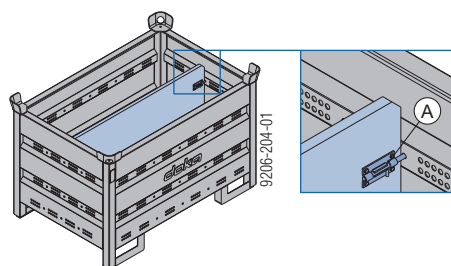
Storage and transport device for small items

### Doka multi-trip transport box 1.20x0.80m



Permitted load-bearing capacity: 1500 kg (3300 lbs)  
Permitted imposed stacking load: 7850 kg (17300 lbs)

Different items in the Doka multi-trip transport box can be kept separate with the **Multi-trip transport box partitions 1.20m or 0.80m**.



A Slide-bolt for fixing the partition

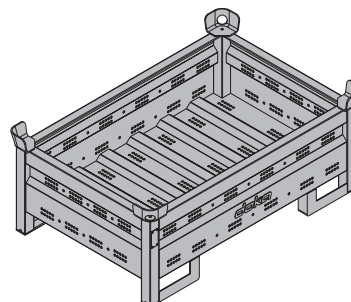
#### Possible ways of dividing the box

Multi-trip transport box partition	in the longitudinal direction	in the transverse direction
1.20m	max. 3	-
0.80m	-	max. 3

9206-204-02	9206-204-03

## Doka multi-trip transport box 1.20x0.80mx0.41m



Permitted load-bearing capacity: 750 kg (1650 lbs)  
Permitted imposed stacking load: 7200 kg (15870 lbs)

### Using Doka multi-trip transport boxes as storage units

#### Max. n° of units on top of one another

Outdoors (on the site)		Indoors	
Floor gradients up to 3%		Floor gradients up to 1%	
Doka multi-trip transport box 1.20x0.80m	Doka multi-trip transport box 1.20x0.80x0.41m	Doka multi-trip transport box 1.20x0.80m	Doka multi-trip transport box 1.20x0.80x0.41m
3	5	6	10
It is not allowed to stack empty pallets on top of one another!			



#### NOTICE

Stacked multi-trip boxes or pallets must have the heaviest boxes at the bottom and the lightest at the top.

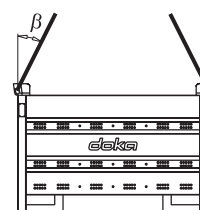
### Using Doka multi-trip transport boxes as transport devices

#### Lifting by crane



#### NOTICE

- Multi-trip packaging items must be lifted individually.
- Use suitable lifting chains:
  - e.g. Doka 4-part chain 3.20m
  - Do not exceed the permitted working load limit of the lifting chains.
- Sling angle  $\beta$  max. 30°!



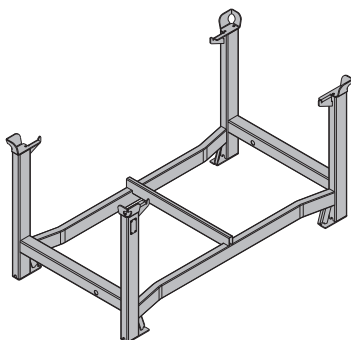
9206-202-01

#### Repositioning by forklift truck or pallet stacking truck

The forks can be inserted under either the broadside or the narrowside of the containers.

## Doka stacking pallet 1.55x0.85m and 1.20x0.80m

Storage and transport device for long items.



Permitted load-bearing capacity: 1100 kg (2420 lbs)  
Permitted imposed stacking load: 5900 kg (13000 lbs)

### Using Doka stacking pallets as storage units

#### Max. n° of units on top of one another

Outdoors (on the site) Floor gradients up to 3%	Indoors Floor gradients up to 1%
2	6
It is not allowed to stack empty pallets on top of one another!	



#### NOTICE

- Stacked multi-trip boxes or pallets must have the heaviest boxes at the bottom and the lightest at the top.
- How to use with Bolt-on castor set B:**
  - Always apply the fixing brake when the container is 'parked'.
  - When Doka stacking pallets are stacked, the bottom pallet must NOT be one with a bolt-on castor set mounted to it.

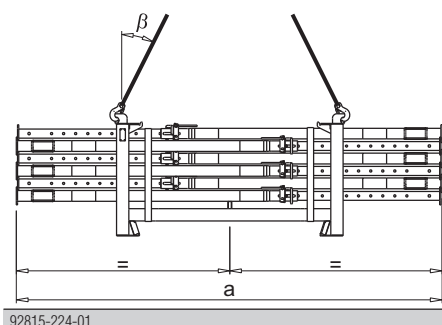
## Using Doka stacking pallets as transport devices

### Lifting by crane



#### NOTICE

- Multi-trip packaging items must be lifted individually.
- Use suitable lifting chains:
  - e.g. Doka 4-part chain 3.20m
  - Do not exceed the permitted working load limit of the lifting chains.
- Load the items centrally.
- Fasten the load to the stacking pallet (e.g. with strapping tape or lashing strap) so that it cannot slide or tip out.
- Sling angle  $\beta$  max. 30°!



92815-224-01

	a
Doka stacking pallet 1.55x0.85m	max. 4.5 m
Doka stacking pallet 1.20x0.80m	max. 3.0 m

### Repositioning by forklift truck or pallet stacking truck

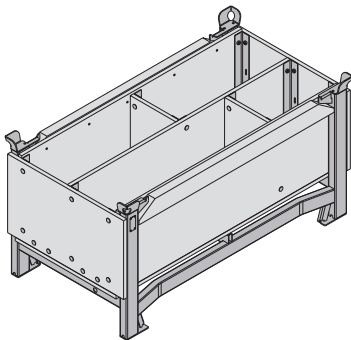


#### NOTICE

- Load the items centrally.
- Fasten the load to the stacking pallet (e.g. with strapping tape or lashing strap) so that it cannot slide or tip out.

## Doka accessory box

Storage and transport device for small items.



Permitted load-bearing capacity: 1000 kg (2200 lbs)  
Permitted imposed stacking load: 5530 kg (12190 lbs)

### Doka accessory boxes as storage units

#### Max. n° of units on top of one another

Outdoors (on the site) Floor gradients up to 3%	Indoors Floor gradients up to 1%
3	6
It is not allowed to stack empty pallets on top of one another!	



#### NOTICE

- Stacked multi-trip boxes or pallets must have the heaviest boxes at the bottom and the lightest at the top.
- How to use with Bolt-on castor set B:**
  - Always apply the fixing brake when the container is 'parked'.
  - When Doka stacking pallets are stacked, the bottom pallet must NOT be one with a bolt-on caster set mounted to it.

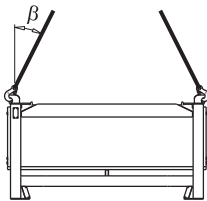
## Doka accessory box as transport devices

### Lifting by crane



#### NOTICE

- Multi-trip packaging items must be lifted individually.
- Use suitable lifting chains:
  - e.g. Doka 4-part chain 3.20m
  - Do not exceed the permitted working load limit of the lifting chains.
- When lifting units to which Bolt-on castor sets B have been attached, you must also follow the directions in the 'Bolt-on castor set B' User information booklet!
- Sling angle  $\beta$  max. 30°!



92816-206-01

### Repositioning by forklift truck or pallet stacking truck

The forks can be inserted under either the broadside or the narrowside of the containers.



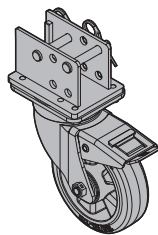
## Universal castor wheel for transport pallet

The Universal castor wheel for transport pallet turns multi-trip packaging items into fast and manoeuvrable transport devices.

- 4 castor wheels needed per multi-trip packaging item.
- Compatible multi-trip packaging items:
  - Doka stacking pallets (all sizes)
  - Doka multi-trip transport box 1.20x0.80m
  - Doka skeleton transport box 1.70x0.80m
  - DokaXdek panel pallets (all sizes)
  - Superdek beam pallet 1.22x1.10m



Follow the directions in the 'Universal castor wheel for transport pallet' User Information booklet.



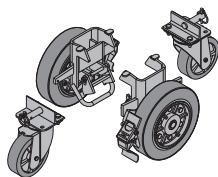
## Bolt-on castor set B

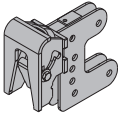
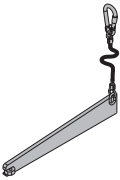
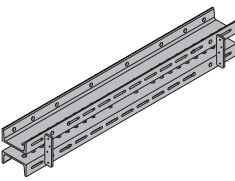
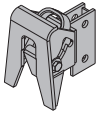
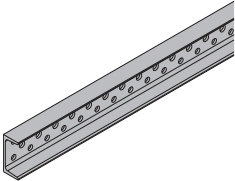
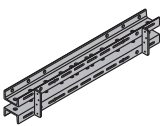
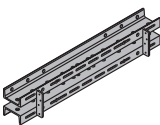
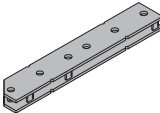
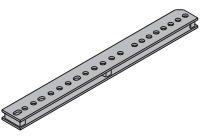
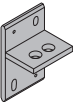
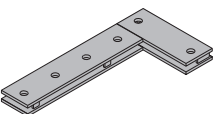
The Bolt-on castor set B turns multi-trip packaging items into fast and manoeuvrable transport devices.

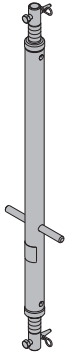
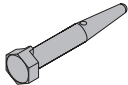

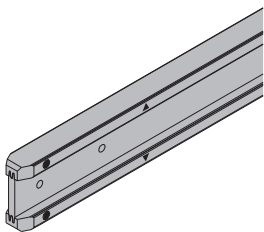
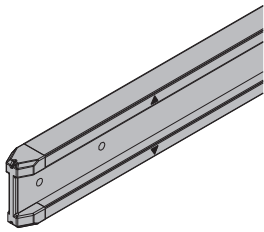
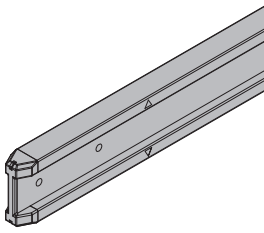

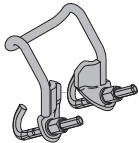
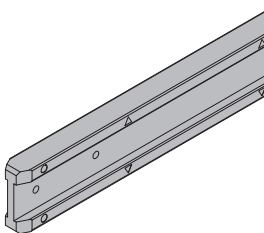

- Suitable for drive-through access openings > 90 cm.
- Compatible multi-trip packaging items:
  - Doka accessory box
  - Doka stacking pallets (all sizes)
  - Protective barrier Z pallets


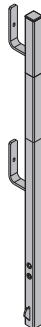



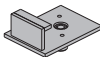

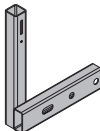


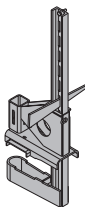
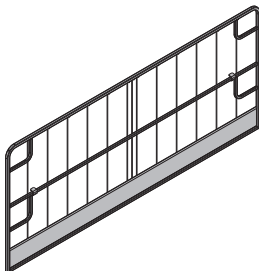


Follow the directions in the 'Bolt-on castor set B' User Information booklet!


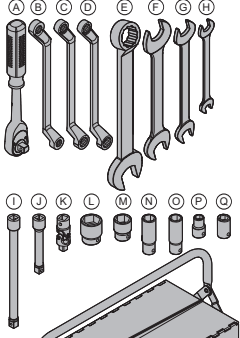
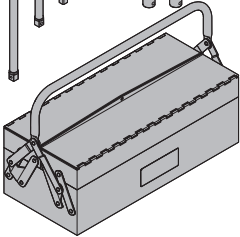
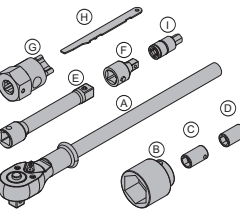


	[kg]	Article N°		[kg]	Article N°
<b>Universal suspension head</b> Universal-Aufhängekopf  Galvanised Length: 36.5 cm Width: 16 cm Height: 32.1 cm	14.0	580408000	<b>Top100 tec waling WU14 0.50m</b> <b>Top100 tec waling WU14 0.75m</b> <b>Top100 tec waling WU14 1.00m</b> <b>Top100 tec waling WU14 1.25m</b> <b>Top100 tec waling WU14 1.50m</b> <b>Top100 tec waling WU14 1.75m</b> <b>Top100 tec waling WU14 2.00m</b> <b>Top100 tec waling WU14 2.25m</b> <b>Top100 tec waling WU14 2.50m</b> <b>Top100 tec waling WU14 2.75m</b> <b>Top100 tec waling WU14 3.00m</b> <b>Top100 tec waling WU14 3.50m</b> <b>Top100 tec waling WU14 4.00m</b> <b>Top100 tec waling WU14 4.50m</b> <b>Top100 tec waling WU14 5.00m</b> <b>Top100 tec waling WU14 5.50m</b> <b>Top100 tec waling WU14 6.00m</b> Top100 tec-Riegel WU14	15.2 21.4 28.6 38.3 43.3 51.2 57.8 67.8 72.2 79.0 85.8 100.7 114.2 136.5 144.5 166.5 182.2	586901000 586902000 586903000 586904000 586905000 586906000 586907000 586908000 586909000 586910000 586911000 586912000 586913000 586914000 586915000 586916000 586917000
<b>Safety wedge for universal suspension head</b> Sicherungskeil Universal-Aufhängekopf  Galvanised Length: 30 cm	0.7	580409000	 Painted blue		
<b>Suspension head WS10</b> Aufhängekopf WS10  Galvanised Length: 21 cm Width: 18 cm Height: 23 cm	8.1	580449000	<b>UniKit channel UK12 1.12m</b> <b>UniKit channel UK12 1.62m</b> <b>UniKit channel UK12 2.12m</b> <b>UniKit channel UK12 2.62m</b> Profil UK12  Painted blue	14.1 20.6 27.0 32.8	582980000 582962000 582960000 582961000
<b>Multi-purpose waling WS10 Top50 0.50m</b> <b>Multi-purpose waling WS10 Top50 0.75m</b> <b>Multi-purpose waling WS10 Top50 1.00m</b> <b>Multi-purpose waling WS10 Top50 1.25m</b> <b>Multi-purpose waling WS10 Top50 1.50m</b> <b>Multi-purpose waling WS10 Top50 1.75m</b> <b>Multi-purpose waling WS10 Top50 2.00m</b> <b>Multi-purpose waling WS10 Top50 2.25m</b> <b>Multi-purpose waling WS10 Top50 2.50m</b> <b>Multi-purpose waling WS10 Top50 2.75m</b> <b>Multi-purpose waling WS10 Top50 3.00m</b> <b>Multi-purpose waling WS10 Top50 3.50m</b> <b>Multi-purpose waling WS10 Top50 4.00m</b> <b>Multi-purpose waling WS10 Top50 4.50m</b> <b>Multi-purpose waling WS10 Top50 5.00m</b> <b>Multi-purpose waling WS10 Top50 5.50m</b> <b>Multi-purpose waling WS10 Top50 6.00m</b> Mehrzweckriegel WS10 Top50  Painted blue	10.2 14.9 19.6 24.7 29.7 35.0 38.9 44.2 48.7 54.2 60.2 68.4 79.4 89.1 102.0 112.4 118.0	580001000 580002000 580003000 580004000 580005000 580006000 580007000 580008000 580009000 580010000 580011000 580012000 580013000 580014000 580015000 580016000 580017000			
<b>Multi-purpose waling WU12 Top50 1.00m</b> <b>Multi-purpose waling WU12 Top50 1.25m</b> <b>Multi-purpose waling WU12 Top50 1.50m</b> <b>Multi-purpose waling WU12 Top50 1.75m</b> <b>Multi-purpose waling WU12 Top50 2.00m</b> <b>Multi-purpose waling WU12 Top50 2.50m</b> <b>Multi-purpose waling WU12 Top50 3.00m</b> <b>Multi-purpose waling WU12 Top50 3.50m</b> <b>Multi-purpose waling WU12 Top50 4.00m</b> Mehrzweckriegel WU12 Top50  Painted blue	25.3 32.0 37.5 44.2 50.0 63.1 75.7 90.7 103.4	580018000 580019000 580020000 580021000 580022000 580023000 580024000 580025000 580026000	<b>Formwork element connector FF20/50 Z</b> Elementverbinder FF20/50 Z  Painted blue Length: 55 cm	6.0	587533000
			<b>Adjustable waling extension FF20/50</b> Ausgleichslasche FF20/50  Painted blue Length: 87 cm	9.1	587532000
			<b>Beam clamp Top50</b> Trägerklammer Top50  Painted blue Height: 15 cm	1.2	580081000
			<b>Corner plate FF20 G</b> Ecklasche FF20 G  Painted blue Length: 49 cm Width: 24 cm	7.2	587571000

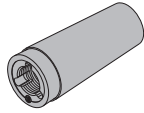
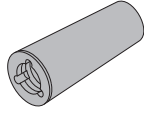
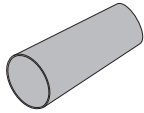
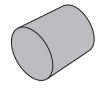
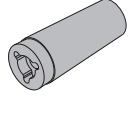



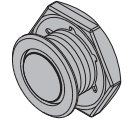
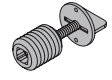
	[kg]	Article N°		[kg]	Article N°
<b>Spindle strut T7 75/110cm</b> <b>Spindle strut T7 100/150cm</b> <b>Spindle strut T7 150/200cm</b> <b>Spindle strut T7 200/250cm</b> <b>Spindle strut T7 250/300cm</b> <b>Spindle strut T7 305/355cm</b> Spindelstrebe T7	13.2 16.8 21.6 26.2 29.4 35.0	584308000 584309000 584324000 584325000 584326000 584327000	 Galvanised		
<b>Connecting pin 10cm</b> Verbindungsbolzen 10cm	0.34	580201000	 Galvanised Length: 14 cm		
<b>Spring cotter 5mm</b> Federvorstecker 5mm	0.03	580204000	 Galvanised Length: 13 cm		
<b>Doka beam H20 eco P 1.80m</b> <b>Doka beam H20 eco P 2.45m</b> <b>Doka beam H20 eco P 2.65m</b> <b>Doka beam H20 eco P 2.90m</b> <b>Doka beam H20 eco P 3.30m</b> <b>Doka beam H20 eco P 3.60m</b> <b>Doka beam H20 eco P 3.90m</b> <b>Doka beam H20 eco P 4.50m</b> <b>Doka beam H20 eco P 4.90m</b> <b>Doka beam H20 eco P 5.90m</b> <b>Doka beam H20 eco P .....m</b> <b>Doka beam H20 eco P .....m BS</b> Doka-Träger H20 eco P	9.5 13.0 14.1 15.4 17.5 19.1 20.7 23.9 26.0 31.3 5.3 5.3	189940000 189936000 189937000 189930000 189941000 189942000 189931000 189943000 189932000 189955000 189999000 189957000	 Varnished yellow		
<b>Doka beam H20 top P 1.80m</b> <b>Doka beam H20 top P 2.45m</b> <b>Doka beam H20 top P 2.65m</b> <b>Doka beam H20 top P 2.90m</b> <b>Doka beam H20 top P 3.30m</b> <b>Doka beam H20 top P 3.60m</b> <b>Doka beam H20 top P 3.90m</b> <b>Doka beam H20 top P 4.50m</b> <b>Doka beam H20 top P 4.90m</b> <b>Doka beam H20 top P 5.90m</b> <b>Doka beam H20 top P .....m</b> <b>Doka beam H20 top P .....m BS</b> Doka-Träger H20 top P	9.5 13.0 14.1 15.4 17.5 19.1 20.7 23.9 26.0 31.3 5.3 5.3	189701000 189702000 189703000 189704000 189705000 189706000 189707000 189708000 189709000 189710000 189700000 189711000	 Varnished yellow		
<b>Doka beam H20 top N 1.80m</b> <b>Doka beam H20 top N 2.45m</b> <b>Doka beam H20 top N 2.65m</b> <b>Doka beam H20 top N 2.90m</b> <b>Doka beam H20 top N 3.30m</b> <b>Doka beam H20 top N 3.60m</b> <b>Doka beam H20 top N 3.90m</b> <b>Doka beam H20 top N 4.50m</b> <b>Doka beam H20 top N 4.90m</b> <b>Doka beam H20 top N 5.90m</b> <b>Doka beam H20 top N .....m</b> <b>Doka beam H20 top N .....m BS</b> Doka-Träger H20 top N	8.5 11.5 12.5 13.6 15.5 16.9 18.3 21.2 23.0 27.7 4.7 4.7	189011000 189012000 189013000 189014000 189015000 189016000 189017000 189018000 189019000 189020000 189010000 189021000	 Varnished yellow		
<b>Beam screw S 8/70</b> Riegelverschraubung S 8/70	0.06	580116500	 Galvanised Length: 8 cm Width-across: 13 mm		
<b>Flange clamp H20</b> Flanschklammer H20	1.0	580135000	 Galvanised Width: 13 cm Width-across: 19 mm		
<b>Doka beam H20 eco N 1.80m</b> <b>Doka beam H20 eco N 2.45m</b> <b>Doka beam H20 eco N 2.65m</b> <b>Doka beam H20 eco N 2.90m</b> <b>Doka beam H20 eco N 3.30m</b> <b>Doka beam H20 eco N 3.60m</b> <b>Doka beam H20 eco N 3.90m</b> <b>Doka beam H20 eco N 4.50m</b> <b>Doka beam H20 eco N 4.90m</b> <b>Doka beam H20 eco N 5.90m</b> <b>Doka beam H20 eco N .....m</b> <b>Doka beam H20 eco N .....m BS</b> Doka-Träger H20 eco N	8.5 11.5 12.5 13.6 15.5 16.9 18.3 21.2 23.0 27.7 4.7 4.7	189283000 189271000 189272000 189273000 189284000 189285000 189276000 189286000 189277000 189287000 189299000 189289000	 Varnished yellow		
<b>Scaffold tube 48.3mm 0.50m</b> <b>Scaffold tube 48.3mm 1.00m</b> <b>Scaffold tube 48.3mm 1.50m</b> <b>Scaffold tube 48.3mm 2.00m</b> <b>Scaffold tube 48.3mm 2.50m</b> <b>Scaffold tube 48.3mm 3.00m</b> <b>Scaffold tube 48.3mm 3.50m</b> <b>Scaffold tube 48.3mm 4.00m</b> <b>Scaffold tube 48.3mm 4.50m</b> <b>Scaffold tube 48.3mm 5.00m</b> <b>Scaffold tube 48.3mm 5.50m</b> <b>Scaffold tube 48.3mm 6.00m</b> <b>Scaffold tube 48.3mm .....m</b> Gerüstrohr 48,3mm	1.7 3.6 5.4 7.2 8.4 10.8 12.6 14.4 16.2 18.0 19.8 21.6 3.6	682026000 682014000 682015000 682016000 682017000 682018000 682019000 682021000 682022000 682023000 682024000 682025000 682001000	 Galvanised		

	[kg]	Article N°		[kg]	Article N°
<b>Screw-on coupler 48mm 50</b> Anschraubkupplung 48mm 50  Galvanised Width-across: 22 mm	0.8	582002000	<b>Handrail post XP 1.20m</b> Geländersteher XP 1,20m  Galvanised Height: 118 cm	4.1	586460000
<b>Swivel coupler 48mm</b> Drehkupplung 48mm  Galvanised Width-across: 22 mm	1.5	582560000			
<b>Lifting rod 15.0</b> Umsetzstab 15,0  Painted blue Height: 57 cm Follow the directions in the "Operating Instructions"!	1.9	586074000	<b>Toeboard holder XP 1.20m</b> Fußwehrhalter XP 1,20m  Galvanised Height: 21 cm	0.64	586461000
<b>Retaining plate 15.0</b> Jochplatte 15,0  Galvanised Length: 17 cm Width: 12 cm Height: 11 cm	1.8	586073000	<b>Handrail post XP 0.60m</b> Geländersteher XP 0,60m  Galvanised Height: 68 cm	5.0	586462000
<b>Insertion adapter XP</b> Einschubadapter XP  Galvanised Height: 43 cm	4.1	586478000	<b>Toeboard holder XP 0.60m</b> Fußwehrhalter XP 0,60m  Galvanised Height: 21 cm	0.77	586463000
<b>Handrail post XP 1.80m</b> Geländersteher XP 1,80m  Galvanised Height: 176 cm	6.0	586482000	<b>Railing clamp XP 40cm</b> Geländerzwinge XP 40cm  Galvanised Height: 73 cm	7.7	586456000
			<b>Protective grating XP 2.70x1.20m</b> <b>Protective grating XP 2.50x1.20m</b> <b>Protective grating XP 2.00x1.20m</b> <b>Protective grating XP 1.20x1.20m</b> Schutzgitter XP  Galvanised	22.2 20.5 17.4 12.0	586450000 586451000 586452000 586453000


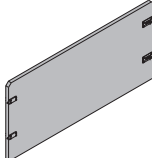
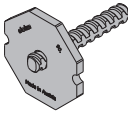
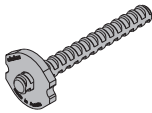
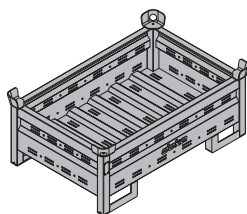
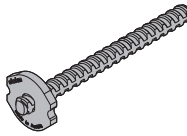
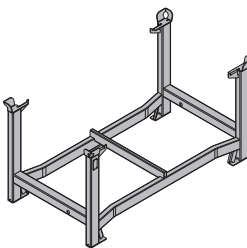
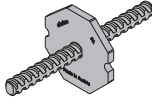
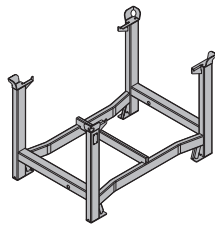
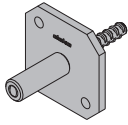
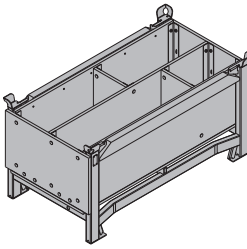

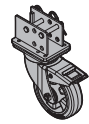
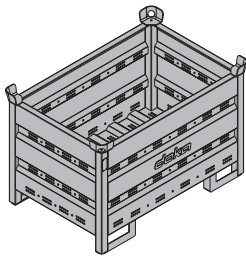
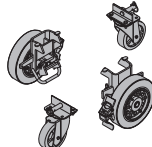
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	[kg]	Article N°
<b>Doka 4-part chain 3.20m</b> Doka-Vierstrangkette 3,20m	15.0	588620000
 <p>Follow the directions in the "Operating Instructions"!</p>		CE
<b>Tool box GF</b> GF-Werkzeugbox included in scope of supply: (A) <b>Reversible ratchet 1/2"</b> Galvanised (B) <b>Ring spanner 13/15</b> (C) <b>Ring spanner 16/18</b> (D) <b>Ring spanner 17/19</b> (E) <b>Combination wrench 36</b> (F) <b>Fork wrench 30/32</b> (G) <b>Fork wrench 22/24</b> (H) <b>Fork wrench 13/17</b> (I) <b>Extension 22cm 1/2"</b> (J) <b>Extension 11cm 1/2"</b> (K) <b>Universal joint coupling 1/2"</b> (L) <b>Box nut 30 1/2"</b> (M) <b>Box nut 24 1/2"</b> (N) <b>Box nut 19 1/2" L</b> (O) <b>Box nut 18 1/2" L</b> (P) <b>Box nut 15 1/2"</b> (Q) <b>Box nut 13 1/2"</b>	7.2	580390000
 		
<b>Additional tools MF</b> Zusatzwerkzeuge MF consisting of: (A) <b>Reversible ratchet 3/4"</b> Galvanised (B) <b>Box nut 50 3/4"</b> (C) <b>Box nut 17 1/2"</b> (D) <b>Box nut 16 1/2"</b> (E) <b>Extension 20cm 3/4"</b> (F) <b>Transition piece A 1/2"x3/4"</b> (G) <b>Universal cone spanner 15.0/20.0</b> Galvanised Width-across: 50 mm (H) <b>Safety Ruler SK</b> Length: 18 cm (I) <b>Hexagon bit socket 14mm 1/2"</b>	5.4	580682000
		

## Tie rod system 15.0

<b>Universal climbing cone 15.0 2G</b> Universal-Kletterkonus 15,0 2G	1.3	581977500
 <p>Galvanised  Orange  Length: 12.8 cm  Diameter: 5.3 cm</p>		
<b>Universal climbing cone 15.0</b> Universal-Kletterkonus 15,0	1.3	581977000
 <p>Galvanised  Orange  Length: 12.8 cm  Diameter: 5.3 cm</p>		
<b>Sealing sleeve K 15.0</b> Dichtungshülse K 15,0	0.03	581976000
 <p>Orange  Length: 12 cm  Diameter: 6 cm</p>		
<b>Concrete cone D52/46 55mm</b> Betonkonus D52/46 55mm	0.19	581939000
 <p>Grey</p>		
<b>Fair-faced concrete positioning cone MF 15.0</b> Sichtbetonvorlauf MF 15,0	1.5	581928000
 <p>Galvanised  Length: 12.6 cm  Diameter: 5.3 cm</p>		
<b>Sealing disc 30/53</b> Dichtscheibe 30/53	0.003	581838000
 <p>Black</p>		
<b>Fair-faced concrete plug 52mm plastic</b> Sichtbetonstopfen 52mm Kunststoff	0.01	581850000
 <p>PE  Grey</p>		
<b>Cone screw M30 SW50 7cm</b> Konusschraube M30 SW50 7cm	0.88	581444500
 <p>Green  Length: 10 cm  Diameter: 7 cm  Width-across: 50 mm</p>		
<b>Form-ply protector 32mm</b> Schalhautschutz 32mm	0.38	580220000
 <p>Galvanised  Width-across: 70 mm</p>		
<b>Positioning clamp M30</b> Vorlaufklemme M30	0.19	581833000
 <p>Galvanised  Diameter: 4 cm</p>		



	[kg]	Article N°		[kg]	Article N°
<b>Positioning disc M30</b> Vorlaufscheibe M30  Galvanised Diameter: 9 cm	0.25	581975000	<b>Multi-trip transport box partition 0.80m</b> <b>Multi-trip transport box partition 1.20m</b> Mehrwegcontainer Unterteilung  Steel parts galvanised Timber parts varnished yellow	3.7 5.5	583018000 583017000
<b>Stop anchor 15.0 B11</b> Sperranker 15,0 B11  Non-treated	0.55	581868000			
<b>Stop anchor 15.0 A16</b> Sperranker 15,0 A16  Non-treated	0.38	581997000	<b>Doka multi-trip transport box 1.20x0.80x0.41m</b> Doka-Mehrwegcontainer 1,20x0,80x0,41m Galvanised 	42.5	583009000
<b>Stop anchor 15.0 A21</b> Sperranker 15,0 A21  Non-treated	0.44	581884000	<b>Doka stacking pallet 1.55x0.85m</b> Doka-Stapelpalette 1,55x0,85m Galvanised Height: 77 cm 	41.0	586151000
<b>Stop anchor double-ended 15.0 K20</b> Sperranker beidseitig 15,0 K20  Non-treated Custom lengths can be ordered under the special-component Art.n° 580100000, quoting the designation and the desired length in mm.	0.76	581820000	<b>Doka stacking pallet 1.20x0.80m</b> Doka-Stapelpalette 1,20x0,80m Galvanised Height: 77 cm 	38.0	583016000
<b>Wall anchor 15.0 15cm</b> Wandanker 15,0 15cm  Galvanised	1.5	581893000			
<b>Multi-trip packaging</b>			<b>Doka accessory box</b> Doka-Kleinteilebox Timber parts varnished yellow Steel parts galvanised Length: 154 cm Width: 83 cm Height: 77 cm 	106.4	583010000
<b>Doka skeleton transport box 1.70x0.80m</b> Doka-Gitterbox 1,70x0,80m  Galvanised Height: 113 cm	87.0	583012000	<b>Universal castor wheel for transport pallet</b> Universal-Lenkrolle Transportgebinde Galvanised Height: 28.8 cm 	6.0	584043000
<b>Doka multi-trip transport box 1.20x0.80m</b> Doka-Mehrwegcontainer 1,20x0,80m  Galvanised Height: 78 cm	70.0	583011000	<b>Bolt-on castor set B</b> Anklemm-Radsatz B Painted blue 	33.6	586168000



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