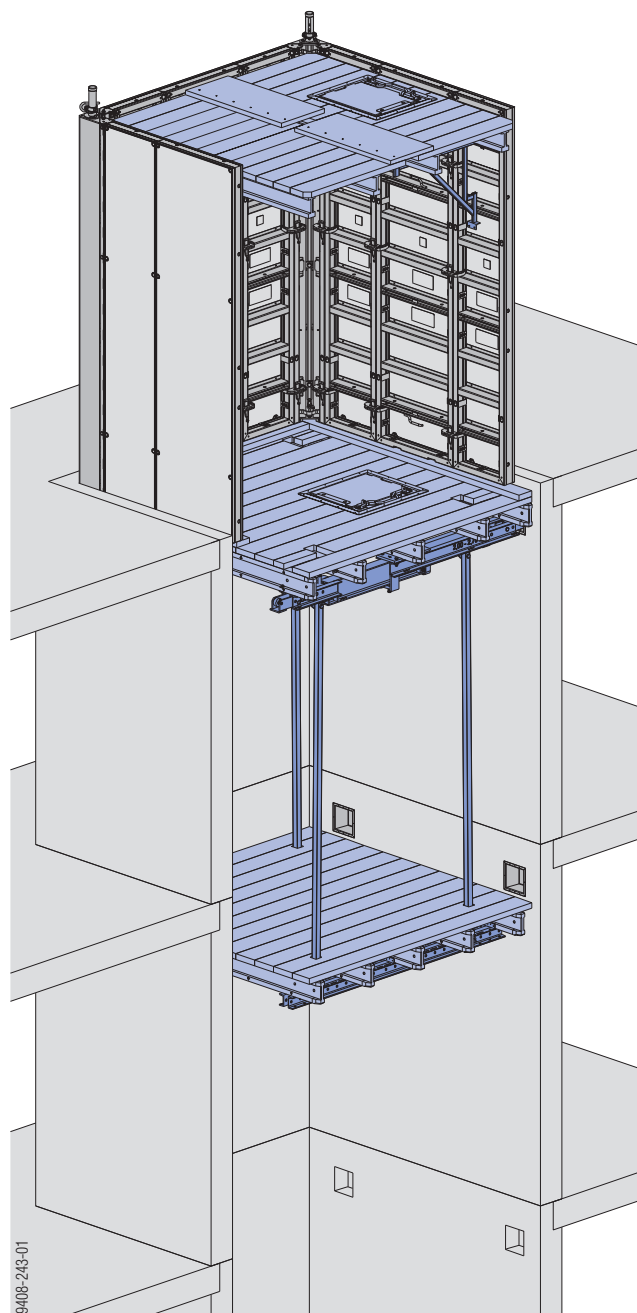


The Formwork Experts.

Shaft platform

User Information

Instructions for assembly and use (Method statement)



Contents

4	Introduction
4	Elementary safety warnings
7	Doka services
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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.
- 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.
- 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.

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.

Doka services

Support in every stage of the project

- Project success assured by products and services from a single source.
- Competent support from planning through to assembly directly on site.

Project assistance from start to finish

Every single project is unique and calls for individualised solutions. When it comes to the forming operations, the Doka team can help you with its consulting, planning and ancillary services in the field, enabling you to carry out your project effectively, safely and reliably. Doka assists you with individual consulting services and customised training courses.

Efficient planning for a safe project sequence

Efficient formwork solutions can only be developed economically if there is an understanding of project requirements and construction processes. This understanding is the basis of Doka engineering services.

Optimise construction workflows with Doka

Doka offers special tools that help you in designing transparent processes. This is the way to speed up pouring processes, optimise inventories and create more efficient formwork planning processes.

Custom formwork and on-site assembly

To complement its system formwork range, Doka offers customised formwork units. And specially trained personnel assemble load-bearing towers and formwork on site.

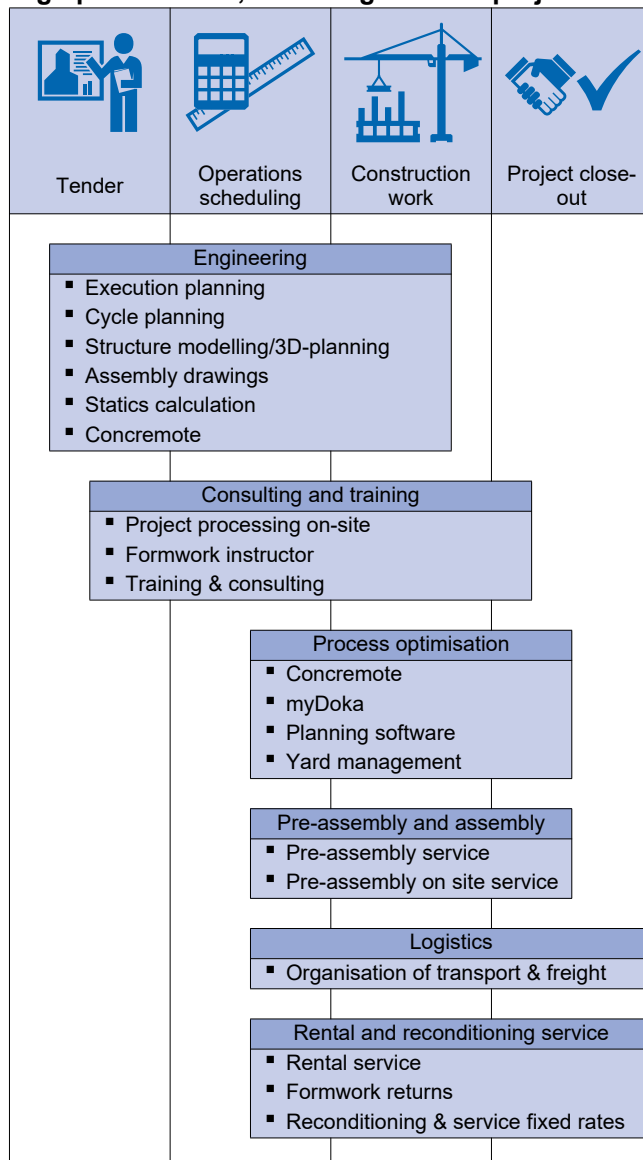
Just-in-time availability

Formwork availability is a crucial factor in realising your project on time and on budget. The worldwide logistics network puts the necessary formwork quantities on site at the agreed time.

Rental and reconditioning service

The formwork material needed for any particular project can be rented from Doka's high-performing rental park. Doka Reconditioning cleans and overhauls both client-owned equipment and Doka rental equipment.

High performance, in all stages of the project



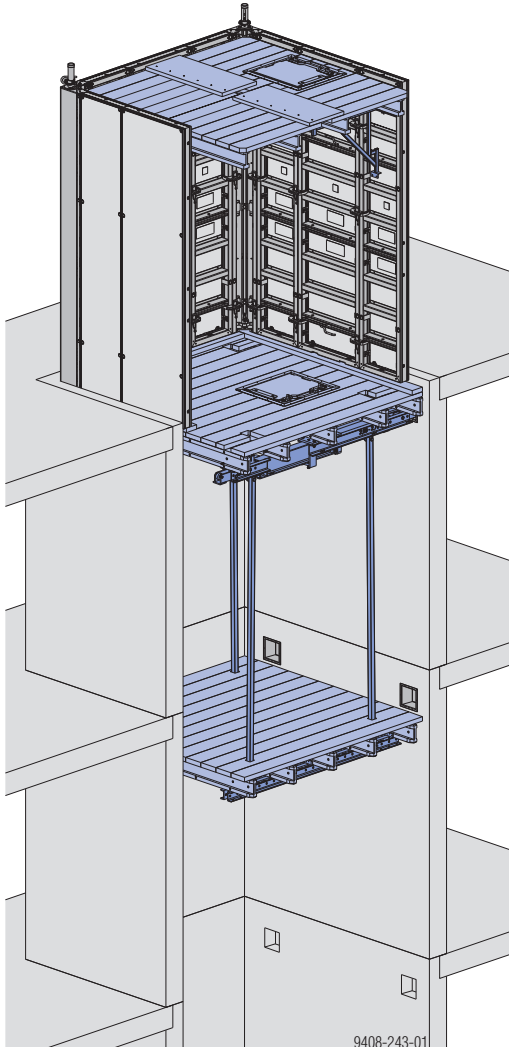
upbeat construction digital services for higher productivity

From planning through to completion - with upbeat construction we'll be moving construction forward and upping the beat for more productive building with all our digital services. Our digital portfolio covers the entire construction process and is being extended all the time. To find out more about our specially developed solutions go to doka.com/upbeatconstruction.

System description

The climbing formwork for inside-shafts

Shaft platforms permit quick and easy repositioning in just one crane cycle. This makes them a cost-effective system for forming inside-shafts.



Ingenious modular system

- uses telescopic shaft beams for easy accommodation to any structure plan
- makes the system quick and easy to assemble
- facilitates attaching a follow-up platform

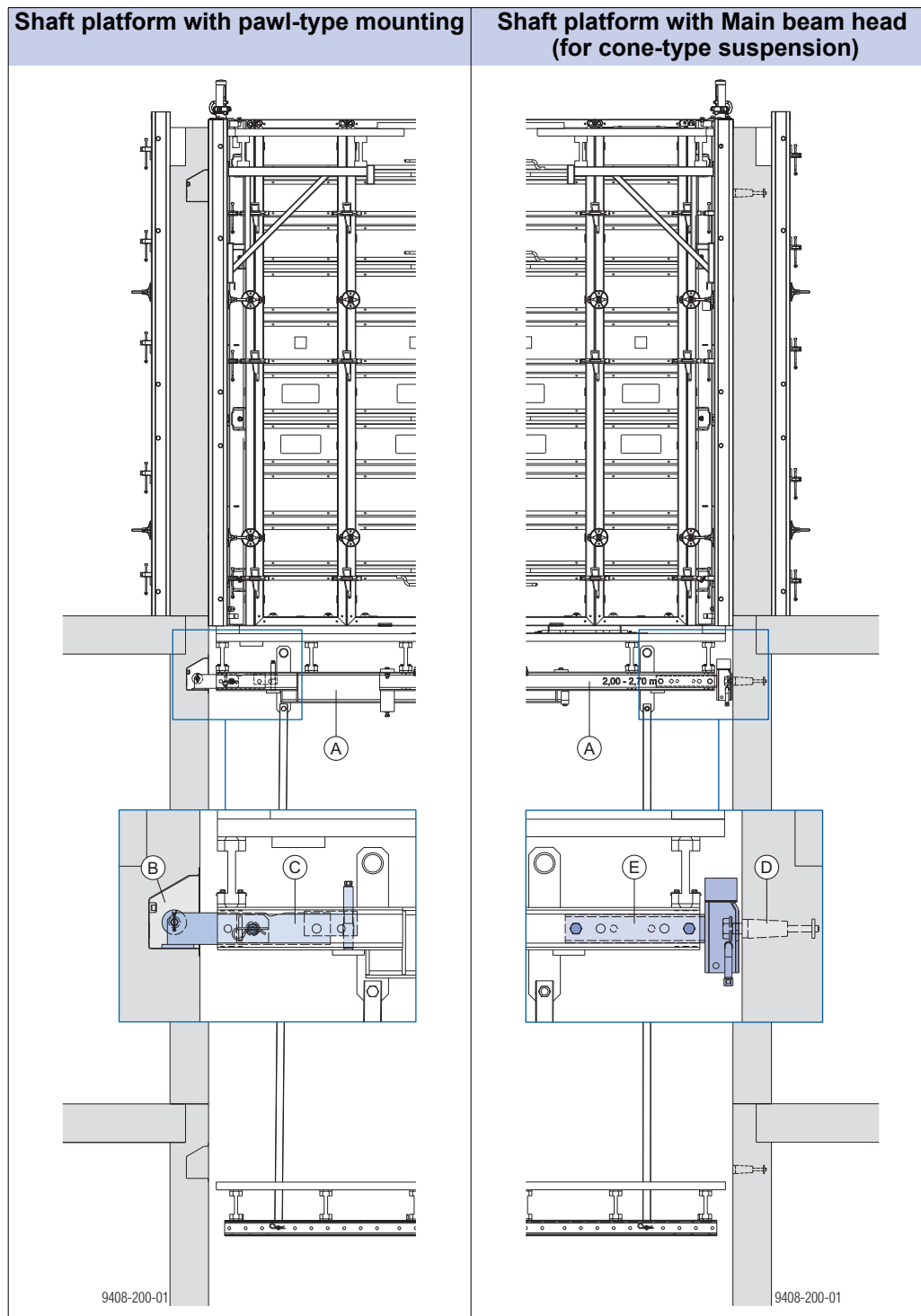
Easy to operate

- formwork can be set up and struck quickly with no need for a crane
- cuts back on crane time by enabling fast repositioning of the entire unit (platform plus shaft formwork)

Easy mounting-system

- provides maximum safety
- with either Main beam head or pawl

Design variants



A Telescopic shaft beam

B Box for latch

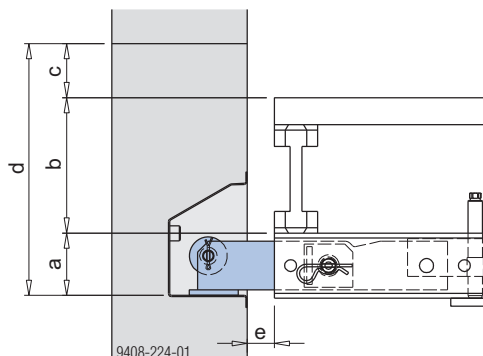
C Latch for shaft platform

D Cone-type suspension

E Main beam head

Shaft platform with pawl-type mounting

System dimensions



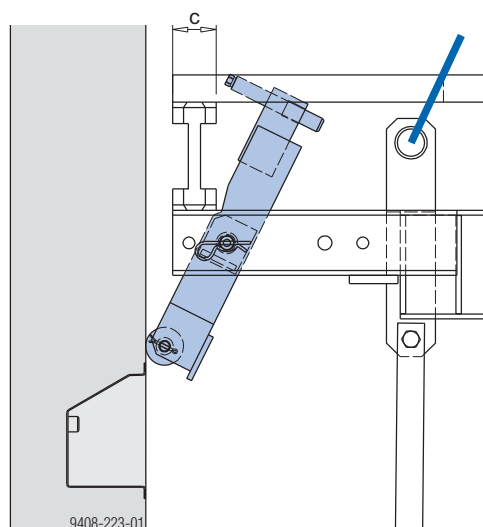
- a ... 115 mm
- b ... 250 mm
- c ... Formwork overlap
- d ... 465 mm (given a formwork overlap of 100 mm)
- e ... 50 mm

Function of the pawl

The version of the shaft platform with self-actuating gravity pawls makes for a highly streamlined lifting/repositioning cycle.

The lifting operation requires recesses in the concrete, for the pawls to latch into.

The adjusting spindles on the pawls enable the entire shaft platform be lined-and-levelled in the horizontal.



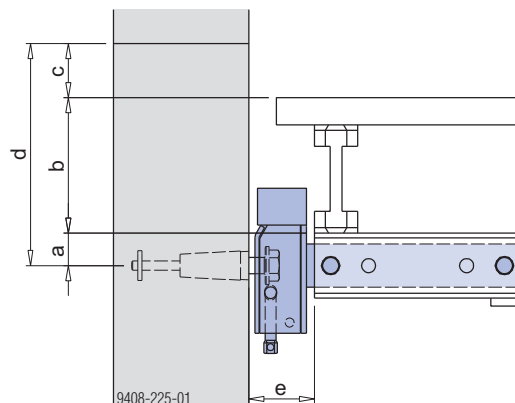
- c ... max. 80 mm

Note:

If very wide squared timbers are used in the edge zone, this limits the swivelling range of the gravity pawls.

Shaft platform with Main beam head (for cone-type suspension)

System dimensions



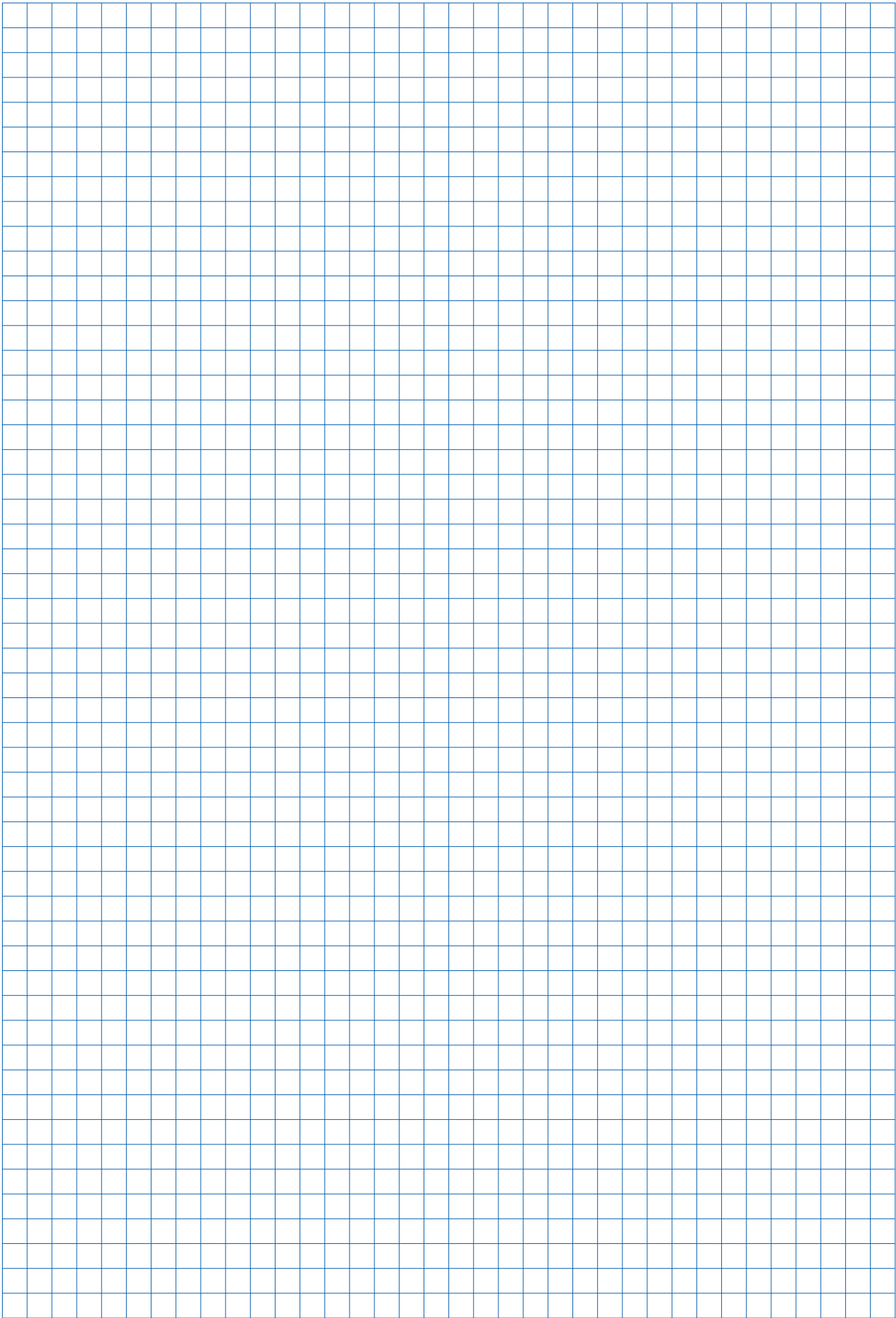
- a ... 60 mm
- b ... 250 mm
- c ... Formwork overlap
- d ... 410 mm (given a formwork overlap of 100 mm)
- e ... 120 mm

As an alternative to the pawl-type mounting version, there is also a version which uses "Platform climbing cones".

The entire shaft platform is anchored to the structure here by universal climbing cones.

Note:

When the Framax stripping corner I is used, the shaft platform must be repositioned separately from the shaft formwork.



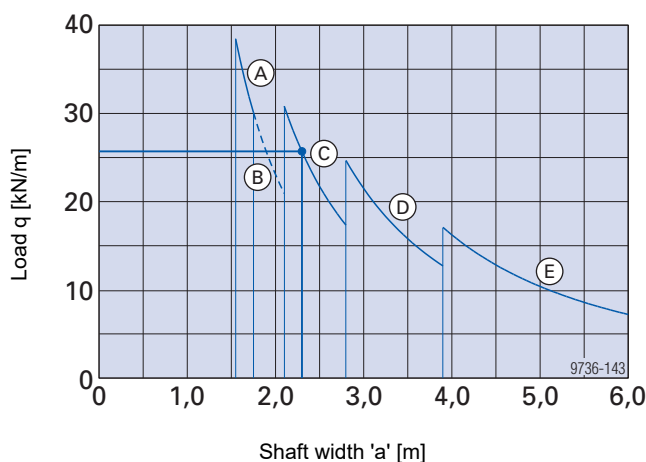
Structural design

Imposed loads

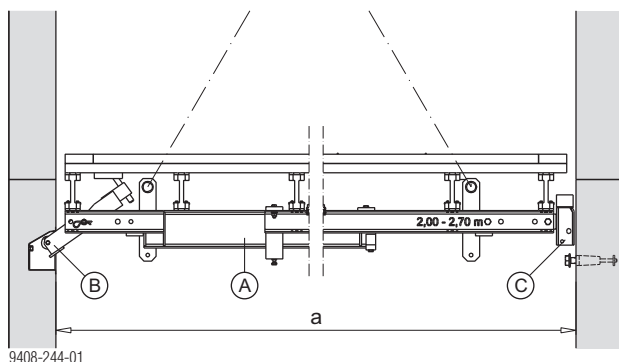
Permissible imposed load per pawl or main beam head:
4000 kg (40 kN)

Permitted loading of the telescopic shaft beams

Design diagram for telescopic shaft beams with gravity pawls or main beam heads



- A** Telescopic shaft beam 1.45-1.65m (2 x U100)
- B** Telescopic shaft beam 1.65-2.00m (2 x U100)
- C** Telescopic shaft beam 2.00-2.70m (2 x U120)
- D** Telescopic shaft beam 2.70-3.80m (2 x U140)
- E** Telescopic shaft beam 3.80-5.90m (2 x U160)



a ... Shaft width (tolerance ± 20 mm)

- A** Telescopic shaft beam
- B** Pawl-type mounting
- C** With main beam head (cone-type suspension)

Explanation of terms

q	$= \frac{(\text{live load} + \text{permanent load})}{\text{Platform area in m}^2} \times \text{Influence width "b" of the telescopic shaft beam}$
Live load	Formwork load + live load distributed across entire platform area (at least 2.0 kN/m ²). If it is also intended to store rebar on the platform, an exact loading calculation will be necessary.
Permanent load	comprises the decking (0.3 kN/m ² for 50 mm thick decking), the transverse squared timbers (6.0 kN/m ³) and an estimate for the main-beam sections:][100 = 0.22 kN/lin. m][120 = 0.27 kN/lin. m][140 = 0.33 kN/lin. m][160 = 0.38 kN/lin. m If a suspended platform is being used, its dead weight must also be allowed for in the permanent load.

Example

- Basic data:
 - Width of shaft: 2.30 m = Curve **(C)**
- Result:
 - Permitted load: 26 kN/m

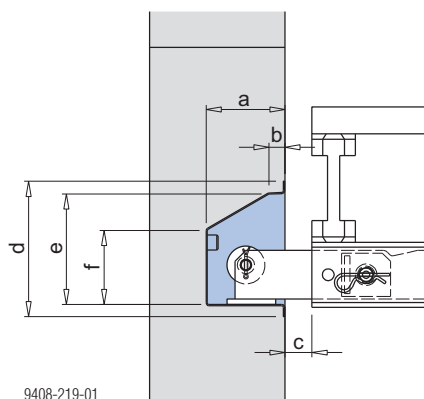
Anchoring on the structure

Shaft platform with pawl-type mounting

Support situation with pawl-type mounting

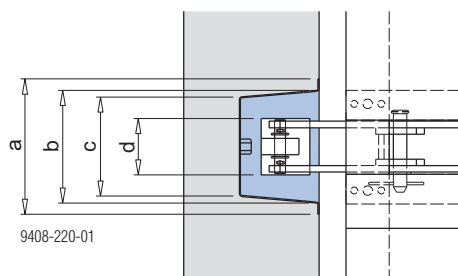
Smallest possible pawl recess using site-provided latch-box

Pawl recess with Box for latch 20x20x15cm

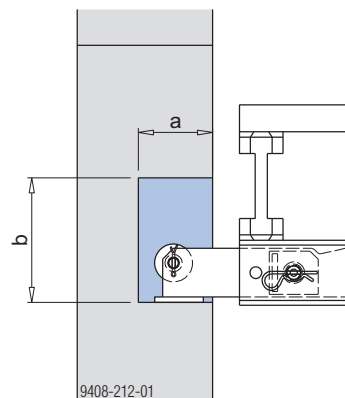


- a ... 145 mm
- b ... 30 mm
- c ... 50 mm
- d ... 250 mm
- e ... 205 mm
- f ... 137 mm

Plan view

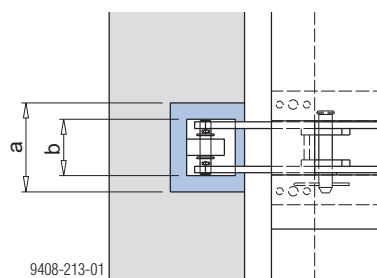


- a ... 250 mm
- b ... 204 mm
- c ... 180 mm
- d ... 104 mm



- a ... 137mm
- b ... 230 mm

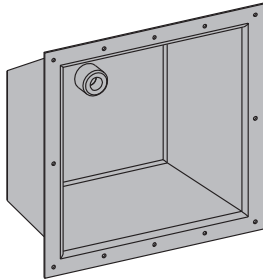
Plan view



- a ... 164mm
- b ... 104mm

"Box for latch" for pawl-type mounting in the concrete

The Box for latch 20x20x15cm is used for forming recesses in the concrete on which to rest the pawls of shaft platforms.

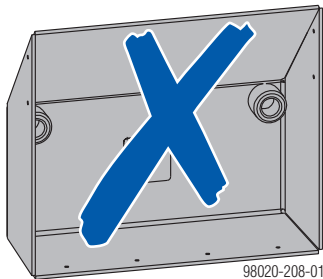


A "Plug 15.0" (expendable part) is captively integrated in the "Box for latch".



NOTICE

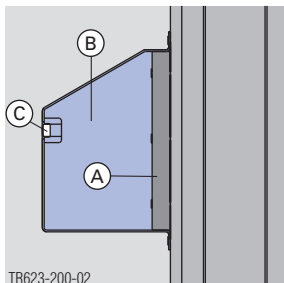
The "Box for latch" 24x21x10cm is not suitable for use with the telescopic shaft beam.



Fixing by nailing to the formwork sheet

Fixing to the formwork

- ▶ Use screws or pin-nails to fix a 20 x 20 cm formwork sheet **(A)** to the desired location on the formwork as a positioning aid.
- ▶ Place the "Box for latch" **(B)** over the positioning aid and fix it with pin-nails.
- ▶ Before every time of using: Make sure that a Plug 15.0 **(C)** has been inserted.



A Formwork sheet 20 x 20 cm

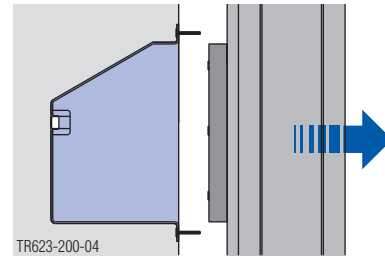
B Box for latch 20x20x15cm

C Plug 15.0

Opening the formwork

- ▶ Strike the shaft formwork.

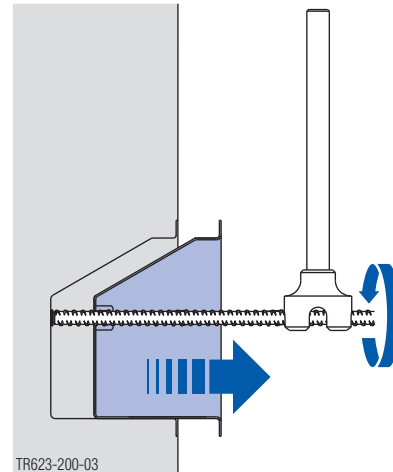
The "Box for latch" remains in the concrete and acts as a support surface for the pawl of the shaft platform.



Dismantling

This work is carried out from the finishing-work platform.

- ▶ Screw a Tie-rod 15.0 into the sleeve of the "Box for latch"; using a Spanner for tie-rod 15.0/20.0, turn the tie-rod to detach the "Box for latch" from the concrete.



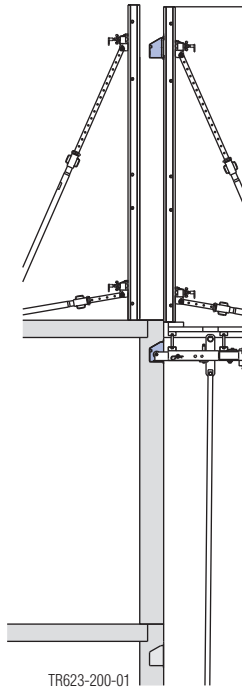
Check for any signs of damage. It may be necessary to straighten the box again.

Typical cross-section

Note:

At least two Boxes for latch 20x20x15cm are needed for each pawl plane!

The pawl rests in one "Box for latch" while the one below it is dismantled, working from the finishing-work platform, and then fastened to the formwork again to prepare the next support point.



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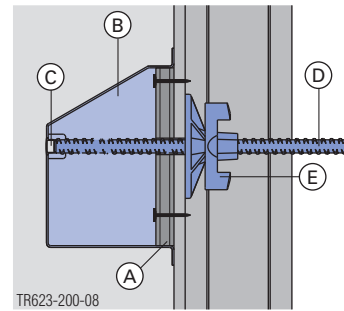
Fixing using a tie-rod and a Super-plate

This fixing method ensures that the "Boxes for latch" remain firmly and stably mounted even when they are used many times over in the same position.

Fixing to the formwork

- ▶ Use screws or pin-nails to fix a 20 x 20 cm formwork sheet (**A**) to the desired location on the formwork as a positioning aid.
- ▶ Drill a diam. 18 mm hole in the form-ply (position as shown in shop drawing / assembly plan).
- ▶ Screw a Tie-rod 15.0 (**D**) into the "Box for latch".
- ▶ Before every time of using: Make sure that a Plug 15.0 (**C**) has been inserted.

- ▶ Place the "Box for latch" (**B**) over the positioning aid and fix it with a Super-plate 15.0 (**E**) .



TR623-200-08

A Formwork sheet 20 x 20 cm

B Box for latch 20x20x15cm

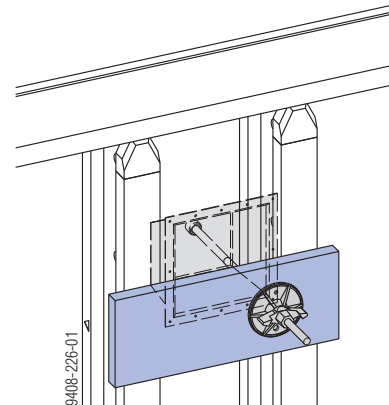
C Plug 15.0

D Tie rod 15.0

E Super plate 15.0



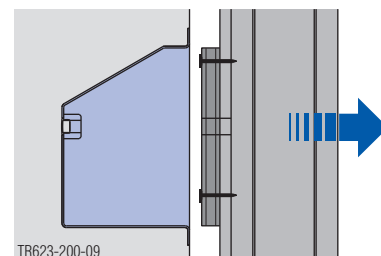
If the Tie-rod 15.0 is located too close to a Doka beam, a plank can be nailed to this and the adjoining beam to provide a support surface for the Super-plate.



9408-226-01

Opening the formwork

- ▶ Unscrew the Super-plate.
- ▶ Before striking the formwork, remove the Tie-rod 15.0 using the Spanner for tie-rod 15.0/20.0.
- ▶ Strike the shaft formwork.
The "Box for latch" remains in the concrete and acts as a support surface for the pawl of the shaft platform.



TR623-200-09

Fixing through an opening cut out of the formwork sheet

This solution makes it possible to remove the "Boxes for latch" before striking the formwork.

Ensure that the following conditions are met:

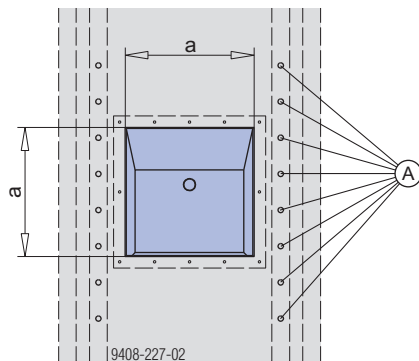
- boxes always used in same position
- formwork used is Large-area formwork Top 50

Advantages:

- only 1 "Box for latch" needed in each pawl plane
- no suspended platform needed for dismantling the boxes

Fixing to the formwork

- Cut out the opening for the "Box for latch" in the formwork sheet.

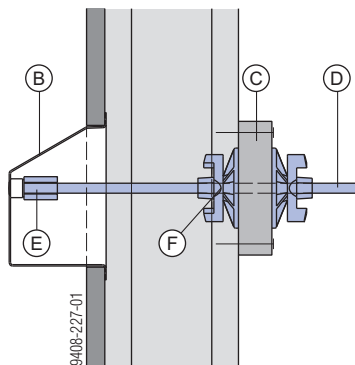


a ... 212 mm

A Universal countersunk screw

Use universal countersunk screws to provide additional fixing between the formwork sheet and the Doka beams H20 on either side of the box.

- Drill a hole for the tie-rod into a plank and fix this plank to the Doka beams H20 with universal countersunk screws.
- Fix the "Box for latch" with a Tie-rod 15.0, Hexagon nut 15.0 and Super-plates 15.0.



B Box for latch 20x20x15cm

C Plank, 5x20 cm

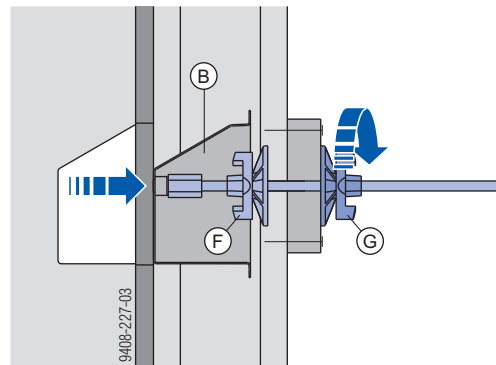
D Tie-rod 15.0

E Hexagon nut 15.0

F Super-plate 15.0

Opening the formwork

- Unscrew the inside super-plate.
- Screw the outside super-plate onto the tie-rod.



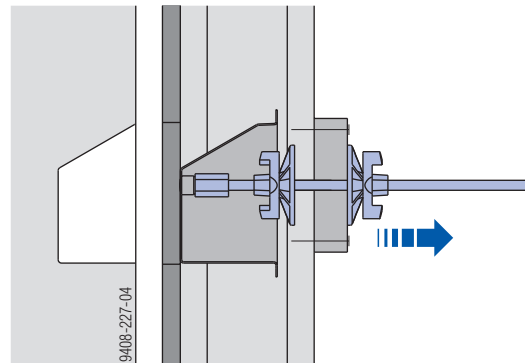
B Box for latch 20x20x15cm

F Inside Super-plate 15.0

G Outside Super-plate 15.0

The "Box for latch" is now pulled from the concrete.

- Strike the shaft formwork.



Shaft platform with Main beam head (for cone-type suspension)

Positioning point and suspension point



NOTICE

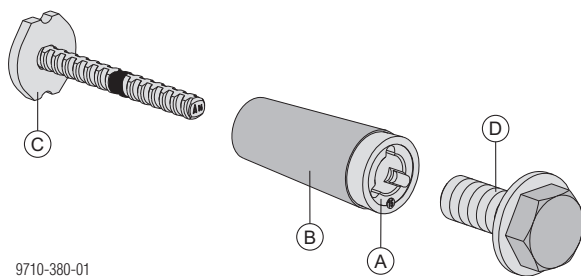
The system is usually anchored to the structure by the **Tie rod system 15.0**.



Risk of confusion!

► When the system is combined with Doka automatic climbing systems, the **Tie rod system 20.0** must be used throughout the entire project to avoid confusion.

This also applies to combinations with guided climbing systems (e.g. Guided climbing formwork Xclimb 60).



A Universal climbing cone 15.0 or
Universal climbing cone 15.0 2G

B Sealing sleeve K 15.0 (expendable anchoring component)

C Stop anchor (expendable anchoring component)

D Cone screw B 7cm

▪ Universal climbing cone 15.0 or Universal climbing cone 15.0 2G

- The positioning points and the suspension points are prepared using the Universal climbing cone 15.0.

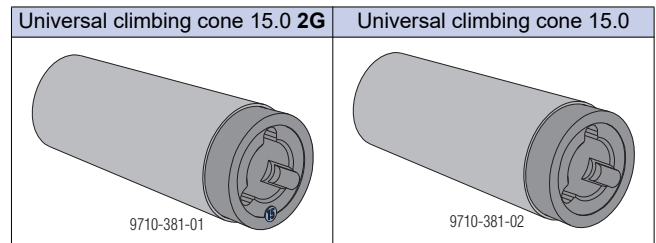
▪ Stop anchor

- Expendable anchoring component for anchoring the universal climbing cone (and thus the climbing unit) in the concrete from one side.

▪ Cone screw B 7cm

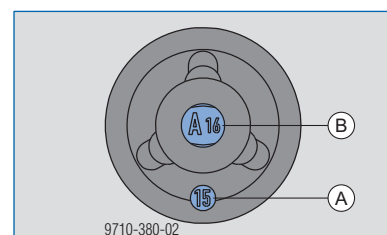
- Positioning point – for fastening the universal climbing cone.
- Suspension point – safe means of suspending the climbing unit.

Universal climbing cones 15.0



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



A Orange mark on end face

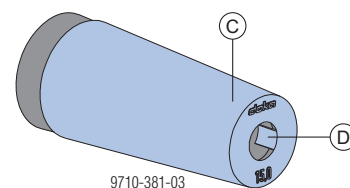
B Code on the stop anchor

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.



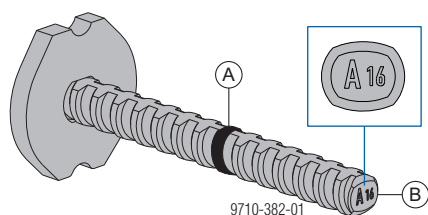
C Sealing sleeve K 15.0 (orange)

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

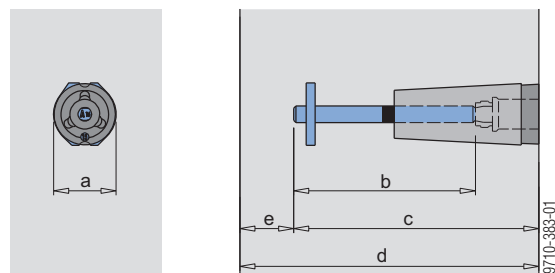
B Code for stop-anchor type



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



A	Stop anchor 15.0
	a ... Size of stop-anchor plate: 55 mm
16	b ... Tie-rod length: 16.0 cm

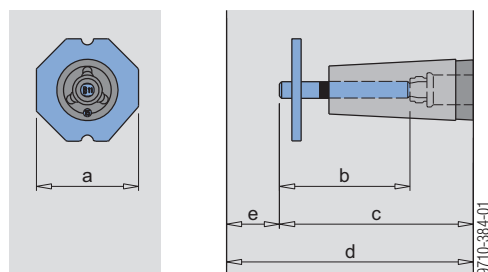
c ... Installation depth: 21.5 cm

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

Stop anchor 15.0 B11



B	Stop anchor 15.0
	a ... Size of stop-anchor plate: 90 mm
11	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.

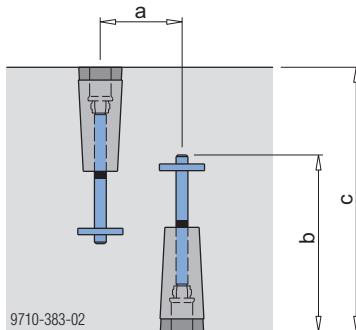
- The short stop anchor may only be used on systems with low tensile loads at the anchoring location, such as on climbing systems inside shafts.
- If the geometry will only allow installation of short stop anchors, then revised static calculations and/or extra reinforcement steel may be required where 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.

Opposite anchoring points

Note:

If the wall thickness is less than twice the installation depth of the stop anchor, opposing anchor points must be offset to one another.

Plan view



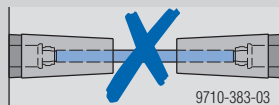
- a ... min. 100 mm, if $c < 2 \times b$
 b ... installation depth
 c ... wall thickness



If two cones are fitted opposite one another and joined with a tie rod there is a risk of formwork falling off.

Unscrewing the anchor on one side may cause the anchor on the opposite side to shear off.

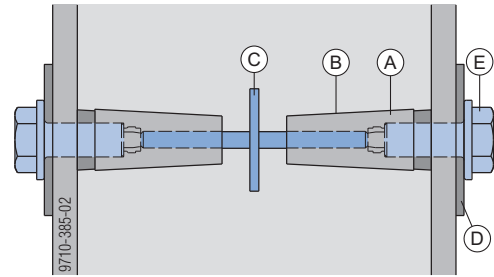
- Do not, under any circumstances, connect climbing cones with a tie rod.



Anchor points with no offset

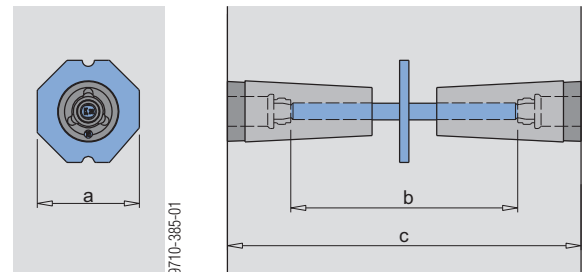
Anchor points with no offset are prepared using the **Stop anchor double-ended 15.0 K.**

Positioning point



- A** Universal climbing cone 15.0 2G
- B** Sealing sleeve K 15.0 (expendable anchoring component)
- C** Stop anchor double-ended 15.0 K.. (expendable anchoring component)
- D** Packing plate (e.g. Dokaplex 15 mm)
- E** Cone screw B 7cm

Stop anchor double-ended 15.0 K..



K	Stop anchor double-ended 15.0
	a ... Size of stop-anchor plate: 90 mm
19 - 60	b ... Tie-rod length: 19 - 60 cm

- b ... order length = wall thickness c - 11 cm
 c ... Wall thickness: 30 - 71 cm



WARNING

In walls that are less than 40 cm thick, the Stop anchor double-ended 15.0 K.. has a much lower load-bearing capacity than the Stop anchor 15.0 C17.

- Revised static calculations are required here.
- Where high tensile forces occur, add additional reinforcement if static calculations require it.

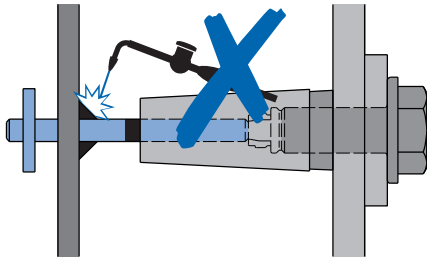
Preparing the positioning point



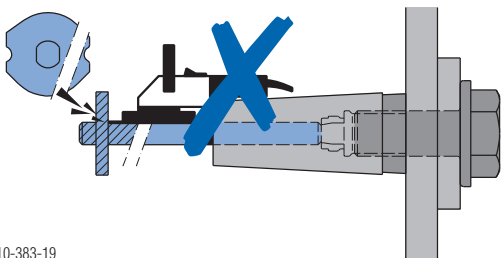
WARNING

Sensitive anchoring, suspension and connector components!

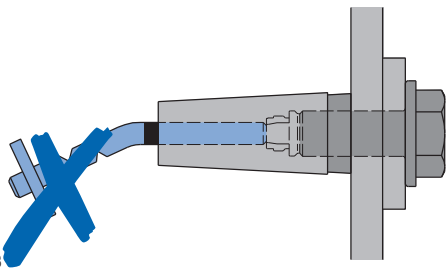
- Never weld or heat these components.
- Any components that are damaged or weakened by corrosion or wear must be withdrawn from use and destroyed.



9710-383-20



9710-383-19



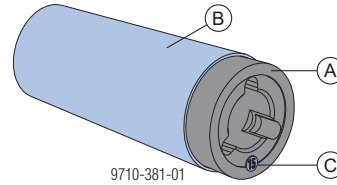
9710-383-18

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

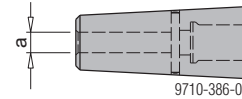
A Universal climbing cone 15.0 2G

B Sealing sleeve K 15.0 (orange)

C Orange mark on end face



For Universal climbing cones 15.0 (without coloured mark), the diameter of the form-tie hole must be 15 mm.



9710-386-01

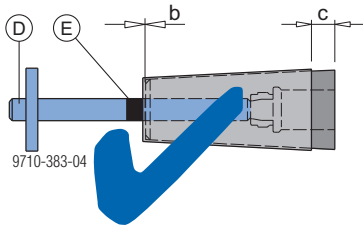
a ... diam. 15 mm

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.

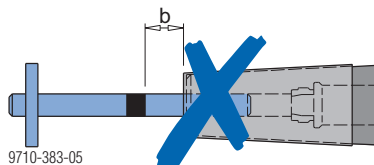


b ... 0 mm
c ... 15 mm

- D** Stop anchor 15.0 (expendable anchoring component)
E Depth mark

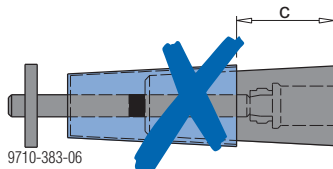


- The depth mark on the stop anchor must be against the universal climbing cone = must be screwed in to the full depth.



b ... > 0 mm not permitted

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

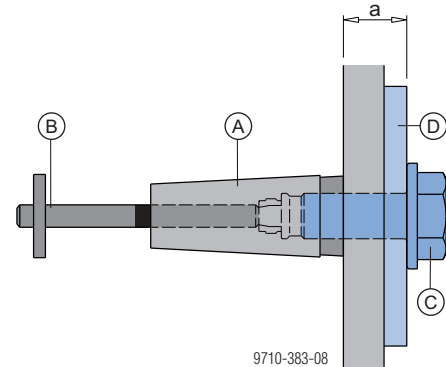


c ... > 15 mm not permitted

Positioning point with Cone screw B 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 plan).
- Drill a diam. 30 mm hole in the form-ply (position as shown in shop drawing / assembly plan).
- Secure the prepared positioning point to the form-ply with Cone screw B 7cm.



a ... 35 - 45 mm

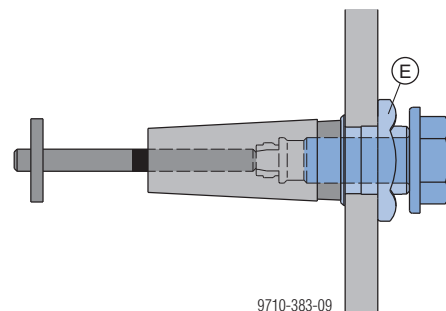
- A** Universal climbing cone 15.0 2G
B Stop anchor 15.0
C Cone screw B 7cm
D Packing plate



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

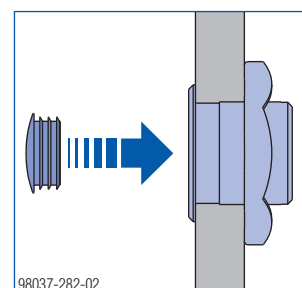
Possible thicknesses of form-ply: 18 - 27 mm

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



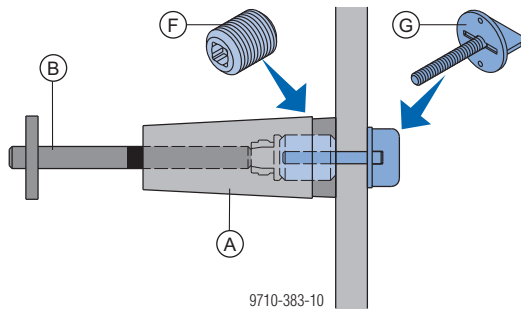
- E** Form-ply protector 32mm (width-across 70 mm)

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 B 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

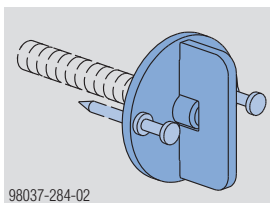
Installation:

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



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

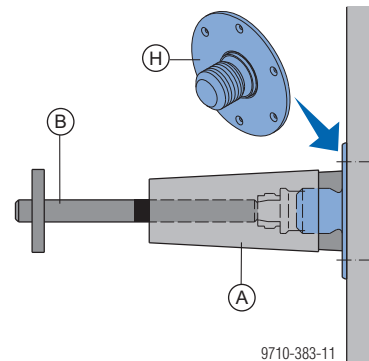
Shortened double-headed nails make it easier to remove the wing bolt.



- ▶ 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.

Assembly:

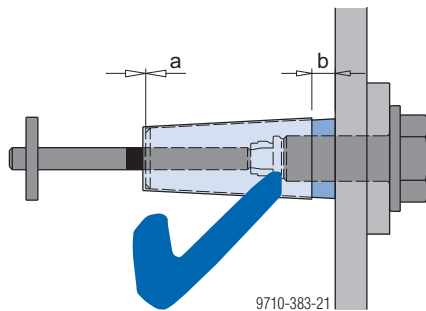
- ▶ Fix the Positioning disk M30 to the form-ply using 28x60 nails (position as shown in shop drawing / assembly plan).
- ▶ Screw the prepared positioning point onto the Positioning disk M30 and tighten it.

Check of the positioning point

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



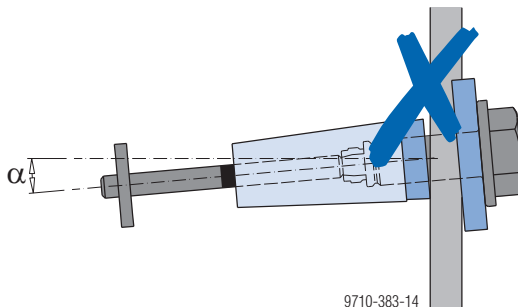
- The sealing sleeve must be completely pushed onto the Universal climbing cone.
- The depth mark on the stop anchor must be right up against the universal climbing cone = must be screwed in to the full depth.
- Tolerance for locating the positioning points and suspension points: ± 10 mm in the horizontal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



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



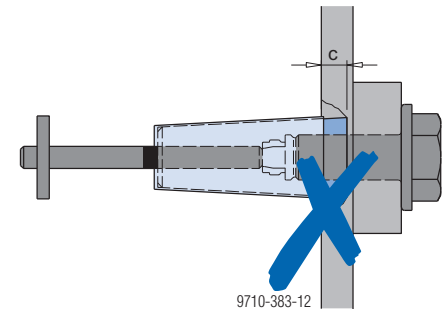
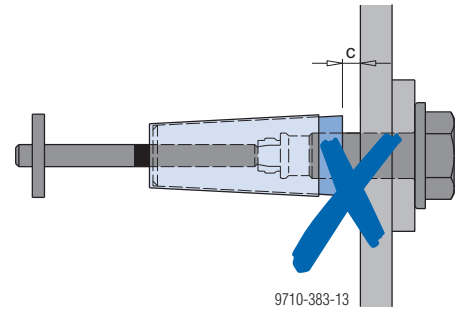
- The axis of the universal climbing cone must be at right-angles to the surface of the concrete – maximum angle of deviation: 2° .



α ... max. 2°



- 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.

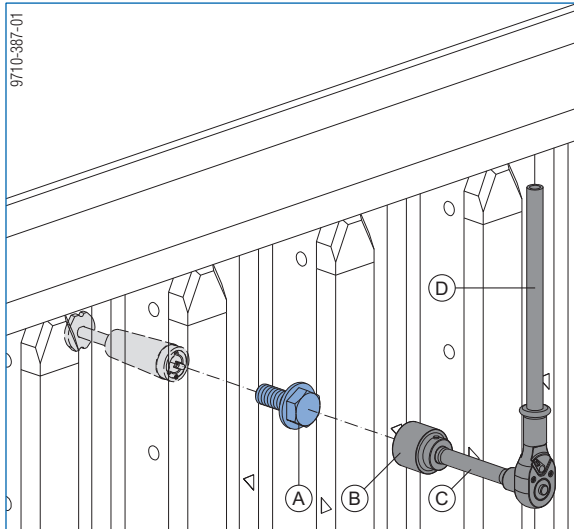
These measures prevent the anchors from working loose during pouring and vibration.

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 B 7cm or Positioning clamp M30:

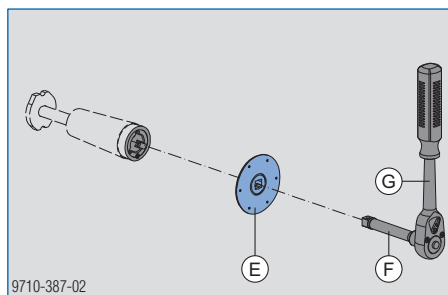
- ▶ Cone screws B 7cm and wing bolts M8: remove before stripping.



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

Positioning point with Positioning disc M30 or Positioning clamp M30:

- ▶ Positioning discs M30 and Socket connectors M30: remove after stripping.



- E** Positioning disc M30 or Socket connector M30 of the Positioning clamp M30
- F** Extension 11cm 1/2"
- G** Reversible ratchet 1/2"

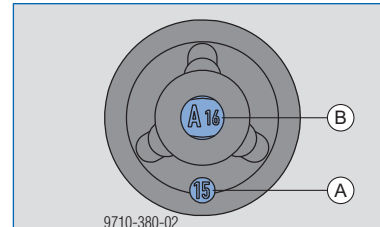
Preparing the suspension point

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.

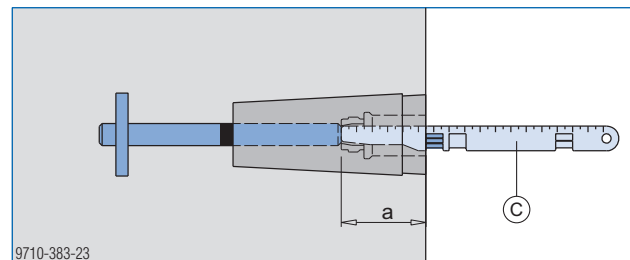


- A** Orange coloured mark (only on Universal climbing cone 15.0 2G)
- B** Code on the stop anchor

- ▶ 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/mm², however.



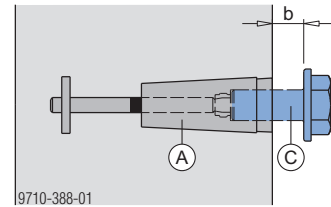
Follow the directions in the Calculation Guide entitled 'Load-bearing capacity of anchorages in concrete' or ask your Doka technician!

Hanging the shaft platform into place

- Screw the Cone screw B 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 $b = 30$ mm!



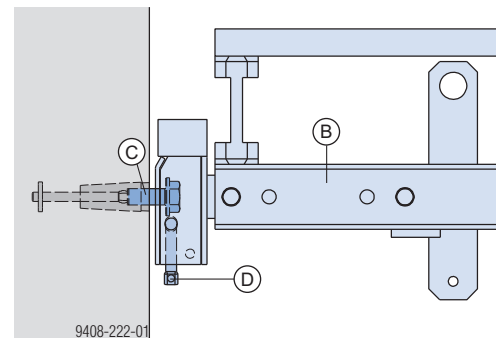
A Universal climbing cone

C Cone screw B 7cm

The Reversible ratchet 3/4" must be used for screwing in and fixing the Cone screw B 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

- Hook the shaft platform onto the Cone screws B 7cm and secure it against accidental lift-out by means of fastening bolts.



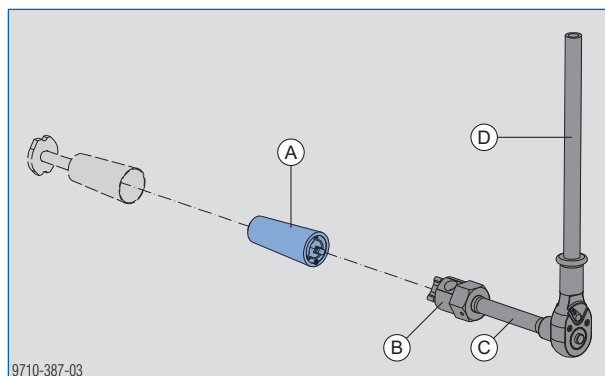
B Shaft platform with Main beam head

C Cone screw B7cm

D Fastening bolt

Dismounting the suspension point

- Remove the Cone screw B 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

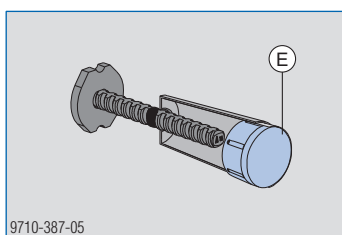
Grout level with the rest of the surface

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

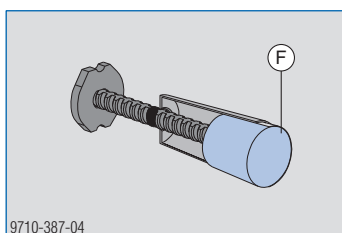
- Push the fair-faced concrete plug into the hole of the suspension point.



- E Fair-faced concrete plug 52mm plastic

Concrete cone 52mm

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



- F Concrete cone 52mm

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

Other possible anchorages

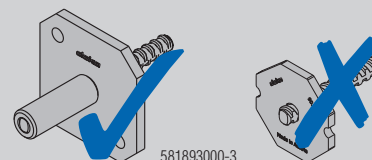
Thin walls

Wall thicknesses of 15 to 16 cm are prepared using the **Wall anchor 15.0 15cm**.

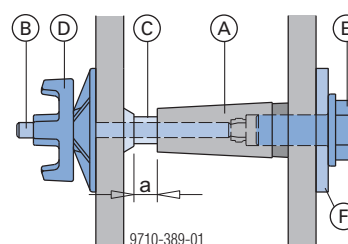


Risk of confusion!

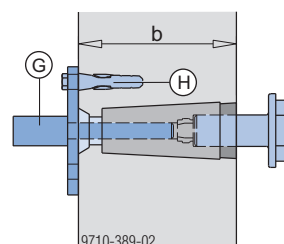
- NEVER use Stop anchors 15.0 for this application.



Positioning point



Suspension point



- a ... Length of plastic tube 12 - 22 mm
- b ... 15 - 16 cm

- A Universal climbing cone 15.0 2G
- B Tie rod 15.0mm
- C Universal cone 22mm + Plastic tube 22mm
- D Super plate 15.0
- E Cone screw B 7cm
- F Packing plate (e.g. Dokaplex 15 mm)
- G Wall anchor 15.0 15cm
- H Hexagon timber screw 10x50 + dowel Ø12

Retrofitting a safe suspension point

Dimensioning the suspension point

The required **cube compressive strength** of the concrete and ready-mix mortar 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
- wall thickness
- 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/mm², however.

Drilling a hole for the suspension point through the wall



Comply with the manufacturer's specifications for the ready-mix mortar!

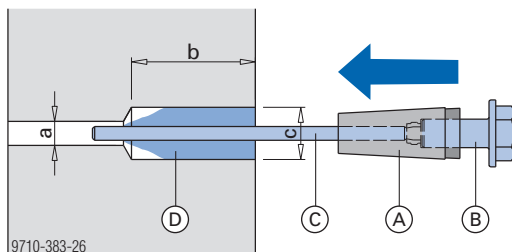
e.g.: if the crew forgot to prepare a positioning point.

- Drill a hole of diam. 55 mm and 130 mm depth.
- Drill a hole of diam. 25 mm.
- Push the sealing sleeve all the way onto the universal climbing cone.
- Screw the tie rod into the universal climbing cone until it fully engages.
- Screw a Cone screw B 7cm into the universal climbing cone.



The cone screw B 7cm is used for aligning the suspension point.

- Put the unit part-way into the borehole.
- Paste the ready-mix mortar (supplied by site) into the drilled hole with a spatula



- a ... 25 mm
- b ... 130 mm
- c ... 55 mm

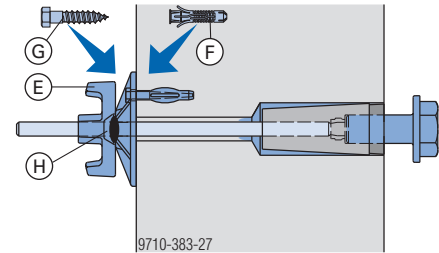
- A** Universal climbing cone 15.0 2G
- B** Cone screw B 7cm
- C** Tie rod 15.0mm
- D** Ready-mix mortar

- Insert the unit so that it is flush with the concrete surface.
Scrap away the excess ready-mix mortar with a spatula.



NOTICE

- Weld a bead to the Super plate to join the nut and the plate. Do this **BEFORE** screwing the super plate onto the tie rod.
- On the other side of the concrete wall, screw on the super plate (now welded together) and secure it with a screw and dowel so that it cannot be unscrewed.

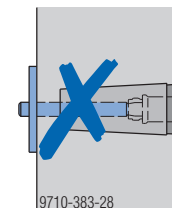


- E** Welded-together Super plate 15.0
- F** Dowel Ø12
- G** Hexagon-head wood screw 10x50
- H** Weld-seam



WARNING

- Do **NOT** fit stop anchors with the anchor plate exposed! The anchor plate must always be embedded in the concrete.



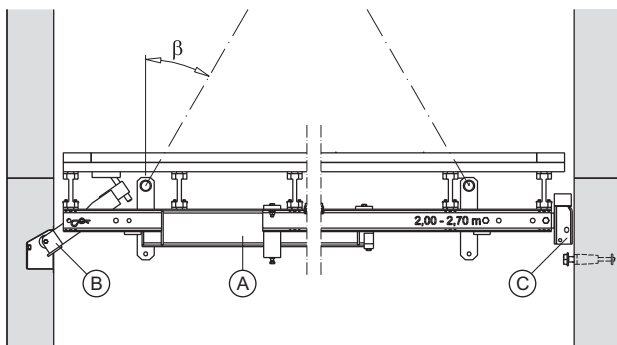
Repositioning

Instructions for safe resetting of the entire unit



NOTICE

- **Before repositioning:** Remove any loose items from the formwork and platforms, or secure them firmly.
- 'Passenger transportation' is forbidden!
- Spread angle β : max. 30°
- When a climbing unit is repositioned, this opens up exposed fall-hazard locations on the remaining units. These exposed locations must be made safe by putting up an access prohibition barrier.



9408-244-01

A Telescopic shaft beam

B Pawl-type mounting

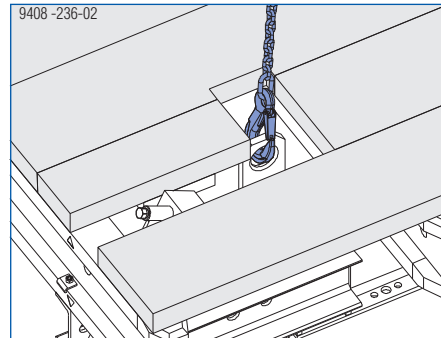
C With main beam head (cone-type suspension)

Max. load per hitching point

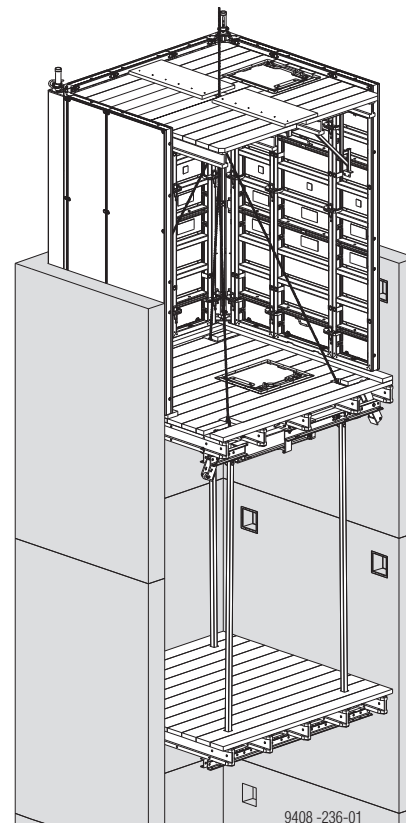
Permitted vertical force: 2000 kg (20 kN)

Shaft platform with pawl-type mounting

- Strip the formwork.
- Attach a 4-part chain to the telescopic shaft beams.



- Reposition the entire unit by crane.

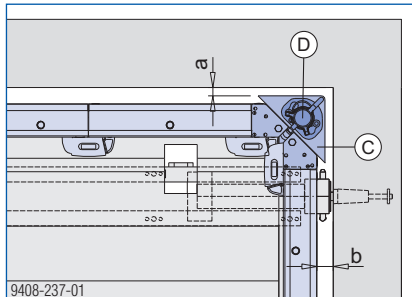


9408-236-01

Shaft platform with Main beam head (for cone-type suspension)

Repositioning of formwork with Stripping corner I

- Detach the formwork from the wall (twist the Stripping spindle anti-clockwise)

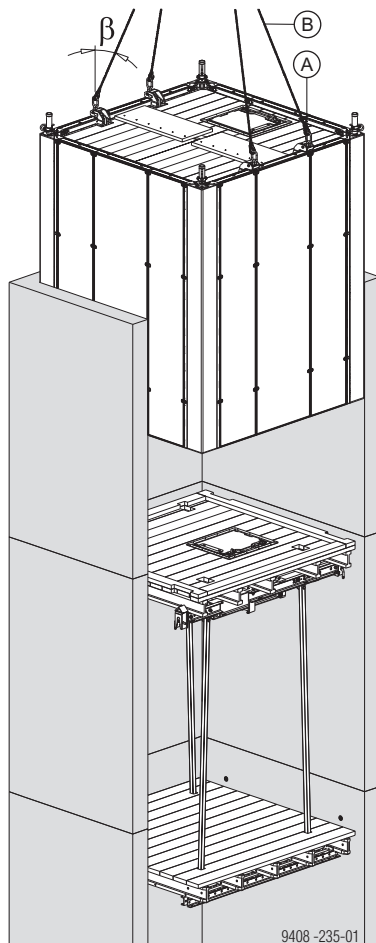


a ... 3.0 cm
b ... 6.0 cm

C Stripping corner I

D Stripping spindle

- Lift the entire formwork unit off the Shaft platform and temporarily store it.



β ... max. 15°

A Framax lifting hook

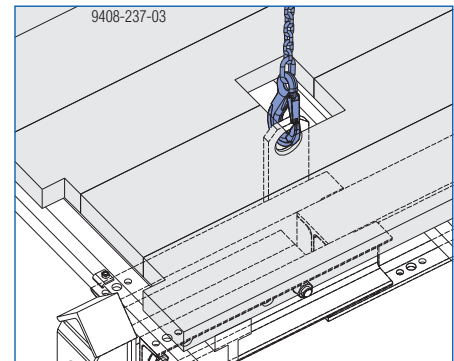
B Four-part lifting chain (e.g. Doka 4-part chain 3.20m)



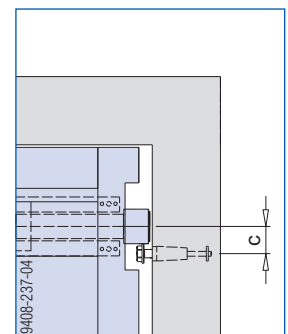
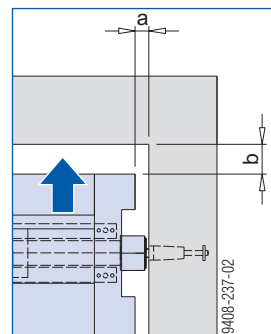
The crane hook on the Stripping corner I is not allowed to be used for lifting the shaft formwork.

- Shaft formwork using Framed formwork Framax Xlife is **only** allowed to be lifted **with Lifting hooks**.
- Shaft formwork using Large-area formwork Top 50 is **only** allowed to be lifted **with Lifting brackets**.

- Attach a 4-part chain to the telescopic shaft beams.



- Manoeuvre the Shaft platform to one side for lifting it past the suspension points.



a ... 50 mm
b ... 110 mm (clearance needed for manoeuvring to one side)
c ... 105 mm (95 mm + min. 10 mm play)

- Hook the Shaft platform into the suspension points of the next casting section.
- Place the formwork unit on the Shaft platform. Close the formwork.

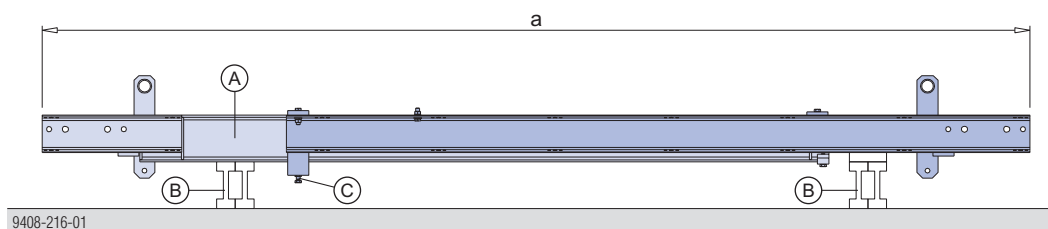
Assembly

Assembling the working platform

Assembling the main beams

Areas of use

Type	Adjusting range of telescopic shaft beams (dimension "a")	Inside dimensions of shaft	
		For pawl-type mounting	For Main beam head
Telescopic shaft beam 1.45-1.65m	145.0 to 165.0 cm	155.0 to 175.0 cm	169.0 to 189.0 cm
Telescopic shaft beam 1.65-2.00m	165.0 to 200.0 cm	175.0 to 210.0 cm	189.0 to 224.0 cm
Telescopic shaft beam 2.00-2.70m	200.0 to 270.0 cm	210.0 to 280.0 cm	224.0 to 294.0 cm
Telescopic shaft beam 2.70-3.80m	270.0 to 380.0 cm	280.0 to 390.0 cm	294.0 to 404.0 cm
Telescopic shaft beam 3.80-5.90m	380.0 to 590.0 cm	390.0 to 600.0 cm	404.0 to 614.0 cm



a ... length of telescopic shaft beam is project-specific, as per table or assembly plan

A Telescopic shaft beam

B Base with levelling mechanism

C Clamping bolt M 16x80 with check-nut (width-across 24 mm)

The telescopic shaft beams are supplied telescoped together.

Determining dimension "a"

For pawl-type mounting	For Main beam head
Inside dimensions of shaft minus 10.0 cm	Inside dimensions of shaft minus 24.0 cm

Tools needed:

- Box nut 24 1/2"
- Reversible ratchet 1/2"
- Fork spanner 22/24



NOTICE

- Make sure that the telescopic shaft beams are resting exactly in the horizontal and in the same plane!

- Place the telescopic shaft beam on the base supports (**B**).
- Loosen the clamping bolts (**C**) and set the length (dimension "a").



NOTICE

- Set the length to an accuracy of within ± 2 mm!

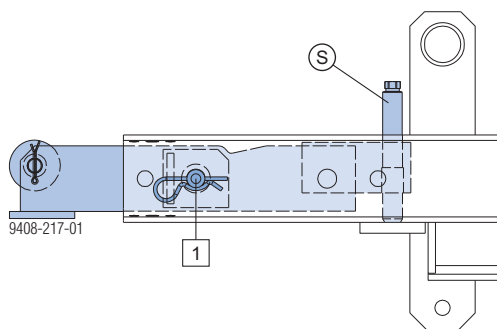
- Tighten the clamping bolts and secure them with check-nuts so that they cannot work loose.

Installing the mounting-fittings

Pawl-type mounting

Tools needed:

- Box nut 19 1/2" L
- Extension 22cm
- Reversible ratchet 1/2"
- Fix the Latch for shaft platform in Pos. 1 with a bolt d25, and secure this with a Spring cotter 5mm.
- Set the horizontal position of the pawl with the height-adjusting spindle.



S Height-adjusting spindle

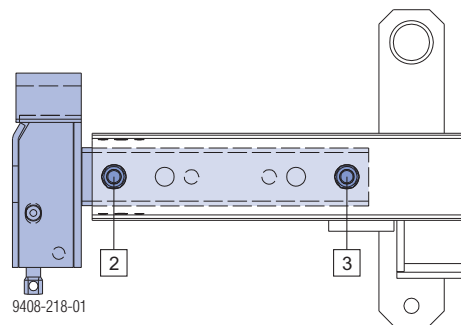
Included in the Latch for shaft platform:

- 1 bolt d25/151
- 1 washer 21
- 1 Spring cotter 5mm

Main beam head for cone-type suspension

Tools needed:

- Fork spanner 30/32
- Reversible ratchet 1/2"
- Box nut 30 1/2"
- Bolt the Main beam head onto the Telescopic shaft beam in Pos. 2 and Pos. 3.



Included in the Main beam head:

- 2 hexagon screws M20x140
- 2 hexagon nuts M20
- 2 spring washers A20

Mounting the cross-beams



NOTICE

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

- Arrange the shaft beams as symmetrically as possible and so that the cantilevers are as small as possible.
- Ensure that all loads are applied centrally.
- The stability of the platforms must be ensured during all phases of the construction work!



CAUTION

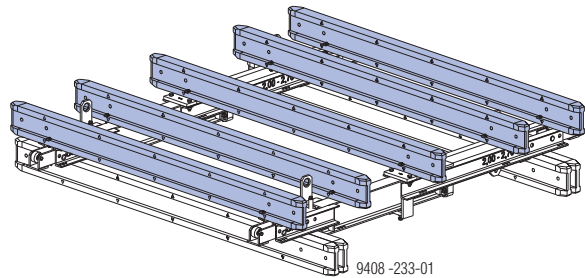
Risk of platforms tipping over when **loads are applied non-centrally**.

If there is no way to avoid cantilevers extending out to one side, observe the following points:

- Choose the widest possible shaft-beam spacing in relation to the cantilever!
- Allow for the greater influence of the shaft beam in the cantilevering region!
- For further measures to prevent platforms tipping over, please contact your Doka technician.

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 points while work is in progress.

- Place cross-beams (e.g. squared timbers, Doka beams or steel girders) on the telescopic shaft beams at the appropriate intervals, as shown in the plans.



For larger numbers of cross-beams, it is recommended to use a stop-bar.

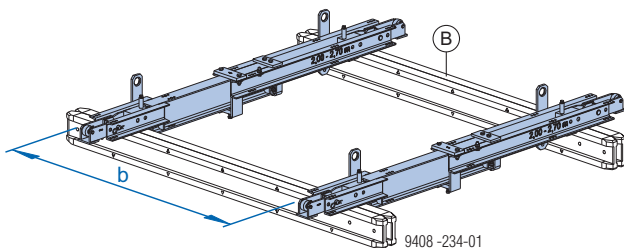
- Where not specified in the plans: Drill fixing holes in the cross-beams and fix these onto the telescopic shaft beams with the specified fixing-screws (site-provided). Ensure the necessary high angle accuracy during basic assembly!



NOTICE

- Make sure that all axes line up!

- Place telescopic shaft beams (length already set) on the base supports, spaced the required centre-to-centre distance apart (using an assembly stop-bar if necessary).

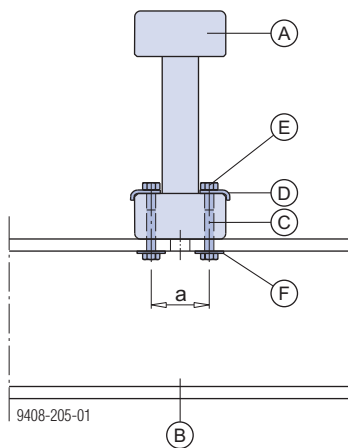


b ... Spacing of support areas

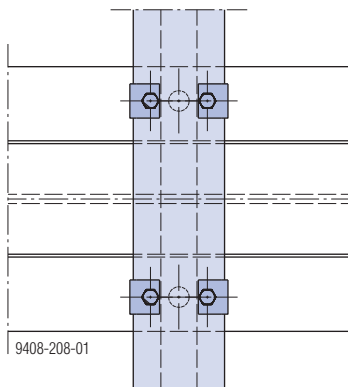
B Base support

Examples of mounting cross-beams

Example: Doka beam



Plan view



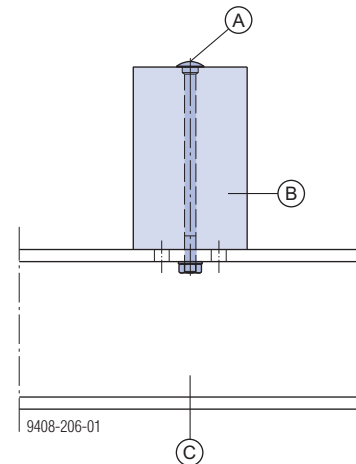
a ... 51 mm

- A** Doka beam H20
- B** Telescopic shaft beam
- C** Diam. 10 mm hole in the Doka beam H20
- D** Shim FF20, art. n° 587570000
- E** Hexagon screw M8 + Hexagon nut M8 (length as required)
- F** Washer A8.4

Note:

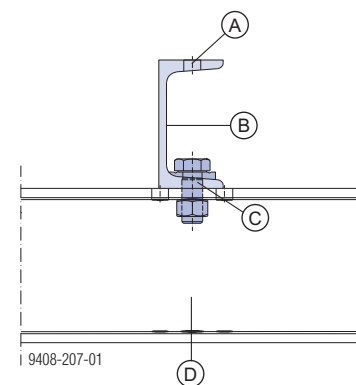
Bolt each cross-beam to the telescopic shaft beam on both flanges, to prevent the telescopic shaft beams being twisted by the oblique pull of the lifting chain.

Example: Squared timber 8x16 cm

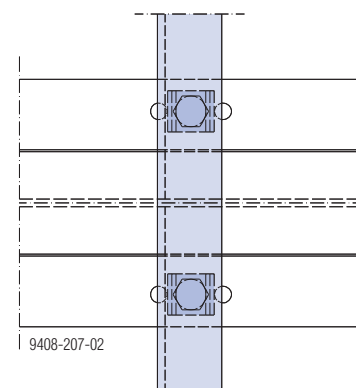


- A** Square bolt M10 + hexagon nut M10 (length as required)
- B** Squared timber 8x16 cm
- C** Telescopic shaft beam

Example: Steel section



Plan view



- A** Fixing holes for decking
- B** Steel section U 100
All fixing holes must be planned in advance.
- C** Hexagon screw M16x50 + U-Washer 17.5 + Hexagon nut M16
- D** Telescopic shaft beam

Mounting the platform decking

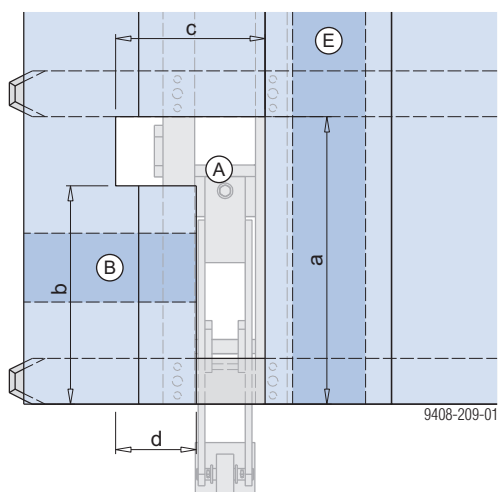
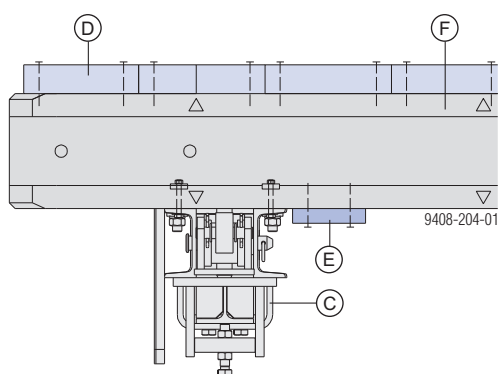
Note:

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.

Shaft platform with pawl-type mounting

- Lay deck-boards across the cross-beams and screw or nail them to the cross-beams.
- Nail an extra backing support onto the underside of the deck-boards in the area of the recess.
- Fasten a bracing plank to the underside of the cross-beams alongside (and parallel to) the Telescopic shaft beam.

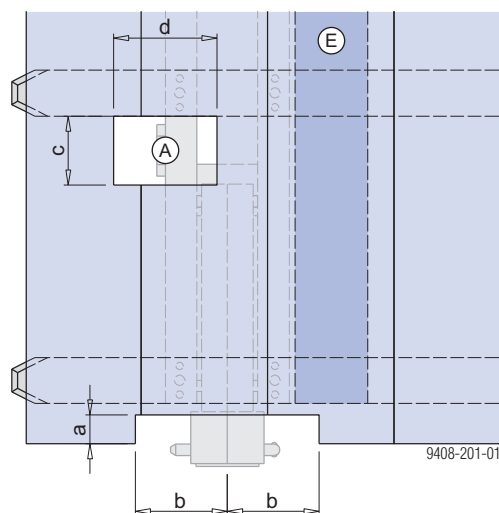
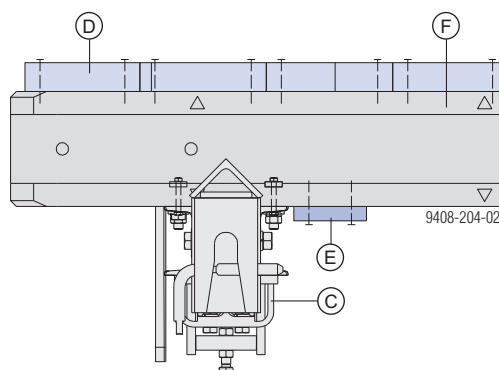


a ... 500 mm
b ... 380 mm
c ... 250 mm
d ... 150 mm

- A** Recess for latch or lifting bracket
- B** Extra backing support (board, min. 15x3 cm)
- C** Telescopic shaft beam
- D** 5x20 cm board
- E** Bracing plank (min. 15x3 cm)
- F** Cross-beam

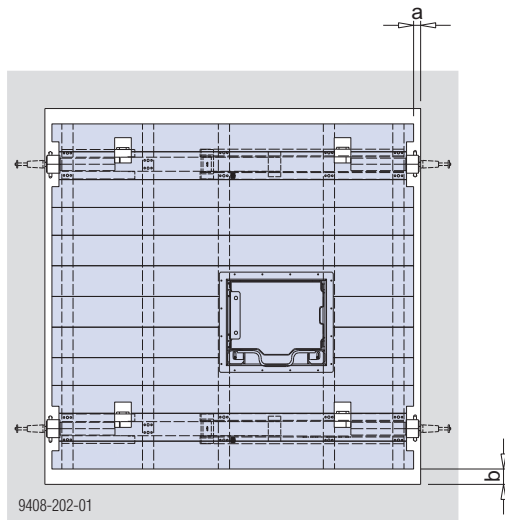
Shaft platform with Main beam head (for cone-type suspension)

- Lay deck-boards across the cross-beams and screw or nail them to the cross-beams.
- Fasten a bracing plank to the underside of the cross-beams alongside (and parallel to) the Telescopic shaft beam.



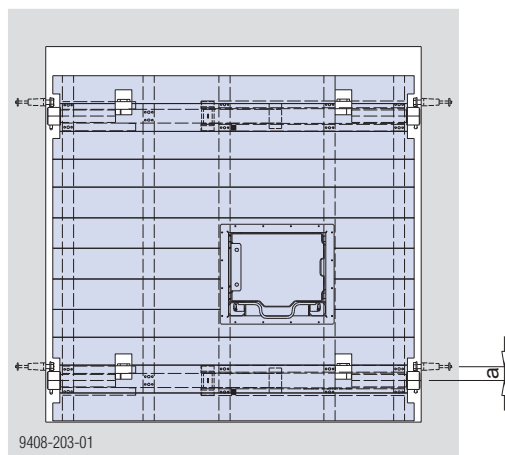
a ... 50 mm
b ... min. 160 mm (clearance needed for manoeuvring to one side when lifting past the suspension point)
c ... 120 mm
d ... 180 mm

- A** Recess for lifting bracket
- C** Telescopic shaft beam
- D** Plank, 5x20 cm
- E** Bracing plank (min. 15x3 cm)
- F** Cross-beam

Plan view – shaft platform hung into place

a ... 50 mm

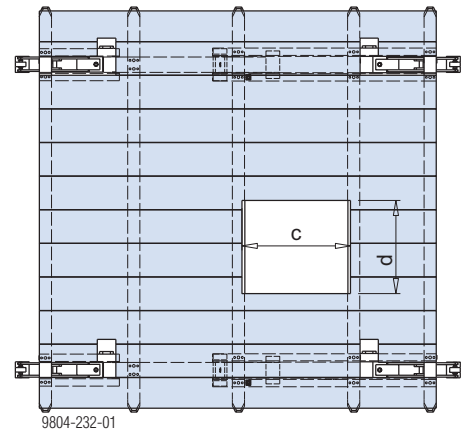
b ... 110 mm (clearance needed for manoeuvring to one side when lifting past the suspension point)

Plan view – situation when lifting past the suspension point

a ... 105 mm (95 mm + min. 10 mm play)

Working platform with manhole

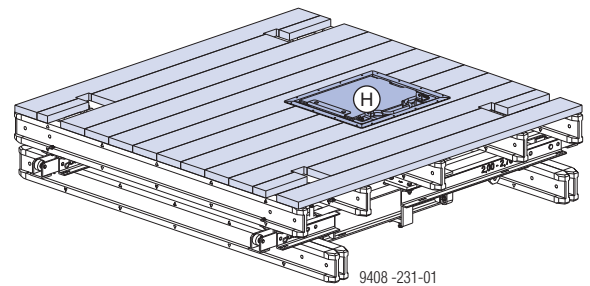
- Determine the position of the manhole in the decking.
- Cut out the opening for the manhole.



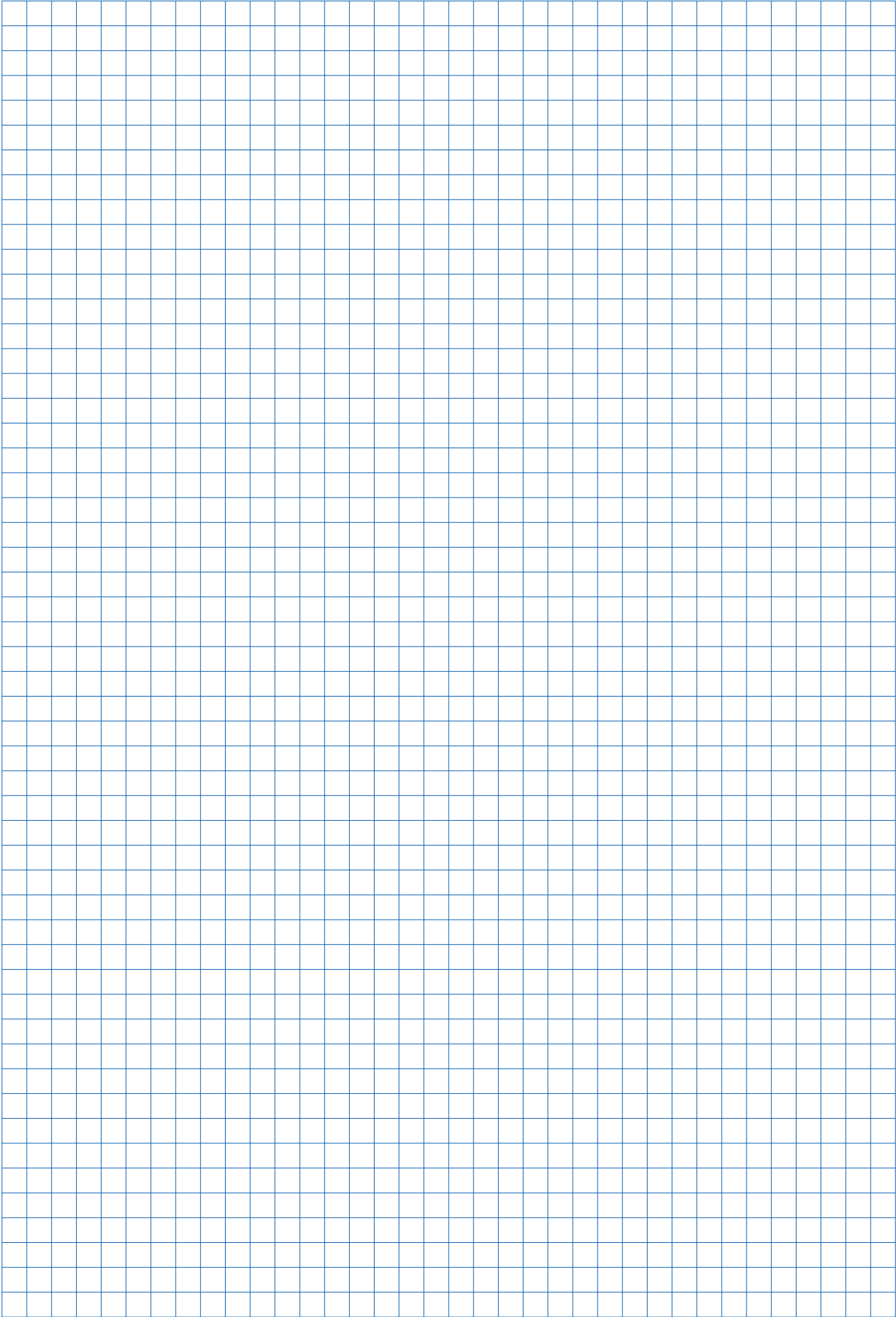
c ... 710 mm

d ... 610 mm

- Screw the Manhole B 70/60cm onto the deck-boards with universal countersunk screws 5x50.



H Manhole B 70/60cm

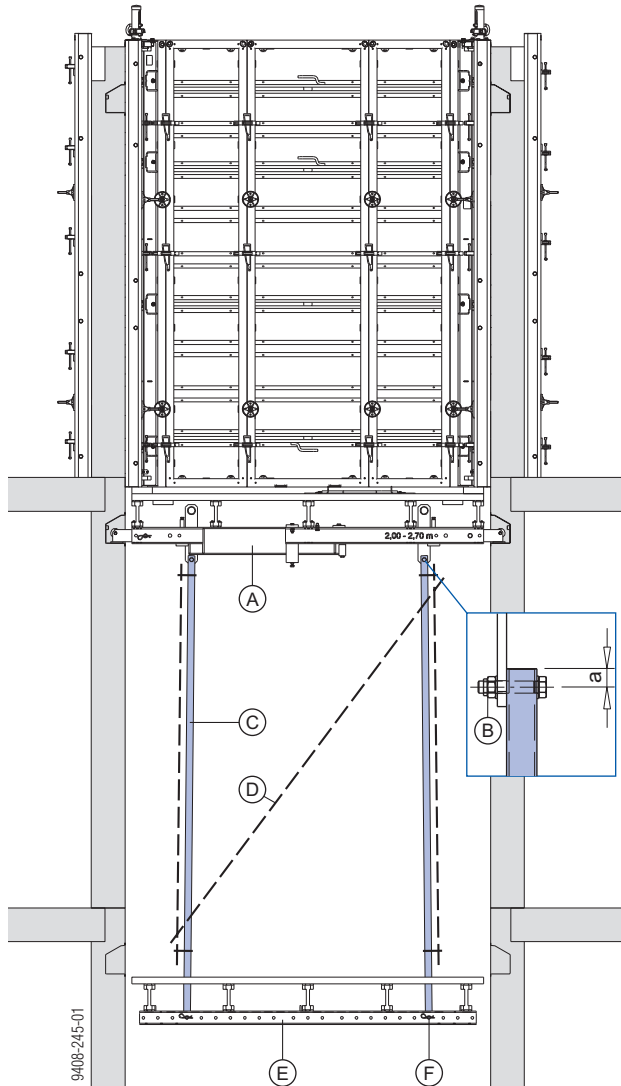


Suspended platform

Various types of suspended platform can be made with components from the Doka standard range.

Max. load per suspension tube: 1000 kg

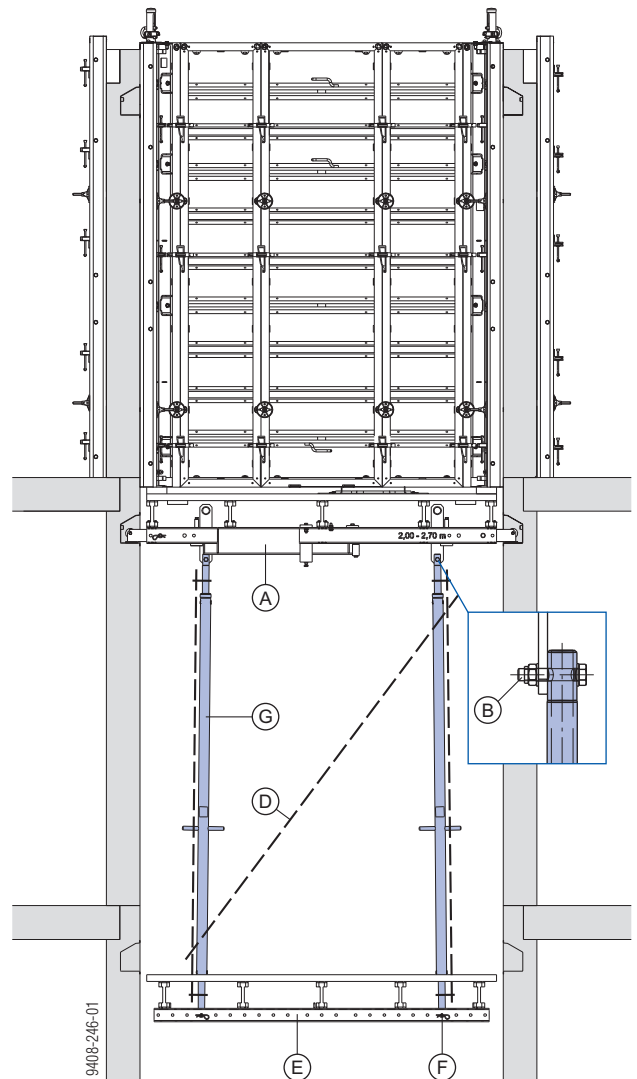
Version using scaffolding tubes or other shaped tubes



a ... min. 3.0 cm

- A** Telescopic shaft beam
- B** Hexagon screw M20x90 8.8 DIN 931 + Hexagon nut M20 8 self-locking DIN 982
- C** Square tube 50/50/3 or Scaffolding tube 48.3mm (length will be project-specific)
- D** Bracing
- E** Multi-purpose waling WS10 Top50 (length will be project-specific)
- F** Connecting pin 10cm + Spring cotter 5mm

Version with spindle struts, e.g. T7 305x355cm

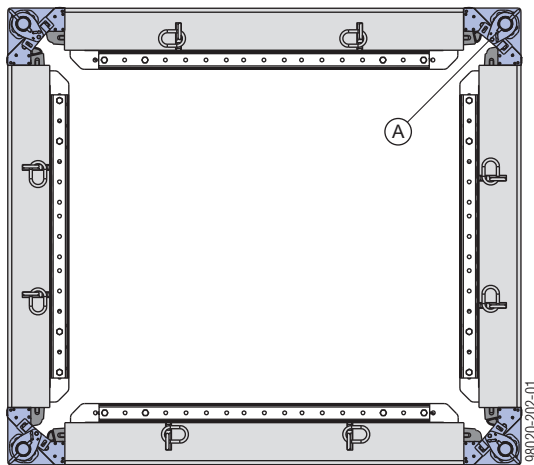


- A** Telescopic shaft beam
- B** Hexagon screw M20x90 8.8 DIN 931 + Hexagon nut M20 8 self-locking DIN 982
- D** Bracing
- E** Multi-purpose waling WS10 Top50 (length will be project-specific)
- F** Connecting pin 10cm + Spring cotter 5mm
- G** Spindle strut T7 305/355cm

Mounting the formwork

Shaft formwork using Large-area formwork Top 50

- Mount the formwork for the inside of the shaft.

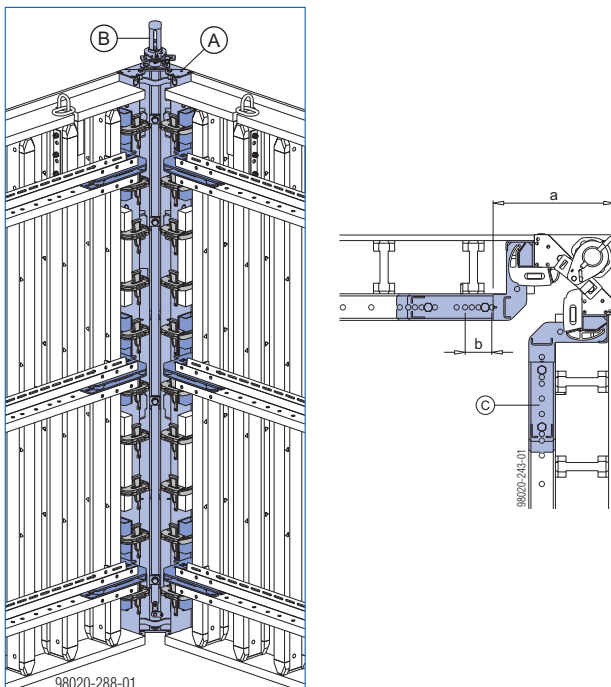


A Framax stripping corner I



With a special transition plate, the Framax stripping corner I can also be used on Large-area formwork Top 50.

The Stripping corner I allows the entire shaft formwork unit to be detached from the wall in one piece.



- a ... 42.5 - 55.0 cm
b ... adjusting range 12.5 cm, in 2.5 cm increments

- A** Framax stripping corner I
B Framax stripping spindle I or
Framax stripping spindle I with ratchet
C Transition plate 18mm or 21mm

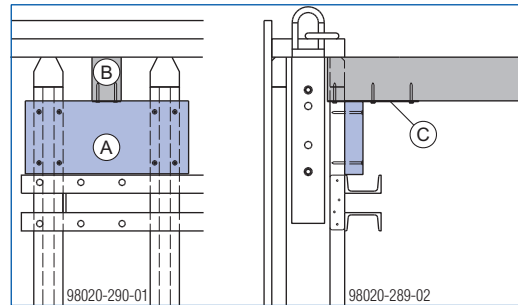
Platform configurations

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



Every plank must be fixed with 8 screws!

- Screw sliding plates onto one side of the squared timbers and place these onto the planks.



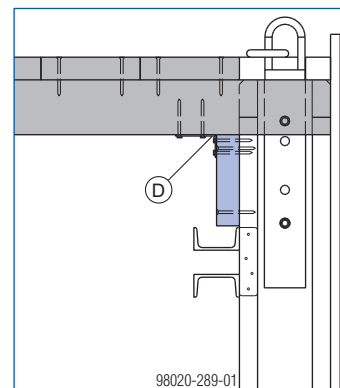
A Plank, 5x20 cm

B Squared timber 8/12 cm

C Sliding plate (site-provided)

Permitted load per screwed-on plank: 2 kN

- Fix the opposite side of the squared timbers to the planks with angle connectors.
- Fasten deck-boards to the squared timbers with Torx TG 6x90 A2 universal countersunk screws.



D Angle connector 9x5cm

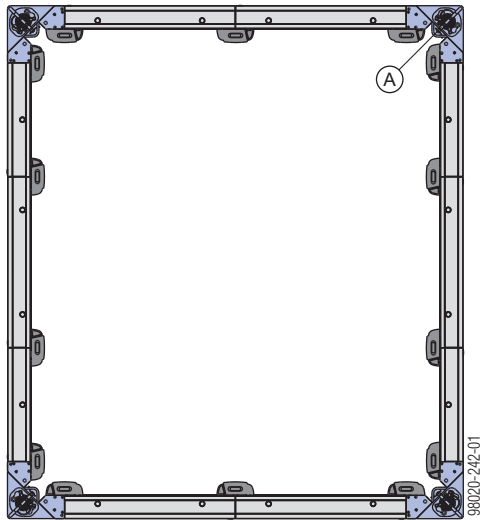


Every deck-board must be fixed with 4 screws!

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

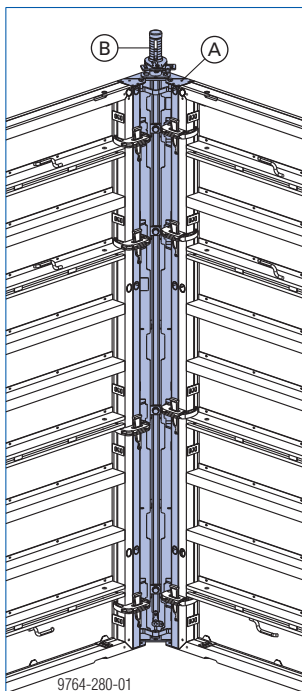
Shaft formwork using framed formwork Framax Xlife

- Mount the formwork for the inside of the shaft.

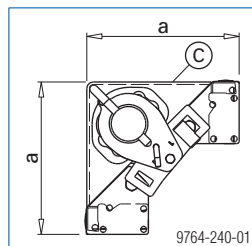


A Framax stripping corner I

The Stripping corner I allows the entire shaft formwork unit to be detached from the wall in one piece.

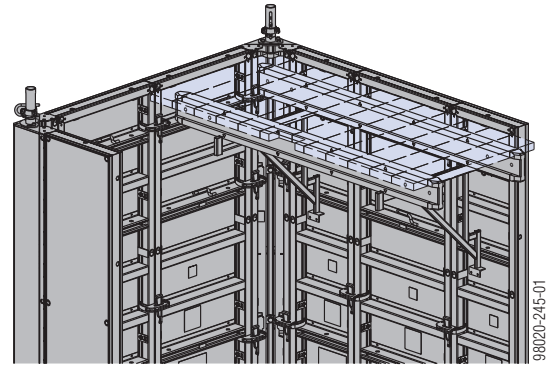


- A** Framax stripping corner I
- B** Framax stripping spindle I or
Framax stripping spindle I with ratchet
- C** Steel form-facing

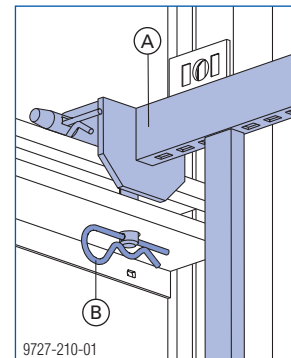


a ... 30.0 cm

Platform configurations

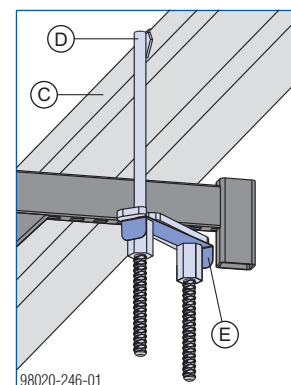


- Hook Framax brackets 90 onto the framed panels and secure them against accidental lift-out.



- A** Framax bracket 90
- B** Spring cotter

- Clamp the Doka H20 beams to the brackets with brace stirrups.
- Use an anti-twisting plate to prevent the hexagon nuts 15.0 from working loose.



- C** Doka beam H20
- D** Brace stirrup 8
- E** Anti-twisting plate for Brace stirrup 8

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



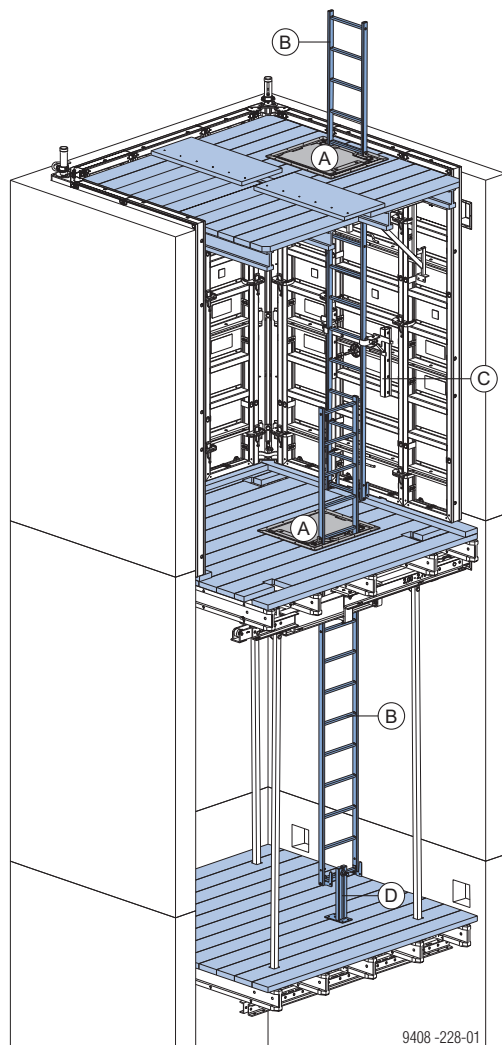
Every deck-board must be fixed with 4 screws!

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

General

Ladder system

For safe up-and-down access between platforms.



- A Manhole B 70/60cm
- B System ladder XS 4.40m
- C Connector XS Wall formwork
- D Ladder adapter XS

Note:

The Ladder system XS must be implemented in such a way that all national regulations are complied with.



CAUTION

- The Ladders XS may only be used as part of the XS system, and must NOT be used separately (as 'lean-to' ladders).

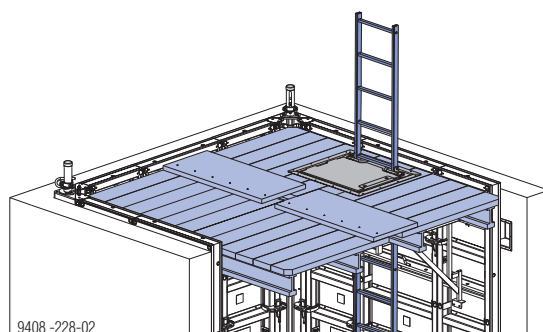
Mounting the ladders to the pouring platforms



For details of how to attach the ladders to the formwork, see the User Information booklets 'Large-area formwork Top 50' or 'Framed formwork Framax Xlife'.



On pouring platforms with decking supports, the Manhole B70/60 cm can be used.



- A Manhole B 70/60cm
- B System ladder XS 4.40m
- C Decking support



NOTICE

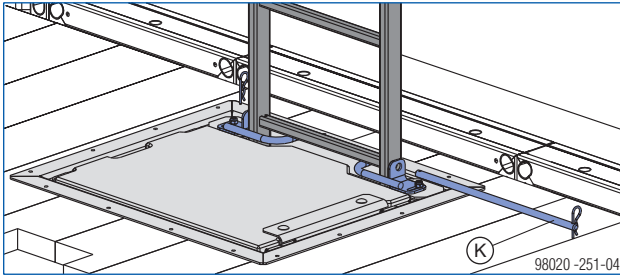
Leave sufficient clearance between the bottom of the ladder and the decking of the working platform (so that the formwork can still be travelled forward and back freely during formwork set-up and removal).

Mounting the ladders to the working platform and to the suspended platforms

Manhole B 70/60cm

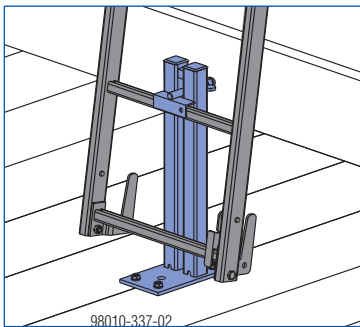
For details of how to mount the manhole, see "Assembling the working platform".

- Fix the System ladder XS 4.40m to the manhole with a ladder stirrup.
- Insert a Ladder bolt XS through the rung of the ladder and secure it on both sides with a d4 spring cotter.



K Ladder bolt XS

- Screw the Ladder adapter XS to the platform decking.
- Fix the bottom of the ladder to the Ladder adapter XS.



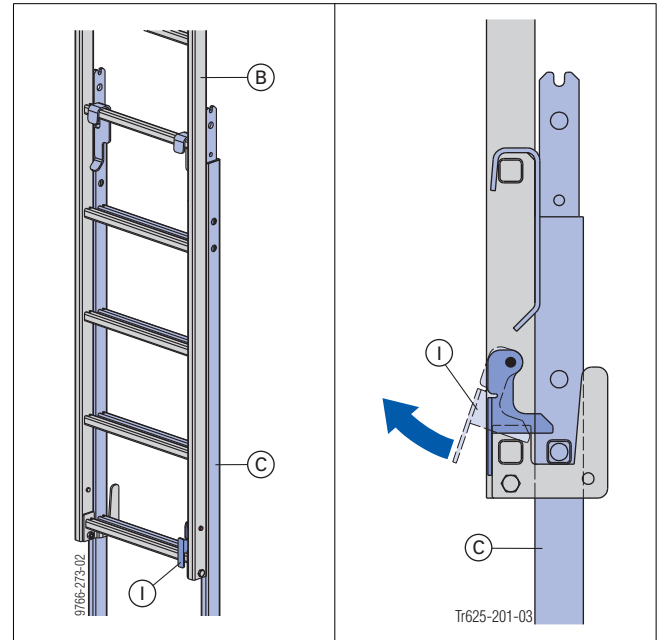
Required nuts & bolts etc.

- 4 square bolts M10x70
- 4 washers A 10.5
- 4 hexagon nuts M10 (self-locking)

Lengthening the ladder

Telescoping ladder extension (for adjusting to ground level)

- To telescope the ladders past one another, lift the safety latch (I) on the ladder (B) and fix the Ladder extension XS 2.30m (C) onto the desired rung of the other ladder.

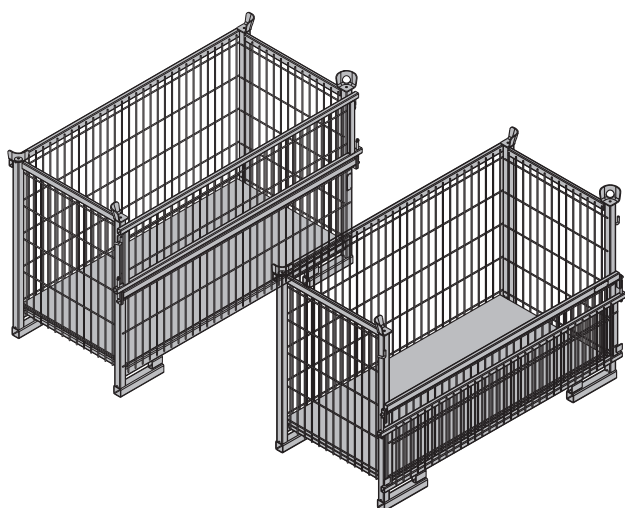


Transporting, stacking and storing

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 devices for small items:

- durable
- stackable

Suitable transport appliances:

- crane
- pallet stacking truck
- forklift truck

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

Max. load: 700 kg (1540 lbs)

Permitted imposed load: 3150 kg (6950 lbs)



NOTICE

- Multi-trip packaging items that each contain very different loads must be stacked with the heaviest ones at the bottom and the lightest ones at the top!
- Rating plate must be in place and clearly legible

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

Max. n° of boxes on top of one another

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

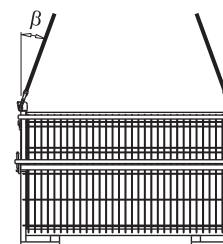
Using Doka skeleton transport boxes 1.70x0.80m as transport devices

Lifting by crane



NOTICE

- Multi-trip packaging items may only be lifted one at a time.
- Only lift the boxes when their sidewalls are closed!
- Use a suitable crane suspension tackle (e.g. Doka 4-part chain 3.20m). Do not exceed the permitted load-bearing capacity.
- Spread angle β max. 30°!

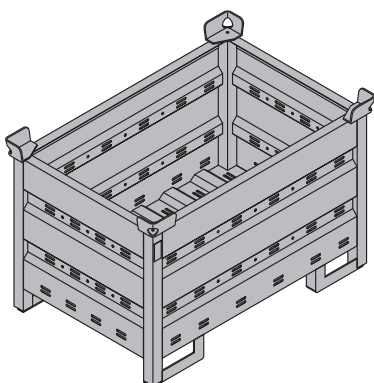


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Repositioning by forklift truck or pallet stacking truck

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

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



Storage and transport devices for small items:

- durable
- stackable

Suitable transport appliances:

- crane
- pallet stacking truck
- forklift truck

Max. load: 1500 kg (3300 lbs)

Permitted imposed load: 7850 kg (17305 lbs)

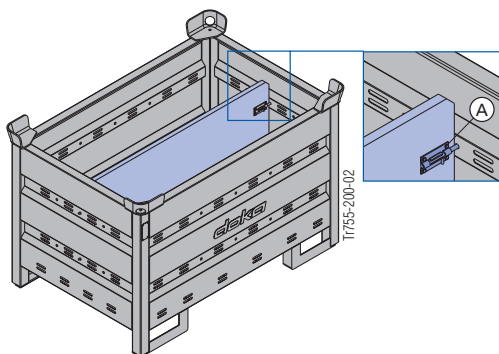


NOTICE

- Multi-trip packaging items that each contain very different loads must be stacked with the heaviest ones at the bottom and the lightest ones at the top!
- Rating plate must be in place and clearly legible

Multi-trip transport box partition

Different items in the 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	Lengthways	Crossways
1.20m	max. 3 partitions	-
0.80m	-	max. 3 partitions
	 Tr755-200-04	 Tr755-200-05

Using Doka multi-trip transport boxes as storage units

Max. n° of boxes on top of one another

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

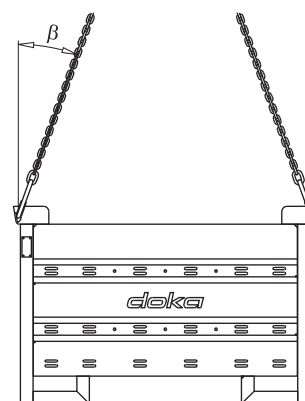
Using Doka multi-trip transport boxes as transport devices

Lifting by crane



NOTICE

- Multi-trip packaging items may only be lifted one at a time.
- Use a suitable crane suspension tackle (e.g. Doka 4-part chain 3.20m). Do not exceed the permitted load-bearing capacity.
- Spread angle β max. 30°!

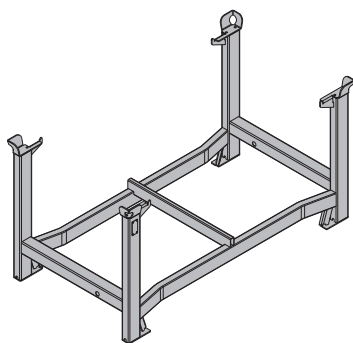


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Repositioning by forklift truck or pallet stacking truck

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 devices for long items:

- durable
- stackable

Suitable transport appliances:

- crane
- pallet stacking truck
- forklift truck

Max. load: 1100 kg (2420 lbs)

Permitted imposed load: 5900 kg (12980 lbs)



NOTICE

- Multi-trip packaging items that each contain very different loads must be stacked with the heaviest ones at the bottom and the lightest ones at the top!
- Rating plate must be in place and clearly legible

Using Doka stacking pallets as storage units

Max. n° of units on top of one another

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

Note:

How to use with bolt-on castor set:

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.

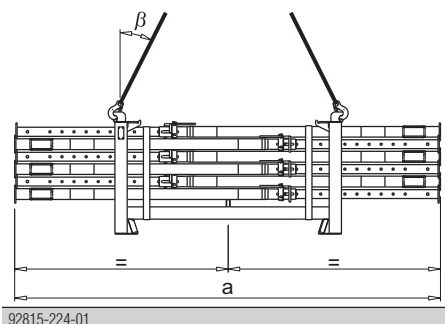
Using Doka stacking pallets as transport devices

Lifting by crane



NOTICE

- Multi-trip packaging items may only be lifted one at a time.
- Use a suitable crane suspension tackle (e.g. Doka 4-part chain 3.20m). Do not exceed the permitted load-bearing capacity.
- Load the items centrally.
- Fasten the load to the stacking pallet so that it cannot slide or tip out.
- Spread angle β max. 30°!



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

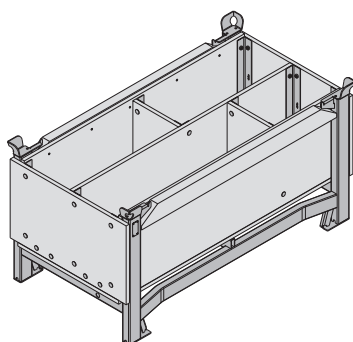
Repositioning by forklift truck or pallet stacking truck



NOTICE

- Load the items centrally.
- Fasten the load to the stacking pallet so that it cannot slide or tip out.

Doka accessory box



Storage and transport devices for small items:

- durable
- stackable

Suitable transport appliances:

- crane
- pallet stacking truck
- forklift truck

The Doka accessory box is the tidy, easy-to-find way of storing and stacking all interconnection and form-tie components.

Max. load: 1000 kg (2200 lbs)

Permitted imposed load: 5530 kg (12191 lbs)



NOTICE

- Multi-trip packaging items that each contain very different loads must be stacked with the heaviest ones at the bottom and the lightest ones at the top!
- Rating plate must be in place and clearly legible

Doka accessory boxes as storage units

Max. n° of boxes on top of one another

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

Note:

How to use with bolt-on castor set:

Always apply the fixing brake when the container is 'parked'.

When Doka accessory boxes are stacked, the bottom box must NOT be one with a bolt-on castor set mounted to it.

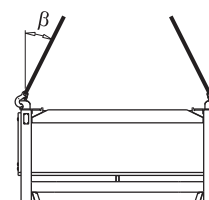
Doka accessory box as transport devices

Lifting by crane



NOTICE

- Multi-trip packaging items may only be lifted one at a time.
- Use a suitable crane suspension tackle (e.g. Doka 4-part chain 3.20m). Do not exceed the permitted load-bearing capacity.
- Spread angle β max. 30°!



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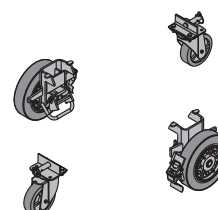
Repositioning by forklift truck or pallet stacking truck

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

Bolt-on castor set B

The Bolt-on caster set B turns the stacking pallet into a fast and manoeuvrable transport device.

Suitable for drive-through access openings > 90 cm.



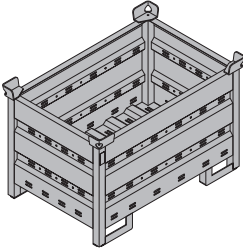
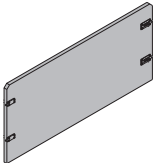
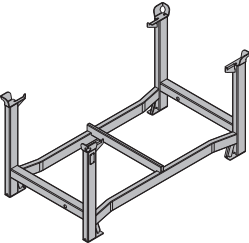
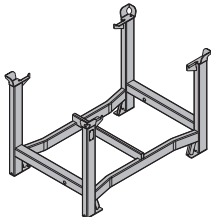
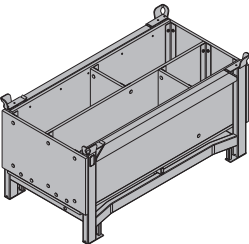
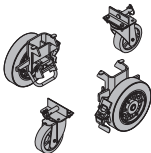
The Bolt-on caster set B can be mounted to the following multi-trip packaging items:

- Doka accessory box
- Doka stacking pallets



Follow the directions in the 'Bolt-on castor set B' Operating Instructions!

doka

	[kg]	Article n°		[kg]	Article n°
Doka multi-trip transport box 1.20x0.80m Doka-Mehrwegcontainer 1,20x0,80m Galvanised Height: 78 cm 	70.0	583011000			
Multi-trip transport box partition 0.80m Multi-trip transport box partition 1.20m Mehrwegcontainer Unterteilung Steel parts galvanised Timber parts varnished yellow 	3.7 5.5	583018000 583017000			
Doka stacking pallet 1.55x0.85m Doka-Stapelpalette 1,55x0,85m Galvanised Height: 77 cm 	41.0	586151000			
Doka stacking pallet 1.20x0.80m Doka-Stapelpalette 1,20x0,80m Galvanised Height: 77 cm 	38.0	583016000			
Doka accessory box Doka-Kleinteilebox Timber parts varnished yellow Steel parts galvanised Length: 154 cm Width: 83 cm Height: 77 cm 	106.4	583010000			
Bolt-on castor set B Anklemm-Radsatz B Painted blue 	33.6	586168000			

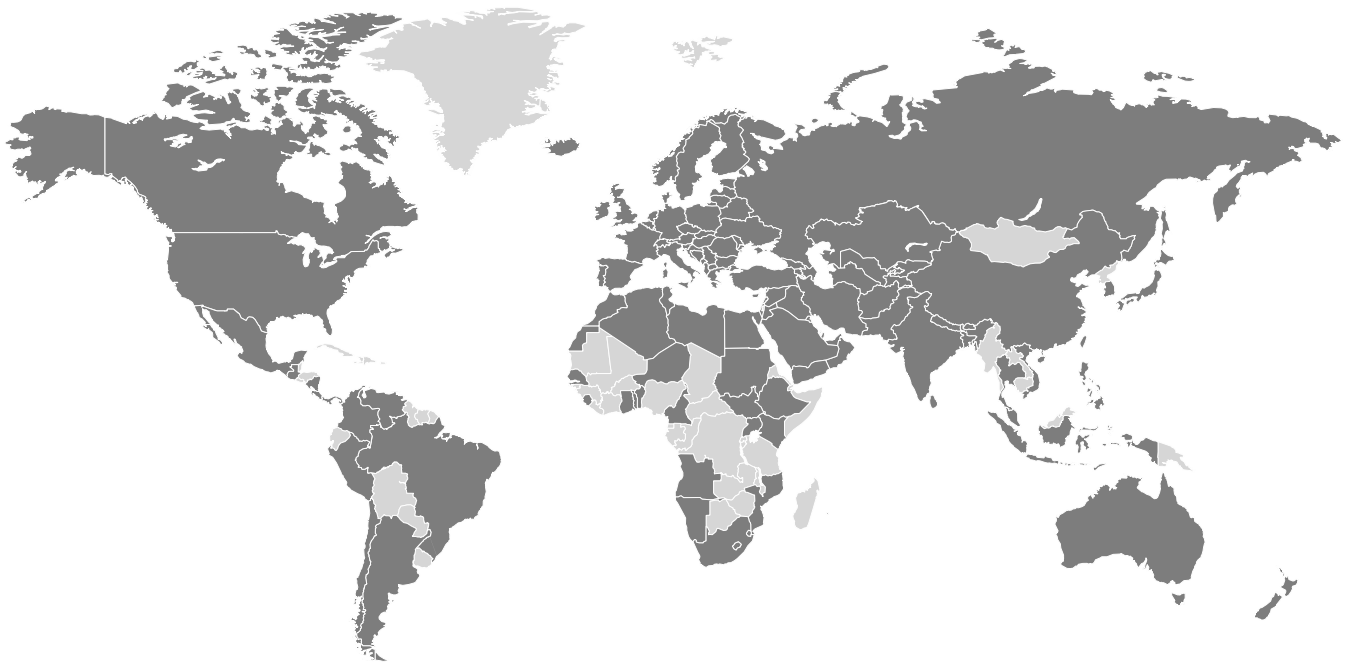
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