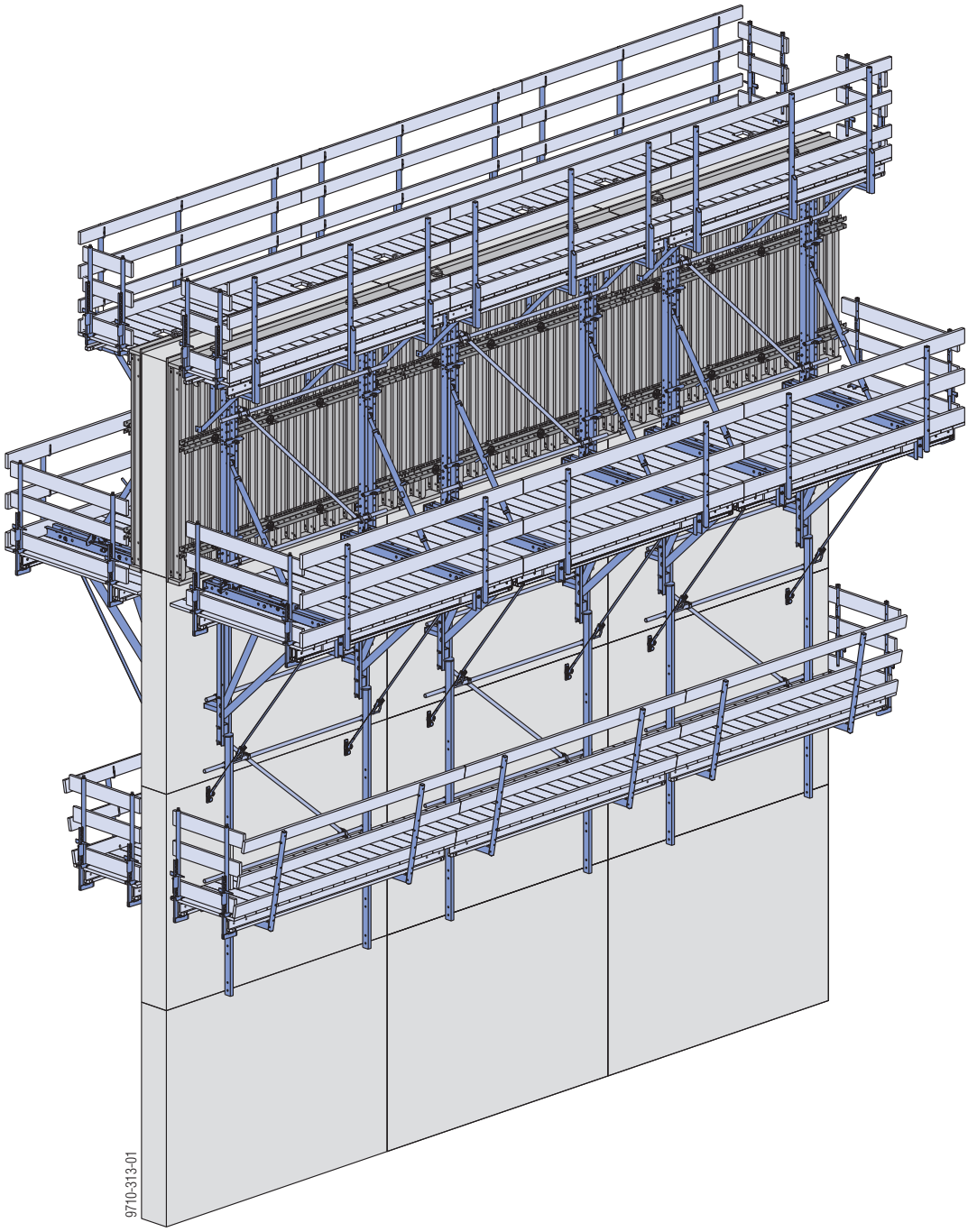
999710002 - 07/2023
en-GB

The Formwork Experts.

Climbing formwork MF240

User Information

Instructions for assembly and use (Method statement)



Contents

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 formwork 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 formwork (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 sideguard 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 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 kN) **are not design values** (e.g. F_{Rd} = 105 kN)**!**

- 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:

- γ_F = 1.5
- $\gamma_{M,\ timber}$ = 1.3
- $\gamma_{M,\ steel}$ = 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.

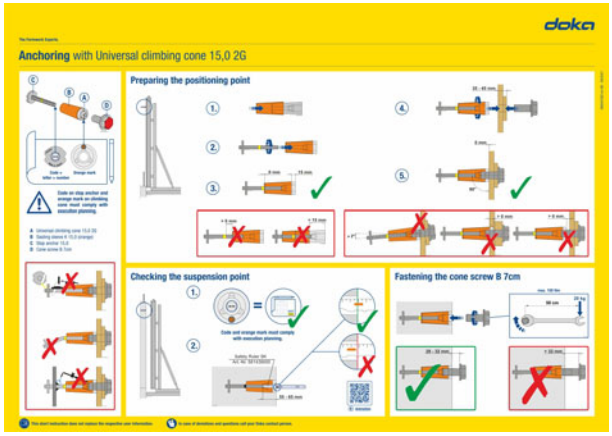
Short instructions increase knowledge of safe anchorage to the structure

Doka puts the quality and safety of all of its formwork products first.

The most important part of a climbing scaffold is its entirely safe anchorage to the structure.

The short instructions tell the site crew how to prepare the positioning points and suspension points correctly.

The short instructions are available from Doka and must be posted by the customer at readily visible points, for example in the area of the main traffic routes of the working platforms.



For more information, please contact your Doka technician.

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.

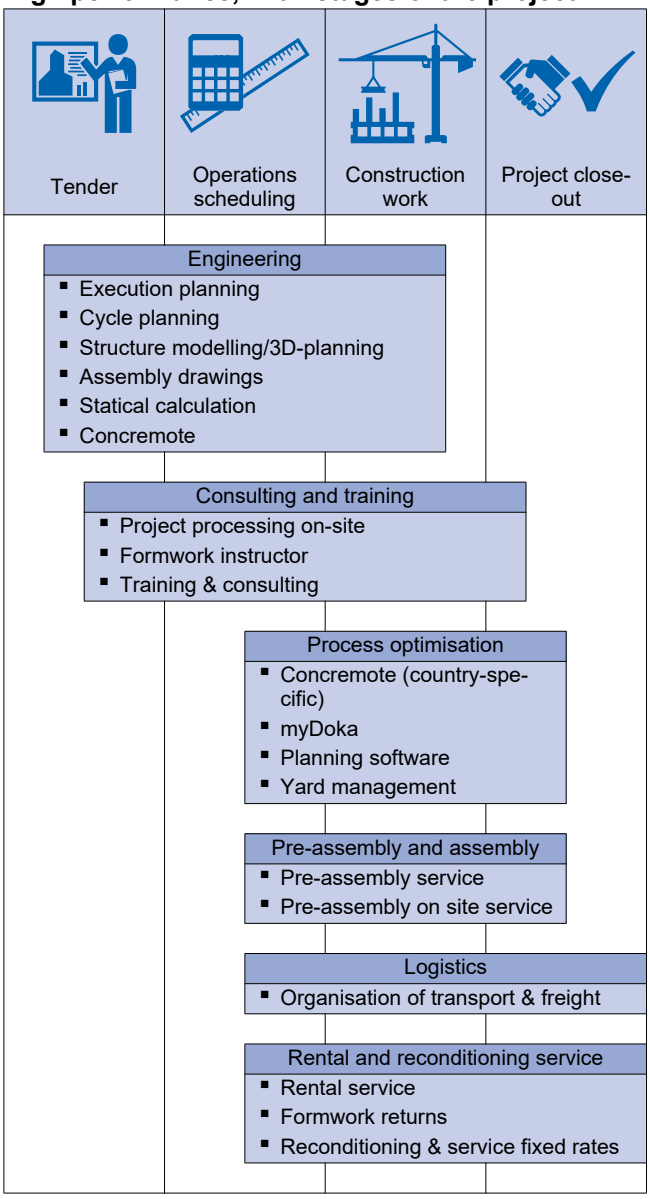
Just-in-time availability

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



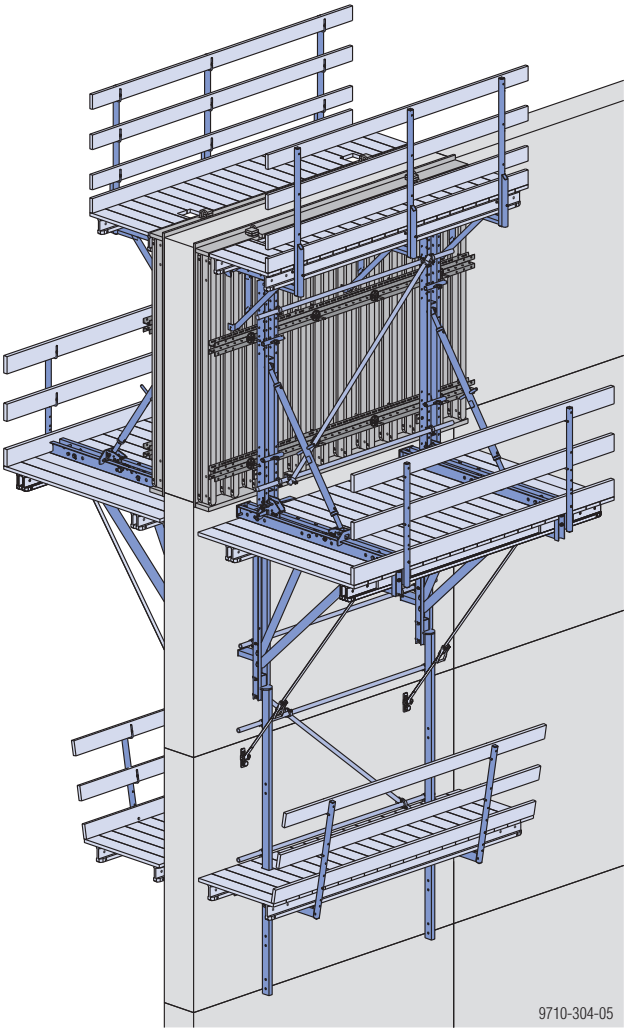
Digital Services
for higher productivity in construction

From planning to completion of construction - with our digital services we want to set the pace for boosting productivity in construction. Our digital portfolio includes solutions for planning, procuring and managing to performing on site. Learn more about our digital offer at doka.com/digital.

System description

Doka climbing formwork MF240

The crane-jumped formwork for structures of any shape and inclination.
Climbing formwork MF240 permits controlled, regular working cycles on all tall structures. It is extremely easy to set up, and can be tailored to meet a wide range of different requirements.



Modular system

- optimum adaptability to any project, with only a small number of different components

Easy to operate

- formwork can be set up and struck quickly with no need for a crane
- less crane time needed, as the formwork repositions quickly as a complete unit
- formwork can be adjusted in all directions both precisely and quickly

Handy, practical design

- high load-bearing capacity (50 kN per climbing bracket)
- formwork heights of up to 6.0 m
- formwork and platform angle-adjustable up to ±15°
- concrete loads transferred by way of form-ties
- suitable for timber-beam and framed formwork
- formwork can be rolled back by up to 75 cm
- cost-saving anchoring (small number of anchoring components)
- concrete projections with a cantilever of up to 25 cm can be overclimbed
- complete safety in all phases of the work
- climbing brackets can also be used for heavy-duty scaffold platforms

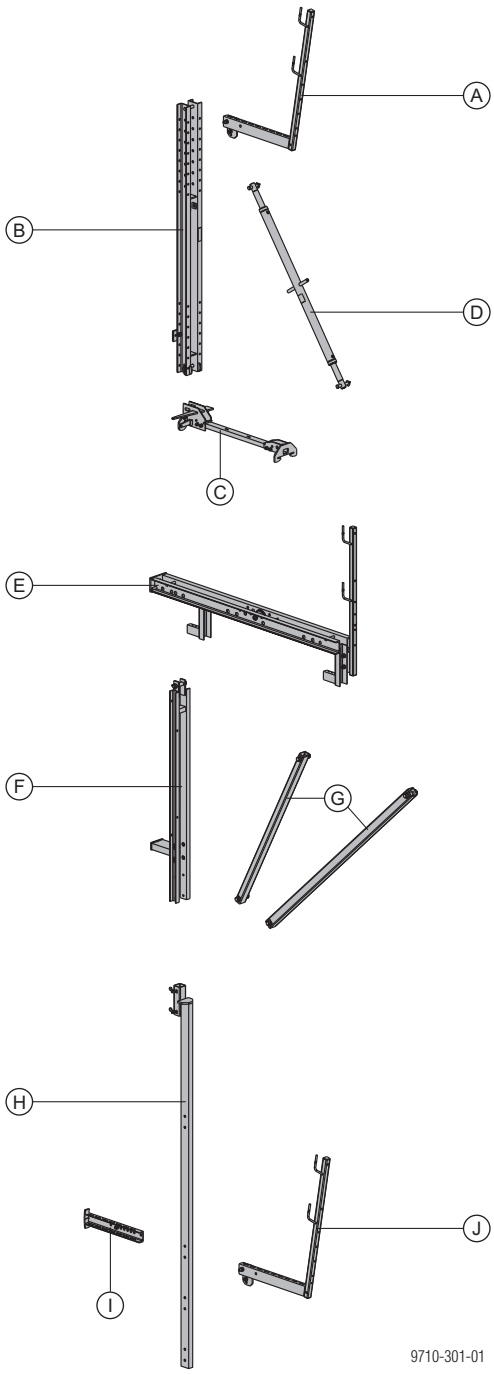
Safe workspaces and workplace access routes

- wide work-platforms (2.40 m)
- Ladder system XS can be integrated

Areas of use

Where formwork needs to be lifted and reset in several casting steps, e.g. on:
- high-rise residential and industrial structures
- bridge piers
- silos
- telecommunications and TV towers

System overview



A	Screw-on access bracket MF75 or the platform system for the formwork being used
B	Vertical waling MF 3.00m or Vertical waling MF 4.50m
C	Travelling gear MF
D	Plumbing spindle MF 3.00m or Plumbing spindle MF 4.50m
E	Horizontal profile MF with handrail post
F	Vertical profile MF80 or Vertical profile MF160
G	Pressure strut MF short + Pressure strut MF long or Pressure spindle MF240
H	Suspension profile MF
I	Distance profile MF
J	Screw-on access bracket MF75

Pouring platform

There are 2 options to choose from:

- **Screw-on access bracket MF75 (A)**
  - The Screw-on access bracket MF75 is mounted directly to the Vertical waling MF.
  - On sloping walls, the inclination of the platform can be adjusted with the Swivel plate MF.
- **Universal bracket 90 or Framax bracket 90**
  - Choose the relevant type of bracket, depending on the formwork system being used (timber-beam or framed formwork).

Travelling unit

- **Vertical waling MF 3.00m or 4.50m (B)**
  - For holding the formwork elements.
- **Travelling gear MF (C)**
  - The formwork elements can be retracted approx. 75 cm from the concrete. This leaves sufficient space for cleaning the formwork and carrying out reinforcement operations.
- **Plumbing spindle MF 3.00m or 4.50m (D)**
  - A threaded spindle for obtaining exact plumbing and aligning of the formwork element.

Working platform(Climbing bracket MF240)

- The **Horizontal profile MF with handrail post (E)** is used for constructing the main working platform, and carries the formwork element or panel.
- **Vertical profile (F)**
  - Vertical profile **MF80** for use on straight walls
  - Vertical profile **MF160** for use on inclined walls
- **Pressure struts MF or Pressure spindle MF240 (G)**
  - For bracing the horizontal profile.
  - Pressure strut MF short + Pressure strut MF long for use on straight walls
  - Pressure spindle MF240 for use on inclined walls

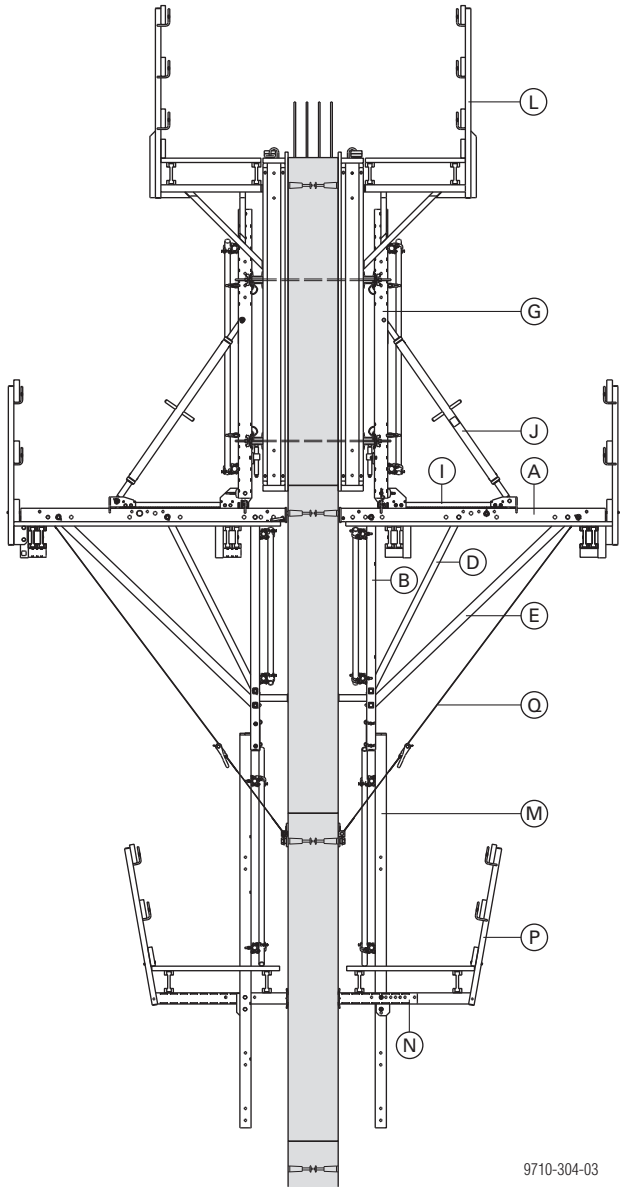
Suspended platform

Consisting of:

- **Suspension profile MF (H)**
- **Distance profile MF (I)**
- **Screw-on access bracket MF75 (J)**

Areas of use

Straight walls



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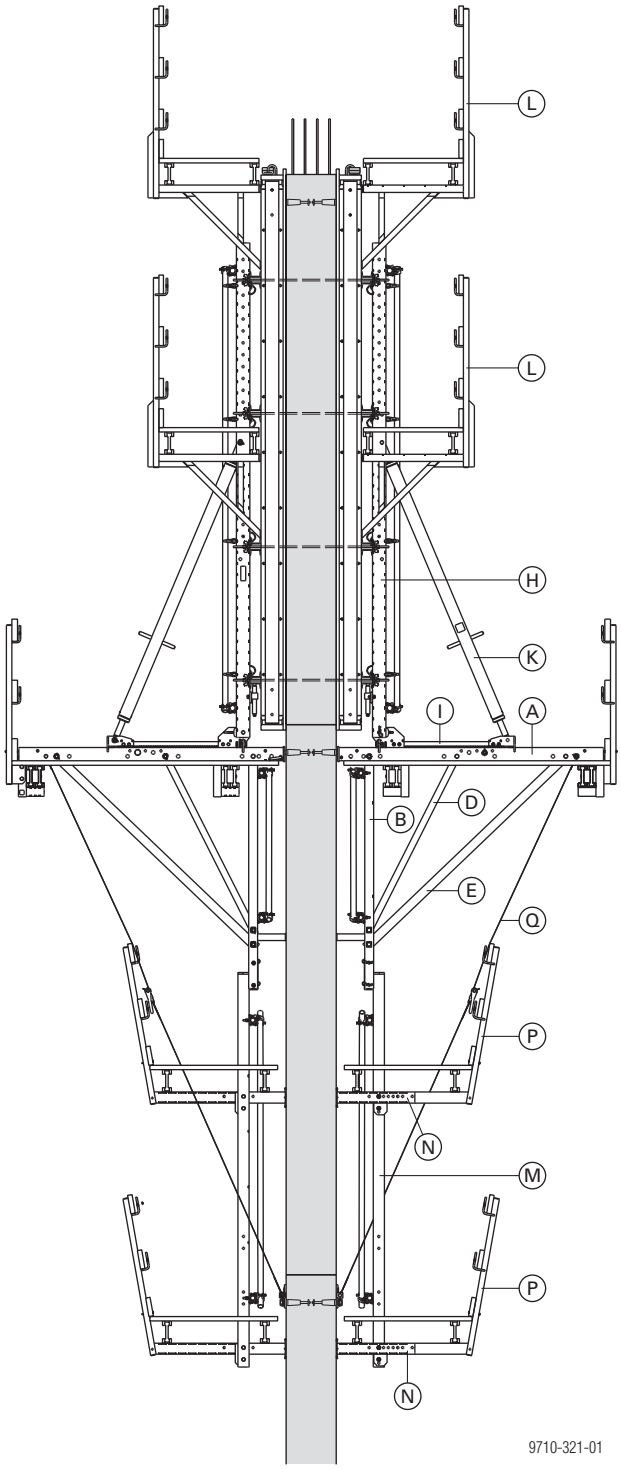
H	Vertical waling MF 4.50m
I	Travelling gear MF
J	Plumbing spindle MF 3.00m
K	Plumbing spindle MF 4.50m
L	Platform system for the formwork being used
M	Suspension profile MF
N	Distance profile MF
O	Swivel plate MF
P	Screw-on access bracket MF75
Q	Wind bracing MF/150F/K 6.00m

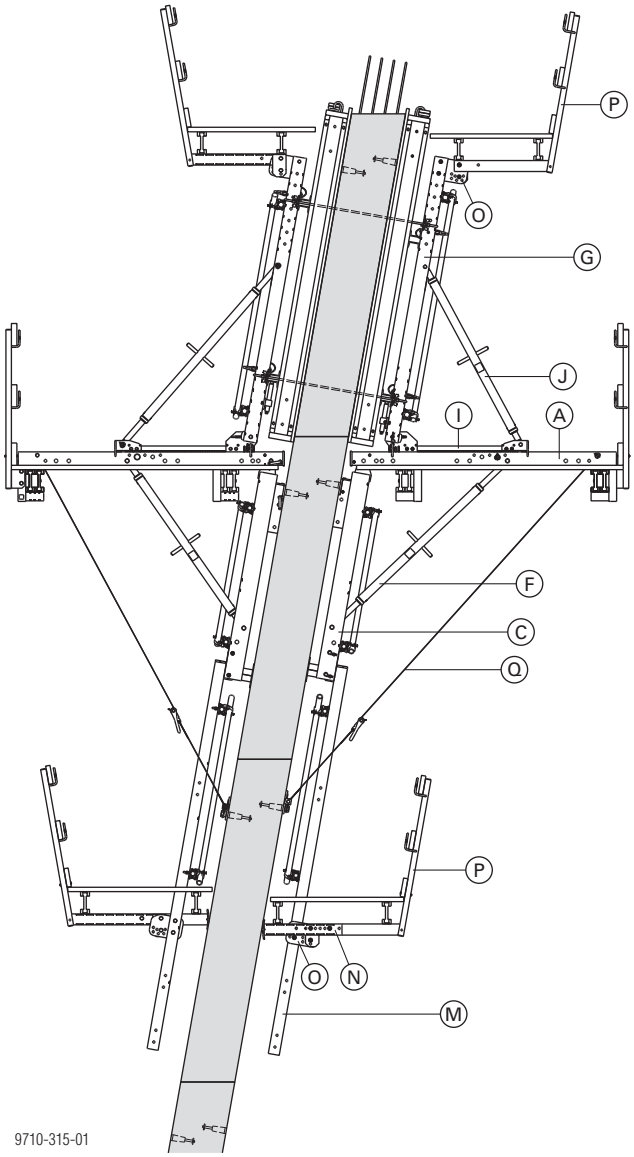
High, straight casting sections



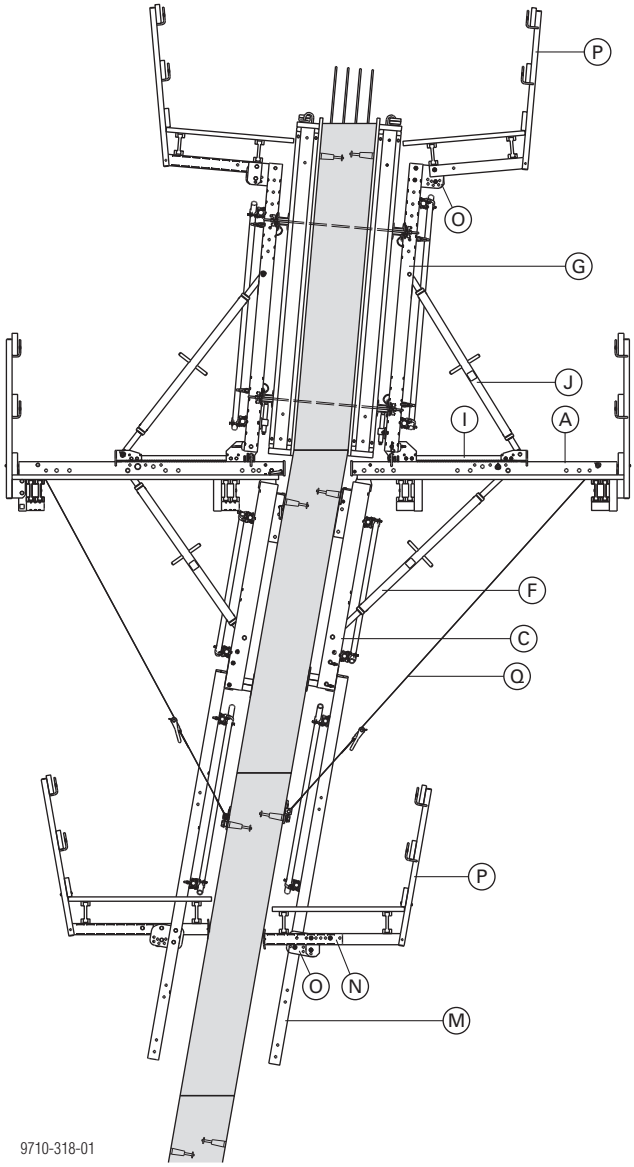
The model (length) of Vertical waling MF and Plumbing spindle MF that is selected will depend on the height of the casting section.

Height of casting section	
2.70 - 4.00 m	4.00 - 5.50 m
Vertical waling MF 3.00m with Plumbing spindle MF 3.00m	Vertical waling MF 4.50m with Plumbing spindle MF 4.50m

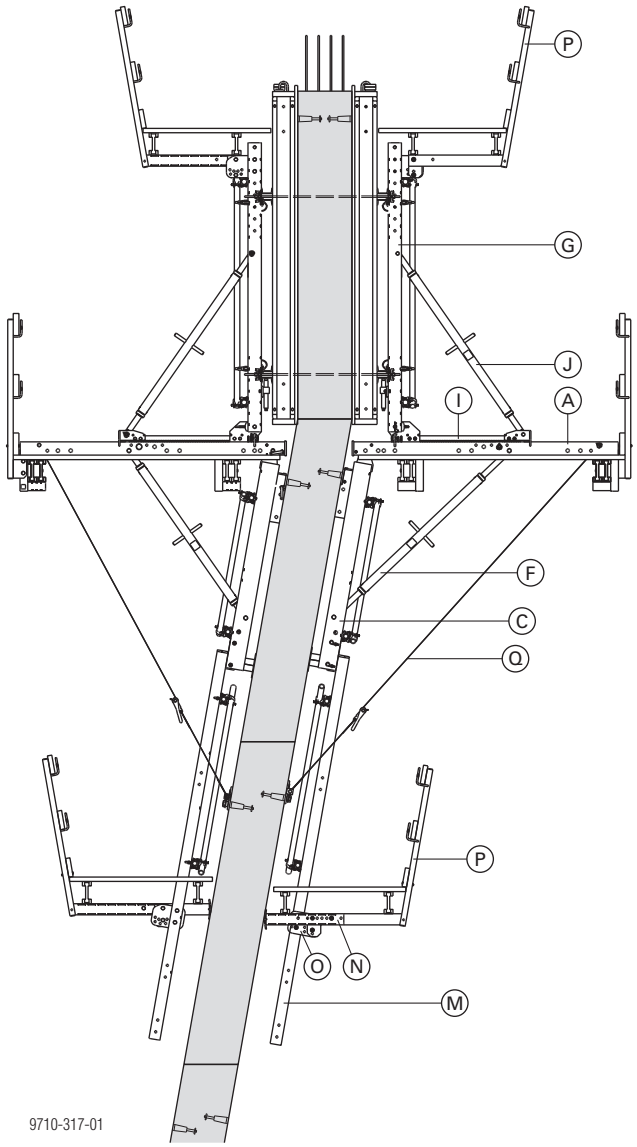
Walls with constant inclination



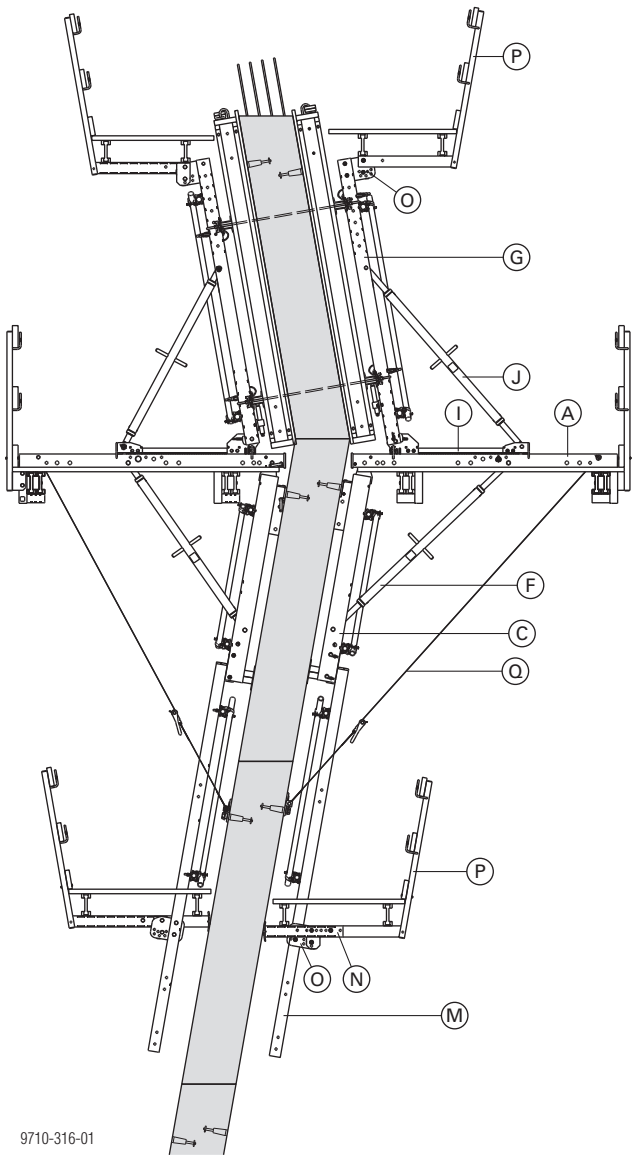
Varying wall inclination



Transition from inclined to straight wall



Transition from inclined wall to wall inclined in opposite direction



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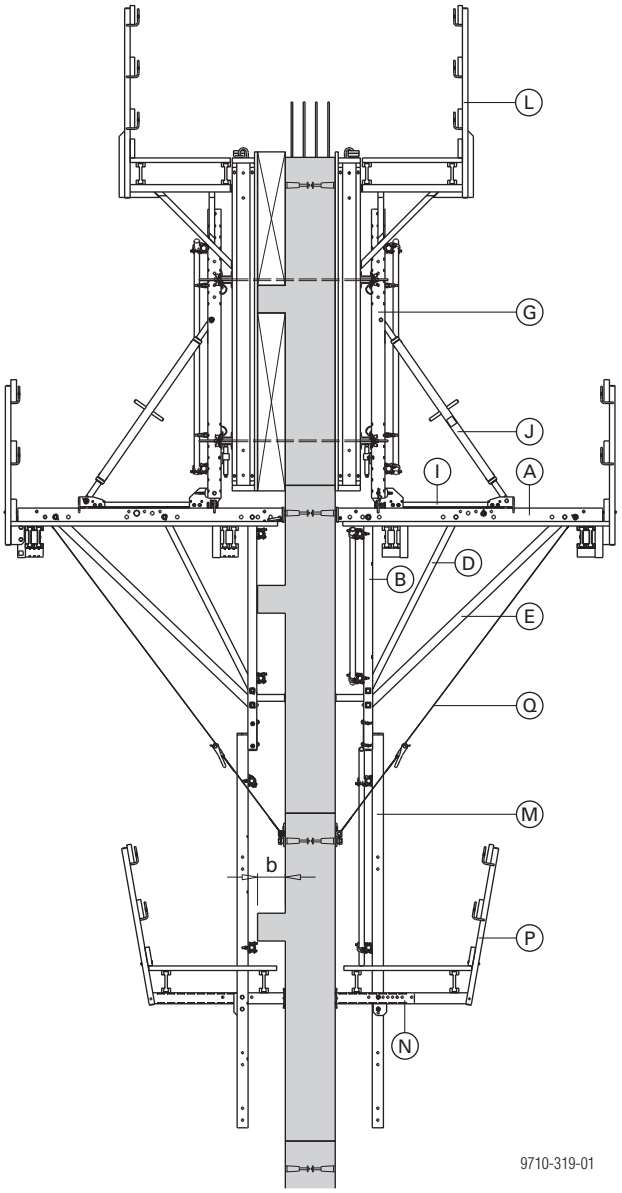
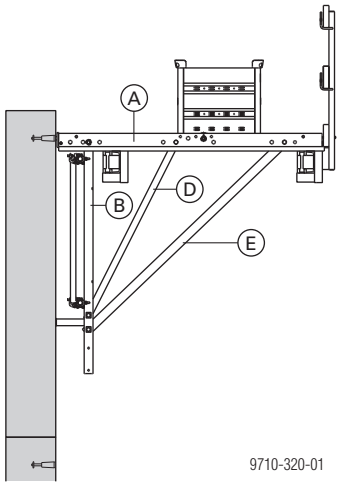
Q	Wind bracing MF/150F/K 6.00m

Overclimbing concrete projections with a cantilever of up to 25 cm



b ... max. 25 cm

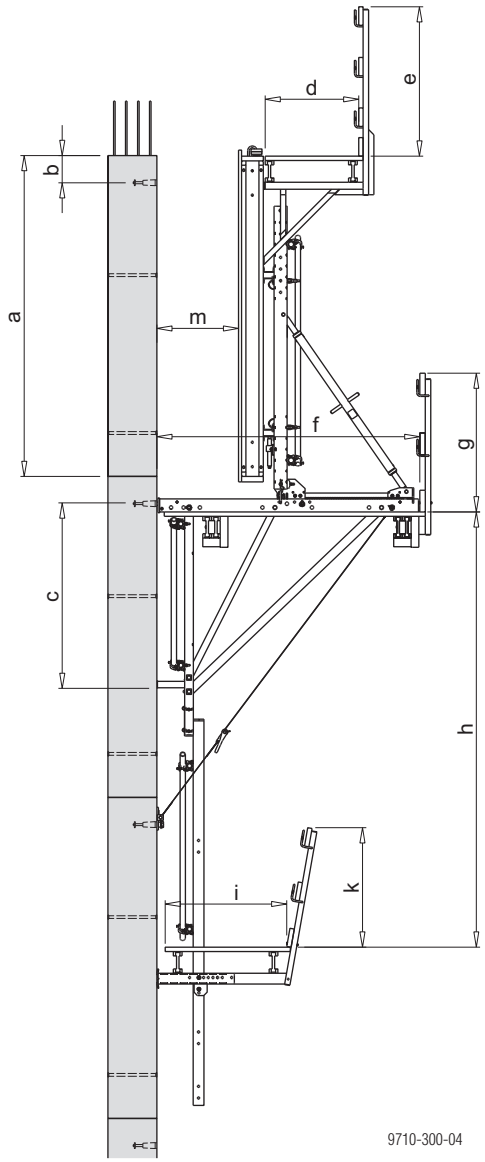
Climbing bracket MF240 used for heavy-duty scaffold platform



For details on the platform decking, see the section headed "Assembling the working platform".

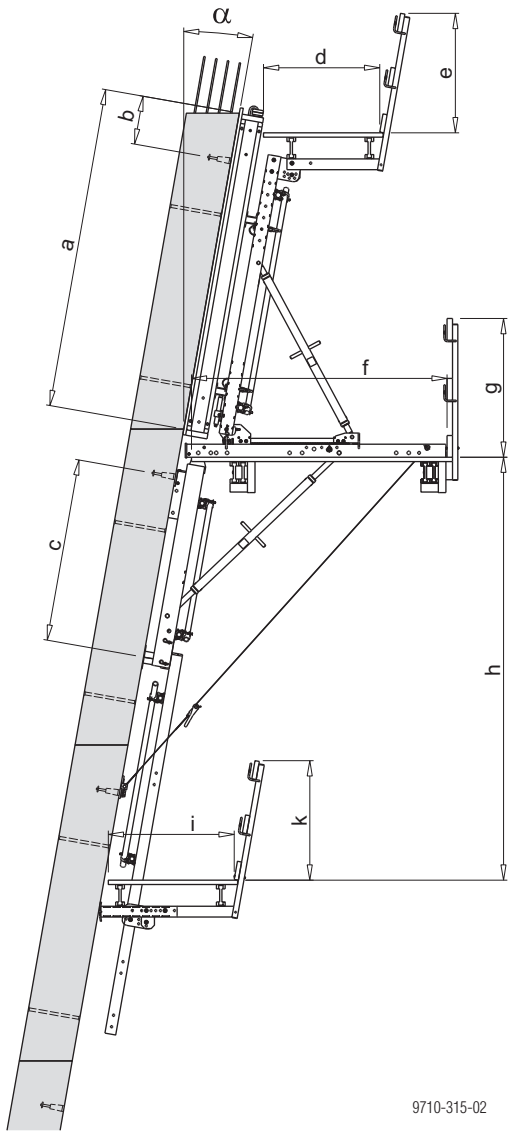
System dimensions

Straight walls



a ... Height of casting section: max. 6000 mm
b ... min. 250 mm
c ... 1660 mm
d ... 880 mm
e ... 1370 mm
f ... 2400 mm
g ... 1275 mm
h ... either 2740, 4000, 4500 or 5000 mm
i ... 1120 mm
k ... 1100 mm
m ... max. 750 mm

Inclined wall

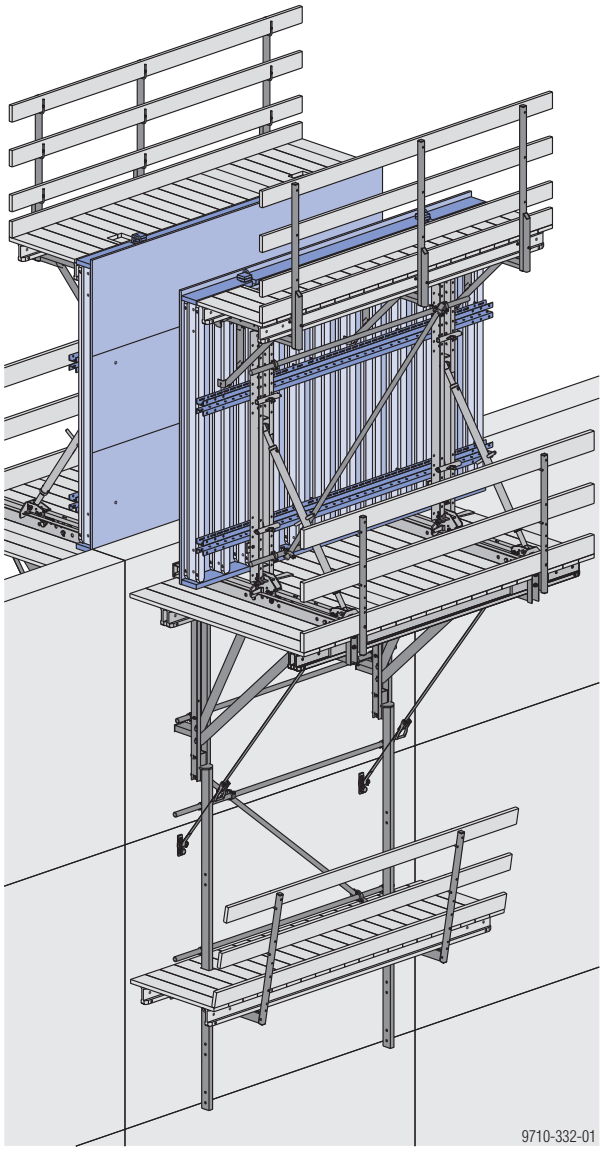


a ... Height of casting section: max. 6000 mm
b ... min. 600 mm
c ... 1660 mm
d ... 1050 mm
e ... 1100 mm
f ... 2400 mm
g ... 1275 mm
h ... either 2630, 3890, 4390 or 4890 mm (where α = 10°)
i ... 1150 mm
k ... 1100 mm
α ... max. 15°

Possible formwork systems

Timber-beam formwork

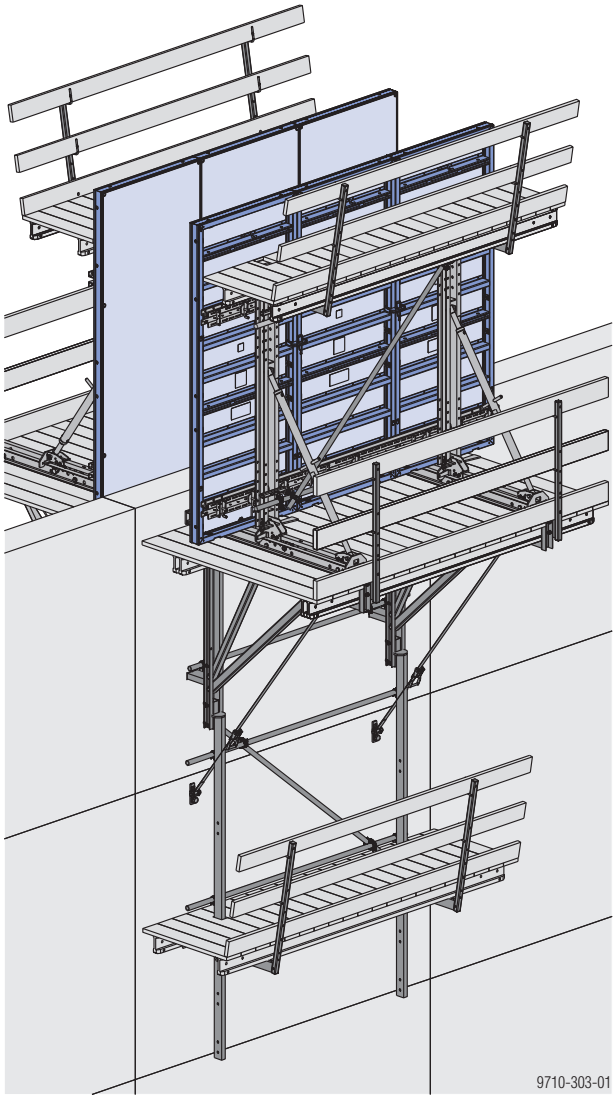
e.g. Large-area formwork Top 50



For more information, see the 'Timber-beam formwork Top 50' User Information booklet.

Framed formwork

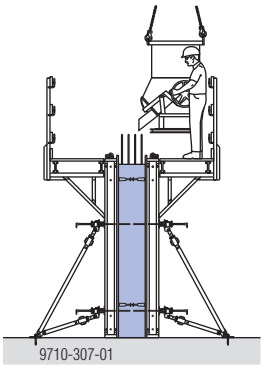
e.g. framed formwork Framax Xlife



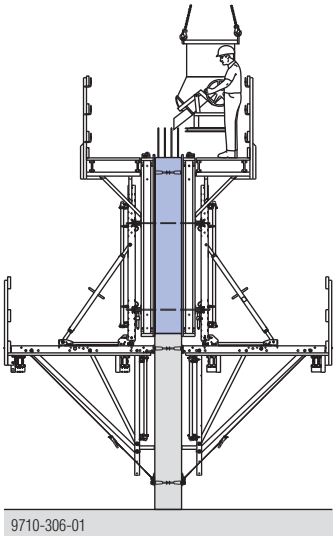
For more information, see the 'Framed formwork Framax Xlife' User Information booklet.

Schematic workflow of climbing phases

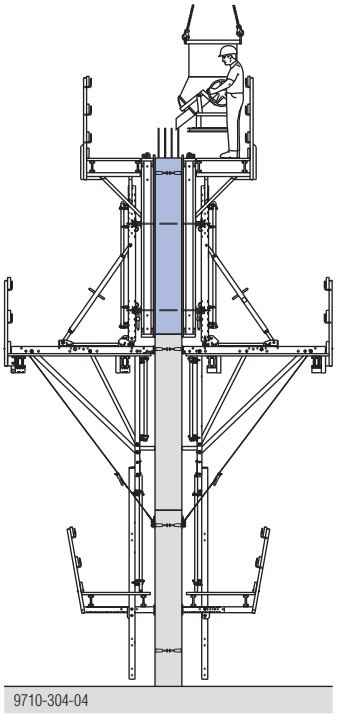
Start-up phases



The 1st casting section is poured without a climbing scaffold.

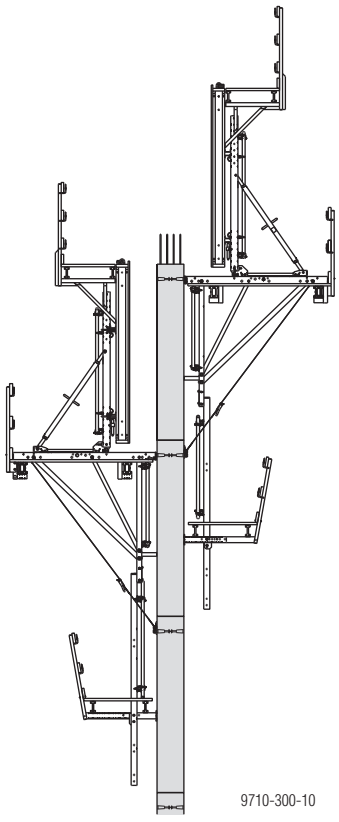


The 2nd casting section (and all further sections) are poured using the climbing scaffold.

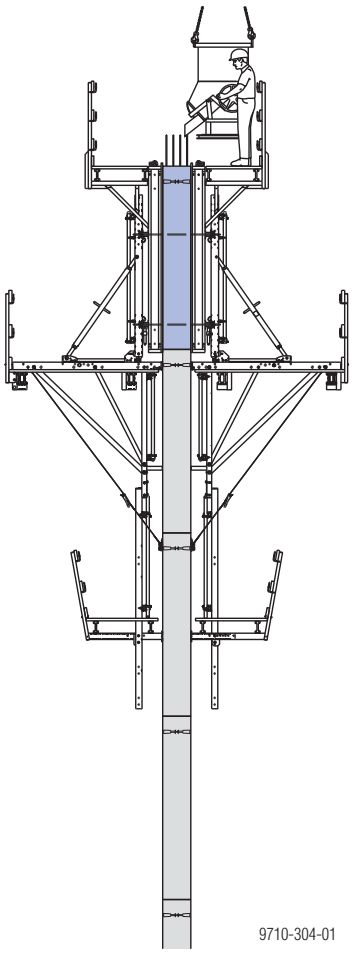


The suspended platforms are mounted, and then the 3rd section is poured.

Typical phases



The climbing scaffold is raised to the next casting section.



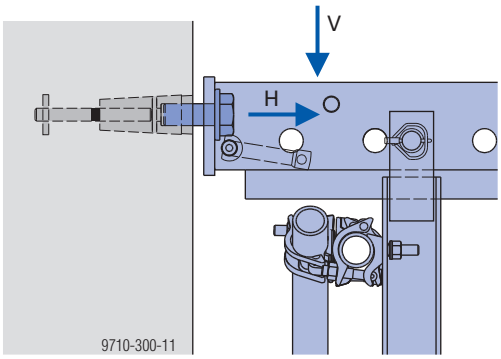
The next casting section is poured.

Structural design

Loading data

Anchoring on the structure

Imposed loads



V ... permitted vertical load: 50 kN
H ... permitted horizontal load: 75 kN

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:

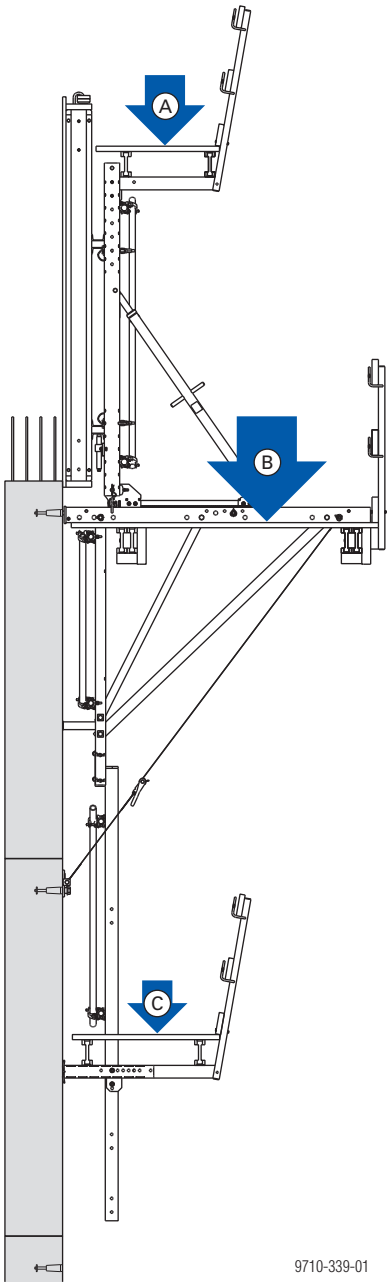
- load actually occurring
- length of the stop anchor
- reinforcement / extra reinforcement steel
- distance from edge

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!

Service loads



A	150 kg/m²
B	300 kg/m²
C	75 kg/m²

Structural design

NOTICE

The structural design data given here apply only to standard assignments on straight walls.

For assignments on e.g. inclined walls, separate statical verification must be performed.

CAUTION

➤ If wind speeds > 72 km/h are likely, and when work finishes for the day or before prolonged work-breaks, always take extra precautions to fix the formwork in place.

Suitable precautions:
- set up the opposing formwork
- move the travelling unit forward (together with the formwork) until it meets the top of the previously cast section, and knock the fixing-wedges into place

Wind pressure

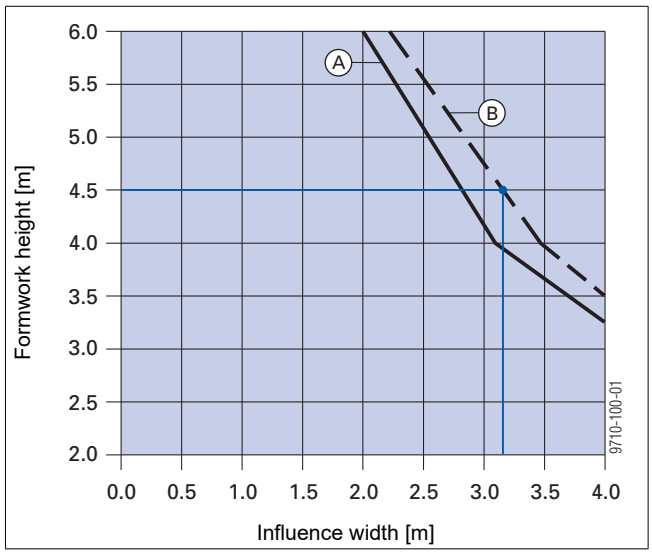
1) Determine the wind pressure as a function of the wind speed, the building environment and the structure height.
2) Determine Curve **(A)** or **(B)** from the following table.

Curve	Wind pressure [kN/m²] $w_e = c_{p,net} \times q_{(Ze)}$	Example:
(A)	1.69	Where $c_{p,net}$ = 1,3: Permissible wind speed = 164 km/h
(B)	1.43	Where $c_{p,net}$ = 1,3: Permissible wind speed = 151 km/h

Note:
Intermediate values may be linearly interpolated.

Follow the directions in the Calculation Guide 'Wind loads to the Eurocodes' when determining the wind pressure, or consult your Doka technician!

Influence width of climbing brackets

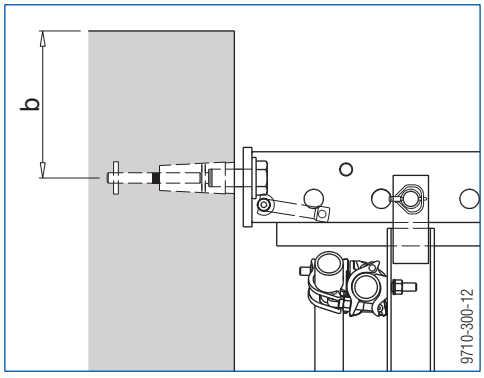


Example

- Basic data:
  - Curve **(B)** (wind pressure = 1.43 kN/m²)
  - formwork height: 4.50 m
- Influence width: 3.20 m

where universal climbing cone is more than 250 mm below top of concrete

➤ When determining the influence width, add the difference (b – 250 mm) to the actual formwork height.



b ... min. 250 mm

Example

- Basic data:
  - Curve **(B)** (wind pressure = 1.43 kN/m²)
  - Formwork height: 4.50 m
  - Distance 'b' from edge: 0.5 m
- Formwork height for determining the influence width: 4.50 m + (0.5 m - 0.25 m) = 4.75 m
  Influence width: 3.00 m

Dimensioning the sideguard components to EN 12811

Max. spacing of the handrail-post uprights

Edge-protection component		Peak velocity pressure $q_{(Ze)}$ [kN/m²]		
		≤ 1.1	≤ 1.3	≤ 1.7
Guardrail boards				
Width 'w'	Height 'h'			
2.4 cm	15 cm	1.9 m	1.9 m	1.9 m
3 cm	15 cm	2.7 m	2.7 m	2.5 m
4 cm	15 cm	3.6 m	3.6 m	3.3 m
3 cm	20 cm	2.9 m	2.8 m	2.5 m
4 cm	20 cm	3.9 m	3.7 m	3.3 m
5 cm	20 cm	4.9 m	4.7 m	4.1 m
Scaffold tube 48.3mm		5.0 m	5.0 m	5.0 m

Max. cantilever of sideguards

Edge-protection component		Peak velocity pressure $q_{(Ze)}$ [kN/m²] ≤ 1.7
Guardrail boards		
Width 'w'	Height 'h'	
2.4 cm	15 cm	0.5 m
3 cm	15 cm	0.8 m
4 cm	15 cm	1.4 m
3 cm	20 cm	1.0 m
4 cm	20 cm	1.6 m
5 cm	20 cm	2.0 m
Scaffold tube 48.3mm		1.3 m

Anchoring on the structure

Positioning point and suspension point

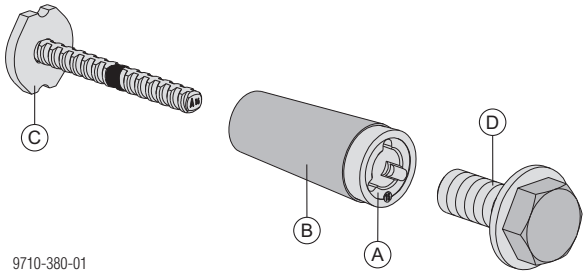
NOTICE

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 (lost anchoring component)

C Stop anchor (lost anchoring component)

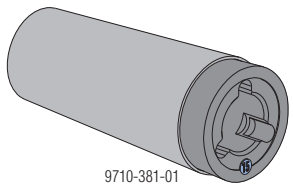
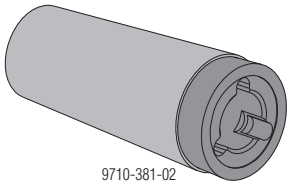
D Cone screw M30 SW50 7cm

- **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**
  - Lost anchoring component for anchoring the universal climbing cone (and thus the climbing unit) 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 climbing unit.

NOTICE

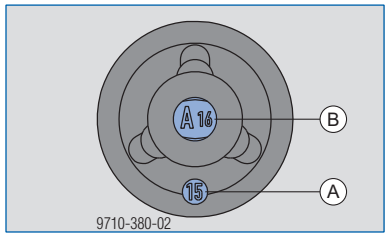
- Use the Cone screw M30 SW50 7cm (head of screw is green) for the positioning point and the suspension point!
- Cone screws B 7cm (head of screw is red) can be used as an alternative.

Universal climbing cones 15.0

Universal climbing cone 15.0 **2G**	Universal climbing cone 15.0
	
9710-381-01	9710-381-02

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



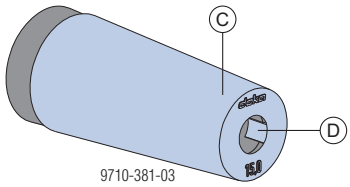
A Orange mark on end face

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**.

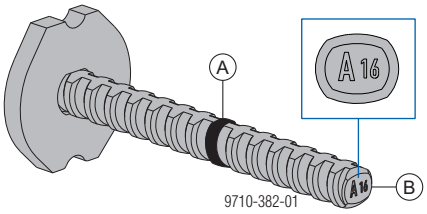


C Sealing sleeve K 15.0 (orange)

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

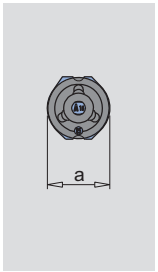


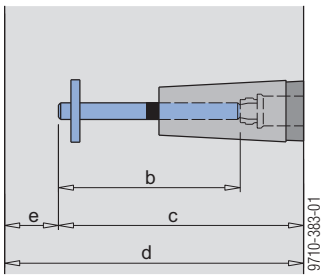
A Mark for screw-in depth
B Code for stop-anchor type

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 and A21





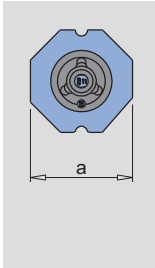
A	Stop anchor 15.0
	a ... size of stop-anchor plate: 55 mm
16	b ... tie-rod length: 16.0 cm

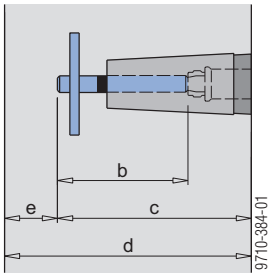
c ... installation depth: 21.5 cm
d ... minimum wall thickness: 23.5 cm (where the concrete cover is 2 cm)
d ... minimum wall thickness: 24.5 cm (where the concrete cover is 3 cm)
e ... concrete cover

A	Stop anchor 15.0
	a ... size of stop-anchor plate: 55 mm
21	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	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

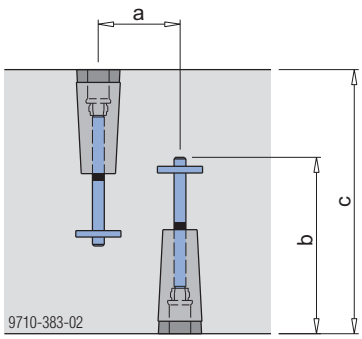
The short **Stop anchor 15.0 B11** has a much lower load-bearing capacity than the Stop anchor 15.0 A16.

- ➤ 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

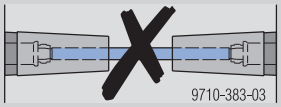


a ... min. 100 mm, if c < 2 x b
b ... installation depth
c ... wall thickness

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.

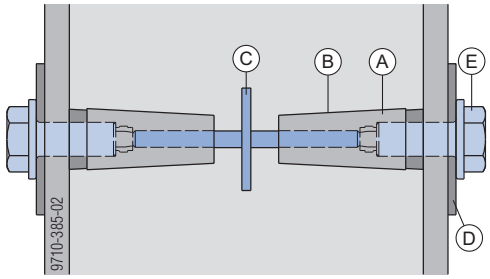
➤ Do not, under any circumstances, connect climbing cones with a tie rod.



Anchor points with no offset

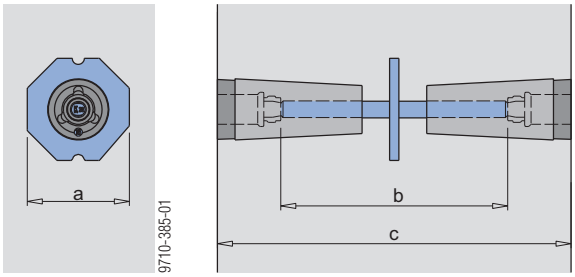
Anchor points with no offset are prepared using the **Stop anchor double-ended 15.0 K**.

Positioning point



A	Universal climbing cone 15.0 2G
B	Sealing sleeve K 15.0 (lost anchoring component)
C	Stop anchor double-ended 15.0 K.. (lost anchoring component)
D	Packing plate (e.g. Dokaplex 15 mm)
E	Cone screw M30 SW50 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

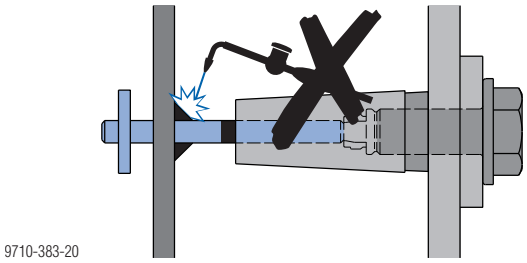
In walls that are less than 40 cm thick, the Stop anchor double-ended 15.0 K.. has a much lower load-bearing capacity than the Stop anchor 15.0 A16.

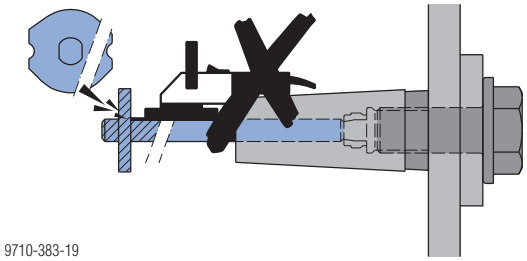
➤ Revised static calculation is required here.

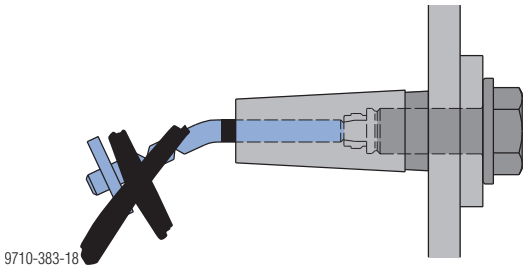
➤ Where high tensile forces occur, locate extra reinforcement steel as statically required.

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

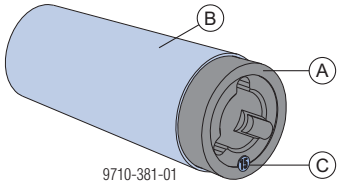

9710-383-19


9710-383-18

Preparing the positioning point

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

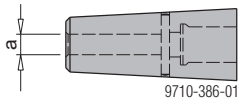
The coloured mark on the universal climbing cone and the colour of the sealing sleeve must be the same.



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.



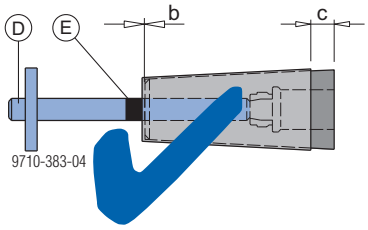
9710-386-01

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

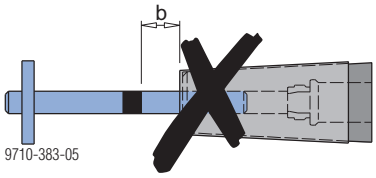
➤ Always screw the stop anchor into the universal climbing cone until it fully engages (up to the depth mark).
Not screwing the stop anchor fully into the cone may lead to reduced load-bearing capacity and failure of the suspension point – resulting in possible injury and/or damage.



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

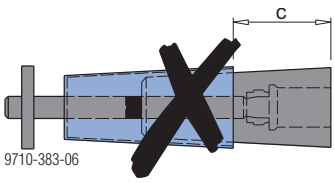
D Stop anchor 15.0 (lost anchoring component)
E Depth mark

- 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.

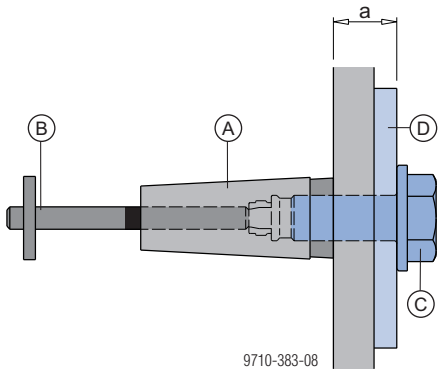


c ... > 15 mm not permitted

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.

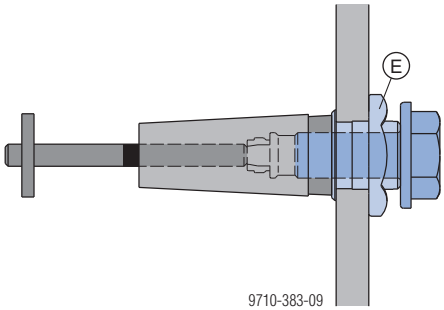


a ... 35 - 45 mm

A Universal climbing cone 15.0 2G
B Stop anchor 15.0
C Cone screw M30 SW50 7cm
D Packing plate

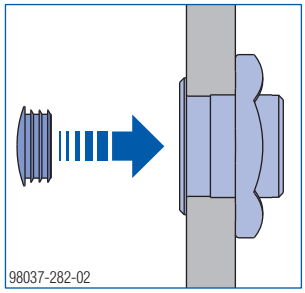
The Form-ply protector 32mm protects the form-ply from damage around the positioning point. This is a particular advantage for formwork with high numbers of repeat uses.

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.



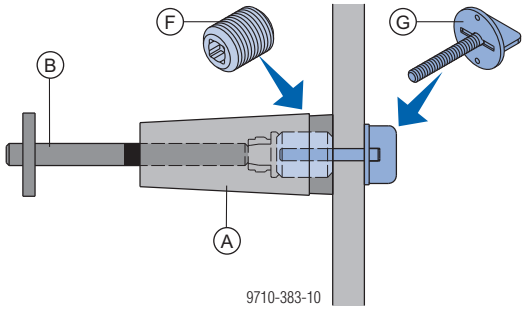
E Form-ply protector 32mm (width across flats 70 mm)

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.



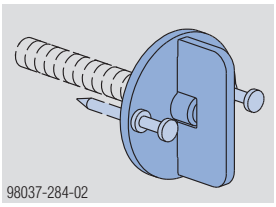
A Universal climbing cone 15.0 2G
B Stop anchor 15.0
F Socket connector M30 of the Positioning clamp M30
G M8 wing bolt of the Positioning clamp M30

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.

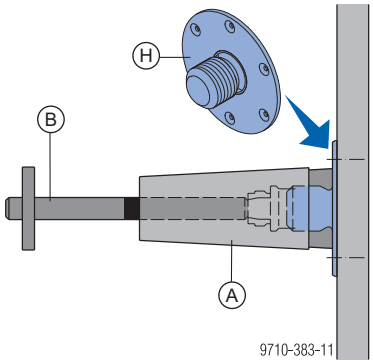


➤ Screw a Socket connector M30 all the way into the universal climbing cone and tighten it.

➤ Screw the prepared positioning point onto the M8 wing bolt (make sure that it seals against the formwork).

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 disc M30

NOTICE

It is not permitted to use the Positioning disc 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:

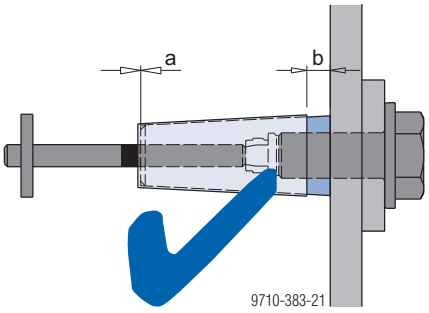
➤ Fix the Positioning disc M30 to the form-ply using 2.8x60 nails (position as shown in shop drawing / assembly drawing).

➤ Screw the prepared positioning point onto the Positioning disc M30 and tighten it.

Check of the positioning point

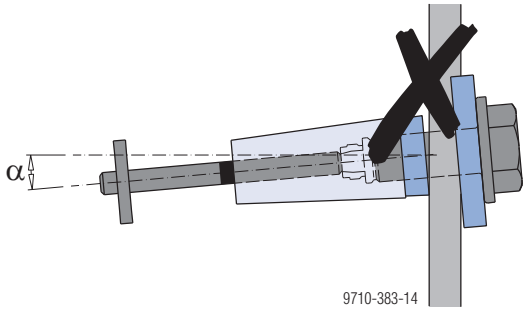
➤ Before pouring, check all positioning points and suspension points again.

- 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.



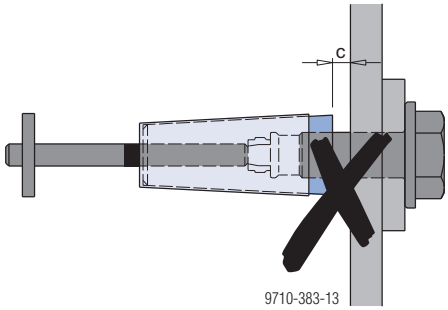
a ... 0 mm
b ... 15 mm

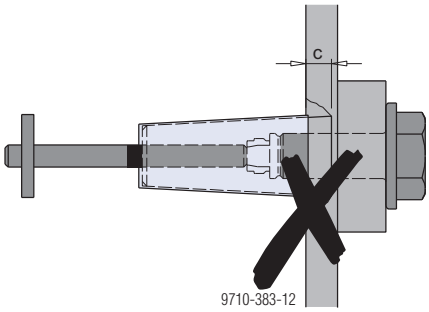
- The axis of the universal climbing cone must be at right-angles to the surface of the concrete – maximum angle of deviation: 2°.



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.

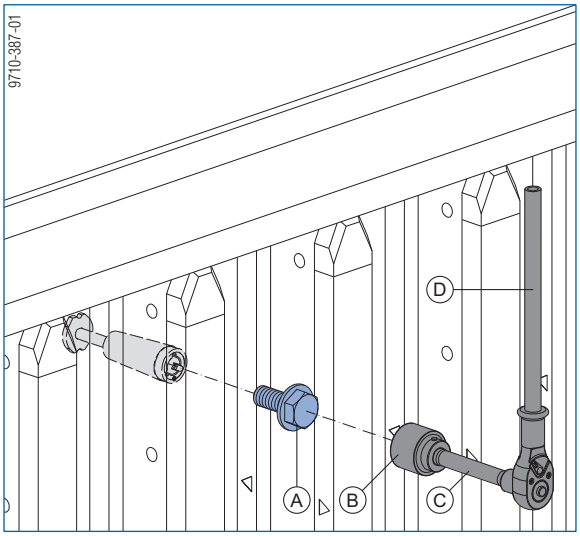
These measures prevent the anchors from working loose during pouring and vibration.

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 M30 SW50 7cm:

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

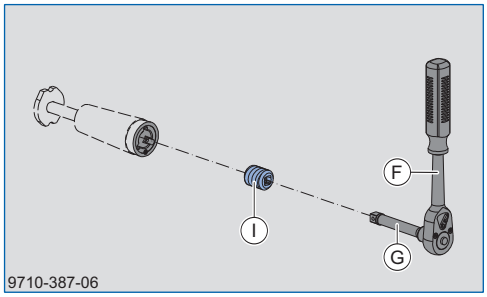


A	Cone screw M30 SW50 7cm
B	Box nut 50 3/4"
C	Extension 20cm 3/4"
D	Reversible ratchet 3/4"

Positioning point with Positioning clamp M30:

➤ Remove the M8 wing bolt before stripping.

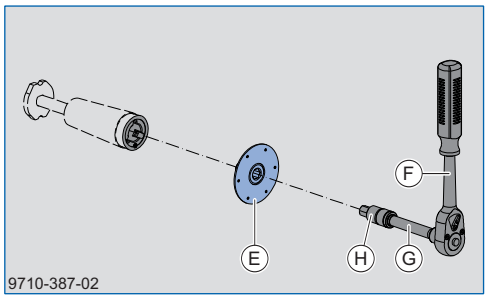
➤ Remove the Socket connector M30 after stripping.



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"

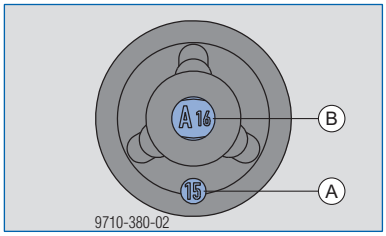
Preparing the suspension point

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.

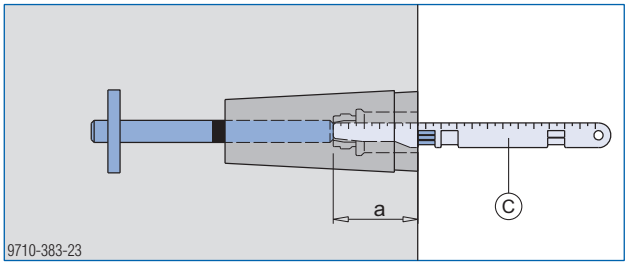
➤ Check the coloured mark on the Universal climbing cone and the code on the stop anchor.



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/mm², however.

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

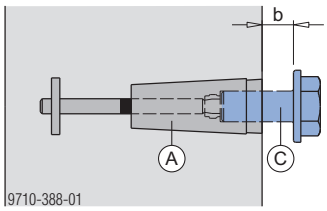
Engaging the climbing bracket

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!

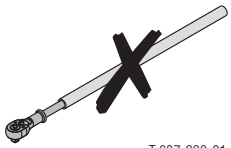
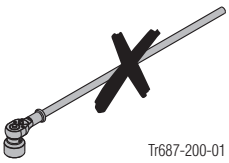


A Universal climbing cone 15.0 2G
C Cone screw M30 SW50 7cm

WARNING

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

➤ The only tool to be used for screwing in and tightening the Cone screw M30 SW50 7cm in the universal climbing cone is the Reversible ratchet 3/4".

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

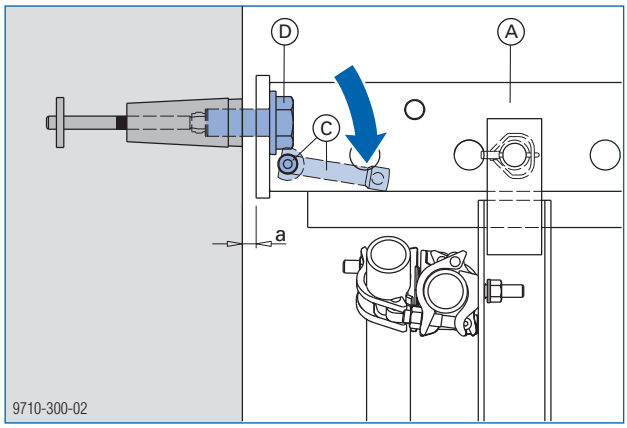
Straight wall (Vertical profile MF80)

➤ Lower the climbing bracket into the prepared suspension point by crane.

➤ Push the fastening pin into the climbing bracket, at 90° to the platform decking, until it fully engages.

➤ Tilt the fastening pin down onto the platform decking. The climbing bracket is now secured against accidental lift-out.

The fastening pin must be in the horizontal!



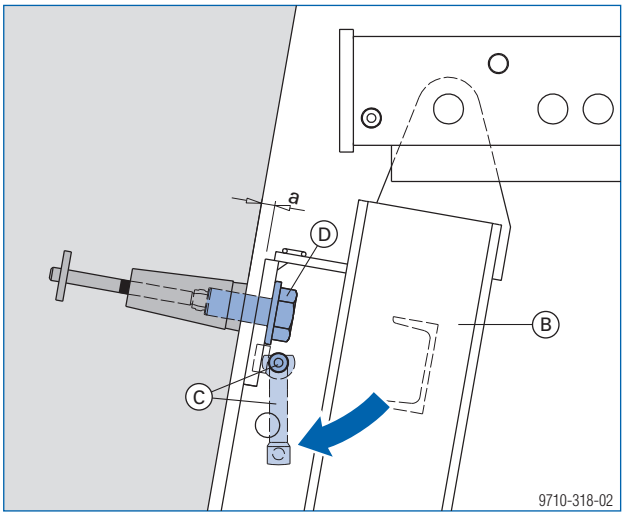
a ... play: approx. 1.5 cm

A Horizontal profile MF of the climbing bracket
C Fastening pin
D Cone screw M30 SW50 7cm

Inclined wall (Vertical profile MF160)

➤ Lower the climbing bracket into the prepared suspension point by crane.
➤ Push the fastening pin into the Vertical profile MF160, at 90° to this profile, until it fully engages.
➤ Tilt the fastening pin downward.
The climbing bracket is now secured against accidental lift-out.

The fastening pin must be pointing vertically downward!

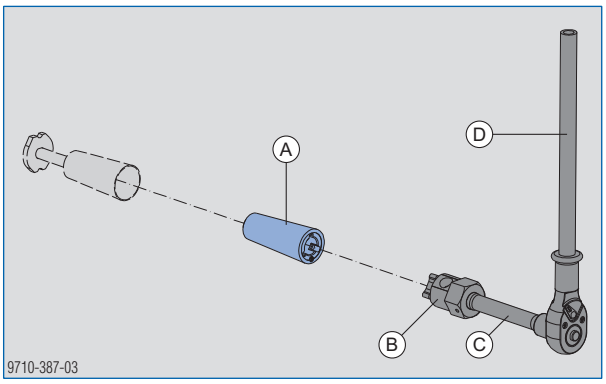


a ... play: approx. 1.5 cm

B Vertical profile MF160 of the climbing bracket
C Fastening pin
D Cone screw M30 SW50 7cm

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"

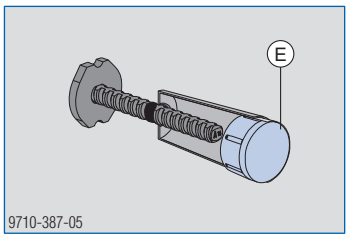
Sealing the suspension point

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

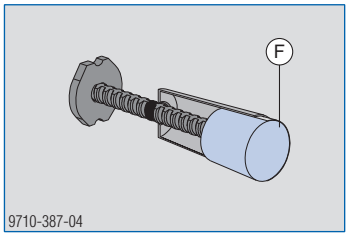
➤ Push the fair-faced concrete plug into the hole of the suspension point.



E 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.

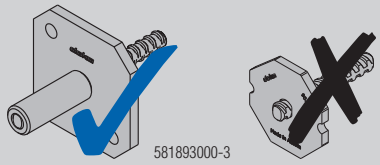
Other possible anchorages

Thin walls

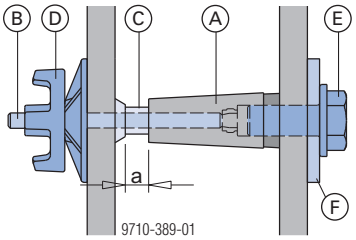
Wall thicknesses of 15 to 16 cm are prepared using the **Wall anchor 15.0 15cm**.

Risk of confusion!

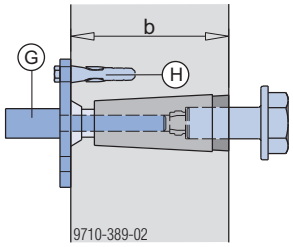
➤ NEVER use Stop anchors 15.0 for this application.



Positioning point



Suspension point



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

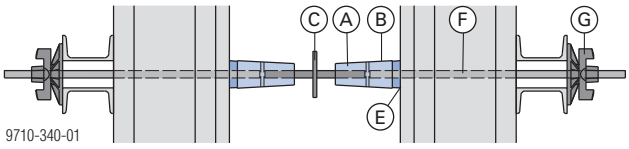
A	Universal climbing cone 15.0 2G
B	Tie rod 15.0mm
C	Universal cone 22mm + Plastic tube 22mm
D	Super plate 15.0
E	Cone screw M30 SW50 7cm
F	Packing plate (e.g. Dokaplex 15 mm)
G	Wall anchor 15.0 15cm
H	Hexagon timber screw 10x50 + dowel Ø12

Suspension point for fair-faced concrete

The Fair-faced concrete positioning cone MF 15.0 is particularly suitable for fair-faced concrete projects where the form-tie points and suspension points are required to make a uniform hole-pattern.
If it is intended to use this type of suspension point, a Doka technician must be contacted before the project starts.

Positioning point

The Fair-faced concrete positioning cone is used as a 'rod connector' for tying the wall formwork.

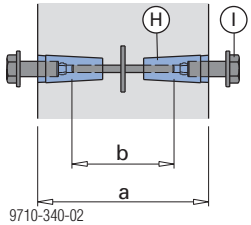


A	Fair-faced concrete positioning cone MF 15.0
B	Sealing sleeve K 15.0
C	Stop anchor double-ended 15.0
E	Reinforcement
E	Sealing disc 30/53
F	Tie rod 15.0mm
G	Super plate 15.0

Suspension point

Preparing the suspension point

➤ Remove the Fair-faced concrete positioning cone MF 15.0 and replace it with a Universal climbing cone 15.0 and a Cone screw M30 SW50 7cm.



a ... 30 - 71 cm
b ... order length = wall thickness a - 13.4 cm

H	Universal climbing cone 15.0 2G
I	Cone screw M30 SW50 7cm

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

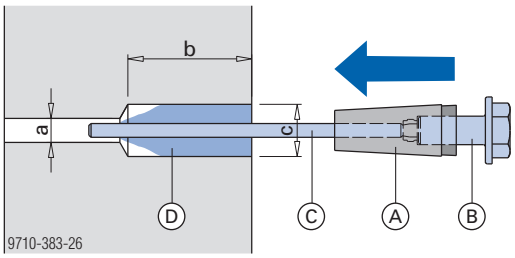
Comply with the manufacturer's specifications for the ready-mix mortar!

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 M30 SW50 7cm into the universal climbing cone.

The cone screw M30 SW50 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

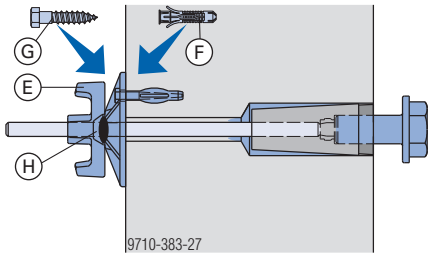
A	Universal climbing cone 15.0 2G
B	Cone screw M30 SW50 7cm
C	Tie rod 15.0mm
D	Ready-mix mortar

➤ 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.

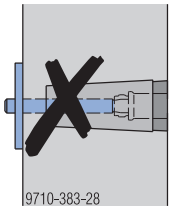
➤ On the other side of the concrete wall, screw on the super plate (now welded together) and secure it with a screw and dowel so that it cannot be unscrewed.



E	Welded-together Super plate 15.0
F	Dowel Ø12
G	Hexagon timber 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.

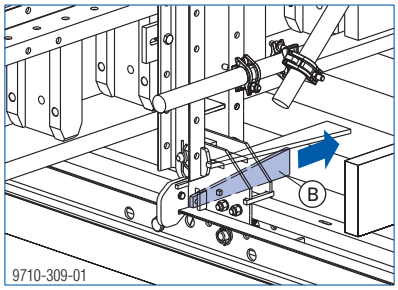


Operating the formwork

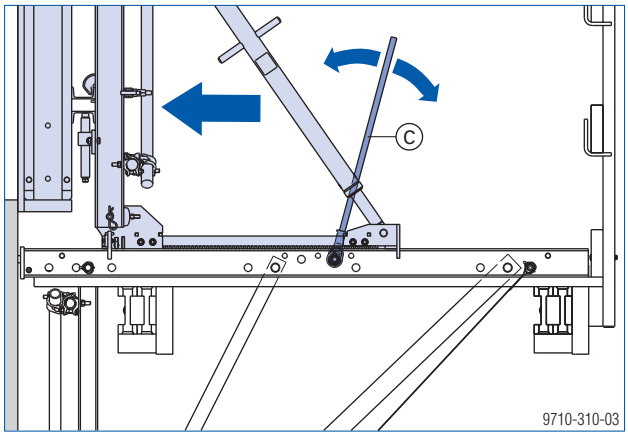
Closing the formwork

This section only deals with how to operate the formwork. For details of how to tie the formwork, please see the User Information booklets 'Large-area formwork Top 50' or 'Framed formwork Framax Xlife'.

➤ Detach the fixing-wedges **(B)** .

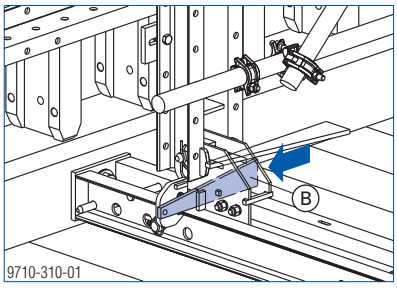


➤ By operating the ratchets simultaneously, move the travelling units forward (together with the formwork) until they meet the top of the previously cast section.



C Ratchet MF 3/4" SW50

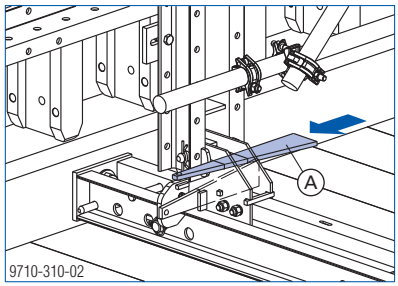
➤ Knock the fixing-wedges **(B)** into place.



This fixes the travelling units to the horizontal profiles.

➤ Adjust the formwork and level the positioning points. See the section headed "Plumbing & aligning".

➤ After adjusting the formwork elements, tighten the pressure wedges **(A)** .



This presses the formwork element up against the previously cast section.

NOTICE

It only takes a gentle blow of the hammer to fix the pressure wedge! The concrete loads are sustained by way of the form-ties and are not transferred via the wedge.

Possible incorrect usages

NOTICE

Improper handling and use of the formwork equipment can lead to hazardous situations. These must be prevented under all circumstances.

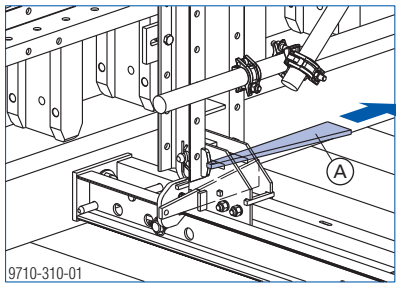
WARNING

It is not allowed to transfer any extra forces into the formwork!

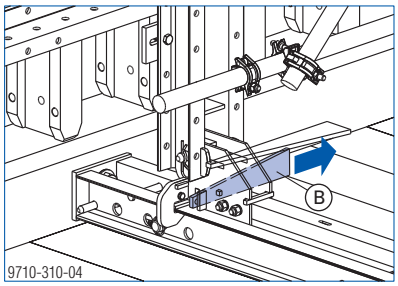
- ➤ Do not use hoists or other such devices for positioning and re-adjusting the formwork.
- ➤ Do not use the formwork to force incorrectly placed reinforcement steel into position.
- ➤ Always press the formwork against the concrete without applying force. Do not use any additional devices (such as extra screwjack mechanisms) on the Travelling gear.
- ➤ Never use 'brute force' on the adjusting spindles (e.g. with tube-extensions).

Opening the formwork

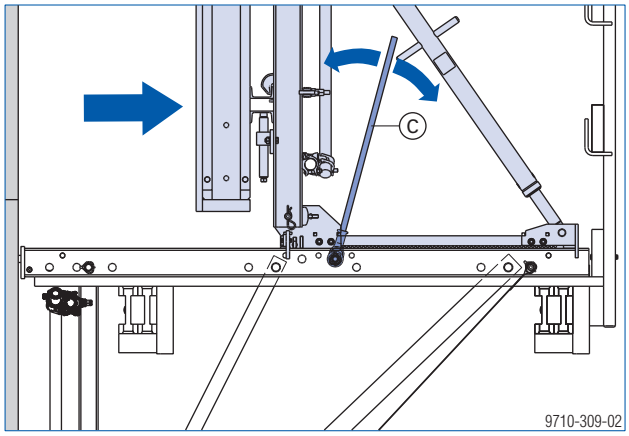
- ➤ Remove the fixings from positioning points where a hole had to be drilled through the form-ply.
- ➤ Undo and remove the form-ties of the formwork element.
- ➤ Remove the connectors from the adjacent gang-forms.
- ➤ Release the pressure wedge **(A)** .



- ➤ Detach the fixing-wedges **(B)** .

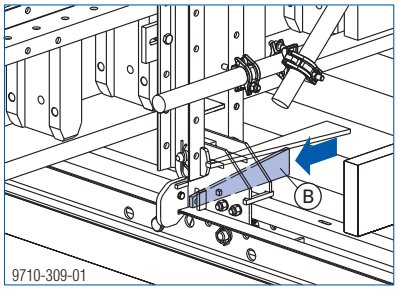


- ➤ By operating the ratchets simultaneously, roll back the travelling units (together with the formwork).



C Ratchet MF 3/4" SW50

- ➤ Knock the fixing-wedges **(B)** into place.



This fixes the travelling units to the horizontal profiles.

NOTICE

The fixing-wedge may only be released while the formwork is being retracted forward or back!

Final position: fixing-wedges knocked back into place (wind bracing).

Plumbing & aligning the formwork

Adjusting the formwork

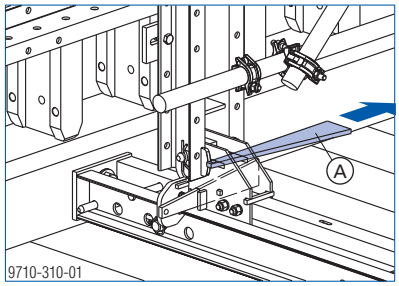
In order to permit exact adjustment of the formwork elements in relation to one another and to the structure, they are adjustable in both the vertical and the horizontal.

Tools needed:

- Hammer
- Reversible ratchet 1/2"
- Box nut 24 1/2" L
- Combination wrench 24 (for the threaded join on the adjusting spindle)

Preparing the adjusting operation

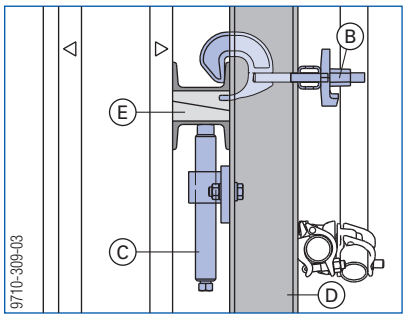
➤ Release the pressure wedge **(A)** .



➤ Detach the formwork from the concrete.

➤ Loosen the **Waling-to-bracket holders (B)** with a blow of the hammer.

The **adjusting spindles (C)** permit a vertical adjustment range of approx. 150 mm. Also, the adjusting spindles can be relocated in the hole-grid of the Vertical waling **(D)** .

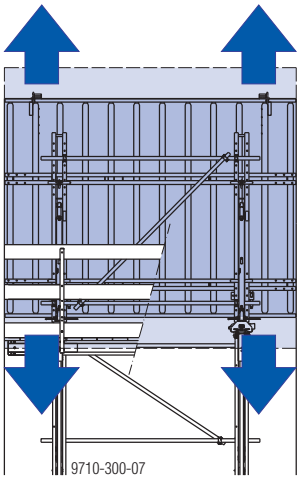


E Timber wedges in the multi-purpose walings (near the adjusting spindles – for ensuring better load transfer)

Vertical adjustment

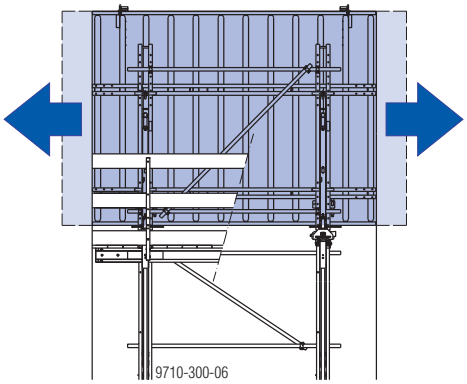
➤ Turn both adjusting spindles.

While adjusting the height, watch the waling-to-bracket holders to make sure that they do not jam and block the adjustment process.



Horizontal adjustment

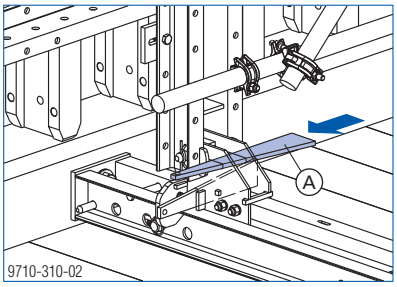
➤ Push the formwork to either side.



Ending the adjusting operation

➤ Tighten the waling-to-bracket holders with the hammer.

➤ After adjusting the formwork elements, tighten the pressure wedges **(A)** .



This presses the formwork element up against the previously cast section.

NOTICE

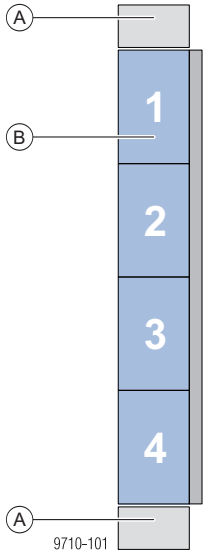
It only takes a gentle blow of the hammer to fix the pressure wedge! The concrete loads are sustained by way of the form-ties and are not transferred via the wedge.

Repositioning

Instructions for safe repositioning of the complete unit

NOTICE

During the planning phase, consideration should also be given to the repositioning order of the units! Provide safe access to the first unit and the last unit.



A Stair tower or aerial work platforms
B Climbing unit

NOTICE

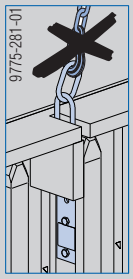
- **Before repositioning:** Remove any loose items from the formwork and platforms, or secure them firmly.
- 'Passenger transportation' is forbidden!
- Observe all regulations applying to the operation of cranes where higher wind speeds are experienced.
- Sling angle β: max. 30°
- Brace the vertical waling sufficiently **against oblique pull**.
  Tightening torque of couplers: 50 Nm
- When using lifting beams, ensure that these have sufficient load-bearing capacity!
- If lifting past inclined walls, fasten an overhanging lifting device to the vertical waling.

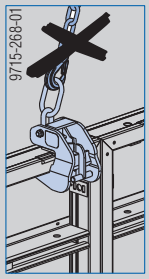
Length of chain = at least the space between the lifting points

This automatically leads to the required sling angle β.

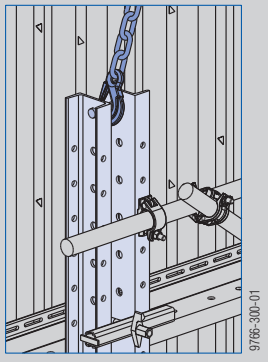
WARNING

➤ Any **lifting brackets** on the formwork panels, or **Framax lifting hooks**, must **not** be used for lifting the unit as a whole.

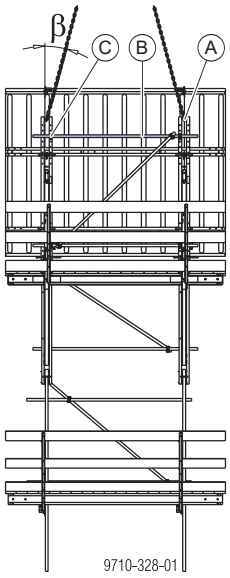


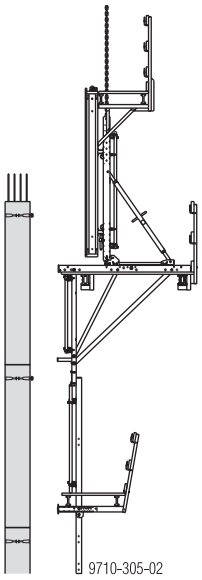


➤ Attach the crane lifting tackle to the suspension bolt of the vertical waling.



The suspension methods shown above are only needed for assembling and dismantling the formwork elements or panels.





β ... max. 30°

A	Suspension bolt
B	Bracing against oblique pull (e.g. scaffold tube)
C	Screw-on coupler

Max. working load limit:
4000 kg per suspension bolt

Required number of braces against oblique pull:

Total weight of unit to be lifted	Number of braces (e.g. scaffold tubes)
up to 2000 kg	1
up to 4000 kg	2

NOTICE

If the unit to be lifted has a total weight of **over 4000 kg**, the **Lifting beam 110kN 6.00m** must be used.

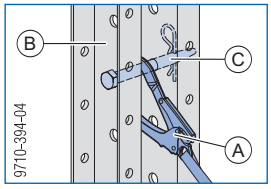
NOTICE

- During repositioning, the only persons allowed inside the access prohibition barriers are the trained personnel in charge of the repositioning operation.
- All persons working inside the access prohibition barriers must use a personal fall-arrest system (e.g. safety harness).

- When a climbing unit is repositioned, this opens up exposed fall-hazard locations on the remaining units. These open ends must be closed off by **attaching sideguards or an access prohibition barrier**.

Anchorage points for personal fall arrest systems (PFAS)

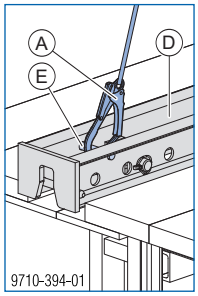
Climbing unit MF240 with formwork

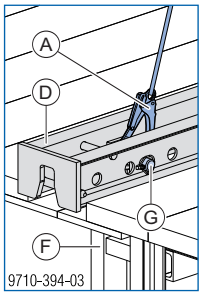


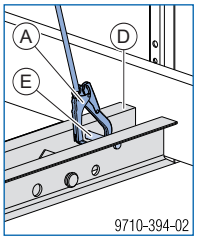
A	Personal fall-arrest system
B	Vertical waling MF
C	Connecting pin 25cm + Spring cotter 5mm

Climbing unit MF24 without formwork

Note:
In the Horizontal profile MF there are three attachment points for personal fall-arrest systems.



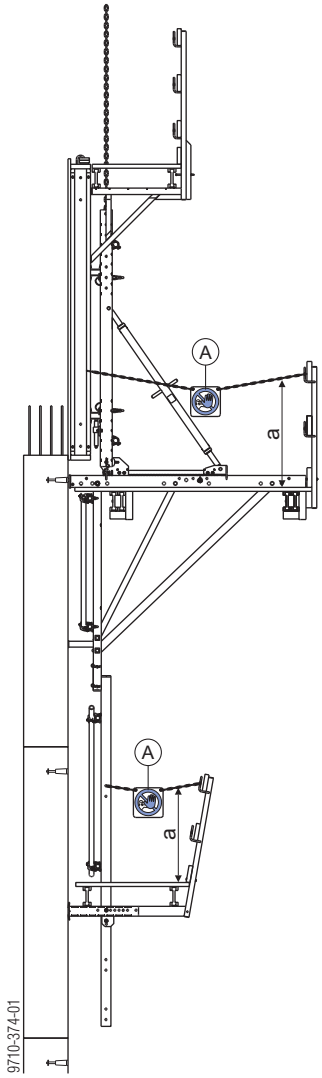




A	Personal fall-arrest system
D	Horizontal profile MF
E	Bolt in the Horizontal profile MF
F	Vertical profile MF80
G	Fastening pins d32/145 + linch pins 6x42

Example: Access prohibition barrier

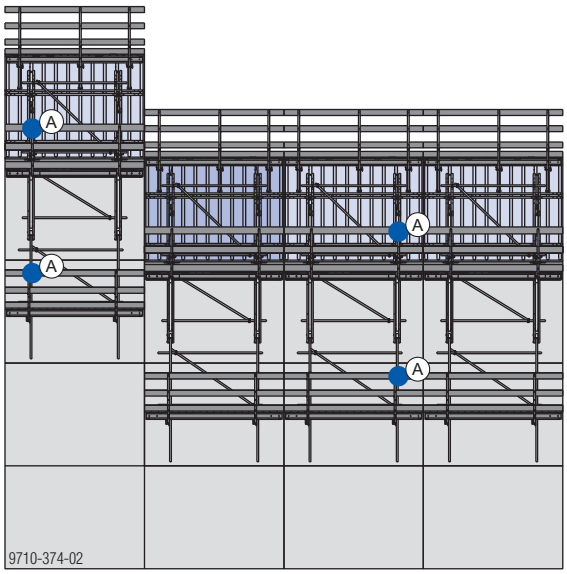
- This access prohibition barrier must be fixed at least 2.0 m before the drop-off edge.
- The personnel in charge of the repositioning operation are responsible for positioning the access prohibition barriers correctly.



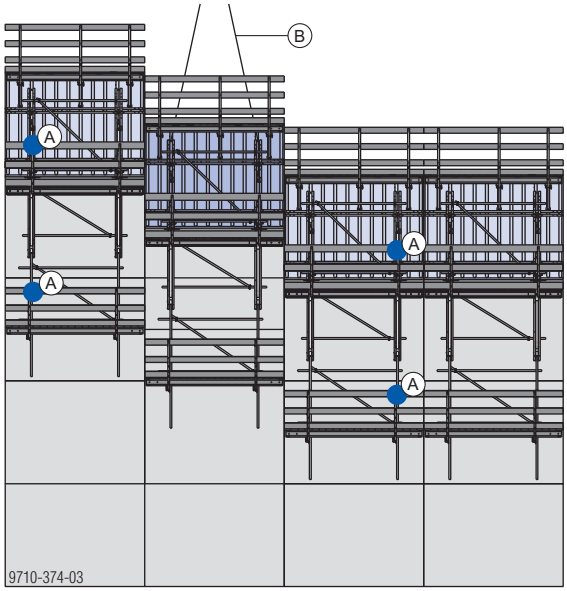
a ... 1.00 - 1.20 m

A Warning sign 'No entry' 300x300mm

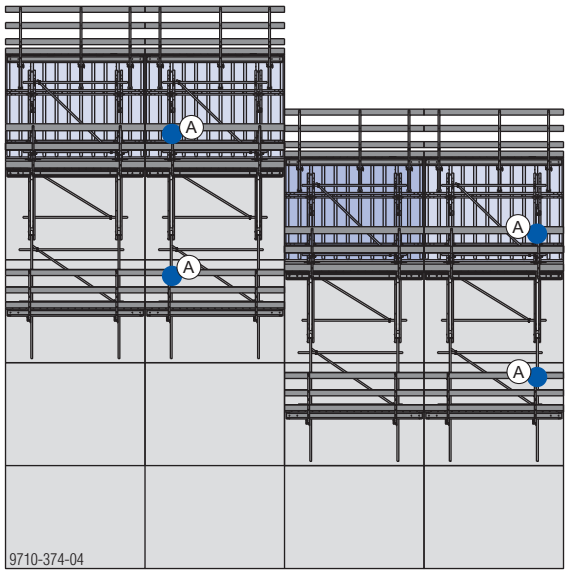
Initial situation



Hoist the unit for repositioning up to the next section.



Horizontal repositioning of the barriers



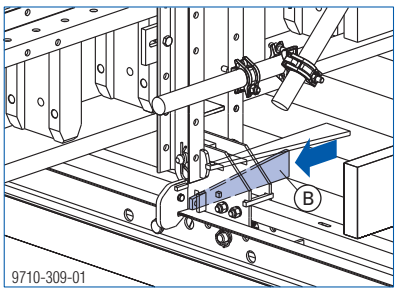
A Warning sign 'No entry' 300x300mm

B Crane suspension tackle

Repositioning the entire unit

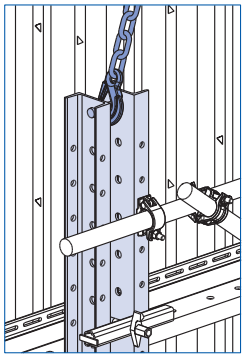
➤ Bring the travelling unit (together with the formwork) into the centre-of-gravity position.

➤ Knock the fixing-wedges **(B)** into place.



Before every lifting operation, check to make sure that all pinned connections have been secured, and that the fixing-wedges of the travelling gear units have been firmly driven in!

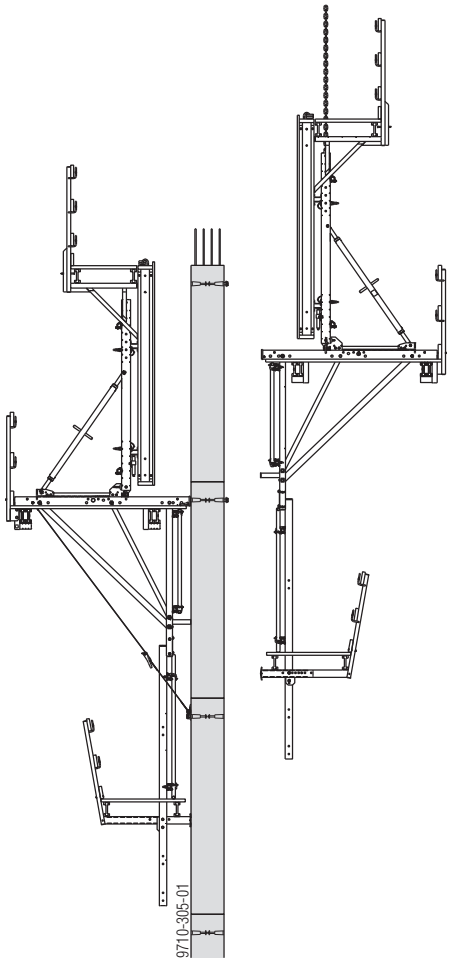
➤ Attach the crane lifting tackle to the suspension bolt of the vertical waling.



➤ Dismount the wind bracing.

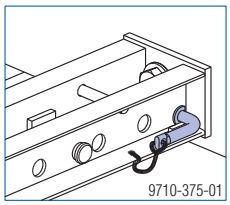
➤ Remove the fastening pins (= anti-liftout guard) from the suspension points.

➤ Lift the entire unit by crane and hang it into place in the suspension point.



➤ Secure the climbing formwork to the suspension points with fastening pins.

Do a sight-check to make sure that the fastening pins are in the horizontal!

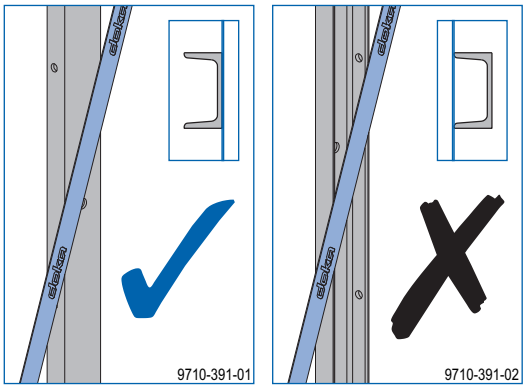


Wind bracing:

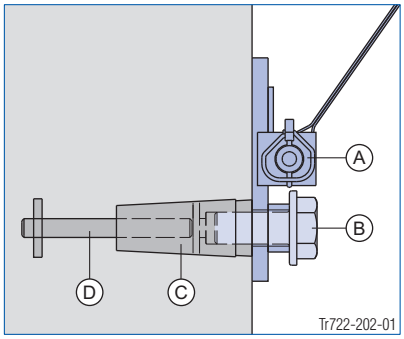
NOTICE

Protect the lashing strap of the wind bracing from damage!

➤ Always route the wind bracing past the flat side of the suspension profile.



➤ Use a Cone screw M30 SW50 7cm to attach the tensioning unit of the wind bracing to the prepared positioning point on the structure.



A	Wind bracing MF/150F/K 6.00m
B	Cone screw M30 SW50 7cm
C	Universal climbing cone 15.0
D	Stop anchor 15.0

➤ Tighten the Wind bracing MF/150F/K 6.00m.

Wind bracing MF/150F/K 6.00m
Permitted tensile force: **25 kN**

Operating the climbing formwork

Starting up

The modular design of the Climbing formwork MF system means that many different combinations are possible.

Depending on the project, the actual design may thus differ very greatly from the basic type described here.

➤ In these cases, you should discuss the assembly procedure with your Doka technician.

➤ Follow the shop drawing / assembly plan.

NOTICE

- A hard, flat, firm surface is needed!
- Prepare a sufficiently large assembly area.
- Tightening torque of the couplers for the bracing tubes: 50 Nm

Note:

In order to explain the entire climbing workflow as simply as possible, the repetitive actions involved are described in detail in separate sections of this booklet. The sections in question are:

- Preparing the positioning points and suspension points (see "Anchoring on the structure").
- Closing the formwork (see 'Closing the formwork').
- Striking (see 'Opening the formwork').
- In addition, the following sections must also be observed:
  - Plumbing & aligning the formwork
  - Resetting by crane

For instructions on tying and joining the formwork elements, and on cleaning them and using concrete release-agents, see the User Information booklets 'Large-area formwork Top50' and 'Framed formwork Framax Xlife'.

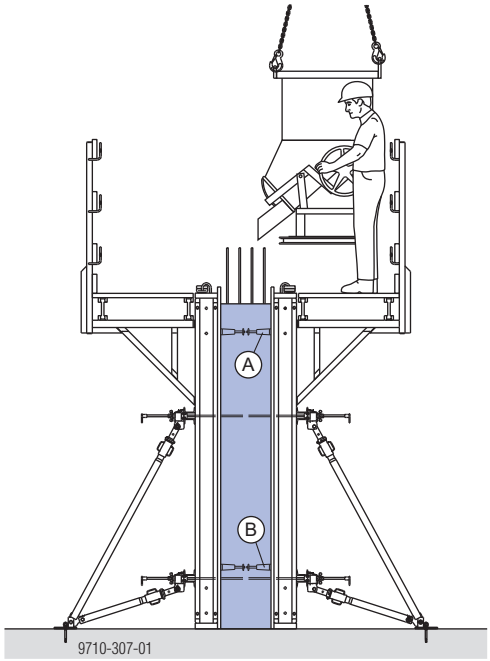
WARNING

Falling hazard!

➤ Do not step onto the pouring platforms until the formwork is closed!

1st casting section

- ➤ Apply concrete release agent and set up one side of the formwork.
- ➤ Mount the positioning points.
- ➤ Mount positioning-points for the wind-bracing.
- ➤ Place the reinforcement.
- ➤ Close the formwork and tie it.
- ➤ Pour the 1st section.



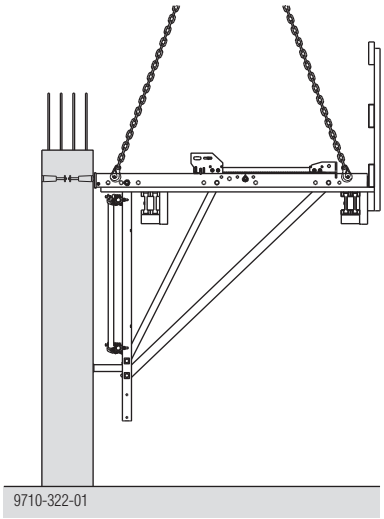
A Positioning point
B Positioning point for wind bracing

- ➤ Strike the formwork.
- ➤ Clean the formwork.
- ➤ Set the gang-form down on a flat surface, with the form-ply facing downwards.
- ➤ Prepare the formwork for the climbing operation.

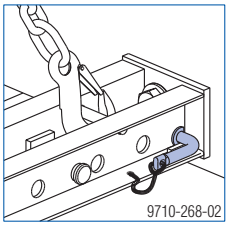
2nd casting section

Hanging the working platform into place on the suspension points:

- ➤ Prepare the suspension points.
- ➤ Using a 4-part lifting chain (e.g. Doka 4-part chain 3.20m), raise the prepared working platform and lower it into the suspension points.
- ➤ Secure the working platform with fastening pins.

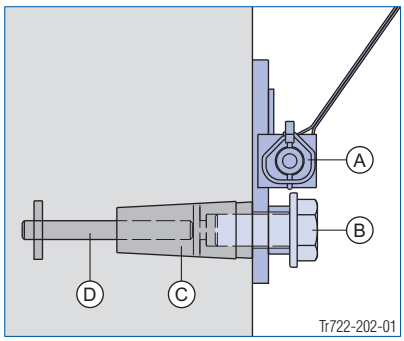


Do a sight-check to make sure that the fastening pins are in the horizontal!



Wind bracing:

- ➤ Fix a Wind bracing MF/150F/K 6.00m onto the Horizontal profile MF, using a d25/151 head bolt and a linch pin.
- ➤ Use a Cone screw M30 SW50 7cm to attach the tensioning unit of the wind bracing to the prepared positioning point on the structure.

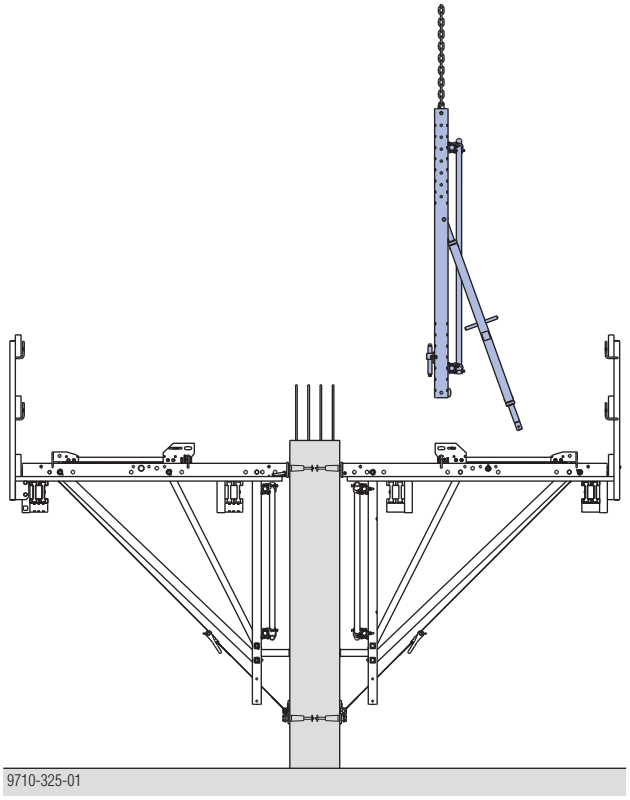


A	Wind bracing MF/150F/K 6.00m
B	Cone screw M30 SW50 7cm
C	Universal climbing cone 15.0
D	Stop anchor 15.0

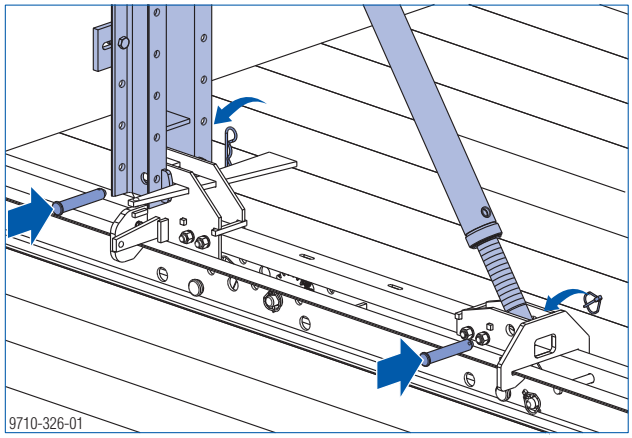
- ➤ Tighten the Wind bracing MF/150F/K 6.00m.

Travelling unit:

- ➤ Attach the crane lifting tackle to the suspension bolt of the vertical waling.
- ➤ Crane-lift the travelling unit to the working platform.



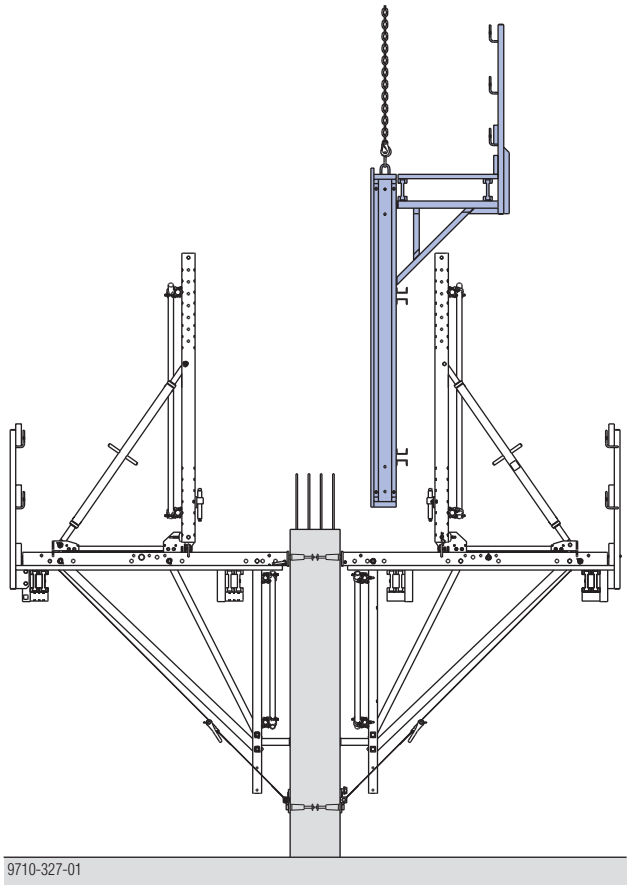
- ➤ Bolt the Vertical waling MF onto the Travelling gear MF with a D25/151 head bolt, and secure this with a Spring cotter 5mm.
- ➤ Bolt the Plumbing spindle MF onto the Travelling gear MF with a D25/120 head bolt, and secure this with a 6x42 linch pin.



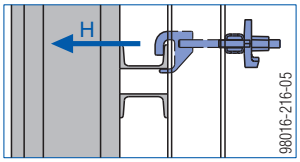
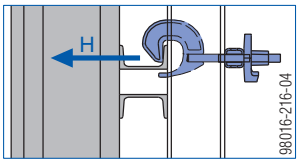
Formwork:

- ➤ Attach the crane lifting tackle to the lifting brackets on the pre-assembled formwork.

➤ Crane-lift the formwork to the working platform.

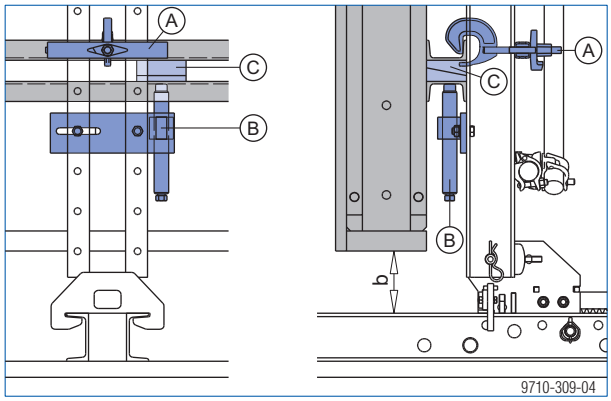


➤ Fix the pre-assembled formwork to the Vertical walings MF with waling-to-bracket holders.

Waling-to-bracket holder	Waling-to-bracket holder (new version)
H ... permitted horizontal load: 11 kN	H ... permitted horizontal load: 22 kN
	

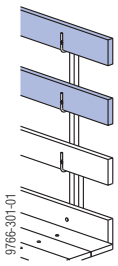
➤ Fix timber wedges in the multi-purpose walings (for better load-transfer in the area around the adjusting spindles).

➤ Adjust dimension 'b' as per shop drawing / assembly drawing, using the adjusting spindle (see the section headed 'Plumbing and aligning the formwork').



A Waling-to-bracket holder 9-15cm
B Height-adjusting spindle
C Wooden wedges

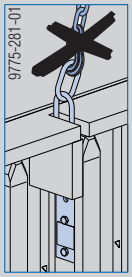
➤ Insert guardrail boards and use nails to secure them to the railing shackles.

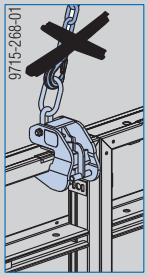


Add provisions to safeguard improper lifting and repositioning of the unit as one piece.

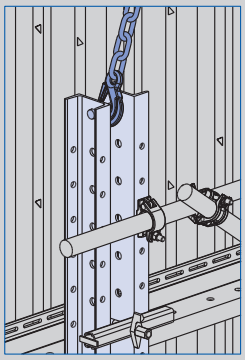
WARNING

➤ Any **lifting brackets** on the formwork panels, or **Framax lifting hooks**, must **not** be used for lifting the unit as a whole.

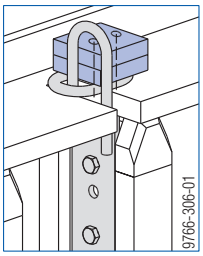




➤ Attach the crane lifting tackle to the suspension bolt of the vertical waling.

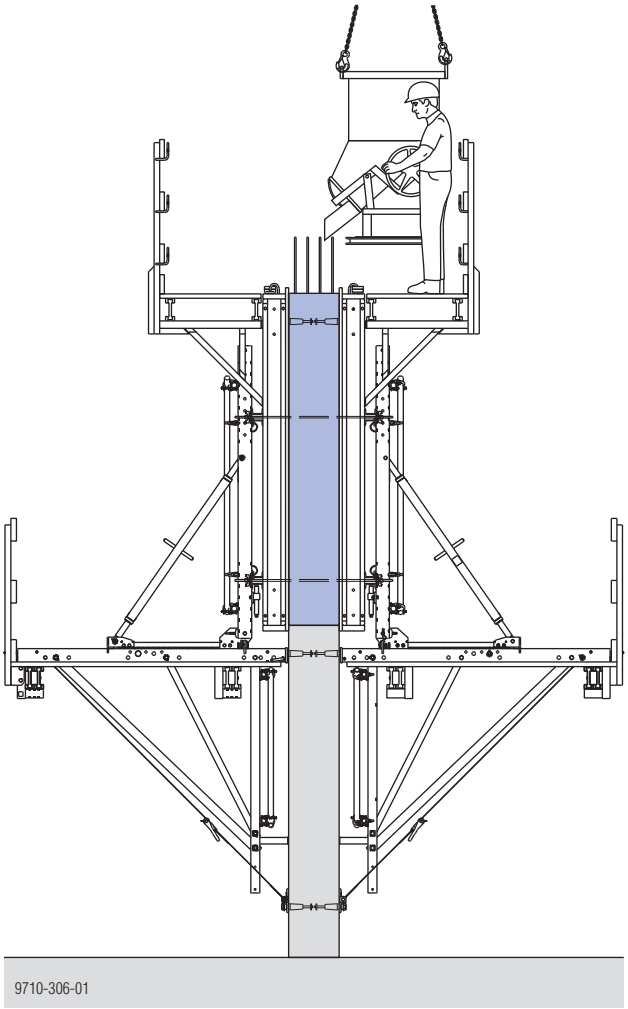


➤ e.g. nail on a board in such a way that the crane lifting tackle cannot be hung into place in the lifting bracket.



Formwork set-up and pouring

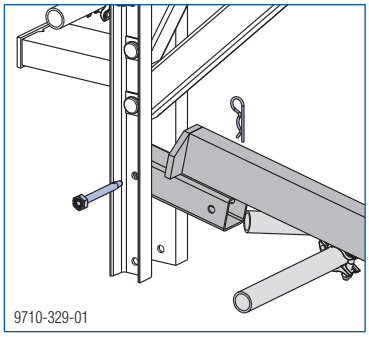
➤ Apply concrete release agent and set up one side of the formwork.
➤ Mount the positioning points.
➤ Place the reinforcement.
➤ Close the formwork and tie it.
➤ Pour the 2nd section.



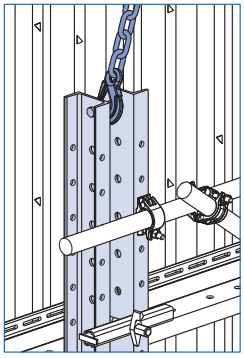
➤ Strike the formwork.
➤ Clean the formwork.

3rd casting section

- Prepare the suspension points.
- Bolt the Suspension profiles MF of the pre-assembled suspended platform onto the Vertical profile MF using the first Pin D16/112 and secure this with a Spring cotter 5mm.

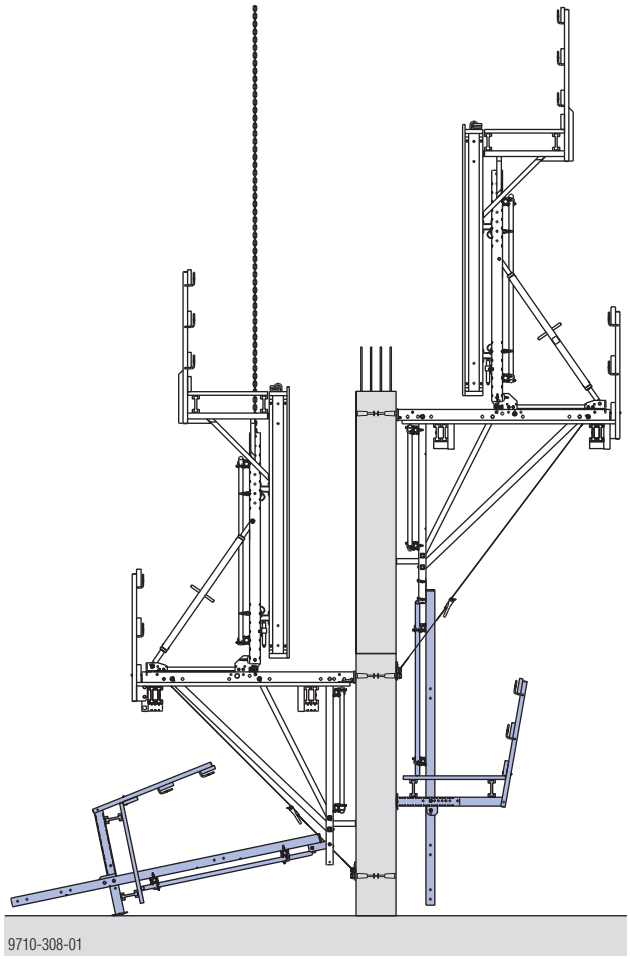


- Dismount the wind bracing.
- Attach the crane suspension tackle to the suspension bolt of the vertical waling.

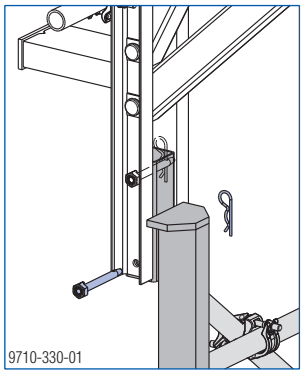


- Remove the fastening pins (= anti-liftout guard) from the suspension points.
- Lift the entire unit by crane and hang it into place in the suspension point.
- Secure the climbing formwork to the suspension points with fastening pins.

- Mount the wind bracing.

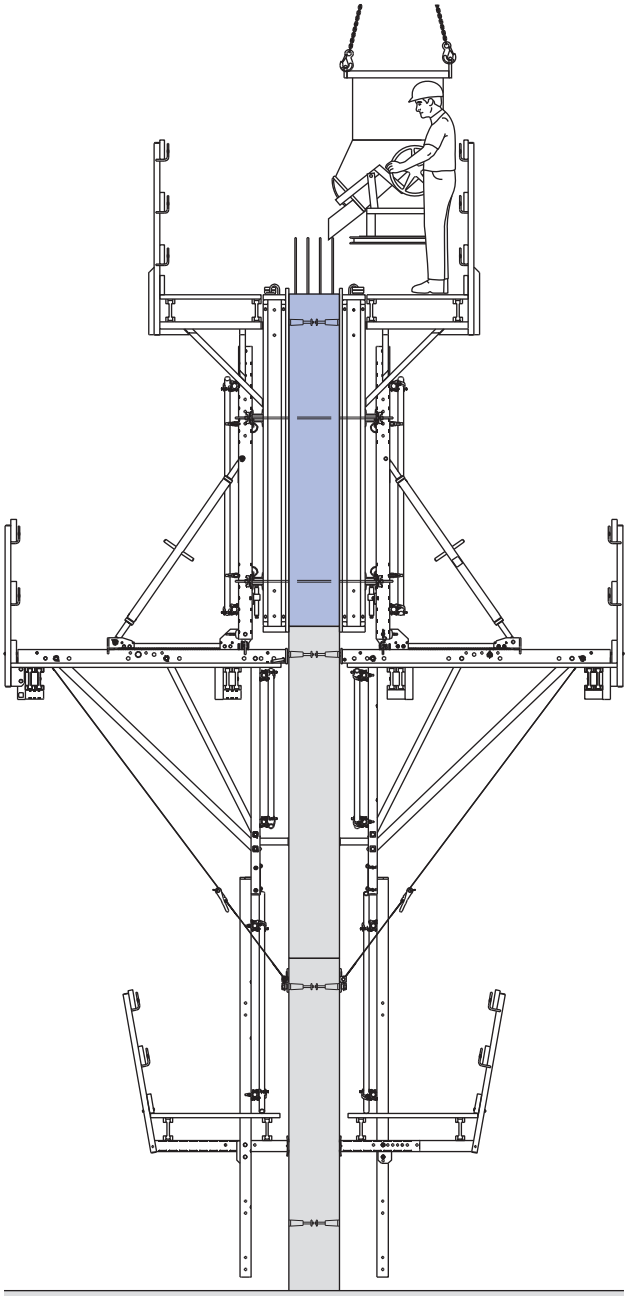


- Bolt the Suspension profiles MF of the suspended platform onto the Vertical profile MF using the second Pin D16/112 and secure this with a Spring cotter 5mm.



Formwork set-up and pouring

- ➤ Apply concrete release agent and set up one side of the formwork.
- ➤ Mount the positioning points.
- ➤ Place the reinforcement.
- ➤ Close the formwork and tie it.
- ➤ Pour the 3rd section.



Assembly

Assembling the working platform

➤ Follow the directions in the shop drawing / assembly drawing.

NOTICE

When making 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 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.

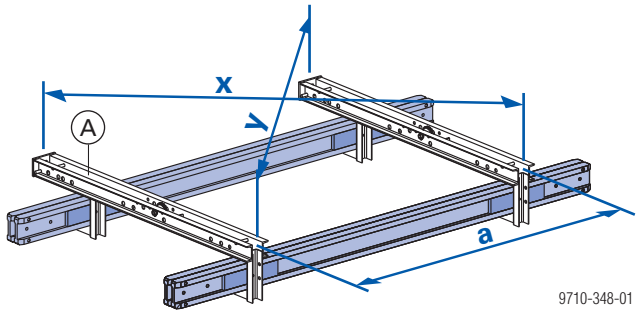
The anti-liftout guards are not suitable for sustaining planned forces! The anti-liftout guard is only designed to prevent the platform from being accidentally lifted out of its suspension point while work is in progress.

Mounting the decking supports

➤ Lay down the horizontal profiles, spaced apart by the exact centre-to-centre distance.

➤ Depending on which variant has been chosen, bolt e.g. Doka beams H20 to the Horizontal profile MF.

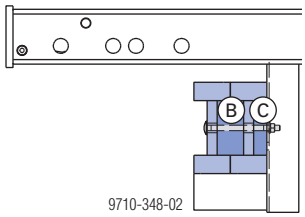
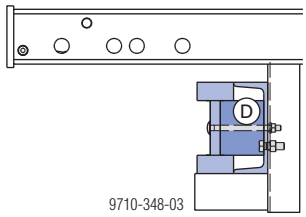
➤ Arrange the horizontal profiles so that both diagonals are the same.



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

A Horizontal profile MF

Note:
The choice of platform beam will depend on the project.

Variant 1 Pairs of H20 beams	Variant 2 U200-section girders + H20 beams
	
Max. imposed load per support: 14.0 kN	Max. imposed load per support: 26.0 kN
Nuts & bolts etc. required for each connection: ▪ 1 square bolt M10x160 + hexagon nut M10 + spring washer A10	Nuts & bolts etc. required for each connection: ▪ 1 square bolt M10x160 + hexagon nut M10 + spring washer A10 ▪ 1 hexagon bolt M16x35 + hexagon nut M16 + spring washer A16

Dimensions of the wooden spacers

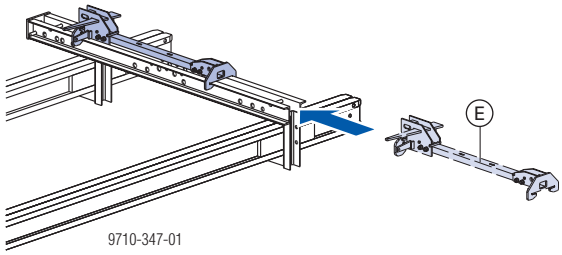
Type of beam	Wooden spacer [mm]		
	(B)	**(C)**	**(D)**
H20 P	60 x 118	30 x 118	97 x 118
H20 N	50 x 118	26 x 118	92 x 118

Length of wooden spacers: approx. 500 mm

Mounting the Travelling gear MF

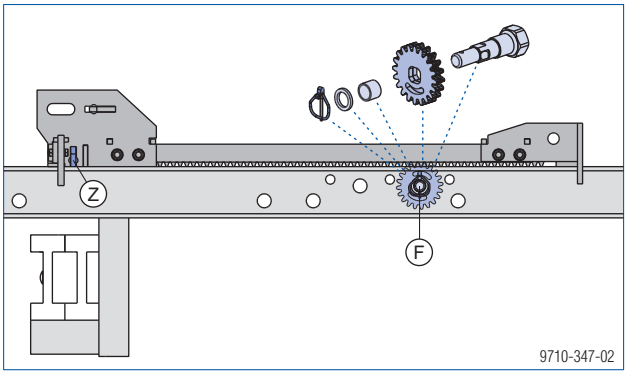
➤ Dismount the pinion gear drive from the horizontal profile.

➤ Push the Travelling gear MF onto the horizontal profile. The catches must engage in the horizontal profile.



E Travelling gear MF

➤ Mount the pinion gear drive to the appropriate position on the horizontal profile.



F Pinion-gear position
Z Fixing-wedge

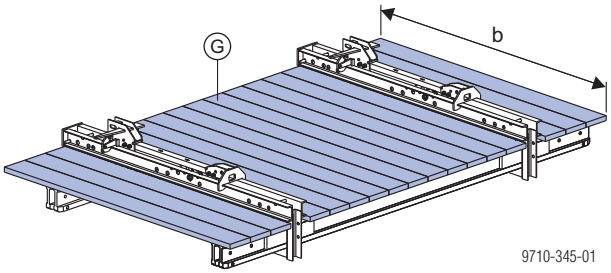
➤ Secure the Travelling gear MF with the fixing-wedge.

Mounting the deck-boards

➤ Lay deck-boards **flush** to either side of the horizontal profiles.
➤ Fasten deck-boards to the Doka beams 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!



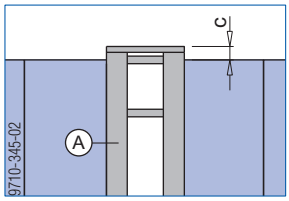
b ... 2415 mm

G e.g. plank 5/20 cm

NOTICE

If the working platform is to be used as a heavy-duty scaffold platform, the platform decking must be adapted so that it meets the structural-design requirements.

Platform decking on the suspension-point side:



c ... 35 mm

A Horizontal profile MF

Note:
The plank and board thicknesses given here comply with the C24 category to EN 338.
Observe all national regulations applying to deck-boards and guardrail boards.

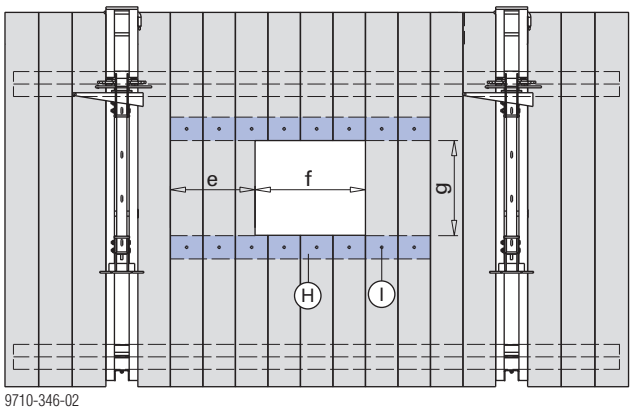
Working platform with manhole

➤ Screw planks to the underside of the deck-boards to distribute the loads.

Every deck-board must be fixed with a square bolt M10 and a hexagon nut M10!

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

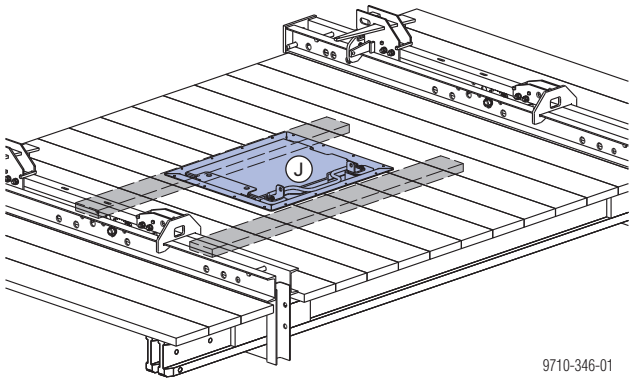
➤ Cut out the opening for the manhole.



e ... minimum overlap: 2 whole deck-boards
f ... 710 mm
g ... 610 mm

H e.g. plank 5/20 cm
I Square bolt M10 + washer R11 + hexagon nut M10

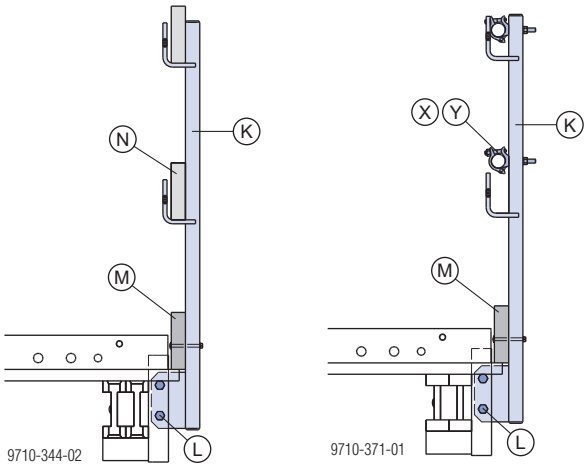
➤ Screw the Manhole B 70/60cm onto the deck-boards with universal countersunk screws 5x50.



J Manhole B 70/60cm

Mounting the railing

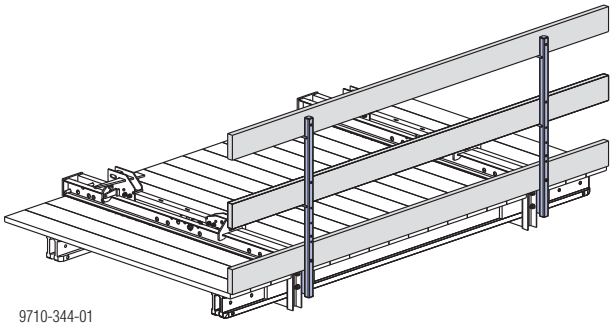
➤ Attach the handrail post to the Horizontal profile MF using M20 nuts & bolts etc.
➤ Attach a toeboard (min. 15x3 cm) to the Handrail-post upright with a square bolt M10.
➤ Insert guard-rail boards and use nails to secure them to the handrail post plates
or attach scaffolding tubes 48.3mm using Screw-on couplers 48mm 95.



K Handrail post
L Hexagon bolt M20x45 + hexagon nut M20 + spring washer A20
M Toeboard min. 15x3 cm
N Guard-rail board
X Scaffolding tube 48.3mm
Y Screw-on coupler 48mm 95

Bolting-items needed for each handrail-post upright:
- 1 square bolt M10x120
- 1 washer A10
- 1 hexagon nut M10

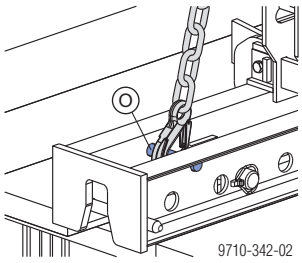
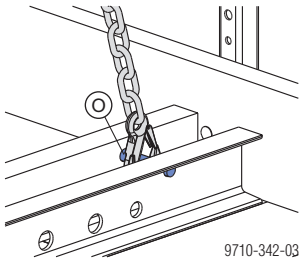
(not included with product)



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

Mounting the Vertical profile MF

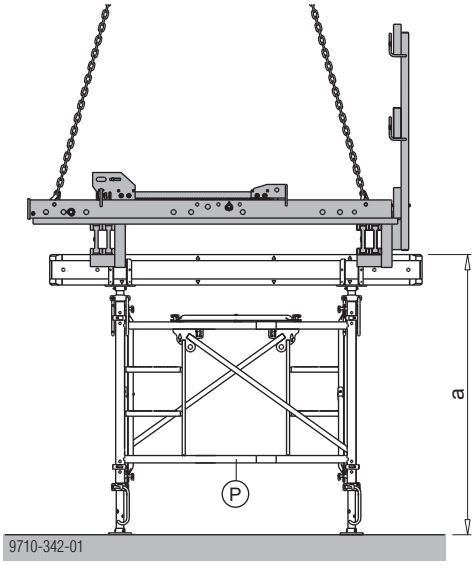
➤ Attach a four-part lifting chain (e.g. Doka 4-part chain 3.20m) to the front and rear crane hoisting points of the pre-assembled working platform.

Front crane hoisting point	Rear crane hoisting point
	

O Bolts in the Horizontal profile MF

NOTICE
➤ Secure the temporary support so that it cannot tip over.

➤ Set down the working platform on a temporary support.

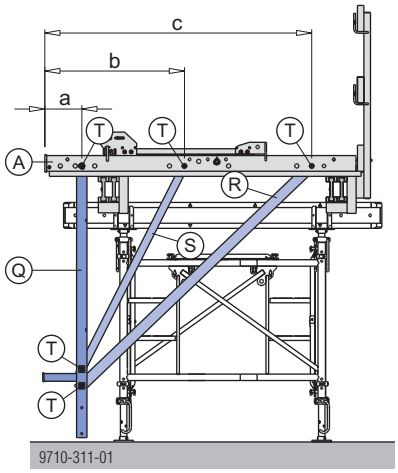


a ... Height of temporary support: min. 1.80 m

P Temporary support (e.g. Load-bearing tower Staxo 100)

Straight wall (Vertical profile MF80)

- ➤ Bolt the Vertical profile MF80 onto the Horizontal profile MF with a fastening pin d32/145 and secure this with a linch pin 6x42.
- ➤ Bolt the Pressure struts MF onto the Horizontal profile MF and Vertical profile MF with fastening pins d32/145 and secure these pins with linch pins 6x42.

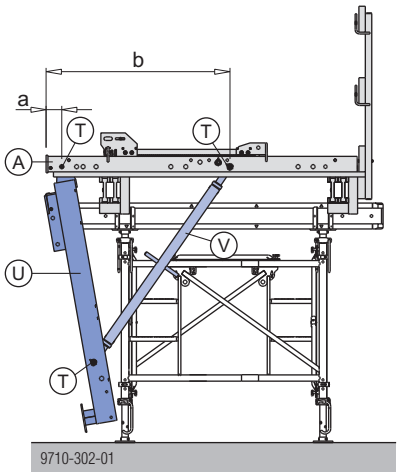


a ... 285 mm
b ... 1075 mm
c ... 2055 mm

A	Horizontal profile MF
Q	Vertical profile MF80
R	Pressure strut MF long
S	Pressure strut MF short
T	Fastening pins d32/145 + linch pins 6x42

Inclined wall (Vertical profile MF160)

- ➤ Bolt the Vertical profile MF160 onto the Horizontal profile MF with a fastening pin d32/145 and secure this with a linch pin 6x42.
- ➤ Set the length of the Pressure spindle MF240 as shown in the shop drawing / assembly plan.
  Make sure that the pressure spindle is extended the same distance at either end of the spindle.
- ➤ Bolt the Pressure spindle MF240 onto the Horizontal profile MF and Vertical profile MF with fastening pins d32/145 and secure these with linch pins 6x42.

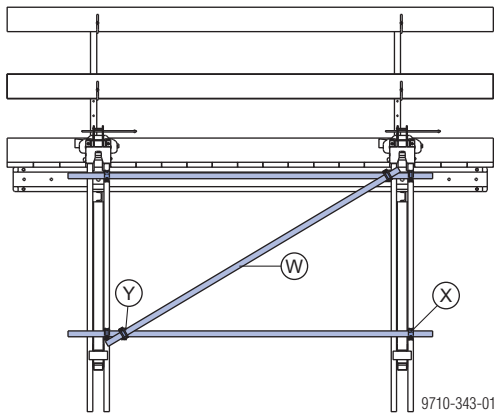


a ... 120 mm
b ... 1415 mm

A	Horizontal profile MF
U	Vertical profile MF160
V	Pressure spindle MF240
T	Fastening pins d32/145 + linch pins 6x42

Mounting the scaffold-tube bracing

- ➤ Attach the scaffolding-tube bracing to the Vertical profile MF.
  Distance between screw-on coupler and swivel coupler: max. 160 mm.



W	Scaffolding tube 48.3mm
X	Screw-on coupler 48mm 50
Y	Swivel coupler 48mm

Tightening torque of the couplers for the bracing tubes: 50 Nm

Mounting the pouring platform

For details of how to assemble and operate the pouring platforms for the formwork system that is being used, see the 'Large-area formwork Top 50' or 'Framed formwork Framax Xlife' User Information booklets.

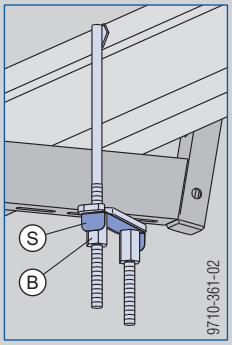
➤ Follow the shop drawing / assembly plan.

Mounting the decking supports

CAUTION

There is a risk of the hexagon nuts working loose on the Brace stirrup 8.

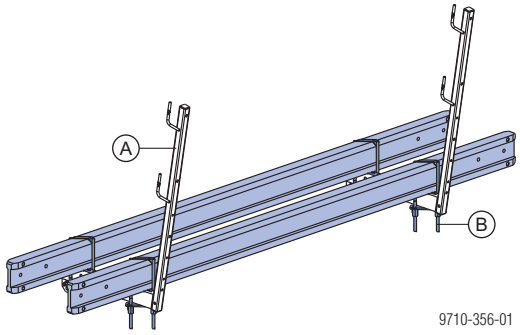
➤ Fix the hexagon nuts on the Brace stirrup 8 with an **Anti-twisting plate for Brace stirrup 8**.



Always bend the anti-twisting plate over the flat side of the hexagon nut.

Use each anti-twisting plate once only.

➤ Attach Doka H20 beams to the Screw-on access bracket MF75 using e.g. Brace stirrups 8.



A Screw-on access bracket MF75

B Brace stirrup 8

S Anti-twisting plate for Brace stirrup 8

Note:

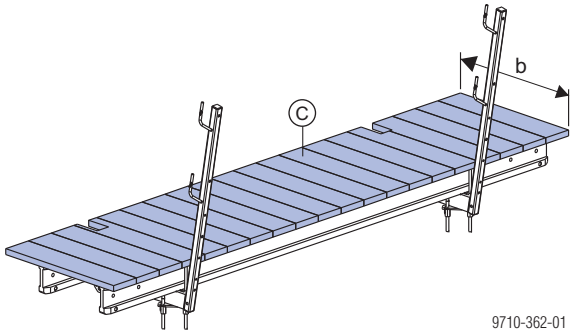
The choice of platform beam will depend on the project.

Mounting the deck-boards

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

Every deck-board must be fixed with 4 screws!

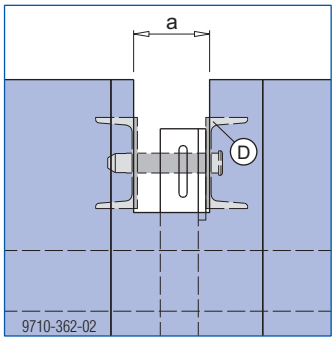
Do a sight-check to make sure that the deck-boards have been fixed properly!



b ... 950 mm (for straight walls)

C e.g. plank 5/20 cm

Cut-out needed in platform decking (for access to the crane-hoisting point on the Vertical waling MF):



a ... 100 mm

D Vertical waling MF

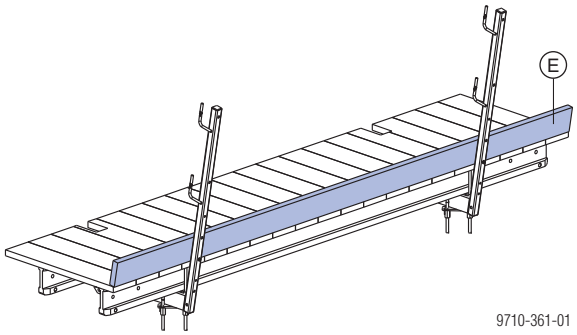
Note:

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

Observe all national regulations applying to deck-boards and guardrail boards.

Mounting toe-board planks

➤ Attach a toeboard (min. 15x3 cm) to the Handrail-post upright with a square bolt M10.



E Toeboard min. 15x3 cm

Bolting-items needed for each handrail-post upright:

- 1 square bolt M10x120
- 1 washer A10
- 1 hexagon nut M10

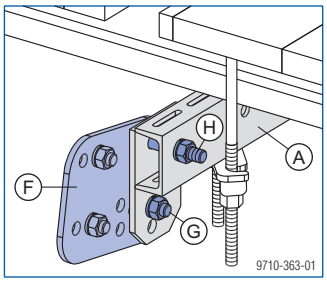
(not included with product)

Note:

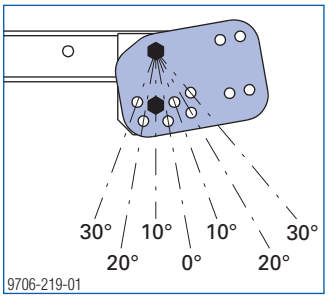
The plank and board thicknesses given here comply with the C24 category of EN 338.

Inclined wall (with swivel plate)

➤ Using M20x45 and M20x110 nuts & bolts etc., mount a Swivel plate MF to the Screw-on access bracket MF75 at the desired angle.



A Screw-on access bracket MF75
F Swivel plate MF
G Hexagon bolt M20x45 + spring washer A20 + hexagon nut M20
H Hexagon bolt M20x110 + spring washer A20 + hexagon nut M20



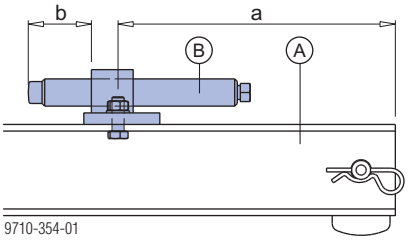
Mounting the travelling unit

➤ Follow the shop drawing / assembly plan.

Setting the adjusting spindle

Tools needed:
- Reversible ratchet 1/2"
- Box nut 24 and
- Fork wrench 22/24 (for the threaded joins on the adjusting spindle)

➤ Adjust dimension "b" as shown in the shop drawing / assembly plan, using the adjusting spindle.

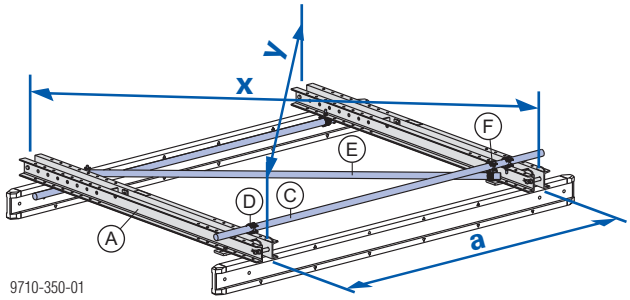


A Vertical waling MF
B Adjusting spindle

Check position "a" of the adjusting spindle on the vertical waling and change this if necessary.

Mounting the scaffold-tube bracing

➤ Lay down the Vertical walings MF, spaced apart by the exact centre-to-centre distance.
➤ Attach horizontal scaffold tubes.
➤ Align the Vertical walings MF so that their diagonals are identical.
➤ Attach a diagonal scaffold tube.
Distance between screw-on coupler and swivel coupler: max. 160 mm.



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

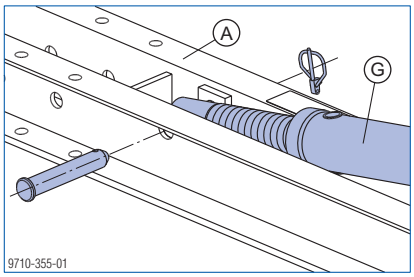
A Vertical waling MF
C Scaffold tube 48.3mm (horizontal)
D Screw-on coupler 48mm 50
E Scaffold tube 48.3mm (diagonal)
F Swivel coupler 48mm

Tightening torque of the couplers for the bracing tubes: 50 Nm

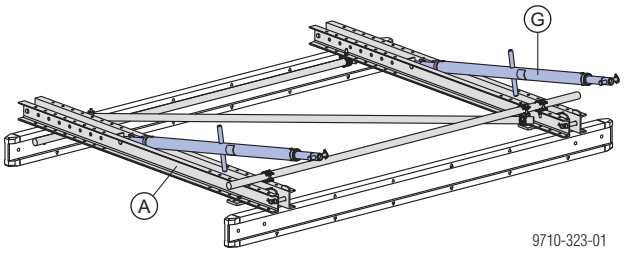
Note:
To make it possible to mount the ladders providing access to the pouring platforms, the scaffold tubes must be mounted in the positions shown.

Mounting the Plumbing spindle MF

➤ Pin the yellow galvanised end of the Plumbing spindle MF into the Vertical waling MF with a D25/151 head bolt, and secure this with a 6x42 linch pin.



➤ Set the lengths of the Plumbing spindles MF as shown in the shop drawing / assembly plan.
Make sure that the Plumbing spindles are extended the same distance at either end of each spindle.

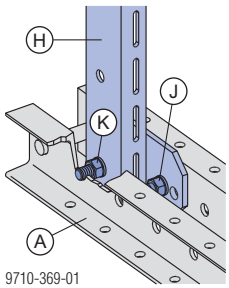
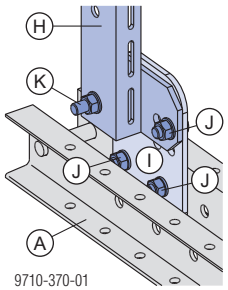


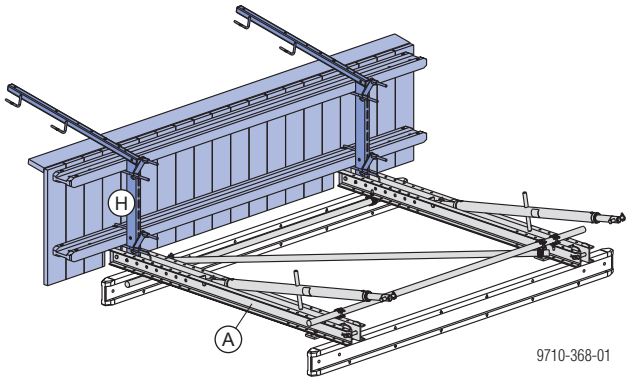
A Vertical waling MF
G Plumbing spindle MF

Mounting the pouring platform

Only when the Screw-on access bracket MF75 is being used as a pouring platform.

➤ Mount the pre-assembled pouring platform to the Vertical walings MF (see the section headed "Mounting the pouring platform").

Pouring platform without Swivel plate MF	Pouring platform with Swivel plate MF
	



A Vertical waling MF
H Screw-on access bracket MF75
I Swivel plate MF
J Hexagon bolt M20x45 + spring washer A20 + hexagon nut M20
K Hexagon bolt M20x110 + spring washer A20 + hexagon nut M20

Mounting the formwork

➤ Follow the shop drawing / assembly plan.

Framed formwork

e.g. framed formwork Framax Xlife

Follow the directions in the 'Framed formwork Framax Xlife' User Information booklet!

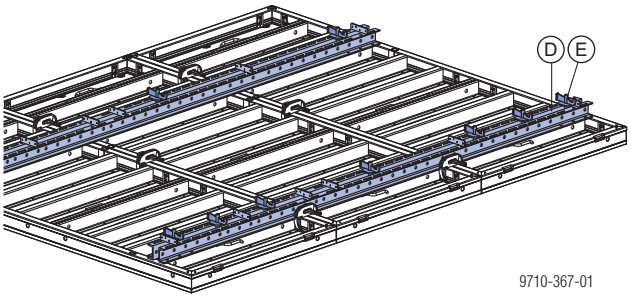
Preparing the formwork

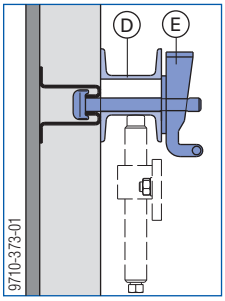
➤ Set the gang-form down on a flat surface, with the form-ply facing downwards.

➤ Fix Multi-purpose walings WS10 Top50 in the function profiles of the framed formwork panels, using Framax wedge clamps .

NOTICE

As an additional precaution, mount a wedge clamp at both ends of the adjusting spindle.





The length of the Multi-purpose waling WS10 Top50 will depend on the width of the gang-form.

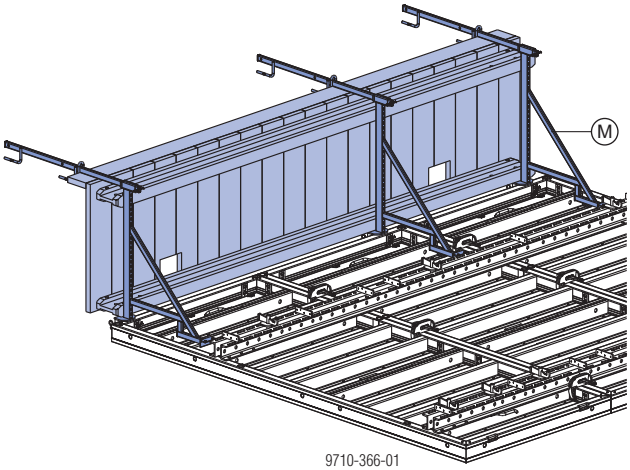
D Multi-purpose waling WS10 Top50

E Framax wedge clamp

Mounting the pouring platform

➤ Attach Framax brackets and mount deck-boards.

➤ Also mount guard-rail boards, except where they would get in the way of the lifting chains when the gang-form is lifted into the upright.



M Framax bracket 90

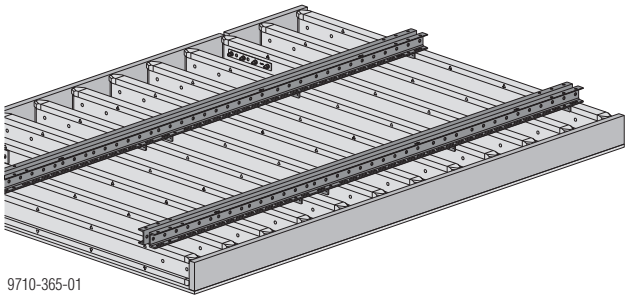
Timber-beam formwork

e.g. Large-area formwork Top 50

Follow the directions in the 'Large-area formwork Top 50' User Information booklet!

Preparing the formwork

➤ Set the formwork element down on a flat surface, with the form-ply facing downwards.

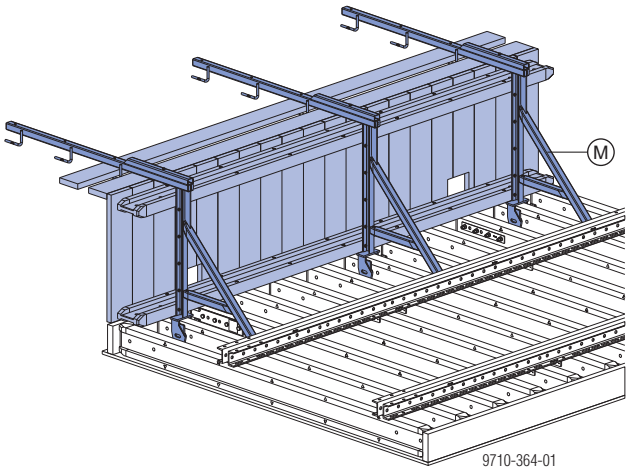


9710-365-01

Mounting the pouring platform

➤ Attach Universal brackets and mount deck-boards.

➤ Also mount guard-rail boards, except where they would get in the way of the lifting chains when the gang-form is lifted into the upright.



9710-364-01

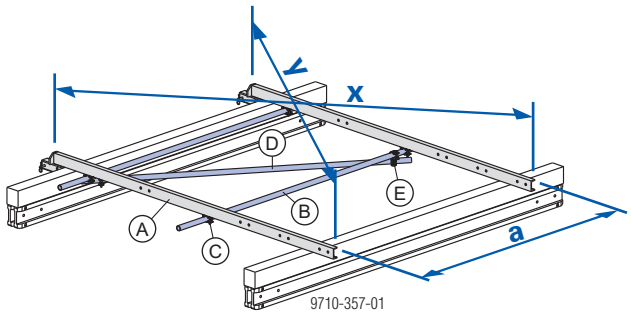
M Universal bracket 90

Assembling the suspended platform

➤ Follow the shop drawing / assembly plan.

Mounting the scaffold-tube bracing

➤ Lay down the Suspension profiles MF, spaced apart by the exact centre-to-centre distance.
➤ Attach horizontal scaffold tubes.
➤ Align the Suspension profiles MF so that their diagonals are identical.
➤ Attach a diagonal scaffold tube.
Distance between screw-on coupler and swivel coupler: max. 160 mm.



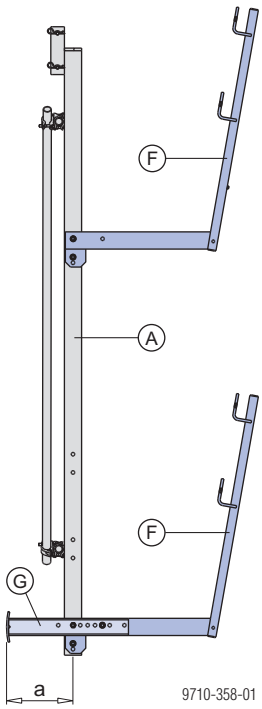
a ... centre-to-centre distance
x = y ... diagonals

A	Suspension profile MF
B	Scaffolding tube 48.3mm (horizontal)
C	Screw-on coupler 48mm 50
D	Scaffolding tube 48.3mm (diagonal)
E	Swivel coupler 48mm

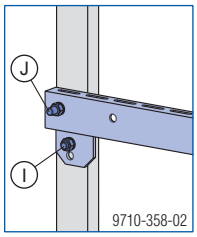
Tightening torque of the couplers for the bracing tubes: 50 Nm

Mounting the Screw-on access bracket MF75

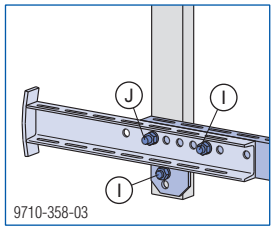
Straight walls



On intermediate platform

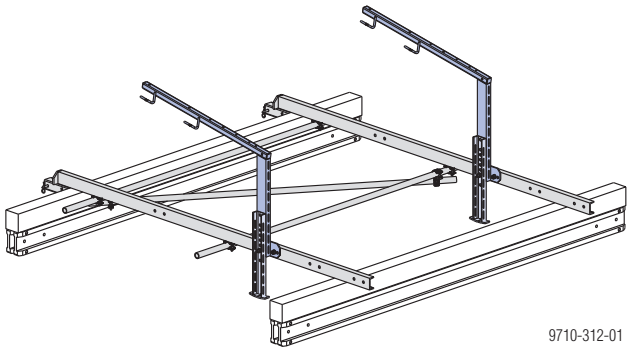


On suspended platform

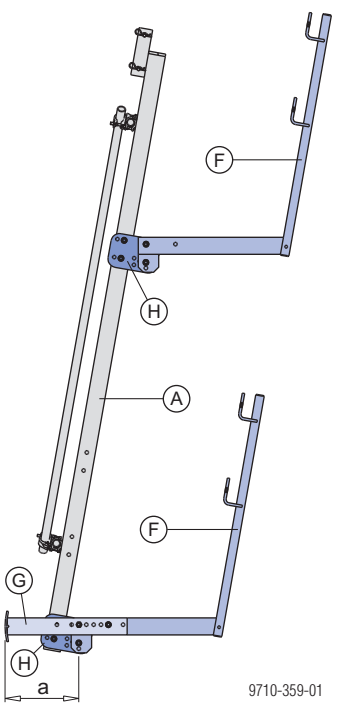


a ... distance from structure (approx. 390 mm)

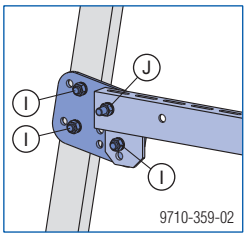
A	Suspension profile MF
F	Screw-on access bracket MF75
G	Distance profile MF
I	Hexagon bolt M20x45 + spring washer A20 + hexagon nut M20
J	Hexagon bolt M20x110 + spring washer A20 + hexagon nut M20



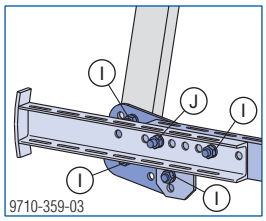
Inclined wall (with swivel plate)



On intermediate platform

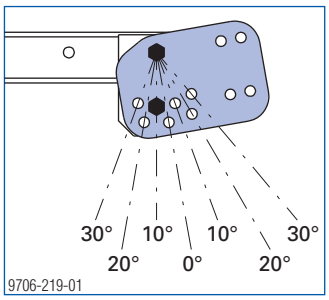


On suspended platform



a ... distance from structure (will depend on the angle of the wall)

A	Suspension profile MF
F	Screw-on access bracket MF75
G	Distance profile MF
H	Swivel plate MF
I	Hexagon bolt M20x45 + spring washer A20 + hexagon nut M20
J	Hexagon bolt M20x110 + spring washer A20 + hexagon nut M20

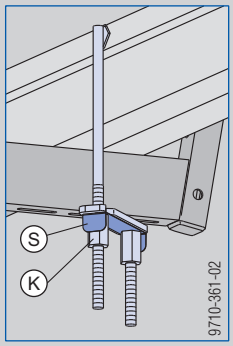


Mounting the decking supports

CAUTION

There is a risk of the hexagon nuts working loose on the Brace stirrup 8.

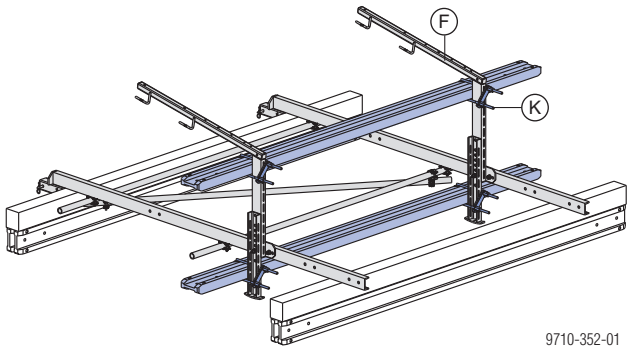
➤ Fix the hexagon nuts on the Brace stirrup 8 with an **Anti-twisting plate for Brace stirrup 8**.



Always bend the anti-twisting plate over the flat side of the hexagon nut.

Use each anti-twisting plate once only.

➤ Attach Doka H20 beams to the Screw-on access bracket MF75 using e.g. Brace stirrups 8.



F	Screw-on access bracket MF75
K	Brace stirrup 8
S	Anti-twisting plate for Brace stirrup 8

Note:

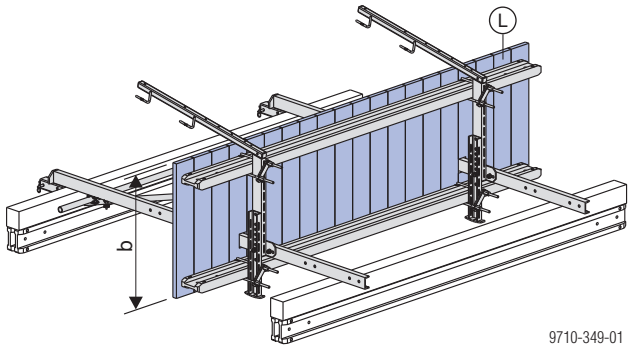
The choice of platform beam will depend on the project.

Mounting the deck-boards

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

Every deck-board must be fixed with 4 screws!

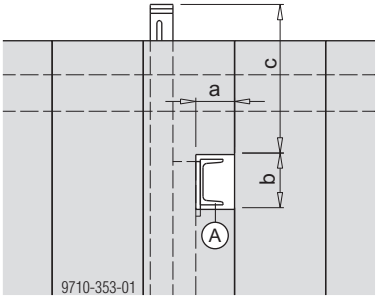
Do a sight-check to make sure that the deck-boards have been fixed properly!



b ... 1170 mm (for straight walls)

L e.g. plank 5/20 cm

Cut-out needed in platform decking:



a ... 70 mm
b ... 120 mm
c ... 330 mm (for straight walls)

A Suspension profile MF

Note:

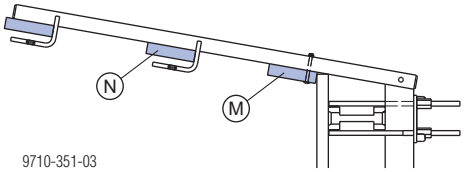
The plank and board thicknesses given here comply with the C24 category to EN 338.

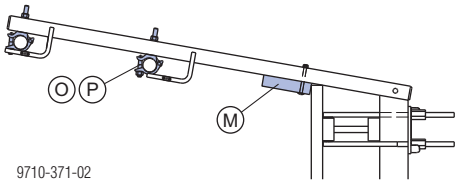
Observe all national regulations applying to deck-boards and guardrail boards.

Mounting the guard-rail boards

➤ Attach a toeboard (min. 15x3 cm) to the Handrail-post upright with a square bolt M10.

➤ Insert guard-rail boards and use nails to secure them to the handrail post plates
or attach scaffolding tubes 48.3mm using Screw-on couplers 48mm 95.





M Toeboard min. 15x3 cm

N Guard-rail board

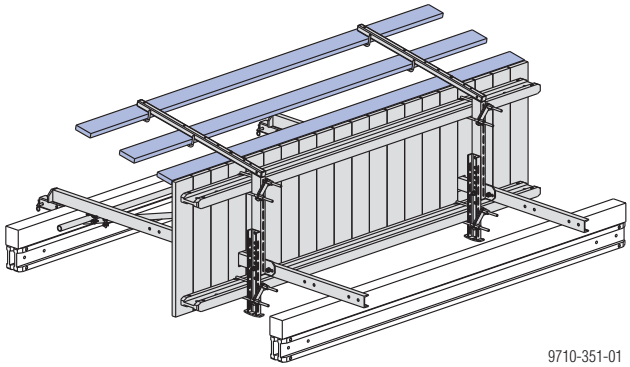
O Scaffolding tube 48.3mm

P Screw-on coupler 48mm 95

Bolting-items needed for each handrail-post upright:

- 1 square bolt M10x120
- 1 washer A10
- 1 hexagon nut M10

(not included with product)



Note:

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

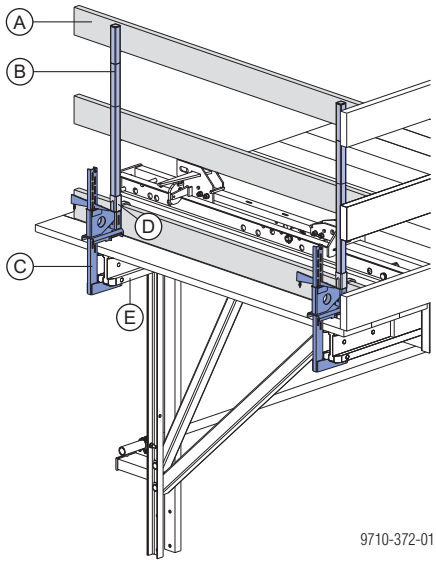
Sideguards on exposed platform-ends

Platform railings which do not extend all the way around the platform must be closed by attaching side railings, e.g. at

- **corner transitions**
- **exposed fall-hazard locations** which result from a **climbing unit being repositioned**

WARNING
Exposed fall-hazard location!
Danger to life from fatal falls!
➤ Either use personal fall-arrest systems (e.g. safety harness)
or
install the sideguards at the same time as the platforms are assembled.

Edge protection system XP



A	Guard-rail board min. 15x3 cm (site-provided)
B	Handrail post XP 1.20m
C	Railing clamp XP 40cm
D	Toeboard holder XP 1.20m
E	Decking support

How to mount:

➤ Wedge the Railing clamps XP firmly to the decking supports (clamping range 2 – 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 XP until the locking mechanism engages.
➤ Fix guard-rail boards to the handrail post plates with nails (diam. 5 mm).

Handrail clamp S

Follow the directions in the “Handrail clamp S” User information!

Dismantling

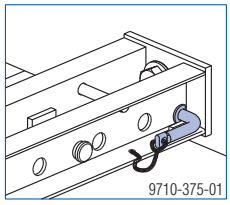
NOTICE

- There must be a flat, firm base capable of supporting the load.
- Provide a sufficiently large dismantling space.
- Follow the instructions in the section headed 'Lifting by crane'!

Lifting the formwork off the climbing unit

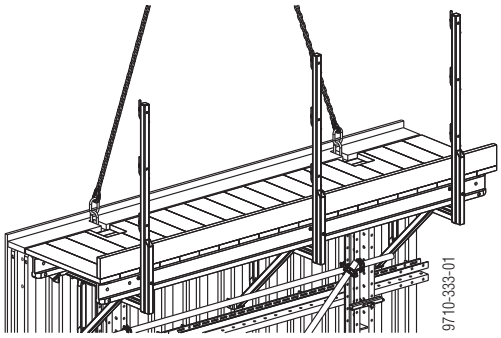
➤ Secure the working platform with fastening pins.

Do a sight-check to make sure that the fastening pins are in the horizontal!

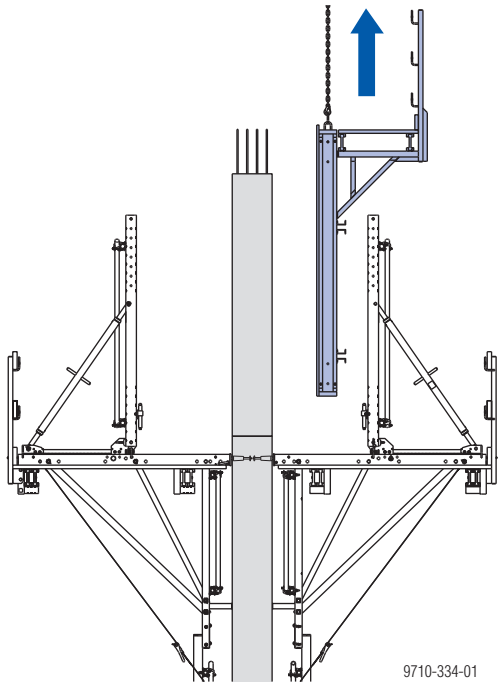


➤ Attach the lifting chain to the lifting brackets on the formwork gang.
This protects the formwork against tipping over.

➤ Remove the two top guard-rail boards from the pouring platform.



➤ Remove the waling-to-bracket holders and lift the formwork element or panel off the climbing unit.

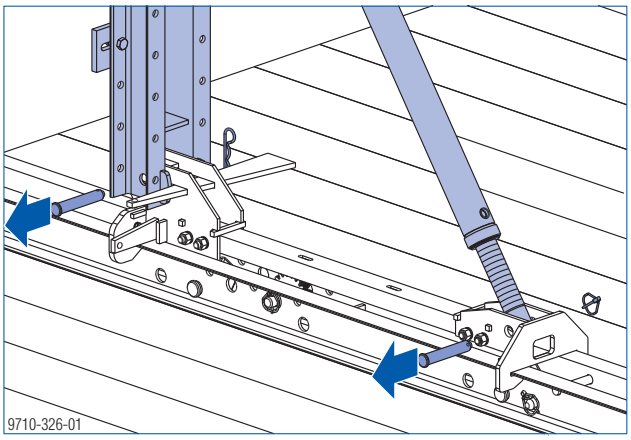


➤ Set down and dismantle the formwork element.

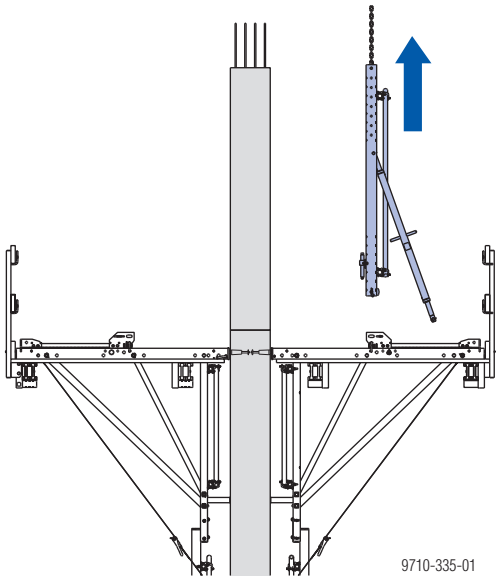
➤ Attach the lifting chain to the suspension bolt of the vertical waling.

➤ Unscrew the bolted connection between the Vertical waling MF and the Travelling gear MF.

➤ Unscrew the bolted connection between the Plumbing spindle MF and the Travelling gear MF.



➤ Lift the Vertical waling MF and Plumbing spindle MF off the climbing unit and set them down.



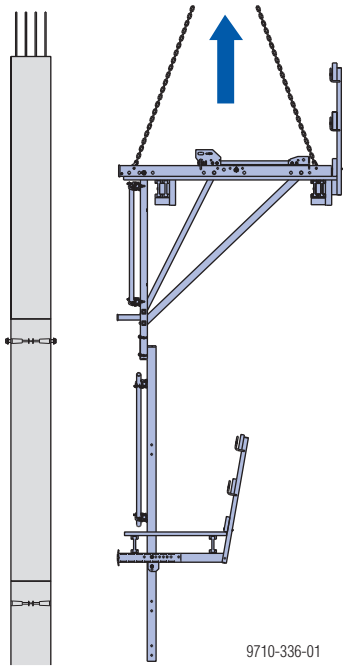
Lifting the climbing unit off the structure

➤ Attach the climbing unit to the crane with a four-part lifting chain (e.g. Doka 4-part chain 3.20m.

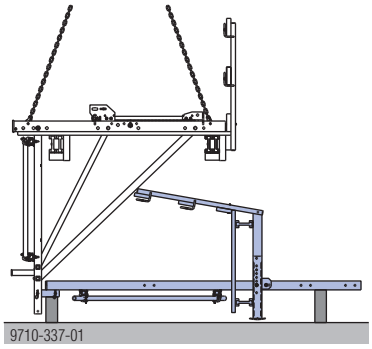
➤ Dismount the 'Wind bracing'.

➤ Remove the fastening pins (= lift-out guard) from the suspension points.

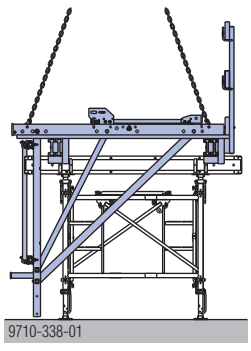
➤ Gently raise the entire unit by crane, and move it away from the building.



➤ Set down the climbing unit and dismantle it.



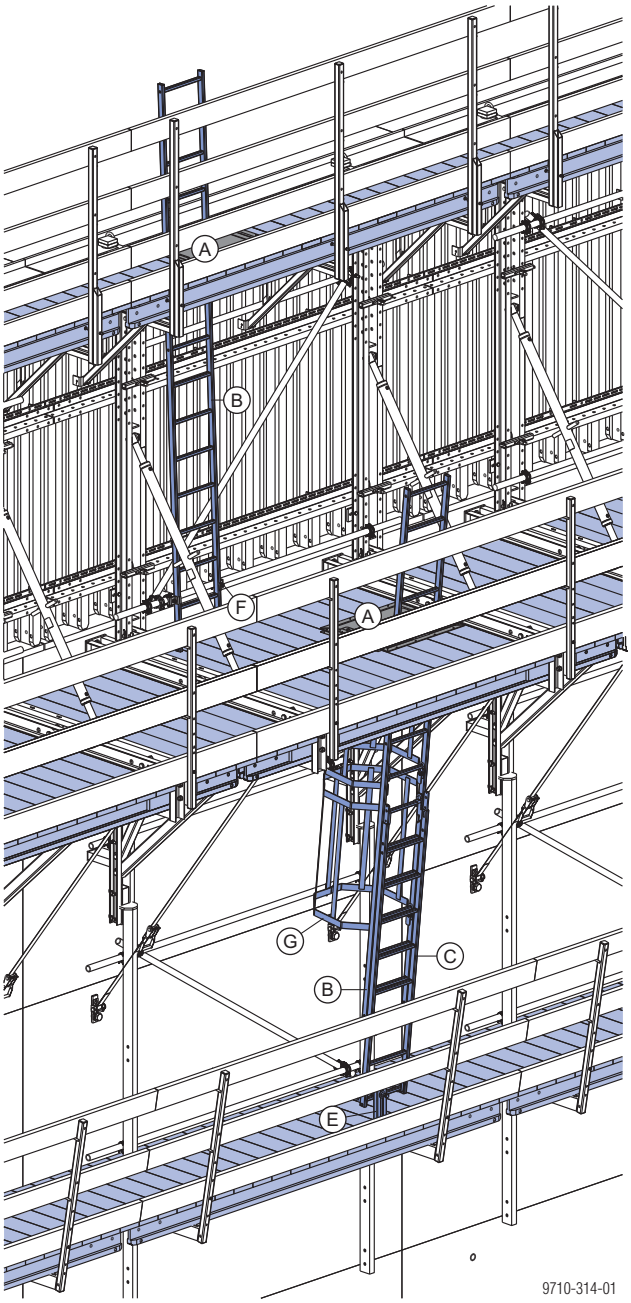
➤ All other dismantling steps are carried out on the ground, in the opposite order of steps from those in which the equipment was assembled.



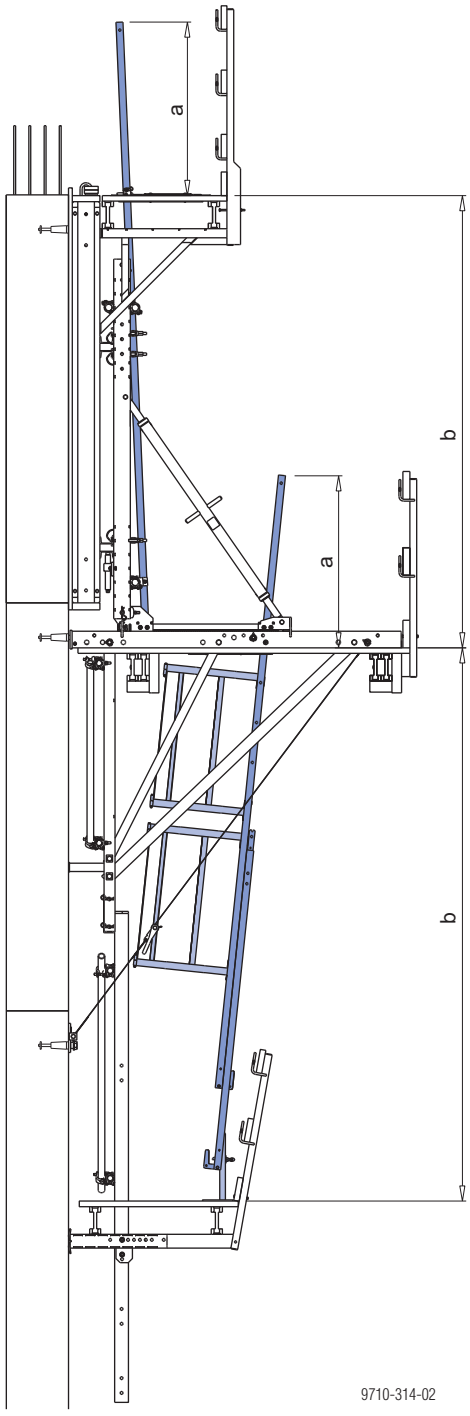
General

Ladder system

For safe up-and-down access between platforms.



A	Manhole B 70/60cm
B	System ladder XS 4.40m
C	Ladder extension XS 2.30m
D	Ladder adapter SK
E	Ladder adapter XS
F	Ladder clamp SK
G	Ladder cage XS



a ... min. 1 m
b ... height of casting section

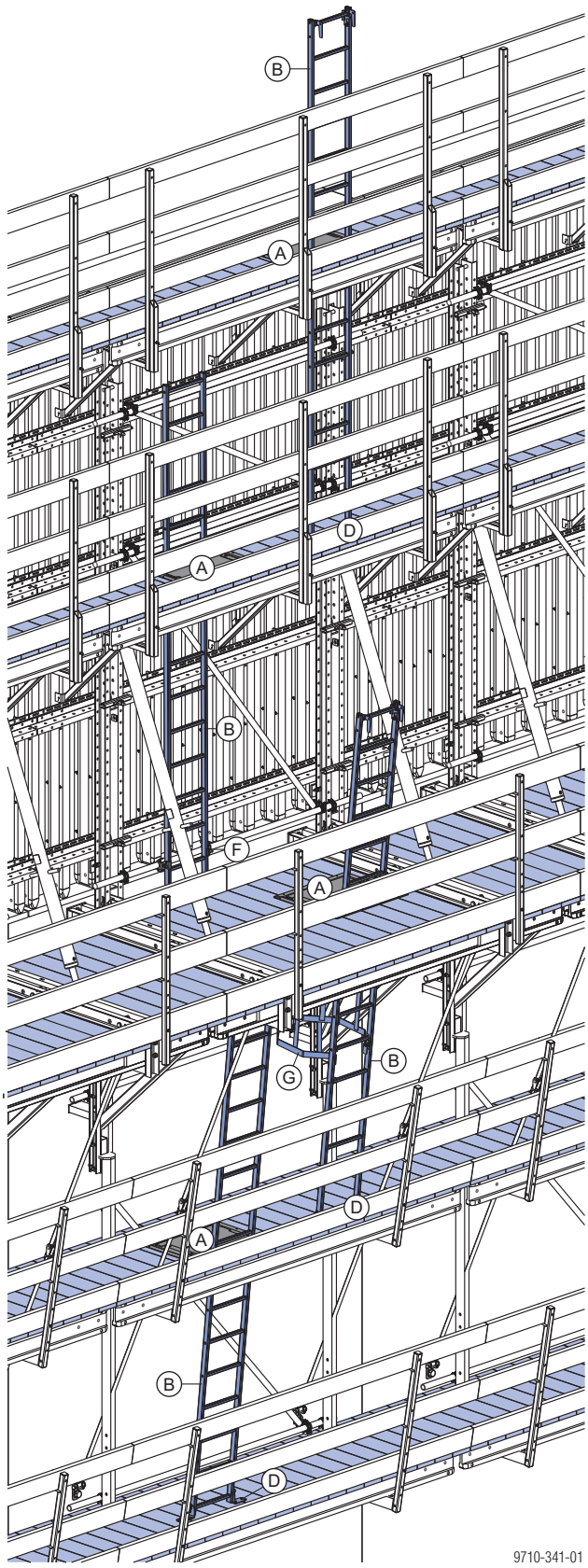
Note:

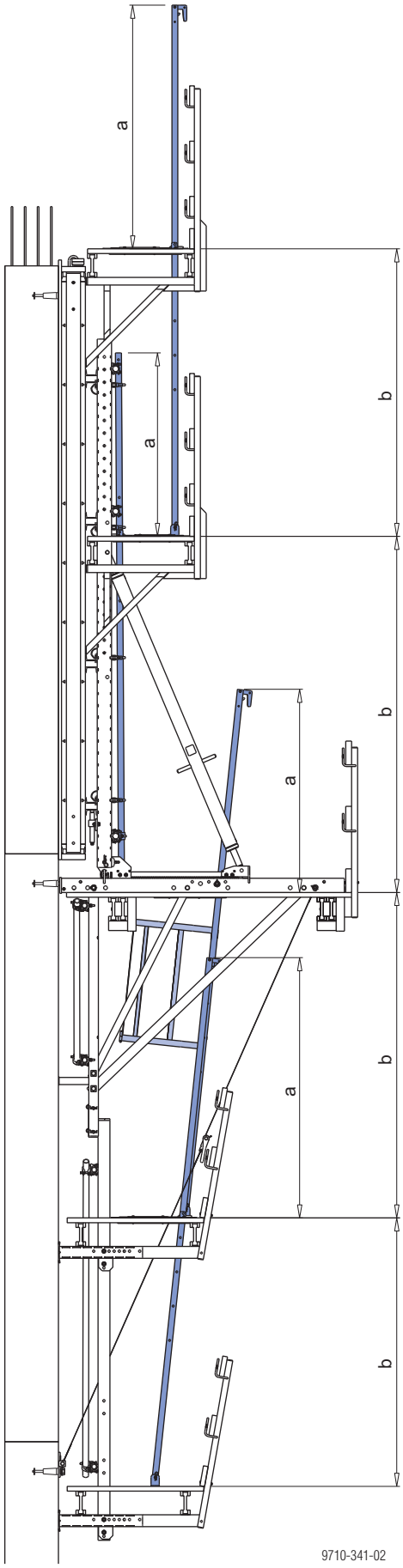
The Ladder system XS must be implemented in such a way that all national regulations are complied with.

Put up safety netting in the ladder and manhole zone, as required by the applicable regulations.

WARNING

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





a ... min. 1 m
b ... height of casting section

Attaching the ladders

to the bracing tubes

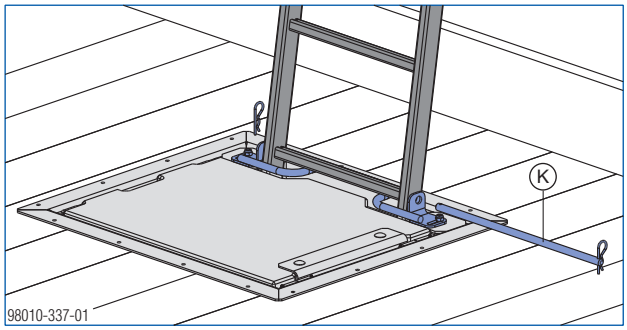
For details of how to attach the ladders to the formwork, see the User Information booklets 'Large-area formwork Top 50' or 'Framed formwork Framax Xlife'.

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).

➤ 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.



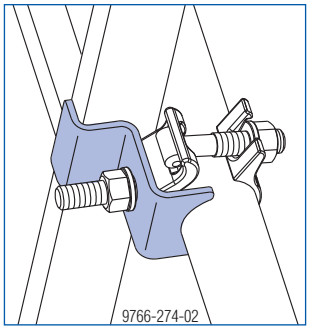
K Ladder bolt XS

CAUTION

The Ladder clamp SK does not sustain vertical loads!

➤ The Ladder clamp SK must only be used in conjunction with a Ladder bolt XS or a Connector XS for wall formwork.

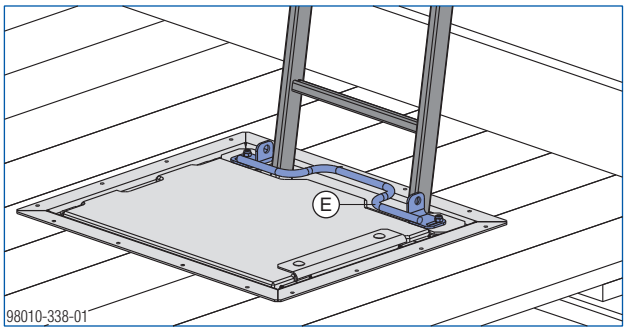
➤ Fix both ladder stiles to the scaffold-tube bracing using Ladder clamps SK and screw-on couplers 48mm 50.



on casting-section heights of up to 3.40 m

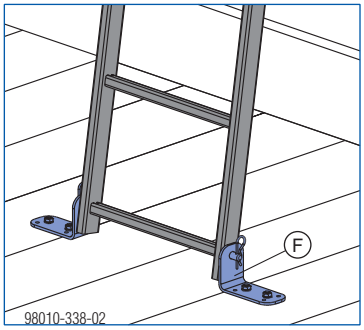
Manhole B 70/60cm

➤ Fix the System ladder XS 4.40m to the manhole with a ladder stirrup.



➤ Screw the Ladder adapter SK to the platform decking.

➤ Pin the System ladder XS 4.40m into the Ladder adapter SK and secure the pins on both sides with a d4 spring cotter.

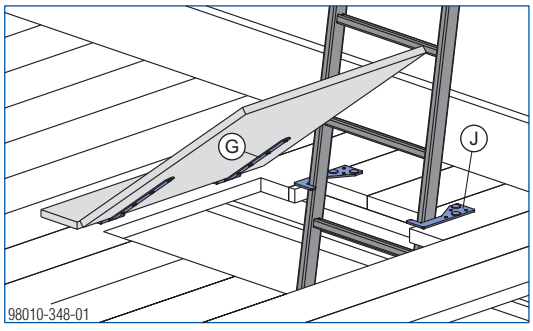


E Ladder stirrup

F Ladder adapter SK

Manhole lid

➤ Fix the System ladder XS 4.40m to the platform decking with a Ladder holder SK.



J Ladder holder SK

G Cover hinge SK 35cm

➤ Screw the Ladder adapter SK to the platform decking.

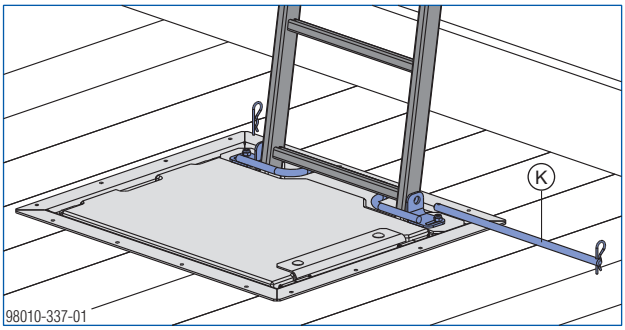
➤ Pin the System ladder XS 4.40m into the Ladder adapter SK and secure the pins on both sides with a d4 spring cotter.

on casting-section heights of over 3.40m

Manhole B 70/60cm

➤ Fix the System ladder XS 4.40m to the manhole with a ladder stirrup.

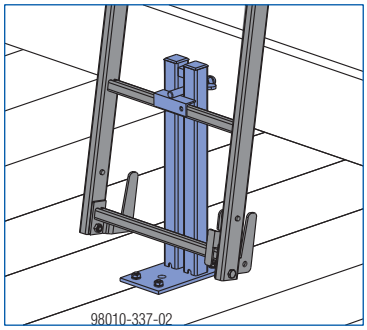
➤ Insert a Ladder bolt XS through the rung of the ladder and secure it on both sides with a d4 spring cotter.



K Ladder bolt XS

➤ Screw the Ladder adapter XS to the platform decking.

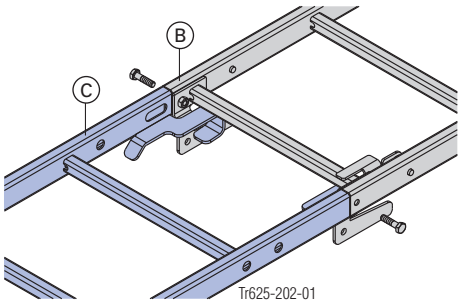
➤ Fix the bottom of the ladder to the Ladder adapter XS.



Lengthening the ladder

Permanently fixed ladder extension

➤ Insert the Ladder extension XS 2.30m **(C)** into the uprights of the System ladder XS 4.40m **(B)** , with its hooking brackets facing downwards, and fasten it with the screws, bolts etc. supplied (width-across 17mm).

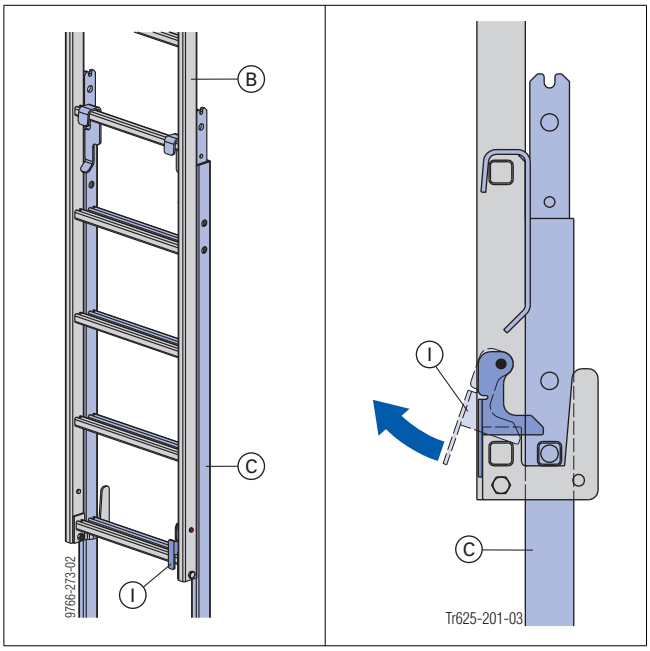


Two Ladder extensions XS 2.30m can be fixed together in the same way.

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.

A telescoping join between two Ladder extensions XS 2.30m can be made in the same way.

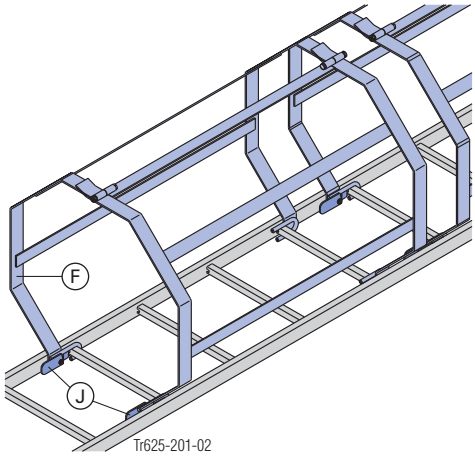


Ladder cage

NOTICE

➤ Always observe all relevant safety regulations applying to the use of the Ladder cage XS in the country in which you are operating (e.g. in Germany: BGV D 36).

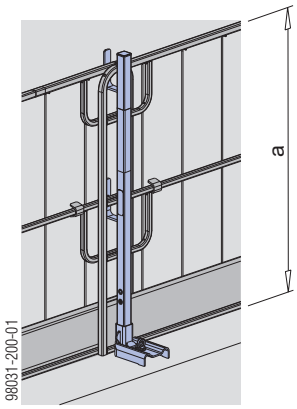
➤ Fix the Ladder cage XS 1.00m **(F)** onto the next available rung. The safety latches **(J)** prevent the cage being accidentally lifted out. Add further Ladder cages XS 1.00m, in each case fixing them onto the next available rung.



Guardrail systems 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

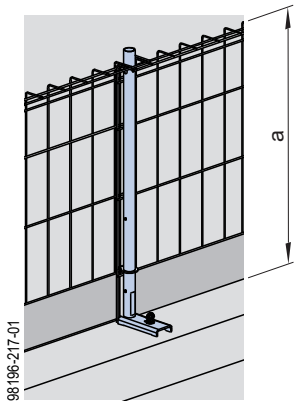


a ... > 1.00 m

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

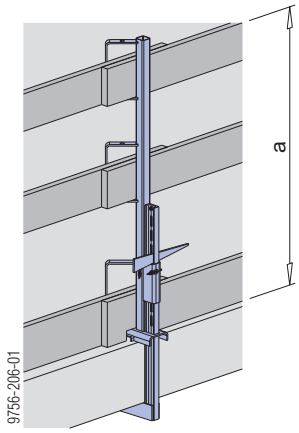


a ... > 1.17 m

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

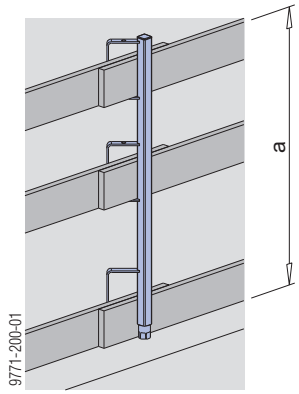


a ... > 1.00 m

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!

Closure of platform gaps

Rubber sheets or flaps for openings of up to 50 mm in the decking

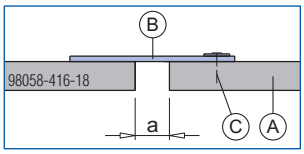
When planning the platforms, a gap to the wall or to the next platform is allowed for to ensure there is enough play for the lifting operation.

NOTICE

Cover these gaps to prevent any small items from falling off.

Closing the gap with a rubber sheet

Gap between two platforms



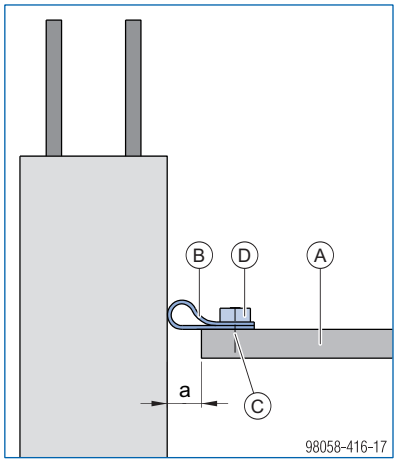
a ... 50 mm

A	Platform decking
B	Rubber sheet, 0.32x10.00m
C	Universal countersunk screws

Note:

Throughout the repositioning operation, make sure that the rubber sheet is not damaged.

Gap between platform and wall

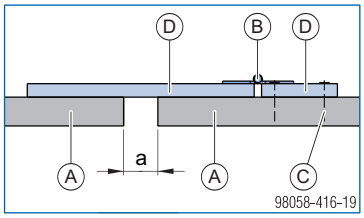


a ... 50 mm

A	Platform decking
B	Rubber sheet, 0.32x10.00m
C	Universal countersunk screws
D	Strip of formwork sheeting 18mm

Closing the gap with a flap

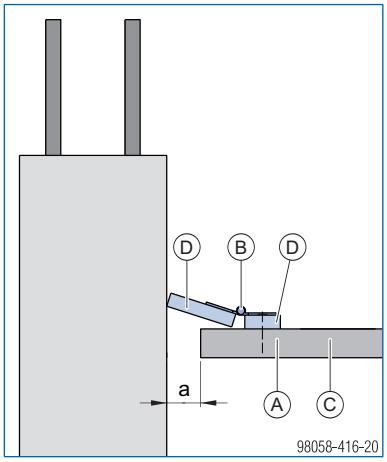
Gap between two platforms



a ... 50 mm

A	Platform decking
B	Hinge
C	Universal countersunk screws
D	Strip of formwork sheeting 18mm

Gap between platform and wall



a ... 50 mm

A	Platform decking
B	Hinge
C	Universal countersunk screws
D	Strip of formwork sheeting 18mm

NOTICE

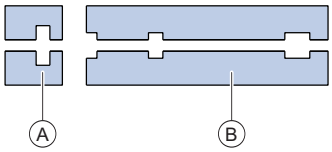
The flaps must be open for the climbing operation.

Closing gap in Horizontal profile MF

NOTICE

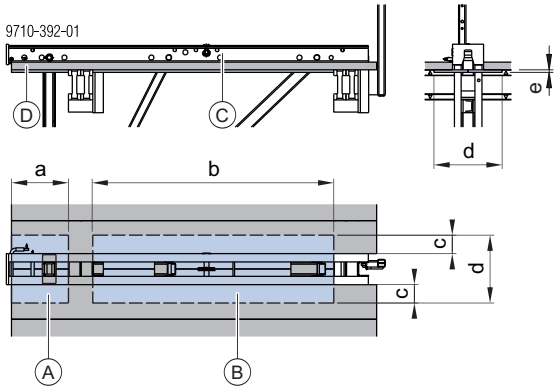
Close the gap in the horizontal profile with strips of formwork sheeting so that small items cannot fall through.

➤ Cut strips of formwork sheeting to size and make cut-outs on project-specific basis.



A Strip of formwork sheeting 18mm (x2)
B Strip of formwork sheeting 18mm (x2)

➤ Screw strips of formwork sheeting to the underside of the platform decking.



a ... 377 mm
b ... 1595 mm
c ... min. 100 mm
d ... 450 mm
e ... 18 mm

A Strip of formwork sheeting 18mm (x2)
B Strip of formwork sheeting 18mm (x2)
C Horizontal profile MF
D Platform decking

Transporting, stacking and storing

The following instructions must be complied with when storing and transporting separate parts or assemblies. This ensures careful, safe treatment of the equipment:

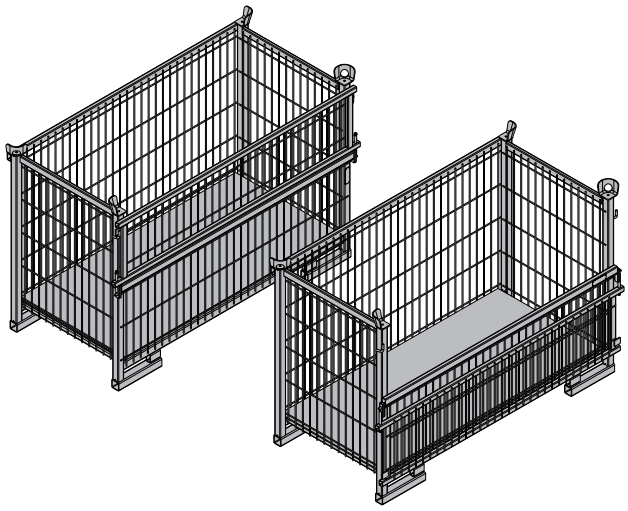
- The parts must be onloaded and off-loaded, transported and stacked in such a way that it is not possible for them to fall off, tip over or slide apart.
- Only set down the parts or assembly units on flat, firm, clean surfaces.
- Spread-angle β of slinging chains: max. 30°.
- Do not detach parts from the lifting straps until they have been safely set down.
- When transporting the equipment by truck, bundle the components or otherwise secure them against slippage, or else transport them in suitable containers.
- Protect all components against soiling, as this prolongs their service life.
- Clearly arranged, logical storage arrangements reduce the time needed for assembly.
- Using intermediate packing timbers during storage and transport lessens the risk of damage.

Please co-ordinate arrangements for return delivery of the equipment with the Doka branch responsible.

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



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

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

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

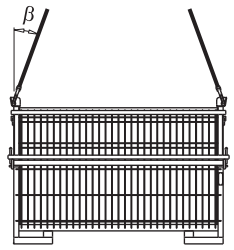
Stacked multi-trip boxes or pallets must have the heaviest boxes at the bottom and the lightest at the top.

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

Lifting by crane

NOTICE

- Multi-trip packaging items 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 working load limit.
- Sling angle β max. 30°!



9234-203-01

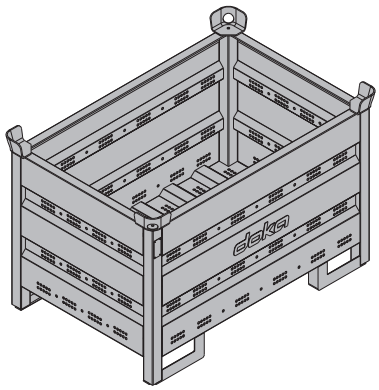
Repositioning by forklift truck or pallet stacking truck

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

Doka multi-trip transport box

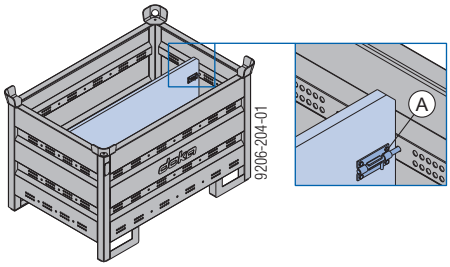
Storage and transport device for small items

Doka multi-trip transport box 1.20x0.80m



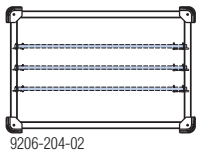
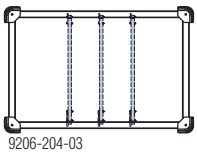
Max. carrying capacity: 1500 kg (3300 lbs)
Permitted imposed load: 7850 kg (17300 lbs)

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**.

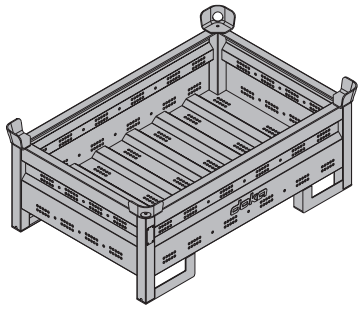


A Slide-bolt for fixing the partition

Possible ways of dividing the box

Multi-trip transport box partition	in the longitudinal direction	in the transverse direction
1.20m	max. 3 partitions	-
0.80m	-	max. 3 partitions
	 9206-204-02	 9206-204-03

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



Max. carrying capacity: 750 kg (1650 lbs)
Permitted imposed 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) Floor gradients up to 3%		Indoors Floor gradients up to 1%	
Doka multi-trip transport box		Doka multi-trip transport box	
1.20x0.80m	1.20x0.80x0.41m	1.20x0.80m	1.20x0.80x0.41m
3	5	6	10
It is not allowed to stack empty pallets on top of one another!			

NOTICE

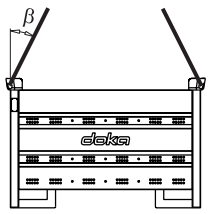
Stacked multi-trip boxes or pallets must have the heaviest boxes at the bottom and the lightest at the top.

Using Doka multi-trip transport boxes as transport devices

Lifting by crane

NOTICE

- Multi-trip packaging items must be lifted individually.
- Use a suitable crane lifting tackle (e.g. Doka 4-part chain 3.20m). Do not exceed the permitted working load limit.
- Sling angle β max. 30°!



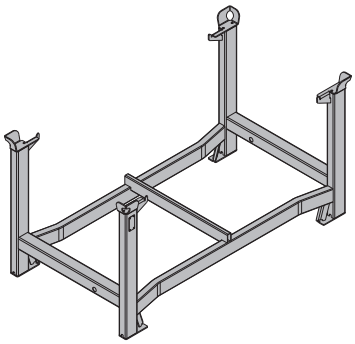
9206-202-01

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 devices for long items.



Max. carrying capacity: 1100 kg (2420 lbs)
Permitted imposed load: 5900 kg (12980 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

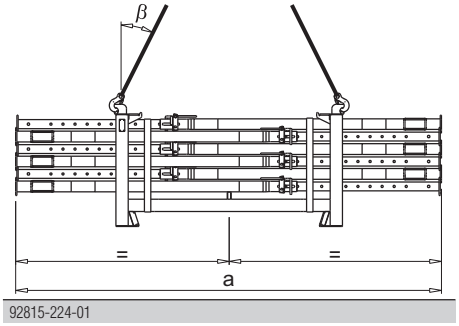
- Stacked multi-trip boxes or pallets must have the heaviest boxes at the bottom and the lightest at the top.
- **How to use with Bolt-on castor set B:**
  - Always apply the fixing brake when the container is 'parked'.
  - When Doka stacking pallets are stacked, the bottom pallet must NOT be one with 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 a suitable crane lifting tackle (e.g. Doka 4-part chain 3.20m). Do not exceed the permitted working load limit.
- Load the items centrically.
- 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 β max. 30°!



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

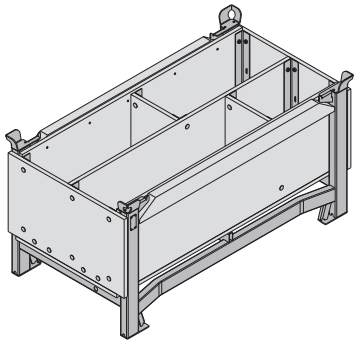
Repositioning by forklift truck or pallet stacking truck

NOTICE

- Load the items centrically.
- 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



Max. carrying capacity: 1000 kg (2200 lbs)
Permitted imposed load: 5530 kg (12191 lbs)

Doka accessory 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%
3	6
It is not allowed to stack empty pallets on top of one another!	

NOTICE

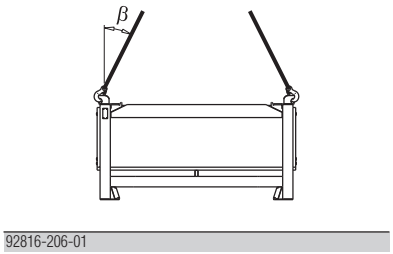
- Stacked multi-trip boxes or pallets must have the heaviest boxes at the bottom and the lightest at the top.
- **How to use with Bolt-on castor set B:**
  - Always apply the fixing brake when the container is 'parked'.
  - When Doka stacking pallets are stacked, the bottom pallet must NOT be one with 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 a suitable crane lifting tackle (e.g. Doka 4-part chain 3.20m). Do not exceed the permitted working load limit.
- When lifting accessory boxes to which Bolt-on castor sets B have been attached, you must also follow the 'Bolt-on castor set B' User Information booklet!
- Sling angle β max. 30°!

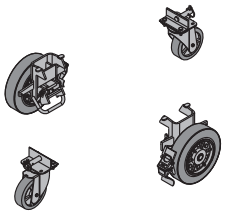


Repositioning by forklift truck or pallet stacking truck

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

Bolt-on castor set B

The Bolt-on castor set B turns multi-trip packaging items into fast and manoeuvrable transport devices.
Suitable for drive-through access openings > 90 cm.

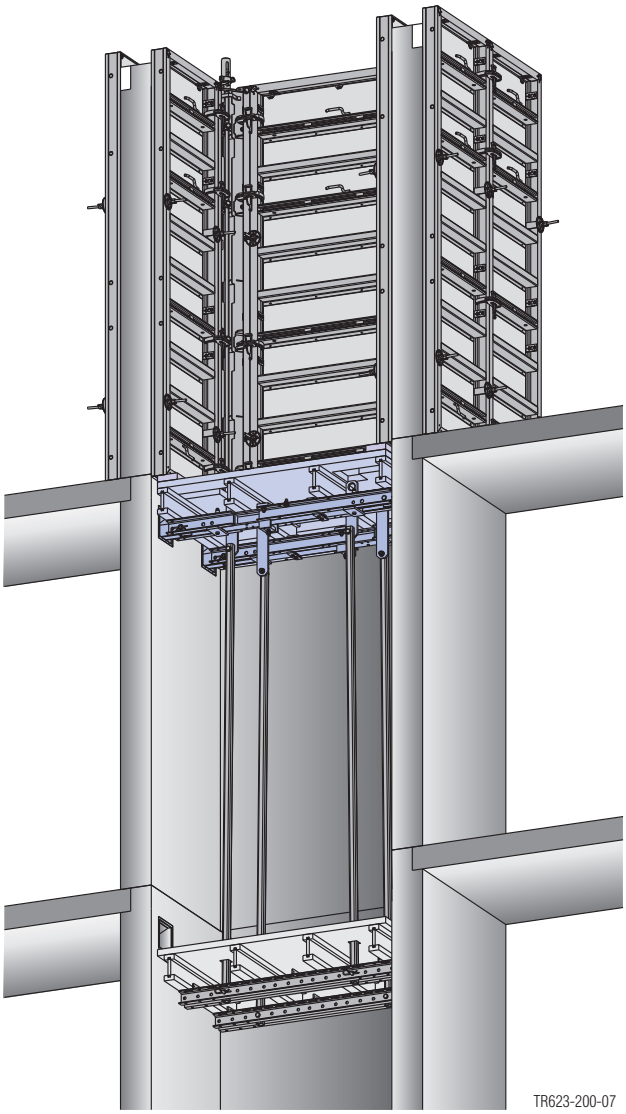


The Bolt-on castor set B can be mounted to the following multi-trip packaging items:

- Doka accessory box
- Doka stacking pallets
- Protective barrier Z pallets

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

Doka shaft platform



Follow the directions in the 'Shaft platform' User Information booklet.

The climbing formwork for inside-shafts

Doka shaft platforms permit quick and easy repositioning in just one crane cycle. This makes them a cost-saving 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

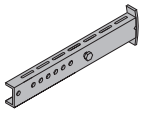
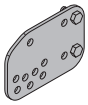
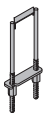
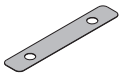
- formwork can be set up and struck quickly with no need for a crane
- cuts back on crane time by enabling fast repositioning of the entire unit (platform plus shaft formwork)

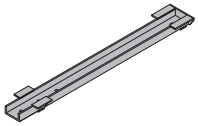
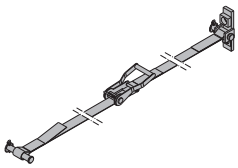
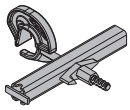
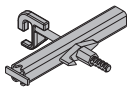
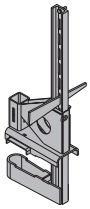
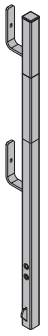
Easy mounting-system

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

	[kg]	Article N°
Horizontal profile MF with handrail post Horizontalprofil MF mit Geländer Galvanised Length: 251 cm Height: 155 cm	**88.5**	**581618000**
Vertical profile MF80 Vertikalprofil MF80 Galvanised Height: 213 cm	**44.0**	**580652000**
Vertical profile MF160 Vertikalprofil MF160 Galvanised Height: 208 cm	**93.3**	**580660000**
Pressure strut MF long Druckstrebe MF lang Galvanised Length: 252.9 cm	**24.7**	**580653000**
Pressure strut MF short Druckstrebe MF kurz Galvanised Length: 183.2 cm	**17.7**	**580654000**
Pressure spindle MF240 Druckspindel MF240 Galvanised Height: 166 - 226 cm	**26.0**	**580680000**

	[kg]	Article N°
Travelling gear MF Fahrwerk MF Galvanised Length: 128 cm Height: 22 cm	**32.3**	**580656000**
Plumbing spindle MF 3.00m Einrichtspindel MF 3,00m Galvanised Length: 166-229 cm	**23.0**	**580657000**
Plumbing spindle MF 4.50m Einrichtspindel MF 4,50m Galvanised Length: 262 - 345 cm	**46.0**	**580664000**
Vertical waling MF 3.00m Fahrriegel MF 3,00m Galvanised	**76.8**	**580658000**
Vertical waling MF 4.50m Fahrriegel MF 4,50m Galvanised	**123.8**	**580663000**

	[kg]	Article N°
Vertical waling extension MF Fahrriegelverlängerung MF Galvanised Height: 144 cm 	**41.5**	**580659000**
Suspension profile MF Hängeprofil MF Height: 368 cm 	**43.0**	**580668000**
Screw-on access bracket MF75 Anschraubbühne MF75 Galvanised Length: 113 cm Height: 152 cm 	**19.0**	**580669000**
Distance profile MF Distanzprofil MF Length: 71 cm 	**7.8**	**580670000**
Swivel plate MF Schwenkplatte MF Galvanised Length: 29 cm Height: 20 cm Width-across: 30 mm 	**4.5**	**580672000**
Brace stirrup 8 Spannbügel 8 Galvanised Width: 19 cm Height: 46 cm Width-across: 30 mm 	**2.7**	**582751000**
Safety plate for brace stirrup 8 Sicherungsblech für Spannbügel 8 Red Length: 23 cm 	**0.05**	**582753000**

	[kg]	Article N°
Starter block unit MF Grundblockriegel MF Galvanised Length: 143 cm Width: 19 cm 	**23.2**	**580678000**
Wind bracing MF/150F/K 6.00m Windabspannung MF/150F/K 6,00m Galvanised 	**4.7**	**580665000**
Waling-to-bracket holder 9-15cm Riegelhalter 9-15cm Galvanised 	**2.7**	**580625000**
Waling-to-bracket holder Keilriegelhalter Galvanised Length: 26 cm Height: 31 cm 	**2.5**	**580526000**
Railing clamp XP 40cm Geländerzwinge XP 40cm Galvanised Height: 73 cm 	**7.7**	**586456000**
Handrail post XP 1.20m Geländersteher XP 1,20m Galvanised Height: 118 cm 	**4.1**	**586460000**
Toeboard holder XP 1.20m Fußwehrhalter XP 1,20m Galvanised Height: 21 cm 	**0.64**	**586461000**

	[kg]	Article N°
Handrail clamp S Schutzgeländerzwinge S Galvanised Height: 123 - 171 cm	**11.5**	**580470000**
Universal railing shackle Universal-Geländerbügel Galvanised Height: 20 cm	**3.0**	**580478000**
Doka 4-part chain 3.20m Doka-Vierstrangkette 3,20m Follow the directions in the "Operating Instructions"!	**15.0**	**588620000**
Lifting beam 110kN 6.00m Umsetzbalken 110kN 6,00m Galvanised Length: 626 cm Follow the directions in the "Operating Instructions"!	**136.5**	**586359000**
Scaffold tube 48.3mm 0.50m	**1.7**	**682026000**
Scaffold tube 48.3mm 1.00m	**3.6**	**682014000**
Scaffold tube 48.3mm 1.50m	**5.4**	**682015000**
Scaffold tube 48.3mm 2.00m	**7.2**	**682016000**
Scaffold tube 48.3mm 2.50m	**9.0**	**682017000**
Scaffold tube 48.3mm 3.00m	**10.8**	**682018000**
Scaffold tube 48.3mm 3.50m	**12.6**	**682019000**
Scaffold tube 48.3mm 4.00m	**14.4**	**682021000**
Scaffold tube 48.3mm 4.50m	**16.2**	**682022000**
Scaffold tube 48.3mm 5.00m	**18.0**	**682023000**
Scaffold tube 48.3mm 5.50m	**19.8**	**682024000**
Scaffold tube 48.3mm 6.00m	**21.6**	**682025000**
Scaffold tube 48.3mm .....m Gerüstrohr 48,3mm Galvanised	**3.6**	**682001000**
Screw-on coupler 48mm 50	**0.80**	**682002000**
Screw-on coupler 48mm 95 Anschraubkupplung Galvanised Width-across: 22 mm	**0.88**	**586013000**
Swivel coupler 48mm Drehkupplung 48mm Galvanised Width-across: 22 mm	**1.5**	**582560000**

	[kg]	Article N°
Warning sign "No entry" 300x300mm Verbotsschild "Zutritt Verboten" 300x300mm	**0.70**	**581575000**
Tool box GF GF-Werkzeugbox included in scope of supply:	**7.2**	**580390000**
(A) **Reversible ratchet 1/2"** Galvanised	**0.73**	**580580000**
(B) **Ring spanner 13/15**	**0.25**	**580599000**
(C) **Ring spanner 16/18**	**0.23**	**580644000**
(D) **Ring spanner 17/19**	**0.27**	**580590000**
(E) **Combination wrench 36**	**0.75**	**582860000**
(F) **Fork wrench 30/32**	**0.80**	**580897000**
(G) **Fork wrench 22/24**	**0.22**	**580587000**
(H) **Fork wrench 13/17**	**0.08**	**580577000**
(I) **Extension 22cm 1/2"**	**0.31**	**580582000**
(J) **Extension 11cm 1/2"**	**0.20**	**580581000**
(K) **Universal joint coupling 1/2"**	**0.16**	**580583000**
(L) **Box nut 30 1/2"**	**0.20**	**580575000**
(M) **Box nut 24 1/2"**	**0.12**	**580584000**
(N) **Box nut 19 1/2" L**	**0.16**	**580598000**
(O) **Box nut 18 1/2" L**	**0.15**	**580642000**
(P) **Box nut 15 1/2"**	**0.09**	**580676000**
(Q) **Box nut 13 1/2"**	**0.06**	**580576000**
Additional tools MF Zusatzwerkzeuge MF consisting of:	**5.4**	**580682000**
(A) **Reversible ratchet 3/4"** Galvanised	**1.5**	**580894000**
(B) **Box nut 50 3/4"**	**0.81**	**581449000**
(C) **Box nut 17 1/2"**	**0.07**	**580685000**
(D) **Box nut 16 1/2"**	**0.08**	**580640000**
(E) **Extension 20cm 3/4"**	**0.68**	**580683000**
(F) **Transition piece A 1/2"x3/4"**	**0.18**	**580684000**
(G) **Universal cone spanner 15.0/20.0** Galvanised Width-across: 50 mm	**0.90**	**581448000**
(H) **Safety Ruler SK** Length: 18 cm	**0.02**	**581439000**
(I) **Hexagon bit socket 14mm 1/2"**	**0.13**	**581583000**

	[kg]	Article N°
Mounting tool for form-ply protector Montagewerkzeug Schalhautschutz Galvanised	**0.96**	**580222000**
Box nut 24 1/2" L Stecknuss 24 1/2" L	**0.30**	**586364000**
Combination wrench 24 Ring-Maulschlüssel 24	**0.25**	**582839000**
Ratchet MF 3/4" SW50 Antriebsknarre MF 3/4" SW50 Galvanised	**5.1**	**580648000**

Ladder system XS

Manhole B 70/60cm Bühnendurchstieg B 70/60cm Steel parts galvanised Timber parts varnished yellow Length: 81 cm Width: 71 cm	**22.0**	**581530000**
Cover hinge SK 35cm Deckelscharnier SK 35cm Galvanised	**0.30**	**581533000**
System ladder XS 4.40m System-Leiter XS 4,40m Galvanised	**33.2**	**588640000**
Ladder extension XS 2.30m Leiternverlängerung XS 2,30m Galvanised	**19.1**	**588641000**
Ladder clamp SK Leiternklemme SK Galvanised Length: 8 cm	**0.23**	**581239000**
Ladder bolt XS Leiternbolzen XS Galvanised Length: 51 cm	**0.85**	**581561000**
Ladder holder SK Leiternhalter SK Galvanised	**0.36**	**581532000**
Ladder adapter SK Leiternfuß SK Galvanised	**2.3**	**581531000**
Ladder adapter XS Leiternfuß XS Galvanised Height: 50 cm	**5.0**	**588673000**
Connector XS Wall formwork Anschluss XS Wandschalung Galvanised Width: 89 cm Height: 63 cm	**20.8**	**588662000**
Ladder cage XS 1.00m **Ladder cage XS 0.25m** Rückenschutz XS Galvanised	**16.5** **10.5**	**588643000** **588670000**

Tie rod system 15.0

	[kg]	Article N°
Universal climbing cone 15.0 2G Universal-Kletterkonus 15,0 2G Galvanised Orange Length: 12.8 cm Diameter: 5.3 cm	1.3	581977500
Universal climbing cone 15.0 Universal-Kletterkonus 15,0 Galvanised Orange Length: 12.8 cm Diameter: 5.3 cm	1.3	581977000
Sealing sleeve K 15.0 Dichtungshülse K 15,0 Orange Length: 12 cm Diameter: 6 cm	0.03	581976000
Concrete cone 52mm Betonkonus 52mm Grey	0.19	581939000
Fair-faced concrete positioning cone MF 15.0 Sichtbetonvorlauf MF 15,0 Galvanised Length: 12.6 cm Diameter: 5.3 cm	1.5	581928000
Sealing disc 30/53 Dichtscheibe 30/53 Black	0.003	581838000
Fair-faced concrete plug 52mm plastic Sichtbetonstopfen 52mm Kunststoff PE Grey	0.01	581850000
Cone screw M30 SW50 7cm Konusschraube M30 SW50 7cm Green Length: 10 cm Diameter: 7 cm Width-across: 50 mm	0.88	581444500
Cone screw B 7cm Konusschraube B 7cm Red Length: 10 cm Diameter: 7 cm Width-across: 50 mm	0.86	581444000
Form-ply protector 32mm Schalhautschutz 32mm Galvanised Width-across: 70 mm	0.38	580220000

	[kg]	Article N°
Positioning clamp M30 Vorlaufklemme M30 Galvanised Diameter: 4 cm	0.19	581833000
Positioning disc M30 Vorlaufscheibe M30 Galvanised Diameter: 9 cm	0.25	581975000
Stop anchor 15.0 B11 Sperranker 15,0 B11 Non-treated	0.55	581868000
Stop anchor 15.0 A16 Sperranker 15,0 A16 Non-treated	0.38	581997000
Stop anchor 15.0 A21 Sperranker 15,0 A21 Non-treated	0.44	581884000
Stop anchor double-ended 15.0 K20 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
Wall anchor 15.0 15cm Wandanker 15,0 15cm Galvanised	1.5	581893000

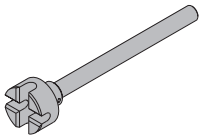
	[kg]	Article N°
Tie rod 15.0mm galvanised 0.50m	**0.72**	**581821000**
Tie rod 15.0mm galvanised 0.75m	**1.1**	**581822000**
Tie rod 15.0mm galvanised 1.00m	**1.4**	**581823000**
Tie rod 15.0mm galvanised 1.25m	**1.8**	**581826000**
Tie rod 15.0mm galvanised 1.50m	**2.2**	**581827000**
Tie rod 15.0mm galvanised 1.75m	**2.5**	**581828000**
Tie rod 15.0mm galvanised 2.00m	**2.9**	**581829000**
Tie rod 15.0mm galvanised 2.50m	**3.6**	**581852000**
Tie rod 15.0mm galvanised .....m	**1.4**	**581824000**
Tie rod 15.0mm non-treated 0.50m	**0.73**	**581870000**
Tie rod 15.0mm non-treated 0.75m	**1.1**	**581871000**
Tie rod 15.0mm non-treated 1.00m	**1.4**	**581874000**
Tie rod 15.0mm non-treated 1.25m	**1.8**	**581886000**
Tie rod 15.0mm non-treated 1.50m	**2.1**	**581876000**
Tie rod 15.0mm non-treated 1.75m	**2.5**	**581887000**
Tie rod 15.0mm non-treated 2.00m	**2.9**	**581875000**
Tie rod 15.0mm non-treated 2.50m	**3.6**	**581877000**
Tie rod 15.0mm non-treated 3.00m	**4.3**	**581878000**
Tie rod 15.0mm non-treated 3.50m	**5.0**	**581888000**
Tie rod 15.0mm non-treated 4.00m	**5.7**	**581879000**
Tie rod 15.0mm non-treated 5.00m	**7.2**	**581880000**
Tie rod 15.0mm non-treated 6.00m	**8.6**	**581881000**
Tie rod 15.0mm non-treated 7.50m	**10.7**	**581882000**
Tie rod 15.0mm non-treated .....m	**1.4**	**581873000**

Ankerstab 15,0mm

DIN 18216

Tie-rod wrench 15.0/20.0 **1.8** **580594000**
Ankerstabschlüssel 15,0/20,0

Galvanised

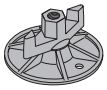


Protective cap 15.0/20.0 **0.03** **581858000**
Schutzkappe 15,0/20,0

Yellow
Length: 6 cm
Diameter: 6.7 cm

Super plate 15.0 **1.1** **581966000**
Superplatte 15,0

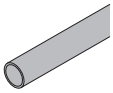
Galvanised
Height: 6 cm
Diameter: 12 cm
Width-across: 27 mm



DIN 18216

Plastic tube 22mm 2.50m **0.45** **581951000**
Kunststoffrohr 22mm 2,50m

PVC
Grey
Diameter: 2.6 cm

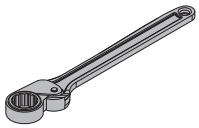


Universal cone 22mm **0.005** **581995000**
Universal-Konus 22mm

Grey
Diameter: 4 cm

Friction type ratchet SW27 **0.49** **581855000**
Freilaufknarre SW27

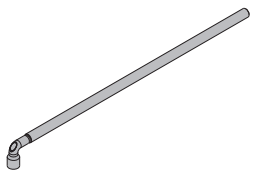
Manganese-phosphated
Length: 30 cm



	[kg]	Article N°
Box spanner 27 0.65m	**1.9**	**581854000**

Steckschlüssel 27 0,65m

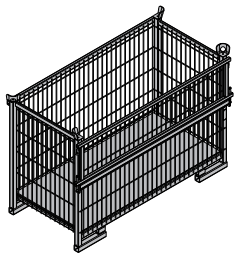
Galvanised



Multi-trip packaging

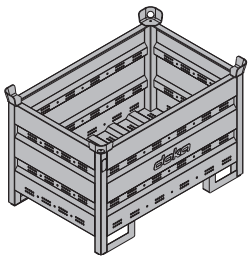
Doka skeleton transport box 1.70x0.80m **87.0** **583012000**
Doka-Gitterbox 1,70x0,80m

Galvanised
Height: 113 cm



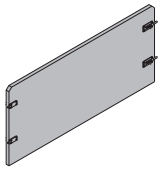
Doka multi-trip transport box 1.20x0.80m **70.0** **583011000**
Doka-Mehrwegcontainer 1,20x0,80m

Galvanised
Height: 78 cm



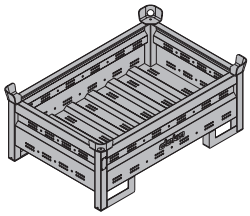
Multi-trip transport box partition 0.80m **3.7** **583018000**
Multi-trip transport box partition 1.20m **5.5** **583017000**
Mehrwegcontainer Unterteilung

Steel parts galvanised
Timber parts varnished yellow



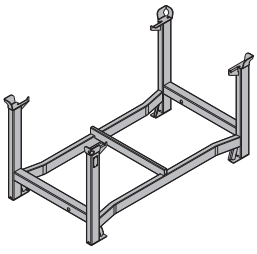
Doka multi-trip transport box 1.20x0.80x0.41m **42.5** **583009000**
Doka-Mehrwegcontainer 1,20x0,80x0,41m

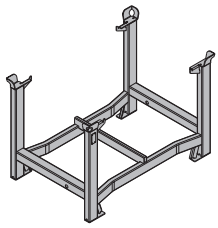
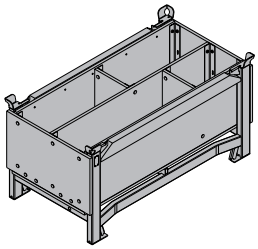
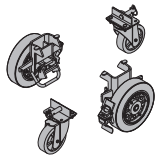
Galvanised



Doka stacking pallet 1.55x0.85m **41.0** **586151000**
Doka-Stapelpalette 1,55x0,85m

Galvanised
Height: 77 cm



	[kg]	Article N°
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**

	[kg]	Article N°

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Doka is one of the world leaders in developing, manufacturing and distributing formwork technology for use in all fields of the construction sector.

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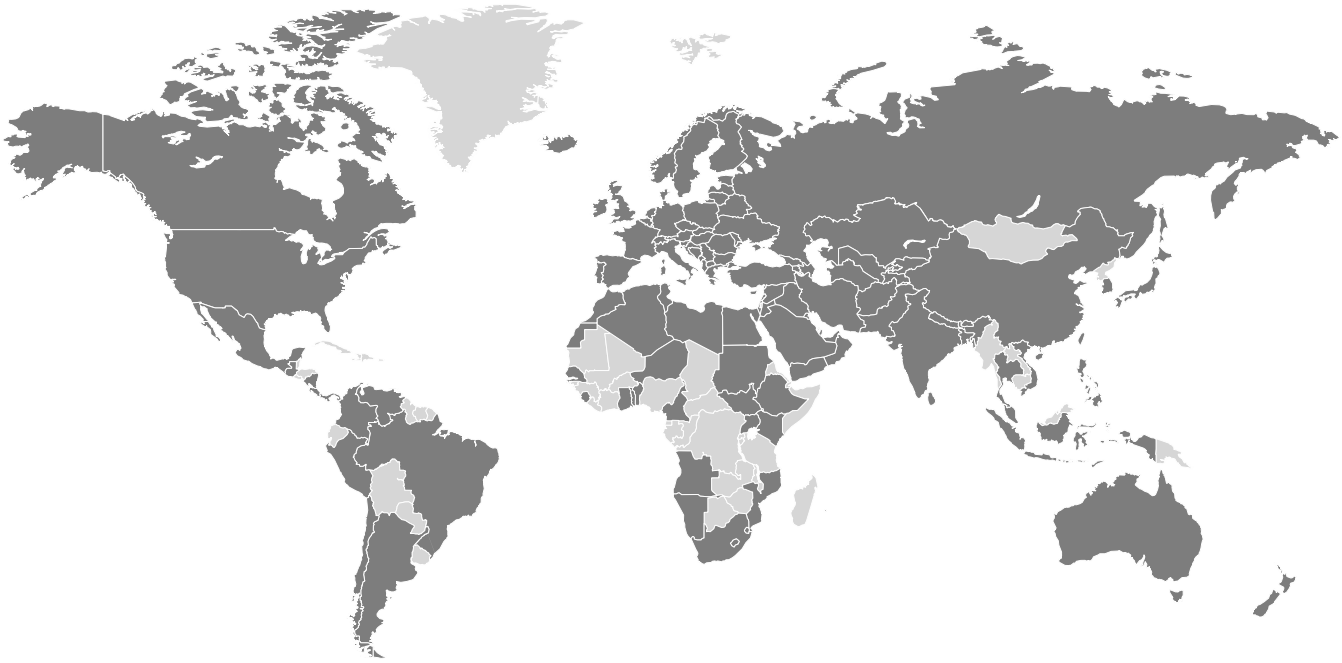
An enterprise forming part of the Umdasch Group, the Doka Group employs a worldwide workforce of more than 6000.



www.doka.com/climbing-formwork-mf240