Climbing formwork MF240

User Information
Instructions for assembly and use (Method statement)
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Introduction

Elementary safety warnings

User target groups

- This booklet is aimed at all persons who will be working with the Doka product or system that it describes. It contains information on the standard design for setting up this system, and on correct, compliant utilisation of the system.
- All persons working with the product described herein must be familiar with the contents of this booklet and with all the safety instructions it contains.
- Persons who are incapable of reading and understanding this booklet, or who can do so only with difficulty, must be instructed and trained by the customer.
- The customer is to ensure that the information materials provided by Doka (e.g. User Information booklets, Instructions for Assembly and Use, Operating Instruction manuals, plans etc.) are up to date and available to all users, and that they have been made aware of them and have easy access to them at the usage location.
- In the relevant technical documentation and 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 side-guard component and/or any of its accessories, the component affected may only continue in use after it has been inspected and passed by an expert.
Rules applying during all phases of the assignment

- The customer must ensure that this product is erected and dismantled, reset and generally used for its intended purpose in accordance with the applicable laws, standards and rules, under the direction and supervision of suitably skilled persons.

  These persons’ mental and physical capacity must not in any way be impaired by alcohol, medicines or drugs.

- Doka products are technical working appliances which are intended for industrial / commercial use only, always in accordance with the respective Doka User Information booklets or other technical documentation authored by Doka.

- The stability and load-bearing capacity of all components and units must be ensured during all phases of the construction work!

- Do not step on or apply strain to cantilevers, closures, etc. until suitable measures to ensure their stability have been correctly implemented (e.g. by tie-backs).

- Strict attention to and compliance with the functional instructions, safety instructions and load specifications are required. Non-compliance can cause accidents and severe injury (risk of fatality) and considerable damage to property.

- Sources of fire in the vicinity of the formwork are prohibited. Heaters are permissible only when used correctly and situated a correspondingly safe distance from the formwork.

- Customer must give due consideration to any and all effects of the weather on the equipment and regards both its use and storage (e.g. slippery surfaces, risk of slipping, effects of the wind, etc.) and implement appropriate precautionary measures to secure the equipment and surrounding areas and to protect workers.

- All connections must be checked at regular intervals to ensure that they are secure and in full working order.

  In particular threaded connections and wedged connections have to be checked and retightened as necessary in accordance with activity on the jobsite and especially after out-of-the-ordinary occurrences (e.g. after a storm).

- It is strictly forbidden to weld Doka products – in particular anchoring/tying components, suspension components, connector components and castings etc. – or otherwise subject them to heating.

  Welding causes serious change in the microstructure of the materials from which these components are made. This leads to a dramatic drop in the failure load, representing a very great risk to safety.

  It is permissible to cut individual tie rods to length with metal cutting discs (introduction of heat at the end of the rod only), but it is important to ensure that flying sparks do not heat and thus damage other tie rods.

  The only articles which are allowed to be welded are those for which the Doka literature expressly points out that welding is permitted.

Assembly

- The equipment/system must be inspected by the customer before use, to ensure that it is in an acceptable condition. Steps must be taken to exclude components that are damaged, deformed, or weakened due to wear, corrosion or rot (e.g. fungal decay).

- Using our safety and formwork systems together with those of other manufacturers can create risks that may lead to injury and damage to property. This requires separate verification.

- The equipment/system must be assembled and erected in accordance with the applicable laws, standards and rules by trained customer personnel whilst maintaining any applicable safety inspections that may be required.

  It is not permitted to modify Doka products; such modifications constitute a safety risk.

Closing the formwork

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

Pouring

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

Stripping the formwork

- Do not strip out the formwork until the concrete has reached sufficient strength and the person in charge has given the order for the formwork to be stripped out!

- When stripping out the formwork, never use the crane to break concrete cohesion. Use suitable tools such as timber wedges, special pry-bars or system features such as Framax stripping corners.

- When stripping out the formwork, do not endanger the stability of any part of the structure, or of any scaffolding, platforms or formwork that is still in place!
Transporting, stacking and storing

- Observe all country-specific regulations applying to the handling of formwork and scaffolding. For system formwork the Doka slinging means stated in this booklet must be used – this is a mandatory requirement.
- If the type of sling is not specified in this document, the customer must use slinging means that are suitable for the application envisaged and that comply with the regulations.
- When lifting, always make sure that the unit to be lifted and its individual parts can absorb the forces that occur.
- Remove loose parts or secure them so that they cannot slip out of position and drop.
- All components must be stored safely, following all the special Doka instructions given in the relevant sections of this document!

Maintenance

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

Miscellaneous

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

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

Symbols used

The following symbols are used in this document:

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

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

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

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

Instruction
Indicates that actions have to be performed by the user.

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

Tip
Points out useful practical tips.

Reference
Cross-references other documents.
Safety signs increase awareness around safe anchoring on 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 safety boards instruct the site crew on how to prepare the positioning points and suspension points correctly. They measure 1000x750x2mm and are weatherproof.
The safety boards are available from Doka and must be prominently positioned by customer in the main access routes on the working and pouring platforms.

For more information, please contact your Doka technician.
Doka services

Support in every stage of the project

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

Project assistance from start to finish

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

Efficient planning for a safe project sequence

Efficient formwork solutions can be developed economically only 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

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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 description

User Information

Climbing formwork MF240

System overview

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 (B)**
  - 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)

- **Horizontal profile MF with handrail post (E)**
  - 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)**

---

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
Areas of use

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.

<table>
<thead>
<tr>
<th>Height of casting section</th>
<th>Vertical waling MF 3.00m with Plumbing spindle MF 3.00m</th>
<th>Vertical waling MF 4.50m with Plumbing spindle MF 4.50m</th>
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<td>Vertical waling MF 3.00m</td>
<td>Vertical waling MF 4.50m</td>
</tr>
<tr>
<td>4.00 - 5.50 m</td>
<td>Vertical waling MF 4.50m</td>
<td>Vertical waling MF 4.50m</td>
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Legend:

A Horizontal profile MF with handrail post
B Vertical profile MF80
C Vertical profile MF160
D Pressure strut MF short
E Pressure strut MF long
F Pressure spindle MF240
G Vertical waling MF 3.00m
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
Walls with constant inclination

Varying wall inclination
Transition from inclined to straight wall

- Horizontal profile MF with handrail post
- Vertical profile MF80
- Vertical profile MF160
- Pressure strut MF short
- Pressure strut MF long
- Pressure spindle MF240
- Vertical waling MF 3.00m
- Vertical waling MF 4.50m
- Travelling gear MF
- Plumbing spindle MF 3.00m
- Plumbing spindle MF 4.50m
- Platform system for the formwork being used
- Suspension profile MF
- Distance profile MF
- Swivel plate MF
- Screw-on access bracket MF75
- Wind bracing MF/150F/K 6.00m

Transition from inclined wall to wall inclined in opposite direction
Overclimbing concrete projections with a cantilever of up to 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".

b ... max. 25 cm
System dimensions

Straight walls

- Height of casting section: max. 6000 mm
- min. 250 mm
- 1660 mm
- 880 mm
- 1370 mm
- 2400 mm
- 1275 mm
- either 2740, 4000, 4500 or 5000 mm
- 1120 mm
- 1100 mm
- max. 750 mm

Inclined wall

- Height of casting section: max. 6000 mm
- min. 600 mm
- 1660 mm
- 1050 mm
- 1100 mm
- 2400 mm
- 1275 mm
- either 2630, 3890, 4390 or 4890 mm (where $\alpha = 10^\circ$)
- 1150 mm
- 1100 mm
- max. 15°
Possible formwork systems

Timber-beam formwork
e.g. Large-area formwork Top 50

Framed formwork
e.g. framed formwork Framax Xlife

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

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!

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.

<table>
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<th>Curve</th>
<th>Wind pressure [kN/m²]</th>
<th>Example:</th>
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<tr>
<td>(A)</td>
<td>1.69</td>
<td>Where (c_{p, \text{net}} = 1.3): Permissible wind speed = 164 km/h</td>
</tr>
<tr>
<td>(B)</td>
<td>1.43</td>
<td>Where (c_{p, \text{net}} = 1.3): Permissible wind speed = 151 km/h</td>
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</table>

**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 \((b - 250 \text{ mm})\) to the actual formwork height.

**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: \(4.50 \text{ m} + (0.5 \text{ m} - 0.25 \text{ m}) = 4.75 \text{ m}\)
  - Influence width: 3.00 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).

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**Universal climbing cones 15.0**

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<td>9710-381-02</td>
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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

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**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.

---

**Cone screw B 7cm**

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

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

<table>
<thead>
<tr>
<th>A</th>
<th>Stop anchor 15.0</th>
</tr>
</thead>
<tbody>
<tr>
<td>16</td>
<td>b ... Tie-rod length: 16.0 cm</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>c</th>
<th>Installation depth: 21.5 cm</th>
</tr>
</thead>
<tbody>
<tr>
<td>d</td>
<td>Minimum wall thickness: 23.5 cm (where the concrete cover is 2 cm)</td>
</tr>
<tr>
<td>e</td>
<td>... concrete cover</td>
</tr>
</tbody>
</table>

### Stop anchor 15.0 B11

<table>
<thead>
<tr>
<th>B</th>
<th>Stop anchor 15.0</th>
</tr>
</thead>
<tbody>
<tr>
<td>11</td>
<td>a ... Size of stop-anchor plate: 90 mm</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>c</th>
<th>Installation depth: 17 cm</th>
</tr>
</thead>
<tbody>
<tr>
<td>d</td>
<td>Minimum wall thickness: 19 cm (where the concrete cover is 2 cm)</td>
</tr>
<tr>
<td>e</td>
<td>... concrete cover</td>
</tr>
</tbody>
</table>

**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

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

Stop anchor double-ended 15.0 K..

<table>
<thead>
<tr>
<th>K</th>
<th>Stop anchor double-ended 15.0</th>
</tr>
</thead>
<tbody>
<tr>
<td>a</td>
<td>Size of stop-anchor plate: 90 mm</td>
</tr>
<tr>
<td>19 - 60</td>
<td>Tie-rod length: 19 - 60 cm</td>
</tr>
</tbody>
</table>

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

WARNING
In walls that are less than 40 cm thick, the Stop anchor double-ended 15.0 K.. has a much lower load-bearing capacity than the Stop anchor 15.0 C17.
➤ Revised static calculations are required here.
➤ Where high tensile forces occur, add additional reinforcement if static calculations require it.
Preparing the positioning point

**WARNING**
Sensitive anchoring, suspension and connector components!
▷ Never weld or heat these components.
▷ Any components that are damaged or weakened by corrosion or wear must be withdrawn from use and destroyed.

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.

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

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

Positioning point with Cone screw formwork MF240

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

**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.

**WARNING**
- The depth mark on the stop anchor must be against the universal climbing cone = must be screwed in to the full depth.
- The sealing sleeve must be completely pushed onto the Universal climbing cone.

Where necessary, the Form-ply protector 32mm can be closed off with a Cover cap D35x3 (included with product).
Positioning point with Positioning clamp M30 (with hole drilled through form-ply)

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

**Installation:**

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

➤ Nail the M8 wing bolt onto the form-facing to make it easier to mount the cone. Shortened double-headed nails make it easier to remove the wing bolt.

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

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

**Assembly:**

➤ Fix the Positioning disk M30 to the form-ply using 28x60 nails (position as shown in shop drawing / assembly plan).

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

**NOTICE**

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

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

Pouring

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

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

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

Positioning point with Cone screw B 7cm or Positioning clamp M30:
- Cone screws B 7cm and wing bolts M8: remove before stripping.

Positioning point with Positioning disc M30 or Positioning clamp M30:
- Positioning discs M30 and Socket connectors M30: remove after stripping.

### 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.

- 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** Orange coloured mark
(only on Universal climbing cone 15.0 2G)

**B** Code on the stop anchor

**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

- Screw the Cone screw B 7cm into the Universal climbing cone until it engages, and tighten it firmly. A tightening torque of 100 Nm (20 kg, assuming a ratchet-length of approx. 50 cm) is sufficient.

  Ensure that control-dimension $b = 30$ mm!

The Reversible ratchet 3/4” must be used for screwing in and fixing the Cone screw B 7cm into the universal climbing cone.

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!
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!

Dismounting the suspension point

➤ Remove the Cone screw B 7cm.
➤ Remove the universal climbing cone.

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.

Concrete cone 52mm

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

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**

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

**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.

**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 B 7cm.

<table>
<thead>
<tr>
<th>a</th>
<th>Length of plastic tube 12 - 22 mm</th>
</tr>
</thead>
<tbody>
<tr>
<td>b</td>
<td>15 - 16 cm</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>a</th>
<th>30 - 71 cm</th>
</tr>
</thead>
<tbody>
<tr>
<td>b</td>
<td>order length = wall thickness a - 13.4 cm</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>H</th>
<th>Universal climbing cone 15.0 2G</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>Cone screw B 7cm</td>
</tr>
</tbody>
</table>
Retrofitting a safe suspension point

Dimensioning the suspension point

The required cube compressive strength of the concrete and ready-mix mortar at the time of loading must be specified separately for each project by the structural designer. It will depend on the following factors:
- load actually occurring
- wall thickness
- reinforcement / extra reinforcement steel
- distance from edge

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

The required cube compressive strength $f_{ck,cube,current}$ must be at least 10 N/mm², however.

Drilling a hole for the suspension point through the wall

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

e.g.: if the crew forgot to prepare a positioning point.
- Drill a hole of diam. 55 mm and 130 mm depth.
- Drill a hole of diam. 25 mm.
- Push the sealing sleeve all the way onto the universal climbing cone.
- Screw the tie rod into the universal climbing cone until it fully engages.
- Screw a Cone screw B 7cm into the universal climbing cone.

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

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

- 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.

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

➤ 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.

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

➤ 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).

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

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

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 resetting of the entire unit

**NOTICE**
- **Before repositioning:** Remove any loose items from the formwork and platforms, or secure them firmly.
- The conveyance of persons is forbidden!
- Observe all regulations applying to the operation of cranes where higher wind speeds are experienced.
- Spread angle $\beta$: 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 hoisting points
This automatically leads to the required spread angle $\beta$.

**WARNING**
- Any lifting brackets on the formwork elements, or Framax lifting hooks, must not be used for lifting the unit as a whole.
- Attach the crane suspension 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.

| Max. load: | 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.
- 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 edge protection or an access prohibition barrier.
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.

![Access prohibition barrier diagram]

**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.

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

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

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

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

➤ 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!

➤ Mount the "wind bracing".
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

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.

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 B 7cm to attach the tensioning unit of the wind bracing to the prepared positioning point on the structure.

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

Wind bracing MF 6.00m
Permitted tensile force: 15 kN

Travelling unit:
➤ Attach the crane suspension tackle to the suspension bolt of the vertical waling.
➤ Fly the travelling unit to the working platform by crane.

➤ 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.

Do a sight-check to make sure that the fastening pins are in the horizontal!
Formwork:
➤ Attach the crane suspension tackle to the lifting brackets on the pre-assembled formwork.
➤ Fly the formwork to the working platform by crane.
➤ Fix the pre-assembled formwork to the Vertical walings MF with waling-to-bracket holders.
➤ Adjust dimension ‘b’ as per shop drawing / assembly plan, using the adjusting spindle (see ‘Plumbing & aligning the formwork’).
➤ Insert guardrail boards and use nails to secure them to the handrail-post plates.

<table>
<thead>
<tr>
<th>Waling-to-bracket holder</th>
<th>Waling-to-bracket holder (new version)</th>
</tr>
</thead>
<tbody>
<tr>
<td>H ... permitted horizontal load: 11 kN</td>
<td></td>
</tr>
<tr>
<td>H ... permitted horizontal load: 22 kN</td>
<td></td>
</tr>
</tbody>
</table>

➤ Fix timber wedges in the multi-purpose walings (for better load-transfer in the area around the adjusting spindles).
Making it impossible to use any of the forbidden attachment methods when lifting and repositioning the unit in one piece:

**WARNING**

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

➤ E.g. nail on a board in such a way that the crane suspension 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 shop drawing / assembly plan.

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 un-avoidable 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.

![Diagram of decking supports]

a ... centre-to-centre distance
x = y ... diagonals
A Horizontal profile MF

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

---

Dimensions of the wooden spacers

<table>
<thead>
<tr>
<th>Type of beam</th>
<th>Wooden spacer [mm]</th>
<th>(B)</th>
<th>(C)</th>
<th>(D)</th>
</tr>
</thead>
<tbody>
<tr>
<td>H20 P</td>
<td>60 x 118</td>
<td>30 x 118</td>
<td>97 x 118</td>
<td></td>
</tr>
<tr>
<td>H20 N</td>
<td>50 x 118</td>
<td>26 x 118</td>
<td>92 x 118</td>
<td></td>
</tr>
</tbody>
</table>

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

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!

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

- 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.

Platform decking on the suspension-point side:

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

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
**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.

**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.

**NOTICE**
➤ Secure the temporary support so that it cannot tip over.
➤ Set down the working platform on a temporary support.
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.

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.

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.
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.

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!

Cut-out needed in platform decking (for access to the crane-hoisting point on the 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.

Note: The choice of platform beam will depend on the project.
Mounting toe-board planks

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

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.
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.

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.

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

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

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.

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").

A Vertical waling MF
G Plumbing spindle MF

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 waling 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.

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.
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.

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.
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.

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 ... 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

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)

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.

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!

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 of 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.

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 protective equipment to protect against falls (e.g. Doka personal fall-arrest set)
or mount the sideguards at the same time as the platforms are assembled.

---

**Edge protection system XP**

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 Plumb-ing 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 remarks

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

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

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.
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.

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

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.

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

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.

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

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

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.

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.

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.
Fall-arrest systems on the structure

**Handrail post XP 1.20m**

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

Follow the directions in the 'Edge protection system XP' User Information booklet!

**Handrail clamp T**

- Fixed in embedded anchoring components or reinforcement hoops
- Guard-rail boards or scaffold tubes can be used as the safety barrier

Follow the directions in the 'Handrail clamp T' User Information!

**Handrail clamp S**

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

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

Follow the directions in the 'Handrail post 1.10m' User Information!
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 $\beta$ 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**

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

| Max. load: 700 kg (1540 lbs) |
| Permitted imposed load: 3150 kg (6950 lbs) |

**NOTICE**

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

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

**Max. n° of boxes on top of one another**

<table>
<thead>
<tr>
<th>Outdoors (on the site)</th>
<th>Indoors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Floor gradient up to 3%</td>
<td>Floor gradient up to 1%</td>
</tr>
<tr>
<td>2</td>
<td>5</td>
</tr>
</tbody>
</table>

It is not allowed to stack empty pallets on top of one another!

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

**Lifting by crane**

**NOTICE**

- Multi-trip packaging items may only be lifted one at a time.
- Only lift the boxes when their sidewalls are closed!
- Use a suitable crane suspension tackle (e.g. Doka 4-part chain 3.20m). Do not exceed the permitted load-bearing capacity.
- Spread angle $\beta$ 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.
Doka multi-trip transport box
1.20x0.80m galv.

Storage and transport devices for small items:
• durable
• stackable

Suitable transport appliances:
• crane
• pallet stacking truck
• forklift truck

Max. load: 1500 kg (3300 lbs)
Permitted imposed load: 7850 kg (17305 lbs)

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

Multi-trip transport box partition

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

Possible ways of dividing the box

<table>
<thead>
<tr>
<th>Multi-trip transport box partition</th>
<th>Lengthways</th>
<th>Crossways</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.20m</td>
<td>max. 3 partitions</td>
<td></td>
</tr>
<tr>
<td>0.80m</td>
<td></td>
<td>max. 3 partitions</td>
</tr>
</tbody>
</table>

Using Doka multi-trip transport boxes as storage units

Max. n° of boxes on top of one another

<table>
<thead>
<tr>
<th>Outdoors (on the site)</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Floor gradient up to 3%</td>
<td>Floor gradient up to 1%</td>
</tr>
<tr>
<td>3</td>
<td>6</td>
</tr>
</tbody>
</table>

It is not allowed to stack empty pallets on top of one another!

Using Doka multi-trip transport boxes as transport devices

Lifting by crane

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

Repositioning by forklift truck or pallet stacking truck

The forks can be inserted under either the broadside or the narrowside of the containers.
Doka stacking pallet 1.55x0.85m and 1.20x0.80m

Storage and transport devices for long items:
- durable
- stackable

Suitable transport appliances:
- crane
- pallet stacking truck
- forklift truck

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

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

Using Doka stacking pallets as transport devices

Lifting by crane

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

Repositioning by forklift truck or pallet stacking truck

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

Using Doka stacking pallets as storage units

Max. n° of units on top of one another

<table>
<thead>
<tr>
<th>Outdoors (on the site)</th>
<th>Indoors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Floor gradients of up to 3%</td>
<td>Floor gradients of up to 1%</td>
</tr>
<tr>
<td>2</td>
<td>6</td>
</tr>
<tr>
<td>It is not allowed to stack empty pallets on top of one another!</td>
<td></td>
</tr>
</tbody>
</table>

Note:
How to use with bolt-on castor set:
Always apply the fixing brake when the container is ‘parked’.
When Doka stacking pallets are stacked, the bottom pallet must NOT be one with a bolt-on caster set mounted to it.

<table>
<thead>
<tr>
<th></th>
<th>a</th>
</tr>
</thead>
<tbody>
<tr>
<td>Doka stacking pallet 1.55x0.85m</td>
<td>max. 4.5 m</td>
</tr>
<tr>
<td>Doka stacking pallet 1.20x0.80m</td>
<td>max. 3.0 m</td>
</tr>
</tbody>
</table>
General remarks

User Information

Climbing formwork MF240

Doka accessory box

Storage and transport devices for small items:
- durable
- stackable

Suitable transport appliances:
- crane
- pallet stacking truck
- forklift truck

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

Doka accessory boxes as storage units

**Max. n° of boxes on top of one another**

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<td>6</td>
</tr>
</tbody>
</table>

It is not allowed to stack empty pallets on top of one another!

**Note:**

**How to use with bolt-on castor set:**
Always apply the fixing brake when the container is 'parked'.

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

NOTICE

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

Doka accessory box as transport devices

**Lifting by crane**

**NOTICE**

- Multi-trip packaging items may only be lifted one at a time.
- Use a suitable crane suspension tackle (e.g. Doka 4-part chain 3.20m).
  Do not exceed the permitted load-bearing capacity.
- Spread angle $\beta$ 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 caster set B turns the stacking pallet into a fast and manoeuvrable transport device.
Suitable for drive-through access openings > 90 cm.

The Bolt-on caster set B can be mounted to the following multi-trip packaging items:
- Doka accessory box
- Doka stacking pallets

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

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

Follow the directions in the 'Shaft platform' User Information booklet.
### Component Overview

<table>
<thead>
<tr>
<th>Component Type</th>
<th>Article No.</th>
<th>Weight (kg)</th>
<th>Description</th>
<th>Length</th>
<th>Height/Cm</th>
<th>Material</th>
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Component overview

Handrail clamp S
Schutzgeländerzwinge S

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Universal railing shackle
Universal-Geländerbügel

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Doka 4-part chain 3.20m
Doka-Vierstrangkette 3.20m

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Lifting beam 110kN 6.00m
Umsetzbalken 110kN 6,00m

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Scaffold tube 48.3mm 0.50m
Gerüstrohr 48,3mm

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Scaffold tube 48.3mm 1.00m

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Swivel coupler 48mm
Drehkupplung 48mm

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Warning sign "No entry" 300x300mm
Verbotschild "Zutritt Verboten" 300x300mm

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Doka personal fall-arrest set
Doka-Auffanggurt

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Tool box GF
GF-Werkzeugbox

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Included in scope of supply:

(A) Reversible ratchet 1/2"
Galvanised

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B) Fork wrench 13/17
C) Fork wrench 22/24
D) Fork wrench 30/32
E) Ring spanner 17/19
F) Extension 11cm 1/2"
G) Extension 22cm 1/2"
H) Universal joint coupling 1/2"
I) Box nut 19 1/2" L
J) Box nut 13 1/2"
K) Box nut 24 1/2"
L) Box nut 30 1/2"

Follow the directions in the "Operating Instructions"!

Galvanised

Width-across: 22 mm
Follow the directions in the "Fitting instructions"!

Follow the directions in the "Operating Instructions"!

Follow the directions in the "Fitting instructions"!

Follow the directions in the "Operating Instructions"!
Ladder system XS

- Manhole B 70/60cm
  - Steel parts galvanised
  - Timber parts varnished yellow
  - Length: 81 cm
  - Width: 71 cm
  - Height: 50 cm
  
  [581530000] 22.0

- Ladder extension XS 2.30m
  - Galvanised
  - Length: 51 cm
  - Height: 12 cm
  
  [588641000] 19.1

- Ladder bolt XS
  - Galvanised
  - Length: 8 cm
  
  [581561000] 0.85

- Ladder holder SK
  - Galvanised
  - Length: 8 cm
  
  [581532000] 0.36

- Ladder adapter SK
  - Galvanised
  
  [581531000] 2.3

- Ladder adapter XS
  - Galvanised
  - Height: 50 cm
  
  [588673000] 5.0

Additional tools MF

- Reversible ratchet 3/4"
  - Galvanised
  - Length: 50 cm
  
  [580685000] 1.5

- Box nut 17 1/2"
  - 0.07
  
  [580685000] 1.5

- Box nut 50 3/4"
  - 0.81
  
  [581449000] 0.81

- Extension 20 cm 3/4"
  - 0.68
  
  [580683000] 0.68

- Transition piece A 1/2"x3/4"
  - 0.18
  
  [580684000] 0.18

- Universal cone spanner 15.0/20.0
  - Galvanised
  - Length: 9 cm
  
  [581448000] 0.90

- Mounting tool for form- ply protector
  - Galvanised
  - Width: 12 cm
  - Height: 12 cm
  
  [580222000] 0.96

- Box nut 24 1/2" L
  - 0.30
  
  [586364000] 0.30

- Combination wrench 24
  - 0.25
  
  [582839000] 0.25

- Ratchet MF 3/4" SW50
  - Galvanised
  
  [580648000] 5.1

System ladder XS 4.40m

- System-Leiter XS 4,40m
  - Galvanised
  
  [588640000] 33.2
## Component Overview

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<th>Component</th>
<th>Description</th>
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<td><strong>Universal climbing cone 15.0 2G</strong></td>
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**Dimensions**

- **Connector XS Wall formwork**
  - Width: 89 cm
  - Height: 63 cm
- **Ladder cage XS 1.00m**
  - Width: 50 mm
  - Diameter: 50 mm
- **Ladder cage XS 0.25m**
  - Width: 70 mm
  - Diameter: 4 cm
- **Tie rod system 15.0**
  - Length: 12.8 cm
  - Diameter: 5.3 cm
- **Universal climbing cone 15.0 2G**
  - Orange
  - Length: 12.8 cm
  - Diameter: 5.3 cm
- **Sealing sleeve K 15.0**
  - Orange
  - Length: 12 cm
  - Diameter: 6 cm
- **Fair-faced concrete positioning cone MF 15.0**
  - Galvanised
  - Length: 12.6 cm
  - Diameter: 5.3 cm
- **Sealing disc 53**
  - Black
- **Fair-faced concrete plug 52mm plastic**
  - PE
  - Grey
- **Cone screw B 7cm**
  - Red
  - Length: 10 cm
  - Diameter: 7 cm
  - Width-across: 50 mm

**Additional Information**

- Custom lengths can be ordered under the special-component Art.n° 580100000, quoting the designation and the desired length in mm.
### Component overview

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<th>Article n°</th>
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<td>Tie rod 15.0mm non-treated 2.00m</td>
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<td>Tie rod wrench 15.0/20.0</td>
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<td>Protective cap 15.0/20.0</td>
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<td>Super plate 15.0</td>
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<td>Plastic tube 22mm 2.50m</td>
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<td>Universal cone 22mm</td>
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<td>Friction type ratchet SW27</td>
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<td>Manganese-phosphated</td>
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### Multi-trip packaging

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<tr>
<th>Article n°</th>
<th>Article n°</th>
<th>[kg]</th>
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<tr>
<td>Box spanner 27 0.65m</td>
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<tr>
<td>Doka skeleton transport box 1.70x0.80m</td>
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<tr>
<td>Doka multi-trip transport box 1.20x0.80m</td>
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<td>Multi-trip transport box partition 0.80m</td>
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<td>Multi-trip transport box partition 1.20m</td>
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<td>5.5</td>
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<td>Doka stacking pallet 1.55x0.85m</td>
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<td>Doka stacking pallet 1.20x0.80m</td>
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### Component overview

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<tr>
<th>Component</th>
<th>Article n°</th>
<th>Description</th>
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<tbody>
<tr>
<td>Doka accessory box</td>
<td>583010000</td>
<td>Timber parts varnished yellow, Steel parts galvanised, Length: 154 cm, Width: 83 cm, Height: 77 cm</td>
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<td>Bolt-on castor set B</td>
<td>586168000</td>
<td>Painted blue</td>
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</tbody>
</table>

**User Information**

Climbing formwork MF240
Near to you, worldwide

Doka is one of the world leaders in developing, manufacturing and distributing formwork technology for use in all fields of the construction sector. With more than 160 sales and logistics facilities in over 70 countries, the Doka Group has a highly efficient distribution network which ensures that equipment and technical support are provided swiftly and professionally. An enterprise forming part of the Umdasch Group, the Doka Group employs a worldwide workforce of more than 6000.

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