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en-GB

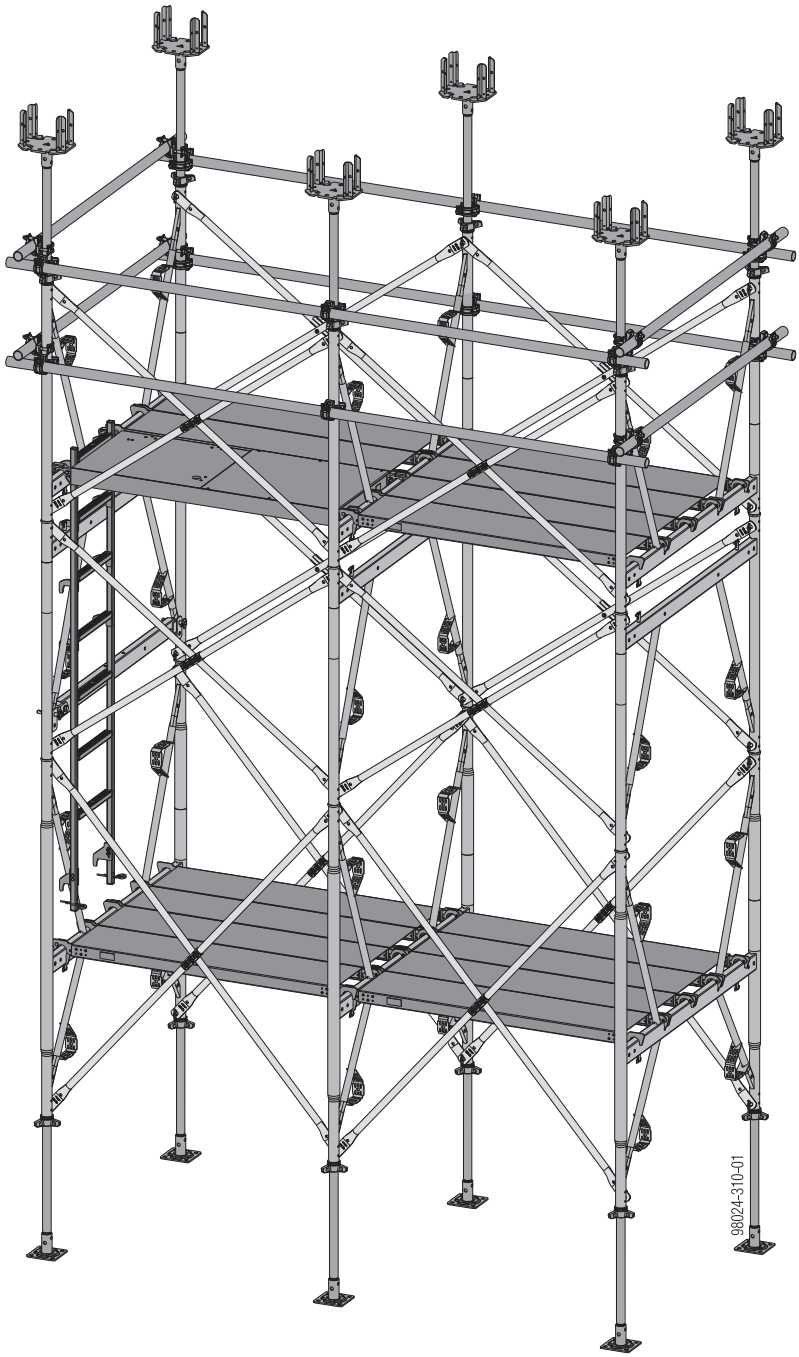
The Formwork Experts.

Load-bearing tower Staxo 40

with brief design as per Eurocode

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 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.

Services

Support in every stage of the project

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

Project assistance from start to finish

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

Efficient planning for a safe project sequence

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

Optimise construction workflows with Doka

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

Custom formwork and on-site assembly

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

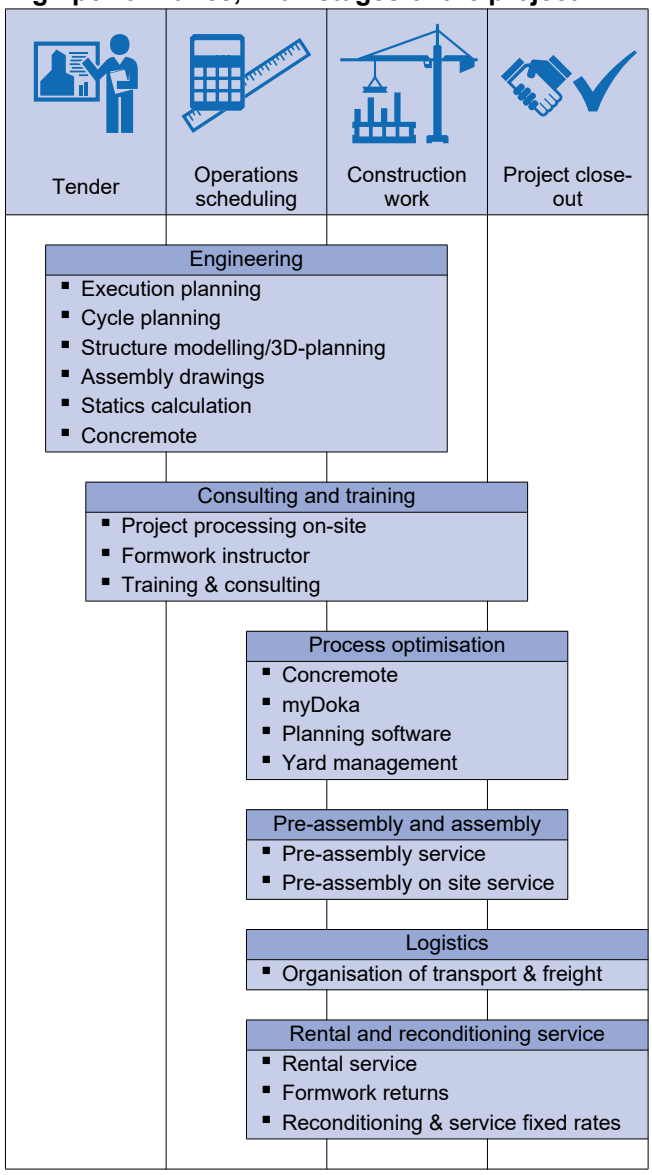
Just-in-time availability

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

Rental and reconditioning service

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

High performance, in all stages of the project



upbeat construction
digital services for higher productivity

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

System description

Staxo 40 – the ergonomic shoring system for the building construction field

Easy to handle

for high-speed working

Highly ergonomic design, featuring

- low unit weight
- ergonomically optimised frame geometry
- small number of system components
- logical assembly sequence

Highly cost-efficient

for all building-construction shoring needs

Unbeatably cost-efficient, thanks to

- fast workflow
- crane-time-saving erection method
- optimised equipment utilisation thanks to the flexible inter-frame spacing
- tower-to-tower walkway openings for fast working inside the scaffold and beneath the superstructure

Maximum safety

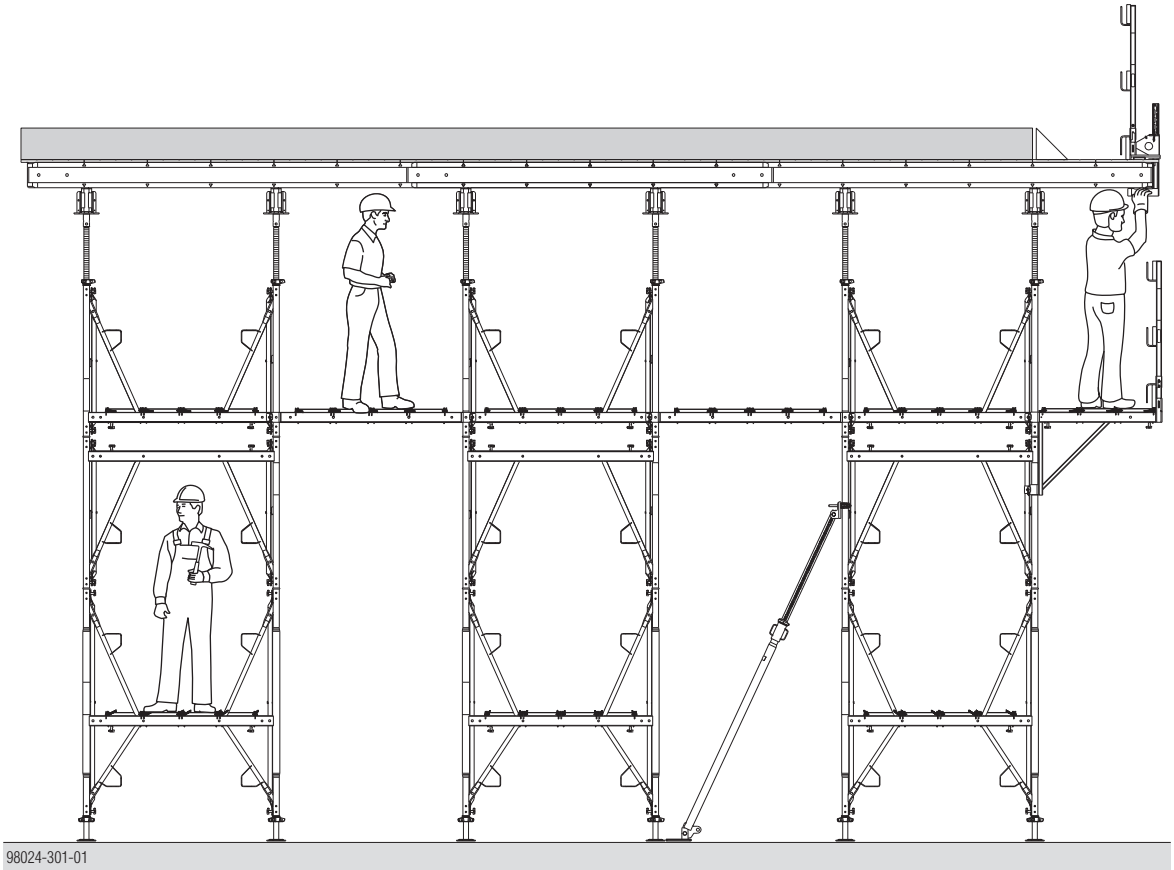
even with large shoring heights

Safe erection and dismantling ensured by

- defined attachment points for personal fall arrest systems (PFAS)
- liftout-proof scaffold planking units
- full-area assembly levels
- brackets for enhanced safety at slab-edges

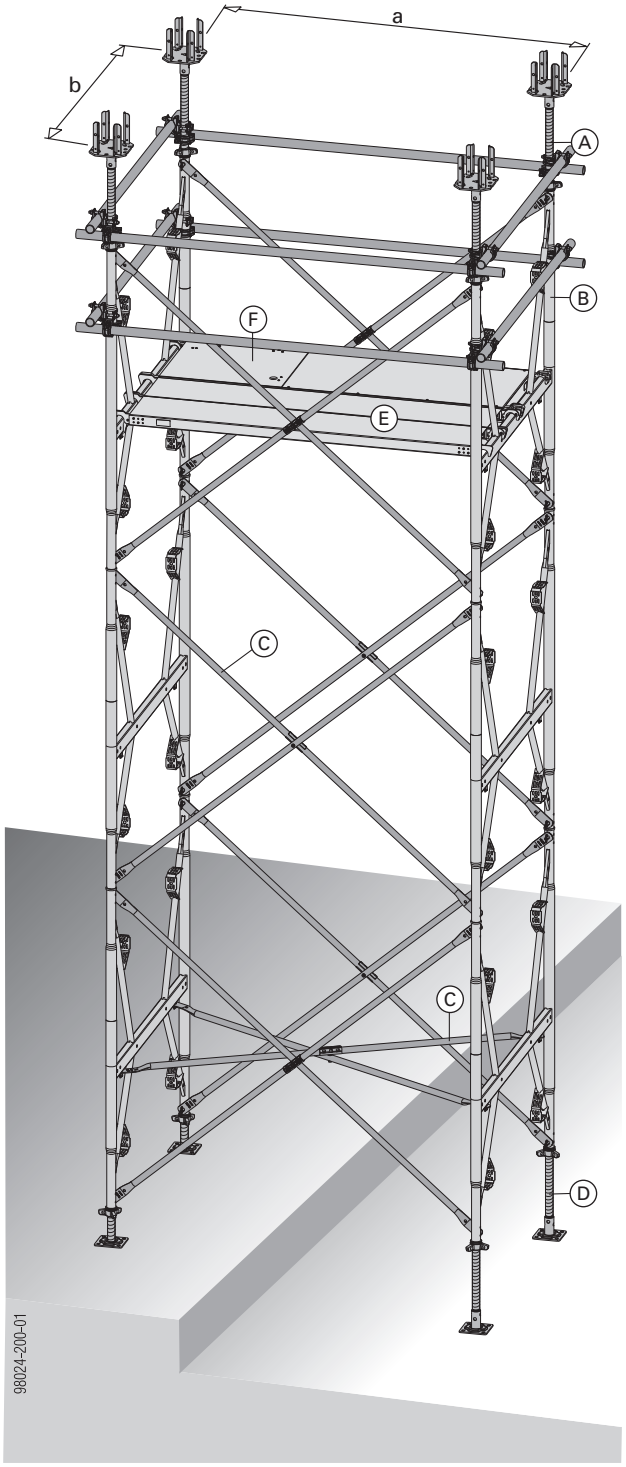
Areas of use

- in building construction (e.g. hotel entrance lobbies)
- for low slab loads
- Staxo 40's load-bearing capacity of up to 45 kN per leg is thus economically optimised for shoring-tower superstructures that use double H20 beams as their primary beams
- ideal for use on slab heights of over 4 m
- for safe shoring of slab-edges
- for low-load applications in civil-engineering projects (e.g. cantilever slabs on bridges)



The tower-to-tower walkway opening and gapless, full-area assembly levels ensure fast, safe working inside the scaffold and beneath the superstructure

System overview

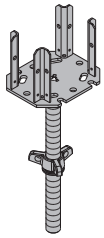
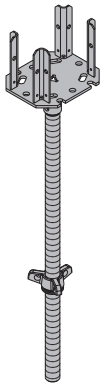
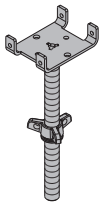
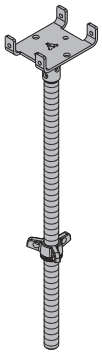


a ... inter-frame spacing = 100 / 150 / 175 / 200 / 250 / 300 cm
b ... frame width = 150 cm (not compatible with Load-bearing towers d2, d3, Staxo, or Staxo 100)

A	Head unit
B	Staxo 40 frame
C	Diagonal cross
D	Base unit
E	Scaffold planking 30/...cm
F	Scaffold planking 60/...cm with manhole

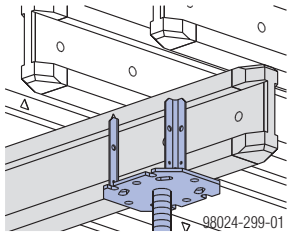
The Staxo 40 system components

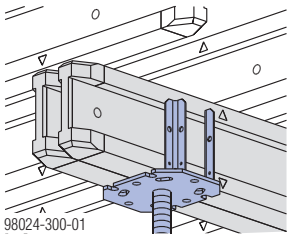
Head units (A)

Staxo 40 4-way screw-jack head 30cm	Staxo 40 4-way screw-jack head 70cm	Staxo 40 screw jack U-head 30cm	Staxo 40 screw jack U-head 70cm
			

Top height-adjustment spindle for load-bearing towers. For holding the superstructure and adjusting its height.

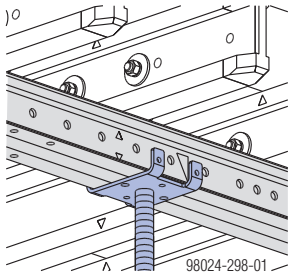
May be used with either one or two Doka H20 beams.



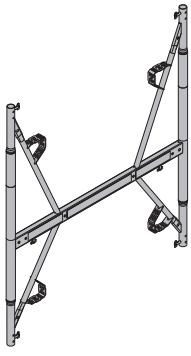
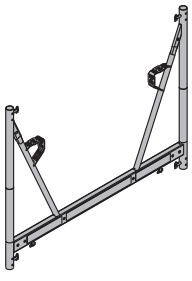
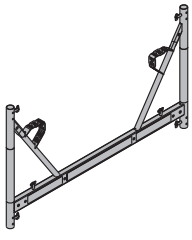


The primary beams are fixed so that they cannot tip over.

For holding steel girders (e.g. Multi-purpose walings or Doka-matic table walings).

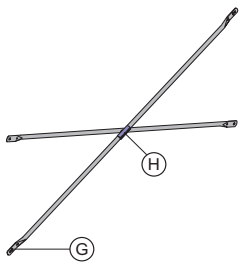


Staxo 40 frames (B)

Staxo 40 frame 1.80m	Staxo 40 frame 1.20m	Staxo 40 frame 0.90m
		

Hot-dip galvanised steel frames.

Diagonal crosses (C)



Drop-in steel-tube bracing crosses between the frames.

Identified by:

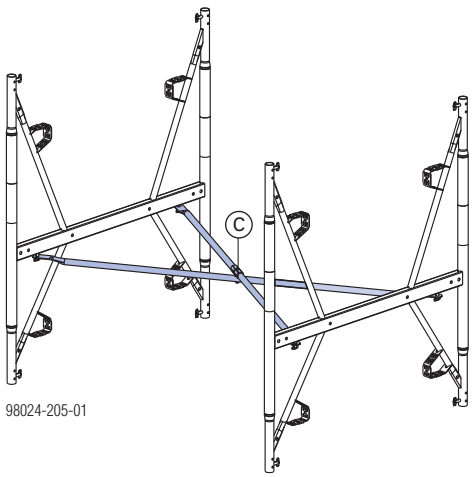
- Embossed marking **(G)** e.g. 18.250
  - 18 = frame height 1.80 m
  - 250 = inter-frame spacing 250 cm
- Notched, colour-coded clips **(H)** (see table)

Designation	Colour-coded clip	Notches
Diagonal cross 9.100	Green	—
Diagonal cross 9.150	Red	—
Diagonal cross 9.175	Light green	—
Diagonal cross 9.200	Blue	—
Diagonal cross 9.250	Yellow	—
Diagonal cross 9.300	Orange	—
Diagonal cross 12.100	Green	1
Diagonal cross 12.150	Red	1
Diagonal cross 12.175	Light green	1
Diagonal cross 12.200	Blue	1
Diagonal cross 12.250	Yellow	1
Diagonal cross 12.300	Orange	1
Diagonal cross 18.100	Green	3
Diagonal cross 18.150	Red	3
Diagonal cross 18.175	Light green	3
Diagonal cross 18.200	Blue	3
Diagonal cross 18.250	Yellow	3
Diagonal cross 18.300	Orange	3

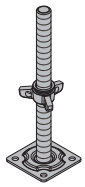
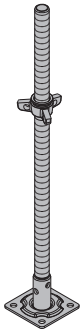
Basic rule:

To maintain correct geometry, horizontally placed Diagonal crosses 12.xxx or shear-rigid planking units must be fitted in the following cases:

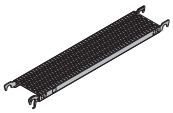
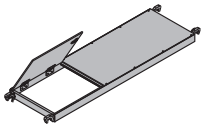
- in the bottom and top 'storeys'
- every 10 m
- in between as required, e.g. where
  - there is a horizontal restraint for the tower (even a temporary one)
  - local loads need to be transferred (e.g. from a bracket or from attaching the tower to the crane when it is assembled in the horizontal)



Base units (D)

Staxo 40 screw-jack foot 30cm	Staxo 40 screw-jack foot 70cm
	

Scaffold planking units (E)

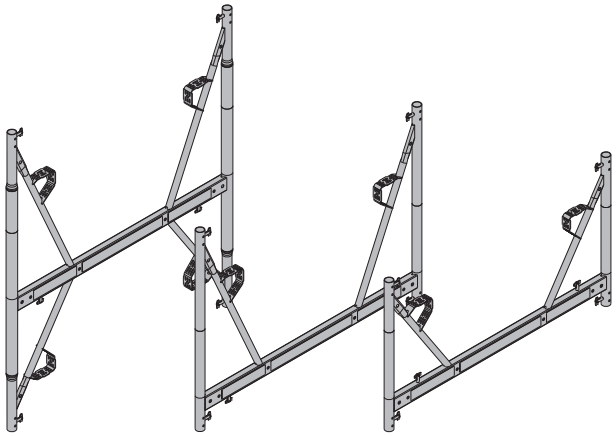
Scaffold planking 30/...cm	Scaffold planking 60/...cm with manhole
	
Steel scaffold planking units for making safe assembly decks.	Aluminium/timber scaffold planking units with self-closing cover, for making safe assembly decks.
Integral anti-liftout guard	
Width: 30 cm	Width: 60 cm
Lengths: 100 / 150 / 175 / 200 / 250 / 300 cm	

Permitted service load: 1.5 kN/m² (150 kg/m²)

Load Class 2 to EN 12811-1:2003

Staxo 40 in detail

Features of the Staxo 40 frames



Only 24.5 kg, 18.0 kg or 15.0 kg, depending on the type of frame.

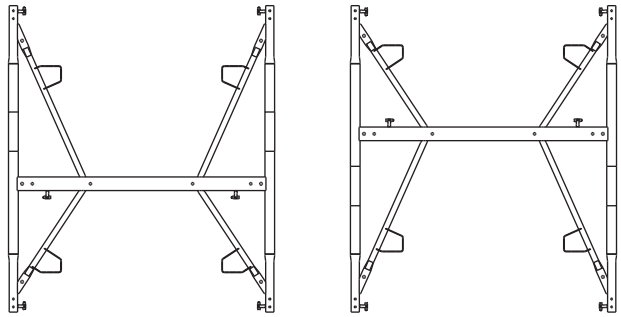
Ergonomic design

Ergonomically shaped – easy to carry, as it can be held at or near the frame's centre of gravity

Framework scaffolding with passageway opening created by inverting the frames

Turning the frames upside-down creates ample head-room for safe working inside the scaffold and beneath the towerframe superstructure.

Staxo 40 frame 1.80m



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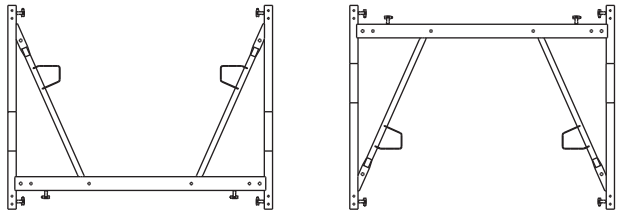
Staxo 40 frames 1.20m and 0.90m



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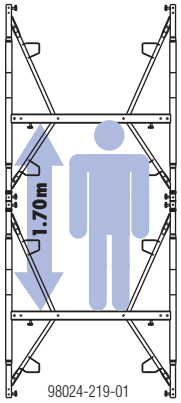
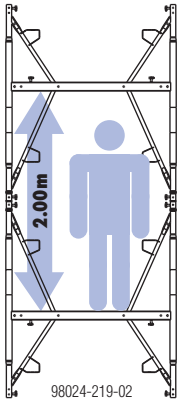
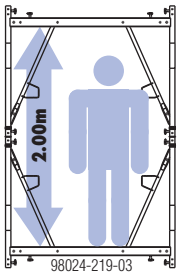
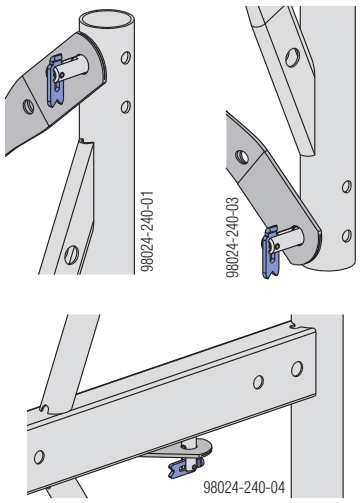
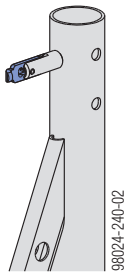
1.80m frames	1.80m frames with inverted top frame	1.20m frames with inverted top frame
 98024-219-01	 98024-219-02	 98024-219-03

Safety catch

- tried-and-tested interconnection system (captive)
- secures the diagonal crosses
- two defined positions (closed – open)

Closed	Open
	

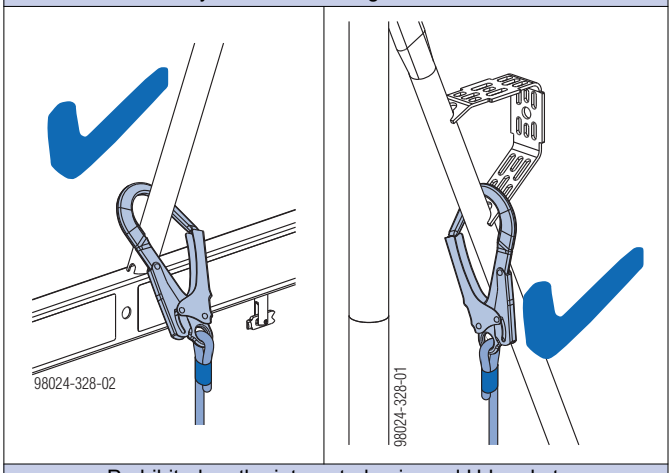
- works in both directions, i.e. on inverted frames as well
- also secures the diagonal crosses when towers are assembled in the horizontal, and when the frame is positioned so that the safety-catch bolts are at the bottom (rather than the top) of the frame crossbar

Anchorage points for personal fall arrest systems (PFAS)

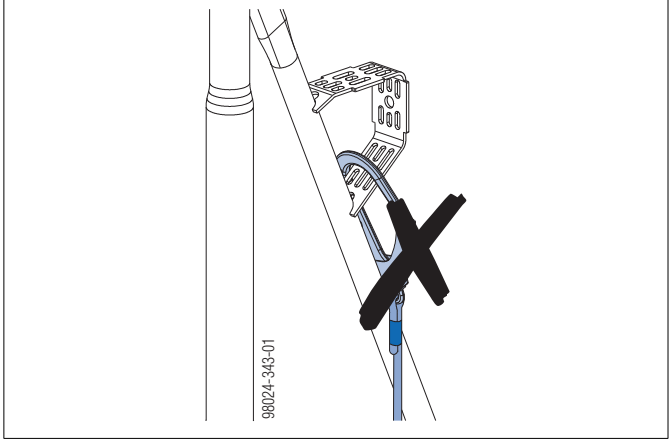
WARNING

- The anchorage point must be at or above the minimum height required for the fall arrest to work.
- As part of a risk assessment, evaluate the use of a personal fall-arrest system. Test the strength of the load-bearing tower.

Permitted anywhere on the diagonal tube of the frame.

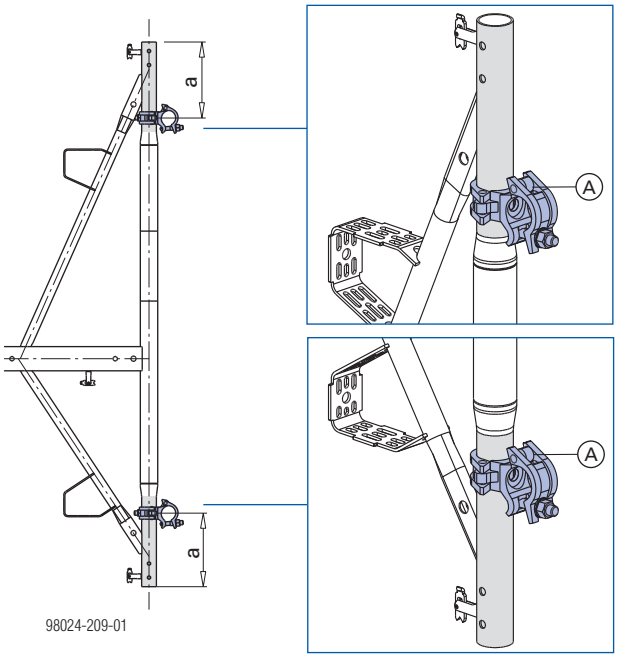


Prohibited on the integrated universal U-bracket.



Many possible ways of connecting couplers

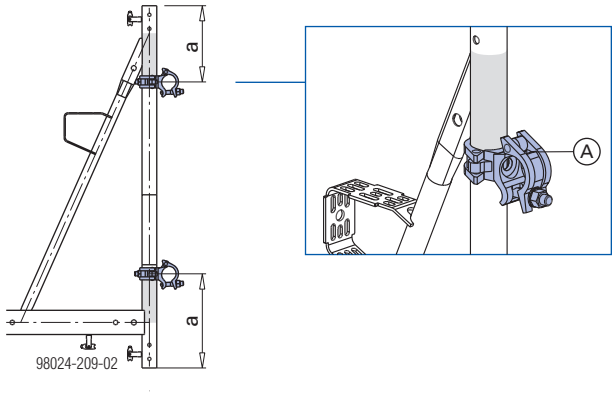
On vertical tubes – Staxo 40 frame 1.80m



a ... max. 25 cm (this stays within the max. distance of 16cm which EN 12812 stipulates from the node point of the centre-lines of the load paths)

A Swivel coupler 48mm or Normal coupler 48mm

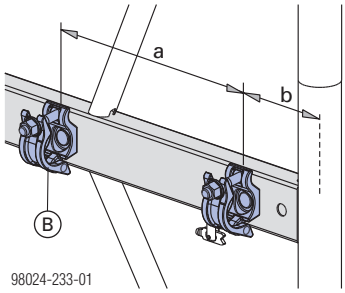
Staxo 40 frames 1.20m and 0.90m



a ... max. 25 cm (this stays within the max. distance of 16cm which EN 12812 stipulates from the node point of the centre-lines of the load paths)

A Swivel coupler 48mm or Normal coupler 48mm

On the horizontal profile – on all types of frame

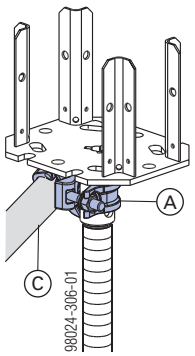
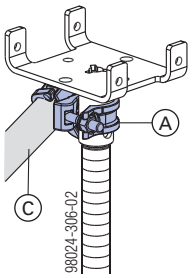
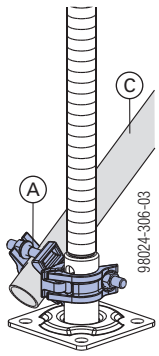


a ... 34 cm
b ... 11 cm

B Screw-on coupler 48mm 95

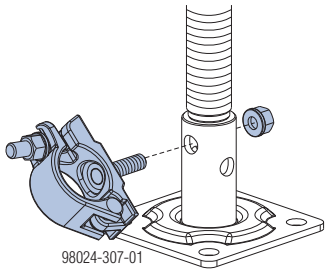
On the screwjack head and base units

On the **70cm long screwjack head and base units**, Swivel couplers 48mm or Normal couplers 48mm can be fastened to the threadless section of the tube.

Staxo 40 4-way screw-jack head 70cm	Staxo 40 screw jack U-head 70cm	Staxo 40 screw-jack foot 70cm
		

A Swivel coupler 48mm or Normal coupler 48mm
B Scaffold tube 48.3mm

Also, a Screw-on coupler 48mm 95 can be mounted in the holes in the threadless section of tube of any 70cm long screw-jack U-head or foot.



NOTICE

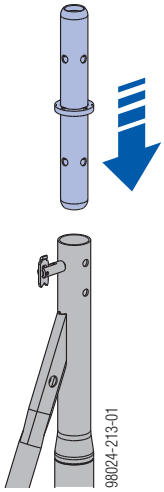
For information on dimensioning braced screw-jack heads and feet, see the type specification sheet.

Linking the frames

Staxo 40 coupler

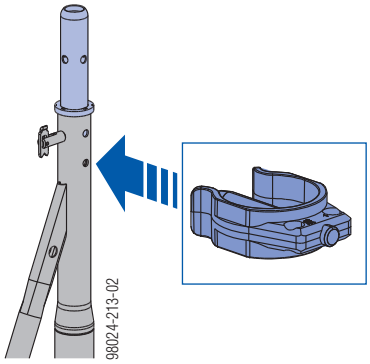
The vertically stacked frames are attached to one another by the **Staxo 40 coupler** with its integrated stop-ring.

Because this coupler extends such a long way (15 cm) into each frame, no extra pin-type safety locks are needed when towerframes are erected and dismantled in the upright.



A crane-handling-safe link, using a Staxo 40 tube connector d48.3mm, is required in the following cases

- when the towerframes are assembled in the horizontal
- when the towerframes are lifted by crane
- if there are forces acting upon the tower which cause tensile stress



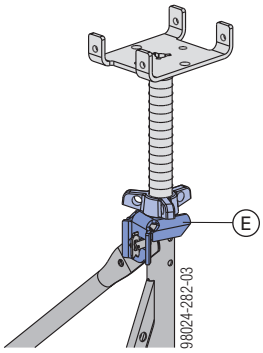
Permitted tensile force 11.7 kN

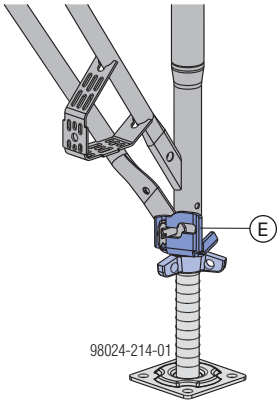
Securing the screw-jack heads and feet against pull-out

Staxo 40 anti-dropout lock (E)

A crane-handling-safe link, using a Staxo 40 anti-dropout lock, is required in the following cases:

- when the towerframes are assembled in the horizontal
- when the towerframes are lifted by crane
- if there are forces acting upon the tower which cause tensile stress



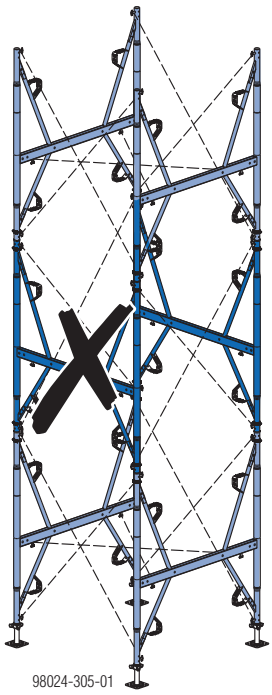


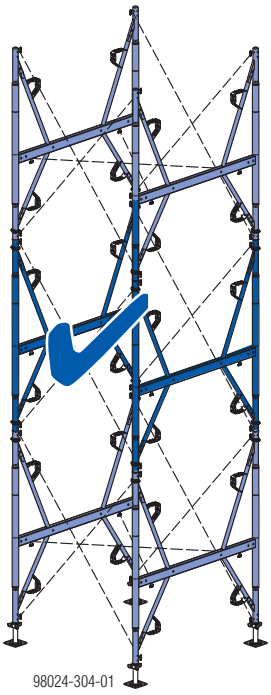
Permitted tensile force 5 kN

Erecting quadratic towers

NOTICE

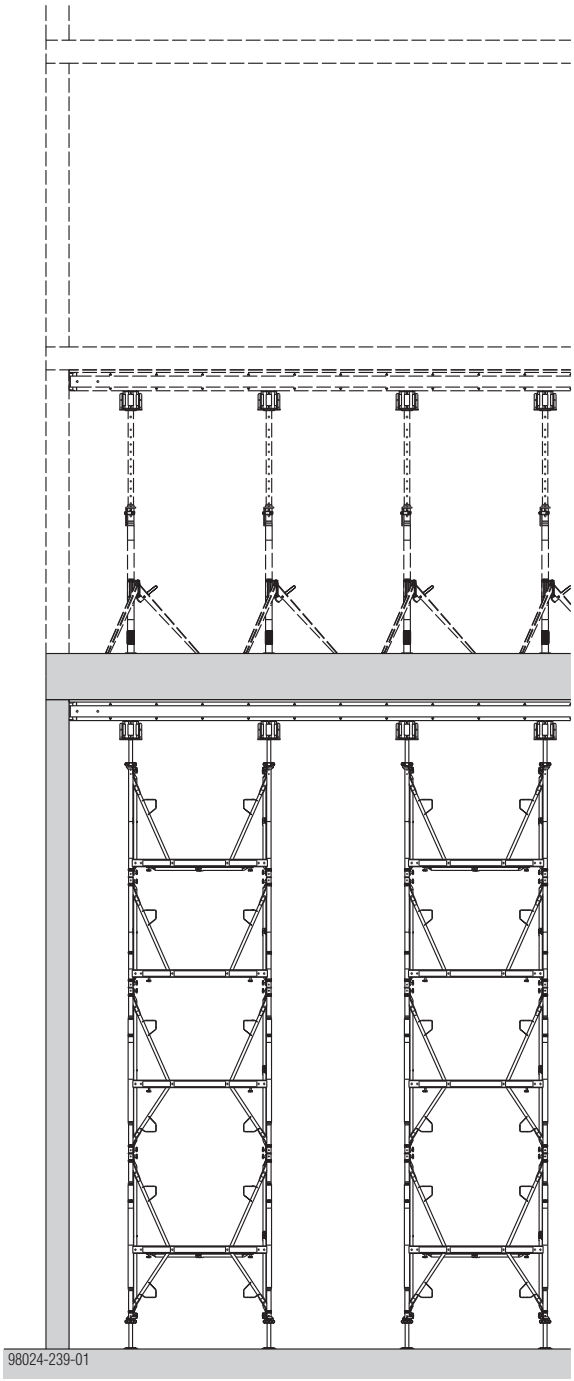
When erecting a square tower 150x150 cm, do not mix the frame planes and bracing-strut planes!





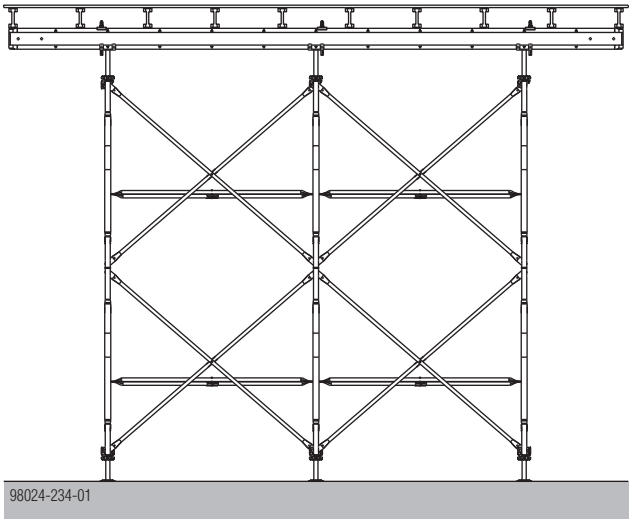
Practical examples

In building construction, e.g. entrance lobbies



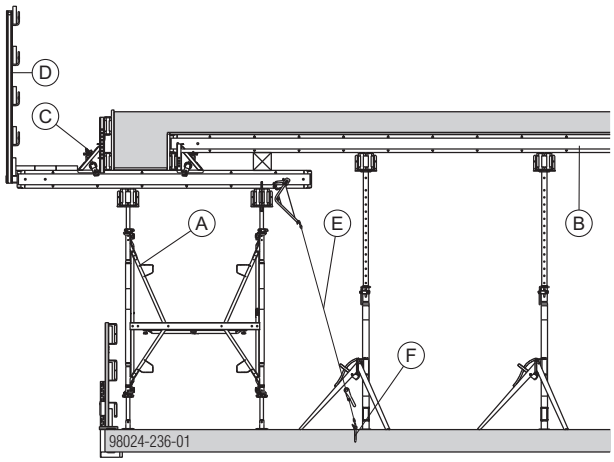
Tableform units

- For repetitive use, the load-bearing tower can be assembled into complete table-forms.



Edge floor-beam

For downstand beams, the **load-bearing towers and beam-forming supports** can be combined very effectively with Dokaflex.

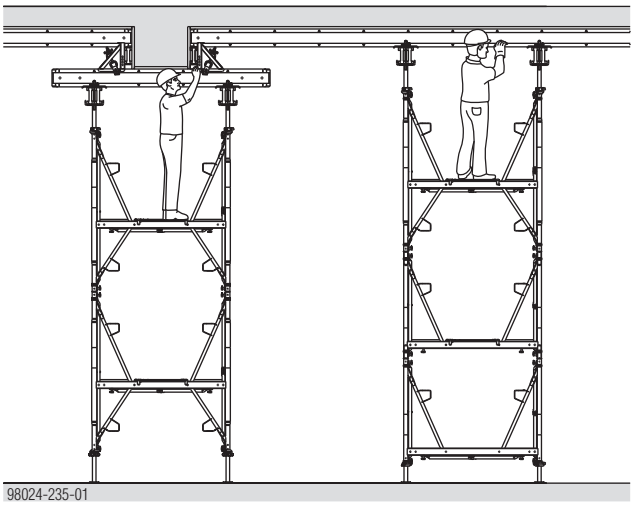


A	Load-bearing tower
B	Dokaflex
C	Beam forming support 20
D	Handrail post T 1.80m (optionally with Toeboard holder T 1.80m), Edge protection system XP, Handrail clamp S or Handrail post 1.50m
E	Lashing strap 5.00m
F	Doka express anchor 16x125mm and Doka coil 16mm

WARNING

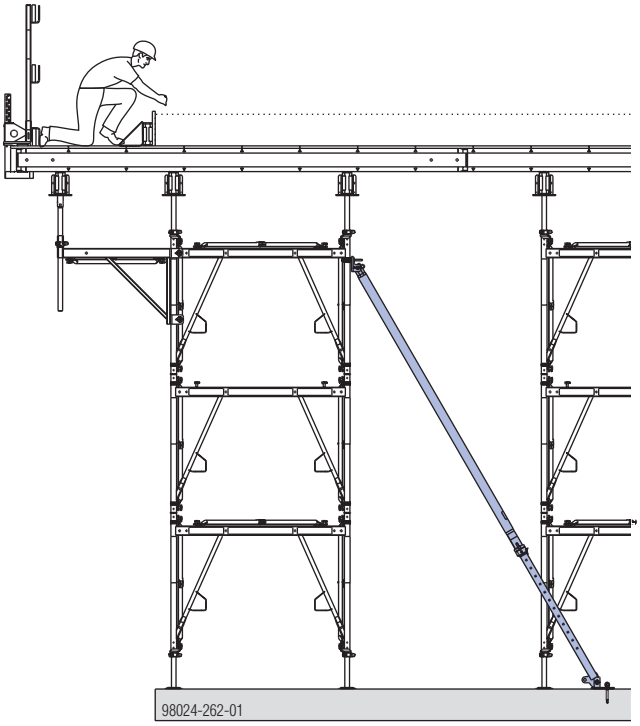
➤ Where formwork beams cantilever out a long way, secure them against accidental lift-out.

Downstand beams



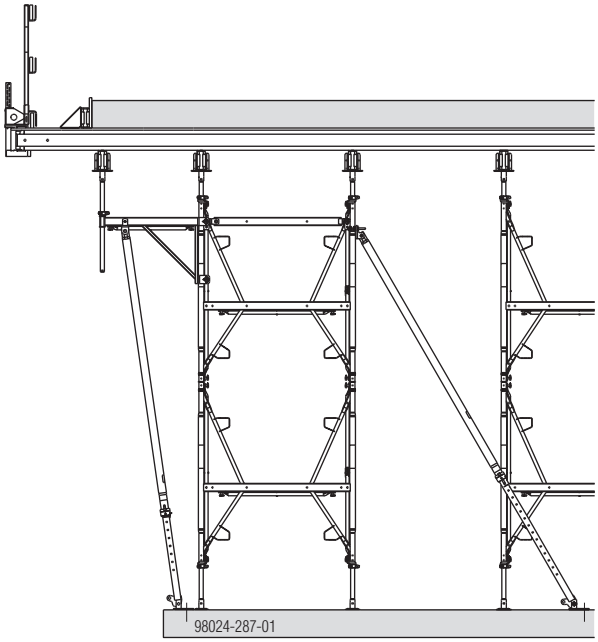
Safe access routes around slab-edges

With the Staxo 40 bracket 90cm and using e.g. a plumbing strut to prevent tower tip-up.



Sustaining the concreting loads, e.g. from projecting floor-slabs

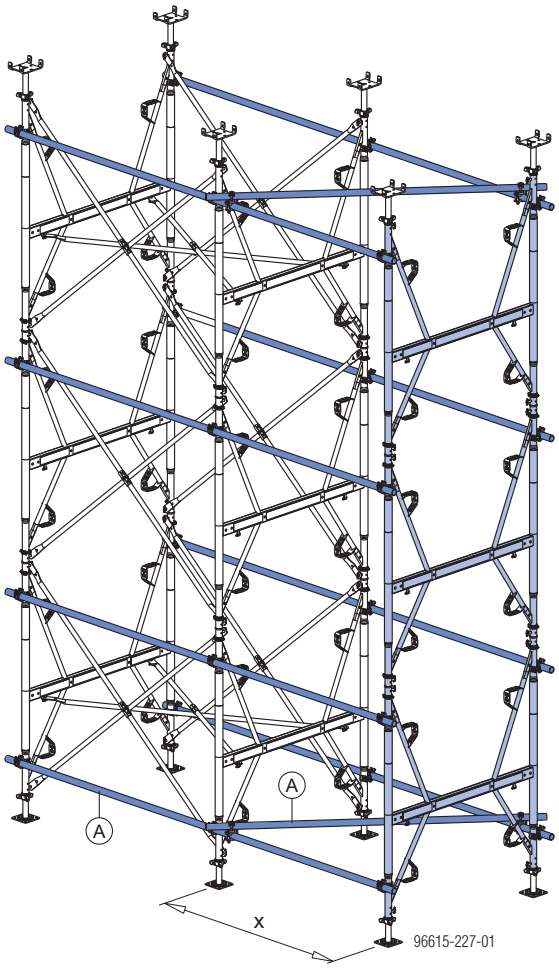
With the Staxo 40 bracket, shored with a plumbing strut, for transferring the concreting loads.
Tower tip-up is prevented by e.g. a plumbing strut.



Flexible adaptation to the structure.

Extra frame-plane

Independently of the system-grid, an extra frame-plane can be added with the aid of scaffold tubes.

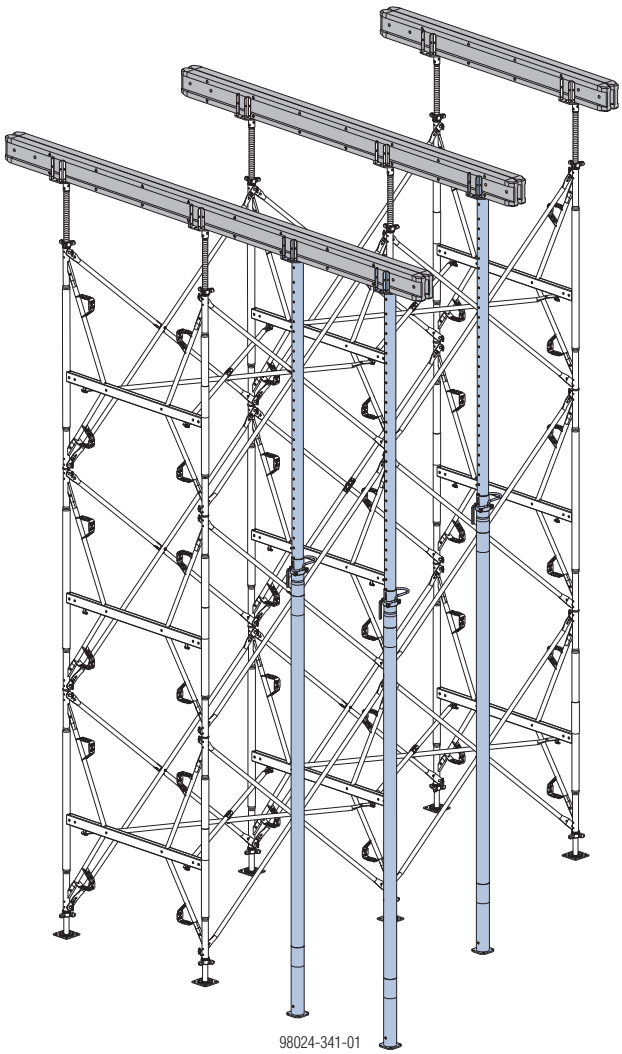


x ... continuously adjustable from 20 cm to 150 cm

A Bracing with scaffold tubes 48.3mm

Follow the directions for dimensioning in the 'Load-bearing tower Staxo 40' type-test documentation and/or consult your Doka technician.

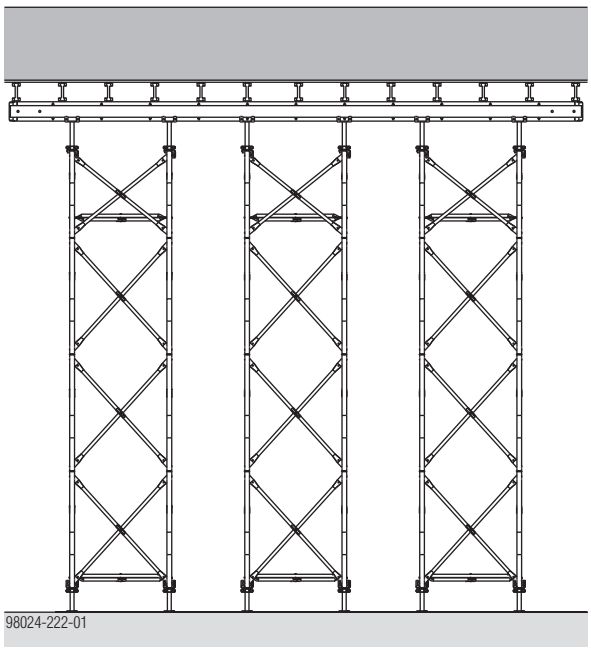
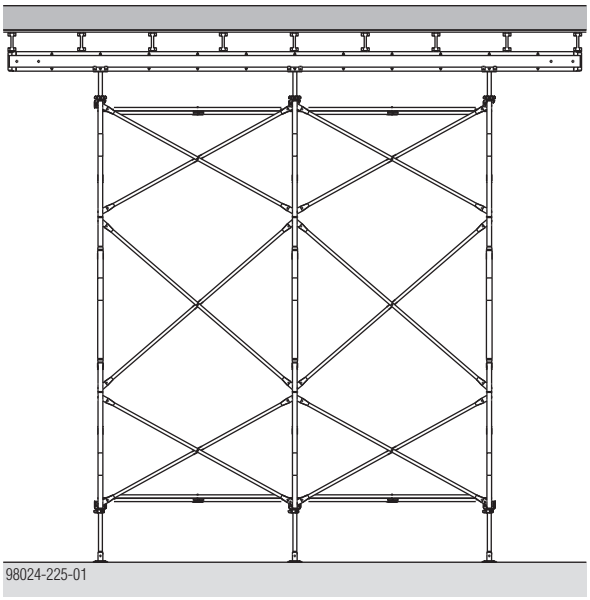
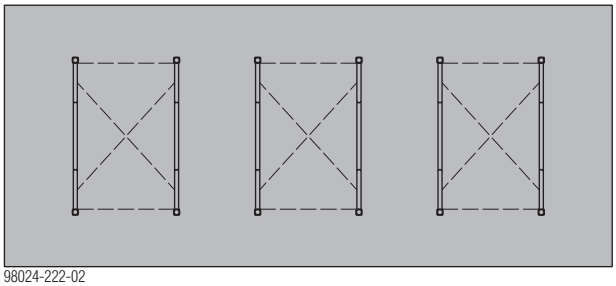
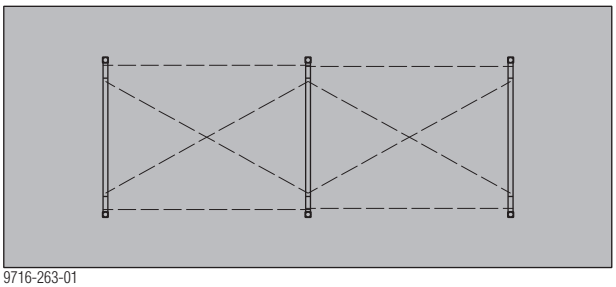
Combining with floor props



Adapting to different layouts, heights and loads

The different sizes of diagonal brace for each height of frame enable the frames to be spaced close together or further apart, depending on the load.

In this way, only as much material is used as is really needed.

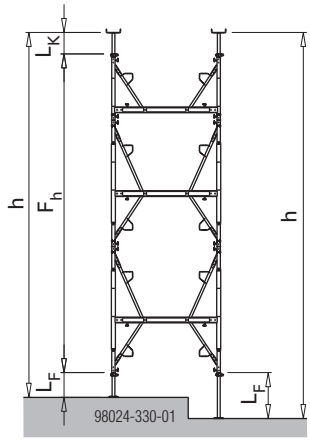
e.g. heavy loads – frames spaced close together	e.g. light loads – frames spaced further apart
 98024-222-01	 98024-225-01
Plan view	Plan view
 98024-222-02	 9716-263-01

Height ranges and materials schedule

Choose the right diagonal crosses for the distance between the frames.

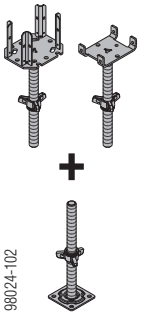
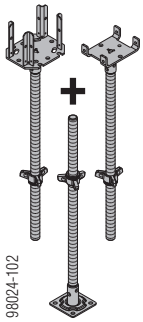
NOTICE

- The minimum values $h_{min.}$ given in Table A are only applicable if the biggest possible frame is always used in the base section.
- The **lowering distance of 6 cm** is already allowed for in Table A!
- L_K and L_F are in accordance with the dimensioning diagrams. In some cases, the structural design will permit greater extension lengths - see Tables B and C.



1.80m, 1.20m and 0.90m frames are possible here.

Table A

Fixed height of frame F_h [m]	Variant 1 L_K = max. 30cm L_F = max. 30cm			Variant 2 L_K = max. 70cm L_F = max. 70cm			Basic items								
	 h [m] min. - max.	Staxo 40 4-way screw-jack head 30cm, Staxo 40 screw-jack U-head 30cm at top	Staxo 40 screw-jack foot 30cm	 h [m] min. - max.	Staxo 40 4-way screw-jack head 70cm, Staxo 40 screw-jack U-head 70cm at top	Staxo 40 screw-jack foot 70cm	Staxo 40 frame 0.90m	Staxo 40 frame 1.20m	Staxo 40 frame 1.80m	Diagonal cross 9.xxx	Diagonal cross 12.xxx	Diagonal cross 18.xxx	Staxo 40 coupler	Staxo 40 anti-dropout lock [1]	Staxo 40 tube connector D48.3mm [1]
1.20	1.37 - 1.79	4	4	2.07 - 2.59	4	4	—	2	—	—	3	—	—	8	—
1.80	1.97 - 2.39	4	4	2.16 - 3.19	4	4	—	—	2	—	1	2	—	8	—
1.80	1.97 - 2.39	4	4	2.39 - 3.19	4	4	4	—	—	4	2	—	4	8	8
2.10	2.27 - 2.69	4	4	2.46 - 3.49	4	4	2	2	—	2	4	—	4	8	8
2.40	2.57 - 2.99	4	4	2.76 - 3.79	4	4	—	4	—	—	6	—	4	8	8
2.70	2.87 - 3.29	4	4	3.06 - 4.09	4	4	2	—	2	2	2	2	4	8	8
3.00	3.17 - 3.59	4	4	3.36 - 4.39	4	4	—	2	2	—	4	2	4	8	8
3.30	3.47 - 3.89	4	4	3.66 - 4.69	4	4	2	4	—	2	6	—	8	8	16
3.60	3.77 - 4.19	4	4	3.96 - 4.99	4	4	—	—	4	—	2	4	4	8	8
3.90	4.07 - 4.49	4	4	4.26 - 5.29	4	4	2	2	2	2	4	2	8	8	16
4.20	4.37 - 4.79	4	4	4.56 - 5.59	4	4	—	4	2	—	6	2	8	8	16
4.50	4.67 - 5.09	4	4	4.86 - 5.89	4	4	2	—	4	2	2	4	8	8	16
4.80	4.97 - 5.39	4	4	5.16 - 6.19	4	4	—	2	4	—	4	4	8	8	16
5.10	5.27 - 5.69	4	4	5.46 - 6.49	4	4	2	4	2	2	6	2	12	8	24
5.40	5.57 - 5.99	4	4	5.76 - 6.79	4	4	—	—	6	—	2	6	8	8	16
5.70	5.87 - 6.29	4	4	6.06 - 7.09	4	4	2	2	4	2	4	4	12	8	24
6.00	6.17 - 6.59	4	4	6.36 - 7.39	4	4	—	4	4	—	6	4	12	8	24
6.30	6.47 - 6.89	4	4	6.66 - 7.69	4	4	2	—	6	2	2	6	12	8	24
6.60	6.77 - 7.19	4	4	6.96 - 7.99	4	4	—	2	6	—	4	6	12	8	24
6.90	7.07 - 7.49	4	4	7.26 - 8.29	4	4	2	4	4	2	6	4	16	8	32
7.20	7.37 - 7.79	4	4	7.56 - 8.59	4	4	—	—	8	—	2	8	12	8	24
7.50	7.67 - 8.09	4	4	7.86 - 8.89	4	4	2	2	6	2	4	6	16	8	32
7.80	7.97 - 8.39	4	4	8.16 - 9.19	4	4	—	4	6	—	6	6	16	8	32
8.10	8.27 - 8.69	4	4	8.46 - 9.49	4	4	2	—	8	2	2	8	16	8	32
8.40	8.57 - 8.99	4	4	8.76 - 9.79	4	4	—	2	8	—	4	8	16	8	32
8.70	8.87 - 9.29	4	4	9.06 - 10.09	4	4	2	4	6	2	6	6	20	8	40
9.00	9.17 - 9.59	4	4	9.36 - 10.39	4	4	—	—	10	—	2	10	16	8	32
9.30	9.47 - 9.89	4	4	9.66 - 10.69	4	4	2	2	8	2	4	8	20	8	40

The schedule of materials does not include scaffold planking units.

[1] Needed when the towerframe unit is lifted into place or repositioned by crane.

Height adjustment

- The 3 different heights of frame 0.90 m, 1.20 m and 1.80 m enable coarse adjustment to within 30 cm.
- Fine adjustment, down to the last millimetre, is done using the various head and base units.

NOTICE

The structural design of the load-bearing tower may make it necessary to plan for shorter extension lengths. See the section headed 'Structural design' for dimensioning details.

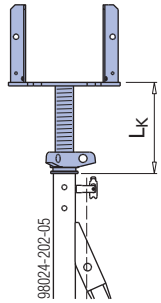
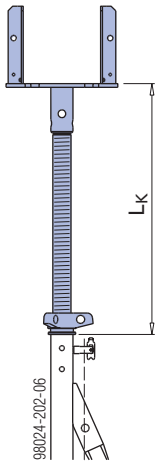
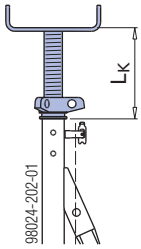
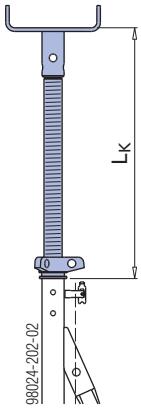
System dimensions

on multi-storey towers

Note:

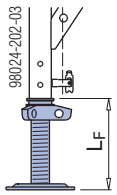
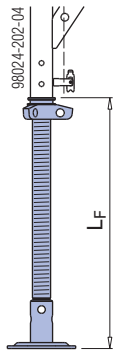
Note minimum formwork-striking play (head + foot)! 5 cm for U-head, 15 cm for 4-way head

Table B: Head zone

	Staxo 40 4-way screw-jack head 30cm	Staxo 40 4-way screw-jack head 70cm			Staxo 40 screw jack U-head 30cm	Staxo 40 screw jack U-head 70cm		
								
	Frames in the top 'storey'				Frames in the top 'storey'			
	1.80 / 1.20 / 0.90m	1.80m	1.20 m	0.90 m	1.80 / 1.20 / 0.90m	1.80 m	1.20m	0.90m
L_K max.	30.0	70.0	70.0	70.0	30.0	70.0	70.0	70.0
L_K min.	6.0	15.5	15.5	26.4	6.0	15.5	15.5	26.4

Values in cm
Min. values with no formwork-striking play

Table C: Base zone

	Staxo 40 screw-jack foot 30cm	Staxo 40 screw-jack foot 70cm				
						
	Frames in the base 'storey'					
	1.80 m	1.20m	0.90m	1.80m	1.20m	0.90m
L_F max.	30.0	30.0	30.0	70.0	70.0	70.0
L_F min.	6.0	6.0	6.0	15.4	15.4	26.3

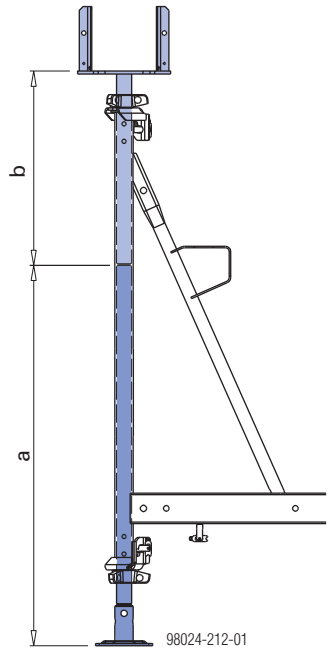
Values in cm
Min. values with no formwork-striking play

on single-storey towers

Note:

For towers consisting of one 'storey' only, the min. values L_K and L_F stated for the screwjack head and base units in the previous Tables will often not be reached.

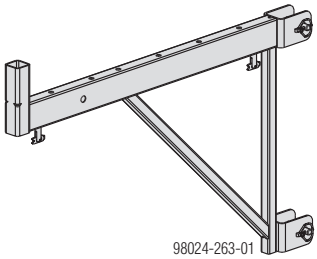
Reason: The lengths of the screwjack head and base units in the frame add up to a larger dimension than the height of the frame.

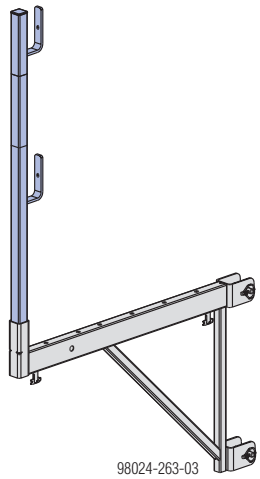
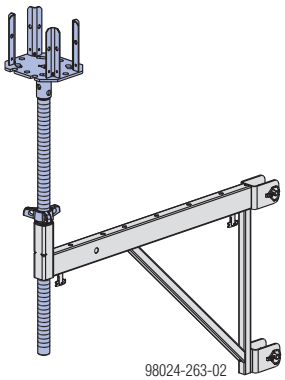


	a	b
Staxo 40 screw-jack foot 30cm	50.7	--
Staxo 40 screw-jack foot 70cm	100.5	--
Staxo 40 screw-jack U-head 30cm	--	50.8
Staxo 40 screw-jack U-head 70cm	--	100.7
Staxo 40 4-way screw-jack head 30cm	--	50.8
Staxo 40 4-way screw-jack head 70cm	--	100.7

Extending the range of use with brackets

Staxo 40 bracket 90cm



Extension with Handrail post XP 1.20m	Extension with Staxo 40 screw-jack U-heads / 4-way screw-jack heads
	

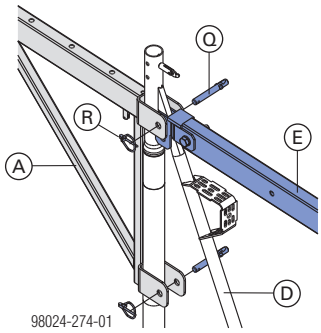
Conditions applying to use

WARNING
Risk of tipping over!
➤ Before setting up and using the bracket, secure the tower with plumbing struts or tie-backs so that it cannot tip over.

NOTICE
- Bracing with a Staxo 40-frame strut 1.40m is always required if the pull-point or pressure point of the bracket is not supported.
- The integrated swivel unit on the Staxo 40-frame strut also makes it possible to retro-fit it to a previously erected tower unit.
- When inter- frame spacing is 1 m, it is not possible to use Staxo 40 frames 0.90m or 1.20m in combination with Staxo 40 brackets 90cm.

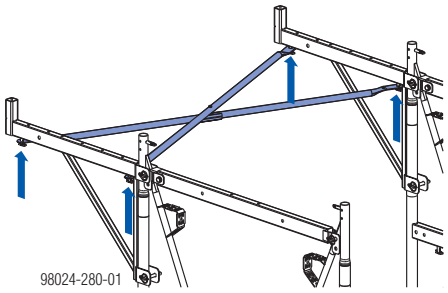
Assembly

1) Secure tower (e.g. with a plumbing strut) so that it cannot tip over.
2) Install a Staxo 40 frame strut 1.40m if the pull-point or pressure point of the bracket is not supported.
3) Bolt the Staxo 40 bracket 90cm to the top of the diagonal tube of the frame and secure the bolt. Insert and secure the bottom bolt, to prevent accidental lift-out.



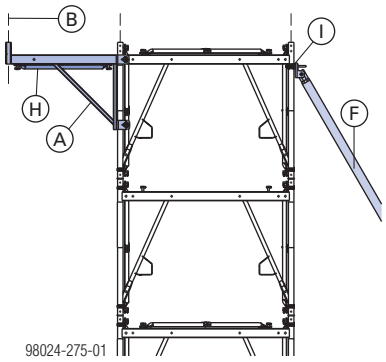
A	Staxo 40 bracket 90cm
D	Staxo 40 frame
E	Staxo 40 frame strut 1.40m (if needed)
Q	Pin D16/122
R	Linch pin 6x42

➤ Fit Diagonal crosses 9.xxx between the brackets and secure them with safety catches



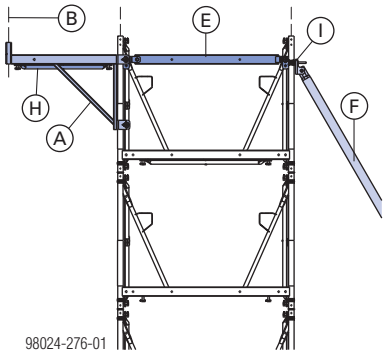
Fitting brackets to the Staxo 40 frame 1.20m

All frames arranged with horizontal profile at top = pull-point and pressure point of bracket are supported = Staxo 40 frame strut 1.40m is not needed.



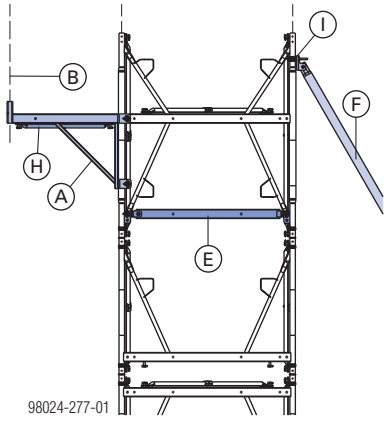
Fitting brackets to the Staxo 40 frame 1.20m

All frames arranged with horizontal profile at bottom = pull-point of bracket is not supported = Staxo 40 frame strut 1.40m is needed.



Fitting brackets to the Staxo 40 frame 1.80m

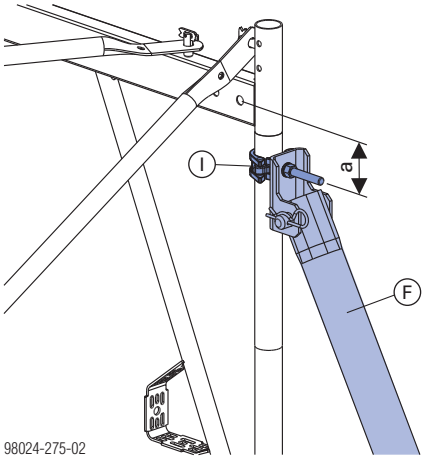
Upper frame has horizontal profile at top, lower frame has horizontal profile at bottom = pressure point of bracket is not supported = Staxo 40 frame strut 1.40m is needed.



A	Staxo 40 bracket 90cm
B	Handrail post XP 1.20m or Staxo 40 4-way screw-jack head / Screw-jack U-head
E	Staxo 40 frame strut 1.40m
F	Plumbing strut IB and Strut shoe EB
H	Diagonal cross 9.xxx
I	Screw-on coupler 48mm 50 or 95

Close-up showing how to attach the Plumbing strut IB

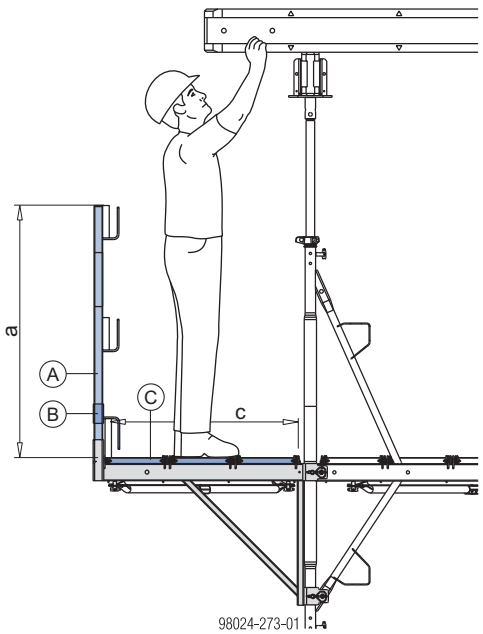
To prevent tower tip-up, a Plumbing strut IB with Strut shoe EB must be mounted to every frame that has a bracket attached to it, and this plumbing strut must be fixed to the ground with a Doka express anchor 16x125mm.



a ... max. 16 cm as stipulated in EN 12812

F	Plumbing strut IB and Strut shoe EB
I	Screw-on coupler 48mm 50 or 95

Close-up with Handrail post XP 1.20m



a ... 115 cm
c ... 90 cm

A	Handrail post XP 1.20m
B	Toeboard holder XP 1.20m
C	Scaffold planking 30/...cm

Staxo 40 bracket 90cm:
Permitted service load: 1.5 kN/m² (150 kg/m²) with influence width of max. 3.0 m.
Load Class 2 to EN 12811-1:2003

Deck and guardrail boards

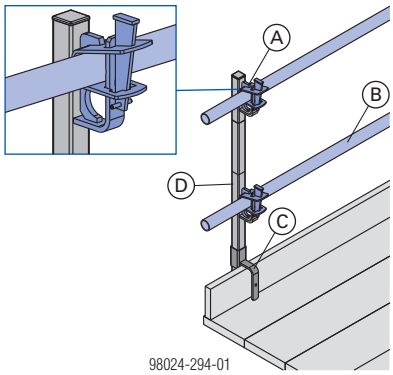
Board thicknesses for centre-to-centre spans up to 2.50 m:

- Deck-boards min. 20/5 cm
- Guardrail boards min. 15/3 cm

Note:
The plank and board thicknesses stated comply with the EN 338 C24 timber.
Observe all national regulations applying to deck and guardrail boards.

Deck-boards and guardrail boards: Per 1 metre length of platform, 0.6 m² of deck-board and 0.6 m² of guardrail board are needed (site-provided).
Fastening the deck-boards: with 4 square bolts M10x120 per bracket (not included with product).
Fixing the guardrail board: use nails

Using scaffold tubes



A	Scaffold tube holder D48mm
B	Scaffold tube 48.3mm
C	Toeboard holder XP 1.20m
D	Handrail post XP 1.20m

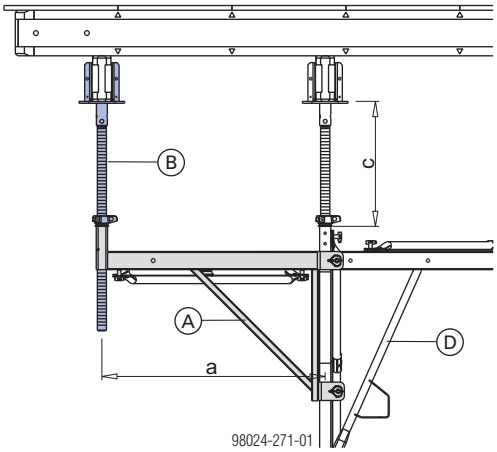
Follow the directions in the 'Edge protection system XP' User Information booklet.

Close-up with Staxo 40 screw-jack U-heads / 4-way screw-jack heads

NOTICE

Nail down the formwork sheets in the edge zone!

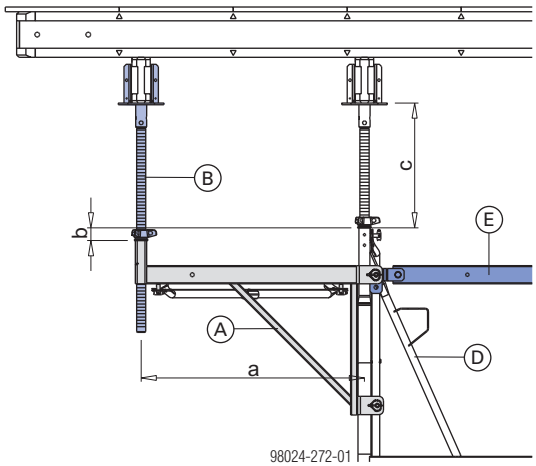
Staxo 40 frame 1.20m or 0.90m (with horizontal profile at top)



a ... 98.0 cm
c ... max. extension length

A	Staxo 40 bracket 90cm
B	Staxo 40 screw-jack U-head or 4-way screw-jack head
D	Staxo 40 frame 1.20m or 0.90m (with horizontal profile at top)

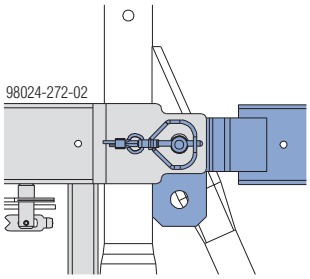
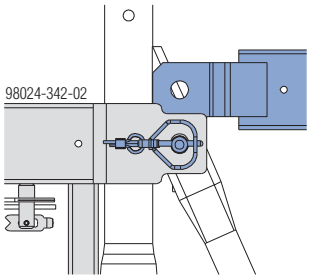
Staxo 40 frame 1.80m Staxo 40 frame 1.20m or 0.90m (with horizontal profile at bottom)



a ... 98.0 cm
b ... 5.5 cm
c ... max. extension length minus dimension 'b'

A	Staxo 40 bracket 90cm
B	Staxo 40 screw-jack U-head or 4-way screw-jack head
D	Staxo 40 frame 1.80m or 1.20 and 0.90m with horizontal profile at bottom
E	Staxo 40 frame strut 1.40m

Installation close-up of the Staxo 40 frame strut 1.40m

in combination with Staxo 40 frame 1.20m or 0.90m	iin combination with Staxo 40 frame 1.80m
	

Note:

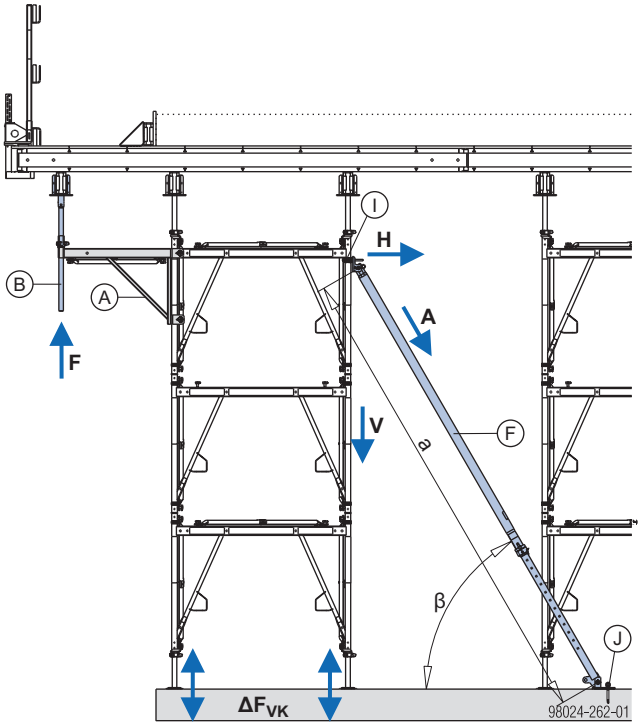
In the case of the Staxo 40 frame 1.80m, the Staxo 40 frame strut has to be pinned into the bottom hole (illustration on right).

Using bracket under service load

Tip-up protection with plumbing strut

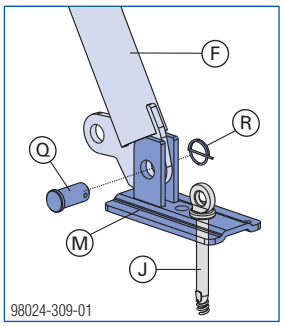
NOTICE

- Every frame with a bracket must be braced by a Plumbing strut IB.
- The whole tower unit must be linked together in a crane-handling-safe way using Staxo 40 anti-dropout locks and Staxo 40 tube connectors.
  See the section headed 'Lifting by crane'



a ... extension length of Plumbing struts IB
340: from 190 - 340cm
540: from 310 - 550cm
β ... approx. 60°
H ... Horizontal force
V ... Resulting vertical force from H
A ... Back-stay/shoring force

Close-up showing how the Plumbing strut IB is fixed to the ground



A	Staxo 40 bracket 90cm
B	Staxo 40 screw-jack U-head or 4-way screw-jack head
F	Plumbing strut 340 IB or 540 IB with Strut shoe EB
I	Screw-on coupler 48mm 50 or 95
J	Doka express anchor 16x125mm + Doka coil 16mm

Supporting force of the outermost screwjack on the bracket:
Permissible F during erection and once erected (i.e. prior to pouring) < 3,0 kN
Permissible F during pouring: 0 kN

The permissible leg load must be reduced by ΔF_{VK} = 14 kN if concreting loads and service loads occur simultaneously.

Anchoring the plumbing strut

The **Doka express anchor** can be re-used many times over.

Characteristic cube compressive strength of the concrete ($f_{ck,cube}$):
min. 15 N/mm² (C12/15 grade concrete)

Follow Fitting Instructions!

Required safe working load of alternative anchors for footplates:
$R_d \geq 20.3$ kN ($F_{permissible} \geq 13.5$ kN)

Follow the manufacturers' applicable fitting instructions.

Using bracket under concreting load

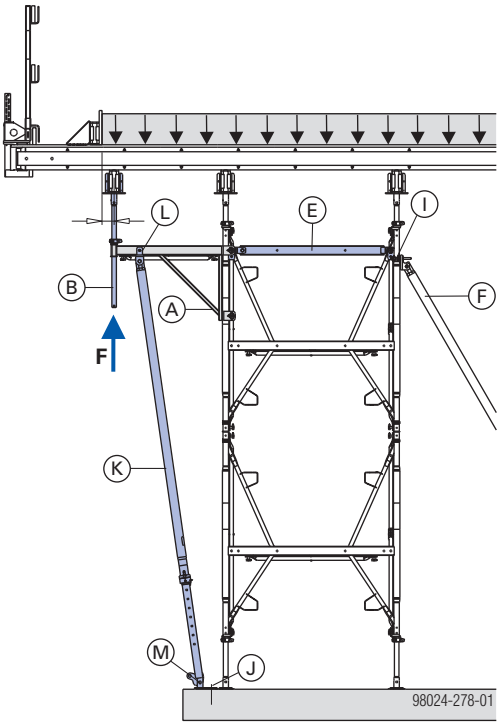
Extra shoring of bracket

The Staxo 40 bracket 90cm can also be used for transferring concreting loads. The extra plumbing strut attached to every bracket ensures that no forces are transferred into the load-bearing tower.

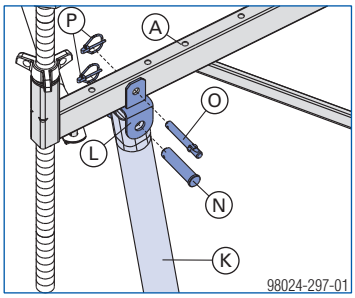
NOTICE

- Every frame with a bracket must be braced by a Plumbing strut IB.
- The whole tower unit must be linked together in a crane-handling-safe way using Staxo 40 anti-dropout locks and Staxo 40 tube connectors.

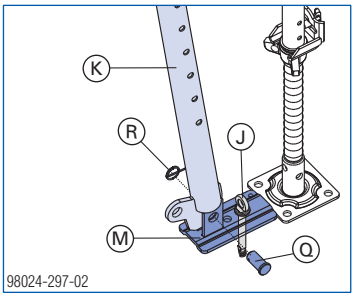
  See the section headed 'Lifting by crane'



Close-up showing how the plumbing strut is fixed to the bracket



Close-up showing how the plumbing strut is fixed to the ground



A	Staxo 40 bracket 90cm
B	Staxo 40 screw-jack U-head or 4-way screw-jack head
E	Staxo 40 frame strut 1.40m
F	Plumbing strut 340 or 540 for precast members
J	Doka express anchor 16x125mm + Doka coil 16mm
K	Plumbing strut 340 IB or 540 IB
L	Staxo 40 plumbing strut adapter
M	Prop shoe
N	B25/90.5 pin
O	D16/122 pin
P	Linch pin 6x42
Q	d25/58 pin
R	Spring pin

Supporting force of the outermost screwjack on the bracket:
Permissible Fmax: 10.5 kN

Reduction of 7.7 kN in the permitted vertical load F_V per leg

Anchoring the plumbing strut

The **Doka express anchor** can be re-used many times over.

Characteristic cube compressive strength of the concrete ($f_{ck,cube}$):
min. 15 N/mm² (C12/15 grade concrete)

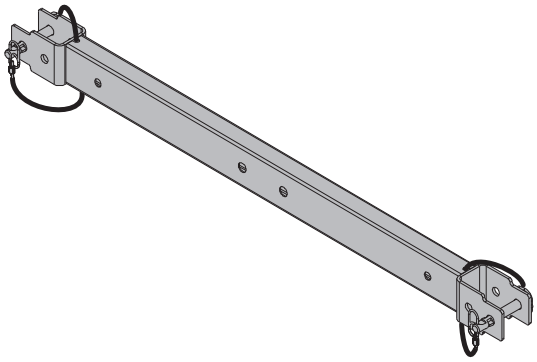
Follow Fitting Instructions!

Required safe working load of alternative anchors for footplates:
$R_d \geq 20.3$ kN ($F_{permissible} \geq 13.5$ kN)

Follow the manufacturers' applicable fitting instructions.

Linking towers / placing assembly-level planking between towers

Staxo 40 planking struts are sturdy, stable connectors between Staxo 40 tower units and they can also carry planking.



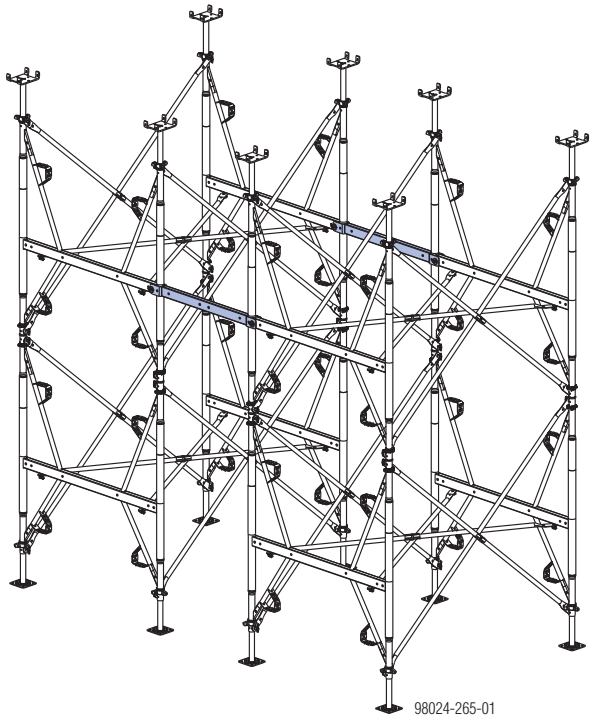
The struts are available in 3 different lengths for inter-frame spacings of 1.00m, 1.50m and 2.00m.

NOTICE

When inter-frame spacing is 1 m, it is not possible to use Staxo 40 frames 0.90m or 1.20m in combination with Staxo 40 planking struts.

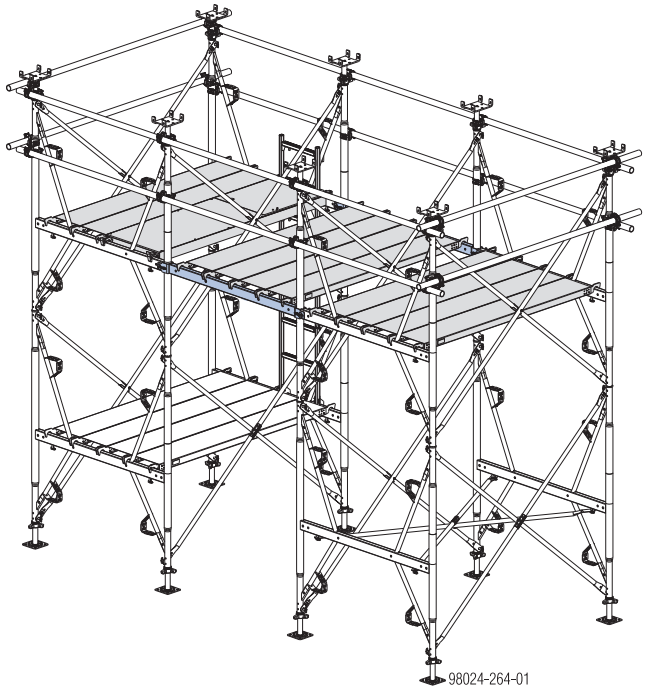
Linking free-standing towers – for horizontal load equalisation

By distributing the horizontal loads more evenly, across several towers, the vertical load-bearing capacity can be increased.



98024-265-01

Placing assembly-level planking between towers



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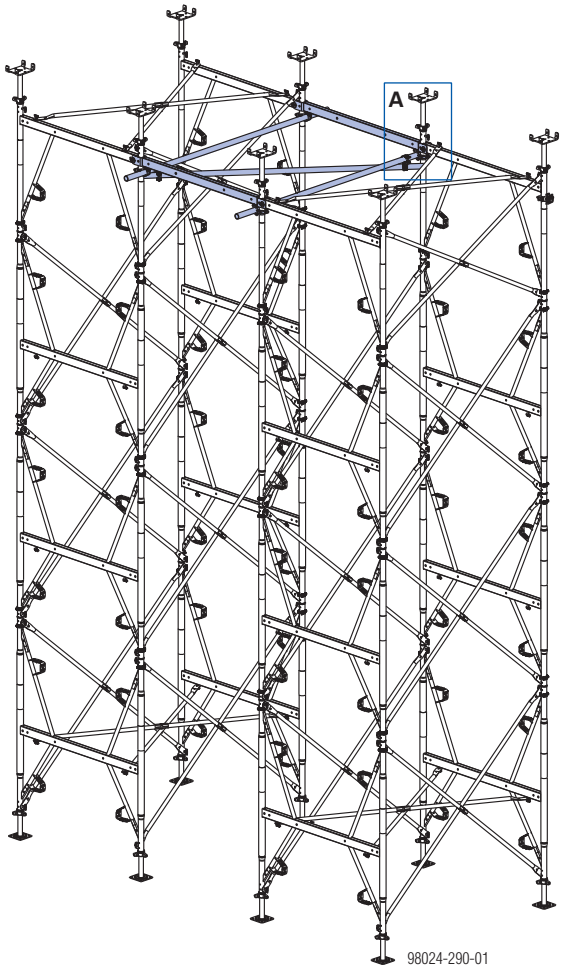
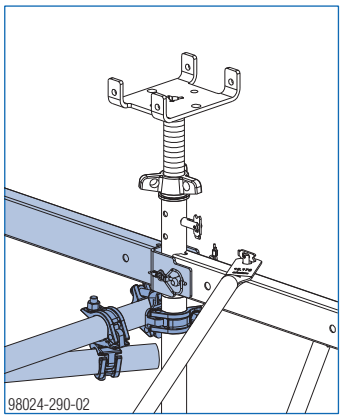
Planking struts as part of bracing configurations

The planking struts and extra scaffold tubes can be used to make a complete horizontal framework, e.g. for bracing towers that are over 11 m tall.



Close-up A

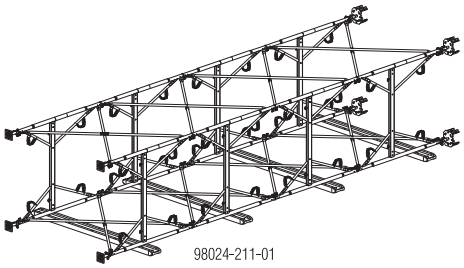


Assembly (overview)

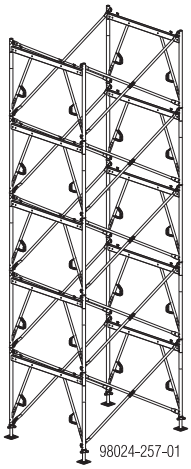
Set-up configurations

Load-bearing tower Staxo 40

Horizontal assembly
Standard set-up

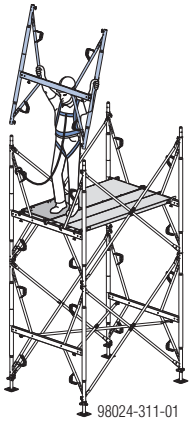

98024-211-01

Assembling in the upright

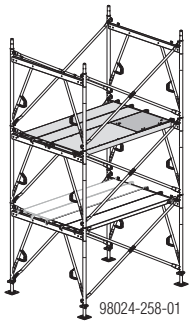

98024-257-01

by hand

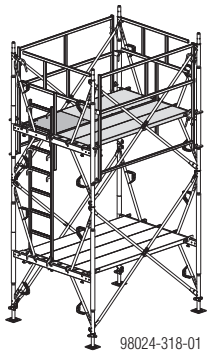
With 'personal fall-arrest equipment'


98024-311-01

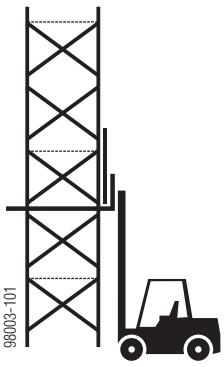
With 'mounted-ahead' 1.20m frames and diagonals (frames' horizontal profile is at top)


98024-258-01

With 'move-up' front and side railings


98024-318-01

with Fork lift shifting device TG


98003-101

Fall protection when erecting, modifying or dismantling the load-bearing tower

If required by local regulations or as the result of a hazard assessment performed by the scaffold erector, when erecting, modifying or dismantling the load-bearing tower it may be necessary to use a personal fall-arrest system, 'mounted-ahead' frames and/or railings, or a combination of both.

NOTICE

Use only the anchorage points as shown in the section headed 'Staxo 40 in detail'!

WARNING

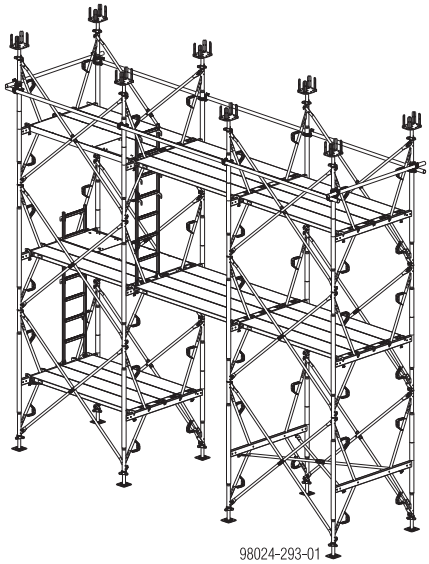
- The anchorage point must be at or above the minimum height required for the fall arrest to work.
- As part of a risk assessment, evaluate the use of a personal fall-arrest system. Test the strength of the load-bearing tower.

Other set-up configurations

With Staxo 40, tower-to-tower passageways are possible at any height and in any direction. Alongside the usual tower-erection methods, this makes possible a number of other methods for tower assembly.

Passageway levels beneath the towerframe superstructure

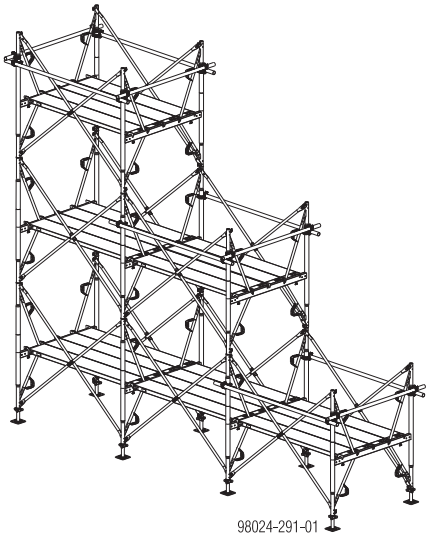
Towers connected with planking struts and scaffold planking units, providing unobstructed tower-to-tower walkway openings beneath the towerframe superstructure and at intermediate levels.



98024-293-01

Multi-tower units

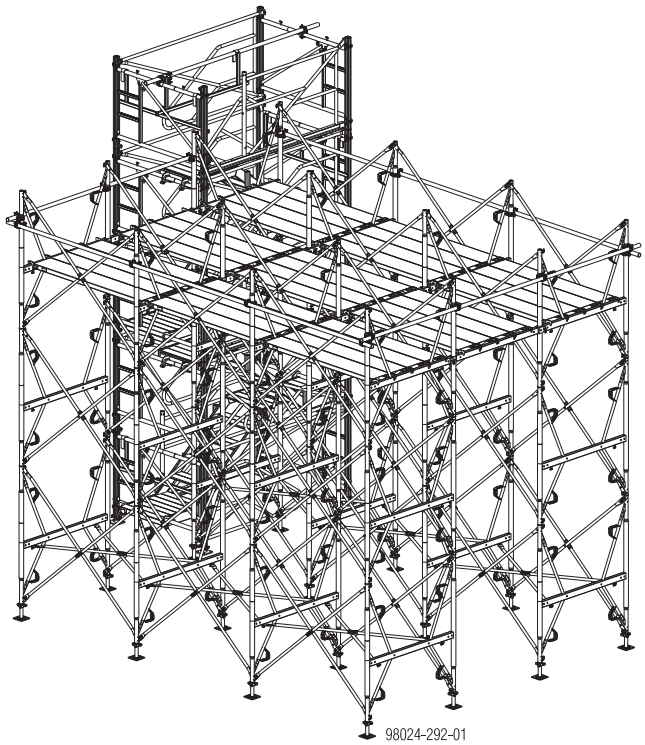
Passageway openings inside the tower and beneath the towerframe superstructure.



98024-291-01

Large-area set-up with planking struts

Set-up configuration with full-area assembly level beneath the superstructure.



98024-292-01

Horizontal assembly

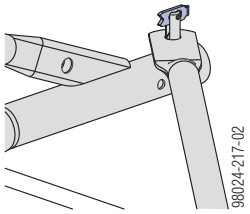
Preliminary remark:

- The terms 'vertical' and 'horizontal' (e.g. referring to the diagonal crosses) are always used here with reference to their installation situation in the finished, upright tower.
- The job of erecting the load-bearing tower begins with the bottom (i.e. first) 'storey'.

NOTICE

General:

- Slide the diagonal cross onto the safety-catch bolt and immediately secure it with the safety catch.

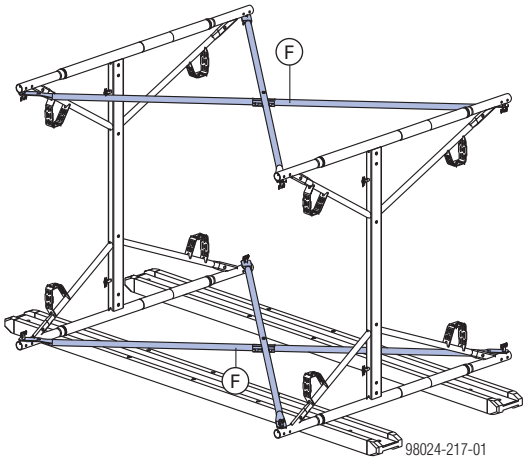


Erecting the first storey

➤ Having regard to the instructions given above, place the tower frames on their sides on timber supports (min. 4cm high).

Bracing the frames in the vertical

➤ Link the frames with diagonal crosses.



F Diagonal cross

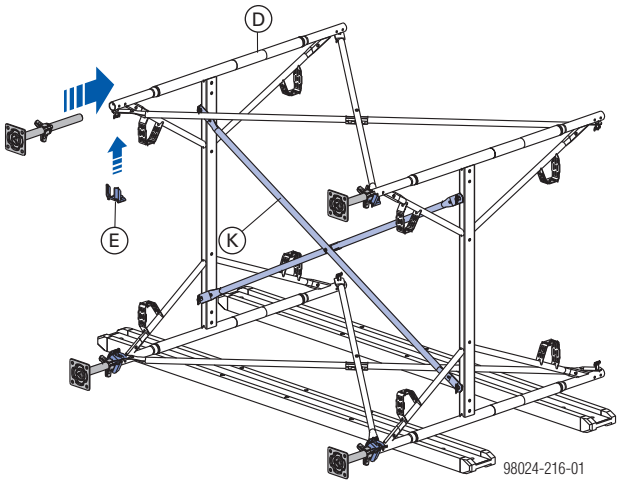
Plan-bracing the frames (in the horizontal)

Basic rule:

To maintain correct geometry, horizontally placed Diagonal crosses 12.xxx or shear-rigid planking units must be fitted in the following cases:

- in the bottom and top 'storeys'
- every 10 m
- in between as required, e.g. where
  - there is a horizontal restraint for the tower (even a temporary one)
  - local loads need to be transferred (e.g. from a bracket or from attaching the tower to the crane when it is assembled in the horizontal)

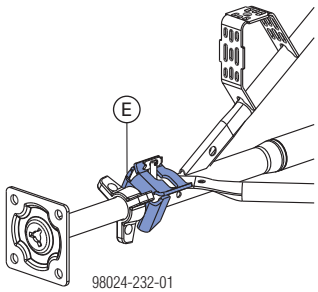
➤ Slot diagonal crosses onto the safety-catch bolts of the horizontal frame tubes, and fix them in place.



D Frame
E Yellow locking spring
K Diagonal cross

➤ Insert screwjack base units and secure them with Staxo 40 anti-dropout locks. See also the section entitled 'Lifting by crane'.

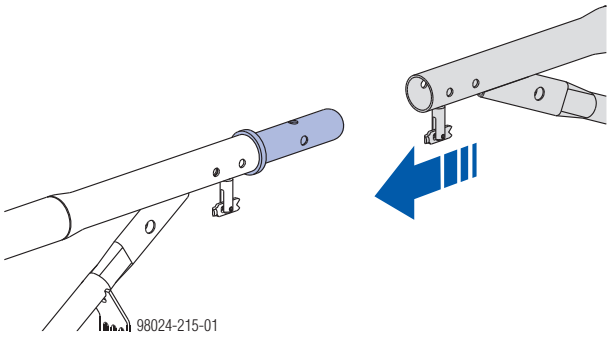
Close-up



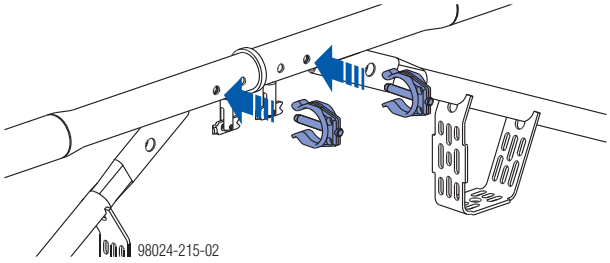
Erecting further storeys

Note:
Do not pre-assemble units any higher than 11 m.

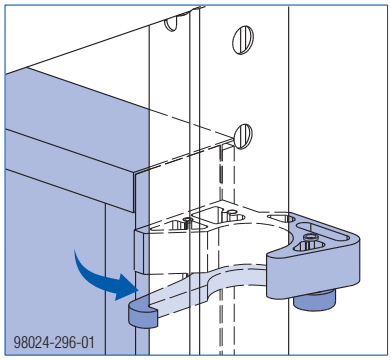
➤ Fit a Staxo 40 coupler and push the next frame onto it.



➤ Use Staxo 40 tube connectors D48.3mm to make crane-handling-safe links between the frames at every joint.



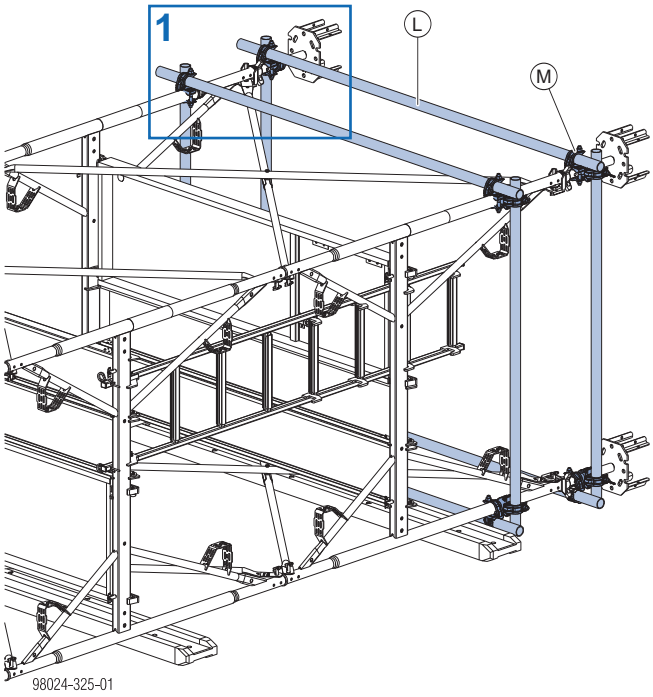
➤ Fit and secure diagonal crosses in the same way as in the first 'storey'.
➤ Install scaffold planking units where needed
➤ Close the anti-liftout guard.



Optionally: Railings on the top 'storey'

NOTICE
Install the frame on the top 'storey' long side up, so that the edge protection can be installed at a height of 1.00 m.

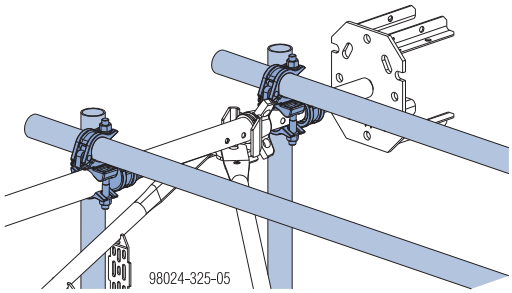
To meet very stringent safety requirements, a railing constructed from scaffold tubes can be installed on the top 'storey'.



L Scaffold tube 48.3mm
M Swivel coupler 48mm

➤ Use Swivel couplers 24mm to install 2 Scaffold tubes 48.3mm on the frame and the head unit on each side.

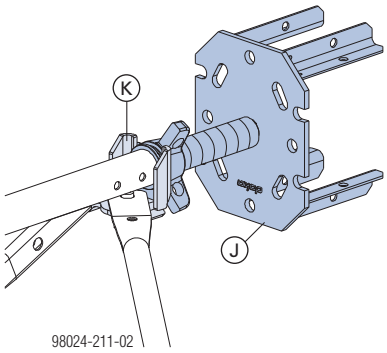
Close-up 1



Head zone

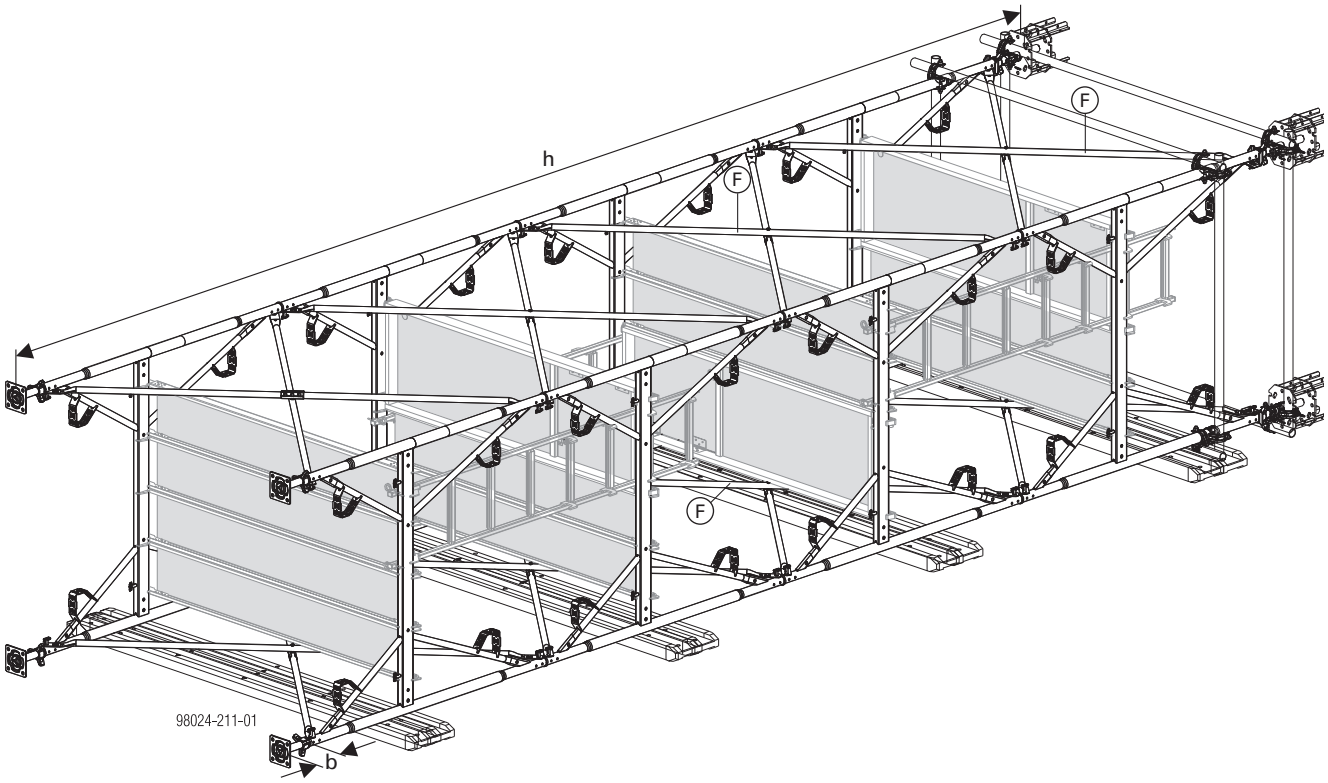
Fitting the head unit

➤ Insert the head unit and secure it with Staxo 40 anti-dropout lock.



J Head unit
K Staxo 40 anti-dropout lock

WARNING
Loads that are applied eccentrically can cause overloading of the system.
➤ Ensure that all loads are applied centrally!



h ... max. 11 m
b ... max. extension length of the screw-jack base units when the tower is being lifted into the upright: 30 cm

F Diagonal cross

Lifting into the upright by crane

➤ Check before attaching the crane suspension tackle:

- All Staxo 40 tube connectors D48.3mm must be in place (to link the frames).
- All screw-jack head and base units must be secured against drop-out.
- All safety catches must be closed.

NOTICE

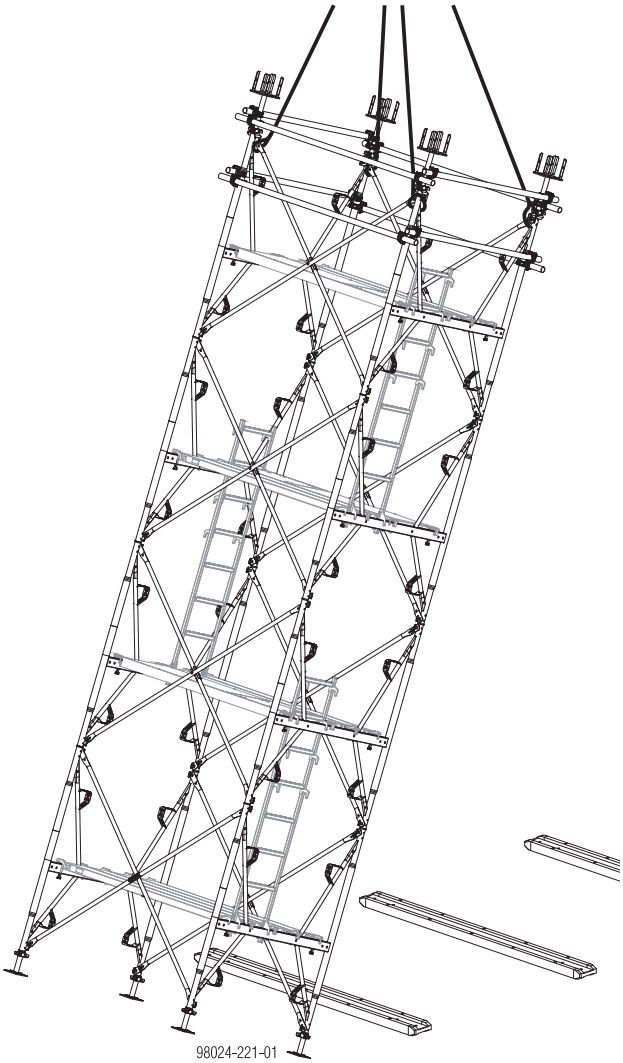
- Max. height of the tower unit to be lifted into the upright: 11 m
- Max. weight of the tower: 700 kg
- Max. extension length of the screw-jack base units when the tower is being lifted into the upright: 30 cm!

Lifting into the upright

NOTICE

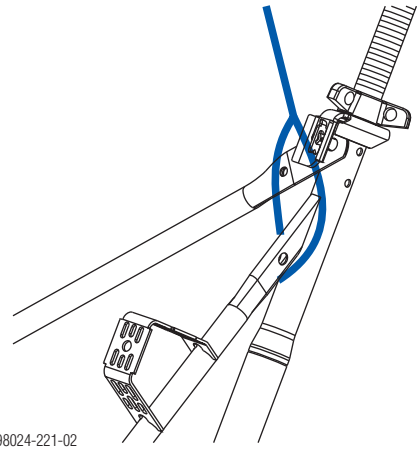
- Erect the load-bearing tower in the vertical on ground that is statically capable of supporting the load.
- If the load-bearing tower is over 6 m high, brace it or combine it with other towers.

➤ Attach the crane lifting tackle to the frames of the top section and lift the entire tower into the upright.



98024-221-01

➤ Observe the crane-slinging details given in the section headed 'Lifting by crane'!



98024-221-02

When the tower is standing in the upright, check once again to make sure that all the safety catches are closed.

Detaching the crane lifting tackle near ground level:

This method must not be used for **placing the tower back on its side**!

Items needed:

- 3 x Scaffolding tube 48.3mm **(G)**
  - Minimum length: inter-frame space + 1.00 m
- 6 x Screw-on coupler 48mm 95 **(H)**
- 4 x Staxo 40 frame strut 1.40m **(I)**

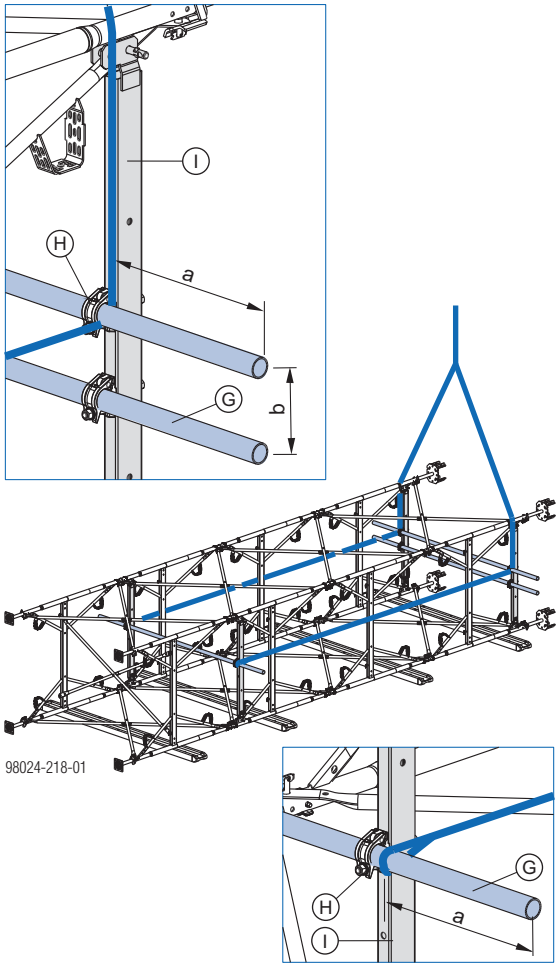
➤ Mount Staxo 40 frame struts in the bottom and top 'storeys'

➤ Attach scaffold tubes:
- one to the bottom frame strut
- two to the top frame struts

➤ Attach two cables, chains or lifting straps to the bottom scaffold tube.

➤ Lead the cables, chains or lifting straps along the outside of the tower and between the top scaffold tubes.

After the tower has been lifted into the upright, the cables, chains or lifting straps are detached by a crewman working from ground level.



a ... min. 0.5 m
b ... max. 0.2 m

G	Scaffold tube 48.3mm
H	Screw-on coupler 48mm 95
I	Staxo 40 frame strut 1.40m

Dismantling

After the tower has been placed back on its side, it can be dismantled in reverse order.

NOTICE

As early as in the planning phase, consideration should also be given to the dismantling operations (e.g. travelling/towing the load-bearing tower/unit into the reach of the crane for safe repositioning or for horizontal on-ground dismantling)!

Assembling towers in the upright

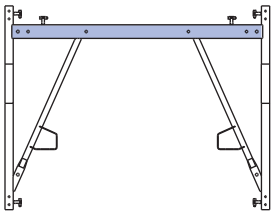
Assembling towers in the upright with 'mounted-ahead' 1.20m frames

NOTICE

- Erect the load-bearing tower in the vertical on ground that is statically capable of supporting the load.
- If the load-bearing tower is over 6 m high, back-stay it or combine it with other towers.

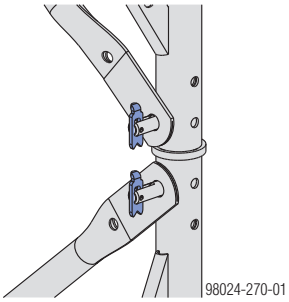
As a rule:

- In this erection method, the horizontal profile of the Staxo 40 frame 1.20m must always be on top, to ensure fall protection.



98024-207-02

- Slide the diagonal cross onto the safety-catch bolt and immediately secure it with the safety catch.

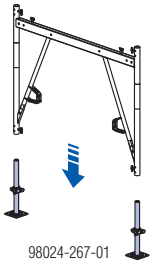


98024-270-01

Installation example with Staxo 40 screw-jack foot 30cm and Staxo 40 4-way screw-jack head 30cm.

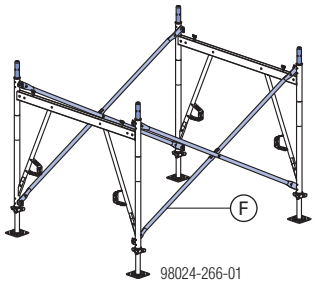
Erecting the first storey

➤ Insert screwjack base units.



98024-267-01

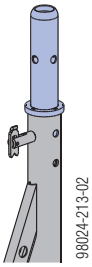
➤ Connect the frames together with diagonal crosses.



98024-266-01

F Diagonal cross

➤ Insert Staxo 40 couplers.



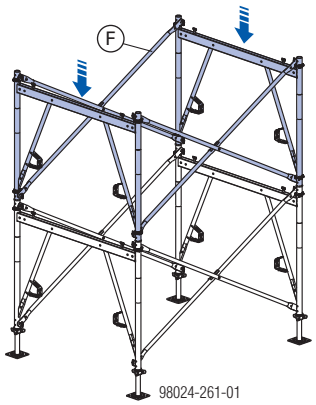
98024-213-02

Note:
If it is intended to crane-lift the tower, the frames must all be linked in a crane-handling-safe manner by Staxo 40 tube connectors D48.3mm. See also the section entitled 'Lifting by crane'.

Erecting the second storey

Stacking the frames

➤ Add the next frames.
➤ Push diagonal crosses onto the bottom safety-catch bolts and secure them with the safety catches.

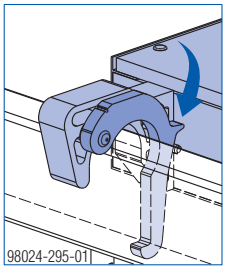


F Diagonal cross

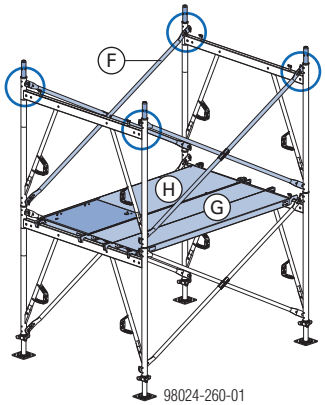
➤ Insert Staxo 40 couplers in the same way as in the first 'storey'.

Bracing the frames in the vertical

➤ Mount the scaffold planking units.
➤ Close the anti-liftout guard.



➤ Push diagonal crosses onto the top safety-catch bolts and secure them with the safety catches.
➤ Insert Staxo 40 couplers.

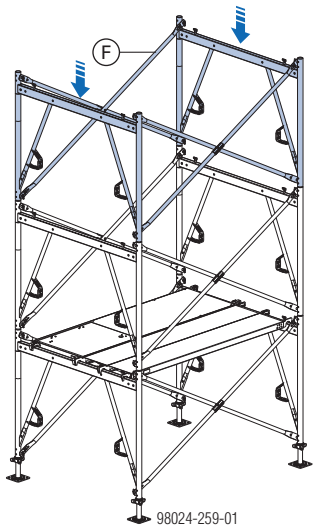


F Diagonal cross
G Scaffold planking 30/...cm
H Scaffold planking 60/...cm with manhole

Erecting the third 'storey'

Stacking the frames

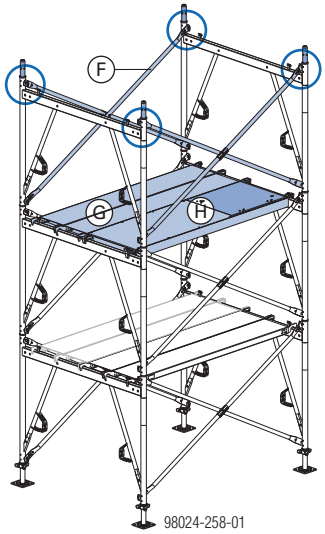
➤ Add 1.20 m frames in the same way as for the 2nd section.
➤ Push diagonal crosses onto the bottom safety-catch bolts and secure them with the safety catches.



F Diagonal cross

Mounting scaffold planking units and bracing the frames in the vertical

➤ Place scaffold planking on the finished 'storey'.
➤ Push diagonal crosses onto the top safety-catch bolts and secure them with the safety catches.
➤ Insert Staxo 40 couplers.



F Diagonal cross
G Scaffold planking 30/...cm
H Scaffold planking 60/...cm with manhole

Horizontal bracing

NOTICE

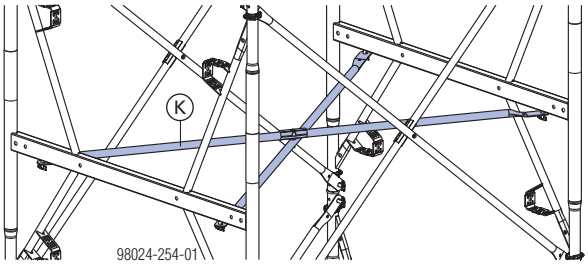
If no scaffold planking units are used, or if these are removed before the tower is finally put into use, the following rule applies.

Basic rule:

To maintain correct geometry, horizontally placed Diagonal crosses 12.xxx or shear-rigid planking units must be fitted in the following cases:

- in the bottom and top 'storeys'
- every 10 m
- in between as required, e.g. where
  - the tower is anchored to one side (even temporarily)
  - local loads need to be transferred (e.g. from a bracket or from attaching the tower to the crane when it is assembled in the horizontal)

➤ Slot diagonal crosses onto the safety-catch bolts of the horizontal frame tubes, and fix them in place.



K Diagonal cross

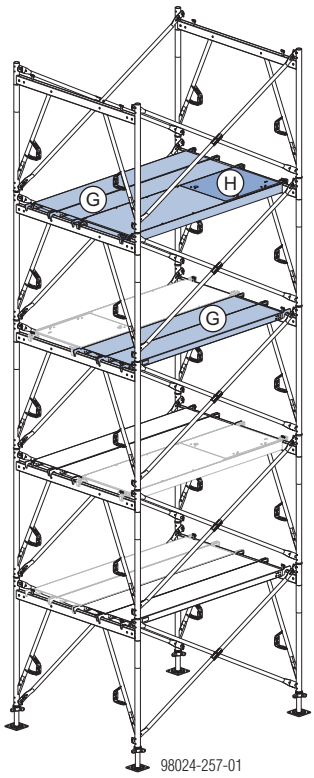
Erecting further storeys

➤ Add further frames in the same way as for the 3rd 'storey', and brace them in the vertical with diagonal crosses.

NOTICE

Arrange the scaffold planking units either on alternate sides from one 'storey' to the next, or across the entire area.

When the scaffold planking units are located on alternate sides, 3 scaffold planking units must be used on the final (i.e. top) 'storey', one of them with a manhole. Make sure that the manhole is in the correct position here.



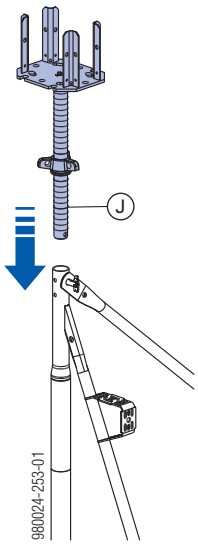
G Scaffold planking 30/...cm

H Scaffold planking 60/...cm with manhole

Head zone

Fitting the head unit

➤ Insert the head unit.



J Head unit

WARNING

Loads that are applied eccentrically can cause overloading of the system.

➤ Ensure that all loads are applied centrally!

NOTICE

➤ When lifting and repositioning the entire tower unit (or pre-assembled sub-units) by crane: Follow the instructions in the section headed 'Lifting by crane'!

Dismantling

To dismantle, perform the above steps in reverse order.

NOTICE

As early as in the planning phase, consideration should also be given to the dismantling operations (e.g. travelling/towing the load-bearing tower/unit into the reach of the crane for safe repositioning or for horizontal on-ground dismantling)!

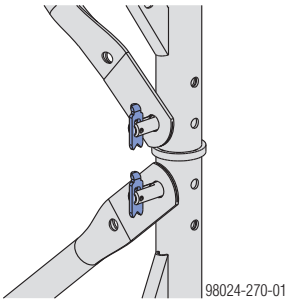
Assembling in the upright with 'move-up' front and side railings

NOTICE

- Erect the load-bearing tower in the vertical on ground that is statically capable of supporting the load.
- If the load-bearing tower is over 6 m high, back-stay it or combine it with other towers.

As a rule:

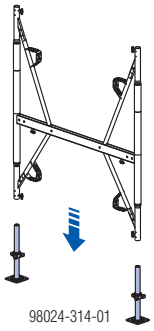
- Slide the diagonal cross onto the safety-catch bolt and immediately secure it with the safety catch.



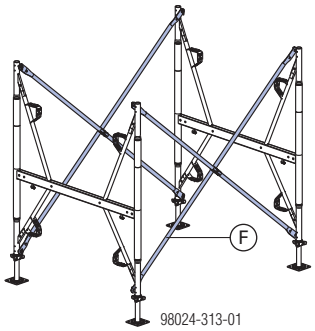
Installation example with Staxo 40 screw-jack foot 30cm and Staxo 40 4-way screw-jack head 30cm.

Erecting the first storey

➤ Insert screwjack base units.



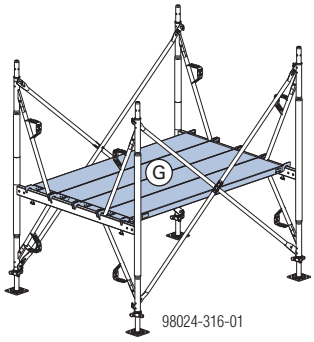
➤ Link the frames with diagonal crosses.



F Diagonal cross

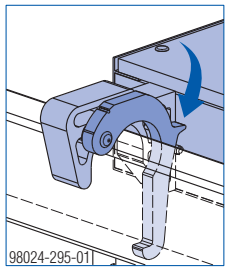
Mounting the scaffold planking units

➤ Insert scaffold planking units.



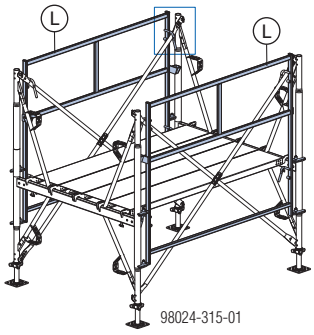
G Scaffold planking 30/...cm

➤ Close the anti-liftout guard.



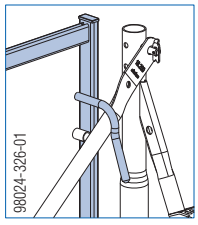
Mounting the 'move-up' railings

➤ Mount the Staxo side railings.

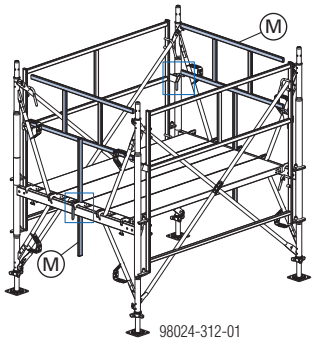


L Staxo side railing

Close-up of how to hang into place

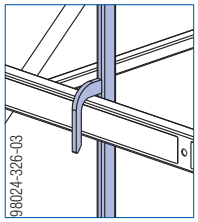


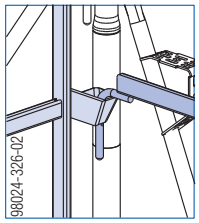
➤ Mount the Staxo front railings.



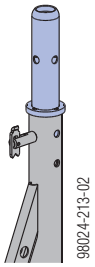
M Staxo front railing

Close-up of how to hang into place





➤ Insert Staxo 40 couplers.



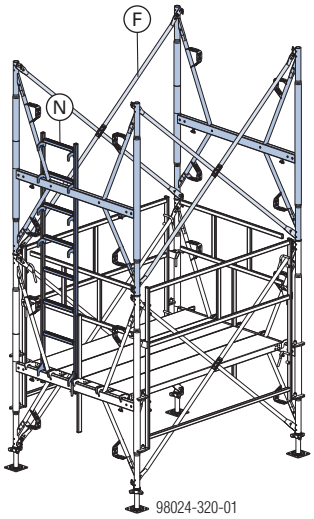
Note:
If it is intended to crane-lift the tower, the frames must all be linked in a crane-handling-safe manner by Staxo 40 tube connectors D48.3mm. See also the section entitled 'Lifting by crane'.

Erecting the second storey

Stacking the frames

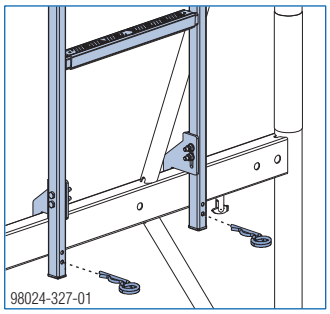
NOTICE
➤ Install the frame long side up.

➤ Add the next frames.
➤ Push diagonal crosses onto the safety-catch bolts and secure them with the safety catches.
➤ Hook in the ladder and secure with Spring cotters d6.



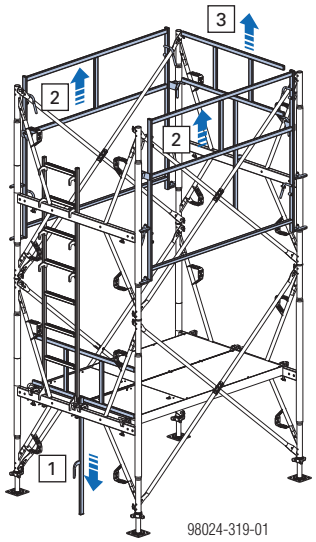
F Diagonal cross
N Staxo 40/d3 ladder 2.30m

Close-up of ladder (as seen from the inside of the load-bearing tower)



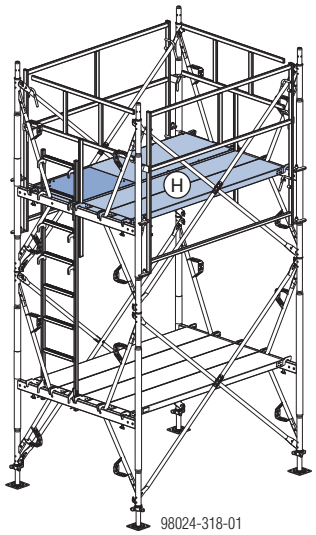
Raising the 'move-up' railings

1) Push the Staxo front railings down into the stand-by position.
2) Move the Staxo side railings up one section ('storey').
3) Move the Staxo front railings up again.



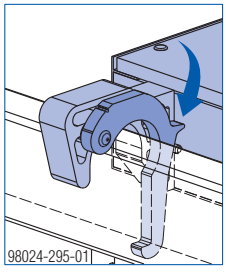
Mounting the scaffold planking units

➤ Insert scaffold planking units.



G Scaffold planking 30/...cm
H Scaffold planking 60/...cm with manhole

➤ Close the anti-liftout guard.



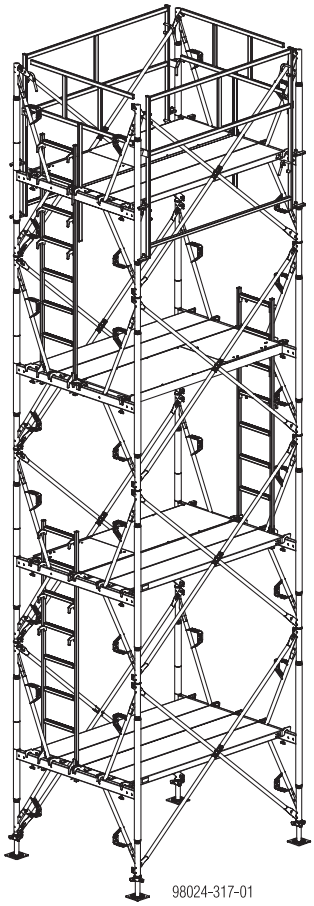
➤ Insert Staxo 40 couplers in the same way as in the first 'storey'.

Erecting further storeys

➤ Add further frames in the same way as for the 2nd 'storey', and brace them in the vertical with diagonal crosses.

NOTICE

Make sure that the manholes are in the right position.



Horizontal bracing

NOTICE

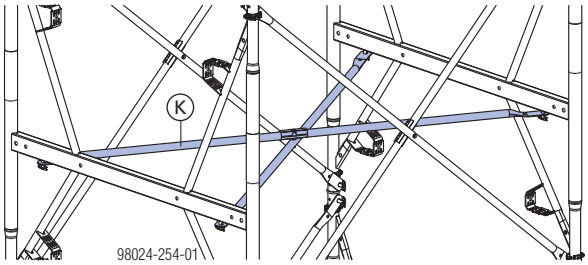
If no scaffold planking units are used, or if these are removed before the tower is finally put into use, the following rule applies.

Basic rule:

To maintain correct geometry, horizontally placed Diagonal crosses 12.xxx or shear-rigid planking units must be fitted in the following cases:

- in the bottom and top 'storeys'
- every 10 m
- in between as required, e.g. where
  - the tower is anchored to one side (even temporarily)
  - local loads need to be transferred (e.g. from a bracket or from attaching the tower to the crane when it is assembled in the horizontal)

➤ Slot diagonal crosses onto the safety-catch bolts of the horizontal frame tubes, and fix them in place.

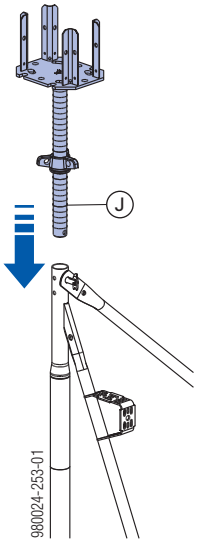


K Diagonal cross

Head zone

Fitting the head unit

➤ Insert the head unit.



J Head unit

WARNING

Loads that are applied eccentrically can cause overloading of the system.

➤ Ensure that all loads are applied centrally!

NOTICE

➤ When lifting and repositioning the entire tower unit (or pre-assembled sub-units) by crane: Follow the instructions in the section headed 'Lifting by crane'!

Dismantling

To dismantle, perform the above steps in reverse order.

NOTICE

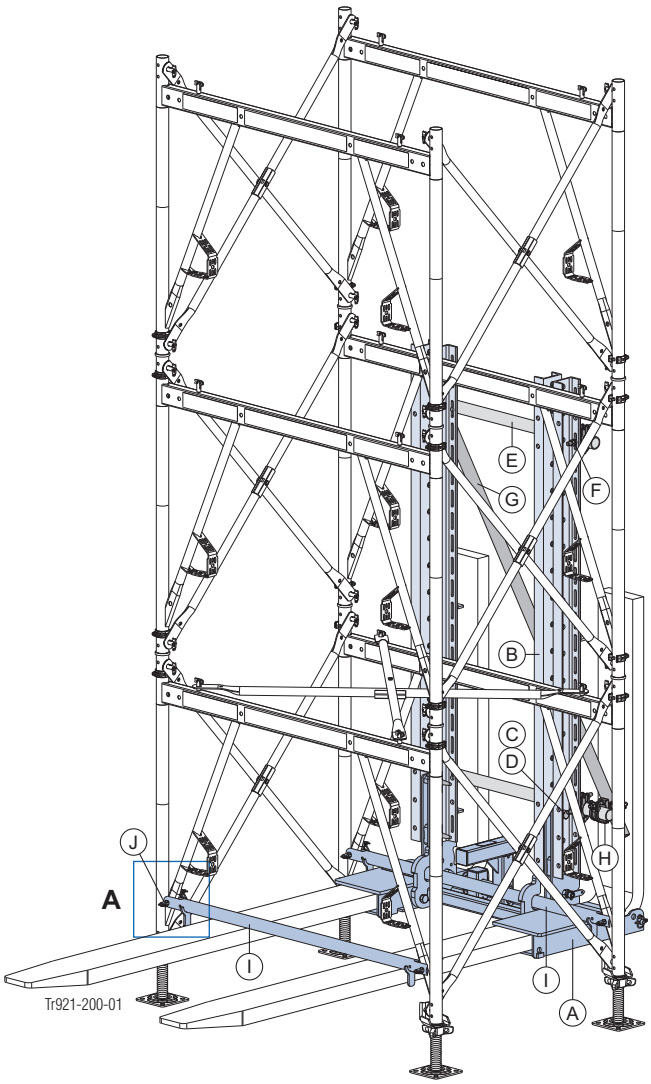
As early as in the planning phase, consideration should also be given to the dismantling operations (e.g. travelling/towing the load-bearing tower/unit into the reach of the crane for safe repositioning or for horizontal on-ground dismantling)!

Assembling towers in the upright by forklift truck

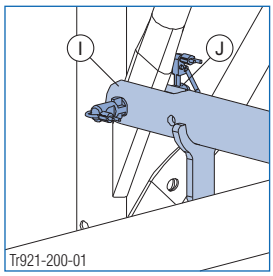
Fork lift shifting device TG

The Fork lift shifting device TG may only be used for erecting, dismantling and transporting Doka load-bearing towers Staxo, Staxo 40, Staxo 100, Staxo 100 eco, d3 and d2.

Follow the Operating Instructions!



Close-up A

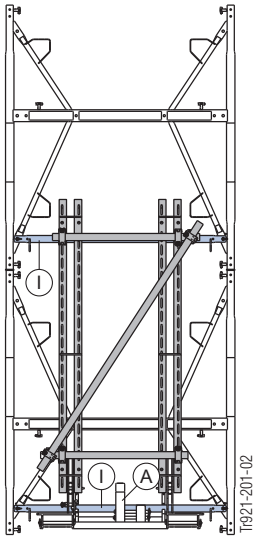


Items needed:

Item	Designation	Q'ty
(A)	Fork lift shifting device TG	1
(B)	Multi-purpose waling WS10 Top50 2.00m	2
(C)	Connecting pin 10cm	4
(D)	Spring cotter 5mm	4
(E)	Scaffold tube 48.3mm 1.00m	2
(F)	Screw-on coupler 48mm 50	4
(G)	Scaffold tube 48.3mm 2.00m	1
(H)	Swivel coupler 48mm	2
(I)	Staxo 40 lifting strut	2 or 3 [1)]
(J)	Bolt D16/125 + Linch pin DIN 11023 (included in scope of supply of Staxo 40 lifting strut)	4 or 6 [1)]
	Operating cord, site-provided (optional)	1

NOTICE

- Secure the Staxo 40 screw-jack feet with Staxo 40 anti-dropout locks.
- [1)] If it is not possible to brace the Multi-purpose waling WS10 Top50 on the cross profile of the top frame, then a **third** Staxo 40 lifting strut must be fitted as well.



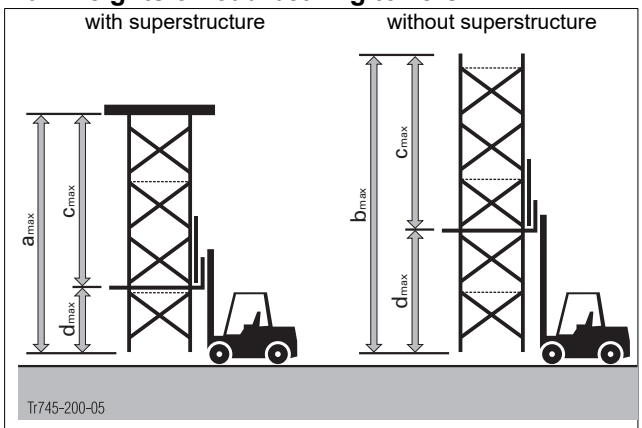
WARNING

➤ While load-bearing towers are being erected or dismantled, lifted or lowered: It is forbidden to walk or stand beneath suspended loads.

Max. load

Load on forklift	Max. load on Fork lift shifting device	
	with box-style fork extensions	with telescopic forks
4000 kg	1000 kg	600 kg
2000 kg	600 kg	600 kg

Max. heights of load-bearing towers



	Max. load on forklift **4000 kg**		Max. load on forklift **2000 kg**	
	when travelling	when lifting	when travelling	when lifting
a_{max}	7.20 m	9.00 m	5.00 m	7.00 m
b_{max}	9.00 m	12.60 m	7.00 m	10.00 m
c_{max}	5.40 m	9.00 m	4.00 m	7.00 m
d_{max}	3.60 m	3.60 m	3.00 m	3.00 m

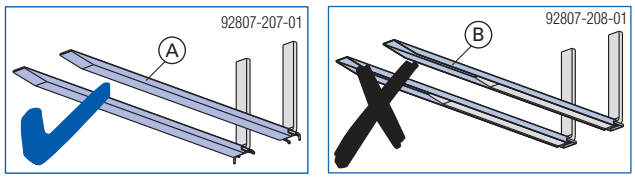
Requirements for fork-lift trucks or telescoping stacker trucks

- Overhead guard for forklift operator
- Centre-to-centre distance of the fork prongs: 850 mm

WARNING

➤ It is forbidden to use forklift or telescoping stacker trucks to erect/dismantle or transport load-bearing towers **without** a Fork lift shifting device TG.

➤ It is not permitted to use non-enclosed (open) fork extensions.



A Box-style fork extension

B Open fork extension

- Permitted types of fork extension:
  - box-style fork extensions [1)]
  - Telescopic fork prongs
- Min. fork length:
  Distance between the frames of the load-bearing tower + 400 mm
- Max. fork width: 195 mm
- Max. fork height: 71 mm

1) Observe the following manufacturer's data:
- Load-bearing capacity of the fork extension
- Required length of the fork prongs

Travelling the towerframe units

NOTICE

Very important points for the moving procedure:

- As well as the fork-lift driver, a specially trained watchman must also be on hand during all lifting, assembly and travelling operations.
- max. inclination of trackway: 2%.
- There must be a flat, firm (e.g. concrete) base that is capable of supporting the load.

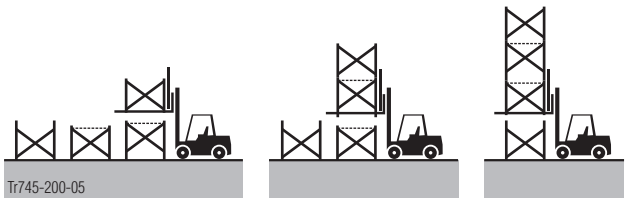
Assembling the towerframe units

NOTICE

➤ For details of how to assemble and join together the individual sections ('towerframe storeys'), see the section headed 'Assembling towers in the upright with 'mounted-ahead' 1.20m frames' or, as applicable, 'Assembling in the upright with 'move-up' front and side railings'!

➤ Build each section at ground level.

➤ Use a forklift truck to stack the towerframe storeys into a single towerframe unit.



Dismantling

To dismantle, perform the above steps in reverse order.

NOTICE

Always only disasemble the bottom "storey" of the towerframe unit.

Erection and dismantling of superstructure

Planning aid

WARNING
Risk of tipping over!
If loads (primary beams, secondary beams, formwork sheets) are not centred, stability can be impaired!
- ➤ Always centre all loads.
- ➤ Make sure that the structure is sufficiently stable.

WARNING
Risk of falling at open edges!
- ➤ Personnel must be trained to use personal fall-arrest systems (e.g. safety harness) until all fall protection has been installed.
- ➤ Suitable anchorage points must be defined by an approved person appointed by the contractor.
- ➤ As part of a risk assessment, evaluate the use of a personal fall-arrest system. Test the strength of the load-bearing tower.

A fall arrester such as the FreeFalcon provides a mobile anchorage point for the safety harness.

Note:
Consider the loads from slab stop-ends. If the loads cannot be transferred directly, ensure all stop-end loads are designed and secured against pull out.

NOTICE

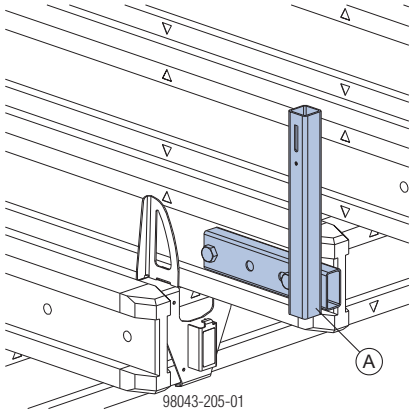
Take the following into account in planning:

- Because of manual handling in stripping out, the maximum weight of the primary beams should be < 50 kg!
  - For this reason, use Doka beams I tec 20, Alu box beams or Multi-purpose walings WS10 Top50 with a maximum length of 2.50 m.
    This is particularly important at closure zones and in towers that cannot be moved out for dismantling.
- In the edge zone, secure or fasten all secondary beams to prevent overturning (use secondary beam stabilisers, Waling clamps H20, etc.).
- In principle, the secondary beams should rest on only 2 primary beams. In the closure zone, the secondary beams can rest on 3 primary beams (because of an additional single primary beam). Avoid long cantilevers, to minimise the risk of overturning.
- In the closure zone, it is advisable to use Timber formwork beams H20, Alu box beams or Doka beams I tec 20.
- The top ‘storey’ should be constructed with a Staxo frame 1.20m. This gives the working height for installation of the superstructure.
- Replace the topmost horizontal crosses with assembly planking.
- Underneath the topmost ‘storey’, construct an uninterrupted assembly level extending for the entire area to be formed.
  Whenever possible, compensate for differences in height due to different frame heights, or install clearly visible steps.
- At downstand beams use only 0.90m frames in the first ‘storey’ to facilitate stripping out, for example by forklift truck.
  - Remove the lowest frames.
  - Then move out the towers underneath the downstand beam.
- For a higher load-bearing capacity, use the smaller frames 0.90m or 1.20m in the lowest and highest ‘storeys’.

Preparations

Below are some general notes for safe use. For detailed descriptions of the erection procedure see the relevant sections of this User Information booklet and the 'Eurex 60 550' User Information booklet.

- ➤ Interconnect the towers (bracing for 6.00 m + towers).
- ➤ Tie-back towers and anchor them to the structure (bracing for 6.00 m + towers).
- ➤ Install assembly planking on the towers.
- ➤ Install an assembly level between the towers.
- ➤ Pre-install Insertion adapters XP on the appropriate edge primary beams for installation of railings.
- ➤ Pre-install Insertion adapters XP on the appropriate secondary beams for installation of railings.



A Insertion adapter XP

Assembly

NOTICE

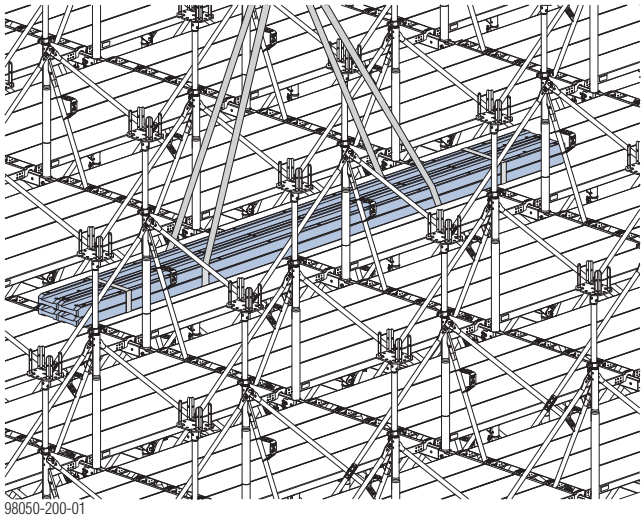
During all operations, ensure that only approved/trained personnel are allowed anywhere near the area where assembly/dismantling is being carried out. Danger from falling objects. Mark or cordon off the area concerned.

Assembling the superstructure

Installing the primary beams

Primary beams of Timber formwork beams H20, Doka beams I tec 20 or Alu box beams

- ➤ Attach packaged primary beams to the crane and crane-lift them to the usage location.
- ➤ Safely lower the primary beam package so that the load is centred on the cross profiles of the Staxo frames and detach the package from the crane.



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- ➤ Manually position each primary beam in turn.

Primary beams with multi-purpose walings, steel profiles, etc.

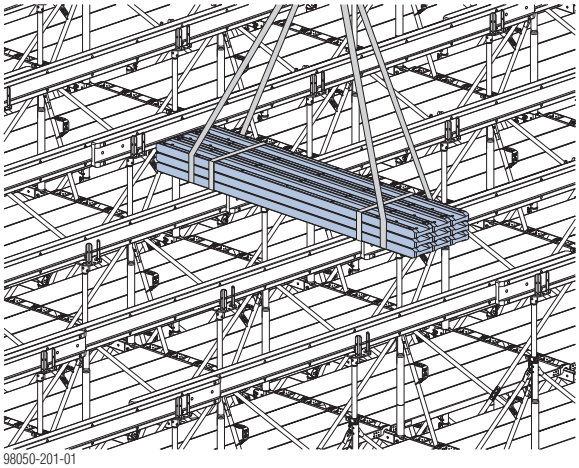
- ➤ Attach each primary beam individually to the crane and crane-lift it to the usage location.
- ➤ Use the crane to lower the primary beam into position on the heads and detach it from the crane.
- ➤ If necessary, interconnect the primary beams (with formwork element connectors, plates, etc.)

Installation of the secondary beams (Doka beams H20)

WARNING

- ➤ Secure cantilevered slab formwork to prevent lift-out and overturning.
- ➤ Secondary beams with stop-end formwork must be secured against horizontal pull-out.

- ➤ Attach packaged secondary beams to the crane and crane-lift them to the usage location.
- ➤ Safely lower the secondary beam package so that the load is centred on the primary beams and detach the package from the crane.



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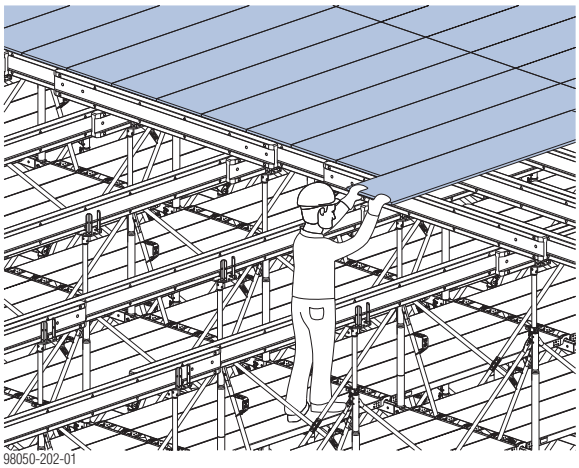
- ➤ Working from the assembly level, manually position each secondary beam in turn at the specified spacing.
- ➤ Repeat these steps until all the secondary beams are in position over the full length of the formwork sheet.

Installation of the formwork sheets

- ➤ Attach packaged formwork sheets (max. 1300 kg) to the crane and crane-lift them to the usage location.
- ➤ Safely lower the formwork sheet package so that the load is centred on the secondary or primary beams and detach the package from the crane.
- ➤ Manually position each formwork sheet in turn.



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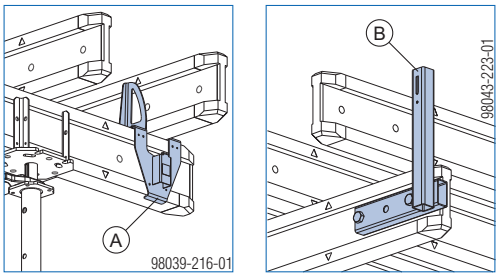
Overturning protection of the secondary beams:
- Secondary-beam stabilisers **(A)**
- Seat the edge beams against the Insertion adapters XP. **(B)**



Where necessary (e.g. in edge zones), secure the formwork sheets with nails.

Recommended nail lengths
- Sheet thickness of 21 mm: approx. 50 mm
- Sheet thickness of 27 mm: approx. 60 mm

➤ Repeat this process until all the formwork sheets are in position.

➤ Only now is it permissible to step on to the formwork.

Installation of the railings

WARNING

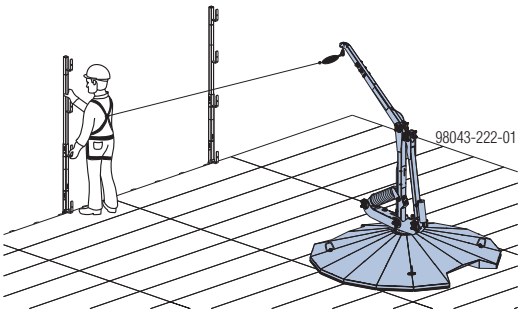
Risk of falling at open edges!

➤ Personnel must be trained to use personal fall-arrest systems (e.g. safety harness) until all fall protection has been installed.

➤ Suitable anchorage points must be defined by an approved person appointed by the contractor.

➤ As part of a risk assessment, evaluate the use of a personal fall-arrest system. Test the strength of the load-bearing tower.

A fall arrester such as the FreeFalcon provides a mobile anchorage point for the safety harness.

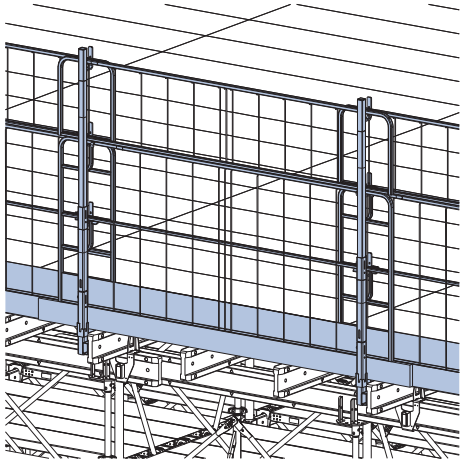


Follow the directions in the 'FreeFalcon' Operating Instructions!

➤ Install Handrail posts XP.

➤ Install protective gratings or guardrail boards for safety barriers.

➤ Only when all safety barriers are in place and secure is it permissible for personal fall-arrest systems to be removed.



Installation of the closure zones

Mounting the floor props

Follow the directions in the 'Eurex 60 550', 'Eurex 20 top 700' or 'Eurex 100 plus' User Information booklet, as applicable.

➤ Lay the floor props flat on the ground and set them to the correct extended length.

➤ Insert and secure each U-head or 4-way head.

➤ Lift each floor prop to the vertical and secure it so that it cannot fall over (e.g. with Removable folding tripod 1.20m)

➤ Use a service tower for all subsequent work steps.

Installing the primary beams

Primary beams of Timber formwork beams H20, Doka beams I tec 20 or Alu box beams

➤ Attach each primary beam individually to the crane and crane-lift it to the usage location.

➤ Working from the service tower, position the primary beam and detach the crane.

Primary beams with multi-purpose walings, steel profiles, etc.

➤ Attach each primary beam individually to the crane and crane-lift it to the usage location.

➤ Working from the service tower and using the crane, lower the primary beam into position on the heads and detach the crane.

➤ If necessary, interconnect the primary beams (with formwork element connectors, plates, etc.).

Installation of the secondary beams (Doka beams H20)

WARNING

- Secure cantilevered slab formwork to prevent lift-out and overturning.
- Secondary beams with stop-end formwork must be secured against horizontal pull-out.

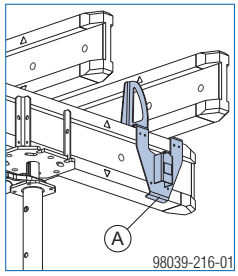
- Attach packaged secondary beams to the crane and crane-lift them to the usage location.
- Safely lower the secondary beam package so that the load is centred on the primary beams and detach the package from the crane.
- Pre-install Insertion adapters XP on the appropriate secondary beams for installation of railings.
- Working from the assembly level, manually position each secondary beam in turn at the specified spacing.
- Repeat this process until all the secondary beams are in position.

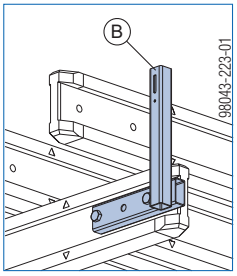
Installation of the formwork sheets

- Attach packaged formwork sheets (max. 1300 kg) to the crane and crane-lift them to the usage location.
- Safely lower the formwork sheet package so that the load is centred on the secondary beams, primary beams or neighbouring formwork sheeting of the typical zone and detach the package from the crane.
- Working from the assembly level, manually position each formwork sheet in turn.

Overturning protection of the secondary beams:

- Secondary-beam stabilisers **(A)**
- Seat the edge beams against the Insertion adapters XP. **(B)**





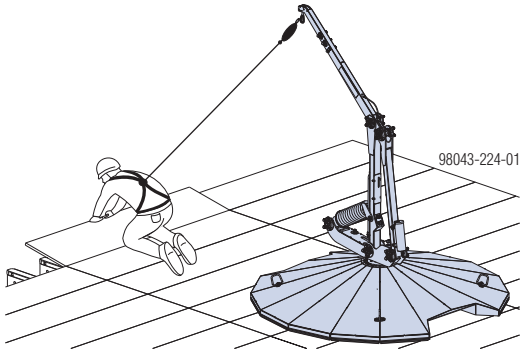
Where necessary (e.g. in edge zones), secure the formwork sheets with nails.

Recommended nail lengths

- Sheet thickness of 21 mm: approx. 50 mm
- Sheet thickness of 27 mm: approx. 60 mm

- Repeat this process until all the formwork sheets are in position.
- Only now is it permissible to step on to the closure zone.

When a fall arrester is used (e.g. FreeFalcon), it is also permissible to lay the formwork sheeting from above.



Follow the directions in the 'FreeFalcon' Operating Instructions!

Installation of the railings

WARNING

Risk of falling at open edges!

- Personnel must be trained to use personal fall-arrest systems (e.g. safety harness) until all fall protection has been installed.
- Suitable anchorage points must be defined by an approved person appointed by the contractor.
- As part of a risk assessment, evaluate the use of a personal fall-arrest system. Test the strength of the load-bearing tower.

- Pre-install the Handrail posts XP.
- Install protective gratings or guardrail boards for safety barriers.
- Only when all safety barriers are in place and secure is it permissible for personal fall-arrest systems to be removed.

Dismantling

WARNING

Risk of falling parts during dismantling!

- ➤ It is forbidden to enter, pass through or be in the danger zone underneath a suspended load.
- ➤ Secure all parts (e.g. with ropes, etc.) so that they cannot drop.
- ➤ All the work of dismantling the superstructure is carried out from the assembly level.

NOTICE

During all operations, ensure that only approved/trained personnel are allowed anywhere near the area where assembly/dismantling is being carried out. Danger from falling objects. Mark or cordon off the area concerned.

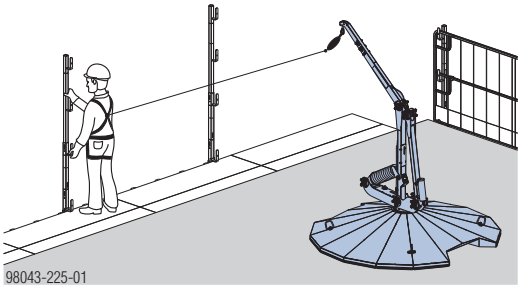
NOTICE

All steps must be carried out from the assembly level or a service tower (e.g. a scissor-type elevated work platform).

Removal of the railings

- ➤ Remove protective gratings or guardrail boards for safety barriers.
- ➤ Remove the Handrail posts XP.

A fall arrester such as the FreeFalcon provides a mobile anchorage point for the safety harness.



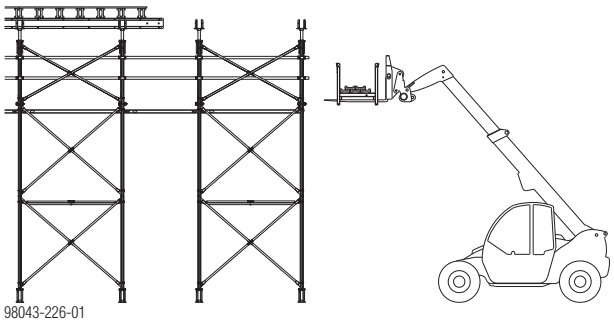
Follow the directions in the 'FreeFalcon' Operating Instructions!

Dismantling the closure zones

- ➤ Invariably, safe dismantling in the closure zone is carried out from a service tower (e.g. a scissor-type elevated work platform).
- ➤ For safe removal of the formwork components, depending on propping height use appropriate lifting equipment (scissor-type elevated work platform, forklift, etc.) and appropriate transport frames.
- ➤ Remove longitudinal connectors between the primary beams (e.g. plates).
- ➤ Uniformly lower the closure zone.
- ➤ Remove the fittings installed to secure the edge secondary beams (removal of secondary-beam stabilisers, Waling clamps H20, etc.).
- ➤ Turn each secondary beam onto its side and pull it out. Stack the beams in the transport frame and remove them from the work zone.
- ➤ Leave enough beams in position to secure the formwork sheets, e.g. the beams at the joints between the formwork sheets.
- ➤ Work each formwork sheet clear. Stack the sheets in the transport frame and remove them from the work zone.
- ➤ Remove the remaining secondary beams, stack them in the transport frame and remove them from the work zone.
- ➤ Remove the fittings installed to secure the primary beams.
- ➤ Manually remove each primary beam in turn. Stack the beams and remove them from the work zone.

Dismantling the superstructure

- Safe dismantling of the superstructure is carried out from the assembly level in or between the Staxo towers.
- For safe removal of the formwork components, depending on propping height use appropriate lifting equipment (scissor-type elevated work platform, forklift, etc.) and appropriate transport frames.
- Remove longitudinal connectors between the primary beams (e.g. plates).
- All loose parts must be removed, e.g. on the assembly level.
- Uniformly lower the superstructure with screw jacks.
- Remove the fittings installed to secure the edge secondary beams (removal of secondary-beam stabilisers, Waling clamps H20, etc.).
- Turn each secondary beam onto its side and pull it out. Stack the beams in the transport frame and remove them from the work zone.
- Leave enough beams in position to secure the formwork sheets.
- Work each formwork sheet clear. Stack the sheets in the transport frame and remove them from the work zone.
- Remove the remaining secondary beams, stack them in the transport frame and remove them from the work zone.
- Remove the fittings installed to secure the primary beams.
- Manually remove each primary beam in turn. Stack the beams and remove them from the work zone.
- Remove the assembly planking between the Staxo towers.
- For instructions on repositioning and dismantling Staxo towers, see the sections headed 'Lifting by forklift truck' and 'Assembling towers in the upright with forklift truck'.

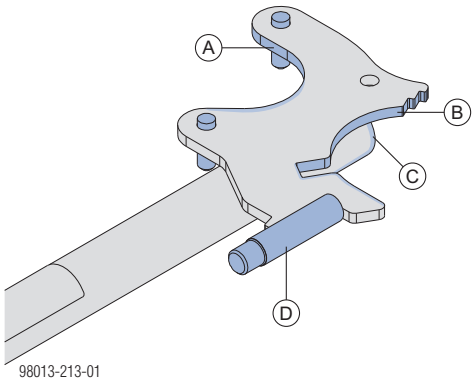


98043-226-01

Universal dismantling tool

The ‘Universal dismantling tool’ makes it easier to undo nuts.

Possible uses

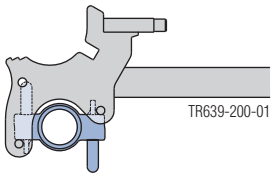
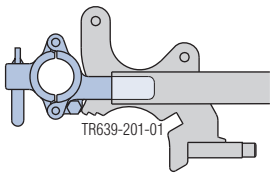
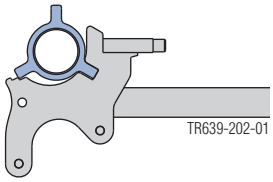
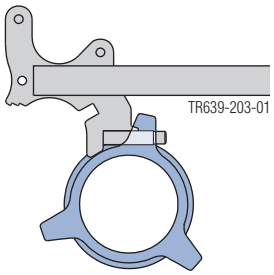


98013-213-01

The contact surfaces are shown in blue in this graphic.

A	Screw jack foot Adjustable plumbing strut
B	Split nut B Spindle strut T Plumbing strut 540
C	Doka floor prop Eurex 20 and Eurex 30
D	Eurex 60 550 Adjusting strut 120 and 220 Plumbing strut 340

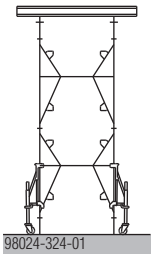
Practical examples

Screw-jack foot	Split nut B
 TR639-200-01	 TR639-201-01
Doka floor props Eurex 20 and Eurex 30	**Eurex 60 550**
 TR639-202-01	 TR639-203-01

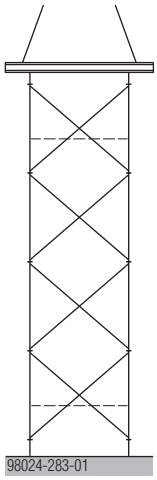
Repositioning

Different ways of repositioning

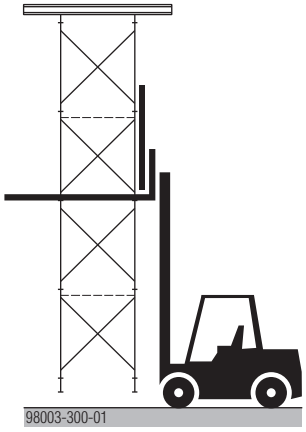
Using Staxo 40 shifting wheel



By crane



By forklift truck or telescoping stacker truck



NOTICE

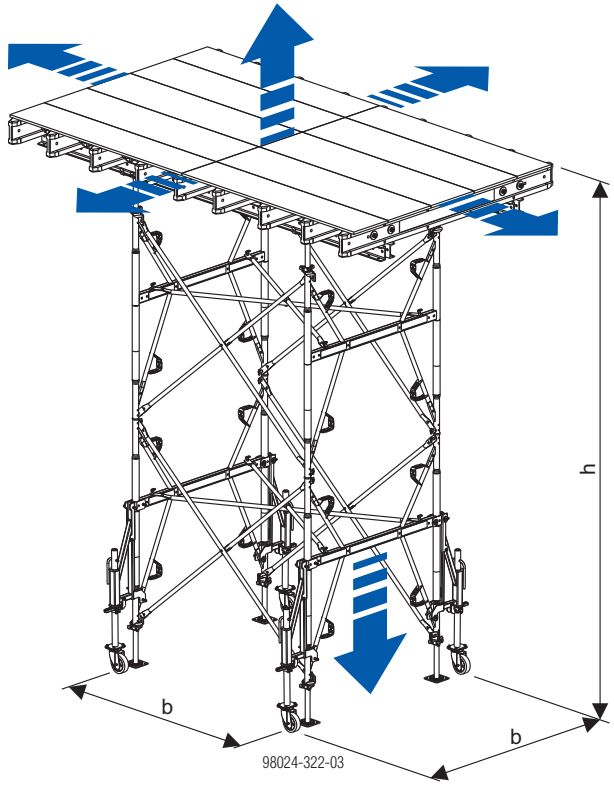
- The most suitable approach to repositioning and dismantling has to be discussed and agreed with the site in the project phase, especially for very tall towers.
- There are also other ways of repositioning the towers that are not shown in this User Information booklet. The customer (contractor) bears sole responsibility for use of all such methods and must prepare a separate risk assessment for any such intended method.

Repositioning using Staxo 40 shifting wheel

Finished tableforms or tower units can be moved on to their next usage location quickly and easily using the Staxo 40 shifting wheel.

With it, the following functions can be carried out:

- Lifting
- Wheeling
- Plumbing
- Lowering



NOTICE

When repositioning load-bearing towers that include standard superstructures, remember:

Ratio w:h = max. 1:3, with 'w' being the narrowest side.

Custom constructions must be statically verified!

Permissible total weight of each unit for repositioning:
1000 kg
(max. 4 Staxo 40 shifting wheels per unit)

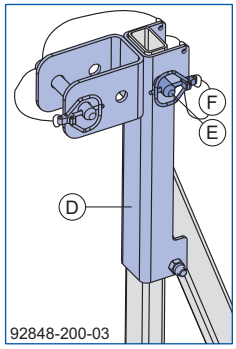
NOTICE

- The floor must be stable, firm and sufficiently smooth (e.g. concrete).
- When inter-frame spacing is 1 m, it is not possible to use Staxo 40 frames 0.90m or 1.20m in combination with Staxo 40 shifting wheels.

Follow the Operating Instructions!

Adjust the shifting-wheels to the Staxo 40 frames of the bottom 'storey' of the tower:

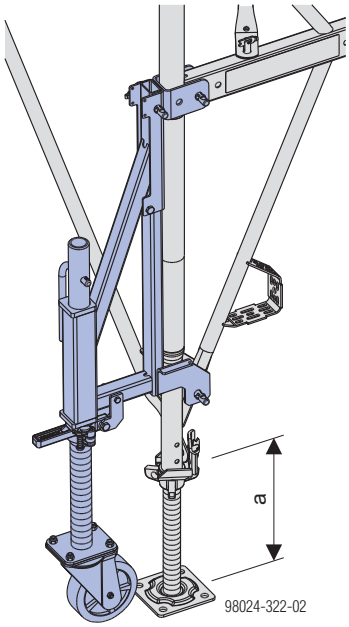
➤ Fix the adjusting bracket in the required position using a D16/125 bolt, and secure this with a linch pin.



D	Adjusting bracket
E	D16/125 pin
F	Linch pin

➤ Bolt the Staxo 40 shifting wheel onto the Staxo 40 frame in the direction of the frames and secure the bolt with a linch pin.

➤ Secure the foot-pieces to prevent them dropping out. See the section headed 'Lifting by crane'.



The Staxo 40 shifting wheel must not be used on Staxo 40 frames where the screw-jack feet have been extended a long way. The extension length **a** of the screw-jack feet must first be reduced to max. 40 cm.

Lifting by crane

Preparation

NOTICE

- The max. height of towerframe unit that can be lifted in one piece is 11 m
- Max. weight of tower for repositioning is 1000 kg. The critical factor here is the load carrying capacity of the anti-dropout lock and of the safety-catch bolt (5 kN is permissible here in each case)
- Max. weight of tower for lifting the tower into the upright and placing it on its side is 700 kg (see the section headed 'Horizontal assembly')

WARNING

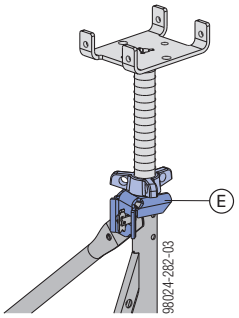
Danger from loose and unsecured parts.

➤ Observe the following points before lifting!

Repositioning towers with no superstructure

Secure the head units so that they cannot be lifted out

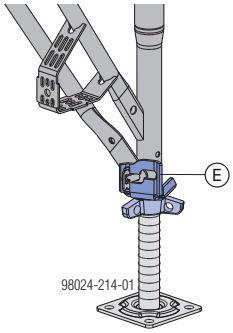
➤ Push a Staxo 40 anti-dropout lock over the nut and fix it by closing the safety catch on the frame.



E Staxo 40 anti-dropout lock

Secure the base units to prevent them dropping out

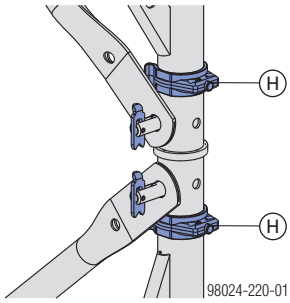
➤ Push a Staxo 40 anti-dropout lock over the nut and fix it by closing the safety catch on the frame.



E Staxo 40 anti-dropout lock

Link the frames in a crane-handling-safe manner

➤ Use Staxo 40 tube connectors d48.3mm to make crane-handling-safe links between the frames at every joint.

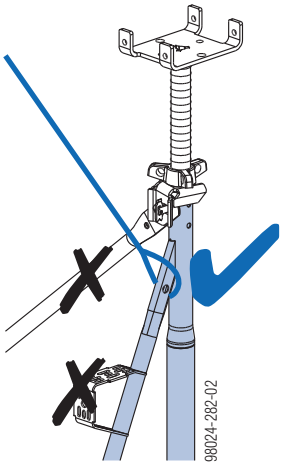


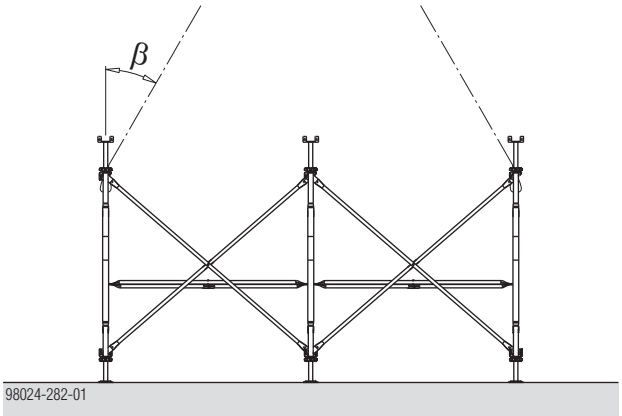
H Staxo 40 tube connector D48.3mm

Repositioning operation

CAUTION

➤ Attach each lifting chain only to a frame node, not to the diagonal cross or the U-bracket!
Spread angle β max. 30°.





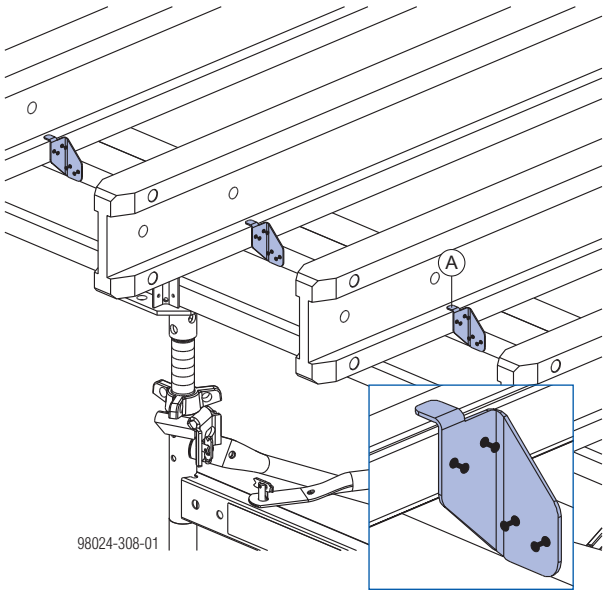
While the tower is being lifted, there must NOT be any loose parts, tools or other items on it!

Repositioning towers with superstructure

In addition to the action steps set out in 'Repositioning towers with no superstructure', the following steps must also be taken:

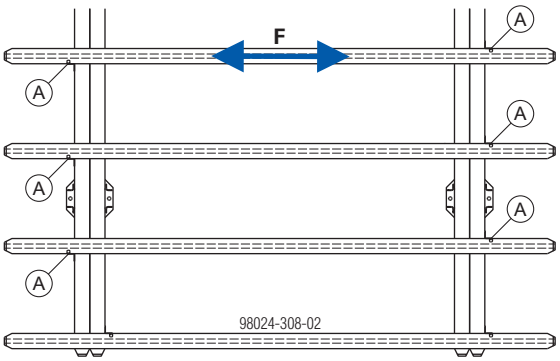
Connect superstructure components together

➤ e.g. connect the primary and secondary beams with Beam connection plates H20, and nail on the formply.



The Beam connection plates H20 are easier to dismount if double-headed nails 3.1x75mm are used.

Plan view



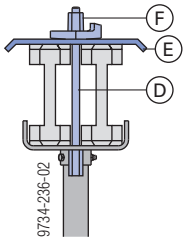
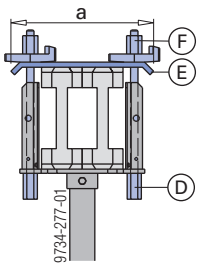
Arrange the Beam connection plates H20 on opposing sides where possible.

Permitted F: 0.8 kN

Connect the superstructure to the head units

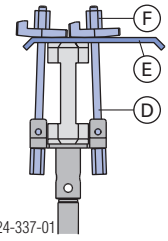
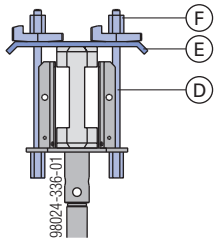
➤ e.g. with Locking rod 15.0, Clamping plate and Wing nut 15.0.

Double primary beams

On Screw jack U-head	On 4-way screw-jack head
	 Only possible with Clamping plate a = 28 cm (2002 models onward)

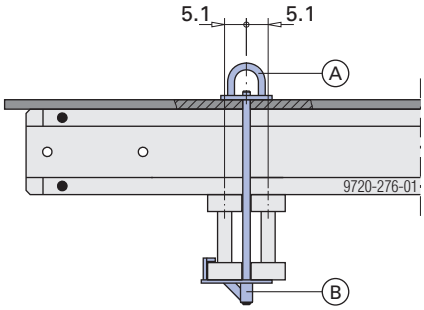
D Locking rod 15.0
E Clamping plate
F Wing nut 15.0

Single primary beams

On Screw jack U-head	On 4-way screw-jack head
	

Mount the Lifting rod 15.0

➤ Mount the Lifting rod 15.0 and Retaining plate 15.0.



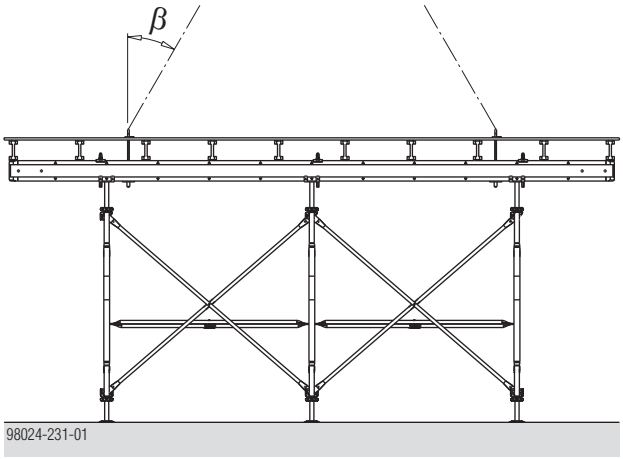
A Lifting rod 15.0
B Retaining plate 15.0

Use a 20 mm diam. bit to drill the hole through the form-ply. It can later be filled with a Universal plug R20/25.

Follow the directions in the Operating Instructions!

Repositioning operation

➤ Attach the crane sling to the Lifting rods 15.0 and lift the tableform to its next location. Spread-angle β max. 30°.



While the tableform is being lifted, there must NOT be any loose parts, tools or other items on the tableform!

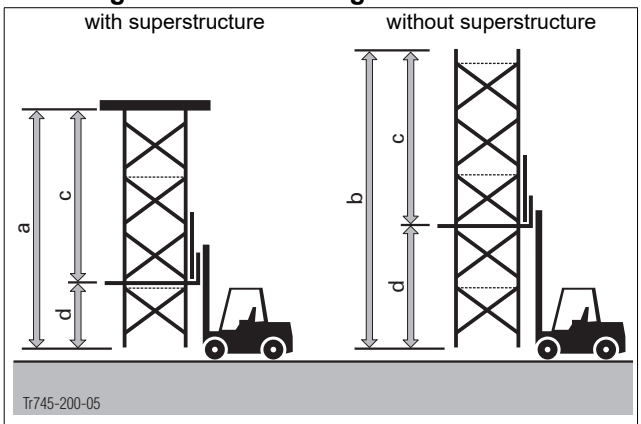
Lifting by forklift truck

Fork lift shifting device TG

For product information on the Fork lift shifting device TG and the requirements in respect of the forklift truck, see the section entitled 'Assembling towers in the upright by forklift truck'.

Follow the directions in the Operating Instructions!

Max. heights of load-bearing towers



	Max. load on forklift **4000 kg**		Max. load on forklift **2000 kg**	
	when travelling	when lifting	when travelling	when lifting
a	7.20 m	9.00 m	5.00 m	7.00 m
b	9.00 m	12.60 m	7.00 m	10.00 m
c	5.40 m	9.00 m	4.00 m	7.00 m
d	3.60 m	3.60 m	3.00 m	3.00 m

Travelling the towerframe units

NOTICE

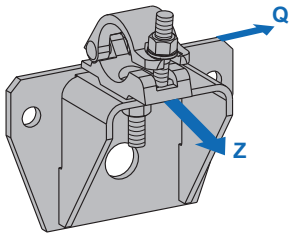
Very important points for the moving procedure:

- As well as the fork-lift driver, a specially trained watchman must also be on hand during all lifting, assembly and travelling operations.
- max. inclination of trackway: 2%.
- There must be a flat, firm (e.g. concrete) base that is capable of supporting the load.

General

Anchoring on the structure

With Anchoring shoe for stair tower



Q ... shear force
Z ... tensile force

Permitted loads [kN]		Anchorage method	Max. anchoring loads [kN] per anchor		Concrete strength at the time of loading
Tensile force Z	Shear force Q		Tensile force Z	Shear force Q	
6.0	6.0	1 dowel in the centre hole e.g. Doka express anchor 16x125mm	14.0	6.0	$f_{ck,cube,current}$ = 20 N/mm²
12.0	6.0	2 dowels, one in each of the outer holes, e.g. Doka express anchor 16x125mm	13.3	3.0	$f_{ck,cube,current}$ = 15 N/mm²
		1 Cone screw B 7cm in the centre hole	44.0	6.0	$f_{ck,cube,current}$ = 10 N/mm²

Methods for fixing in concrete:

- By using a Cone screw B 7cm to fix the anchoring shoe to an existing suspension point prepared with Universal climbing cones 15.0 (diameter of hole in anchoring shoe = 32 mm). Hardwood shim (essential for ensuring a firm fit) prevents damage to the concrete (scratch marks).
  This fixing method is only possible with anchoring shoes manufactured from 05/2009 onwards.
- With one or two dowels (diameter of hole in anchoring shoe = 18 mm).

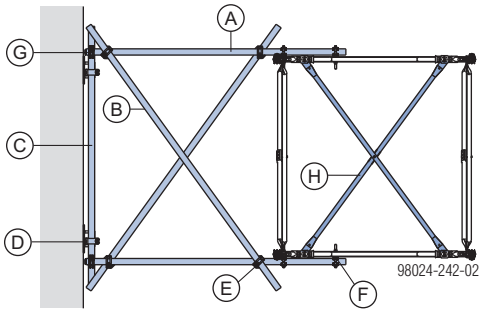
Design of the anchoring planes

The load-bearing tower is connected to the Anchoring shoe for stair tower by scaffold tubes and couplers.

NOTICE

When designing units assembled from tubes and couplers, all applicable standards and regulations must be observed, in particular EN 12812 'Falsework', EN 39 'Loose steel tubes for tube and coupler scaffolds' and EN 74 'Couplers, spigot pins and baseplates for use in falsework and scaffolds'.

Example:



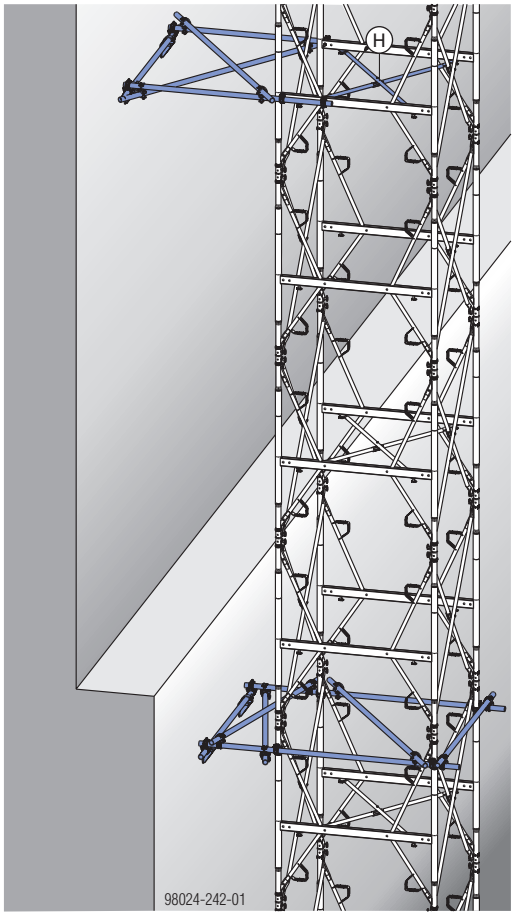
A	Scaffold tube 48.3mm (L min = distance from structure)
B	Scaffold tube 48.3mm (L = variable)
C	Scaffold tube 48.3mm (L = variable)
D	Anchoring shoe for stair tower
E	Swivel coupler 48mm
F	Screw-on coupler 48mm 95
G	Normal coupler 48mm
H	Horizontal diagonal cross

Vertical distance between the anchoring levels

- will depend on the assembly method, the wind loads and the design assumptions

NOTICE

The load-bearing tower must be stiffened in the anchoring plane, either by a horizontal diagonal cross or by a scaffold-tube bracing.



H Diagonal cross

NOTICE

- The actual design of the anchoring planes, and the maximum permitted distances from the structure, must be reviewed separately for each project.
- Adjacent load-bearing towers must be braced to one another as statically required, in a similar way to when towers are anchored to the structure.

Back-stays/shoring supports for the load-bearing towers

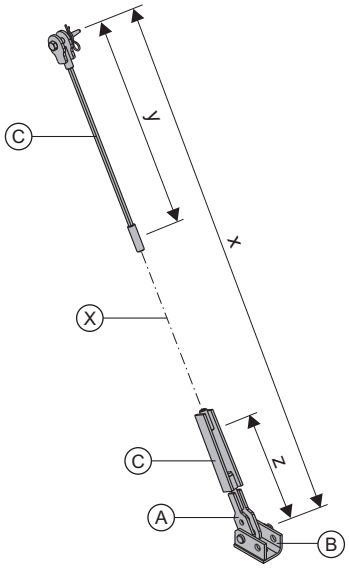
Back-stay on the superstructure

Back-stay for load-bearing towers

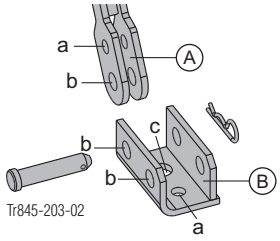
For transferring **planned horizontal loads** e.g. wind loads, concrete loads or in custom applications (e.g. on inclined load-bearing towers or for high load-bearing capacities).

NOTICE

Lashing straps are **not** suitable for transferring planned horizontal loads.



Bores in Screw-jack unit and Shoe complete



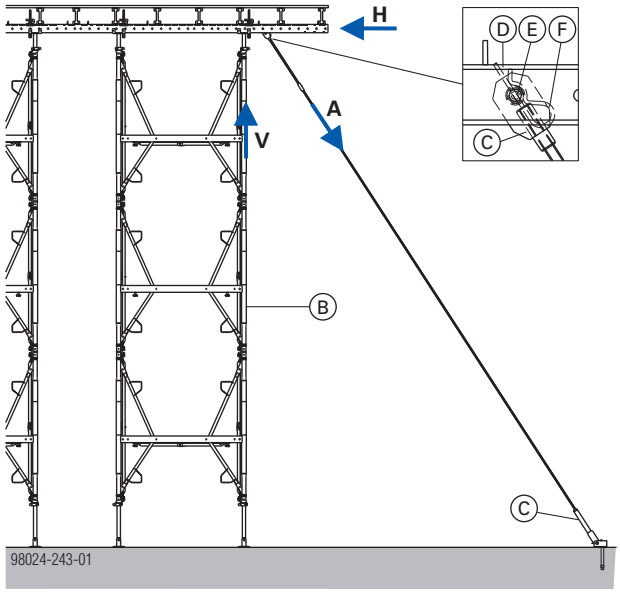
a ... diam. 21 mm
b ... diam. 27 mm
c ... diam. 35 mm

A	Screw-jack unit
B	Shoe complete
X	Tie rod 15.0 (not included in scope of supply) Length = a minus 119 cm This leaves a 17 cm adjustment range available

NOTICE

- Screw the tie rods all the way in to the rod connectors of the bracing (i.e. until they are fully engaged)!
- When calculating the leg loads, allow for the additional forces imposed by the bracing!
- With high loads and long back-stays, watch out for any elongation of the bracing!

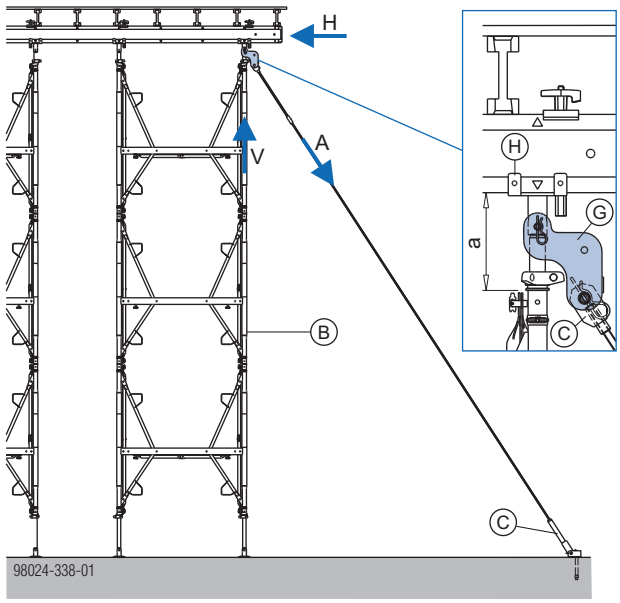
Mounting in multi-purpose waling



H ... Horizontal force
V ... Resulting vertical force from H
A ... Back-stay/shoring force

B	Load-bearing tower
C	Back-stay for load-bearing towers
D	Multi-purpose waling
E	Connecting pin 10cm
F	Spring cotter 5mm

Mounting on screwjack head unit

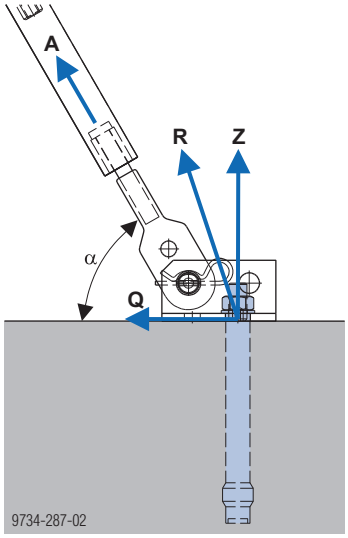


a ... min. 25 cm
H ... Horizontal force
V ... Resulting vertical force from H
A ... Back-stay/shoring force

B	Load-bearing tower
C	Bracing for load-bearing towers
G	Spindle connecting plate T
H	Staxo 40 4-way screw-jack head 70cm or Staxo 40 screw-jack U-head 70cm

Permitted horizontal force H: 4 kN

Anchoring with standard products



A ... Bracing force
Q ... Shear force (corresponds to horizontal force H)
R ... Resulting anchor force
Z ... Anchor tensile force

Bracing force A_k = 30 kN (A_d = 45 kN)

Anchor force [kN]	Z_k	$Q_k = H_k$	R_k	Z_d	$Q_d = H_d$	R_d
α = 30° a)	18.2	26.0	31.7	27.3	39.0	47.6
α = 45° a)	27.6	21.2	34.8	41.4	31.8	52.2
α = 60° b)	44.8	15.0	47.2	67.2	22.5	70.8

Bracing force A_k = 40 kN (A_d = 60 kN)

Anchor force [kN]	Z_k	$Q_k = H_k$	R_k	Z_d	$Q_d = H_d$	R_d
α = 30° a)	24.3	34.6	42.3	36.5	51.9	63.5
α = 45° b)	36.8	28.3	46.4	55.2	42.5	69.6
α = 60° c)	59.7	20.0	62.9	89.6	30.0	94.4

Bracing force A_k = 50 kN (A_d = 75 kN)

Anchor force [kN]	Z_k	$Q_k = H_k$	R_k	Z_d	$Q_d = H_d$	R_d
α = 30° b)	30.4	43.3	52.9	45.6	65.0	79.4
α = 45° c)	46.0	35.4	58.0	69.0	53.1	87.0
α = 60° c)	74.6	25.0	78.7	111.9	37.5	118.1

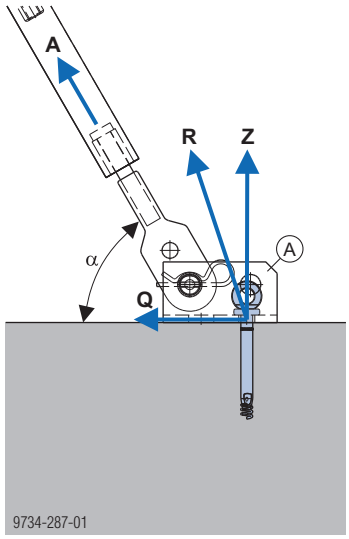
Examples of anchor points in uncracked C 25/30 concrete:
a) HILTI heavy-duty anchor HSL-3 M20
b) HILTI heavy-duty anchor HSL-3 M24
c) HILTI HIT HY200A+HIT-V(5.8) M30
or equivalent products from other manufacturers.
Follow the manufacturers' applicable fitting instructions.

CAUTION

➤ Do not remove the bracing for load-bearing towers before adequate stability for the load-bearing tower is ensured.

Anchored with Doka Express anchor 16x125mm

Note:
The 'Shoe (complete)' must be turned by 180° in the horizontal.



A Shoe complete

Permitted bracing force [kN]

	$f_{ck,cube,current}$ > 15 N/mm²		$f_{ck,cube,current}$ > 25 N/mm²	
	A_k	A_d	A_k	A_d
α = 30°	16.9	25.4	21.9	32.9
α = 45°	10.2	15.2	13.2	19.7
α = 60°	7.1	10.6	9.1	13.7

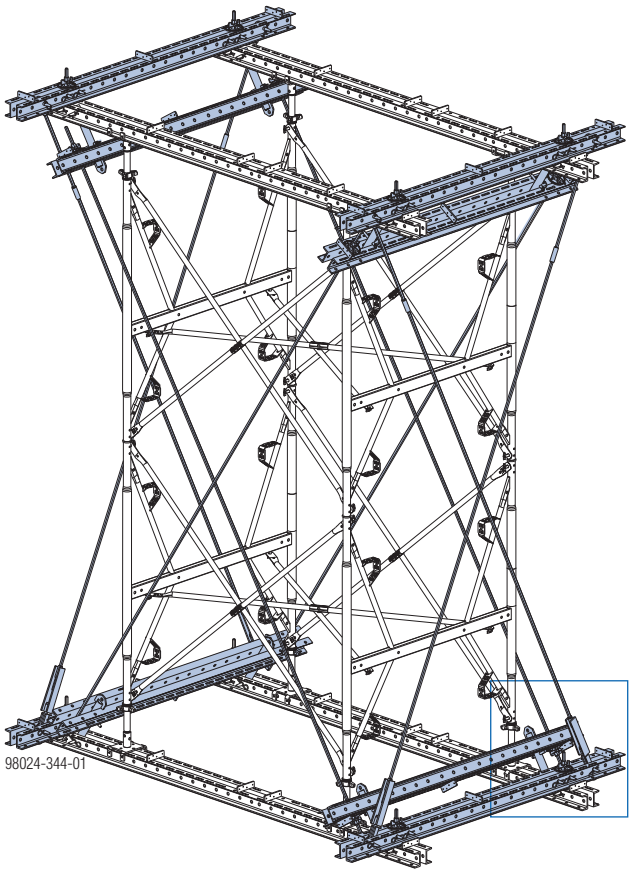
Follow the directions in the 'Doka express anchor 16x125mm' Fitting Instructions!

Bracing waling connector WS10

The Bracing waling connector WS10 is used for bracing load-bearing towers erected on ground which has sufficient load-bearing capacity but in which it is not possible to fix tension anchoring.

It is also possible to brace several load-bearing towers to one another to transfer the horizontal loads jointly.

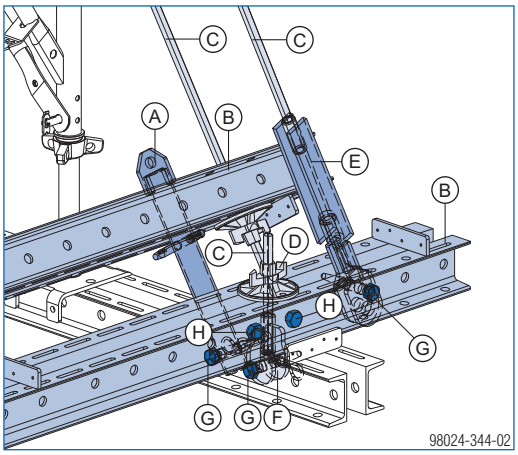
Bracing individual towers in the bracing-strut and frame planes



Note:

Separate towers may also be braced in the frame plane or bracing-strut plane only.

Close-up

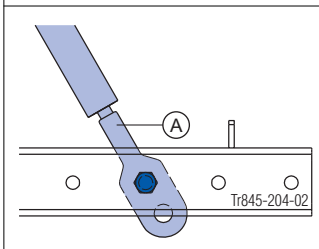
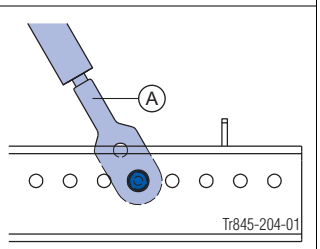


A Bracing waling connector WS10
B Multi-purpose waling WS10 Top50 2.25m
C Tie rod 15.0mm galvanised ...m
D Super plate 15.0
E Bracing for load-bearing towers – without 'Shoe (complete)'
F Eye-lug anchor 15.0 without tie rod
G Connecting pin 10cm and Spring cotter 5mm
H Extra safeguard against slippage (end-stop) with Connecting pin 10cm and Spring cotter 5mm

Note:

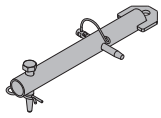
The Bracing for load-bearing towers is attached to the multi-purpose waling directly by means of a spindle unit, without a 'Shoe (complete)'.

Permissible back-stay force [kN]

Bolted on through the **upper** bore (Ø 21 mm) of the screw-jack unit	Bolted on through the **lower** bore (Ø 27 mm) of the screw-jack unit
50.0	40.0
	

A Screw-jack unit

Bracing waling connector WS10



Permitted tensile force: 50 kN

➤ When calculating the leg loads on the Load-bearing tower, allow for the additional forces from the bracing!

Shoring to the superstructure with Eurex 60

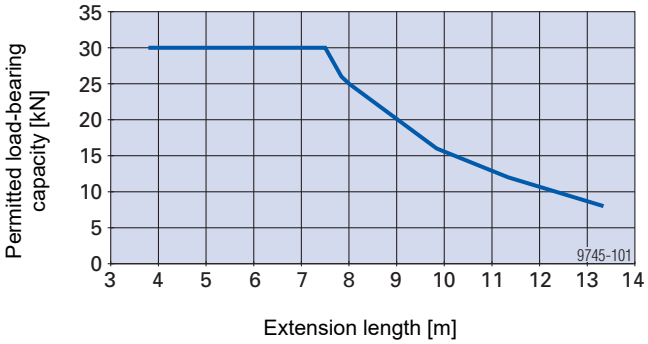
For transferring **planned horizontal loads** e.g. wind loads, concrete loads or in custom applications (e.g. on inclined load-bearing towers or for high load-bearing capacities).

CAUTION

➤ The plumbing strut must not be dismounted until it is certain that there is sufficient stability for the load-bearing tower.

Permitted load-bearing capacity of Eurex 60 550 (compressive force)*

Used as a plumbing accessory

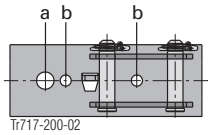


* 15 kN tensile force at any extension length
30 kN tensile force at any extension length and when anchored with 2 dowels

Fixing to the ground

➤ Anchor the plumbing accessories in such a way as to resist tensile and compressive forces!

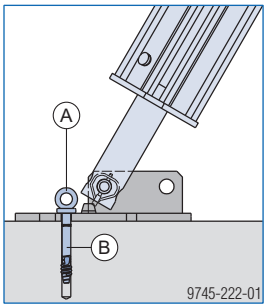
Holes in plumbing strut shoe Eurex 60:



a ... diam. 28 mm
b ... diam. 18 mm (suitable for Doka express anchors)

Anchoring the footplate

The **Doka express anchor** can be re-used many times over.



A Doka express anchor 16x125mm
B Doka coil 16mm

Follow the Fitting Instructions!

Anchored with one dowel (up to 15 kN tensile force)

Characteristic cube compressive strength of the concrete ($f_{ck,cube,current}$):
min. 25 N/mm² (C20/25 concrete)

Required safe working load of alternative anchors for footplates:

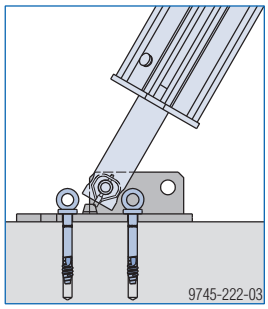
- $R_d \geq 30.0$ kN ($F_{permissible} \geq 20.0$ kN) in the diam. 18 mm hole
- $R_d \geq 43.5$ kN ($F_{permissible} \geq 29.0$ kN) in the diam. 28 mm hole

Follow the manufacturers' applicable fitting instructions.

Anchored with two dowels (up to 30 kN tensile force)

NOTICE

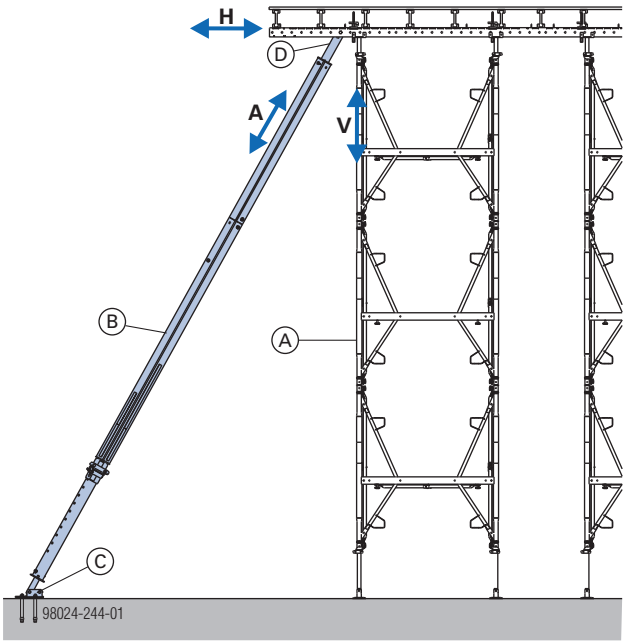
- One dowel must be positioned between the lugs of the footplate.
- Remove the footplate from the plumbing strut for this step.
- After anchoring the footplate, reinstall the Plumbing strut Eurex 60 550 at the position shown.



Characteristic cube compressive strength of the concrete ($f_{ck,cube,current}$):
min. 30 N/mm² (C25/30 concrete)

Required safe working load of alternative anchors for footplates:
$R_d \geq 30.0$ kN ($F_{permissible} \geq 20.0$ kN)
Follow the manufacturers' applicable fitting instructions.

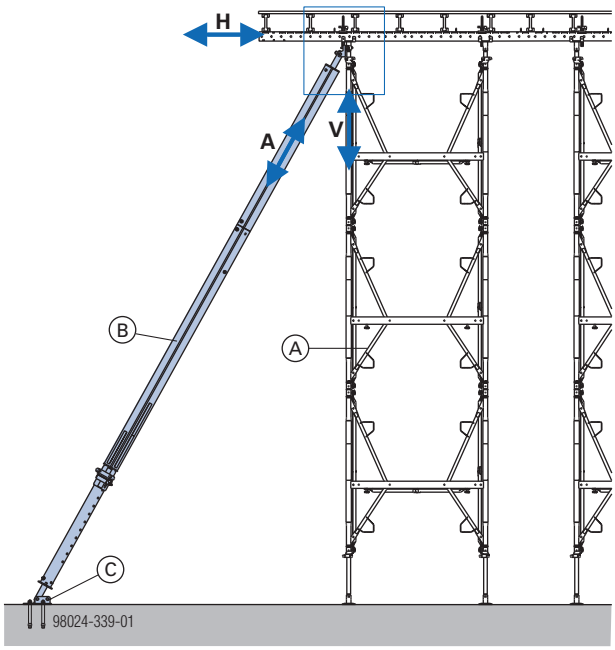
Mounting in multi-purpose waling



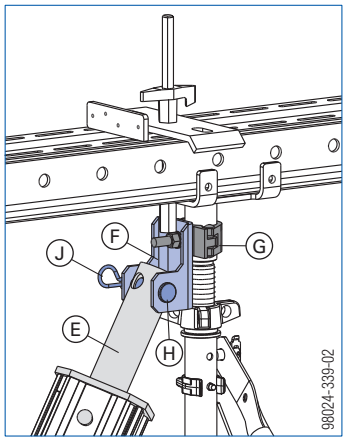
H ... Horizontal force
V ... Resulting vertical force from H
A ... Back-stay/shoring force

A	Load-bearing tower
B	Plumbing strut Eurex 60 550
C	Plumbing strut shoe Eurex 60 EB
D	Prop head Eurex 60 Top50

Mounting on screwjack head unit



H ... Horizontal force
V ... Resulting vertical force from H
A ... Bracing/shoring force



A	Load-bearing tower
B	Plumbing strut Eurex 60 550
C	Plumbing strut shoe Eurex 60 EB
E	Connector Eurex 60 IB
F	Strut shoe EB
G	Screw-on coupler 48mm 50 or 95

EN 74 compliant couplers
- Class A perm. V ≤ 6 kN

Shoring to the superstructure with a plumbing strut

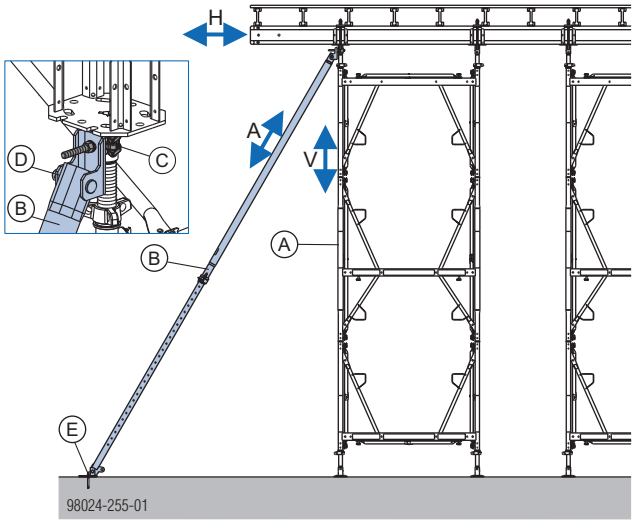
Mounting on screwjack head unit

For transferring **planned horizontal loads** e.g. wind loads, concrete loads or in custom applications (e.g. on inclined load-bearing towers or for high load-bearing capacities).

The plumbing strut is attached to the top screw-jack with a screw-on coupler.

Note:

Couplers can be fixed only to the 70cm screw-jack heads!



H ... Horizontal force
V ... Resulting vertical force from H
A ... Bracing/shoring force

A	Load-bearing tower
B	Plumbing strut 340 IB or 540 IB
C	Screw-on coupler 48mm 50 or 95
D	Strut shoe EB
E	Doka express anchor 16x125mm and Doka coil 16mm

Perm. A ≤ 13.5 kN

EN 74 compliant couplers

- Class A perm. V ≤ 6 kN

CAUTION

➤ Do not remove the compression bracing before adequate stability for the load-bearing tower is ensured.

Tip-up protection for towers during erection

To ensure safety during erection of the towers, suitable precautions must be taken to prevent them tipping over after they have reached a height of max. 6 m (or less, if necessitated by the result of a hazard assessment).

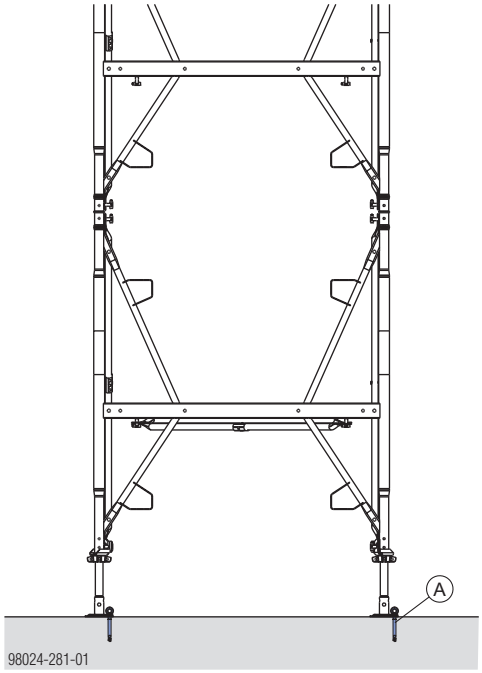
using Doka Express anchor 16x125mm

NOTICE

The whole tower unit must be linked together in a crane-handling-safe way using Staxo 40 anti-dropout locks and Staxo 40 tube connectors.

See the section headed 'Lifting by crane'

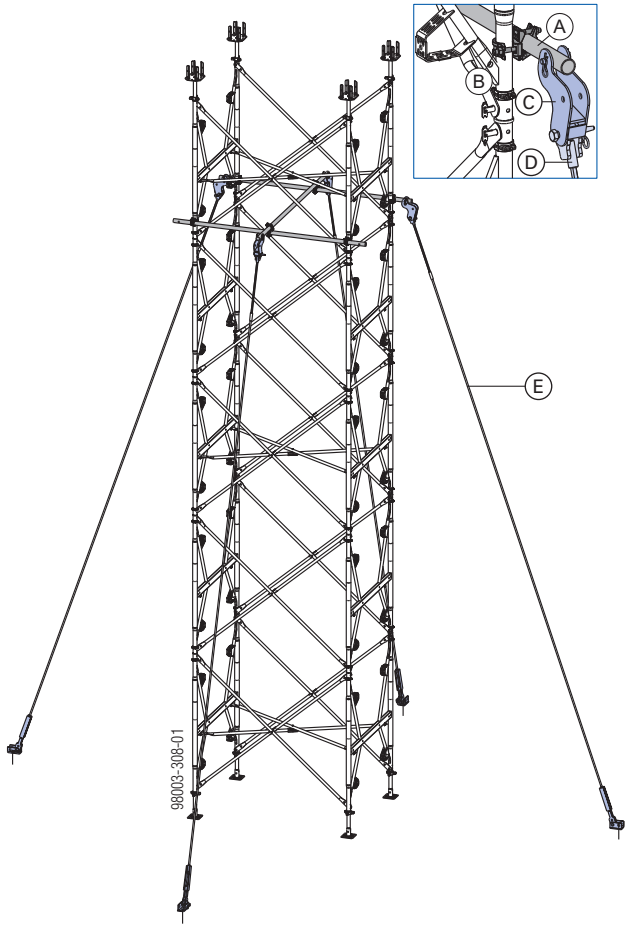
➤ Screw in 1 Express anchor for each screw-jack foot.



A Doka express anchor 16x125mm

Max. tensile force per leg: 5 kN

Back-stays directly on the load-bearing tower



A	Scaffolding tube 48.3mm (with drilled hole Ø17mm)
B	Normal coupler 48mm
C	Spindle connecting plate T
D	Back-stay for load-bearing towers
E	Tie-rod 15.0mm

Horizontal fixing to the structure

See the section headed 'Anchoring on the structure'.

Inclination adjustment

If the superstructure or the ground are **inclined at an angle of 1% or more**, slope compensation must be provided.

using Wedges for screw-jack ..... %

These prefabricated birch plywood wedges make it possible to stand load-bearing towers in the perpendicular on surfaces with various inclinations, even when utilising the full leg load.

CAUTION

Excessively steep wedges may slip away!

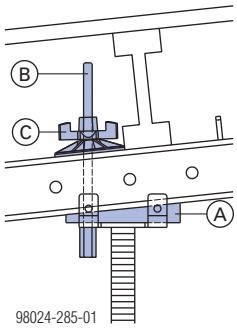
➤ Maximum inclination: 20%!

For this reason, wedges must NOT be placed on top of one another in an attempt to compensate for inclinations that are greater than 20%.

Inclined superstructures

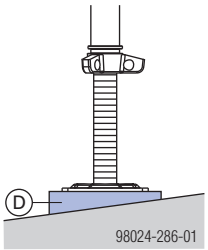
Securing the superstructure at angles of over 12%:

➤ Connect the head-plate to the longitudinal beam (e.g. with Locking rod 15.0/33cm and Super-plate 15.0 or Angle anchor plate 12/18)



A Wedge for screw-jack ..... %
B Locking rod 15.0/33cm
C Super-plate 15.0

Inclined ground surface



D Wedge for screw-jack ..... %

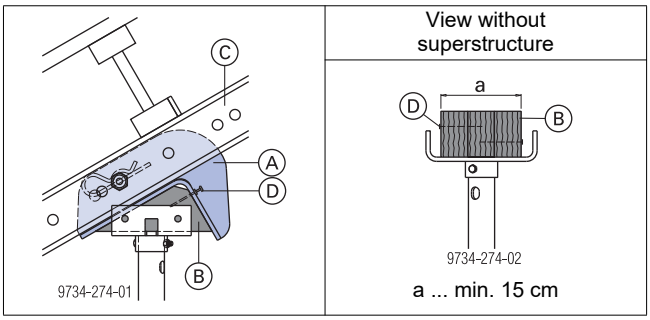
using Staxo wedge support WS10

Used with timber wedges, this component provides angle adjustment to floor-slab constructions with a max. inclination of 45°.

Bolted into the multi-purpose waling or steel waling, this wedge support prevents the timber wedges from slipping and ensures that the loads are safely transferred.

NOTICE

This type of connection is no substitute for extra structural design measures such as back-stays.



A Staxo wedge support WS10
B Timber wedge, project-specific
C Multi-purpose waling WS10 Top50
D Nailed connection

NOTICE

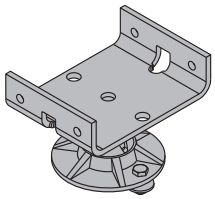
The grain of the timber wedges must always be in the vertical!

Note:

If the legs of the load-bearing tower have to be located outside the pattern of drilled holes in the multi-purpose waling, then a suitable 20 mm diam. hole must be drilled in the web of the waling.

See the type specification sheet 'Load-bearing tower Staxo 40' for alternative solutions.

with Swivel bearing plates for Screw jack U-head



Rotatable in all directions, the Swivel bearing plate for Screw jack U-head has been designed for use with slab supports where the superstructure slopes on both sides.

On projects where the superstructure slopes on one side only, the solutions shown above are preferable.

Note:

When assessing the oblique bending, always consult the Structural Engineering department!

NOTICE

The following structural-design limitations must be taken into account:

- Swivel bearing plate for Screw jack U-head on screwjack head unit only:
  See type specification sheet for structural design details.
- Maximum inclination of superstructure: 18%
- Permitted overall inclination (in both the longitudinal and transverse directions): 18%
- From an overall inclination of 12%: Superstructure must be secured!
- Allow for the oblique bending on the primary beam!
- When calculating the extension lengths of the head and base units, always allow for the extra height of the Swivel bearing plate for Screw jack U-head (92 mm).

NOTICE

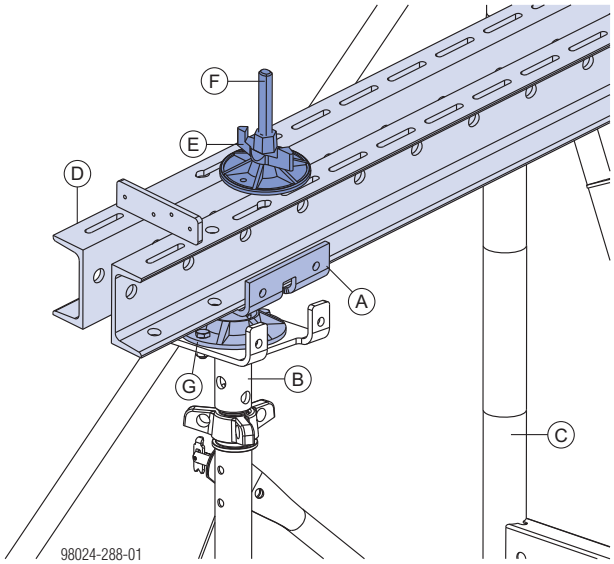
The following geometrical limitations must be taken into account:

- Additional height of the Swivel bearing plate for Screw jack U-head (92 mm).
- Different extension lengths for the Screw jack feet, caused by inclined superstructures.

Assembly

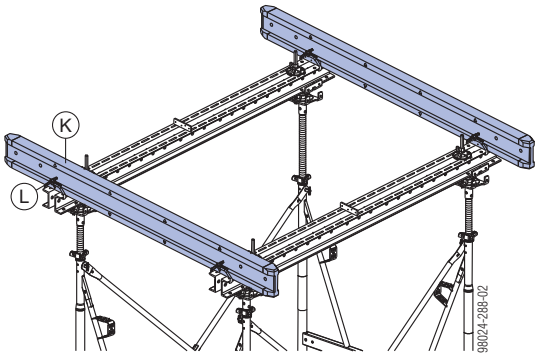
Multi-purpose waling centrally clamped on the Swivel bearing plate for Screw jack U-head:

- ➤ Insert a Locking rod 15.0 330mm through one of the side holes (diam. 18 mm) on the Swivel bearing plate for Screw jack U-head.
- ➤ Using the nuts & bolts etc. supplied with the product, fix the Swivel bearing plate for Screw jack U-head to the Screw-jack U-head (spanner size 17 mm).
- ➤ Place the multi-purpose waling on the Swivel bearing plate for Screw jack U-head.
- ➤ Screw a Super-plate 15.0 onto the Locking rod 15.0 and tighten it.

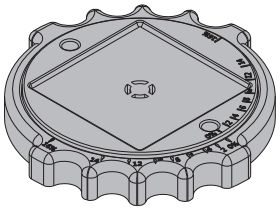


A	Swivel bearing plate for Screw jack U-head
B	Staxo 40 screw-jack U-head
C	Staxo 40 frame
D	Multi-purpose waling
E	Super-plate 15.0
F	Locking rod 15.0 330mm
G	Screws, bolts etc.

To prevent the primary beams tipping over while an unattached superstructure is being mounted, it is advisable – even where the overall inclination is less than 12 % (in both the longitudinal and transverse directions) – to attach 2 Doka H20 beams **(K)** to each multi-purpose waling using Flange-clamps H20 **(L)** .



with Compensating plate

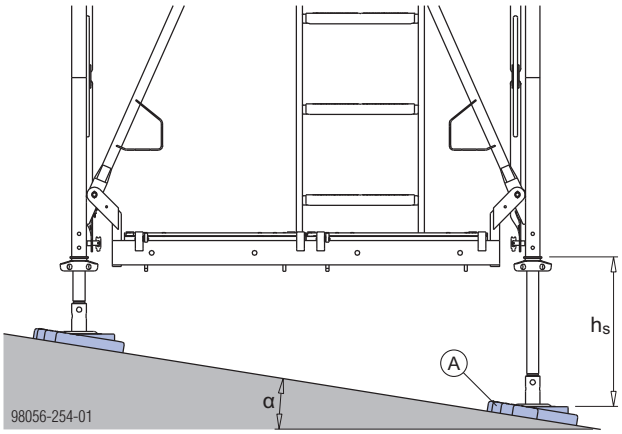


The 'Compensating plate' is made of tough plastic and is used to compensate for sloping support surfaces beneath load-bearing towers, without limiting their load-bearing capacity.

- Angle adjustment from 0 - 16 % in all directions.
- The baseplate is always supported across its entire area.
- The punch-marked number scale is a practical aid for setting and checking the required angle.
- No timber wedges or other chocks are needed.
- Max. size of baseplate: 15 x 15 cm
  (meaning that Eurex 60 cannot be stood on it).

NOTICE

- The 'Compensating plate' must be placed on concrete only.
- For the proof against slippage between the Compensating plate and the concrete, a friction coefficient of 0.33 must be assumed.



α ... maximum inclination 16 %
h_s ... screw-jack extension length (determines design-load of load-bearing tower)

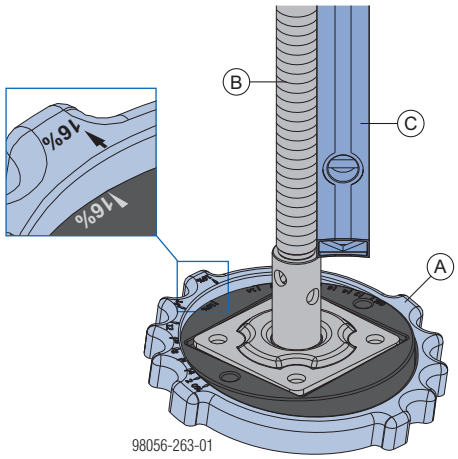
Set-up instructions:

➤ Place the 'Compensating plates' on concrete.

➤ Set the required angle with the black rotary plate. The numbers must correspond – see close-up.

➤ Position the Doka load-bearing tower.

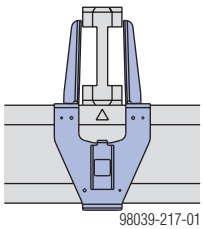
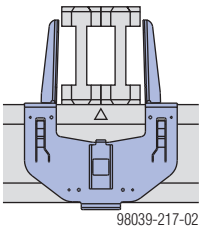
➤ Make sure that the 'Compensating plate' is sitting firmly, and check that the leg is in the vertical.



A	Compensating plate
B	Staxo 40 screw-jack foot
C	Spirit level

Secondary-beam stabilisers

Secondary-beam stabilisers are used to prevent formwork beams tipping over while panels are being laid on them.

Secondary-beam stabiliser 1	Secondary-beam stabiliser 2
 98039-217-01	 98039-217-02

Advantages:

- Special claws to prevent slippage on the beam-flange
- Needs only small commissioning quantities, as the Secondary-beam stabilisers can be re-set in tandem with the formwork erection cycle:
  - approx. 20 Secondary-beam stabilisers 1
  - approx. 10 Secondary-beam stabilisers 2

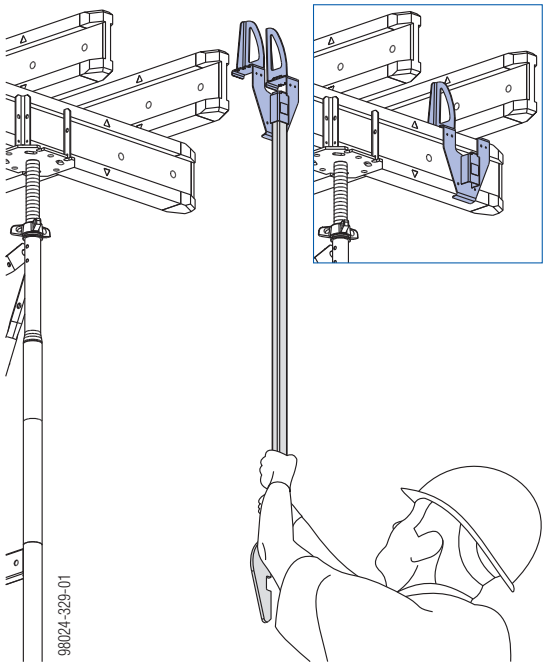
Note:

In certain special situations, (e.g. when forming inclined floor-slabs), Secondary-beam stabilisers can also be used for transferring horizontal loads.

For more information, please contact your Doka technician.

How to mount:

➤ Hang the Secondary-beam stabilisers into place with an Alu beam fork H20.



The secondary beam is now held in place.

➤ Lay the formwork sheets.

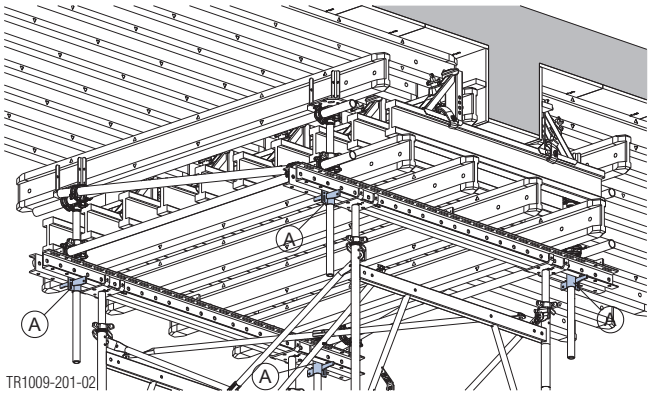
➤ After the formwork sheets have been laid, unhook and remove the Secondary-beam stabilisers with an Alu beam fork H20.

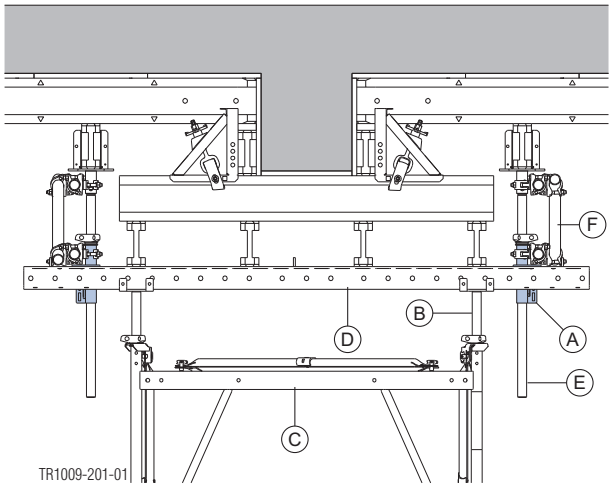
Forming downstand beams

This spindle adapter has been specially designed for use in forming downstand beams.

- Can be mounted onto both types of Multi-purpose waling: WS10 and WU12.
- Because they are fixed onto multi-purpose walings (whose length can be selected), a variable adjusting range is possible.
- Allow exact lining-and-levelling.
- No doubling-up required.

Practical example





A	Staxo 40 spindle adapter
B	Staxo 40 screw jack U-head 30cm
C	Staxo 40 frames
D	Multi-purpose waling WS10 Top50
E	Staxo 40 4-way screw-jack head 70cm
F	Bracing

NOTICE

- It must be ensured – in every single case – that the screwjack U-heads are restrained in both directions.

  This may be achieved by way of:
  - contact to the structure
  - nailed-down floor-slab formwork
  - Bracing
- Non-restrained screw-jack heads are not permitted.
- In the transverse direction of the multi-purpose waling (torsion of waling), bracing is absolutely essential!
- The multi-purpose waling, the screw-jack and the load-bearing tower must be statically dimensioned as stipulated in this User Information booklet.

Mounting the Staxo 40 spindle adapter

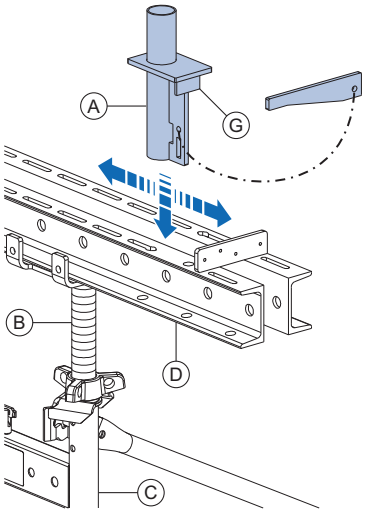
Example on Multi-purpose waling WS10 Top50

➤ Insert the Staxo 40 spindle adapter into the waling-gap of the Multi-purpose waling WS10.

NOTICE

➤ Do not oil or grease wedged connections.

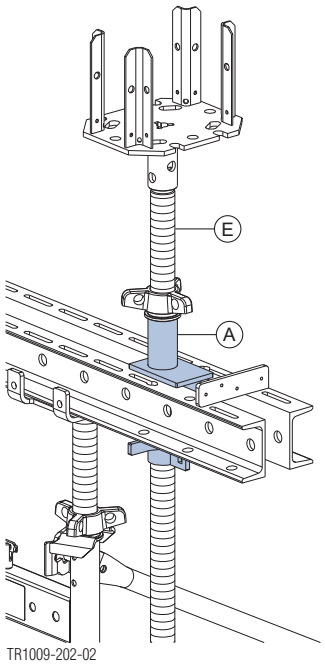
➤ Move it to the desired position and firmly fix it with the wedge.



TR1009-202-01

A	Staxo 40 spindle adapter
B	Staxo 40 screw jack U-head 30cm
C	Staxo 40 frame
D	Multi-purpose waling WS10 Top50
G	Anti-twist lock (prevents the Staxo 40 spindle adapter from being turned out of position)

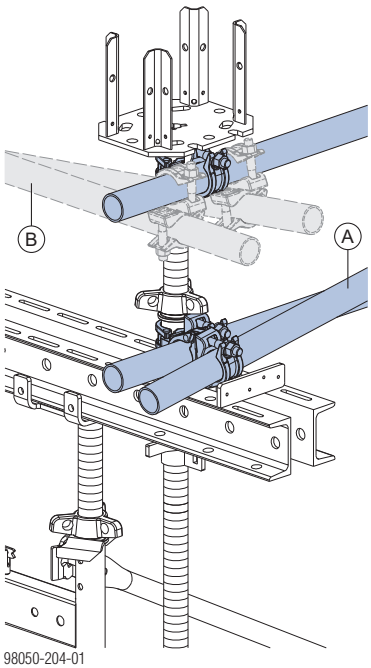
➤ Next, fit on a Staxo 40 4-way screw-jack head 70cm.



TR1009-202-02

A	Staxo 40 spindle adapter
E	Staxo 40 4-way screw-jack head 70cm

➤ Installation of the scaffold tubes

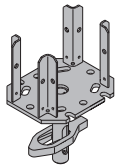
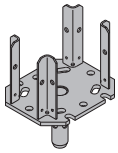
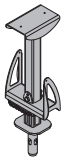


98050-204-01

A	Bracing in the direction transverse to the multi-purpose waling
B	Alternative bracing when screw-jack U-head not restrained

Combining the system with standard components from other Doka formwork systems

Using head units from the Dokaflex 1-2-4 and Doka Xtra floor-slab systems

Lowering head H20	4-way head H20	Doka Xtra head
		
Permitted capacity when used with Staxo 40: 22 kN		

NOTICE

These head units may be used instead of Staxo 40 4-way screw-jack heads or Staxo 40 screw-jack U-heads, provided that the following Table is observed.

Using alternative screw-jack U-heads

Component	Extra information on usage	Screwjack U-head restraint	Notional screw-jack U-head extension length
4-way head H20	-	in accordance with the section headed 'Structural design'	180 mm
Lowering head H20	-	no	350 mm
Doka Xtra head*	Under load from primary beams*	yes	180 mm
	Temporary reshoring*	yes	540 mm

* effective resistance of leg must always be ≤ 22 kN, however

Using braces from the Load-bearing tower d2 system

As an alternative to the diagonal crosses, it is also possible to use Diagonal braces d2 and Horizontal braces d2 from the **Doka load-bearing tower d2**.

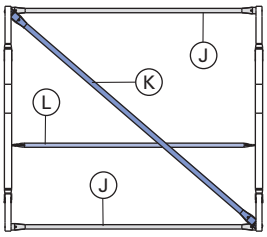
NOTICE

Deployment limitation:

- Cannot be used in conjunction with Staxo 40 anti-dropout lock.
  For this reason:
  - horizontal tower assembly is not allowed
  - tower is not allowed to be crane-lifted
  - tower must not be used with e.g. brackets or in any other applications where tensile forces act upon the tower
- Do not mix the d2 braces with diagonal crosses!
- Remember that these alternative parts have different capacity ratings!

The permitted vertical loads must be diminished by 10%!

The permitted horizontal loads must be diminished by 15%!



98024-206-02

J Horizontal brace d2 (length = 100 cm to 250 cm)
K Diagonal brace 9, 12, or 18
L Diagonal brace 12.xxx used as a horizontal diagonal

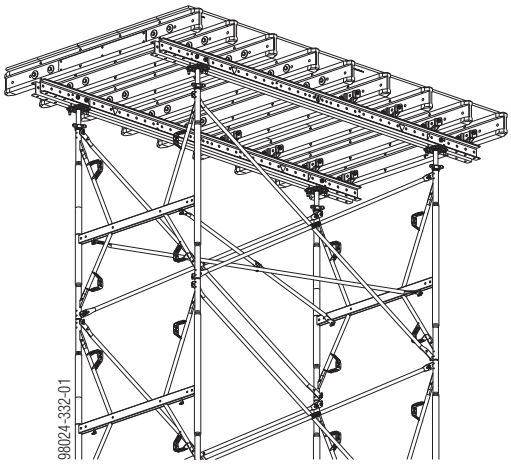
Combining with Dokamatic tables

Superstructure attached by Dokamatic table Staxo spindle connectors

- Ready-assembled Dokamatic tables can be mounted directly onto Staxo 40
- Height adjustment is possible in both the head and base zone of the load-bearing tower
- Superstructure can be inclined by up to 12% (in both the longitudinal and transverse directions)

NOTICE

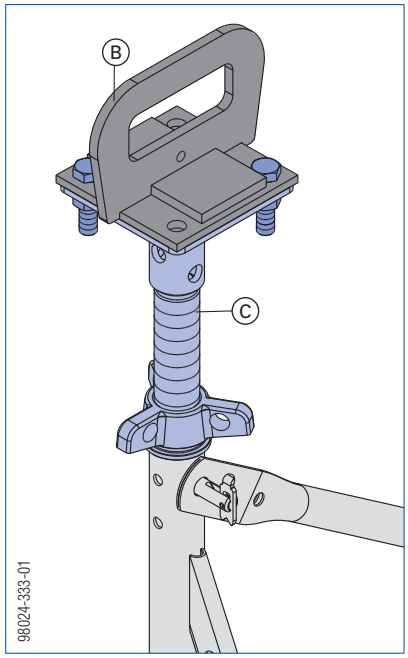
This configuration requires screwjack feet at the top of the tower instead of the usual screw-jack head units!



Assembly

➤ Mount a Screw-jack foot on the top frame.

➤ Bolt the 'Dokamatic table Staxo spindle connector' onto the Screw-jack foot.
Spanner size (width-across): 24 mm



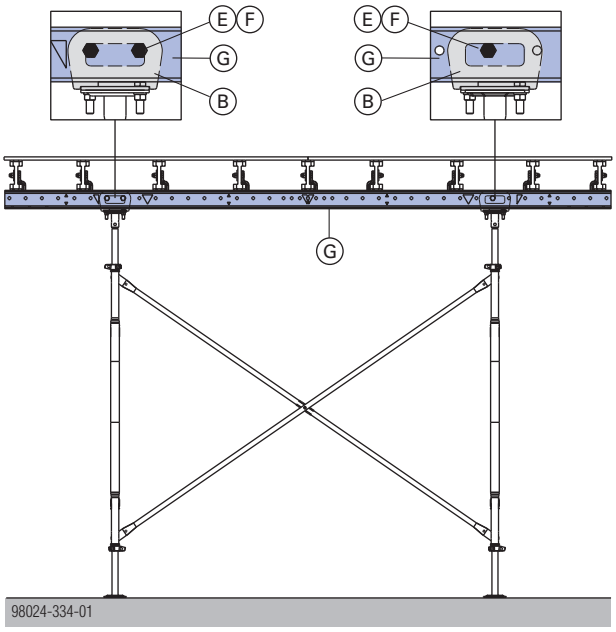
B Dokamatic table Staxo spindle connector

C Screw-jack foot

Attaching the Dokamatic table:

➤ Place the Dokamatic table onto the Staxo unit with the aid of two Dokamatic lifting straps 13.00m and the crane.

➤ Fit Connecting pins 10cm to connect the table, and secure these with spring cotters. The second connecting pin on each longitudinal connection prevents any displacement of the table superstructure.

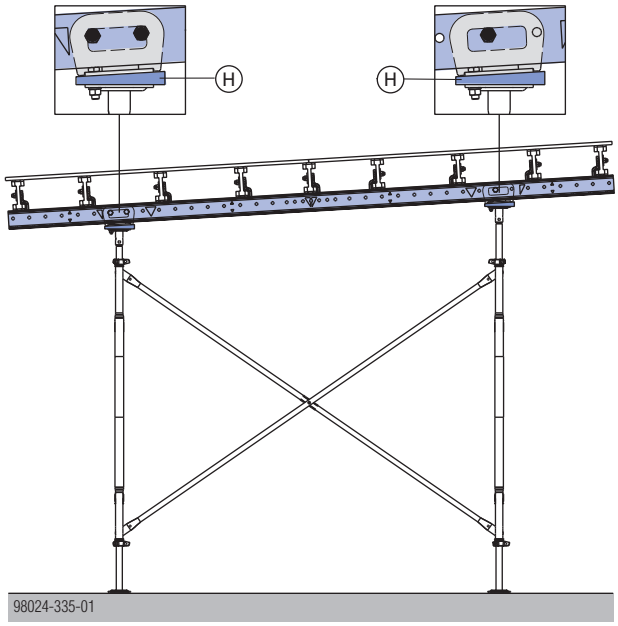


B Dokamatic table Staxo spindle connector
E Connecting pin 10cm
F Spring cotter 5mm
G Dokamatic table

Inclinations

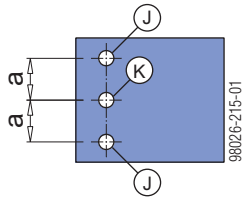
using Wedges for screw-jack ..... % (hardwood wedge)

➤ Bolt the Wedge for screw-jack ..... % onto the Screw-jack foot. If any more holes are needed in the Wedge for screw-jack, these can be drilled on-site.



H Wedge for screw-jack ..... %

Details of extra holes in the Wedge for screw-jack .....%



a ... 55 mm

J Holes to be drilled (diam. 20 mm)
K Ready-drilled hole (diam. 20 mm)

NOTICE

Max. table inclination 12% (in both the longitudinal and transverse directions).

Transporting, stacking and storing

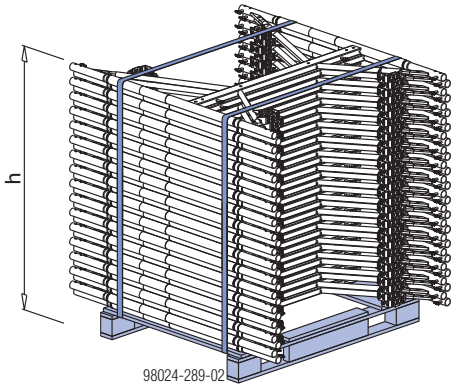
Utilise the benefits of Doka multi-trip packaging on your site.
Multi-trip packaging such as containers, stacking pallets and skeleton transport boxes keep everything in place on the site, minimise time wasted searching for parts, and streamline the storage and transport of system components, small items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

Wooden pallets

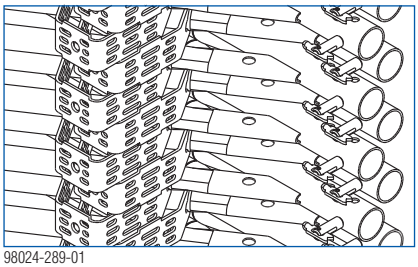
for stacking the Staxo 40 frames:
- Wooden pallet 1.22x1.60m for 1.80m high frames
- Wooden pallet 0.80x1.60m for 1.20m and 0.90m high frames
- Max. 40 Staxo 40 frames per stack!

CAUTION
Risk of tipping over!
➤ Doka wooden pallets with Staxo 40 frames (even if only part-loaded) must not be stacked on top of one another!

➤ Wrap two strapping belts around the Staxo frames and the Doka wooden pallet to strap them firmly together.



h ... 194 cm

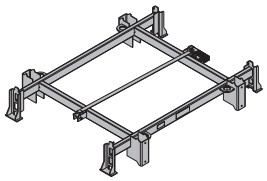
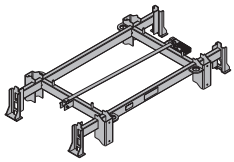


The U-brackets on the frames act as a lock to stop the frames slipping.

Staxo 40 pallet 1.80m and Staxo 40 pallet 1.20/0.90m

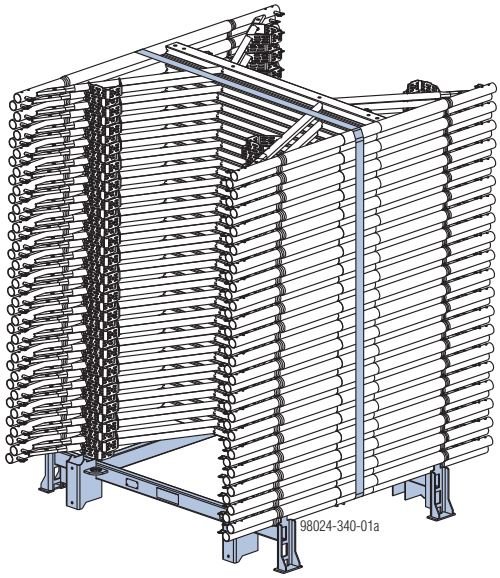
The stackable Staxo 40 pallets are an alternative to wooden pallets for stacking Staxo 40 frames.

Note:
Staxo 40 frames ship ex-works stacked on wooden pallets.

Staxo 40 pallet 1.80m	Staxo 40 pallet 1.20m/0.90m
	
Max. load	
1000 kg	750 kg
Permitted imposed load:	
2150 kg	1560 kg

- durable
- stackable
- Integrated lashing strap for fixing the Staxo 40 frames.
- Optimised for container and truck-based shipments.
- Entry direction for transport appliances: possible from all sides.

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



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!
- The rating plate must be in place and clearly legible.

Loading the transport device

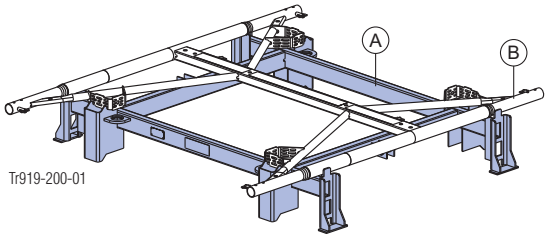
CAUTION

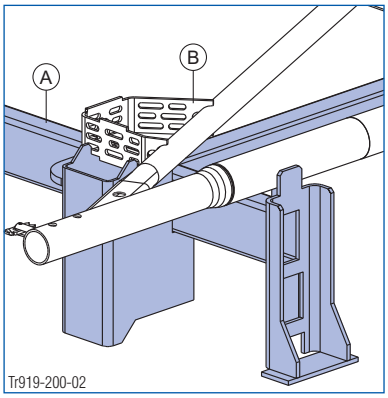
➤ It is not allowed to mix frames of different heights!

➤ Put down the lashing strap of the Staxo 40 pallet on one side.

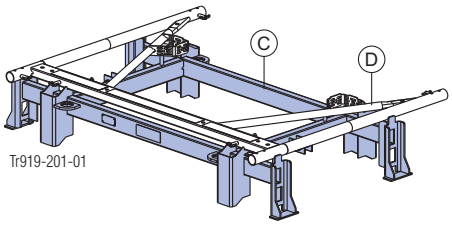
➤ Place the first Staxo 40 frame onto the defined points on the Staxo 40 pallet (see close-up).

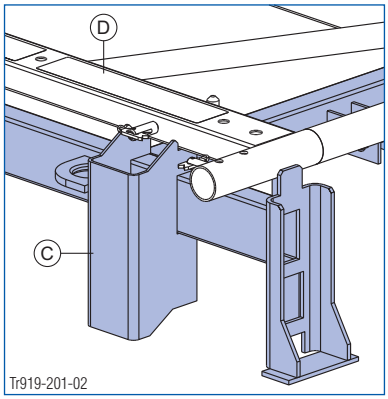
Loading the Staxo 40 pallet 1.80m





Loading the Staxo 40 pallet 1.20m/0.90m



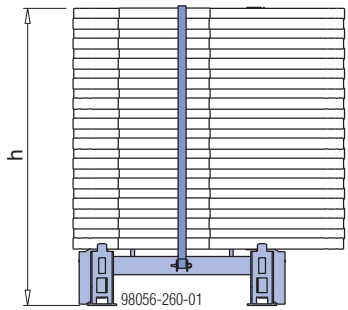


A Staxo 40 pallet 1.80m
B Staxo 40 frame 1.80m
C Staxo 40 pallet 1.20m/0.90m
D Staxo 40 frame 1.20m or 0.90m

➤ Stack all the other Staxo 40 frames so that they are alternately above one another (max. 40 high)

➤ Secure the Staxo 40 frames with the lashing strap.

Stacking and storing the Staxo 40 frames



Staxo 40 frames	Units	Height h [cm]
1.80m	20	122
	40	219
1.20m	20	113
	40	202
0.90m	20	113
	40	202

Using Staxo 40 pallets as storage units

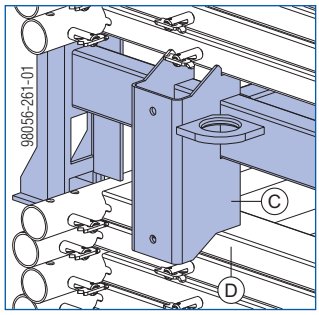
Stacking and storing filled Staxo 40 pallets

NOTICE

- The Staxo 40 pallets at the bottom of the stack must be completely and uniformly filled.
- Make sure that the lashing straps are taut and correctly positioned.
- There must be a flat, firm (e.g. concrete) base that is capable of supporting the load.

Max. number of pallets

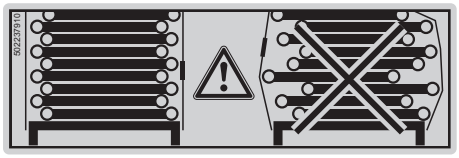
Staxo 40 frame	Q'ty	**Stacked on the site** (outdoors) floor gradients of up to 3%	**Stacked in the warehouse** floor gradients of up to 1%
1.80m	20	2	5
	40	1	3
1.20m	20	1	5
	40	1	3
0.90m	20	1	4
	40	1	2



C Staxo 40 pallet
D Staxo 40 frame

NOTICE

- The rating plate must be in place and clearly legible.
- Make sure that the Staxo 40 frames are centrally positioned!
- Observe the 'Stacking instruction' sticker!



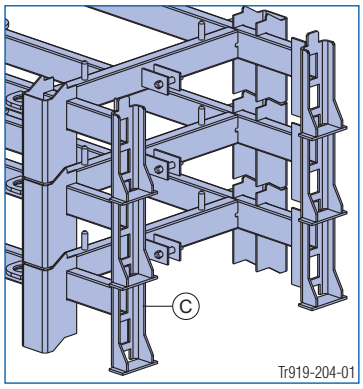
Stacking and storing empty Staxo 40 pallets

NOTICE

When empty Staxo 40 pallets are stacked, the lashing straps must be wound tightly around each pallet.

Max. number of pallets

Staxo 40 pallet	**Stacked on the site** (outdoors) floor gradients of up to 3%	**Stacked in the warehouse** floor gradients of up to 1%
1.80m	6	20
1.20/0.90m	4	20



C Staxo 40 pallet (shown without lashing strap)

Using Staxo 40 pallets as transport devices

Lifting by crane

WARNING

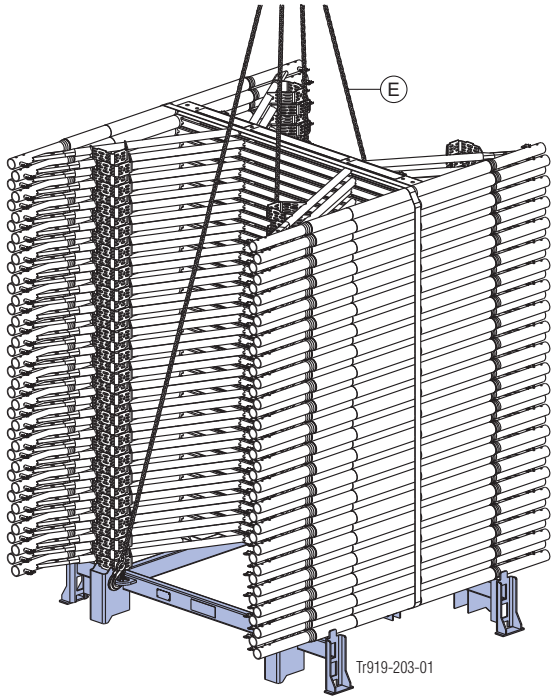
Do not attach the crane suspension tackel to the load-bearing tower frames!

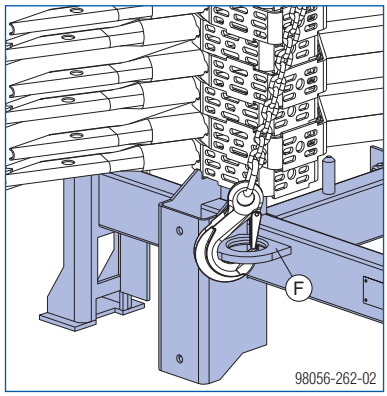
The lashing strap is not designed to be used for hoisting loads – risk of rupture!

➤ Attach the lifting chain to the 4 crane hoisting points of the Staxo 40 pallet only.

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°!





E Doka 4-part chain 3.20m

F Crane hoisting point

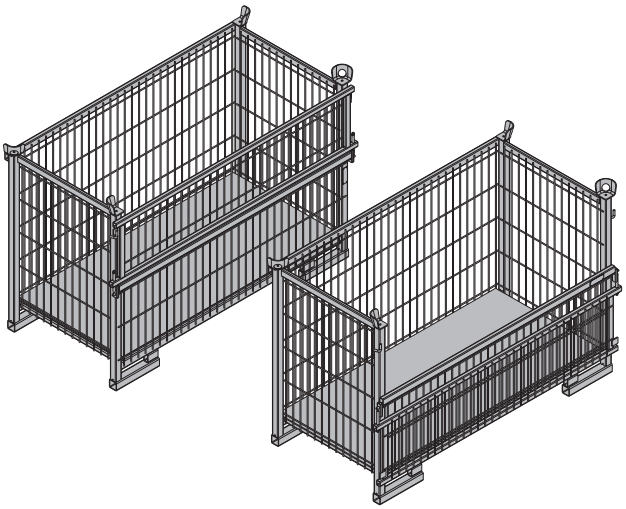
Repositioning by forklift truck or pallet stacking truck

NOTICE

- Push the forks of the forklift truck as far apart as possible.

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

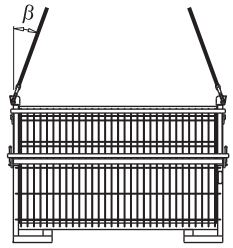
Stacked multi-trip boxes or pallets must have the heaviest boxes at the bottom and the lightest at the top.

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 load-bearing capacity.
- Spread angle β max. 30°!



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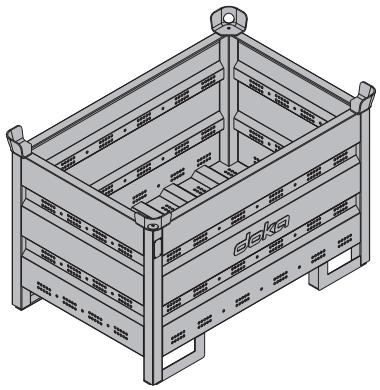
Repositioning by forklift truck or pallet stacking truck

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

Doka multi-trip transport box

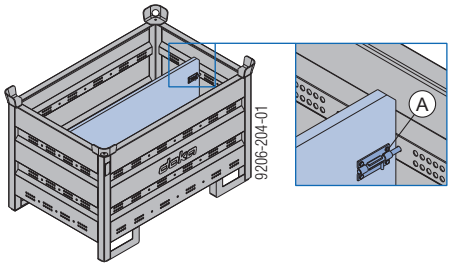
Storage and transport device for small items

Doka multi-trip transport box 1.20x0.80m



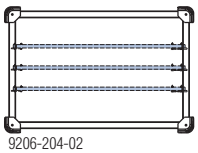
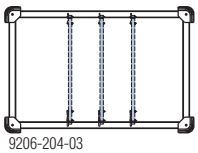
Max. carrying capacity: 1500 kg (3300 lbs)
Permitted imposed load: 7850 kg (17300 lbs)

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**.

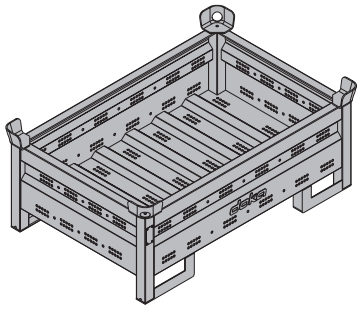


A Slide-bolt for fixing the partition

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

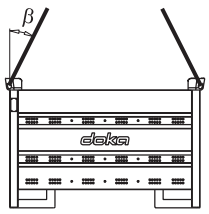
Stacked multi-trip boxes or pallets must have the heaviest boxes at the bottom and the lightest at the top.

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 load-bearing capacity.
- Spread angle β max. 30°!



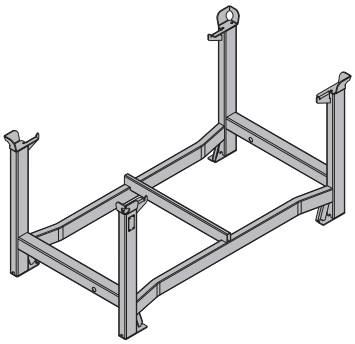
9206-202-01

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

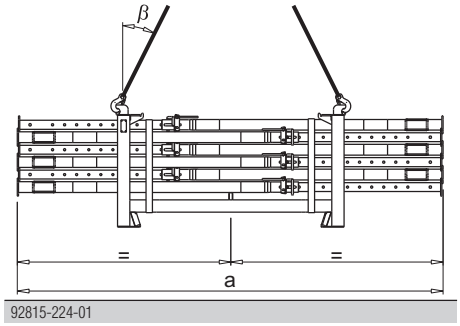
- Stacked multi-trip boxes or pallets must have the heaviest boxes at the bottom and the lightest at the top.
- **How to use with Bolt-on castor set B:**
  - Always apply the fixing brake when the container is 'parked'.
  - When Doka stacking pallets are stacked, the bottom pallet must NOT be one with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

Using Doka stacking pallets as transport devices

Lifting by crane

NOTICE

- Multi-trip packaging items 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°!



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

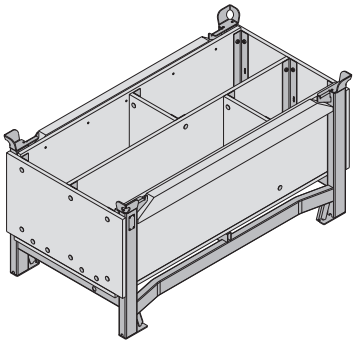
Repositioning by forklift truck or pallet stacking truck

NOTICE

- Load the items centrically.
- Fasten the load to the stacking pallet 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

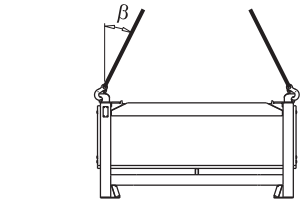
- Stacked multi-trip boxes or pallets must have the heaviest boxes at the bottom and the lightest at the top.
- **How to use with Bolt-on castor set B:**
  - Always apply the fixing brake when the container is 'parked'.
  - When Doka stacking pallets are stacked, the bottom pallet must NOT be one with 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 load-bearing capacity.
- Spread angle β max. 30°!



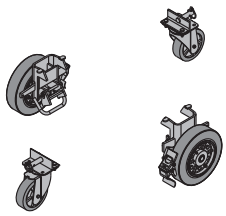
92816-206-01

Repositioning by forklift truck or pallet stacking truck

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

Bolt-on castor set B

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

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

Structural design

Preconditions for use

- Working wind of 0.2 kN/m² (64.4 km/h) is considered
- Separate proof must be provided, by a suitably skilled person, regarding the foundation. Particular attention must be paid here to the ground-bearing pressure!
- Intermediate anchoring planes may be necessary while the towers are being erected.
- The calculated values are in line with the type test for 'Load-bearing tower Staxo 40', the Calculation guide 'Load-bearing tower Staxo 40' and thus also with EN 12812 and EN 1993.
- In all cases which differ from the stated boundary conditions, the type-test or the Calculation Guide must be used as the basis for the dimensioning calculation, to ensure adequate stability.
  Such deviations may be due to:
  - variations in height
  - different wind loads
  - different inter-frame spacings
  - additional horizontal loads
  - single legs
  - larger screw-jack extension lengths
  - Inclined load-bearing tower
  - low vertical loads on free-standing systems
- On multi-plane towers with different inter-frame spaces, it is always the smallest inter-frame space that determines the design load.

Inclination adjustment

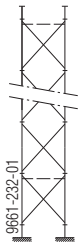
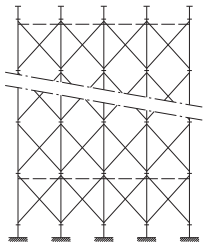
- Inclination adjusted with a centering strip (e.g. hexagon bolt M20x230) or Swivel bearing plate for Screw jack U-head = Screw-jack U-head not restrained.
- Inclination adjusted with a wooden wedge or 'Compensating plate' = no effect on the restraint situation.
  - e.g. with Wedge for screw jack U-head or Staxo wedge support

Founding with the 'Compensating plate'

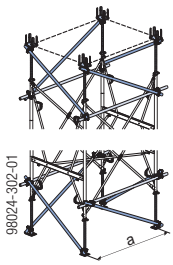
NOTICE

- The 'Compensating plate' must be placed on concrete only.
- For the proof against slippage between the Compensating plate and the concrete, a friction coefficient of 0.33 must be assumed.

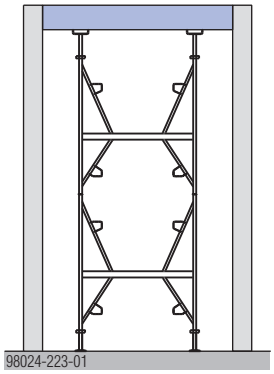
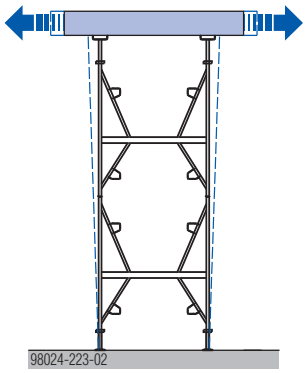
Set-up configurations

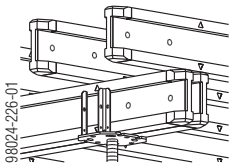
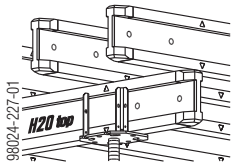
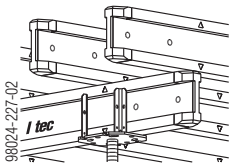
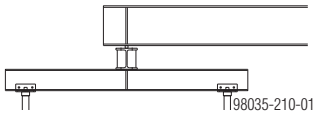
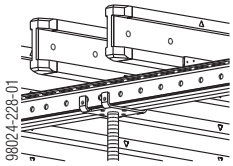
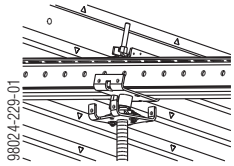
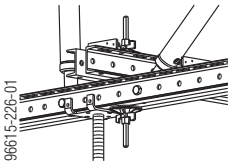
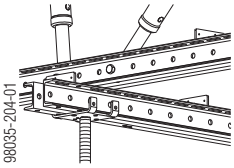
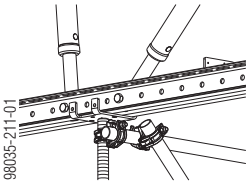
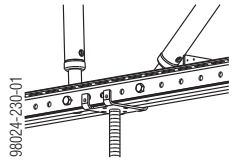
As tower Number of frame planes = 2	With multiple towerframe-planes Number of frame planes ≥ 3
	

Head and base zone configuration

Unbraced	Braced
	

Superstructure configuration

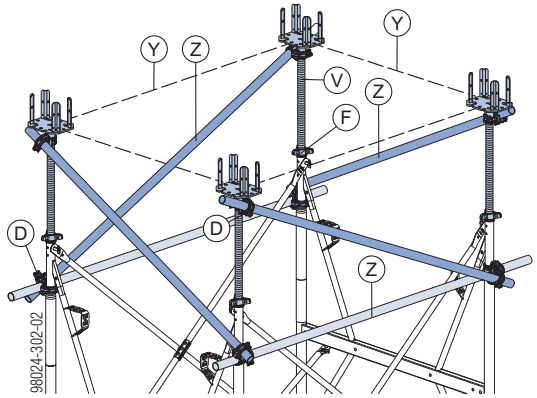
Top-held systems	Free-standing systems
	

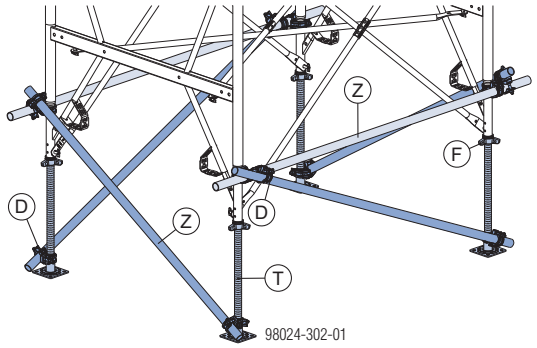
Head units restrained			Head units not restrained
Double primary beams consisting of timber formwork beams to DIN EN 13377 			Single primary beams consisting of timber formwork beams to DIN EN 13377 
Single primary beams consisting of Doka beams I tec 20 to Z-9.1-773[1)] 			Centring beams 
Multi-purpose walings][100 to][160 			Swivel head 
Friction-locked, unloaded secondary beam 	or transverse, unloaded WS10 walings between longitudinal WS10 walings and screwjack U-heads 	Multi-purpose walings with braced screw jacks U-heads without stiffeners 	Multi-purpose walings with screw jacks U-heads without bracing 

Max. secondary-beam spacing 50 cm

[1)] due to the higher rigidity of the flanges and the web

Bracing





D	Swivel coupler 48mm
F	Split nut B
T	Heavy-duty screw jack 70
V	Heavy-duty screw jack 70 top
Y	Extra bracing is only necessary if the screw-jack heads are not connected with one another by way of the formwork base.
Z	Scaffold tube 48.3mm

Consult the type-test documentation for details of the different bracing arrangements.

Permitted leg loads

Free-standing systems (without back-stay, without holding device)

Frame size [m]	Screw-jack extension lengths [cm] at top and bottom respectively		Inter-frame space [m]	N° of frame planes connected to one another by diagonal crosses (multi-plane tower)	Max. height [m] of load-bearing tower without intermediate anchoring (Intermediate anchoring planes may be necessary while the towers are being erected)	Permitted leg load [kN]			
						Head units restrained		Head units not restrained	
	Unbraced	Braced				V	H	V	H
up to 1.80	15	70	≥ 1.5	≥ 2	7.5	36.7	0.5	32.6	0.4
				≥ 3	12.9	33.5	0.5	31.8	0.4
			≥ 1.0	≥ 2	7.5	34.5	0.5	31.1	0.4
				≥ 3	12.9	30.4	0.4	30.5	0.4
	30		≥ 1.5	≥ 2	7.8	33.7	0.5	25.8	0.4
				≥ 3	13.2	31.7	0.4	24.9	0.4
			≥ 1.0	≥ 2	7.8	31.3	0.4	24.8	0.4
				≥ 3	13.2	27.3	0.4	23.9	0.4
up to 1.20	15	70	≥ 1.5	≥ 2	7.5	41.4	0.5	39.1	0.5
				≥ 3	14.7	36.4	0.5	36.0	0.5
			≥ 1.0	≥ 2	7.5	39.2	0.5	36.5	0.5
				≥ 3	12.3	34.3	0.5	33.7	0.5
	30		≥ 1.5	≥ 2	7.8	38.6	0.5	31.6	0.5
				≥ 3	15.0	34.2	0.5	30.1	0.4
			≥ 1.0	≥ 2	7.8	37.3	0.5	30.1	0.4
				≥ 3	12.6	32.4	0.5	29.7	0.4

Top-held systems (e.g. enclosed space, or with back-stay)

Frame size [m]	Screw-jack extension lengths [cm] at top and bottom respectively		Inter-frame space [m]	N° of frame planes connected to one another by diagonal crosses (multi-plane tower)	Max. height [m] of load-bearing tower without intermediate anchoring (Intermediate anchoring planes may be necessary while the towers are being erected)	Permitted leg load [kN]	
						Head units restrained	Head units not restrained
	Unbraced	Braced					
up to 1.80	15	70	≥ 1.5	≥ 2	2.1	39.3	35.1
					20	37.5	33.2
			≥ 1.0	≥ 2	2.1	39.3	34.5
				≥ 3	20	35.5	32.2
	30		≥ 1.5	≥ 2	2.4	35.2	30.1
					20	35.0	26.8
			≥ 1.0	≥ 2	2.4	35.2	29.5
				≥ 3	20	34.3	25.7
	70	—	≥ 1.5	≥ 2	3.2	20.9	—
					20	20.9	—
			≥ 1.0	≥ 2	3.2	23.3	—
				≥ 3	20	18.9	—
up to 1.20	15	70	≥ 1.5	≥ 2	1.5	44.3	40.9
					20	44.7	41.5
			≥ 1.0	≥ 2	1.5	44.1	40.5
				≥ 3	20	44.6	40.5
	30		≥ 1.5	≥ 2	1.8	40.7	35.9
					20	41.4	33.7
			≥ 1.0	≥ 2	1.8	40.3	35.5
				≥ 3	20	40.5	32.3
	70	—	≥ 1.5	≥ 2	2.6	28.7	—
					20	29.5	—
			≥ 1.0	≥ 2	2.6	28.6	—
				≥ 3	20	29.1	—

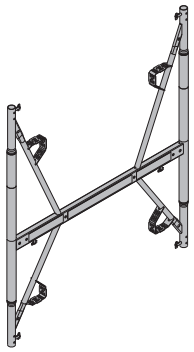
NOTICE

- Secure the load-bearing tower against slippage and tipover, in all situations!
- Ensure that all loads are applied centrally!

	[kg]	Article N°
Staxo 40 frame 0.90m	**14.6**	**582202000**
Staxo 40 frame 1.20m	**17.5**	**582201000**
Staxo 40 frame 1.80m	**24.5**	**582200000**

Staxo 40-Rahmen

Galvanised



Staxo 40 coupler	**0.60**	**582203000**

Staxo 40-Kupplungsstück

Galvanised
Height: 30.8 cm

Staxo 40 tube connector D48.3mm	**0.07**	**582204000**

Staxo 40-Rohrstecker D48,3mm

Yellow

Diagonal cross 9.100	**4.1**	**582772000**
Diagonal cross 9.150	**5.2**	**582773000**
Diagonal cross 9.175	**6.1**	**582334000**
Diagonal cross 9.200	**6.6**	**582774000**
Diagonal cross 9.250	**7.7**	**582775000**
Diagonal cross 9.300	**9.0**	**582323000**
Diagonal cross 12.100	**4.6**	**582610000**
Diagonal cross 12.150	**5.7**	**582612000**
Diagonal cross 12.175	**6.3**	**582335000**
Diagonal cross 12.200	**6.9**	**582614000**
Diagonal cross 12.250	**8.3**	**582616000**
Diagonal cross 12.300	**9.3**	**582325000**
Diagonal cross 18.100	**6.1**	**582620000**
Diagonal cross 18.150	**6.9**	**582622000**
Diagonal cross 18.175	**7.8**	**582336000**
Diagonal cross 18.200	**7.8**	**582624000**
Diagonal cross 18.250	**9.1**	**582626000**
Diagonal cross 18.300	**10.3**	**582326000**

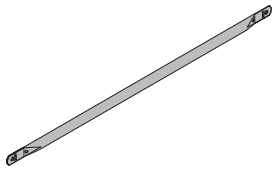
Diagonalkreuz

Galvanised
Delivery condition: folded closed

	[kg]	Article N°
Diagonal brace d2 9.100	**2.0**	**582740000**
Diagonal brace d2 9.125	**2.2**	**582741000**
Diagonal brace d2 9.152	**2.6**	**582742000**
Diagonal brace d2 9.175	**3.0**	**582743000**
Diagonal brace d2 9.200	**3.3**	**582744000**
Diagonal brace d2 9.225	**5.9**	**582745000**
Diagonal brace d2 9.250	**6.8**	**582746000**
Diagonal brace d2 12.100	**2.2**	**582712000**
Diagonal brace d2 12.125	**2.5**	**582713000**
Diagonal brace d2 12.152	**2.9**	**582714000**
Diagonal brace d2 12.175	**3.1**	**582715000**
Diagonal brace d2 12.200	**3.5**	**582716000**
Diagonal brace d2 12.225	**6.0**	**582717000**
Diagonal brace d2 12.250	**6.7**	**582718000**
Diagonal brace d2 18.100	**3.0**	**582720000**
Diagonal brace d2 18.125	**3.3**	**582721000**
Diagonal brace d2 18.152	**5.8**	**582722000**
Diagonal brace d2 18.175	**6.1**	**582723000**
Diagonal brace d2 18.200	**6.4**	**582724000**
Diagonal brace d2 18.225	**6.9**	**582725000**
Diagonal brace d2 18.250	**7.4**	**582726000**

Diagonalstrebe d2

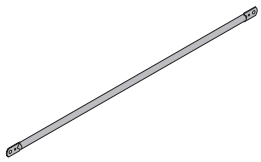
Galvanised



Horizontal brace d2 100	**1.6**	**582730000**
Horizontal brace d2 125	**1.9**	**582731000**
Horizontal brace d2 152	**2.3**	**582732000**
Horizontal brace d2 175	**2.7**	**582733000**
Horizontal brace d2 200	**3.0**	**582734000**
Horizontal brace d2 225	**3.4**	**582735000**
Horizontal brace d2 250	**3.8**	**582736000**

Horizontalstrebe d2

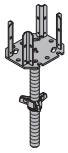
Galvanised



Staxo 40 4-way screw-jack head 30cm	**6.5**	**582209000**

Staxo 40-Vierwegkopfspindel 30cm

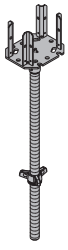
Galvanised
Height: 67.8 cm



Staxo 40 4-way screw-jack head 70cm	**8.9**	**582210000**

Staxo 40-Vierwegkopfspindel 70cm

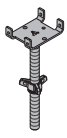
Galvanised
Height: 117.6 cm



Staxo 40 screw jack U-head 30cm	**4.7**	**582207000**

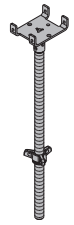
Staxo 40-Kopfspindel 30cm

Galvanised
Height: 55.7 cm



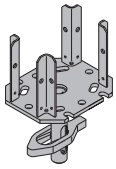
	[kg]	Article N°

Staxo 40 screw jack U-head 70cm — 7.0 — 582208000
Staxo 40-Kopfspindel 70cm



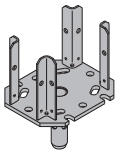
Galvanised
Height: 105.5 cm

Lowering head H20 — 6.1 — 586174000
Absenkkopf H20



Galvanised
Length: 25 cm
Width: 20 cm
Height: 38 cm

4-way head H20 — 4.0 — 586170000
Vierwegkopf H20

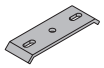


Galvanised
Length: 25 cm
Width: 20 cm
Height: 33 cm

Doka Xtra head — 9.7 — 586108000
Doka Xtra-Kopf

Galvanised
Height: 69 cm

Clamping plate D — 2.0 — 502709030
Klemmplatte D



Galvanised
Length: 24 cm
Width: 9 cm

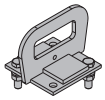
Wing nut 15.0 — 0.31 — 581961000
Flügelmutter 15,0

Galvanised
Length: 10 cm
Height: 5 cm
Width-across: 27 mm

Locking rod 15.0 330mm — 0.48 — 582641000
Quetschteil 15,0 330mm

Galvanised
Width-across: 24 mm

Dokamatic table Staxo spindle connector — 3.9 — 582347000
Staxo-Spindelanschluss Dokamatic-Tisch



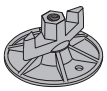
Galvanised
Length: 20.7 cm

Wedge for screw jack ..... % — 0.46 — 176071000
Spindelkeil ..... %

Length: 20 cm
Width: 16 cm

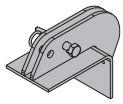
	[kg]	Article N°

Super plate 15.0 — 1.1 — 581966000
Superplatte 15,0



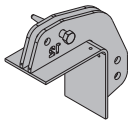
Galvanised
Height: 6 cm
Diameter: 12 cm
Width-across: 27 mm

Staxo wedge support WS10 — 8.7 — 582796000
Staxo-Keilauflager WS10



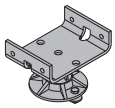
Galvanised
Length: 31 cm
Width: 15 cm
Height: 23 cm

Staxo wedge support WU12/14 — 12.2 — 582350000
Staxo-Keilauflager WU12/14



Galvanised
Length: 35.6 cm
Width: 15 cm
Height: 33.6 cm

Swivel bearing plate for screw jack U-head — 5.2 — 582799000
Gelenkaufsatz Kopfspindel

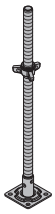


Galvanised
Length: 20.8 cm
Width: 15.0 cm
Height: 14.4 cm

Staxo 40 screw jack foot 30cm — 3.9 — 582205000
Staxo 40-Fußspindel 30cm

Galvanised
Height: 50.7 cm

Staxo 40 screw jack foot 70cm — 6.1 — 582206000
Staxo 40-Fußspindel 70cm

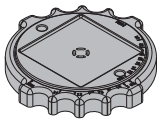


Galvanised
Height: 100.5 cm

Staxo 40 anti-dropout lock — 0.54 — 582211000
Staxo 40-Spindelsicherung

Galvanised
Powder-coated blue
Length: 9.0 cm
Width: 8.8 cm
Height: 8.6 cm

Compensating plate — 1.2 — 582239000
Ausgleichsplatte



Orange
Black
Diameter: 30 cm

	[kg]	Article N°

Plumbing strut Eurex 60 550 — 42.5 — 582658000
Justierstütze Eurex 60 550

Powder-coated blue
Aluminium
Length: 343 - 553 cm

Extension Eurex 60 2.00m — 21.3 — 582651000
Verlängerung Eurex 60 2,00m

Powder-coated blue
Aluminium
Length: 250 cm

Coupler Eurex 60 — 8.6 — 582652000
Kupplungsstück Eurex 60

Aluminium
Length: 100 cm
Diameter: 12.8 cm

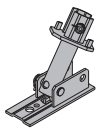
Prop head Eurex 60 Top50 — 7.1 — 582665000
Stützenkopf Eurex 60 Top50

Galvanised
Height: 50 cm

Connector Eurex 60 IB — 4.2 — 582657500
Verbindungsstück Eurex 60 IB

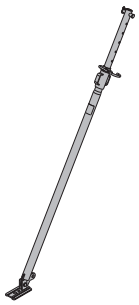
Galvanised
Length: 15 cm
Width: 15 cm
Height: 30 cm

Plumbing strut shoe Eurex 60 EB — 8.0 — 582660500
Justierstützenfuß Eurex 60 EB



Galvanised
Length: 31 cm
Width: 12 cm
Height: 33 cm

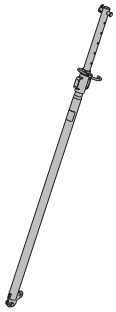
Plumbing strut 340 IB — 16.7 — 588696000
Justierstütze 340 IB



Galvanised
Length: 190.8 - 341.8 cm

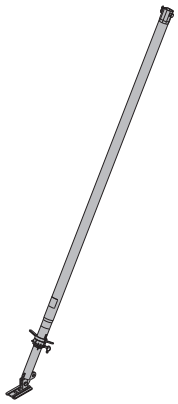
	[kg]	Article N°

Plumbing strut 340 IB EF — 14.9 — 588247500
Justierstütze 340 IB EF



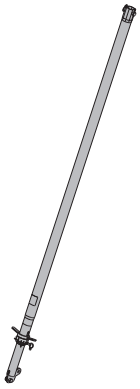
Galvanised
Length: 190.8 - 341.8 cm

Plumbing strut 540 IB — 30.7 — 588697000
Justierstütze 540 IB



Galvanised
Length: 310.5 - 549.2 cm

Plumbing strut 540 IB EF — 28.9 — 588250500
Justierstütze 540 IB EF



Galvanised
Length: 310.5 - 549.2 cm

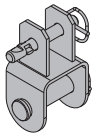
Strut shoe EB — 0.93 — 588946000
Strebenschuh EB

Galvanised
Width: 8 cm
Height: 13 cm

Prop shoe EB — 1.8 — 588245500
Stützenschuh EB

Galvanised
Length: 20 cm
Width: 11 cm
Height: 10 cm

Staxo 40 plumbing strut adapter — 1.6 — 582214000
Staxo 40-Justierstützenadapter



Galvanised
Height: 16 cm

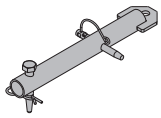
	[kg]	Article N°
Universal dismantling tool Universal-Lösewerkzeug Galvanised Length: 75.5 cm	**3.7**	**582768000**
Doka express anchor 16x125mm Doka-Expressanker 16x125mm Galvanised Length: 18 cm Follow the directions in the "Fitting instructions"!	**0.31**	**588631000**
Doka coil 16mm Doka-Coil 16mm Galvanised Diameter: 1.6 cm	**0.009**	**588633000**
Scaffold planking 30/100cm **Scaffold planking 30/150cm** **Scaffold planking 30/200cm** **Scaffold planking 30/250cm** **Scaffold planking 30/300cm** Gerüstbelag Galvanised	**7.4** **10.6** **13.5** **16.4** **19.5**	**582231000** **582232000** **582234000** **582235000** **582236000**
Scaffold planking 60/100cm with manhole **Scaffold planking 60/150cm with manhole** **Scaffold planking 60/175cm with manhole** **Scaffold planking 60/200cm with manhole** **Scaffold planking 60/250cm with manhole** **Scaffold planking 60/300cm with manhole** Gerüstbelag mit Durchstieg Aluminium	**9.5** **13.8** **15.5** **17.7** **20.8** **26.3**	**582311500** **582312500** **582333500** **582313500** **582314500** **582315500**
Scaffold planking 60/100cm **Scaffold planking 60/150cm** **Scaffold planking 60/175cm** **Scaffold planking 60/200cm** **Scaffold planking 60/250cm** **Scaffold planking 60/300cm** Gerüstbelag Aluminium	**9.5** **13.6** **15.5** **17.8** **22.2** **26.2**	**582306500** **582307500** **582332500** **582308500** **582309500** **582310500**
Staxo 40 bracket 90cm Staxo 40-Konsole 90cm Galvanised Width: 108.9 cm Height: 65.5 cm	**8.6**	**582212000**

	[kg]	Article N°
Staxo 40 planking strut 1.00m **Staxo 40 planking strut 1.50m** **Staxo 40 planking strut 2.00m** Staxo 40-Belagstrebe Galvanised	**5.7** **7.3** **9.3**	**582215000** **582216000** **582217000**
Staxo 40 frame strut 1.40m Staxo 40-Rahmenstrebe 1,40m Galvanised	**6.5**	**582213000**
Staxo front railing Staxo-Stirngeländer Galvanised Length: 140 cm Height: 152 cm	**10.5**	**582316000**
Staxo side railing 100 **Staxo side railing 150** **Staxo side railing 175** **Staxo side railing 200** **Staxo side railing 250** **Staxo side railing 300** Staxo-Seitengeländer Galvanised Height: 152 cm	**17.5** **20.0** **23.2** **24.1** **27.5** **31.1**	**582317500** **582318500** **582331500** **582319500** **582320500** **582321500**
Spring locked connecting pin 16mm Federbolzen 16mm Galvanised Length: 15 cm	**0.25**	**582528000**
Staxo 40/d3 ladder 2.30m Staxo 40/d3-Leiter 2,30m Galvanised	**15.5**	**582219500**

	[kg]	Article N°
Staxo 40 ladder 2.30m Staxo 40-Leiter 2,30m Galvanised	**14.8**	**582219000**
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**
Swivel coupler 48mm Drehkupplung 48mm Galvanised Width-across: 22 mm Follow the directions in the "Fitting instructions"!	**1.5**	**582560000**
Normal coupler 48mm Normalkupplung 48mm Galvanised Width-across: 22 mm Follow the directions in the "Fitting instructions"!	**1.2**	**682004000**
Screw-on coupler 48mm 50 Anschraubkupplung 48mm 50 Galvanised Width-across: 22 mm Follow the directions in the "Fitting instructions"!	**0.84**	**682002000**
Screw-on coupler 48mm 95 Anschraubkupplung 48mm 95 Galvanised Width-across: 22 mm Follow the directions in the "Fitting instructions"!	**0.88**	**586013000**
Anchoring shoe for stair tower Ankerschuh für Treppenturm Galvanised Length: 22 cm Width: 12 cm Height: 22 cm	**3.4**	**582680000**
Cone screw B 7cm Konusschraube B 7cm Red Length: 10 cm Diameter: 7 cm Width-across: 50 mm	**0.86**	**581444000**
Handrail post XP 1.20m Geländersteher XP 1,20m Galvanised Height: 118 cm	**4.1**	**586460000**
Scaffold tube holder D48mm Gerüstrohrhalter D48mm Galvanised Height: 18 cm	**0.95**	**586464000**
Toeboard holder XP 1.20m Fußwehrhalter XP 1,20m Galvanised Height: 21 cm	**0.64**	**586461000**
Beam connecting plate H20 Gurtverbinder H20 Galvanised Height: 8 cm	**0.07**	**586263000**
Bracing for load-bearing towers Abspannung für Traggerüste Galvanised Painted blue	**10.2**	**582795000**
Spindle connecting plate T Spindellasche T Galvanised Width: 20 cm Height: 25 cm	**3.1**	**584371000**
Connecting pin 10cm Verbindungsbolzen 10cm Galvanised Length: 14 cm	**0.34**	**580201000**
Spring cotter 5mm Federvorstecker 5mm Galvanised Length: 13 cm	**0.03**	**580204000**

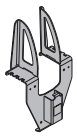
	[kg]	Article N°

Bracing waling connector WS10 2.7 582756000
Abspann-Riegelverbinder WS10



Galvanised
Length: 46.7 cm

Secondary-beam stabiliser 1 1.6 586196000
Secondary-beam stabiliser 2 2.1 586197000
Querträgersicherung



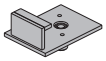
Galvanised
Height: 38.7 cm

Lifting rod 15.0 1.9 586074000
Umsetzstab 15,0

Painted blue
Height: 57 cm
Follow the directions in the "Operating Instructions"!

CE

Retaining plate 15.0 1.8 586073000
Jochplatte 15,0

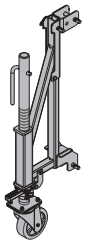


Galvanised
Length: 17 cm
Width: 12 cm
Height: 11 cm

Universal plug R20/25 0.003 588180000
Kombi-Ankerstopfen R20/25

Blue
Diameter: 3 cm

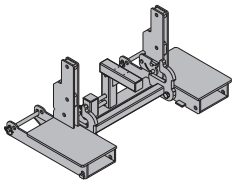
Staxo 40 shifting wheel 22.8 582218000
Staxo 40-Umsetzrad



Galvanised
Height: 120 cm
Follow the directions in the "Operating Instructions"!

CE

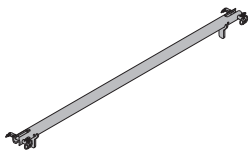
Fork lift shifting device TG 83.0 582797000
Umsetzgerät TG für Stapler



Galvanised
Length: 60 cm
Width: 113 cm
Height: 52 cm
Follow the directions in the "Operating Instructions"!

CE

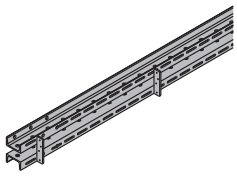
Staxo 40 lifting strut 9.5 582224000
Staxo 40-Umsetzstrebe



Galvanised
Length: 144 cm

	[kg]	Article N°

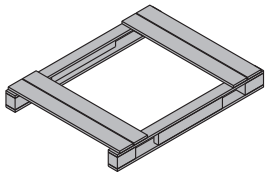
Multi-purpose waling WS10 Top50 2.00m 38.9 580007000
Mehrzweckriegel WS10 Top50 2,00m



Painted blue

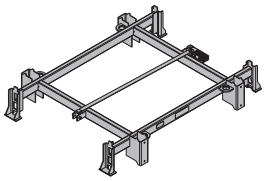
Multi-trip packaging

Wooden pallet 1.22x1.60m (HT) 24.0 176139000
Wooden pallet 0.80x1.60m (HT) 20.0 176140000
Holzpalette (DB, HT)



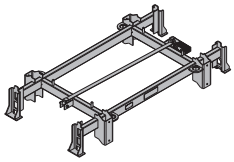
Height: 18 cm

Staxo 40 pallet 1.80m 47.0 582237000
Staxo 40-Palette 1,80m



Galvanised
Length: 169 cm
Width: 134 cm
Height: 27 cm

Staxo 40 pallet 1.20/0.90m 38.5 582238000
Staxo 40-Palette 1,20/0,90m

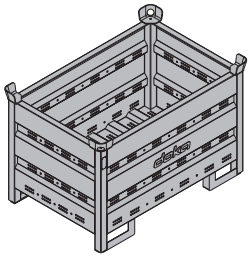


Galvanised
Length: 169 cm
Width: 91 cm
Height: 27 cm

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

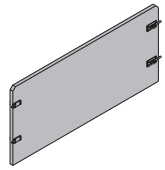


Galvanised
Height: 78 cm

	[kg]	Article N°
Multi-trip transport box partition 0.80m	**3.7**	**583018000**
Multi-trip transport box partition 1.20m	**5.5**	**583017000**

Mehrwegcontainer Unterteilung

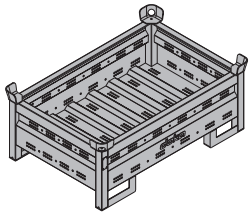
Steel parts galvanised
Timber parts varnished yellow



Doka multi-trip transport box 1.20x0.80x0.41m	**42.5**	**583009000**

Doka-Mehrwegcontainer 1,20x0,80x0,41m

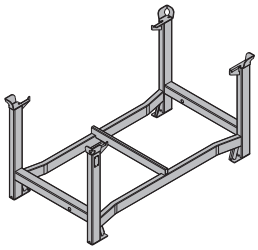
Galvanised



Doka stacking pallet 1.55x0.85m	**41.0**	**586151000**

Doka-Stapelpalette 1,55x0,85m

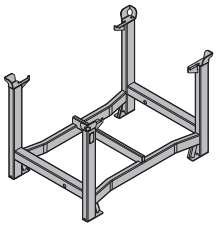
Galvanised
Height: 77 cm



Doka stacking pallet 1.20x0.80m	**38.0**	**583016000**

Doka-Stapelpalette 1,20x0,80m

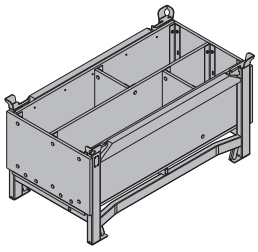
Galvanised
Height: 77 cm



Doka accessory box	**106.4**	**583010000**

Doka-Kleinteilebox

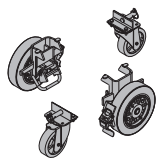
Timber parts varnished yellow
Steel parts galvanised
Length: 154 cm
Width: 83 cm
Height: 77 cm



Bolt-on castor set B	**33.6**	**586168000**

Anklemm-Radsatz B

Painted blue

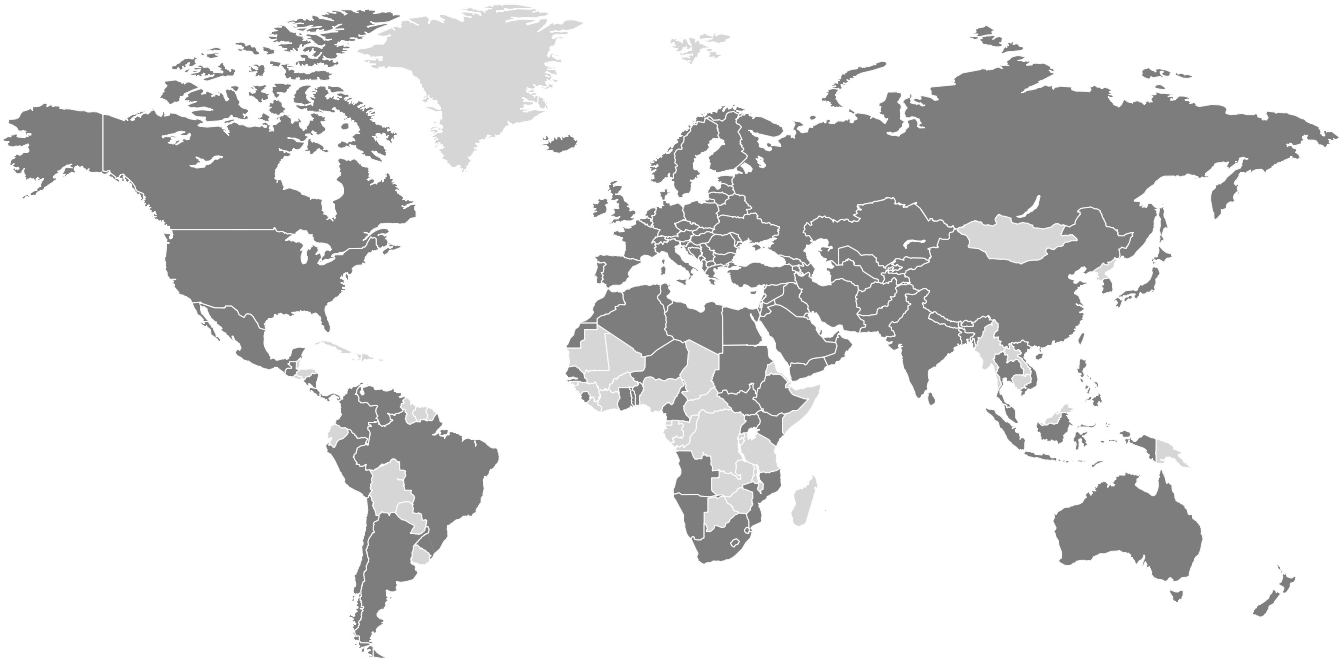


Near to you, worldwide

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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