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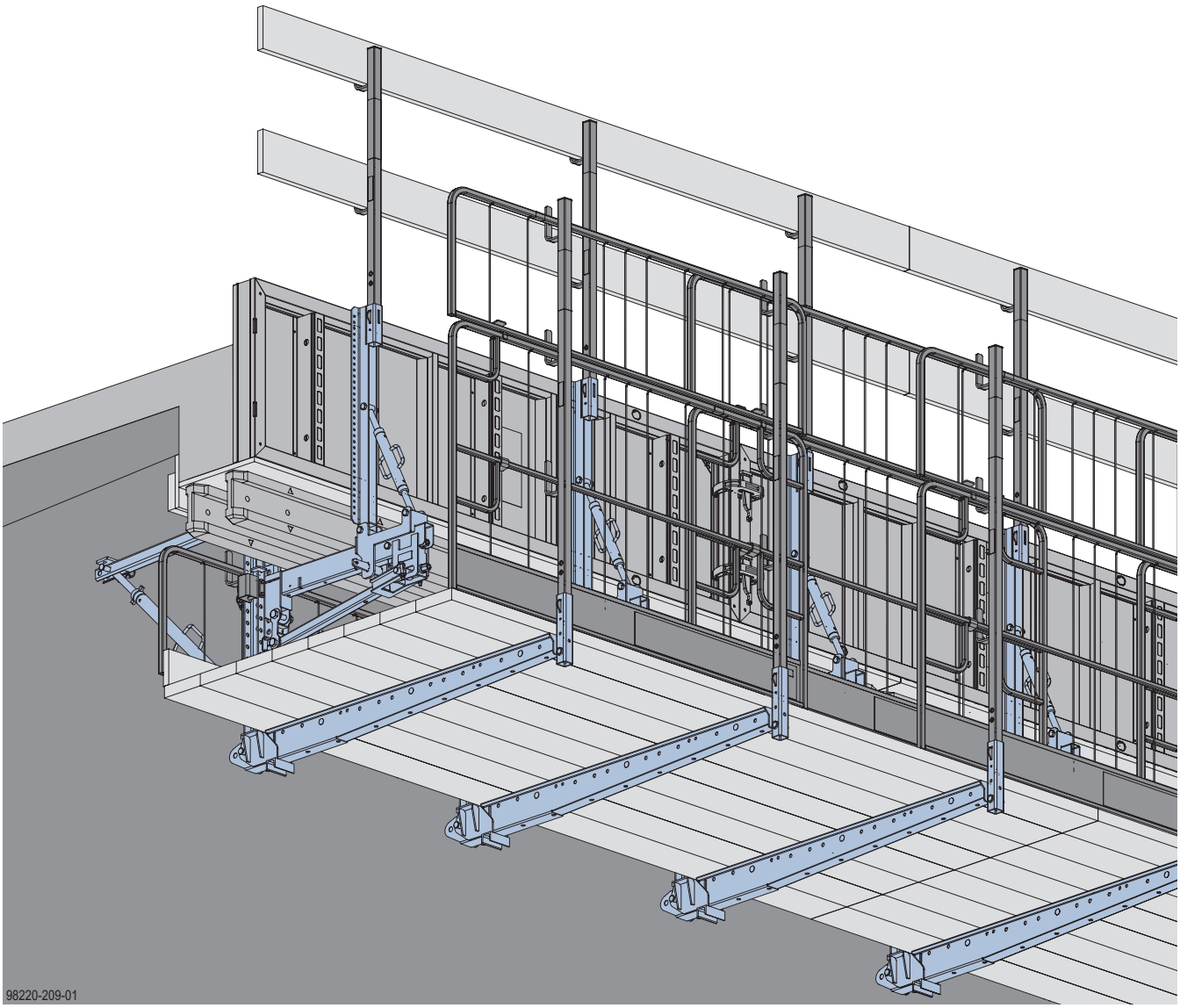
Formwork & Scaffolding.
We make it work.

Bridge edge beam formwork NG

User Information

Instructions for assembly and use (Method statement)



Contents

Introduction

Elementary safety warnings

User target groups

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

Hazard assessment

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

Remarks on this booklet

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

Planning

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

Regulations; industrial safety

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

Rules applying during all phases of the assignment

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

Assembly

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

Closing the formwork

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

Pouring

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

Stripping the formwork

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

Transporting, stacking and storing

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

Maintenance

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

Miscellaneous

The weights as stated are averages for new material; actual weights can differ, depending on material tolerances. Dirt accretions, moisture saturation, etc. can also affect weight.
We reserve the right to make alterations in the interests of technical progress.

Eurocodes at Doka

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

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

Allowance has been made for the following partial factors:

- 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.

System description

Intended use

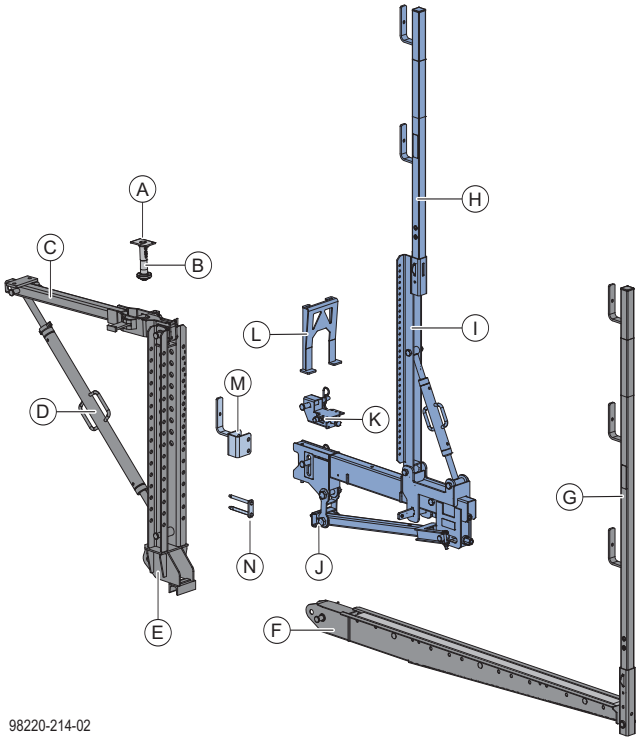
The Bridge edge beam formwork NG is a formwork system for casting and rehabilitating the cantilevered parapets of a bridge in cast-in-place bridge construction. The Bridge edge beam formwork NG is designed for forming by hand and with a crane.

Technical data:

- Max. parapet width: 50 cm
- Max. parapet height: 88 cm
- Full enclosure up to 2 m height

In special cases, boundary conditions can vary. The relevant information in the Doka technical documents must be observed. Any other use or use going beyond that stated above is contrary to the intended use.

System overview



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The Bridge edge beam formwork NG can be configured in various ways. Modular components enable adaptation to parapet cross-section, drive-through access height and the supporting structure.

Items needed for one bridge edge beam bracket:

	Components for standard parapet cross-sections	Quantity	Modular components
A	Bridge edge beam anchor 15.0	1	
B	Screw-in cone 15.0	1	
C	Suspension profile NG 0.95m	1	Suspension profile NG 0.55m
D	Spindle strut NG 90/125cm	1	Spindle strut NG 60/95cm
E	Vertical profile NG 1.13m	1	Vertical profile NG 0.82m
F	Platform beam NG 1.60m	1	Platform beam NG 1.60m top
G	Handrail post NG 2.00m	1	Handrail post XP 1.80m
H	Handrail post XP 1.20m	1	
I	Bridge edge beam clamp NG 1.00m	1	
J	Bridge edge beam support NG 1.16m	1	Bridge edge beam support NG 1.01m
K	Inside formwork holder NG	1	Inside formwork holder NG eco
L	Stripping wedge Inside formwork NG	1	
M	Railing holder NG	1	
N	Double bolt NG D12	1	
	Linch pin 6x42 St galv.	1	
	Pin D20 160	6	
	Spring cotter 5mm	6	

Suspension point

- **Bridge edge beam anchor 15.0**
  - Lost anchoring component for single-sided tying of the screw-in cone.
- **Screw-in cone 15.0**
  - For safe suspension of the suspension profile.

Bridge edge beam platform

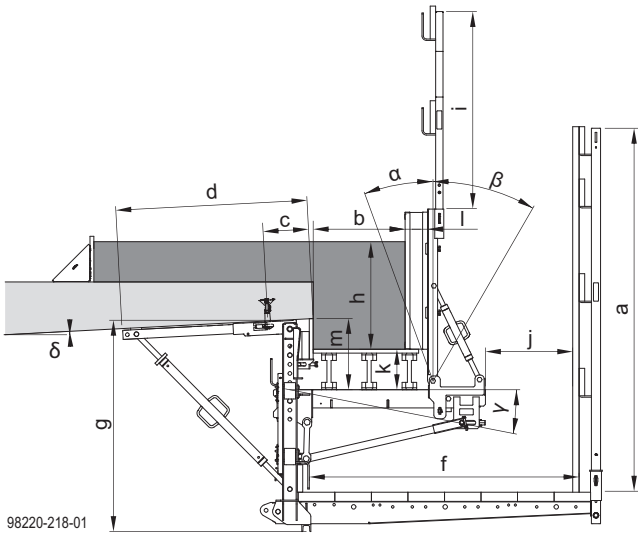
- **Suspension profile NG**
  - Profile for suspension of the bridge edge beam formwork.
- **Spindle strut NG**
  - Spindle of the bridge edge beam formwork for aligning the vertical profile.
- **Vertical profile NG**
  - Vertical profile of the bridge edge beam formwork for installation of the platform beam and the inside formwork.
- **Platform beam NG 1.60m**
  - Beam pinned to the vertical profile for construction of a working platform.
- **Handrail post NG 2.00m or XP 1.80m**
  - For constructing fall-protection barriers on the bridge edge beam platform.
- **Railing holder NG**
  - Holder for hooking the edge protection into place. Installs with a double bolt on the vertical profile.
- **Pin D20 160 and Spring cotter 5mm**
  - Connector for the bridge edge beam platform.
- **System decking**
  - Pre-assembled decking for rapid assembly.

Bridge edge beam formwork

- **Stripping wedge NG inside formwork**
  - Wedge element for releasing the inside formwork.
- **Inside formwork holder NG**
  - Adjustable support for the inside formwork and possibility of combination with Stripping wedge NG.
- **Bridge edge beam support NG**
  - Beam for inclination and height adjustment of the bottom formwork.
- **Bridge edge beam clamp NG 1.00m**
  - Clamp for aligning the side formwork.
- **Handrail post XP 1.20m**
  - For constructing fall-protection barriers on the bridge edge beam formwork.
- **Pin D20 160 and Spring cotter 5mm**
  - Connector for the bridge edge beam formwork.

System dimensions

Configuration for standard parapet cross-sections

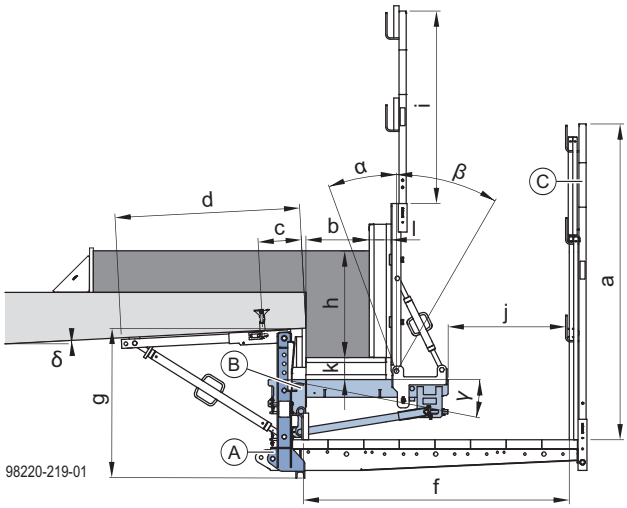


b ... parapet width: max. 50 cm
h ... parapet height: max. 88 cm

a ... 2000 mm
c ... 250 mm
d ... 1044 mm
f ... 1470 mm
g ... 1165 mm
i ... 1080 mm
j ... 510 mm
k ... 230 mm
l ... 120 mm
m ... max. 480mm
α ... 0° - 20°
β ... 0° - 30°
γ ... 0° - 10°
δ ... 0° - 25°

If the cantilever-arm length is short, distance from edge **c** can be reduced to 200 mm.

Configuration for small parapet cross-sections and maximised drive-through access height



b ... parapet width: max. 35 cm
h ... parapet height: max. 60 cm

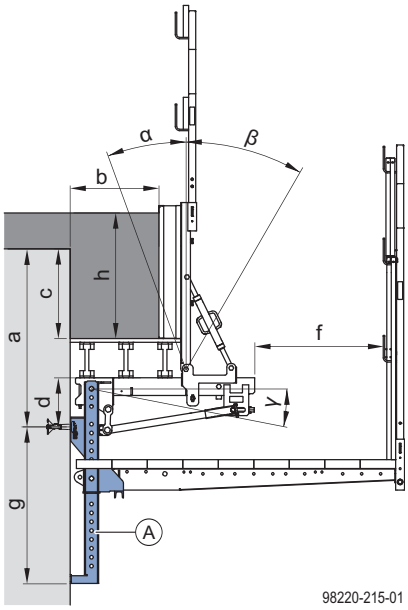
a ... 1774 mm
c ... 250 mm
d ... 1044 mm
f ... 1470 mm
g ... 840 mm
i ... 1080 mm
j ... 600 mm
k ... 120 mm
l ... 120 mm
α ... 0° - 20°
β ... 0° - 30°
γ ... 0° - 10°
δ ... 0° - 25°

A	Vertical profile NG 0.82m
B	Bridge edge beam support NG 1.01m
C	Handrail post XP 1.80m

Abutments

NOTICE

The position of the anchorage depends on the parapet coverage depth.



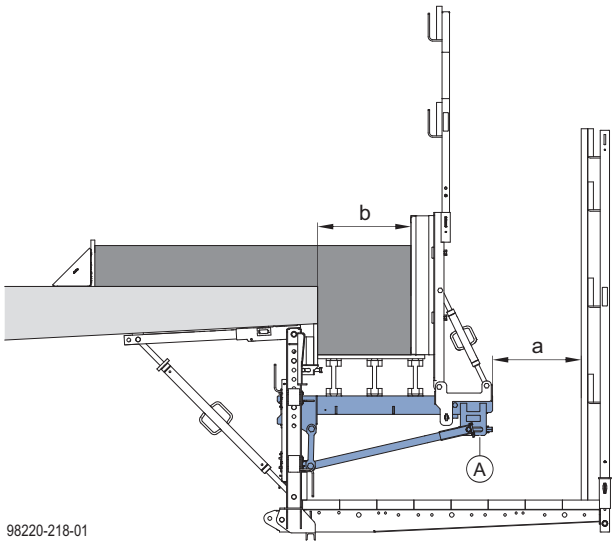
b ... parapet width: max. 50 cm
h ... parapet height: max. 88 cm

a ... 1010 mm (when parapet coverage depth c = 500 mm)
d ... 280 mm
f ... 570 mm with Bridge edge beam support NG 1.16m
f ... 720 mm with Bridge edge beam support NG 1.01m
g ... 885 mm
α ... 0° - 20°
β ... 0° - 30°
γ ... 0° - 10°

A Abutment profile NG 1.14m

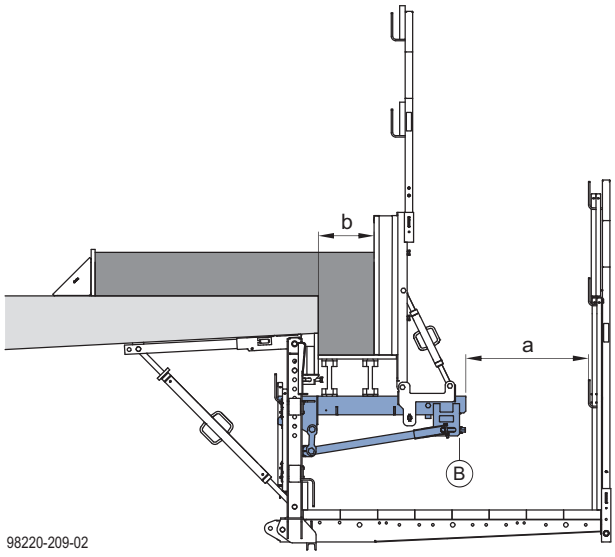
Adaptation to parapet cross-section, drive-through access height and the supporting structure

Adaptation to parapet cross-section



a ... 510 mm
b ... max. 500 mm

A Bridge edge beam support NG 1.16m



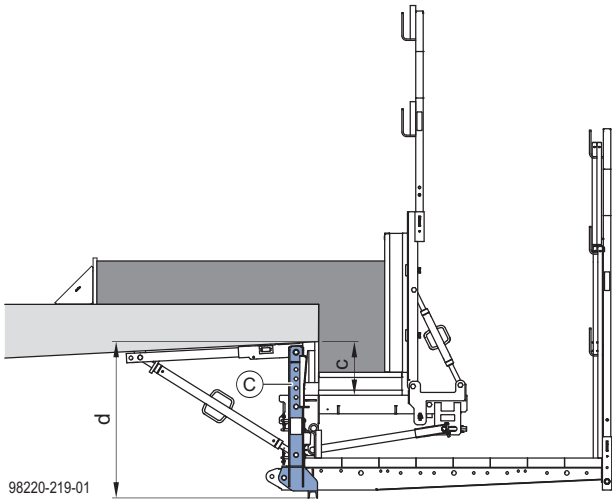
a ... 600 mm
b ... max. 350 mm

B Bridge edge beam support NG 1.01m

Adaptation to drive-through access height

NOTICE

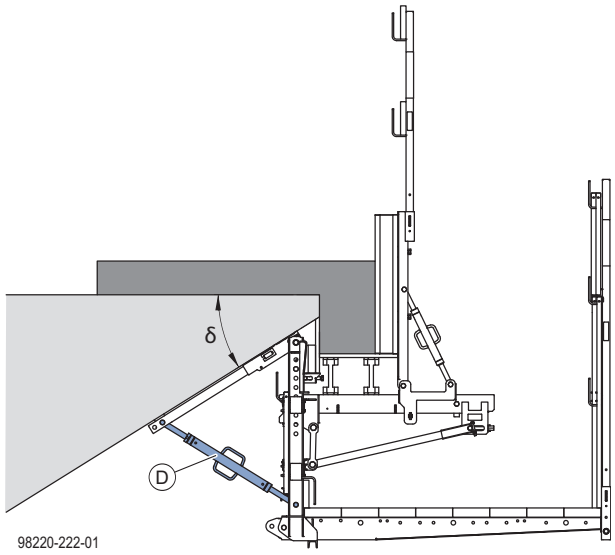
- Drive-through access height can be optimised with the Vertical profile NG 0.82m.
- Possible parapet height depends on the structure of the bottom formwork.



c ... 338.5 mm
d ... 840 mm

C Vertical profile NG 0.82m

Adaptation to large cantilever angles

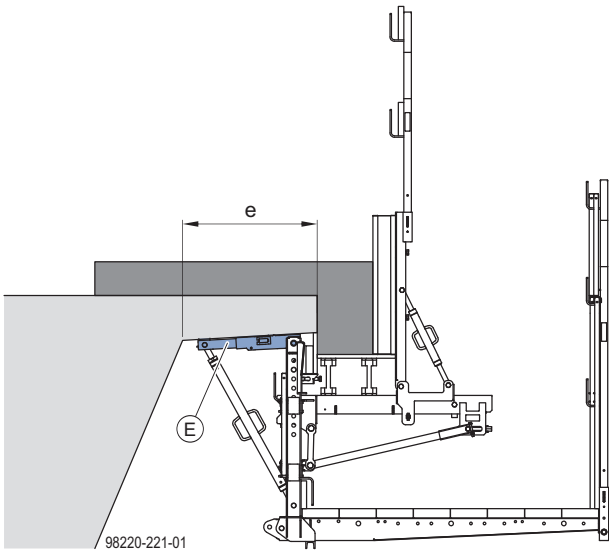


δ ... max. 30°

D Spindle strut NG 60/95cm

Adaptation to small cantilevers

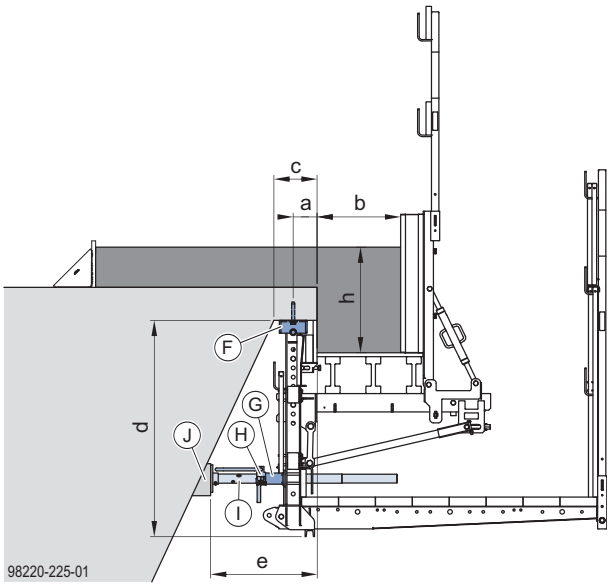
Cantilevers >600mm



e ... min. 600 mm

E	Suspension profile NG 0.55m

Cantilevers >200mm



b ... parapet width: max. 50 cm
h ... parapet height: max. 78 cm

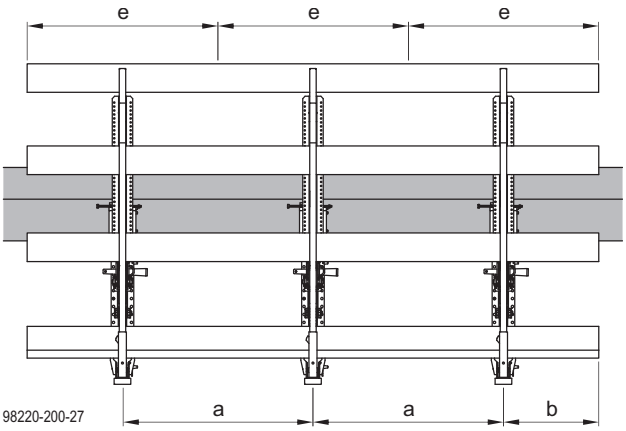
a ... min. 100 mm
c ... min. 200 mm
d ... 1175 mm
e ... 350 - 900 mm

F	Suspension profile NG 0.15m
G	Pressure piece NG
H	Split nut B
I	Heavy-duty screw jack 70
J	Timber filler

Structural design

NOTICE

- The permitted influence width **e** depends on the dimensions of the cantilevered parapet (**b** and **h**) and must be dimensioned on a project-specific basis.
- When longitudinal bridge slope is > 4%, project-specific additional measures (e.g. scaffold-tube bracing) must be implemented for the transfer of horizontal loads in the bridge longitudinal direction.



a ... bracket centre-to-centre spacing
b ... cantilever
e ... influence width

NOTICE

A fundamental distinction must be made between the bracket centre-to-centre spacing **(a)** and the influence width **(e)**:

- The permitted influence width of a bridge edge beam bracket is stated in the respective tables.

- Influence width **(e)** is approximately equal to bracket centre-to-centre spacing **(a)** when
  - they are evenly spaced,
  - platform decking is end-to-end, and
  - there are no cantilevering projections.

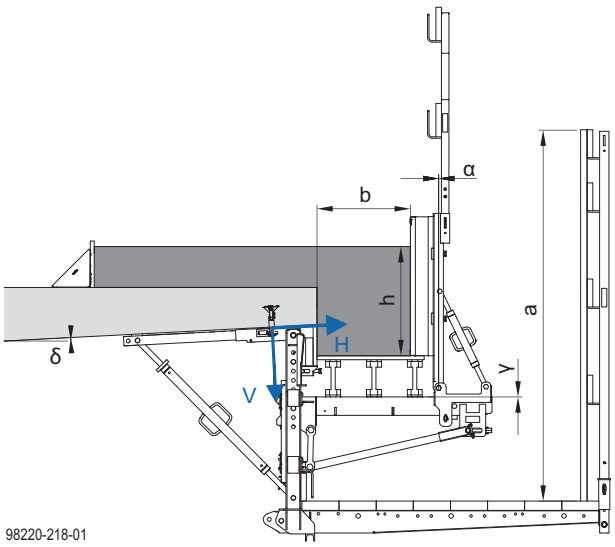
The following wind loads were taken into account in the dimensioning graphs:

- Max. permitted working wind 0.20 kN/m² (64 km/h).
- Storm wind: max. 0.60 kN/m² (108 km/h).

Separate statical verification is required for other wind loads.

Configuration for standard parapet cross-sections

Reaction forces



a ... 1.80 m or 2.0 m
b ... parapet width
h ... parapet height
α ... 0°
γ ... 0°
δ ... 3°, 10° or 20°

Max. imposed reaction forces:

- V_d
  - Longitudinal gradient 0%: 34.2 kN (V_k = 22.8 kN)
  - Longitudinal gradient 2%: 39.2 kN (V_k = 26.1 kN)
  - Longitudinal gradient 4%: 44.1 kN (V_k = 29.4 kN)
- H_d = 10.6 kN (H_k = 7.1 kN)

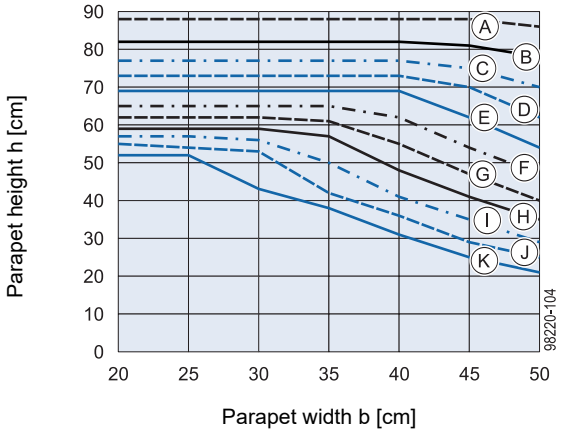
The structural engineer must provide proofs for the inward/onward transfer of the reaction forces into the structure.

Influence widths with railing height 1.80 m

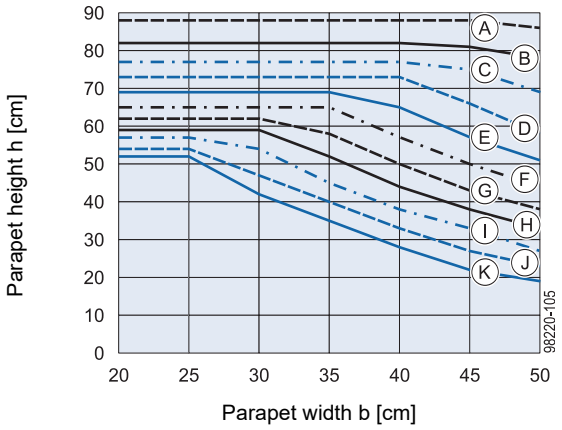
The graphs apply for the following boundary conditions:

- Standard parapet cross-sections when the dimensions are as shown.
- Railing height of the bridge edge beam platform: 1.80 m
- Permissible live load on the bridge edge beam platform:
  - Operations before pouring 2.0 kN/m²
  - From pouring onward 0.75 kN/m²
- Edge protection:
  - Protective grating XP or toeboards and guardrail boards

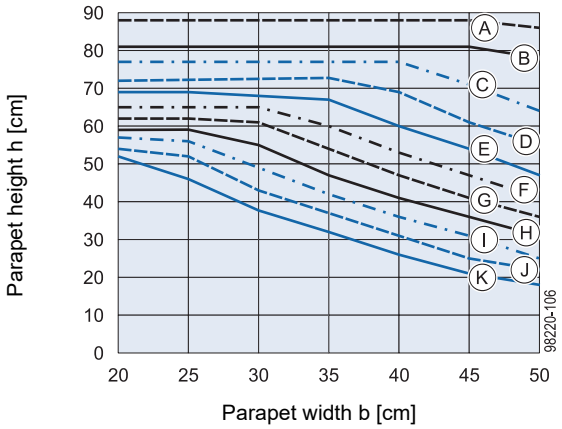
Influence widths with an inclination angle of the underside of the bridge supporting structure δ = 3°



Influence widths with an inclination angle of the underside of the bridge supporting structure δ = 10°



Influence widths with an inclination angle of the underside of the bridge supporting structure δ = 20°



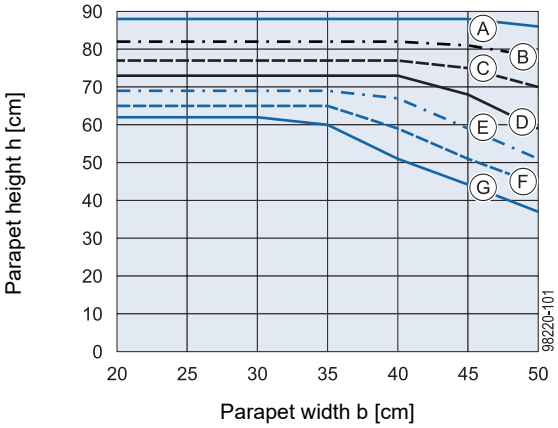
A	Influence e ... 0.6 m
B	Influence e ... 0.7 m
C	Influence e ... 0.8 m
D	Influence e ... 0.9 m
E	Influence e ... 1.0 m
F	Influence e ... 1.1 m
G	Influence e ... 1.2 m
H	Influence e ... 1.3 m
I	Influence e ... 1.4 m
J	Influence e ... 1.5 m
K	Influence e ... 1.6 m

Influence widths with full enclosure 2.0 m

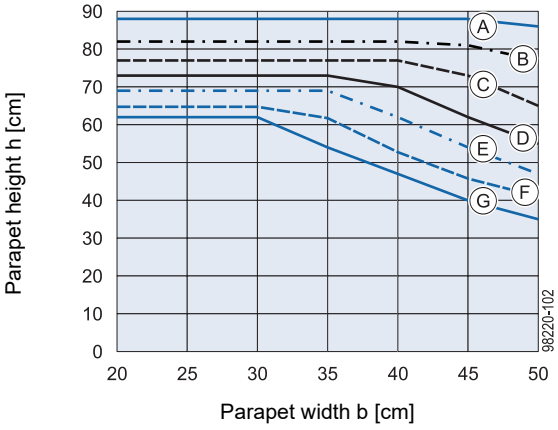
Graph applies for the following boundary conditions:

- Standard parapet cross-sections when the dimensions are as shown.
- Railing height of the bridge edge beam platform: 2.0 m
- Permissible live load on the bridge edge beam platform:
  - Operations before pouring 2.0 kN/m²
  - From pouring onward 0.75 kN/m²
- Edge protection:
  - Full enclosure

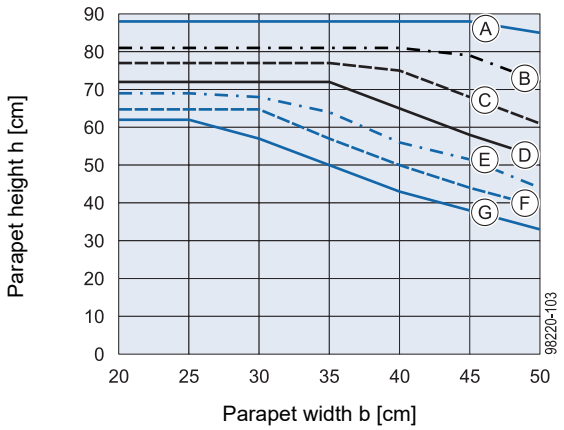
Influence widths with an inclination angle of the underside of the bridge supporting structure δ = 3°



Influence widths with an inclination angle of the underside of the bridge supporting structure δ = 10°



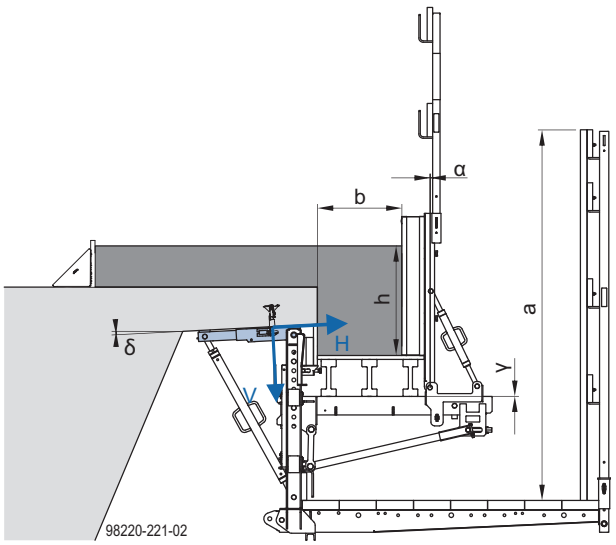
Influence widths with an inclination angle of the underside of the bridge supporting structure δ = 20°



A	Influence e ... 0.6 m
B	Influence e ... 0.7 m
C	Influence e ... 0.8 m
D	Influence e ... 0.9 m
E	Influence e ... 1.0 m
F	Influence e ... 1.1 m
G	Influence e ... 1.2 m

Configuration with Suspension profile NG 0.55m

Reaction forces



a ... 1.80 m or 2.0 m
b ... parapet width
h ... parapet height
α ... 0°
γ ... 0°
δ ... 3°, 10° or 20°

Max. imposed reaction forces:

- V_d
  - Longitudinal gradient 0%: 49.0 kN (V_k = 32.7 kN)
  - Longitudinal gradient 2%: 53.9 kN (V_k = 36.0 kN)
  - Longitudinal gradient 4%: 58.9 kN (V_k = 39.3 kN)
- H_d = 10.6 kN (H_k = 7.1 kN)

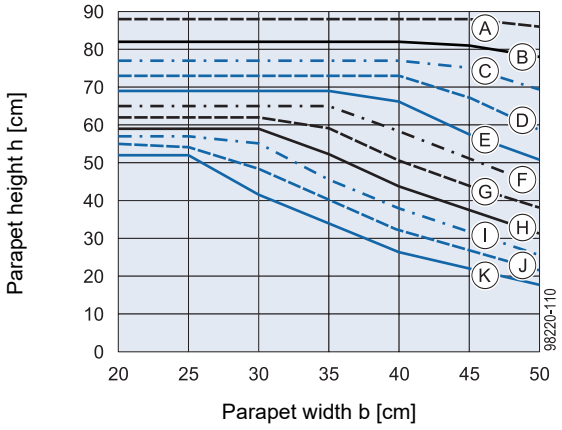
The structural engineer must provide proofs for the inward/onward transfer of the reaction forces into the structure.

Influence widths with railing height 1.80 m

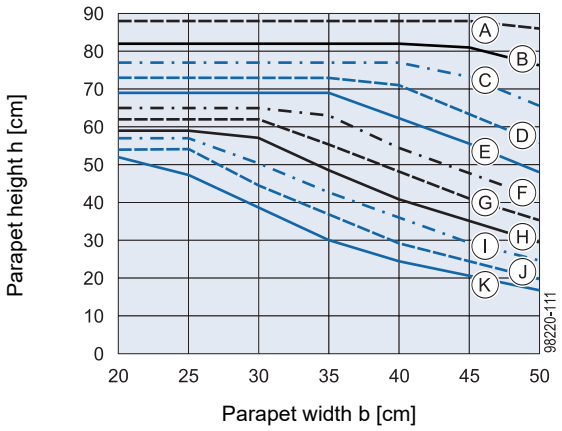
Graph applies for the following boundary conditions:

- Configuration with short suspension profile when the dimensions are as shown
- Railing height of the bridge edge beam platform: 1.80 m
- Permissible live load on the bridge edge beam platform:
  - Operations before pouring 2.0 kN/m²
  - From pouring onward 0.75 kN/m²
- Edge protection:
  - Protective grating XP or toeboards and guardrail boards

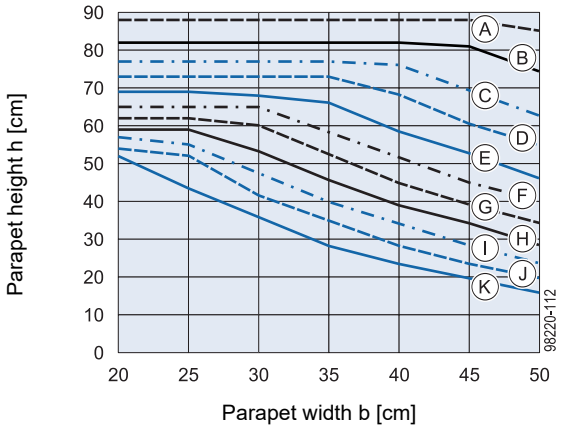
Influence widths with an inclination angle of the underside of the bridge supporting structure δ = 3°



Influence widths with an inclination angle of the underside of the bridge supporting structure δ = 10°



Influence widths with an inclination angle of the underside of the bridge supporting structure δ = 20°



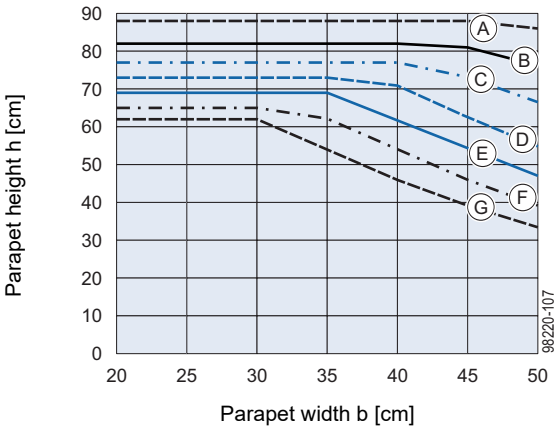
A	Influence e ... 0.6 m
B	Influence e ... 0.7 m
C	Influence e ... 0.8 m
D	Influence e ... 0.9 m
E	Influence e ... 1.0 m
F	Influence e ... 1.1 m
G	Influence e ... 1.2 m
H	Influence e ... 1.3 m
I	Influence e ... 1.4 m
J	Influence e ... 1.5 m
K	Influence e ... 1.6 m

Influence widths with full enclosure 2.0 m

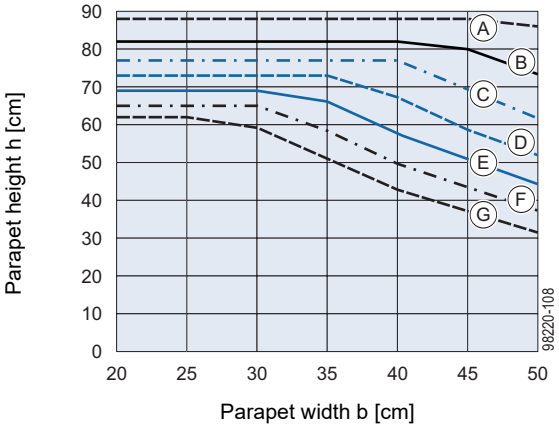
Graph applies for the following boundary conditions:

- Configuration with short suspension profile when the dimensions are as shown
- Railing height of the bridge edge beam platform: 2.0 m
- Permissible live load on the bridge edge beam platform:
  - Operations before pouring 2.0 kN/m²
  - From pouring onward 0.75 kN/m²
- Edge protection:
  - Full enclosure

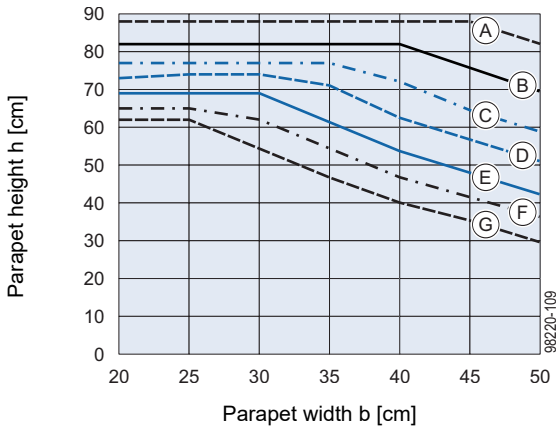
Influence widths with an inclination angle of the underside of the bridge supporting structure δ = 3°



Influence widths with an inclination angle of the underside of the bridge supporting structure δ = 10°

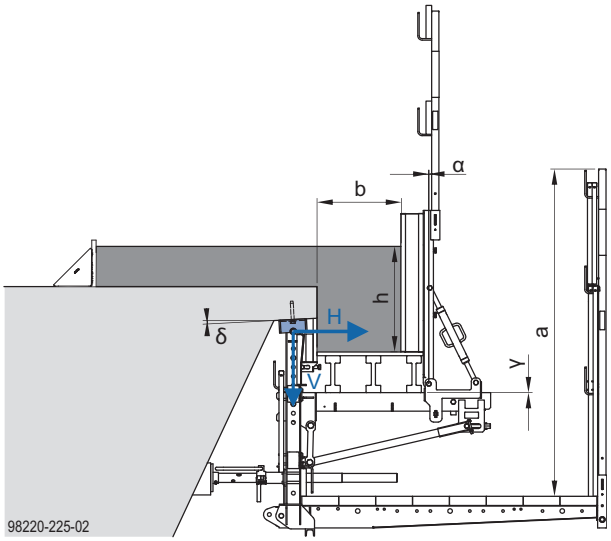


Influence widths with an inclination angle of the underside of the bridge supporting structure δ = 20°

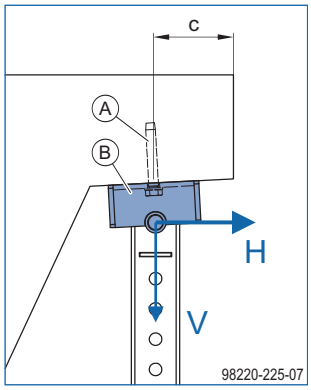


A	Influence e ... 0.6 m
B	Influence e ... 0.7 m
C	Influence e ... 0.8 m
D	Influence e ... 0.9 m
E	Influence e ... 1.0 m
F	Influence e ... 1.1 m
G	Influence e ... 1.2 m

Configuration with Suspension profile 0.15m



a ... 1.80 m or 2.0 m
b ... parapet width
h ... parapet height
α ... 0°
γ ... 0°
δ ... 3° - 20°



c ... min. 100 mm

A Mechanical anchor
B Suspension profile 0.15m

Max. exerted bolt load:
- V_d = 16.5 kN
- H_d = 23.5 kN

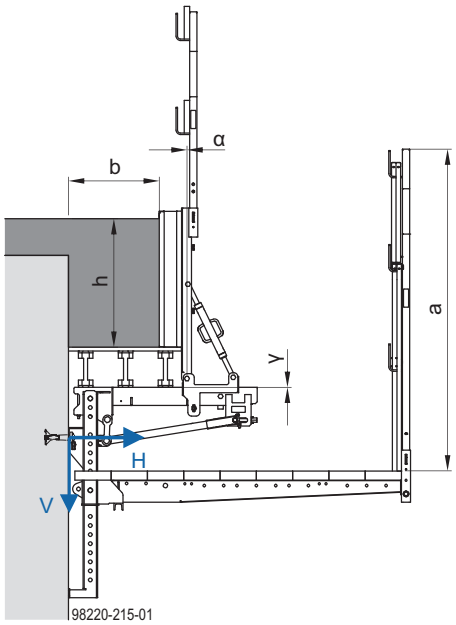
The manufacturer of the anchorage has to provide proof of calculation for the suspension point. (e.g. HILTI HUS4 H(F) 16x165 mm)
The structural engineer must provide proofs for the inward/onward transfer of the reaction forces into the structure.

NOTICE

As a general rule, a separate statics test is necessary for the load case 'storm winds (without live load)'!

Securing options:
- Bracing
- Ballast weight

Abutments



a ... 1.80 m or 2.0 m
b ... parapet width
h ... parapet height
α ... 0°
γ ... 0°

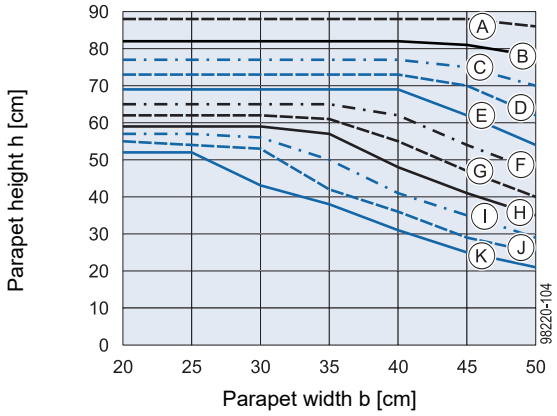
Max. imposed reaction forces:
V_d = 18 kN (V_k = 12 kN)
H_d = 33 kN (H_k = 22 kN)
The structural engineer must provide proofs for the inward/onward transfer of the reaction forces into the structure.

Influence widths with railing height 1.80 m

Graph applies for the following boundary conditions:

- Configuration for abutment when the dimensions are as shown
- Railing height of the bridge edge beam platform: 1.80 m
- Permissible live load on the bridge edge beam platform:
  - Operations before pouring 2.0 kN/m²
  - From pouring onward 0.75 kN/m²
- Edge protection:
  - Protective grating XP or toeboards and guardrail boards

Influence widths



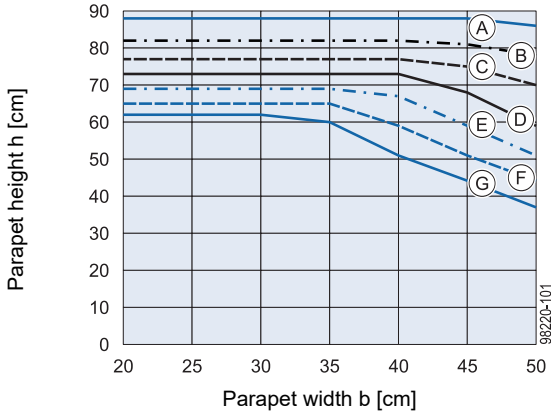
A	Influence e ... 0.6 m
B	Influence e ... 0.7 m
C	Influence e ... 0.8 m
D	Influence e ... 0.9 m
E	Influence e ... 1.0 m
F	Influence e ... 1.1 m
G	Influence e ... 1.2 m
H	Influence e ... 1.3 m
I	Influence e ... 1.4 m
J	Influence e ... 1.5 m
K	Influence e ... 1.6 m

Influence widths with full enclosure 2.0 m

Graph applies for the following boundary conditions:

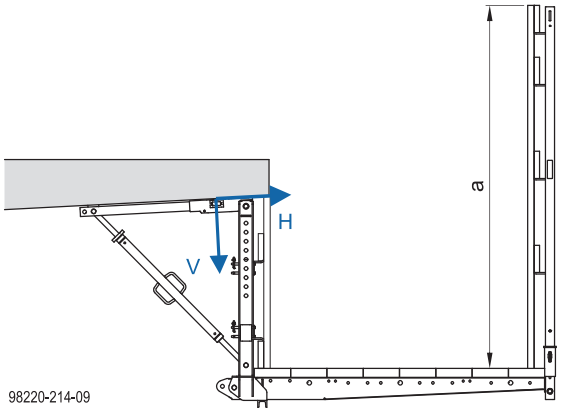
- Configuration for abutment when the dimensions are as shown
- Railing height of the bridge edge beam platform: 2.0 m
- Permissible live load on the bridge edge beam platform:
  - Operations before pouring 2.0 kN/m²
  - From pouring onward 0.75 kN/m²
- Edge protection:
  - Full enclosure

Influence widths



A	Influence e ... 0.6 m
B	Influence e ... 0.7 m
C	Influence e ... 0.8 m
D	Influence e ... 0.9 m
E	Influence e ... 1.0 m
F	Influence e ... 1.1 m
G	Influence e ... 1.2 m

Working platform



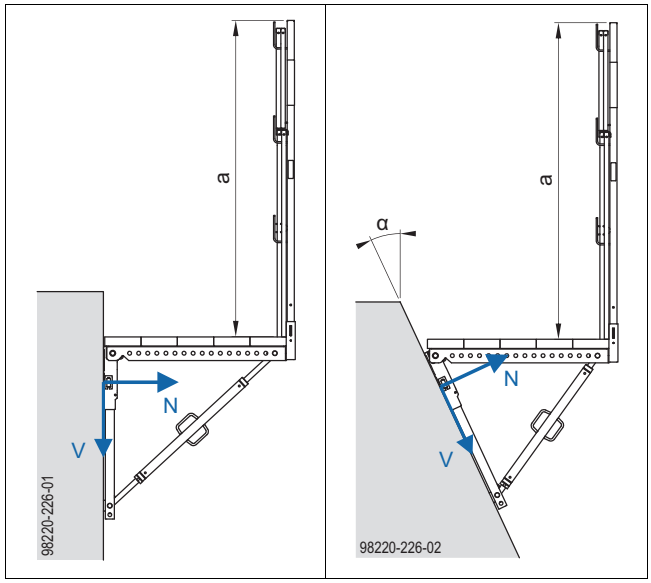
a ... 2.0 m

Type of edge protection	Load class	Distributed load [kN/m²]	e ... influence [m]	V_k ... vertical force [kN] Longitudinal bridge slope 0%	2%	4%	H_k ... horizontal force [kN]
Full enclosure	1	0.75	1.25	9.6	11.0	12.4	1.9
	2	1.50	1.25	11.9	13.9	15.9	1.9
	3	2.00	1.25	14.1	16.6	19.0	1.9
	4	3.00	0.77	17.7	20.0	22.2	1.2
	[1] Live load 3.0 kN/m²	3.00	1.13	17.1	20.1	23.1	1.7
Guardrail boards	1	0.75	2.25	14.0	16.3	18.4	1.6
	2	1.50	1.85	16.9	19.7	22.4	1.3
	3	2.00	1.55	17.3	20.2	23.1	1.1
	4	3.00	0.80	18.3	20.6	22.9	0.5
	[1] Live load 3.0 kN/m²	3.00	1.18	17.8	20.9	24.0	0.9

[1] Distributed load corresponding to load class 4 without taking into account concentrated loads or partial-area loads in accordance with EN 12811-1

The structural engineer must provide proofs for the inward/onward transfer of the reaction forces into the structure.

Working platform with platform profile NG



a ... max. 2.0 m
α ... 0° - 20°

Load class	Distributed load [kN/m²]	e ... influence [m]	V_k ... prevailing tensile force [kN]	N_k ... prevailing shear force [kN]
2	1.50	2.35	7.4	15.1
3	2.00		9.1	15.1
4	3.00		19.4	16.1

The structural engineer must provide proofs for the inward/onward transfer of the reaction forces into the structure.

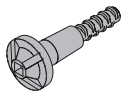
Anchoring on the structure

Suspension point with Bridge edge beam anchor

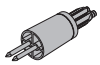
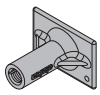
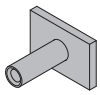
NOTICE

When constructing the bridge supporting structure, incorporate the suspension points at the required positions and spacings. Separate statical verification testing is required for other anchoring versions.

Reusable form-tie component

Screw-in cone 15.0


Consumable form-tie components

Nailing cone 15.0	Bridge edge beam anchor 15.0 or Bridge edge beam anchor 15.0 galv.	Bridge edge beam anchor 15.0 stainless
		

Comply with '**Approval n° Z-21.6-1982**' for planning and structural design of the form-tie point!

Follow the directions in the 'Bridge edge beam anchor 15.0' User Information booklet.

Dimensioning the suspension point

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

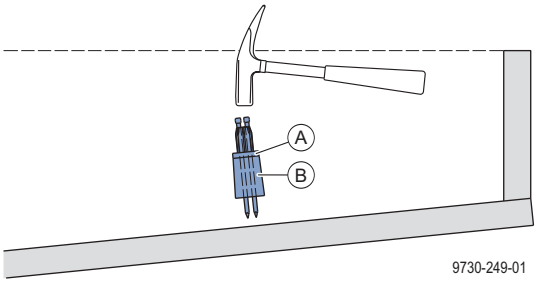
- load actually occurring
- reinforcement / extra reinforcement steel
- distance from edge

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

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

Fitting the bridge edge beam anchor

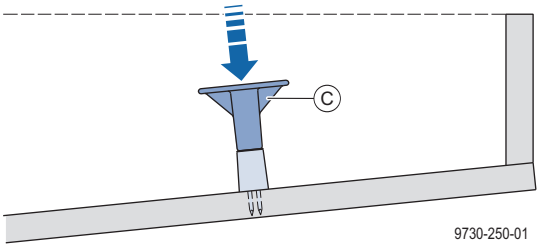
➤ Nail a nailing cone to the form-ply (position as shown in shop drawing / assembly drawing).



A Sealing ring
B Nailing cone 15.0

Make sure that the sealing ring is fitted correctly!

➤ Push the bridge edge beam anchor onto the nailing cone.



C Bridge edge beam anchor 15.0

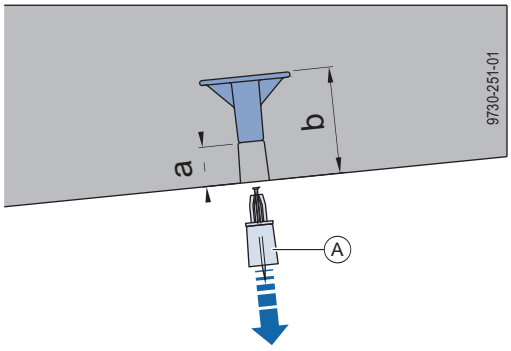
➤ Tie the bridge edge beam anchor tightly to the reinforcements with binding wire.
This prevents it from working loose during pouring and vibration.

NOTICE

If statically required – place extra reinforcement steel.

After formwork has been struck

➤ Remove the nailing cone from the anchoring point.

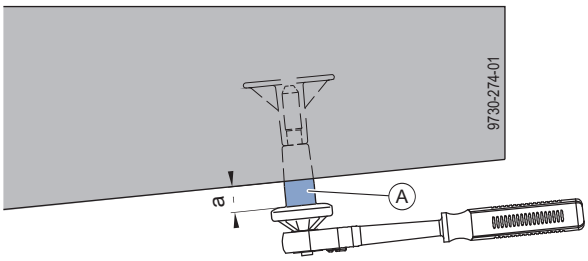


a ... concrete cover 4.0 cm
b ... placement depth 11.5 cm

A Nailing cone 15.0

Quick-attachment facility using Screw-in cone 15.0

➤ Screw in a Screw-in cone 15.0.



a ... 23mm to 25mm

A Screw-in cone 15.0

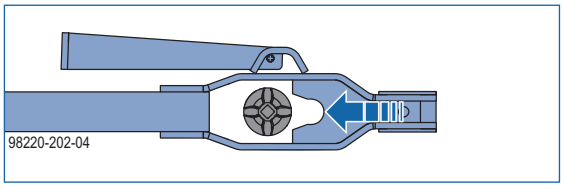
Tools needed:

- Reversible ratchet 1/2"
- Extension 11cm 1/2"

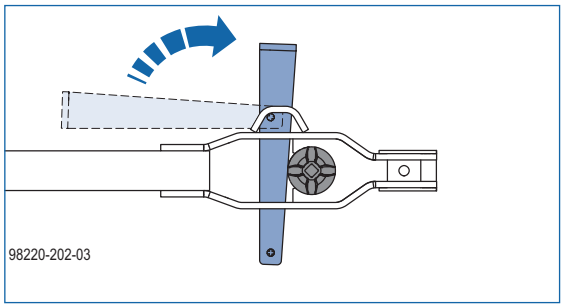
Do not tighten the screw-in cone. Gap **a** allows the suspension profile to be pushed into position.

Installing suspension profile (view from below)

➤ Place the suspension profile onto the cone head and push it into the suspension opening.

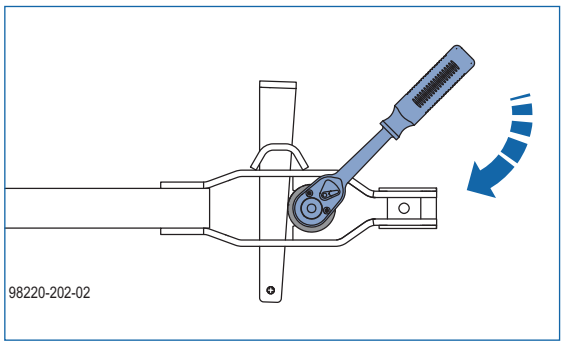


➤ Push the wedge in by hand.

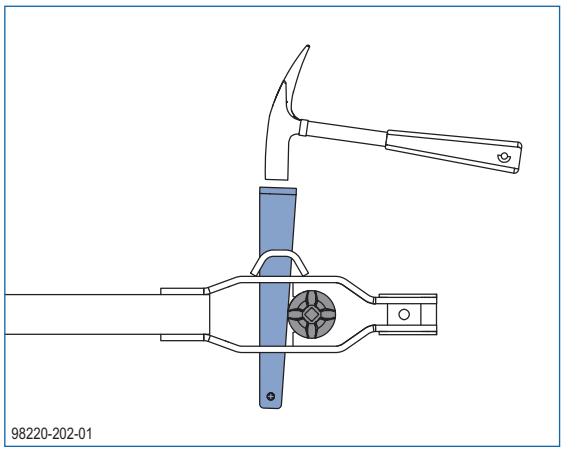


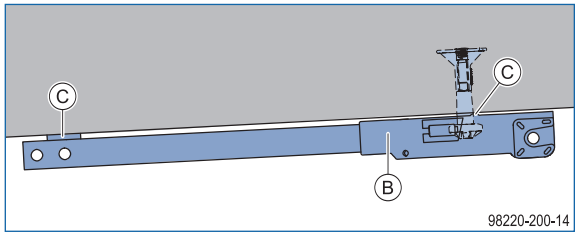
➤ Align the suspension profile at right angles to the outside edge.

➤ Tighten the Screw-in cone 15.0.



➤ Hammer in the wedge (one blow of the hammer is sufficient).





B Suspension profile NG 0.95m

C Pressure points, suspension profile

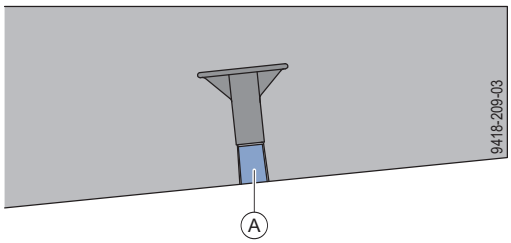
The pressure points of the suspension profile must act against the concrete.

Sealing the suspension point

Permanent sealing of suspension points

All suspension points that will no longer be required must be permanently sealed.

➤ Glue the concrete cone into the hole of the suspension point.



A Concrete cone D26/24 38mm

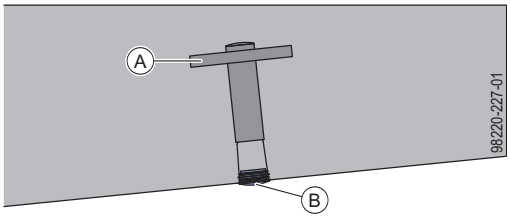
The concrete cone is glued into place with standard concrete adhesive.

Sealing of suspension points for later use

Bridge edge beam anchor 15.0 stainless

If the suspension point is to be available again for later use, Bridge edge beam anchor 15.0 stainless should preferably be used.

➤ Push the hole plug into the hole of the suspension point.



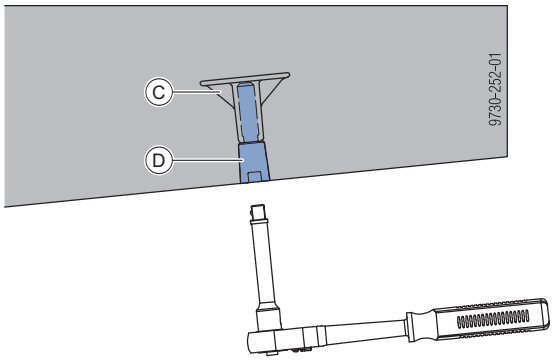
A Bridge edge beam anchor 15.0 stainless

B Hole plug 29mm

Bridge edge beam anchor 15.0 or Bridge edge beam anchor 15.0 galv.

Where an ungalvanised 'standard' Bridge edge beam anchor 15.0 has been used, you can give the suspension point lasting (electrochemical) protection against corrosion by screwing a Zinc plug 15.0 into the anchor after the formwork has been removed.

➤ Screw the zinc plug fully into the hole of the suspension point.



C Bridge edge beam anchor 15.0 or Bridge edge beam anchor 15.0 galv.

D Zinc plug 15.0

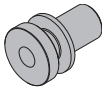
Tools needed:

- Reversible ratchet 1/2"
- Extension 11cm 1/2"

Retrofitted suspension points

Bridge edge beam formwork NG is also ideal for use in bridge renovation. However, for this application, ready-prepared form-tie points will rarely be found.

Retrofitted suspension points with collar-mounts are required for engaging the bridge edge beam brackets.

Collar-mount 21	Collar-mount 21/84	Collar-mount 25
		
For thread outside diameter 16-20 mm	For thread outside diameter 16-20 mm	For thread outside diameter 21-24 mm

Options for making a safe retrofitted suspension point:

- Chemical anchor
- Chemical-mechanical anchor
- Heavy-duty anchor
- Self-undercutting anchor
- Rock anchor spreader unit 15.0

Follow the manufacturer's fitting instructions!

Max. imposed reaction forces, see the section headed 'Structural design'.

The structural engineer must provide proofs for the inward/onward transfer of the reaction forces into the structure.

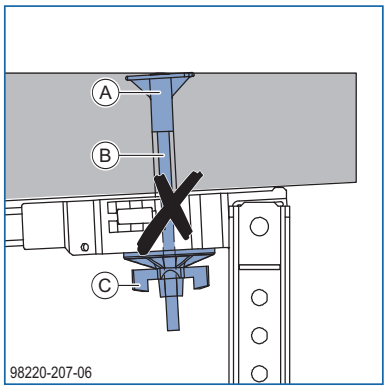
For more information, please contact your Doka technician.

WARNING

Suspension point not constructed in accordance with correct procedure!

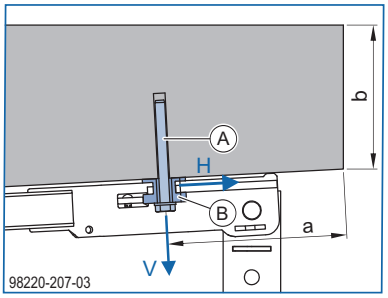
Reduced load-bearing capacity and failure of the suspension point.

➤ Suspension points that rely on friction (e.g. anchorage with bridge edge beam anchor, tie rod and super plate) are not permitted.



A Bridge edge beam anchor 15.0
B Tie rod 15.0
C Super plate 15.0

Example with chemical-mechanical anchor



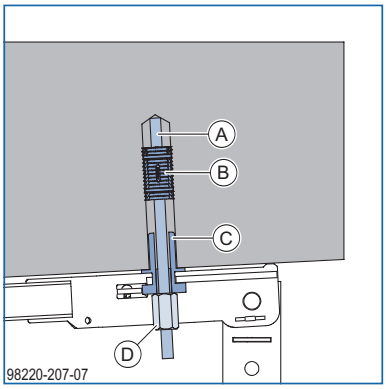
A Chemical-mechanical anchor
B Collar-mount 21

The manufacturer of the anchorage has to provide proof of calculation for the suspension point. (e.g. HILTI HUS4 H(F) 16 x 165 mm)

It is essential to provide the manufacturer with the following information for this purpose:

- concrete strength
- a ... distance from edge
- b ... building-element thickness
- V_d ... design value of the anchor tensile load (γ_F = 1.5)
- H_d ... design value of the shear force (γ_F = 1.5)

Example with Rock anchor spreader unit 15.0



A Tie rod 15.0
B Rock anchor spreader unit 15.0
C Collar-mount 21/84
D Hexagon nut 15.0

Follow the directions in the 'Rock anchor spreader unit 15.0' Fitting Instructions!

Comply with ‘Approval Z-21.6-1850’!

Assembly

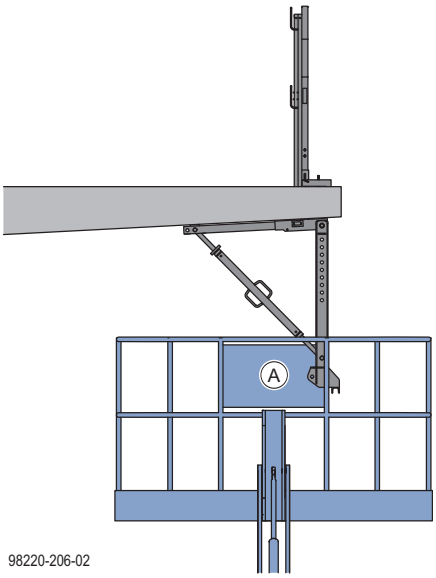
Assembling the bridge edge beam platform

Preconditions for use:

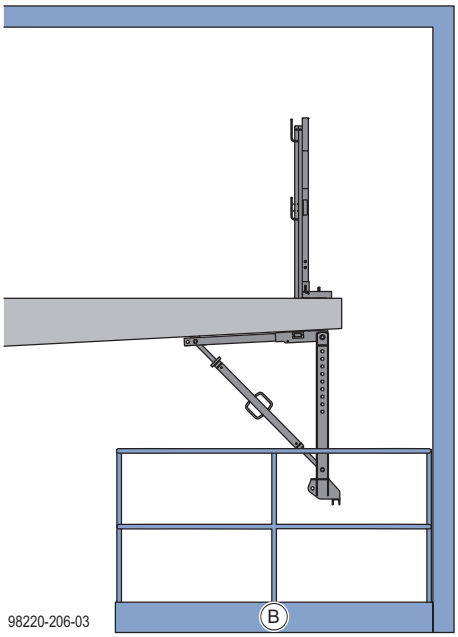
The suspension points must be pre-fitted into the supporting structure at the correct intervals (see the section headed 'Anchoring on the structure').

NOTICE

- Provide safe workplaces for mounting the bridge edge beam platform (e.g. mobile work platform, assembly carriage).
- All equipment used must be officially approved for carrying personnel!



A Mobile work platform



B Assembly carriage

The modular design of the Bridge edge beam formwork NG system means that many different combinations are possible.

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

➤ In such cases, discuss the assembly sequence with your Doka technician.

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

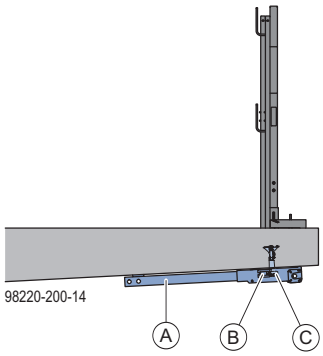
Note:

Deck-boards and guardrail boards must, as a minimum, comply with strength grade C24 to EN 338.

Observe all national regulations applying to deck and guardrail boards.

Installing the suspension profile

➤ Install suspension profile (see the section headed 'Quick-attachment facility using Screw-in cone 15.0').



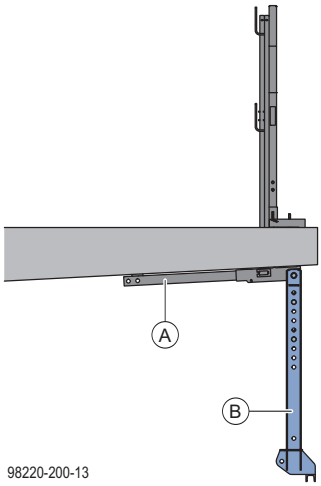
A Suspension profile NG 0.95m

B Safety wedge

C Screw-in cone 15.0

Mounting the vertical profile

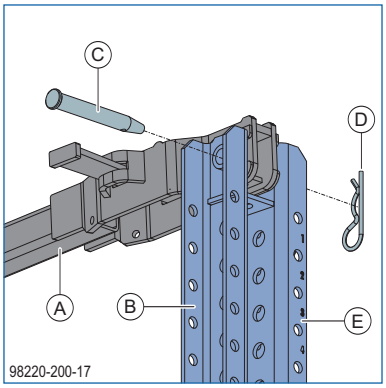
➤ Engage the vertical profile in the suspension profile in the parked position.



A Suspension profile NG 0.95m
B Vertical profile NG 1.13m

Make sure that the vertical profile is the right way round! (numbering facing out)

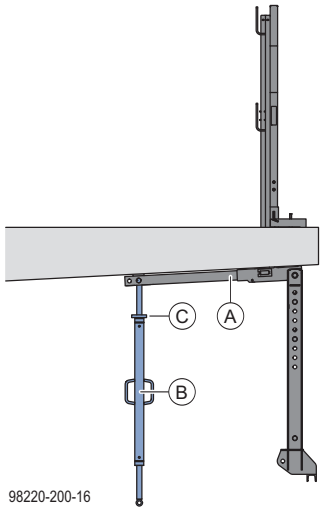
➤ Insert and secure the pin.



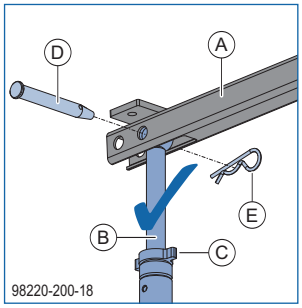
A Suspension profile NG 0.95m
B Vertical profile NG 1.13m
C Pin D20 160
D Spring cotter 5mm
E Numbering

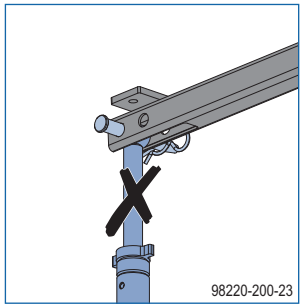
Mounting the Spindle struts

➤ Pin the spindle strut to the suspension profile and secure the pin.



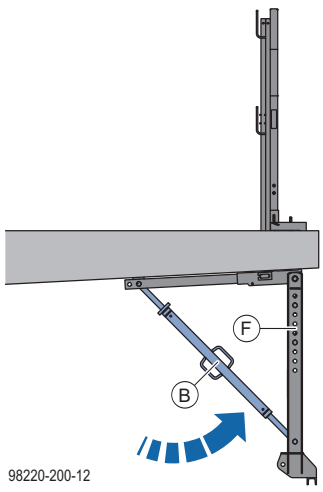
- Make sure that the spindle strut is pinned into position right way round.
- The check nut must be on the topside of the spindle strut.





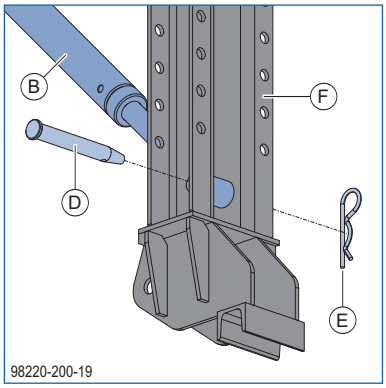
A Suspension profile NG 0.95m
B Spindle strut NG 90/125cm
C Check nut
D Pin D20 160
E Spring cotter 5mm

➤ Swing the end of the spindle strut over to the vertical profile.



B Spindle strut NG 90/125cm
F Vertical profile NG 1.13m

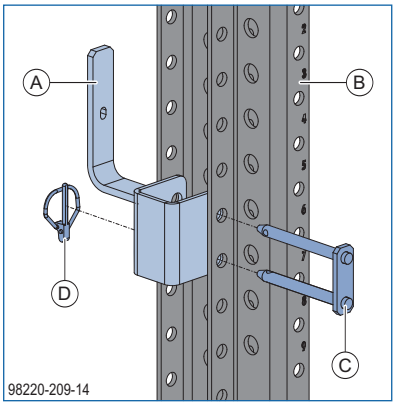
➤ Pin the spindle strut to the vertical profile and secure the pin.
➤ Use the spindle strut to plumb the vertical profile.
➤ Tighten the check nut on the spindle strut.



B Spindle strut NG 90/125cm
D Pin D20 160
E Spring cotter 5mm
F Vertical profile NG 1.13m

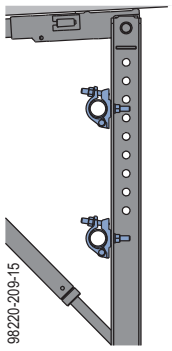
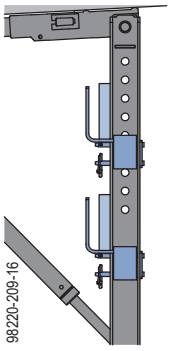
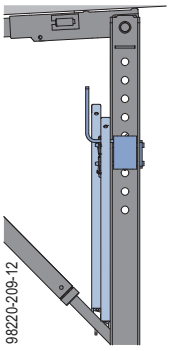
Installing fall protection

➤ Pin the railing holder to the vertical profile with a double bolt.
➤ Secure the double bolt with a linch pin.



A Railing holder NG
B Vertical profile NG 1.13m
C Double bolt NG D12
D Linch pin 6x42 St galv.

➤ Install fall protection.

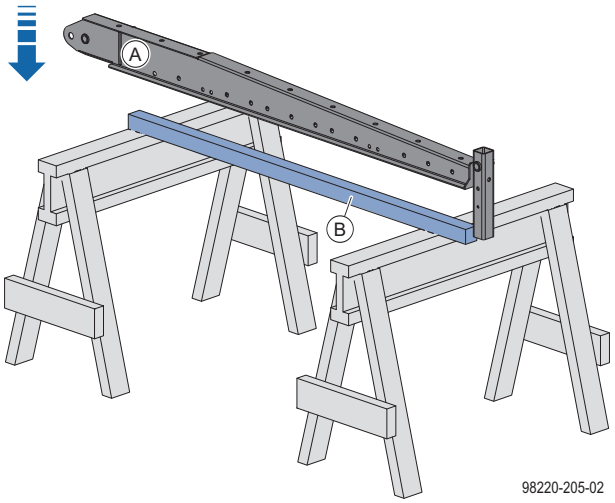
Scaffold tube	Guardrail board	Protective grating XP
		

Installing platform beams

Pre-installing squared timber in platform beam

➤ Lay the squared timber on supports.

➤ Turn the platform beam upside down and seat it on the squared timber.

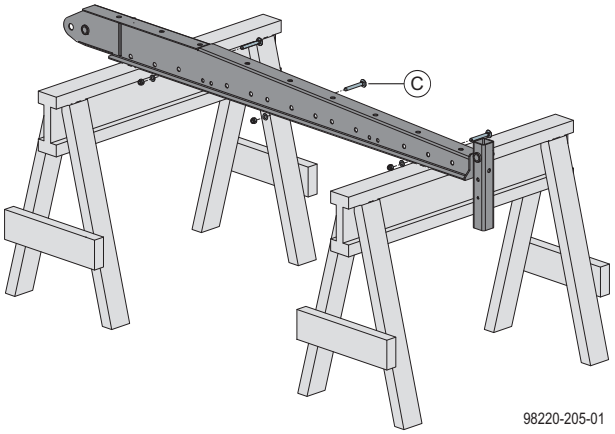


A Platform beam NG 1.60m

B Squared timber 150/5/6 cm (site-provided)

➤ Drill holes for threaded fasteners through the squared timber.

➤ Bolt the squared timber into the platform beam.

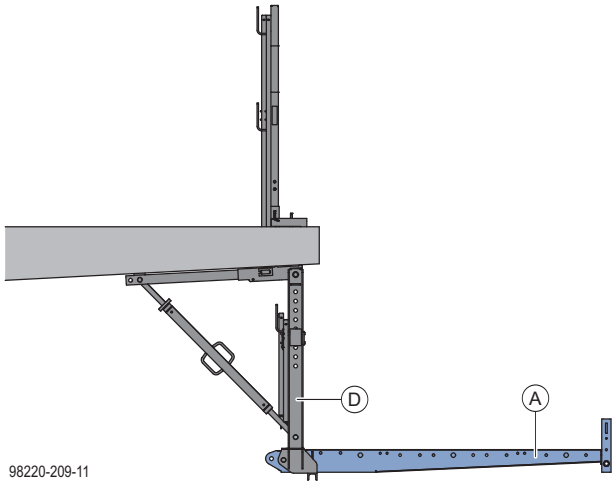


C Bolting items

Bolting items required for each platform beam

- 3 x hexagon bolt ISO 4014 M10x80 8.8
- 3 x hexagon nut ISO 7040 M10 self-locking, 8 galv.
- 6 x washer ISO 7089 10

➤ Position the platform beam in the vertical profile.



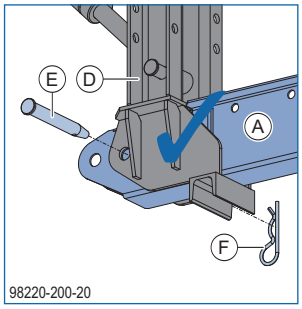
A Platform beam NG 1.60m

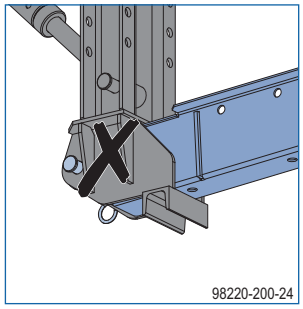
D Vertical profile NG 1.13m

➤ Pin the platform beam to the vertical profile and secure the pin.

NOTICE

Make sure that the platform beam is pinned into position right way round!





A Platform beam NG 1.60m

D Vertical profile NG 1.13m

E Pin D20 160

F Spring cotter 5mm

Attaching the platform decking

➤ Lay the deck-boards on the platform beam and screw them to the squared timber.

Threaded-fastener material required for each deck-board and platform beam

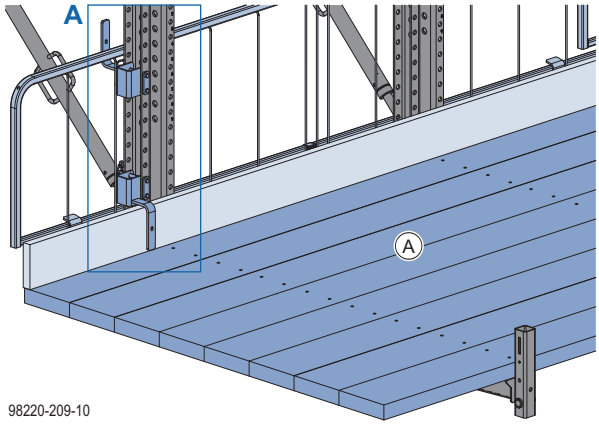
- 2 universal countersunk screws Torx TG 6x90 UNI

➤ Lift the toeboard into position.

➤ Pin the railing holder to the vertical profile with a double bolt.

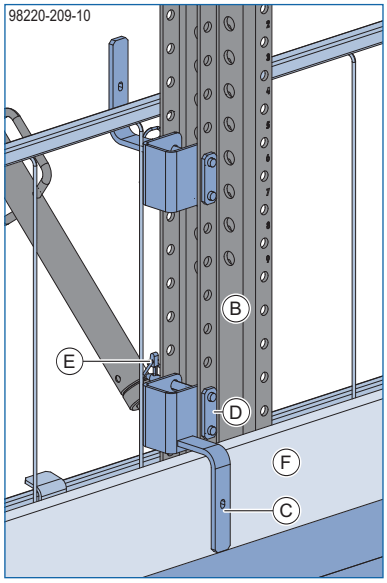
➤ Secure the double bolt with a linch pin.

➤ Secure the toeboard to the railing holder by nailing.



A Deck-board 20/5 cm

Close-up A



B Vertical profile NG 1.13m

C Railing holder NG

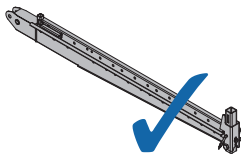
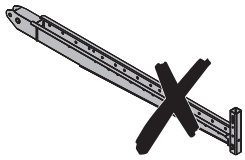
D Double bolt NG D12

E Linch pin 6x42 St galv.

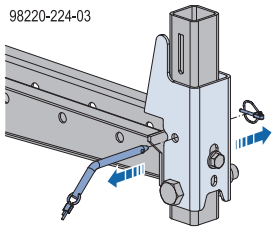
F Toeboard

Installing system decking

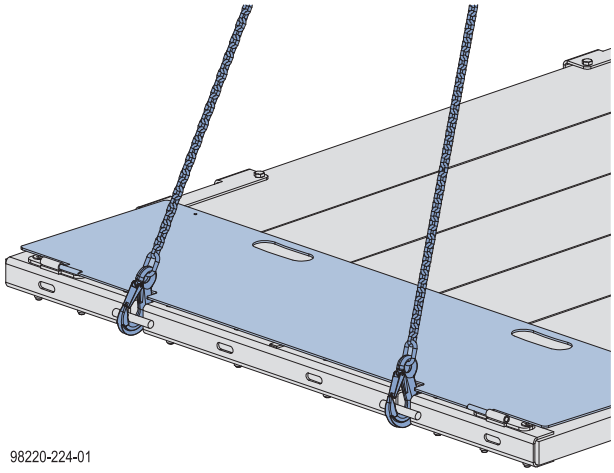
System decking can be used as an alternative to the platform decking. The Platform beam NG 1.60m top is required for use of the system decking.

Platform beam NG 1.60m top	Platform beam NG 1.60m
	

➤ Remove the safety pin of the locking flap on the platform beam.



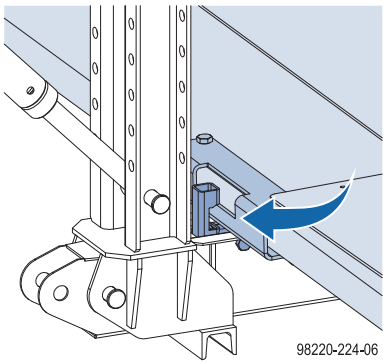
➤ Attach the lifting chains to the system decking.



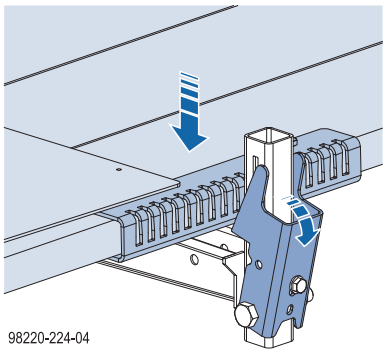
Leave the transition deck on the system decking.

Shorten the lifting chains on the comb sheet side by approx. 10-15 cm. This makes it easier to install the system decking in the platform beam.

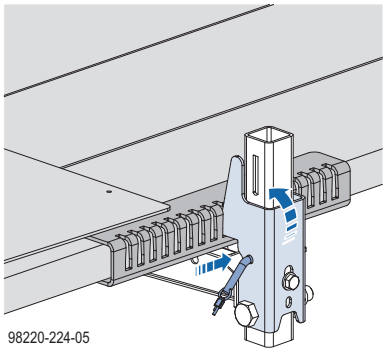
➤ Lift in the system decking and push into the securing hook.



➤ Lower further until the locking flap engages in the comb sheet.

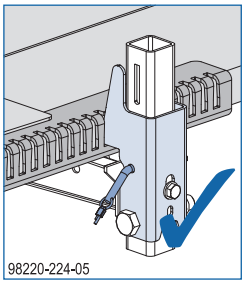


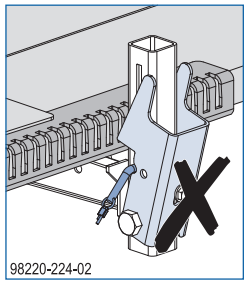
➤ Insert the safety pin and secure it with a linch pin.



Sight-check

Pay attention to correct installation of the locking mechanism!

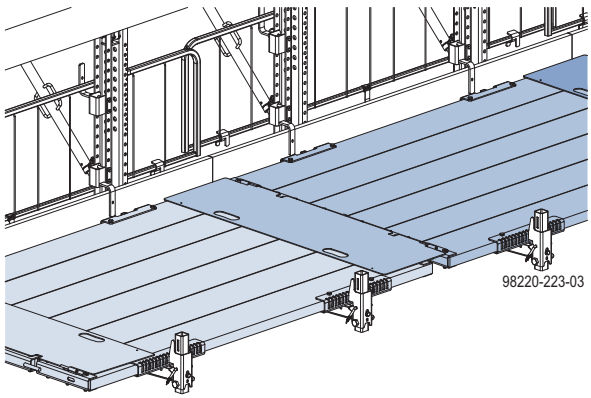




➤ Detach the lifting chains from the system decking.

➤ Swing the transition deck onto the previous system decking.

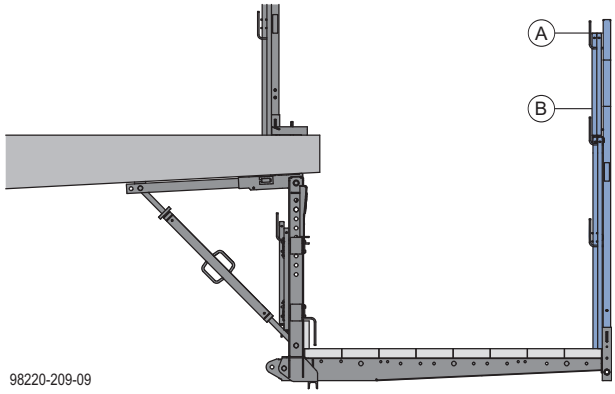
Install further system deckings in the same way.



Installing edge protection railing

➤ Push the handrail post into the platform beam until the locking mechanism engages ('Easy-Click' function).

➤ Lift the Protective grating XP into position and install.



A	Handrail post XP 1.80m
B	Protective grating XP

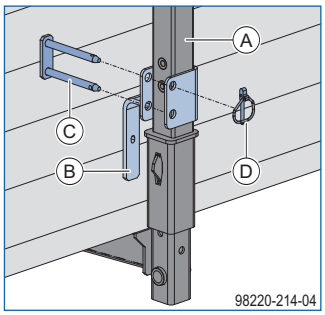
Follow the directions in the 'Xsafe edge protection XP' User Information booklet.

Using guard rail boards

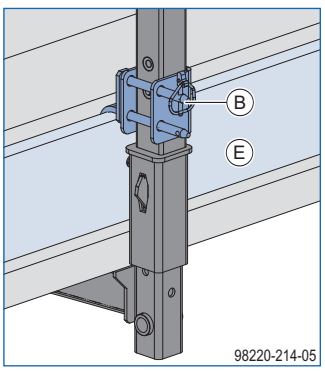
➤ Lift the guardrail boards into position and install.

➤ Pin the railing holder to the handrail post with a double bolt.

➤ Secure the double bolt with a linch pin.



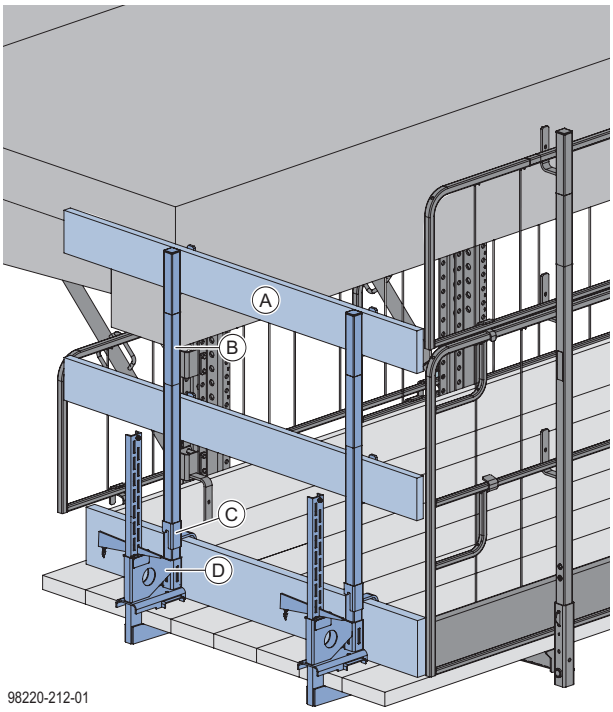
➤ Hold the toeboard in position and secure it to the railing holder by nailing.



A	Handrail post NG 2.00m
C	Railing holder NG
D	Double bolt NG D12
E	Linch pin 6x42 St galv.
F	Toeboard

Sideguards on exposed platform-ends

used in combination with Handrail post XP 1.20m



A	Guardrail board min. 15/3 cm (site-provided)
B	Handrail post XP 1.20m
C	Toeboard holder XP 1.20m
D	Railing clamp XP 40cm

Installation:

➤ Fasten the clamping part of the railing clamp to the deck-boards of the bridge edge beam formwork using the wedge.

➤ Working from below, push the toeboard holder on to the handrail post. The bracket of the toeboard holder must be facing down and toward the platform.

➤ Push the handrail post into the adapter until the locking mechanism engages ('Easy-Click' function).

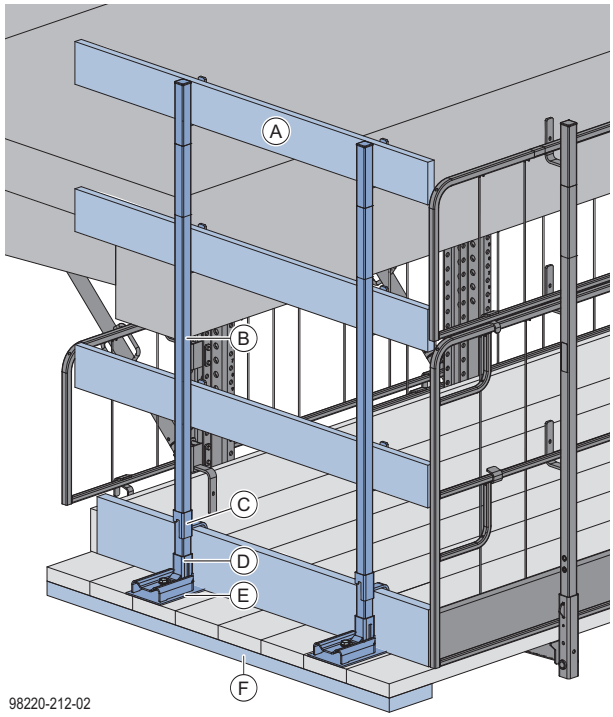
➤ Place guardrail boards on the railing shackles and secure them with nails (diam. 5 mm).

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

used in combination with Handrail post XP 1.80m

NOTICE

- Screw a distribution plank to the underside of the deck-boards to distribute the loads.
- Position a steel plate between platform decking and Handrail-post shoe XP.



A	Guardrail board min. 15/3 cm (site-provided)
B	Handrail post XP 1.80m
C	Toeboard holder XP 1.20m
D	Handrail-post shoe XP
E	Steel plate 16/21/0.3 cm
F	Distribution plank

➤ Bolt the handrail-post shoe to the deck-boards of the bridge edge beam formwork.

Threaded-fastener material required for each handrail-post shoe

- 1 hexagon bolt ISO 4014 M16x160 8.8 galv. (length depends on thickness of decking)
- 1 washer ISO 7094 16 (on wood side)
- 1 washer ISO 7089 16 (on steel side)
- 1 hexagon nut ISO 7040 M16 self-locking

➤ Working from below, push the toeboard holder on to the handrail post. The bracket of the toeboard holder must be facing down and toward the platform.

➤ Push the handrail post into the adapter until the locking mechanism engages ('Easy-Click' function).

➤ Place guardrail boards on the railing shackles and secure them with nails (diam. 5 mm).

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

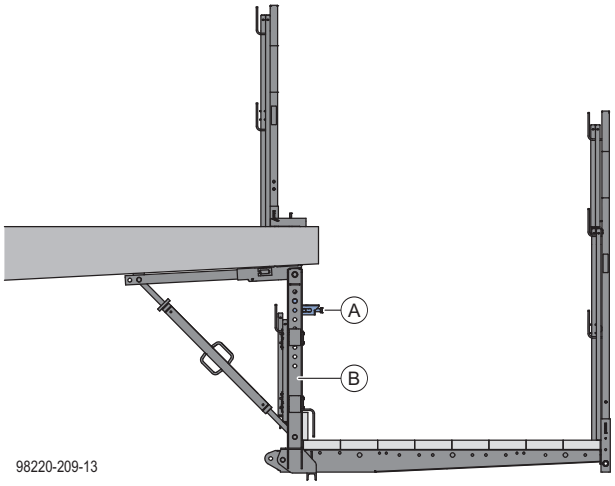
Installing the formwork

Precondition for installing the formwork

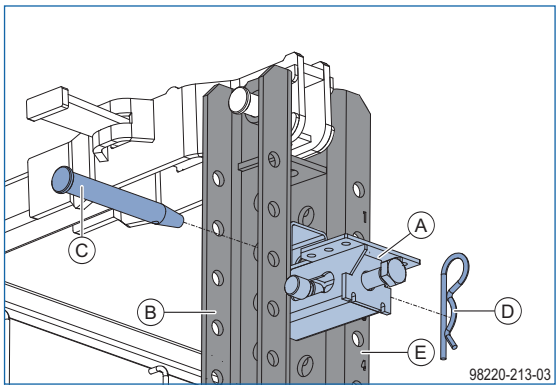
WARNING
Falling hazard!
➤ Do not step on to the bridge edge beam platform before the railing of the bridge edge beam platform has been fully installed.

Installing the inside formwork holder

➤ Pin the inside formwork holder to the vertical profile and secure the pin.



Note the numbered pegging holes for height adjustment in the vertical profile (see the section headed 'Mounting the Bridge edge beam supports').



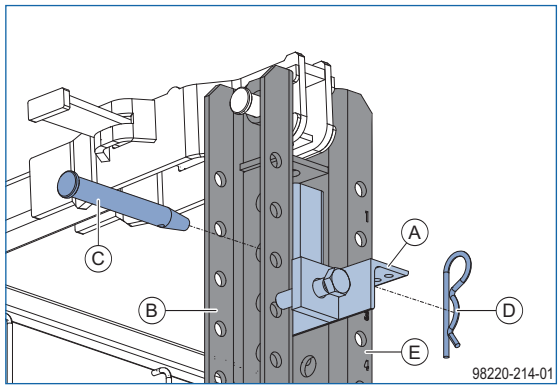
A	Inside formwork holder NG
B	Vertical profile NG 1.13m
C	Pin D20 160
D	Spring cotter 5mm
E	Numbering

Inside formwork holder NG eco

Inside formwork holder NG eco can be installed as an alternative to the Inside formwork holder NG.

NOTICE
➤ Inside formwork holder NG eco is not compatible with the stripping wedge.

➤ Pin the inside formwork holder into the vertical profile.

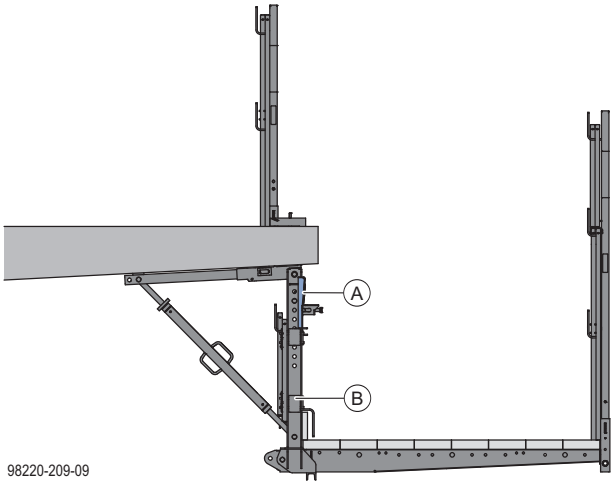


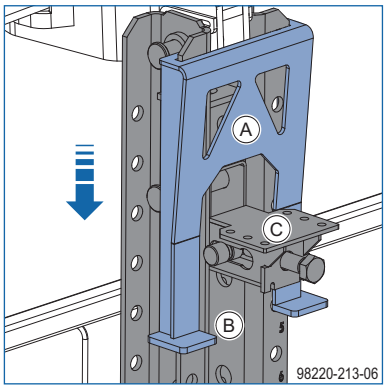
A	Inside formwork holder NG eco
B	Vertical profile NG 1.13m
C	Pin D20 160
D	Spring cotter 5mm
E	Numbering

Note the numbered pegging holes for height adjustment on the vertical profile (see the section headed “Mounting the Bridge edge beam supports”).

Installing the stripping wedge

➤ Push the stripping wedge on to the vertical profile.

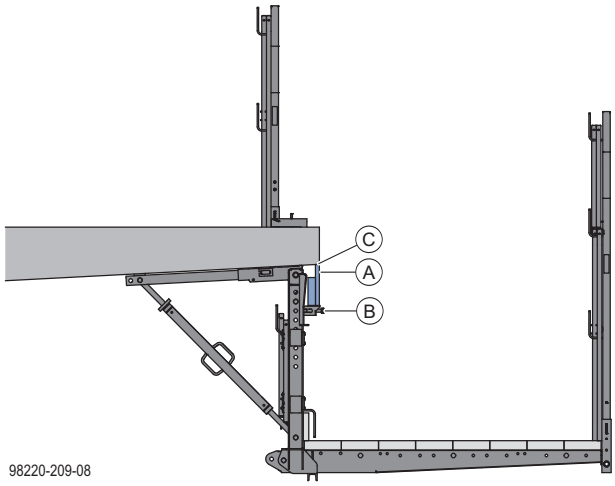


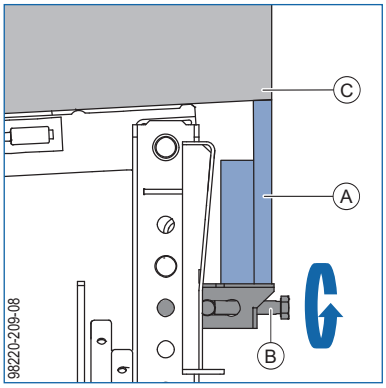


A Stripping wedge NG inside formwork
B Vertical profile NG 1.13m
C Inside formwork holder NG

Installing the inside formwork

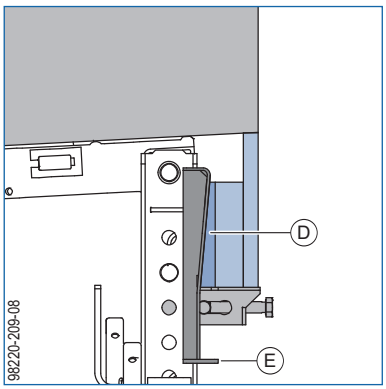
➤ Tighten the hexagon bolt on the inside formwork holder to press the formwork sheet against the cantilever underside.





A Formwork sheet and squared timber
B Inside formwork holder NG
C Cantilever underside

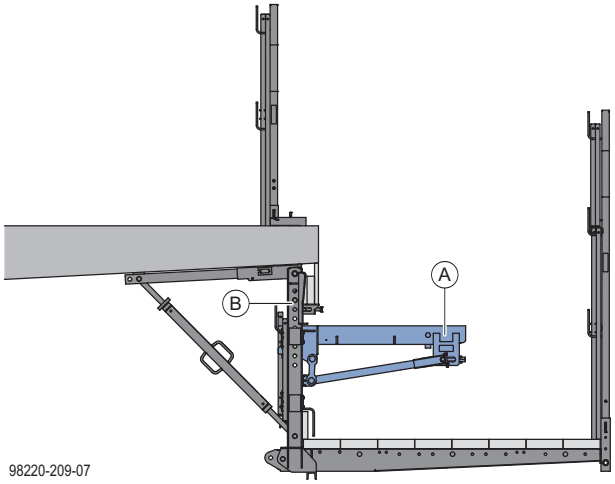
➤ Pack the formwork sheet and squared timber against the stripping wedge with site-provided wooden wedge.

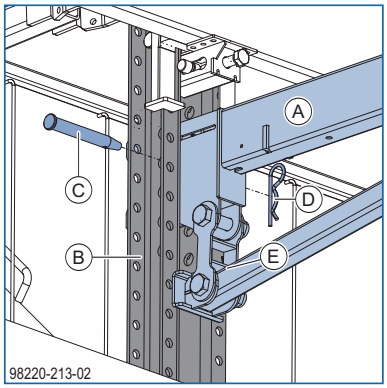


D Wooden wedge (site-provided)
E Stripping wedge NG inside formwork

Mounting the Bridge edge beam supports

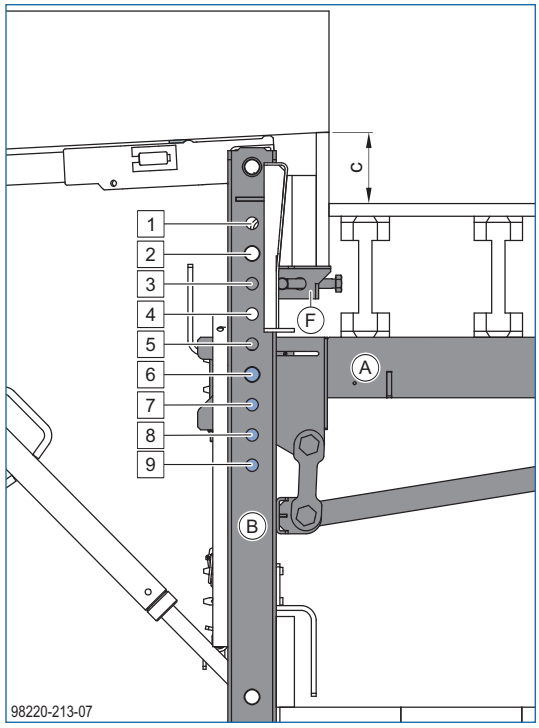
➤ Pin the bridge edge beam support to the vertical profile and secure the pin.





A Bridge edge beam support NG 1.01m
B Vertical profile NG 1.13m
C Pin D20 160
D Spring cotter 5mm
E Numbering

Numbered pegging holes in the vertical profile make it easier to position the bridge edge beam support and the inside formwork holder.



A Bridge edge beam support NG 1.01m
B Vertical profile NG 1.13m
F Inside formwork holder NG

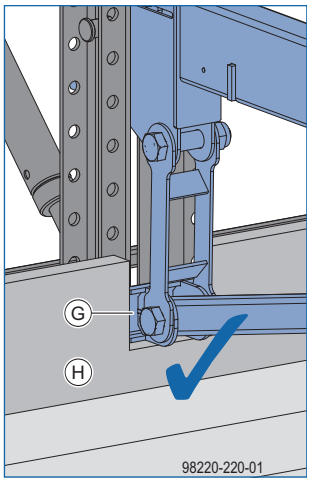
Example: Bottom formwork with Doka beam H20

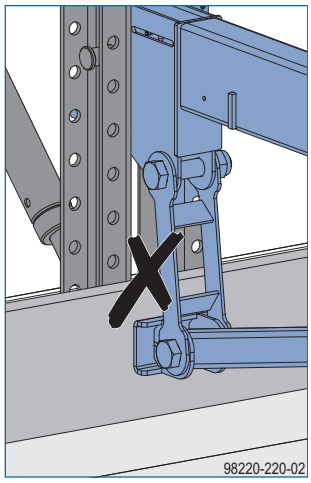
c	Fixing position, vertical profile
10 cm	6
15 cm	7
20 cm	8
25 cm	9

NOTICE

The pressure point of the stop shoe must be in full-face contact with the vertical profile.

➤ If necessary, make a cut-out in the toeboard.



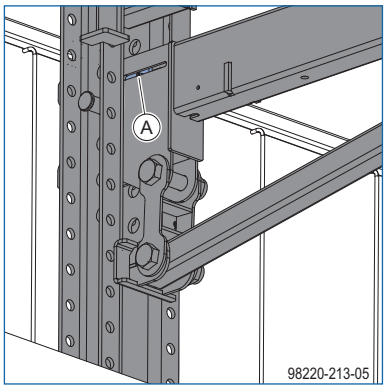


G Stop shoe
H Toeboard

Installing the bottom formwork

➤ Set the height adjuster of the bridge edge beam support to the initial position (middle position).

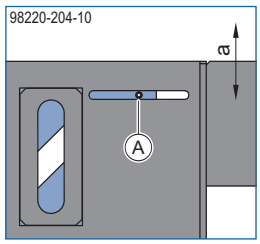
The height setting is indicated by a locking pin in the bridge edge beam support.



A Locking pin

NOTICE

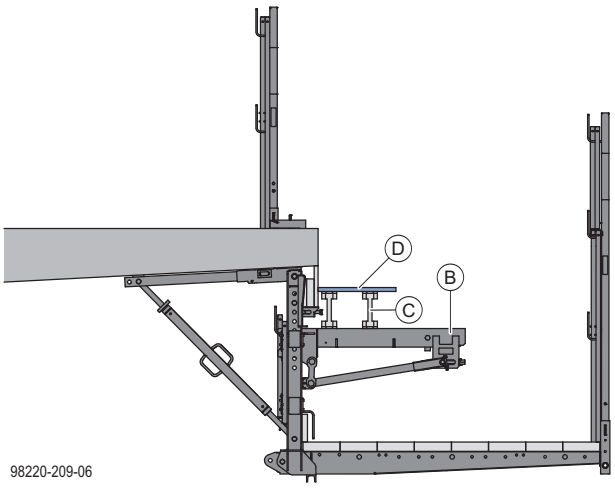
In the initial position the locking pin is in the middle position.
Maximum adjustment range a: ± 35 mm



A Locking pin in middle position

➤ Position the Doka beams on the bridge edge beam supports.

➤ Lay the formwork sheet on the Doka beams and nail it to the beams.

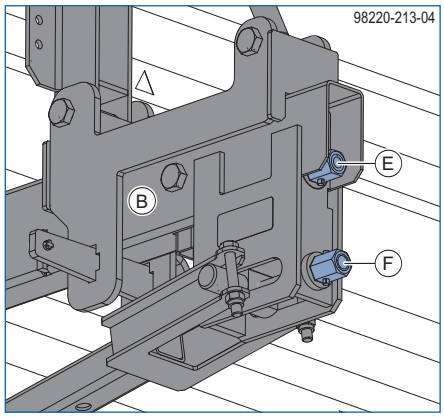


B Bridge edge beam support NG 1.01m

C Doka beam H20

D Formwork sheet

➤ Adjust the height and the angle of inclination of the bridge edge beam support.



B Bridge edge beam support NG 1.01m

E Height adjustment

F Inclination adjustment

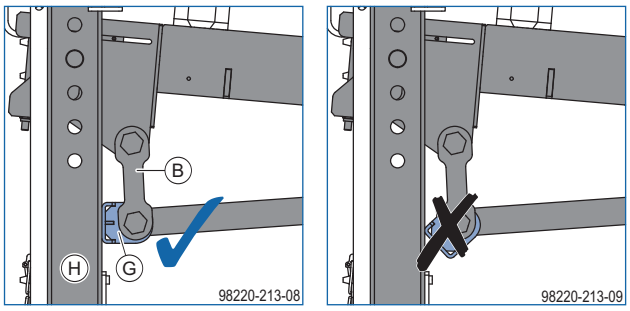
Tools needed:

- Reversible ratchet 1/2"
- Box nut 24 1/2"
- Fork wrench 24
- Impact screw driver, max. torque 450 Nm

NOTICE

Adjust the bridge edge beam supports to the project-specific camber.

The pressure point of the stop shoe must be in full-face contact with the vertical profile.



B Bridge edge beam support NG 1.01m

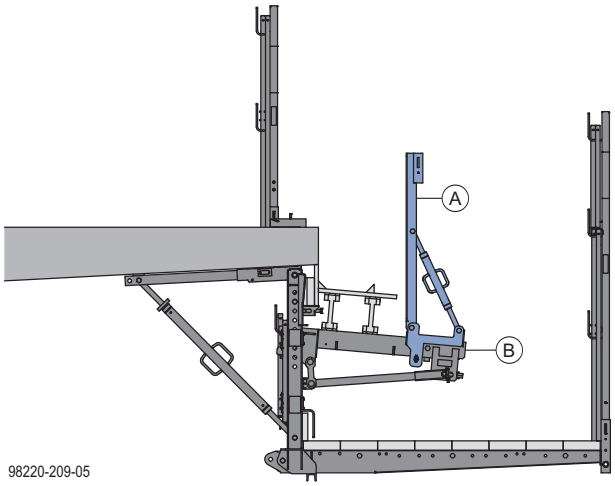
G Stop shoe

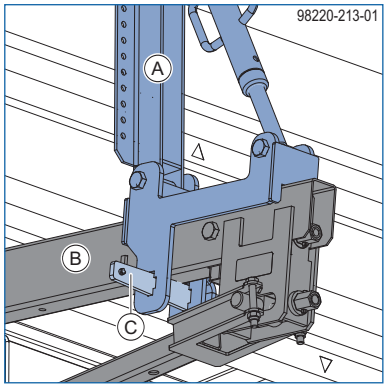
H Vertical profile NG 1.13m

➤ Install triangular ledges on the formwork sheet.

Mounting the Bridge edge beam clamp

➤ Loosen the wedge of the bridge edge beam clamp.
➤ Stand the bridge edge beam clamp on the bridge edge beam support.
➤ Slightly tighten the wedge.

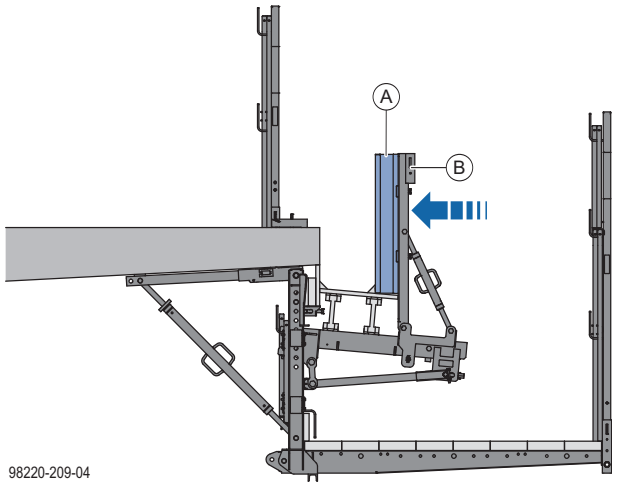




A Bridge edge beam clamp NG 1.00m
B Bridge edge beam support NG 1.01m
C Wedge

Mounting the side formwork

➤ Lift the side formwork into position.
➤ Plumb and align the side formwork with the bridge edge beam clamp.

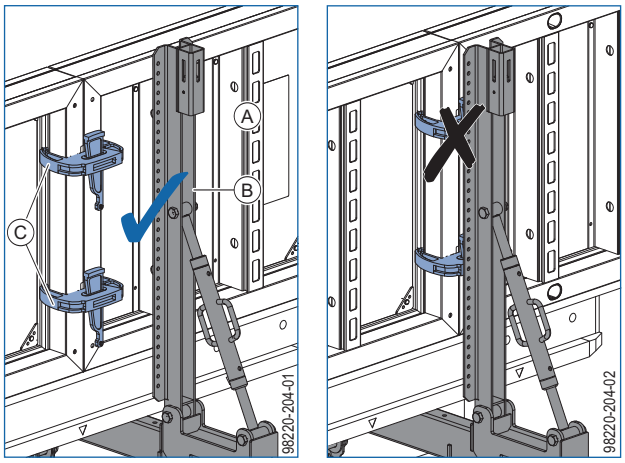


A Side formwork
B Bridge edge beam clamp NG 1.00m

➤ Knock in the wedge of the bridge edge beam clamp until the hammer rebounds.

NOTICE
➤ The positioning of the connectors for the formwork panels has to be taken into consideration at the planning stage.

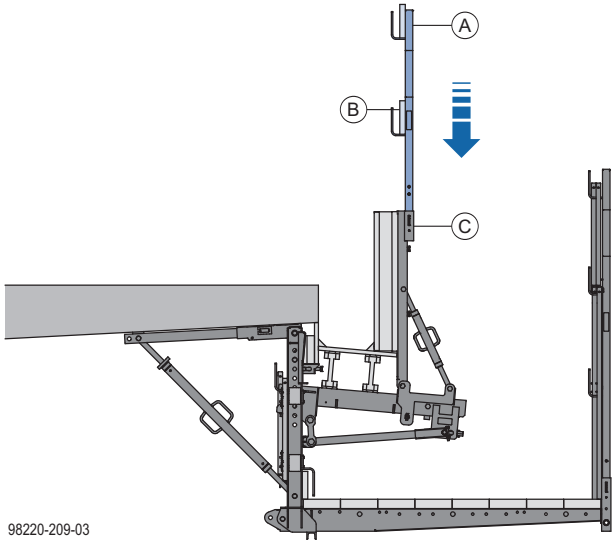
➤ Connect the formwork panels.



A Formwork panels
B Bridge edge beam clamp NG 1.00m
C Connectors

Installing edge protection railing

➤ Push the handrail post into the bridge edge beam clamp until the locking mechanism engages ('Easy-Click' function).
➤ Lift the guardrail boards into position and install.



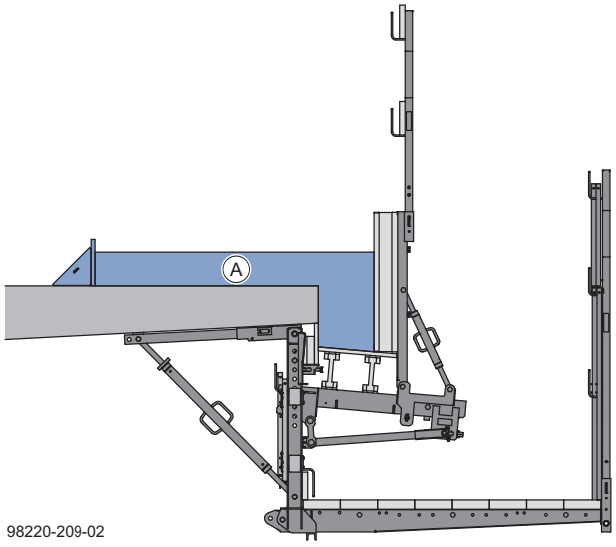
A Handrail post XP 1.20m
B Guardrail boards min. 15/3 cm (site-provided)
C Bridge edge beam clamp NG 1.00m

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

Pouring the cantilevered parapet

NOTICE
➤ The work of installing the reinforcement and pouring the cantilevered parapet is performed from the bridge superstructure.

➤ Place the reinforcement.
➤ Pour the cantilevered parapet.



A Cantilevered parapet

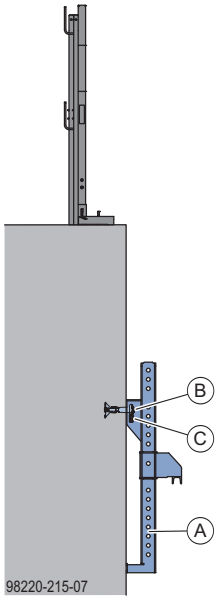
Abutments

NOTICE

Separate statical verification testing is required for this version.

Installing bridge edge beam platform on abutment

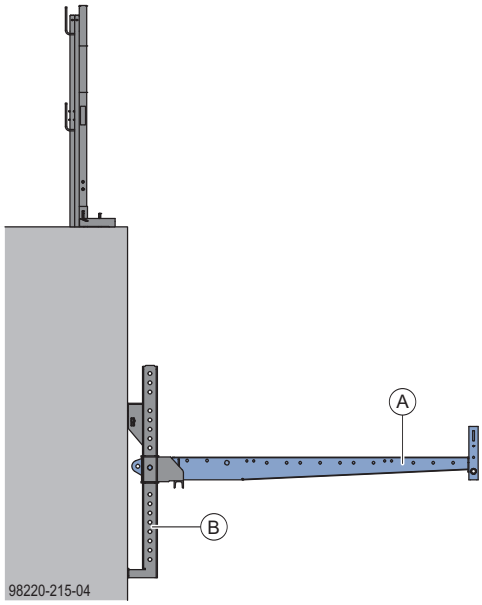
➤ Install abutment profile (see the section headed 'Quick-attachment facility using Screw-in cone 15.0').



A Abutment profile NG 1.14m
B Safety wedge
C Screw-in cone 15.0

Installing platform beams

➤ Position the platform beam in the abutment profile.

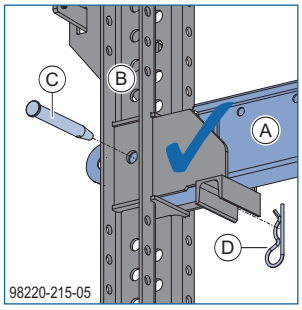


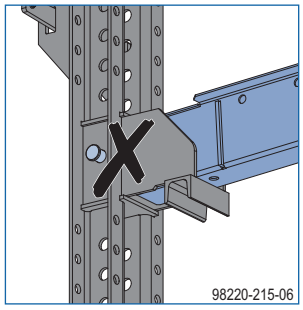
A Platform beam NG 1.60m
B Abutment profile NG 1.14m

➤ Pin the platform beam to the abutment profile and secure the pin.

NOTICE

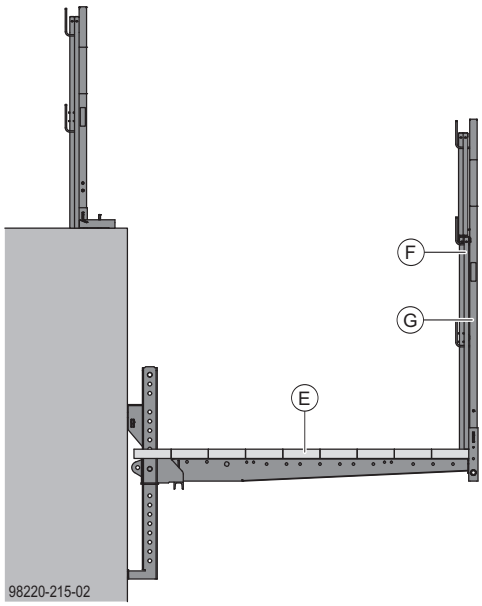
Make sure that the platform beam is pinned into position right way round!





A Platform beam NG 1.60m
B Abutment profile NG 1.14m
C Pin D20 160
D Spring cotter 5mm

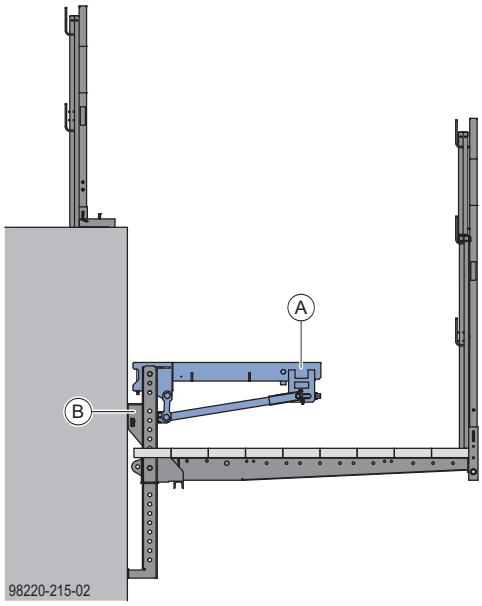
➤ Install platform decking (see the section headed 'Attaching the platform decking').
➤ Install edge protection railing (see the section headed 'Installing edge protection railing').

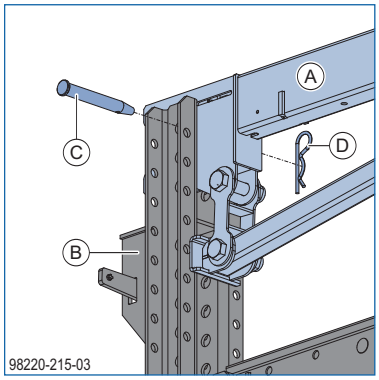


E Platform decking
F Xsafe edge protection XP
G Handrail post XP 1.80m

Installing bridge edge beam support on abutment

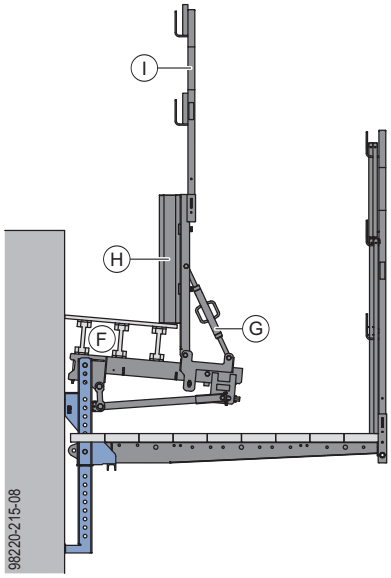
➤ Pin the bridge edge beam support into the topmost pinning hole of the abutment profile.





A Bridge edge beam support NG 1.01m
B Abutment profile NG 1.14m
C Pin D20 160
D Spring cotter 5mm

➤ Install bottom formwork (see the section headed 'Installing the bottom formwork').
➤ Install the bridge edge beam clamp.
➤ Install side formwork (see the section headed 'Mounting the side formwork').
➤ Install edge protection railing.

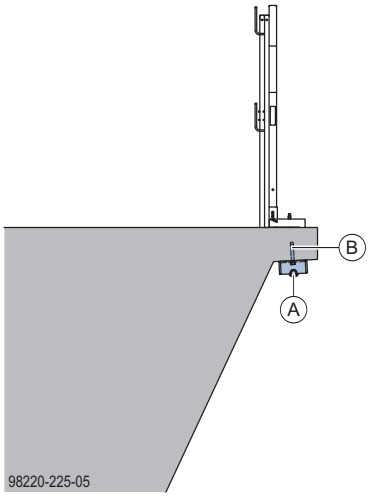


F Bottom formwork
G Bridge edge beam clamp NG 1.00m
H Side formwork
I Handrail post XP 1.20m

Small cantilevers

Installing the suspension profile

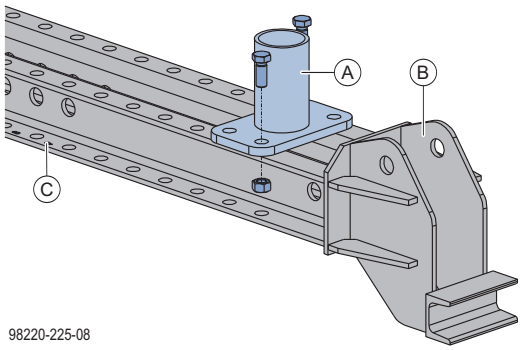
➤ Install suspension profile 0.15m.



A Suspension profile 0.15m
B Mechanical anchor

Mounting the vertical profile

➤ Pre-install Pressure piece NG on the vertical profile.

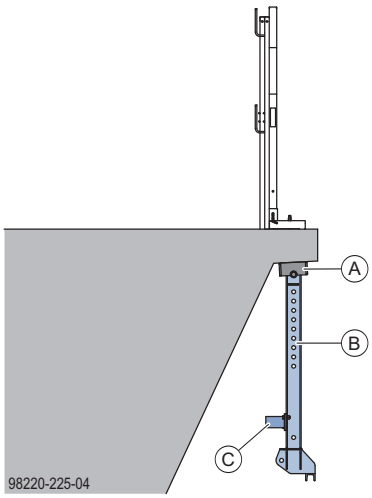


A Pressure piece NG
B Vertical profile NG 1.13m
C Numbering

Ensure that the pressure piece is installed in the correct position! (With numbers on the opposite side)

Bolting items required for each Pressure piece NG
- 2 x hexagon bolt ISO 4017 M12x30 8.8 galvanised
- 2 x hexagon nut ISO 4032 M12 8 galvanised

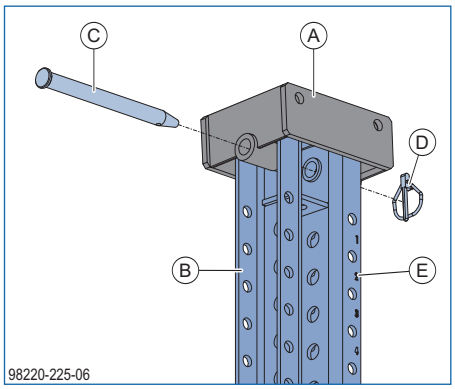
➤ Pin vertical profile with Pressure piece NG to the suspension profile.



A Suspension profile NG 0.95m
B Vertical profile NG 1.13m
C Pressure piece NG

Make sure that the vertical profile is the right way round! (numbering facing out)

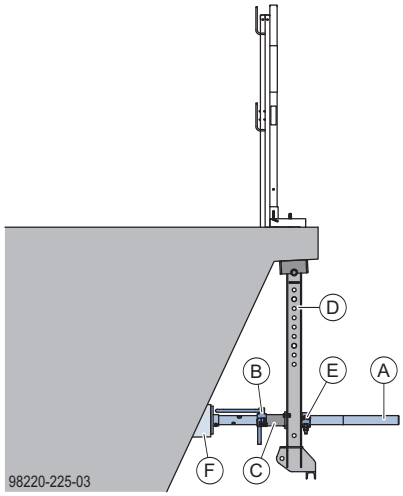
➤ Insert and secure the pin.



A Suspension profile 0.15m
B Vertical profile NG 1.13m
C Pin D20 200
D Linch pin 6x42mm
E Numbering

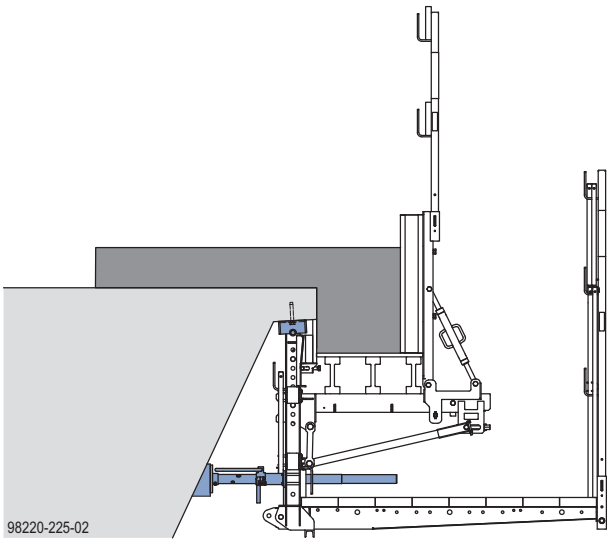
Installing the screw jack

- ➤ Secure timber filler on the heavy-duty screw jack.
- ➤ Push heavy-duty screw jack with split nut into Pressure piece NG.
- ➤ Position vertical profile upright using heavy-duty screw jack and split nut.
- ➤ Secure heavy-duty screw jack to prevent it from moving using Screw-on coupler 48mm.



A	Heavy-duty screw jack 70
B	Split nut B
C	Pressure piece NG
D	Vertical profile NG 1.13m
E	Screw-on coupler 48mm
F	Timber filler

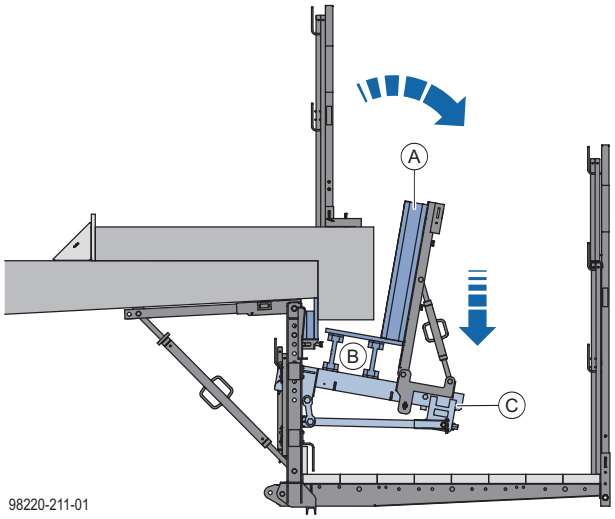
The further assembly of the bridge edge beam platform and formwork is the same as with the configuration for standard cross sections.

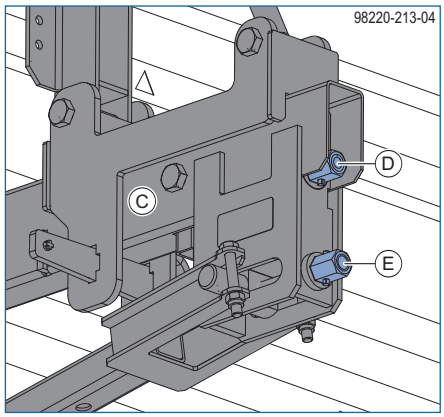


Dismantling

Stripping the formwork

➤ Install a guardrail system on the structure.
➤ Remove the guard rail from the bridge edge beam clamp.
➤ Detach the formwork from the cantilevered parapet by means of the inclination adjusters and height adjusters of the bridge edge beam supports.





A Side formwork
B Bottom formwork
C Bridge edge beam support NG 1.01m
D Height adjustment
E Inclination adjustment

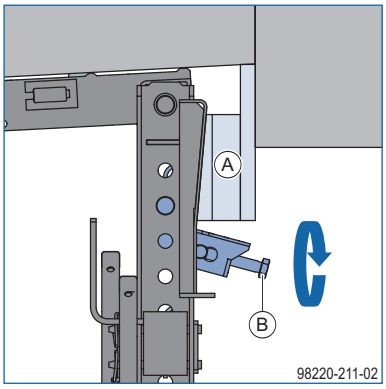
Tools needed:

- Reversible ratchet 1/2"
- Box nut 24 1/2"
- Fork wrench 24
- Impact screw driver, max. torque 450 Nm

➤ Remove the side formwork.
➤ Remove the bridge edge beam clamp.
➤ Remove the bottom formwork.
➤ Remove the bridge edge beam support.

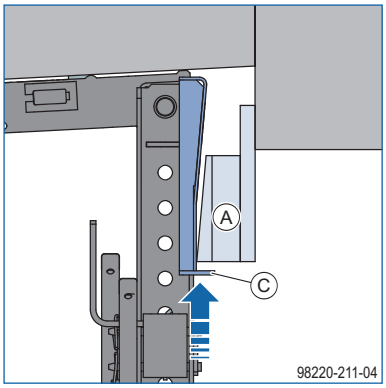
Stripping the inside formwork

➤ Back off the hexagon bolt to loosen the inside formwork holder.



A Inside formwork
B Inside formwork holder NG

➤ Remove the inside formwork holder.
➤ Drive the stripping wedge up.



A Inside formwork
C Stripping wedge NG inside formwork

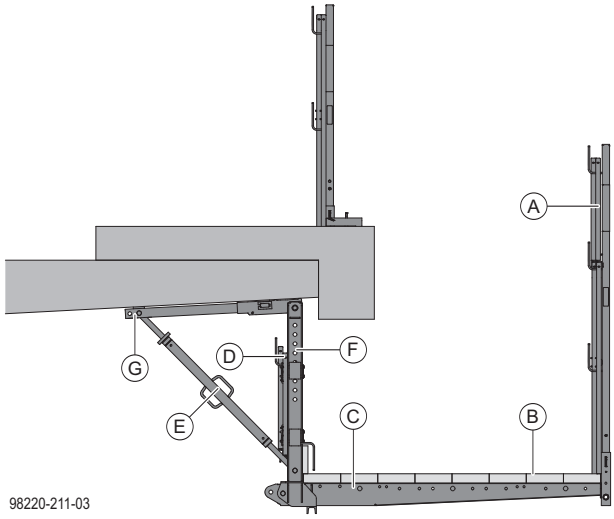
NOTICE

➤ Hold the loose wooden parts of the inside formwork in place while driving the stripping wedge up.

➤ Remove the inside formwork.
➤ Remove the stripping wedge.

Disassembling the bridge edge beam platform

Disassembly is the reverse of the assembly procedure (see the section headed 'Assembly').



A	Handrail post XP 1.80m
B	Deck-boards and toeboard
C	Platform beam NG 1.60m
D	Protective grating XP 0.60m
E	Spindle strut NG 90/125cm
F	Vertical profile NG 1.13m
G	Suspension profile NG 0.95m

Repositioning pre-assembled platform units

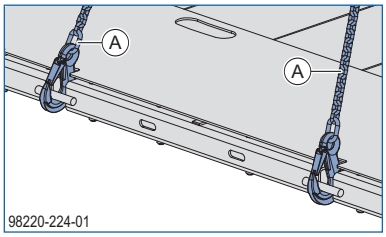
With the system decking it is possible to move a bridge edge beam platform as a complete repositioning unit using the crane.

NOTICE

➤ Remove the bridge edge beam formwork from the bridge edge beam platform.

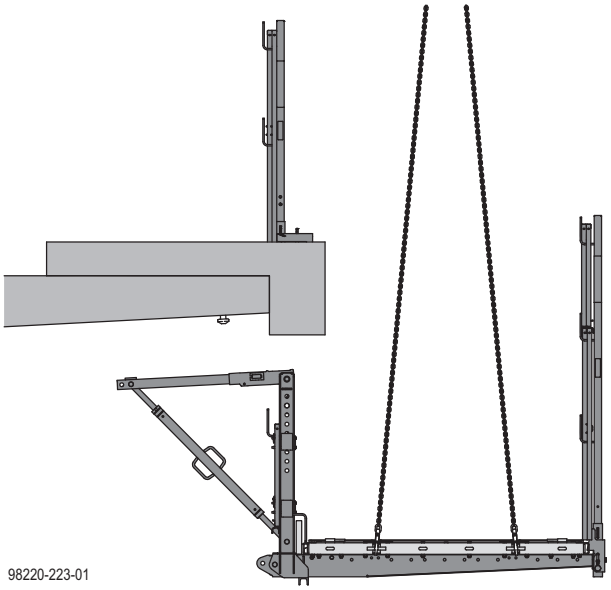
Repositioning of the bridge edge beam platform and bridge edge beam formwork together is not permitted.

➤ Attach the lifting chains to the system decking.



A Doka 4-part chain 3.20m

➤ Reposition the bridge edge beam platform.



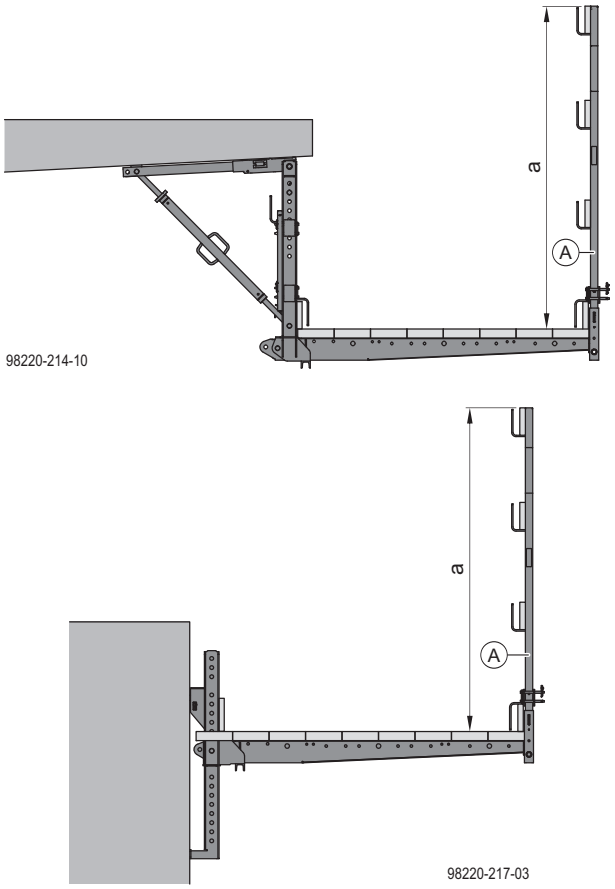
Weight of a repositioning unit: approx. 340 kg

For more information, please contact your Doka technician.

Additional areas of use

Fall-stop scaffold

Note:
Bridge edge beam formwork NG fulfils the requirements of the drop tests defined in EN 12810-2 Annex B.



a ... min. 1.80 m

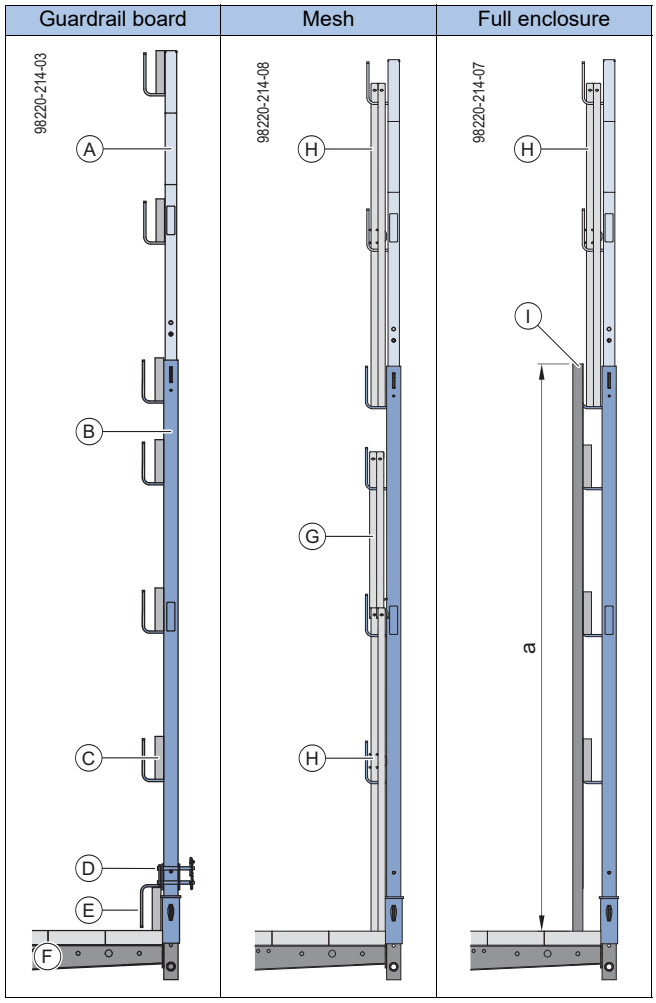
A	Handrail post XP 1.80m or Handrail post NG 2.00m

Railing height up to 3.20 m

To meet the requirement for high railings up to 3.20 m, a Handrail post XP 1.20m can be attached on top of a Handrail post NG 2.00m.

NOTICE

- Separate statical verification testing is required for this version.
- Full enclosure permitted only up to a height of 2.0 m.

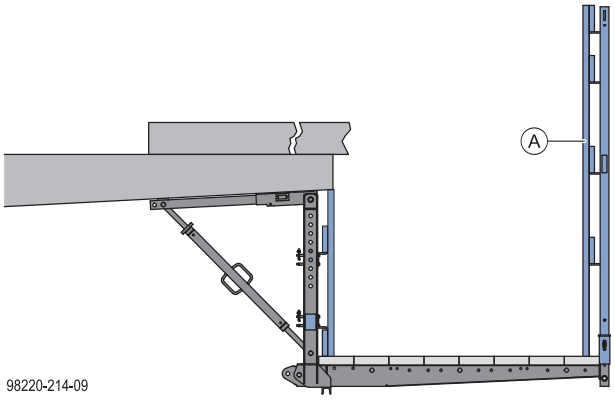


a ... 2.0 m

A	Handrail post XP 1.20m
B	Handrail post NG 2.00m
C	Guardrail board min. 15/3 cm (site-provided)
D	Double bolt NG D12
E	Railing holder NG
F	Platform beam NG 1.60m
G	Protective grating XP 0.60m
H	Protective grating XP 1.20m
I	Trapezoidal metal sheet / trapezoidal perforated sheet / wooden sheeting

Working platform for demolition work

For demolition work, the inner railing and the outer railing can be constructed as a full enclosure.



A Full enclosure with Handrail post NG 2.00m

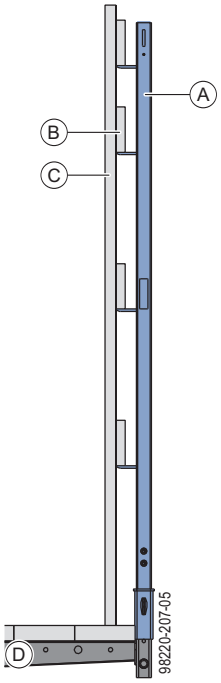
WARNING

Depending on the demolition method employed, falling material can impose dynamic loads that are considerably higher than the static loads.

- ➤ Demolition material must not be left on the bridge edge beam platform.
- ➤ Project-specific statical proof for these loads is required in all cases.

Full enclosure up to 2 m

For the ‘Full enclosure up to 2 m’ version, use the Handrail post NG 2.00m.



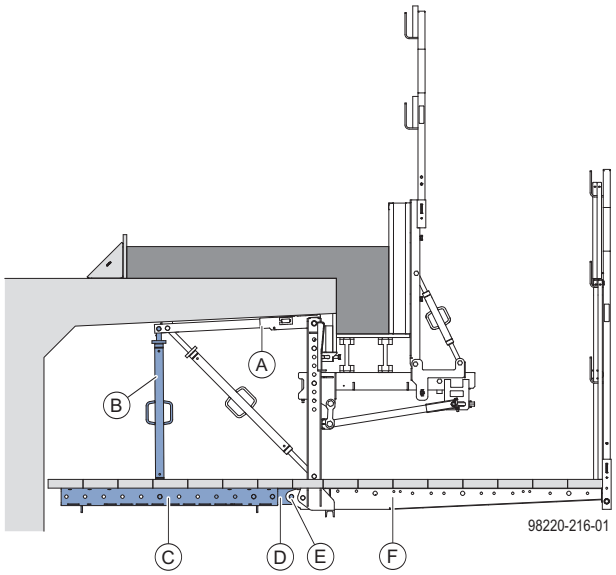
A Handrail post NG 2.00m
B Guardrail board min. 15/3 cm (site-provided)
C Trapezoidal metal sheet / trapezoidal perforated sheet / wooden sheeting
D Platform beam NG 1.60m

Threaded-fastener material required for each bridge edge beam bracket

- 4 cup square bolts M8
- 4 hexagon nuts ISO 7040 self-locking, 8 galv.
- 4 washers ISO 7098

Platform extension

For repairs or assembly work on the cantilever, the bridge edge beam platform can be extended to reach underneath the structure. The platform beam has provision for connection of a multi-purpose waling.

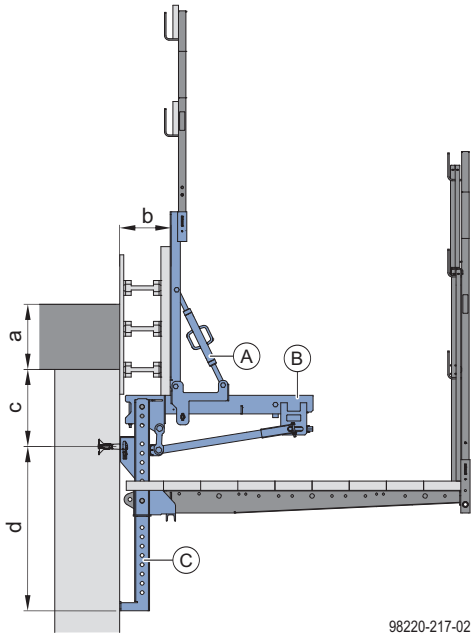


A	Suspension profile NG 0.95m
B	Spindle strut NG 90/125cm
C	Multi-purpose waling WS10 Top50
D	Formwork element connector FF20/50 Z
E	Pin D20 160
F	Platform beam NG 1.60m

Edge shuttering

NOTICE

Separate statical verification testing is required for this version.

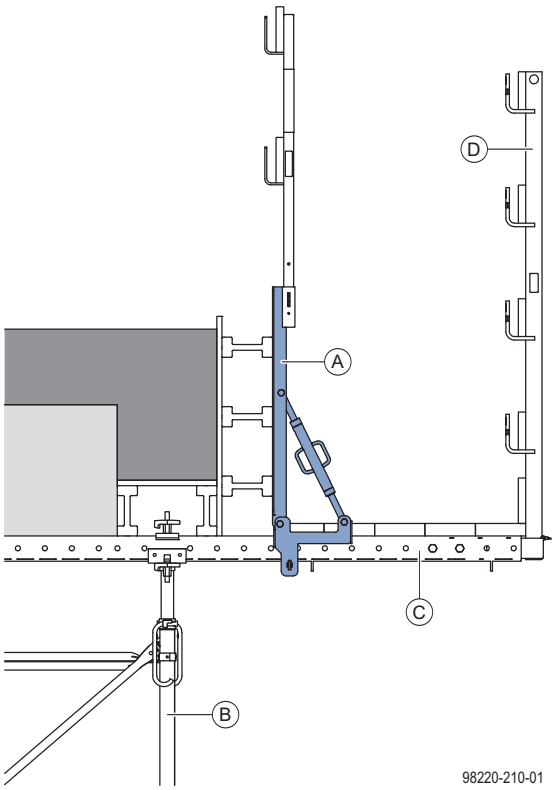


a ... max. slab thickness 700 mm
b ... ≥ 240 mm
c ... 415 mm
d ... 885 mm

A	Bridge edge beam clamp NG 1.00m
B	Bridge edge beam support NG 1.01m
C	Abutment profile NG 1.14m

Bridge edge beam clamp on Doka multi-purpose waling WS10 Top50

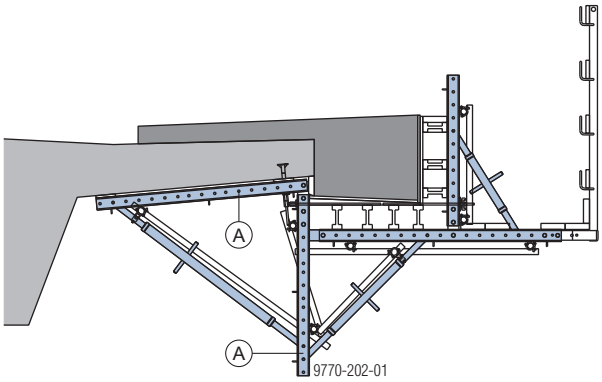
The bridge edge beam clamp is designed for a profile size of 100x50 mm. This enables additional use on any Multi-purpose waling WS10 and similar walings.



A Bridge edge beam clamp NG 1.00m
B Load-bearing tower
C Multi-purpose waling WS10 Top50
D Handrail post T 1.80m

Edge kerbs with large cross-sections

For wide edge kerbs, special brackets can be constructed using Multi-purpose walings WS10.



A Multi-purpose waling WS10 Top50

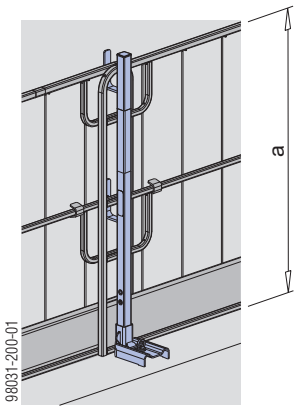
For more information, please contact your Doka technician.

General

Fall protection on the structure

Handrail post XP 1.20m

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

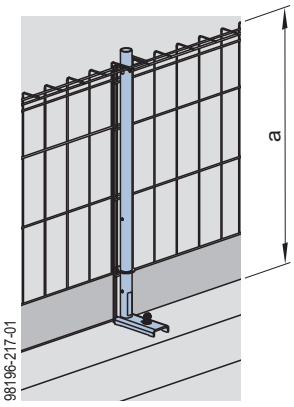


a ... > 1.00 m

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

Xsafe edge protection Z

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

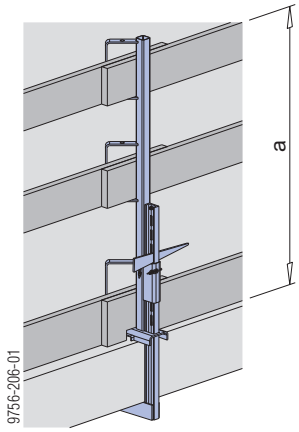


a ... > 1.17 m

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

Handrail clamp S

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

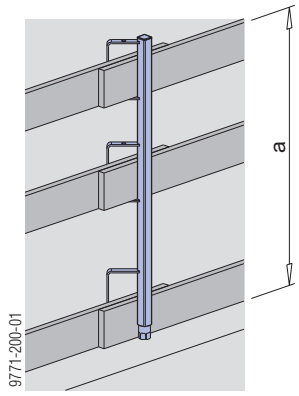


a ... > 1.00 m

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

Handrail post 1.10m

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



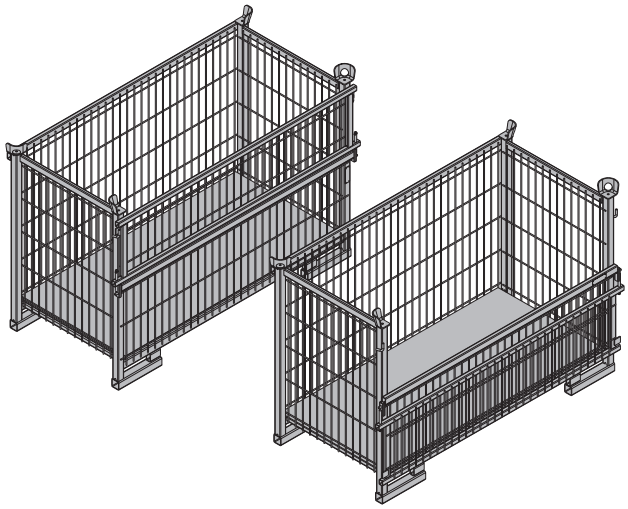
a ... > 1.00 m

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

Transporting, stacking and storing

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

Doka skeleton transport box 1.70x0.80m



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

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

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

Max. n° of units on top of one another

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

NOTICE

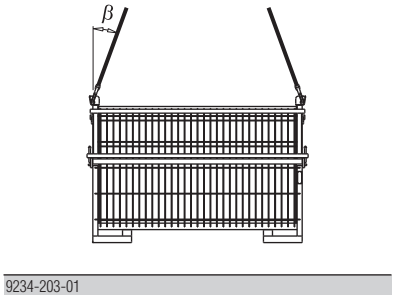
Stacked multi-trip boxes or pallets must have the heaviest boxes at the bottom and the lightest at the top.

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

Lifting by crane

NOTICE

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



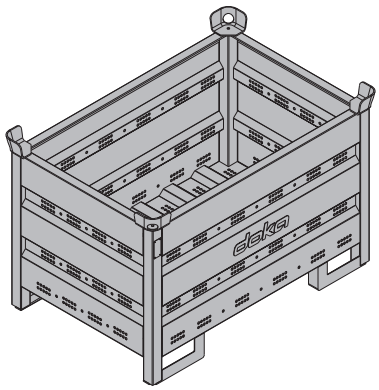
Repositioning by forklift truck or pallet stacking truck

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

Doka multi-trip transport box

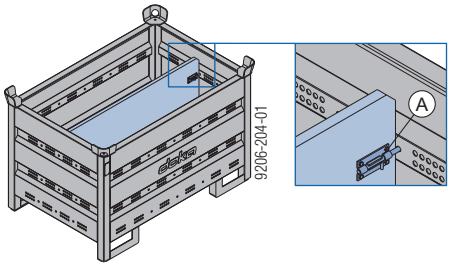
Storage and transport device for small items

Doka multi-trip transport box 1.20x0.80m



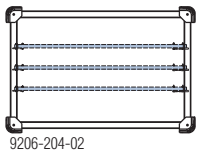
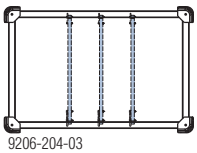
Permitted load-bearing capacity: 1500 kg (3300 lbs)
Permitted imposed stacking load: 7850 kg (17300 lbs)

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

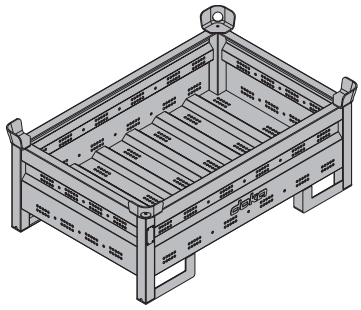


A Slide-bolt for fixing the partition

Possible ways of dividing the box

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

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



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

Using Doka multi-trip transport boxes as storage units

Max. n° of units on top of one another

Outdoors (on the site) 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

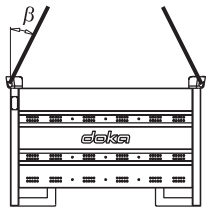
Stacked multi-trip boxes or pallets must have the heaviest boxes at the bottom and the lightest at the top.

Using Doka multi-trip transport boxes as transport devices

Lifting by crane

NOTICE

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



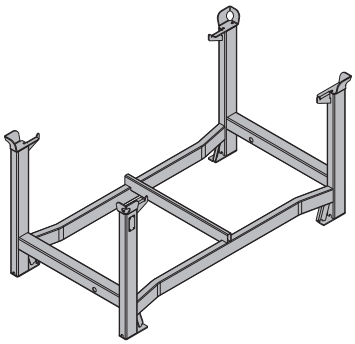
9206-202-01

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 device for long items.



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

Using Doka stacking pallets as storage units

Max. n° of units on top of one another

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

NOTICE

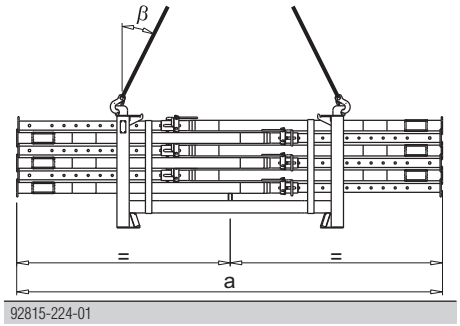
- Stacked multi-trip boxes or pallets must have the heaviest boxes at the bottom and the lightest at the top.
- **How to use with Bolt-on castor set B:**
  - Always apply the fixing brake when the container is 'parked'.
  - When Doka stacking pallets are stacked, the bottom pallet must NOT be one with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

Using Doka stacking pallets as transport devices

Lifting by crane

NOTICE

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



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

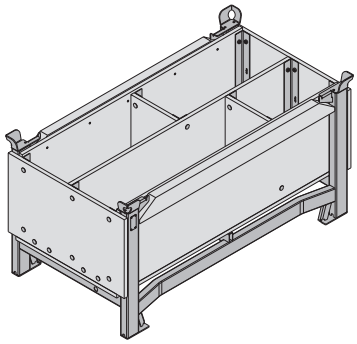
Repositioning by forklift truck or pallet stacking truck

NOTICE

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

Doka accessory box

Storage and transport device for small items.



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

Doka accessory boxes as storage units

Max. n° of units on top of one another

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

NOTICE

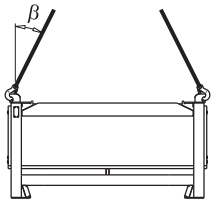
- Stacked multi-trip boxes or pallets must have the heaviest boxes at the bottom and the lightest at the top.
- **How to use with Bolt-on castor set B:**
  - Always apply the fixing brake when the container is 'parked'.
  - When Doka stacking pallets are stacked, the bottom pallet must NOT be one with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

Doka accessory box as transport devices

Lifting by crane

NOTICE

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



92816-206-01

Repositioning by forklift truck or pallet stacking truck

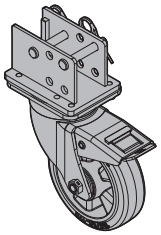
The forks can be inserted under either the broadside or the narrowside of the containers.

Universal castor wheel for transport pallet

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

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

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

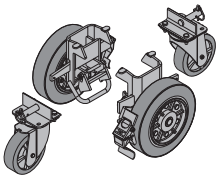


Bolt-on castor set B

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

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

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



	[kg]	Article N°
Suspension profile NG 0.95m Aufhängeprofil NG 0,95m Galvanised Length: 95.5 cm	**9.1**	**584830000**
Suspension profile NG 0.55m Aufhängeprofil NG 0,55m Galvanised	**7.0**	**584851000**
Vertical profile NG 0.82m Vertikalprofil NG 0,82m Galvanised	**13.3**	**584832000**
Vertical profile NG 1.13m Vertikalprofil NG 1,13m Galvanised Length: 114 cm	**17.5**	**584831000**
Spindle strut NG 90/125cm Spindelstrebe NG 90/125cm Galvanised	**5.8**	**584834000**
Spindle strut NG 60/95cm Spindelstrebe NG 60/95cm Galvanised	**4.8**	**584852000**
Suspension profile NG 0.15m Aufhängeprofil NG 0,15m Blue Galvanised	**5.8**	**584862000**
Pressure piece NG Druckstück NG Galvanised	**1.5**	**584863000**

	[kg]	Article N°
Abutment profile NG 1.14m Widerlagerprofil NG 1,14m Galvanised	**22.0**	**584841000**
Platform profile NG 1.04m Bühnenprofil NG 1,04m Galvanised	**8.3**	**584865000**
Platform beam NG 1.60m Bühnenträger NG 1,60m Galvanised Length: 186.5 cm	**16.0**	**584835000**
Platform beam NG 1.60m top Bühnenträger NG 1,60m top	**18.0**	**584844000**
System decking NG 80 150/150cm **System decking NG 100 150/190cm** **System decking NG 120 150/230cm** Systembelag NG	**110.0** **120.5** **136.5**	**584853000** **584854000** **584855000**
Bridge edge beam support NG 1.16m Gesimsträger NG 1,16m Galvanised Length: 116 cm Height: 41 cm	**23.5**	**584837000**
Bridge edge beam support NG 1.01m Gesimsträger NG 1,01m Galvanised	**21.5**	**584838000**

	[kg]	Article N°
Bridge edge beam clamp NG 1.00m Gesimszwinge NG 1,00m Galvanised Length: 115 cm	**16.9**	**584840000**
Inside formwork holder NG eco Innenschalungshalter NG eco Galvanised Length: 17 cm Height: 15.5 cm	**1.4**	**584846000**
Inside formwork holder NG Innenschalungshalter NG Galvanised Length: 16 cm Height: 10 cm	**1.3**	**584847000**
Stripping wedge NG inside formwork Ausschalkeil Innenschalung NG Galvanised Width: 20 cm Height: 28 cm	**1.6**	**584848000**
Pin D20 160 Bolzen D20 160 Galvanised	**0.37**	**584109000**
Spring cotter 5mm Federvorstecker 5mm Galvanised Length: 13 cm	**0.03**	**580204000**
Railing holder NG Geländerhalter NG Galvanised	**1.1**	**584850000**
Double bolt NG D12 Doppelbolzen NG D12 Galvanised	**0.3**	**584849000**
Linch pin 6x42 St galv. Kommerzklappstecker 6x42 St verz. Galvanised	**0.03**	**020401**

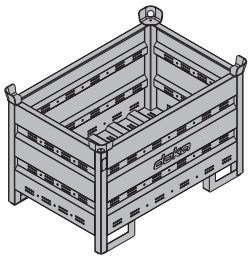
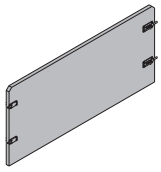
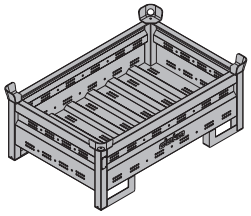
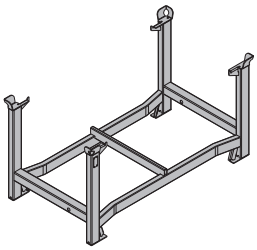
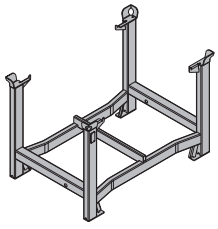
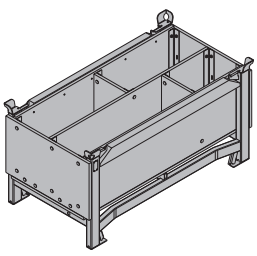
	[kg]	Article N°
Handrail post NG 2.00m Geländersteher NG 2,00m Galvanised Height: 204 cm	**10.9**	**584836000**
Handrail post XP 1.80m Geländersteher XP 1,80m Galvanised Height: 176 cm	**6.0**	**586482000**
Toeboard holder XP 1.20m Fußwehrhalter XP 1,20m Galvanised Height: 21 cm	**0.64**	**586461000**
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	**8.4**	**682017000**
Scaffold tube 48.3mm 3.00m	**10.8**	**682018000**
Scaffold tube 48.3mm 3.50m	**12.6**	**682019000**
Scaffold tube 48.3mm 4.00m	**14.4**	**682021000**
Scaffold tube 48.3mm 4.50m	**16.2**	**682022000**
Scaffold tube 48.3mm 5.00m	**18.0**	**682023000**
Scaffold tube 48.3mm 5.50m	**19.8**	**682024000**
Scaffold tube 48.3mm 6.00m	**21.6**	**682025000**
Scaffold tube 48.3mm .....m Gerüstrohr 48,3mm Galvanised	**3.6**	**682001000**
Screw-on coupler 48mm 50 Anschraubkupplung 48mm 50 Galvanised Width-across: 22 mm	**0.8**	**682002000**

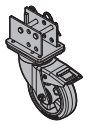
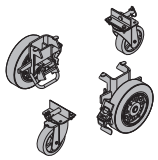
	[kg]	Article N°
Handrail clamp S Schutzgeländerzwinge S Galvanised Height: 123 - 171 cm	**11.5**	**580470000**
Handrail post 1.10m Schutzgeländer 1,10m Galvanised Height: 134 cm	**5.5**	**584384000**
Attachable sleeve 24mm Steckhülse 24mm PVC PE Grey Length: 16.5 cm Diameter: 2.7 cm	**0.03**	**584385000**
Screw sleeve 20.0 Schraubhülse 20,0 PP Yellow Length: 20 cm Diameter: 3.1 cm	**0.03**	**584386000**
Reversible ratchet 1/2" Umschaltknarre 1/2" Galvanised	**0.73**	**580580000**
Extension 11cm 1/2" Verlängerung 11cm 1/2"	**0.2**	**580581000**
Box nut 30 1/2" Stecknuss 30 1/2"	**0.2**	**580575000**
Screw-in cone 15.0 Einschraubkonus 15,0 Galvanised Length: 15 cm	**0.74**	**581895000**

	[kg]	Article N°
Bridge edge beam anchor 15.0 **Bridge edge beam anchor 15.0 galv.** Gesimsanker 15,0 Length: 7 cm	**0.45** **0.44**	**581896000** **581890000**
Bridge edge beam anchor 15.0 stainless Gesimsanker 15,0 rostfrei	**0.6**	**584861000**
Nailing cone 15.0 Nagelkonus 15,0 Black Length: 7 cm	**0.02**	**581897000**
Hole plug 29mm Gesimsankerstopfen 29mm PE Grey Diameter: 3 cm	**0.003**	**581891000**
Zinc plug 15.0 Zinkstöpsel 15,0 Galvanised Length: 9.9 cm Diameter: 2.9 cm	**0.2**	**581889000**
Collar-mount 21/84 Gesimshülse 21/84 Galvanised	**0.66**	**584860000**
Collar-mount 21 **Collar-mount 25** Gesimshülse Galvanised Diameter: 6 cm	**0.39** **0.36**	**584365000** **584364000**
Doka 4-part chain 3.20m Doka-Vierstrangkette 3,20m Follow the directions in the "Operating Instructions"! CE	**15.0**	**588620000**

Multi-trip packaging

Doka skeleton transport box 1.70x0.80m Doka-Gitterbox 1,70x0,80m Galvanised Height: 113 cm	**87.0**	**583012000**

	[kg]	Article N°
Doka multi-trip transport box 1.20x0.80m Doka-Mehrwegcontainer 1,20x0,80m Galvanised Height: 78 cm	**70.0**	**583011000**
		
Multi-trip transport box partition 0.80m **Multi-trip transport box partition 1.20m** Mehrwegcontainer Unterteilung Steel parts galvanised Timber parts varnished yellow	**3.7** **5.5**	**583018000** **583017000**
		
Doka multi-trip transport box 1.20x0.80x0.41m Doka-Mehrwegcontainer 1,20x0,80x0,41m Galvanised	**42.5**	**583009000**
		
Doka stacking pallet 1.55x0.85m Doka-Stapelpalette 1,55x0,85m Galvanised Height: 77 cm	**41.0**	**586151000**
		
Doka stacking pallet 1.20x0.80m Doka-Stapelpalette 1,20x0,80m Galvanised Height: 77 cm	**38.0**	**583016000**
		
Doka accessory box Doka-Kleinteilebox Timber parts varnished yellow Steel parts galvanised Length: 154 cm Width: 83 cm Height: 77 cm	**106.4**	**583010000**
		

	[kg]	Article N°
Universal castor wheel for transport pallet Universal-Lenkrolle Transportgebinde Galvanised Height: 28.8 cm	**6.0**	**584043000**
		
Bolt-on castor set B Anklemm-Radsatz B Painted blue	**33.6**	**586168000**
		

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