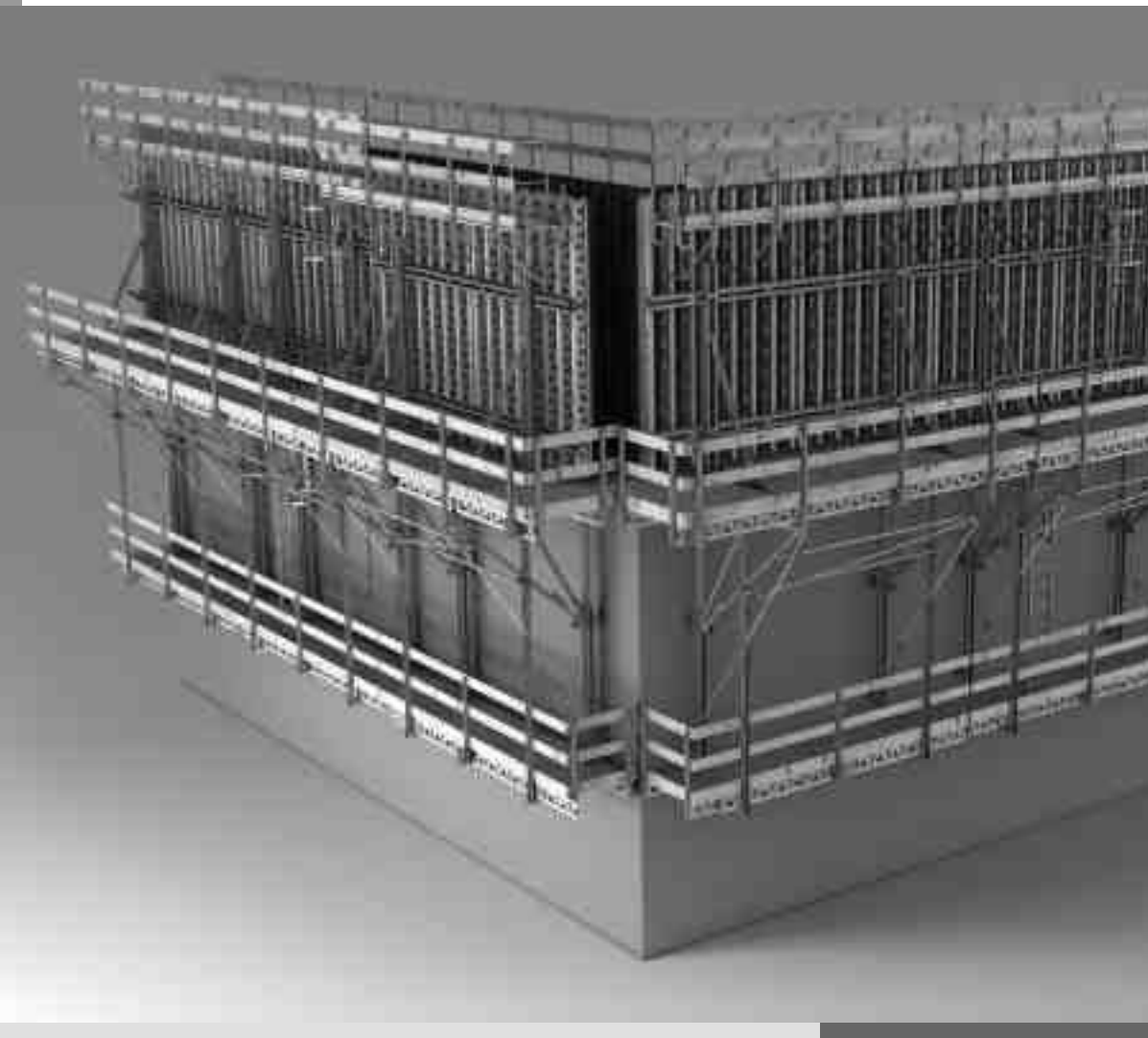


CB 240 **Climbing Formwork**

Instructions for Assembly and Use – Standard Configuration



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Components

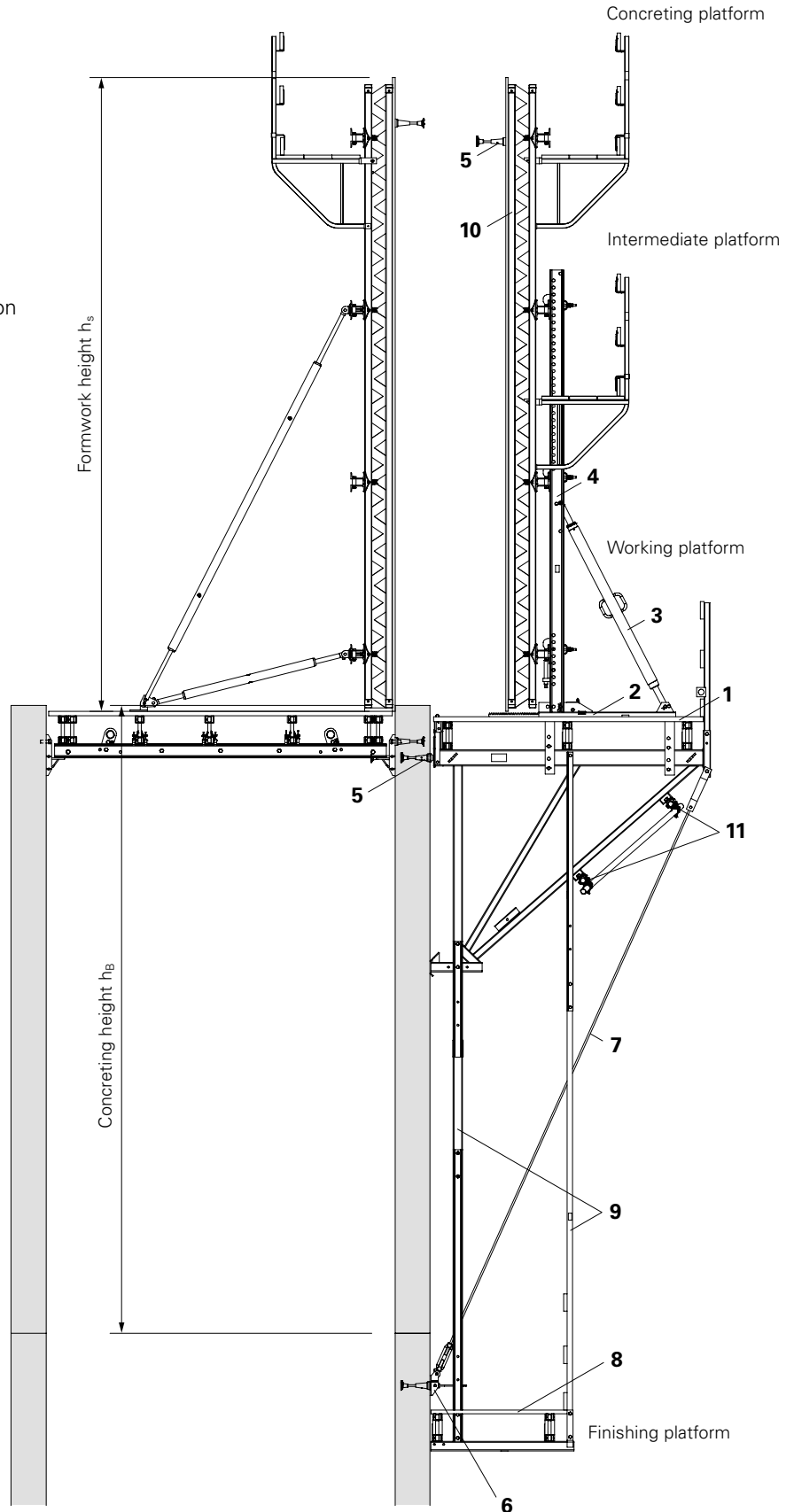
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Overview, Main Components

Climbing Formwork CB 240 with VARIO GT 24 Girder Wall Formwork

- Concreting height 5.40 m.
- Extended suspension of finishing platform.
- Tension Anchor CB with DW 15 as wind bracing.
- Intermediate platform on formwork.

*Formwork height =
concreting height + formwork projection
(max. 5.40 m)

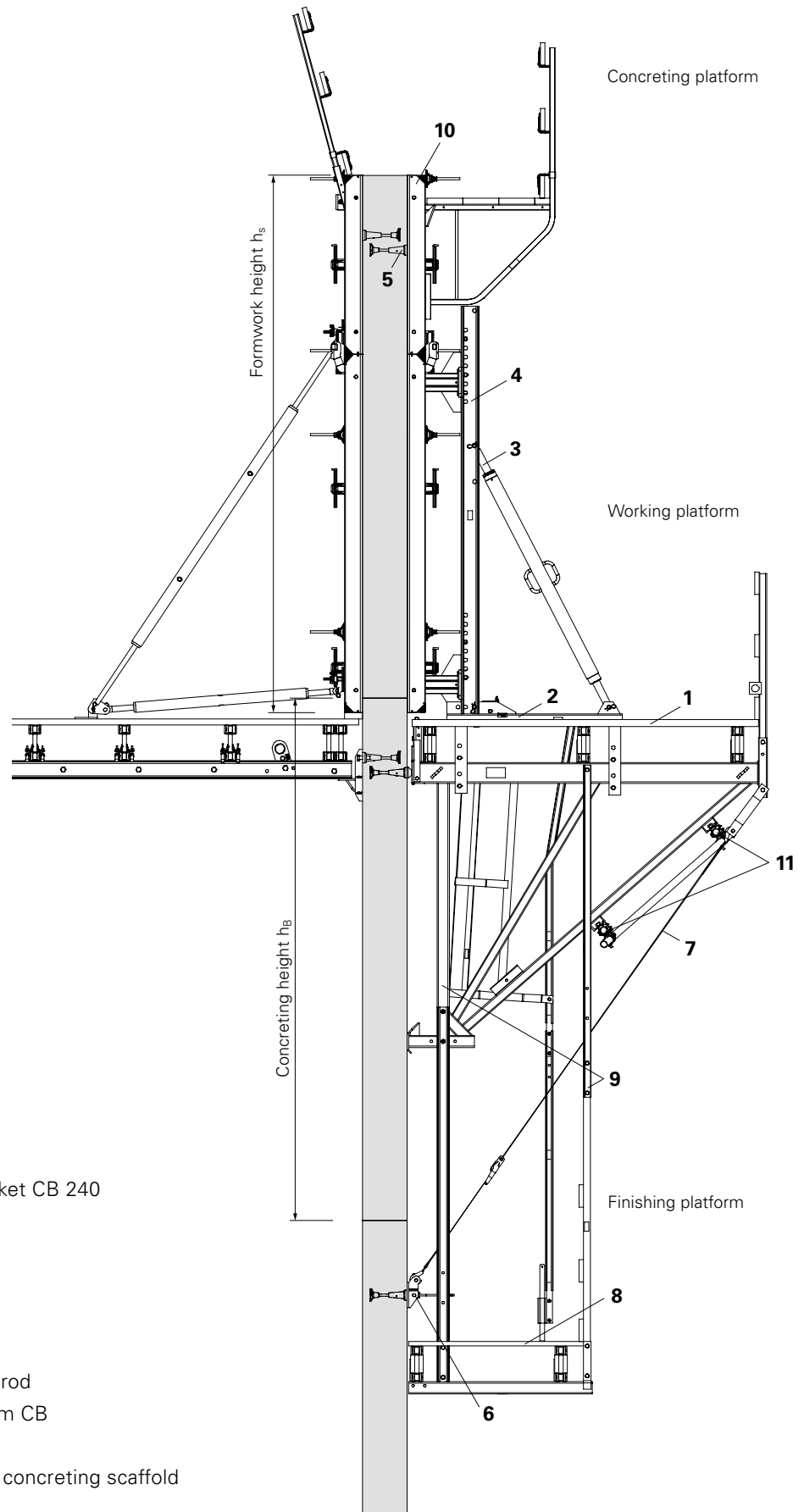


Overview, Main Components

Climbing Formwork CB 240 with TRIO Panel Formwork

- Concreting height 3.60 m.
- Suspension of finishing platform, single.
- Tension Belt CB as wind bracing.

*Formwork height =
concreting height + formwork projection
(max. 5.40 m)



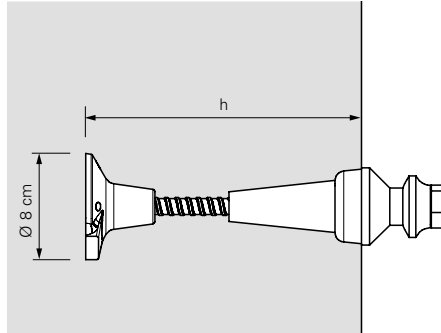
- 1 Working platform with Climbing Bracket CB 240
- 2 Carriage CB 240 with Rack CB 240
- 3 Adjustable Brace CB 164-224
- 4 Strongback CB 270 or CB 380
- 5 Anchoring and Leading Anchor
- 6 Bracing Shoe Wall CB M24
- 7 Wind bracing with tension belt or tie rod
- 8 Finishing Platform with Platform Beam CB
- 9 Suspension of finishing platform
- 10 VARIO GT 24 or TRIO formwork with concreting scaffold
- 11 Bracing with scaffold tubes

Overview, Main Components

Anchoring to the building structure

Version 1

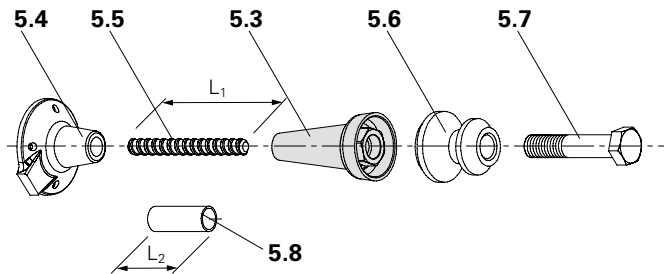
- 5.4 Threaded Anchor Plate DW 15*
- 5.5 Tie Rod DW 15*, Z-12.4-70
- $L_1 = h - 8 \text{ cm}$ or Tie Rod B15*, Z-12.5-82
- 5.3 Climbing Cone 2 M24/DW 15**
- 5.6 Scaffold Mounting Ring M24, galv.
- 5.7 Hex. Bolt M24 x 120 ISO 4014-10.9
- 5.8 Spacer Tube DR 22* (optional)
- $L_2 = h - 18.5 \text{ cm}$ (tolerance 0 to +5 mm)



Anchoring depth $h \geq 18.5 \text{ cm}$ (variable).

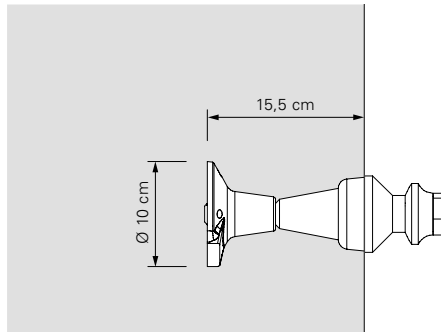
* "Not re-usable"

When using the PVC Spacer Tube, the tie rod (5.5) can be re-used.



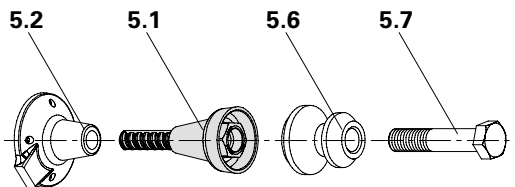
Version 2

- 5.2 Threaded Anchor Plate DW 20*
- 5.1 Screw-On Cone 2 M24/DW 20**
- 5.6 Scaffold Mounting Ring M24, galv.
- 5.7 Hex. Bolt M24 x 120 ISO 4014-10.9



Anchoring depth $h = 15.5 \text{ cm}$ (fix).

* "Not re-usable"



Key



Safety Instructions



Note



Visual Check



Tip



Load-bearing point



Personal protective equipment to prevent falling from a height (PPE)



Warning of suspended load

Dimension Specifications

Dimensions are usually given in mm and m. Other measurement units, e.g. cm, are shown in the drawings.

Conventions

– Instructions are numbered (1., 2., 3.)

Multiple position numbers, i.e. alternative components, are represented with a slash: **1 / 2**.

Arrows

Actions

Forces

General

The illustration on the front cover of these instructions is understood to be a system representation only. The assembly steps presented in these Instructions for Assembly and Use are shown in the form of examples with only one component size. They are valid for all component sizes contained in the standard configuration accordingly.

In order to ensure better understandability, detailed descriptions are partly incomplete. The safety installations which have possibly not been shown in these detailed descriptions must nevertheless be available. Preceding working steps must be complied with.

Intended Use

Product Description

PERI products have been exclusively designed for use in the industrial and commercial sectors by suitably trained personnel.

The CB 240 climbing formwork system is normally used as shoring in order to support anchored wall formwork in accordance with EN 12812. The formwork is firmly connected with the climbing bracket and is moved as a single unit suspended on a crane. The climbing formwork can also be used as a working platform. The working platform for operating the formwork consists of planing, platform beams and two fixed climbing brackets. These transfer the loads deriving from the dead weight, live loads and prevailing wind loads via the anchorage and bottom pressure point into the structure.

The working platform can be supplemented with:

- formwork carriage, strongbacks and adjustable braces for accommodating the VARIO and TRIO formwork systems.
- a height-adjustable finishing platform complete with access ladder which is attached to posts.
- end-to-end guardrails on the working and finishing platforms in accordance with respective national guidelines.
- a tension anchor which prevents tipping inwards.

Technical Data

- width of bracket: 2.40 m
- static height: 1.80 m
- retraction distance: 75 cm
- max. formwork height: 5.40 m

Instructions for Use

General

The use in a way not intended, deviating from the standard configuration or the intended use according to the Instructions for Assembly and Use, represents a misapplication with a potential safety risk, e.g. risk of falling.

Only PERI original components may be used. The use of other products and spare parts is not allowed.

Changes to PERI components are not permitted.

Safety Instructions

General

These assembly instructions serve as basis for the project-related risk assessment and the instructions for the provision and use of the system by the contractor.

However, they do not replace them.

The contractor must ensure that the Instructions for Assembly and Use provided by PERI are available at all times for the users and that they are also fully understood.

Safety instructions and permissible loads must be observed at all times.

For the application and inspection of our products, the current safety regulations and guidelines in the respective countries where they are being used must be observed at all times.

In order to guarantee the safety against falling, the contractor must carry out a site-specific risk assessment based on these Instructions for Assembly and Use and the included safety and warning information during each respective assembly, modification and dismantling procedure, as well as every time the system is used! Based on the risk assessment, appropriate measures regarding safety against falling are to be implemented on site.

The contractor must ensure that the required personal protective equipment required for the assembly, modification or dismantling is available and used as intended.

Materials and working areas are to be inspected on a regular basis especially before each use and assembly, and checked for signs of damage as well as stability and functionality. Damaged components must be exchanged immediately on site and may no longer be used.

The contractor has to provide safe working areas for site personnel which are to be reached through the provision of safe access ways. Areas of risk must be cordoned off and clearly marked.

Safety components are removed only when they are no longer required.

The contractor must guarantee the stability during all stages of construction especially during assembly, modification and dismantling. He must ensure and prove that all loads can be safely transferred.

Any deviations from the standard configuration may only be carried out after a separate risk assessment has been done by the contractor (user).

On this basis, appropriate measures for the working and operational safety as well as the stability are to be implemented. Appropriate proof of stability can be provided by PERI if the risk assessment and measures deriving from this are readily available.

Components provided by the contractor must conform with the characteristics required in these Instructions for Assembly and Use as well as with all valid construction guidelines and standards. In particular, the following applies if nothing else is specified:

- Timber components: Strength Class C24 for Solid Wood according to EN 338.
- Scaffold tubes: galvanised steel tubes with minimum dimensions of $\varnothing 48.3 \times 3.2$ mm according to EN 12811-1:2003 4.2.1.2.
- Scaffold tube couplings according to EN 74.

In the event of unfavourable weather conditions, e.g.

- poor visibility (fog),
 - strong winds,
 - snow,
- suitable precautions and measures are to be taken in order to ensure both work and operational safety as well as stability.

In case of extraordinary events which could compromise safety, e.g.

- storms,
 - earthquakes,
 - accidents,
 - longer downtimes,
- the system must be comprehensively checked by a qualified person on behalf of the contractor regarding the working and operational safety as well as the stability. The results of the inspection are to be documented.

Safety Instructions

Storage and Transportation

Store and transport components ensuring that no unintentional change in their position is possible. Detach lifting gear from the lowered components only if they are in a stable position and no unintentional change is possible.

Do not drop the components.

Use only suitable load-carrying equipment to move the components as well as the designated load-bearing points.

During the moving procedure, ensure that components are picked up and set down so that unintentional falling over, falling apart, sliding or rolling is avoided.

When moving pre-assembled units by crane, always use ropes to guide the load.

The access areas on the jobsite must be free of obstacles and tripping hazards as well as being slip-resistant.

For transportation, the surface must have sufficient load-bearing capacity.

Use original PERI storage and transport systems, e.g. crate pallets, pallets or stacking devices.

Safety Instructions

System-Specific

Retract components only when the concrete has sufficiently hardened and the person in charge has given the go-ahead for striking to take place.

Anchoring is to take place only if the anchorage has sufficient concrete strength.

Inspection of the anchoring and associated components must be carried out by the contractor (user).

Enclosure of the platform or mounting of additional surfaces which are exposed to the influences of the wind changes the stability and must therefore be checked. If necessary, additional measures must be implemented.

The platforms are to be inspected for signs of damage by authorised personnel at regular intervals.

During operating conditions, working areas at great heights are always to be secured against falling objects through the use of suitable construction measures.

Hatches and openings on accessible working areas must be kept closed during working operations.

Concrete residue and other soiling that could impair or cause the function to fail must be removed. The platforms are to be kept clean at all times.

As a result of the moving procedure, falling edges are formed between the platforms. Corresponding areas of risk are to be secured.

In case the access hatches are blocked when retracting the formwork as well as during the entire moving procedure, ensure that site personnel can still use the emergency escape route.

Site personnel, construction materials or tools may not be transported with the crane during moving operations. Exceptions to this can be determined through the operational working and assembly instructions.

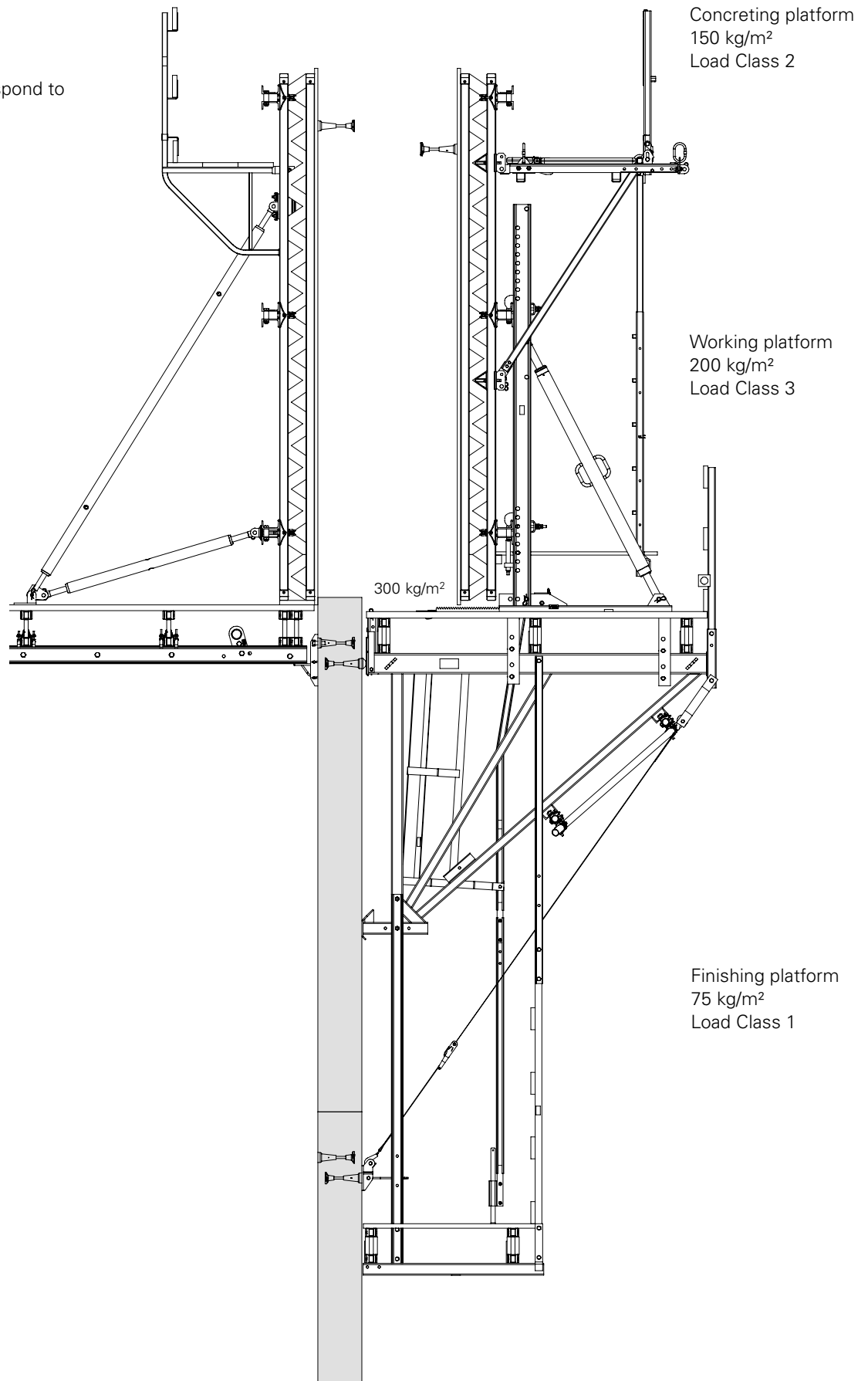
Additional Technical Documentation

- CB 240 Dimensioning Information
- CB 240 Climbing scaffold type test
- CB 240 and CB 160 Climbing System Brochures
- Instructions for Use for the Crane Splice 24
- Instructions for Use: MAXIMO Lifting Hook
- PERI design tables

Load Models

Working Position

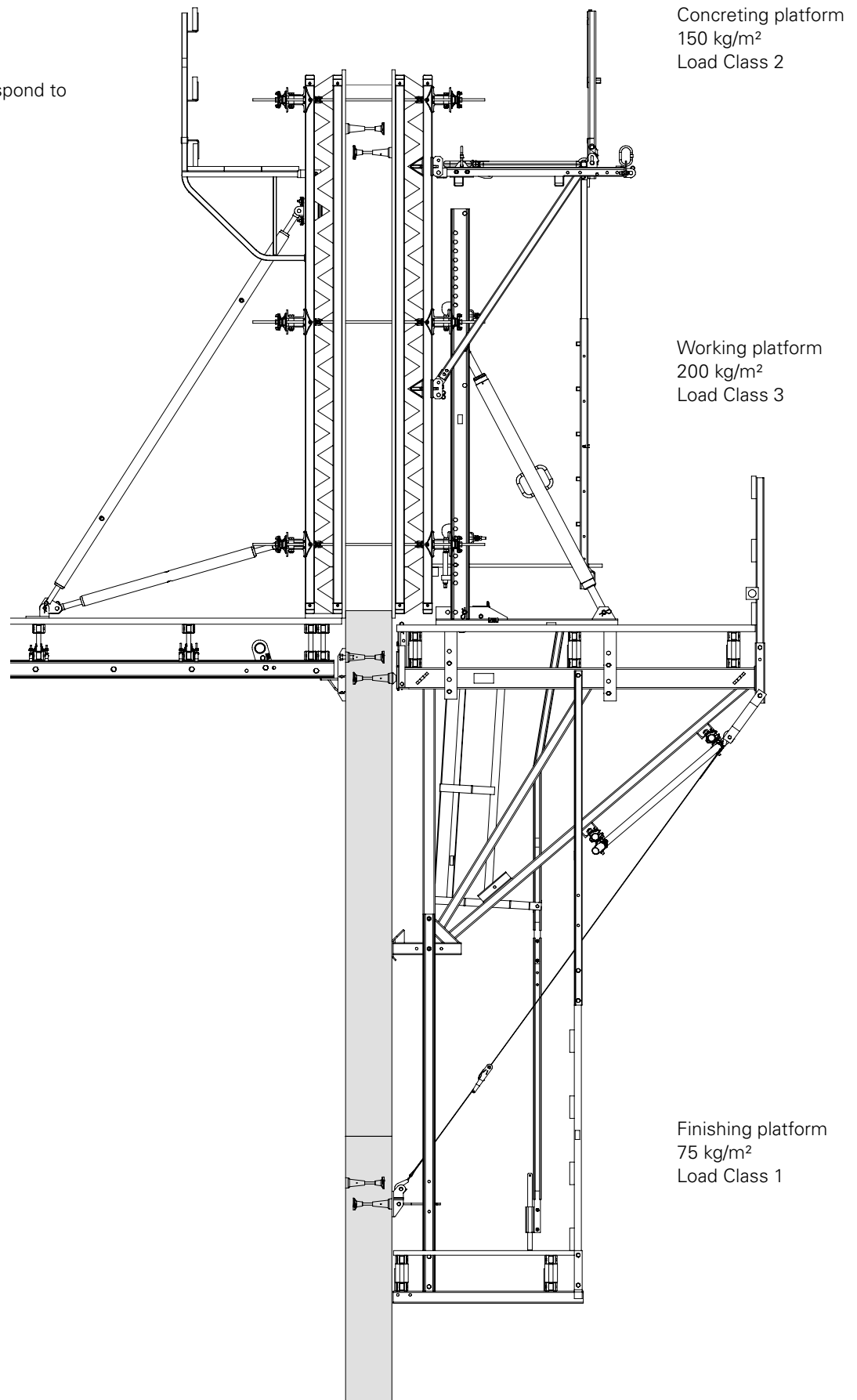
The area-related loads correspond to EN 12811.



Load Models

Concreting Position

The area-related loads correspond to EN 12811.



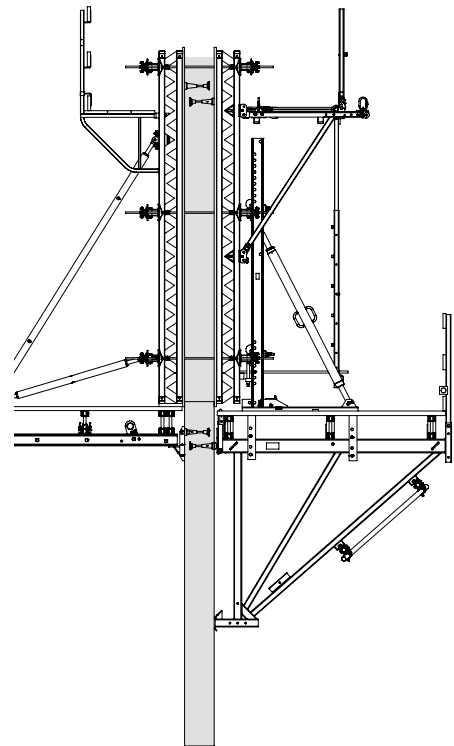
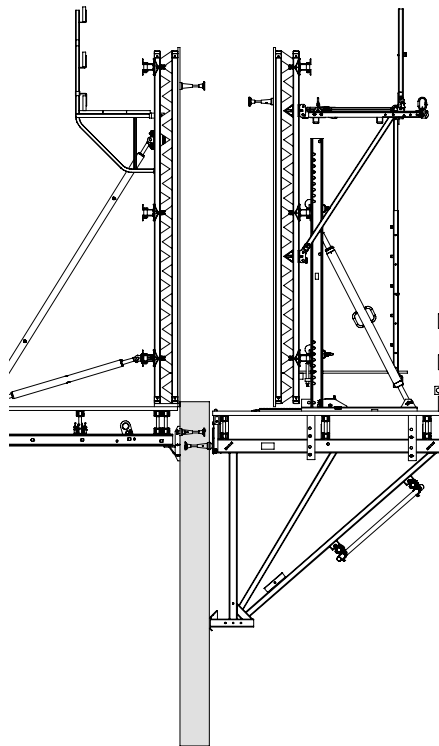
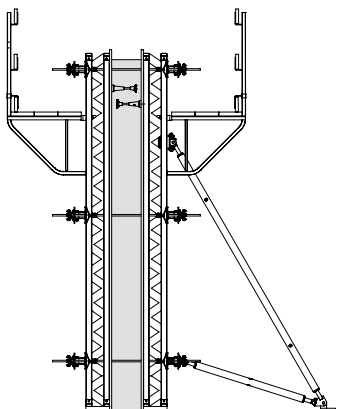
Standard Work Flow

Preparation

1. Assemble wall formwork.
2. Assemble platforms.
3. Assemble finishing platform.

Initial use

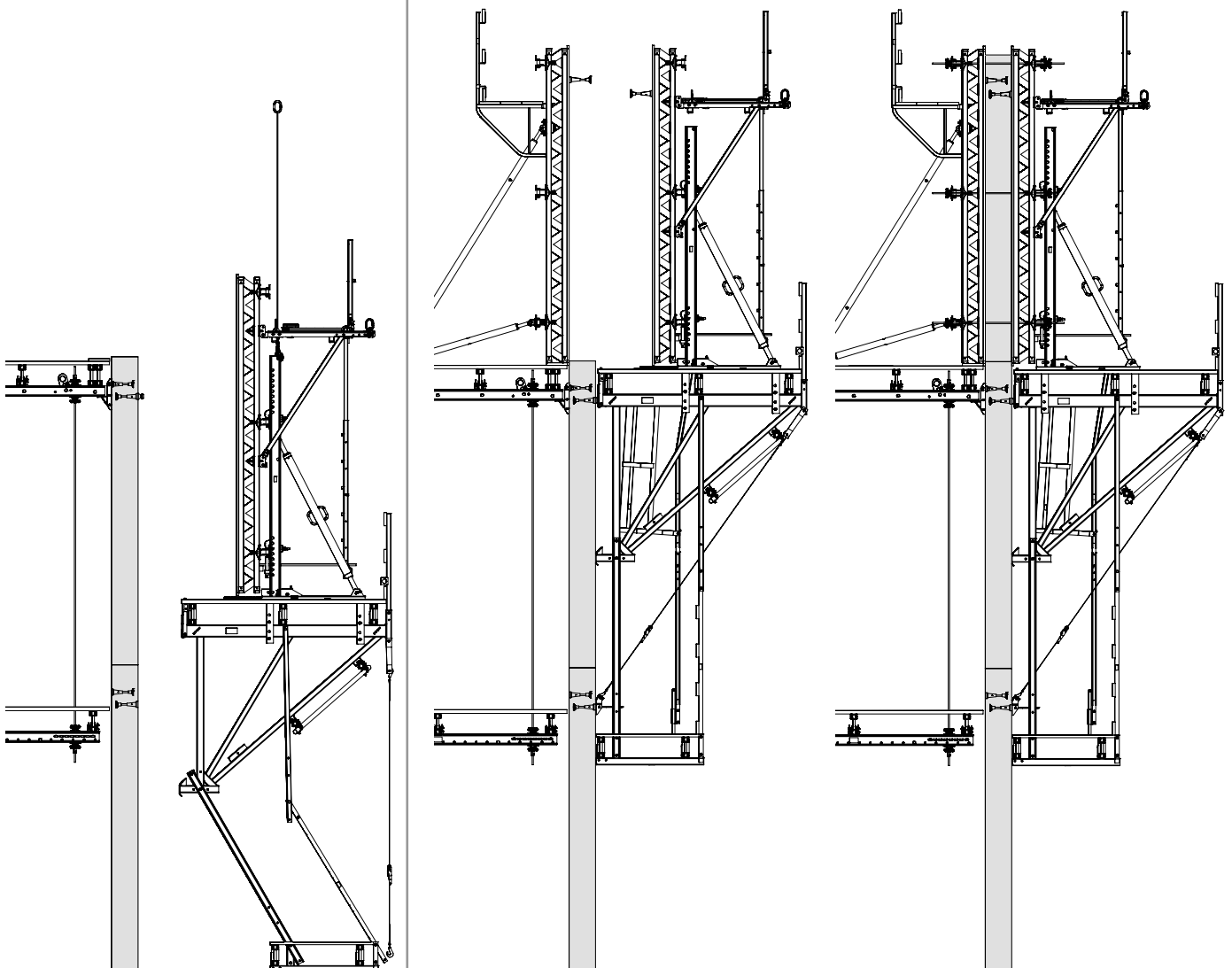
1. Position wall formwork for first wall section.
2. Add reinforcement to first wall section.
3. Mount leading anchor and close formwork.
4. Place formwork anchor.
5. Pour first wall section.
6. Remove advancing bolts and strike.
7. Mount scaffold mounting rings.
8. Attach platform unit.
9. Mount wind bracing if required.
10. Place formwork on platform unit and secure.
11. Clean formwork and adjust if necessary.
12. Reinforce second wall section.
13. Mount leading anchor and close formwork.
14. Place formwork anchor.
15. Pour second wall section.
16. Remove advancing bolts and retract formwork.
17. Mount scaffold mounting rings.



18. Attach finishing platform.
19. Move climbing unit to second wall section.
20. Bolt on finishing platform and attach guardrails.
21. If necessary, mount ladder.

Standard Cycle

22. Mount wind bracing if required.
23. Clean formwork and adjust.
24. Install reinforcement to wall.
25. Mount leading anchor and close formwork.
26. Place formwork anchor.
27. Pour wall section.
28. Remove advancing bolts and retract formwork.
29. Mount scaffold mounting rings.
30. Remove the following anchor from the previous casting step.
31. Move climbing unit to next wall section. Continue with standard cycle.
32. Dismantle the climbing unit.



Required Resources

Equipment and Tools

Hammer, wire pins, plumb line, 4 screw clamps with 300 mm clamping length, circular saw, electric drill, HSS drill \varnothing 6 mm, \varnothing 8 mm, min. L = 180 mm
 072180 Ratchet Wrench 1/2"
 102784 Socket SW 24 – 1/2"
 029620 Socket SW 19 – 1/2"
 072170 Socket SW 13 – 1/2"
 072150 Power Wrench M14, ASB 636
 072210 Power Screwdriver SCU 7 – 9
 072220 Bit Holder
 072230 Magnetic Holder
 072140 Bit Points TX 30
 031480 Socket Wrench SW 36
 027212 Allen Key SW 14
 031080 Drill Bit \varnothing 25 mm

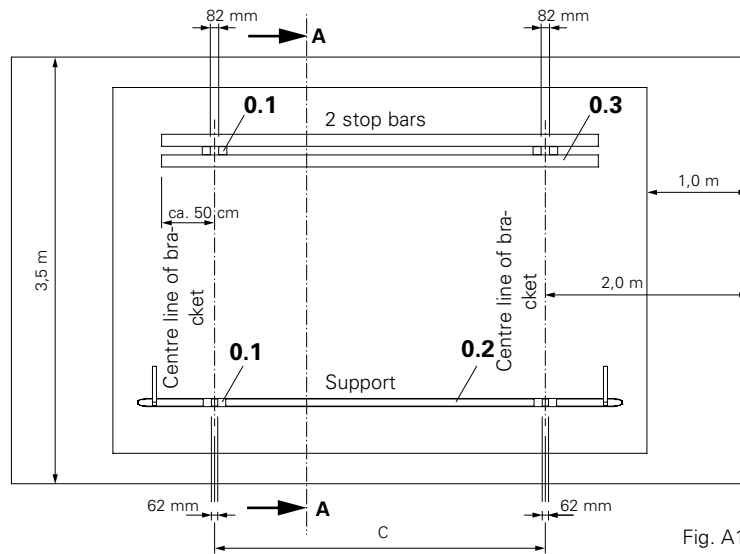


Fig. A1.01

Assembly Surface

Width: approx. 3.50 m.
 Length: maximum platform width + min. 2.0 m.
 Attach stop bars and support.
 (Fig. A1.01)

Aids

- Locating Block (0.1) 12 plywood blocks 21 x 80 x 80 mm.
- Support (0.2) h = approx. 24 cm, e.g. GT 24 L = max. bracket spacing + 1.0 m.
- Stop Bars (0.3) 1 plank 40 x 120 mm
 1 plank 80 x 80 mm L = max. bracket spacing + 1.0 m.
- Gauge for bracket spacing (0.4) 1 plank 40 x 120 mm L = bracket spacing + max. 1.0 m Formlining blocks (4). (Fig. A1.02)
- Diagonal bracing for securing bracket (0.5) 1 plank 40 x 120 mm, L = 2.0 m. (Fig. A1.03)

Section A-A

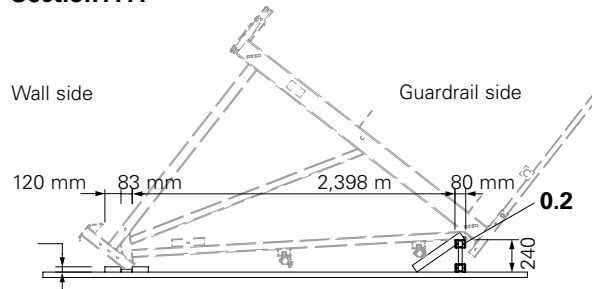


Fig. A1.01a

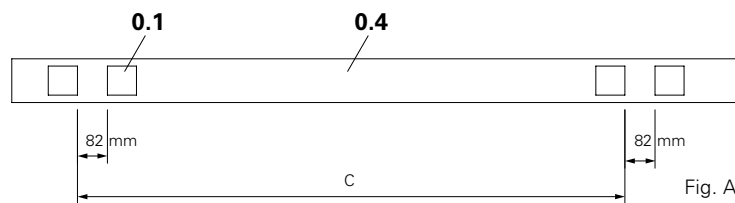


Fig. A1.02



Are the stop bars and support mounted parallel to each other?

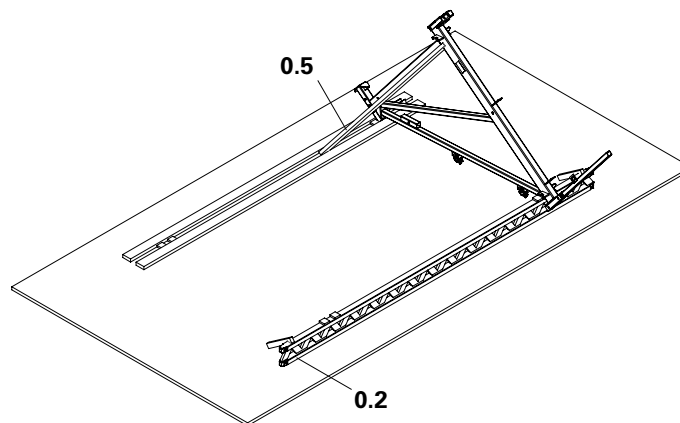


Fig. A1.03

Assembly of CB 240 Brackets

Assembly

1. Check centre-to-centre spacing of brackets regarding the planned measurement, or measure spacing of climbing cones already cast in concrete.
2. Adjust centre-to-centre spacing of brackets to the support (0.2). (Fig. A1.04)



Fig. A1.04



The bracket axes form a right-angle to the stops and support.

3. Fix locating blocks (0.1). (Fig. A1.05)
For spacings: see Fig. A1.02.



Fig. A1.05

4. Lift first bracket (1.1) vertically into the stops and then align.

5. Fix together with the diagonal bracing (0.5). (Fig. A1.06)



Fig. A1.06

6. Lift in second bracket and align using bracket spacing gauge. Fix gauge using screw clamps. Check bracket spacing. (Fig. A1.07)



Fig. A1.07

7. Fix two scaffold tubes (11.1) to screw couplings (1.3) in a parallel position to provide support.

8. Brace with diagonal scaffold tube (11.2) and two swivel couplings (11.3). (Fig. A1.08)

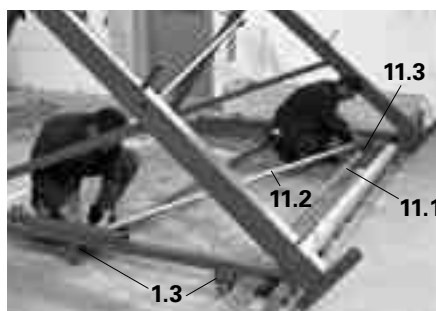


Fig. A1.08

The brackets are now aligned.

Girder Assembly



When using PERI GT 24 girders, strengthen them on both sides in the area of the brackets with plywood strips (13.2).

(Fig. A1.09)

Dimensions: thickness/width/height
27 x 120 x 300 mm.

Fixing: Torx TSS 6 x 60.

Assembly

1. Fix girder (13.1) by means of screw clamps. (Fig. A1.10)
2. Fix diagonals to the fixing plates using two hex. wood screws 6 x 80 DIN 571 (13.3) each. (Fig. A1.11)

Alternatively:

Round head bolts M6 x 100 DIN 603 and washer, or M6 x 180 (13.4) for double girders.



Pre-drill girders when using round head bolts. Use round head bolts for longer girder cantilevers.

Timbers must be fixed accordingly.
The girders are now assembled.



Fig. A1.09

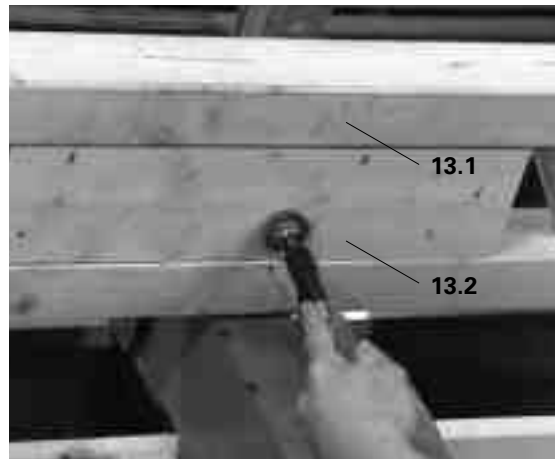


Fig. A1.10



Fig. A1.11

Single Girder Position

- plywood or 3-ply board (13.2)
 - hex. wood screw 6 x 80 DIN 571 (13.3)
 - timber 8/16 (13.6)
 - GT 24 lattice girder (13.7)
- (Fig. A1.12 + A1.13)

GT 24 Girder

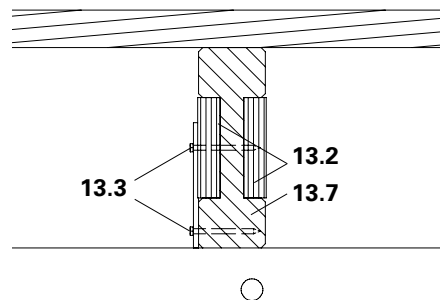


Fig. A1.12

Timber

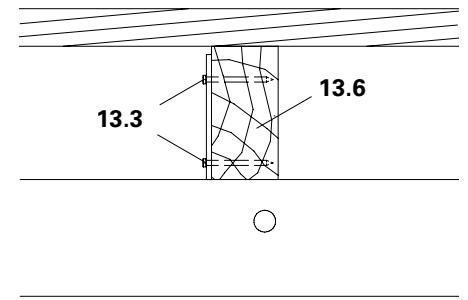


Fig. A1.13

Double Girder Position

- plywood or 3-ply board (13.2)
 - timber 8/16 (2x) or 16 x 16 (1x) (13.6)
 - round head bolt M6 x 180 DIN 603 (13.4)
 - GT 24 lattice girder (13.7)
- (Fig. A1.14 + A1.15)

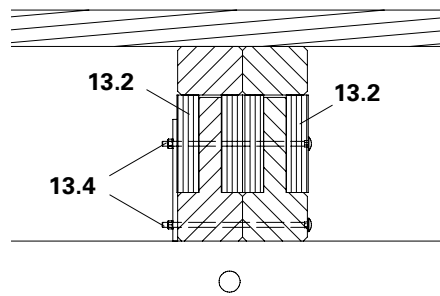


Fig. A1.14

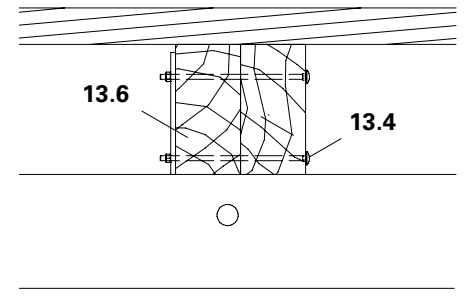


Fig. A1.15



These drawings conform to Appendix K15 of the type test issued by the State Structural Inspectorate, Düsseldorf, test certificate no. P31 – 95/91 and may only be used in accordance with the aforementioned type test.

Assembly of CB 240 Carriage

Assembly

1. Retract the wedge (2.2).
2. Insert rack (2.7) into the carriage (2.1). (Fig. A1.16)
3. Secure with wedge (2.2). (Fig. A1.17)
4. Remove lower-positioned bolts (2.4) and roller (2.3) from the carriage. (Fig. A1.16)

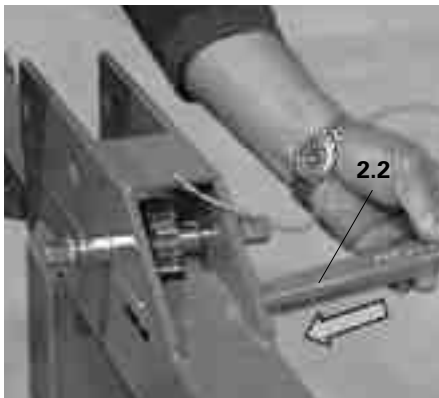


Fig. A1.17

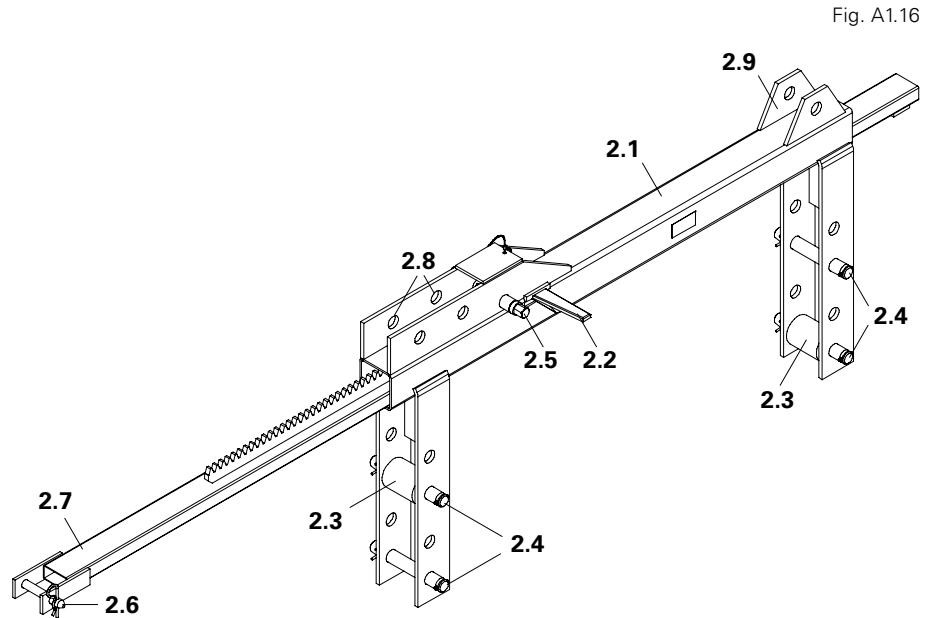


Fig. A1.16

- | | |
|---|---|
| (2.1) Carriage CB 240 | (2.6) Bolt \varnothing 16 x 65/86 with Cotter Pin 4/1 |
| (2.2) Wedge | (2.7) Rack |
| (2.3) Rollers \varnothing 60 x 85 | (2.8) Strongback Connection \varnothing 26 |
| (2.4) Bolt \varnothing 25 x 180 with Cotter Pin 4/1 | (2.9) Adjustable Brace Connection \varnothing 26 |
| (2.5) Traction Screw SW 19 | |

5. Depending on the height of the girders (24 cm or 16 cm), mark out both bolts (2.4) and roller (2.3) accordingly. (Fig. A1.18)

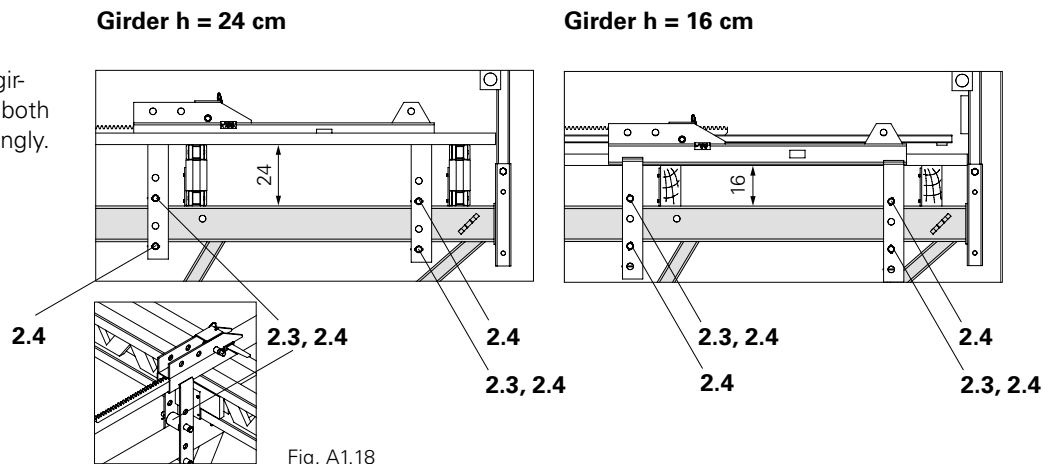


Fig. A1.18

Assembly of CB 240 Carriage

Assembly

6. Position carriage (2.1) on the bracket (1.1). (Fig. A1.19)

The mounting for the Strongback is facing the formwork side.



Fig. A1.19

7. Push roller (2.3) on bolt (2.4). On the guardrail side, insert and secure underneath the bracket beam. (Fig. A1.20)

8. Insert and secure second bolt on the formwork side. (Fig. A1.16)

9. Assemble carriage on second bracket in the same way.

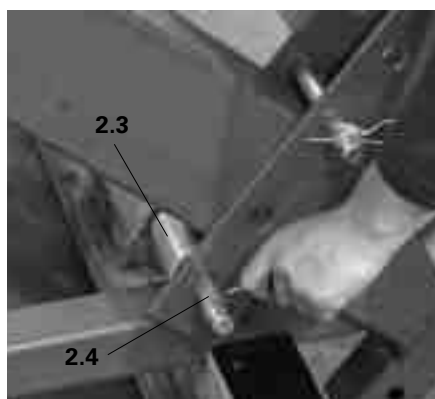


Fig. A1.20



Risk of crushing!
Hold carriage when detaching!



Check the position of the rollers!
(Fig. A1.21)



Fig. A1.21

10. Remove wedges from carriage. Extend rack (2.7) and attach to bracket with bolts $\varnothing 16 \times 65/86$ and cotter pins (2.6). (Fig. A1.22)

Push carriage upwards and secure with the wedges to the rack.



Fig. A1.22

Assembly of Decking for the Working Platform

Assembly

1. Cut planking at right angles, $L = 2.326 \text{ m}$.
2. At platform ends, fix each plank flush to the girders (13.1). (Fig. A1.23)
Planking is flush with bracket front edge on the wall side.
Projecting length: 81 mm over girder on the wall side. (Fig. A1.24)
Mounting: Torx TSS 6 x 80 (13.5) 2 x per girder support.
Alternatively: nails 38 x 100.
3. For accurate positioning, use plumb line. (Fig. A1.24)
4. Fix remaining planking. (Fig. A1.25)



- Assembly details for the sliding hatch are to be found in A2.
- Joint width in planking max. 2 cm.

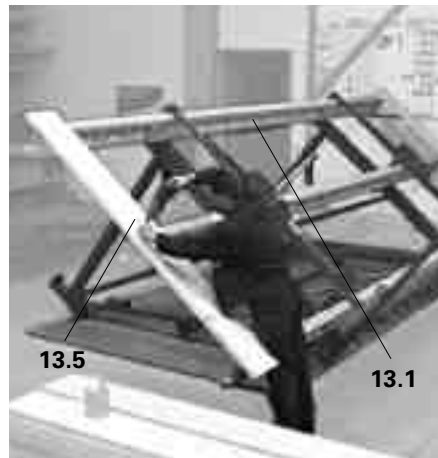


Fig. A1.23

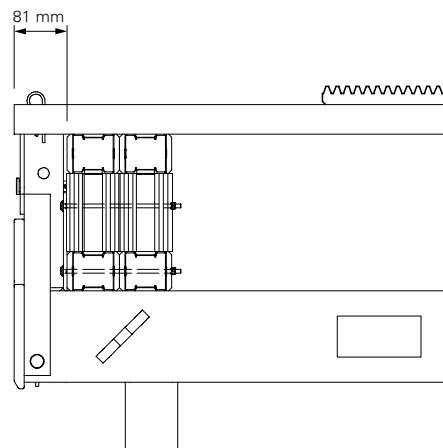


Fig. A1.24



Fig. A1.25

Assembly of Decking for Working Platform

Assembly Dimensions

- cut out for securing bolt 1.5.

Other Dimensions:

- plank width min. 10 cm.
- guide apertures on both sides of the carriage: 10 – 15 mm. (Fig. A1.26)

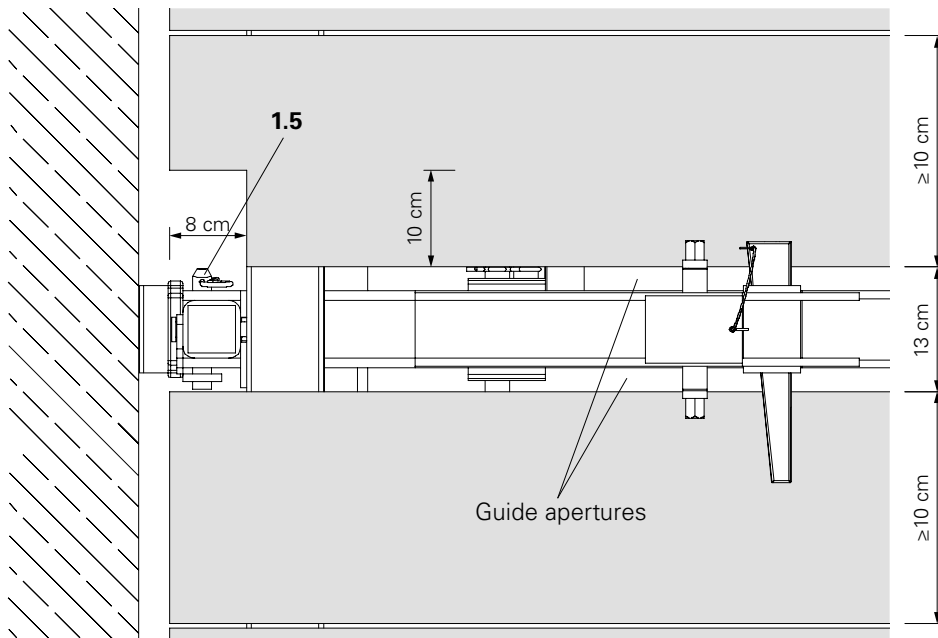


Fig. A1.26

Assembly of Guardrails

Guardrail Post CB

1. Loosen bolt (1.6), SW 24, and take out guardrail post (1.2). (Fig. A1.27)
2. Insert Guardrail Post into the holder. The Crane Eye (1.4) is pointing in the direction of the platform. Fix with bolt (1.6), spring washer and nut. (Fig. A1.28)
3. Proceed in the same way with the second Guardrail Post.



Fig. A1.27



Fig. A1.28

Depending on the height of the girders, use the following:
 24 cm = top drilled hole a
 16 cm = bottom drilled hole b.
 (Fig. A1.29)

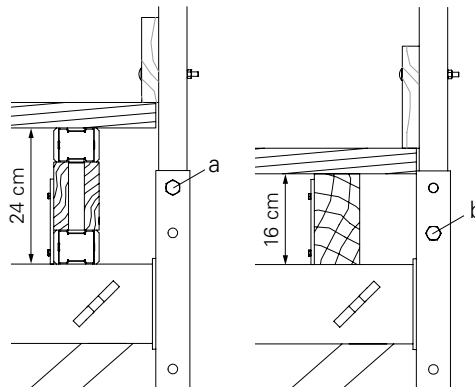


Fig. A1.29

Assembly of Guardrails

1. Cut guardrail boards (12.1) to match platform width.
2. Attach guardrail boards to Guardrail Post with screw clamps. Height: 50 cm and 100 cm above planking. (Fig. A1.30a)
3. Fix guardrail boards and toe board (12.2) with round head bolts M8 x 100 DIN 603 (12.5).
Pre-drill boards!



Guardrail boards flush with the planking.



Fig. A1.30a

Guardrail Post Extension CB (12.9)

It serves to extend the CB Guardrail Post by 50 cm. Guardrail board and/or scaffold tube connection. (Fig. A1.30b)

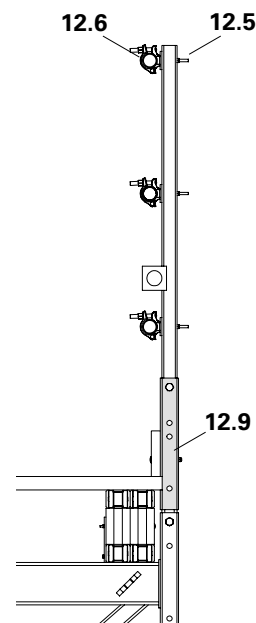


Fig. A1.30b

Assembly of Guardrails

End Guardrail Posts

For longer cantilevers, it is necessary to additionally support the guardrail boards with one or more End Guardrail Posts.

1. Mark the outside edge of the End Guardrail Post (12.3) on the guardrail boards (12.1 + 12.2).
2. Align End Guardrail Post and fix to girder (13.1) with screw clamp. (Fig. A1.31 + A1.32)
3. Use wood screws (6x) 6 x 80 DIN 571 (12.8) for fixing to girder. (Fig. A1.33a)
4. Mount the pre-drilled guardrail boards using round head bolts M8 x 100 DIN 603 (12.5).



Fig. A1.31



Fig. A1.32

Assembly using one GT 24 Girder

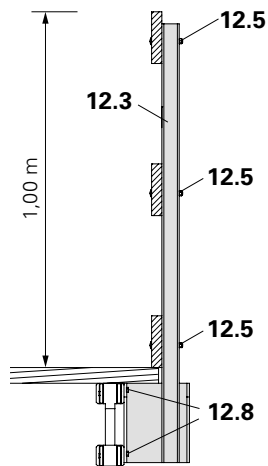


Fig. A1.33a

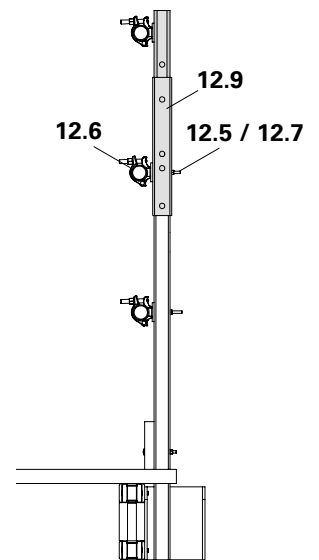


Fig. A1.33b

Guardrail Post Extension CB (12.9)

(Fig. A1.33b + A1.34b)



- As an alternative to the guardrail boards, scaffold tubes can be connected with Guardrail Connector CB (12.6) and round head bolts M8 x 100 DIN 603 (12.5).
- Round head bolts M8 x 125 (12.7) are to be used for the guardrail boards.

Assembly using Two GT 24 Girders

1. Turn End Guardrail Post. The post rests against the planking.
2. Using wood screws (6x) 6 x 80 DIN 571 (12.8), fix to pre-drilled outer girder. (Fig. A1.34a)

Assembly using two GT 24 Girders

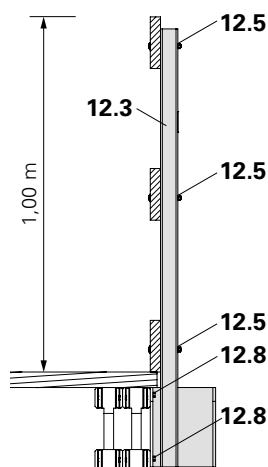


Fig. A1.34a

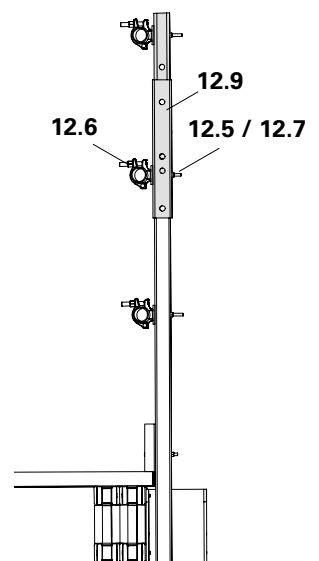


Fig. A1.34b

Assembly of End Guardrail Posts

Required Materials:

- 2 End Guardrail Posts
- 2 guardrail boards 4 x 12 cm
- 1 toe board 4 x 12 cm

Assembly

1. Fix End Guardrail Post (12.4) to girders with wood screws 6 x 80 (5x) (12.8).
2. Fix guardrail boards and toe board with round head bolts M8 x 100 DIN 603 (12.5). (Fig. A2.01 + A2.02a)



Fig. A2.01

Guardrail Post Extension CB (12.9)

(Fig. A2.02b)



- As an alternative to the guardrail boards, scaffold tubes can be connected with Guardrail Connector CB (12.6) and round head bolts M8 x 100 DIN 603 (12.5).
- Round head bolts M8 x 125 (12.7) are to be used for the guardrail boards.

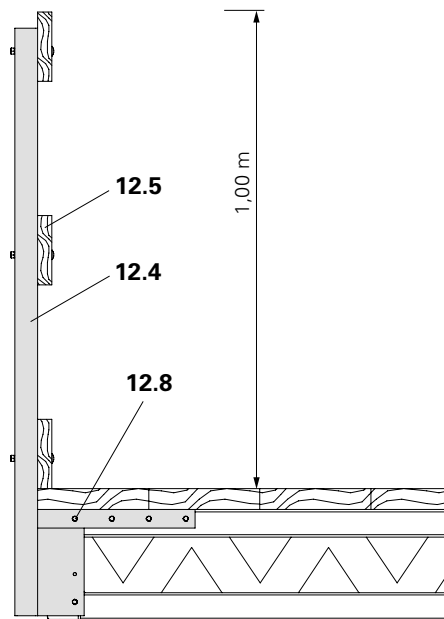


Fig. A2.02a

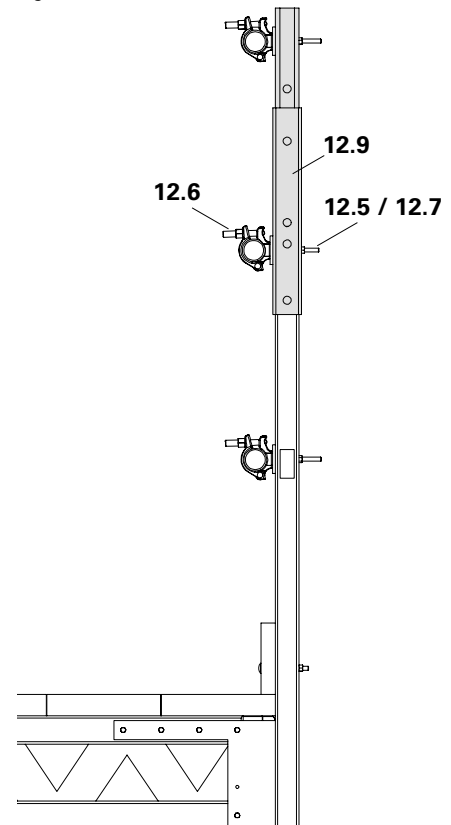


Fig. A2.02b

Assembly of Foldable Hatch



The hatch is positioned in the moving area of the formwork. If the access ladder is to be used even if the formwork is completely retracted, the hatch is to be positioned in the cantilevered area of a corner platform.



- We recommend the hatch, as featured, to be installed close to the bracket in order that personnel can hold the spindle when climbing.
- Alternatively, the Sliding Hatch Cover Item no. 051430 can be used. The cut-out in the planking must be adapted accordingly. Details are available on request.

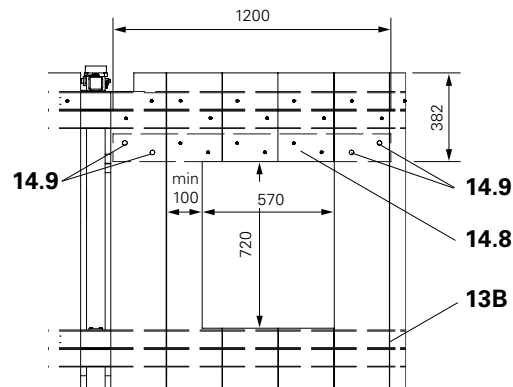


Fig. A2.03

Section

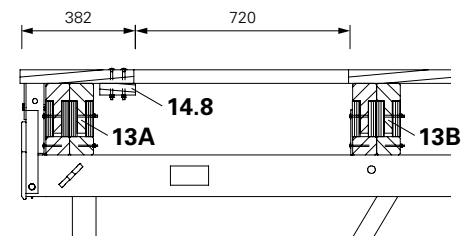


Fig. A2.04

Pre-assembly

- For installation, a 72 x 57 cm cut-out must be made in the planking between the brackets.
- Ensure the remaining plank width is > 10 cm.
- The cut-out is arranged flush against the middle girder (13B).
- The truncated decking pieces are to be supported on the wall-side girder (13A) using timber (14.8), L = 120 cm, min. 120 x 40 mm and bolted using TORX 6 x 80.
- The timber (14.8) is bolted 2x in each case to the lateral continuous planking. F.H. Round head bolts DIN 603 M8 x 100 (14.9) with washer ISO 7094 100 HV A8. (Fig. A2.03 and Fig. A2.04)

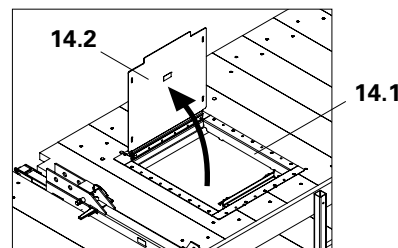


Fig. A2.05

Assembly

- Place hinged hatch 55 x 60-2 (14.1) in the cut-out. The cover (14.2) opens towards the wall side. (Fig. A2.05)
- Attach hatch frame to the planking (approx. 20 x TORX 6 x 40). (Fig. A2.06)

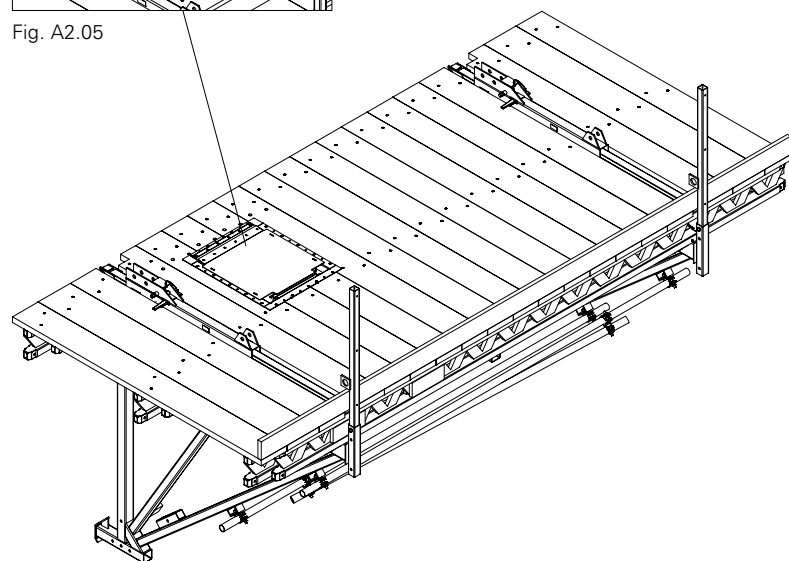


Fig. A2.06

Assembly of Finishing Platform

Assembly of Platform Beams



When using PERI GT 24 Girders, strengthen them on both sides in the area of the brackets with plywood strips (13.2).

(Fig. A2.08)

Dimensions: thickness/width/height
27 x 120 x 300 mm.

Fixing: Torx TSS 6 x 60.

Assembly

1. Lay Platform Beam CB (8.1) parallel in the bracket spacing on the assembly floor.
2. Place girder (13.1) and secure in position: 2 x KH 8/16 and 8 x round head bolts. (Fig. A2.07)



Fig. A2.07

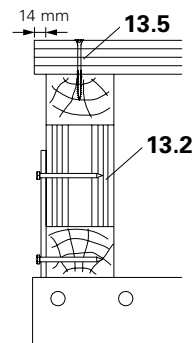


Fig. A2.08

Assembly of Decking

1. Cut planking at right angles, L = 1170 mm.
2. Fix planking at both platform ends flush to girders. Projection length: 14 mm over girder on wall side. (Fig. A2.08)
Mounting:
Torx TSS 6 x 80 (13.5) 2 x per girder.
Alternatively: nails 38 x 100.
3. For accurate positioning, use plumb line.
4. Fix remaining planking. (Fig. A2.09)

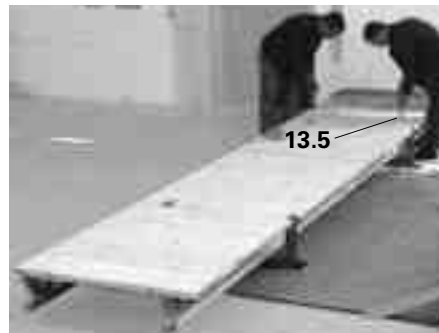


Fig. A2.09

Assembly of Finishing Platform

Assembly in the Platform Beam Area

The plank jointing is centered on the platform beams (8.1). The planks (8.3) to the side of the platform post (9.1) must be complete!

This planking is only tacked on and must be removed when the finishing platform is mounted.

A cut-out is made in the area around the platform post.

(Fig. A2.10)

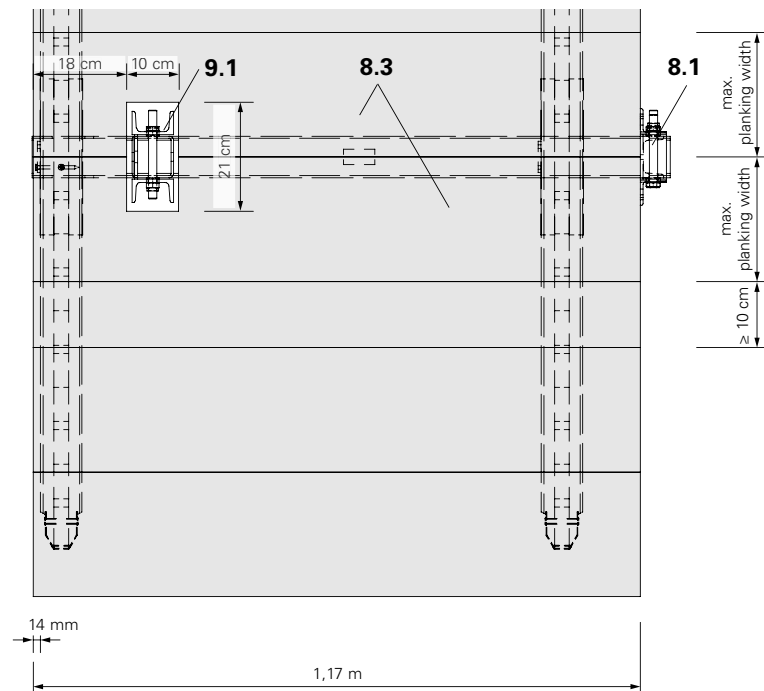


Fig. A2.10

Finishing Tasks

1. Mark the platform according to planning instructions e.g. with colour spray.
2. Preparations for transportation and storage.

Anchoring

Safety Instructions



- Each CB Bracket must be individually anchored, and the loosening or dismantling of the anchoring may only take place on the side of the load transfer. The positioning of two cones against each other is not allowed. (Fig. B1.01)
- If $h_1 + h_2 < d$, the anchor positions must be horizontally or vertically offset. (Fig. B1.02 + B1.03)
- The correct installation of the climbing anchor is to be checked before being concreted in position. We recommend the compiling of an acceptance report.
- The climbing anchors must not be used until the load-bearing capacity of the anchorage is sufficient.
- The threaded areas on the Screw-On Cone-2 and Climbing Cone-2 as well as the Threaded Plates DW 15 and DW 20 must always be completely screwed in.
- The required anchoring depth h must not be achieved through a reduction of the screw-in depth.
- The tie rods must be chamfered at both ends.
- Damaged anchoring components must not be used.

Examples of damage:

- welding splashes on the tie rods,
- twisted tie rods,
- blocked threads,
- deformed cone cups,
- rough or scratched cone surfaces,
- missing dowel pin in the climbing cone.

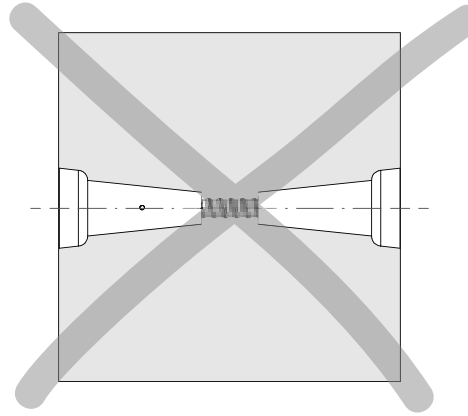


Fig. B1.01

Top view
horizontal offset

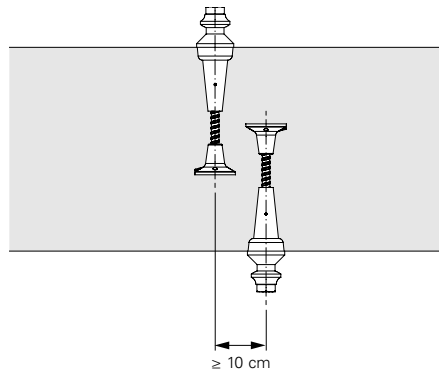


Fig. B1.02

Section
vertical offset

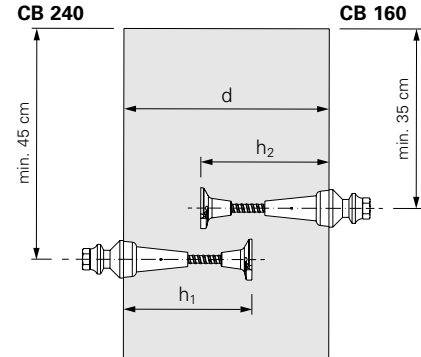


Fig. B1.03

Anchoring

Preparations for Use



- With different concreting heights, anchor spacings with < 5 cm deviations can be compensated by means of the height adjusting unit. With larger deviations, more drilled holes are provided.
- During the first installation, compare the anchor spacing with the bracket spacing of the pre-assembled platform.
- Dimension and install the leading anchor according to planning requirements.

Version 1

Climbing Cone-2 M24/DW 15

Anchoring depth h according to static requirements.

1. Check tie rod length L_1 .
2. Screw in DW 15 Tie Rod into the climbing cone (5.3).
3. If necessary, pull DR 22 Spacer Tube (5.8) over the DW 15 Tie Rod (5.5).
4. Completely screw in and tighten Threaded Anchor Plate DW 15 (5.4) on the tie rod (5.5). (Fig. B1.04)

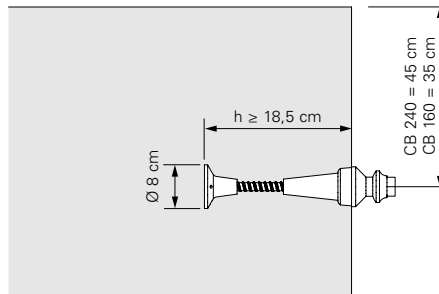


Fig. B1.04

Version 2

Screw-On Cone-2 M24/DW 20

Anchoring depth $h = 15.5$ cm.

1. Completely insert Screw-On Cone (5.1) into the Threaded Anchor Plate DW 20 (5.2). (Fig. B1.05)

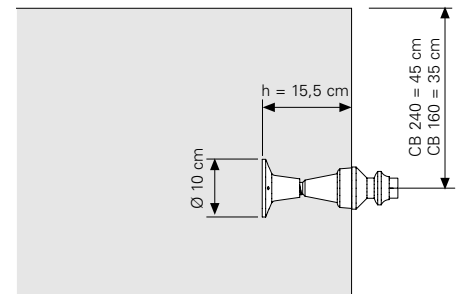
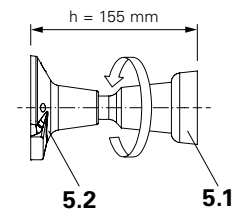
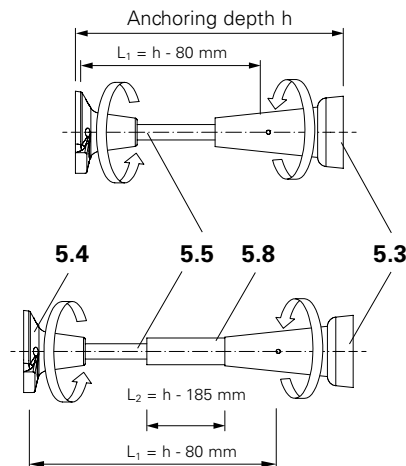


Fig. B1.05



Anchoring

Assembly of the Leading Anchor With Anchor Positioning Stud M24, e.g. for TRIO Panel Formwork.

Initial Use and Standard Use

1. Fix Anchor Positioning Stud M24 (5.11) to the marked position with nails 31 x 80 (4x) (5.12). (Fig. B1.06)
2. Tightly screw on pre-assembled Leading Anchor (5) on Anchor Positioning Stud M24. (Fig. B1.07)



Fig. B1.06



- A more stable mounting is achieved through the installation of the Anchor Positioning Plate, see “Assembly of Advancing Bolt M24.”
- In this case, the distances from the holes to be drilled to the steel struts of the formwork must be sufficient.
- For safe positioning, firmly connect the Threaded Anchor Plate (5.2) to the reinforcement.



Fig. B1.07



Check Assembly

- height,
- anchor spacings,
- anchoring depth h ,
- alignment according to specifications,
- turn over wire nails.

Checking the Leading Anchor and reinforcement measures can be done at the same time.

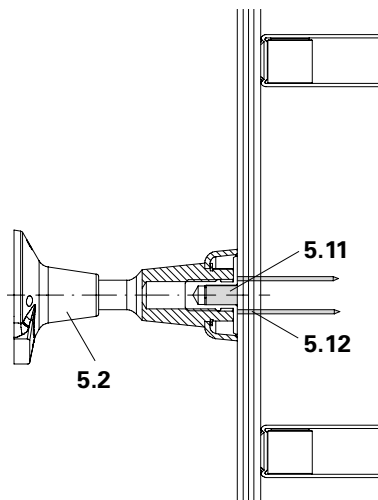


Fig. B1.08

Anchoring

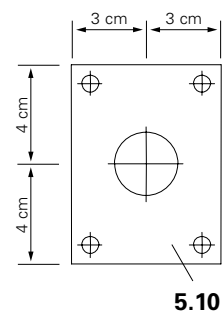
Assembly of the Leading Anchor With Advancing Bolt M24, e.g. for VARIO GT 24 Girder Wall Formwork.

Initial Use

1. Check the required space for the Anchor Positioning Plate M24 (5.10). A lateral clearance of 3 cm or 4 cm is required. (Fig. B1.10)
2. Determine the set position and drill \varnothing 25 mm hole from the front of the formwork. (Fig. B1.09)
3. Mount Anchor Positioning Plate M24 (5.10) to the rear side of plywood. Wood screws 6 x 20 DIN 571, SW 10 (4x) (5.13). (Fig. B1.10)



Fig. B1.09



5.10

Fig. B1.10



- If there is a formwork girder positioned at the rear of the anchoring, "Assembly with Anchor Positioning Stud M24" can be applied.
- For safety reasons, firmly connect the Threaded Anchor Plate (5.4) to the reinforcement.



Fig. B1.11



Check Assembly

- height,
 - anchor spacings,
 - anchoring depth h ,
 - alignment according to specifications.
- Checking the Leading Anchor and reinforcement measures can be done at the same time.

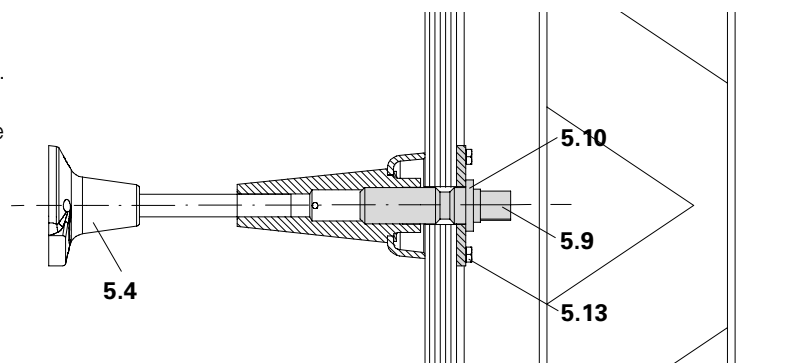


Fig. B1.12

Anchoring

Important aspects when striking with Anchor Positioning Stud M24:

Straighten out bent wire nails. When retracting the formwork, the wire nails (5.12) must be pulled through the plywood.

(Fig. B1.13)

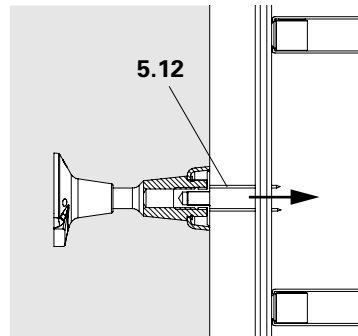


Fig. B1.13

Important aspects when striking with Advancing Bolt M24:

Loosen and remove all Advancing Bolts M24 (5.9) from the rear side of the plywood. (Fig. B1.14)

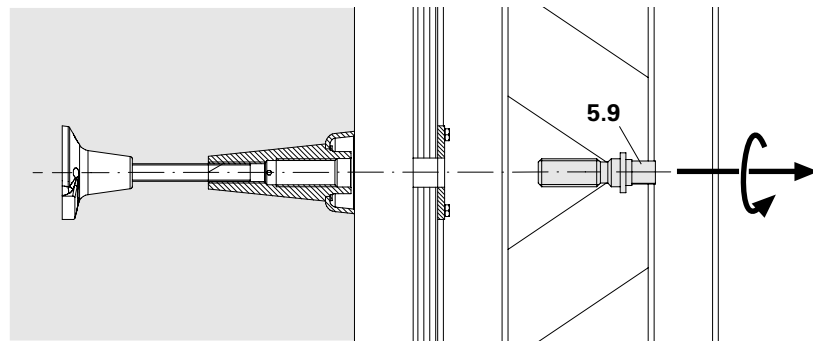


Fig. B1.14

Striking



If the formwork is retracted without the use of the spindle, this could result in damage to the carriage drive unit.

Retracting

1. Release connections to the adjoining elements (VKZ Couplings, BFD Alignment Coupler).
2. Release wedge (2.2) on the carriage.
3. Tilt formwork using Adjustable Brace CB 164-225 (3.1). With this, the nails from the Anchor Positioning Stud M24 (5.12) and box outs are pulled out of the plywood or at least loosened.
4. Retract carriage (2). (Fig. B1.15)

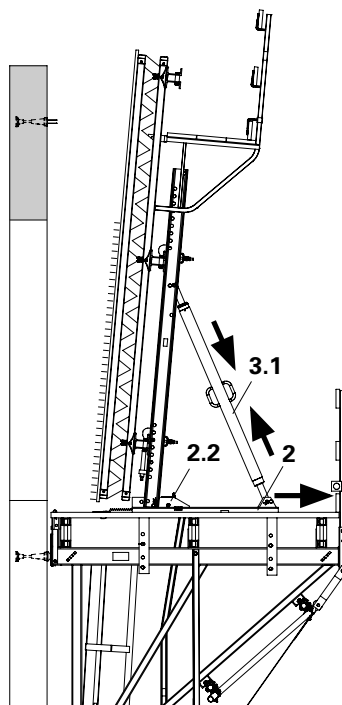


Fig. B1.15

Anchoring



Check if the cone fits correctly and is clean.

Assembly of Scaffold Mounting Ring M24

1. Turn over wire nails with a hammer.
2. Remove the Anchor Positioning Stud M24 (5.11) from the cone with an Allen Key SW 14. (Fig. B1.16)
3. Place the Scaffold Mounting Ring M24 (5.6) on the cone cup of the Screw-On or Climbing Cone (5.1/5.3) and secure using bolt M24 x 120 ISO 4014-10.9 (5.7). (Fig. B1.17)
4. Firmly tighten bolt by hand using socket wrench SW 36. (Fig. B1.18)

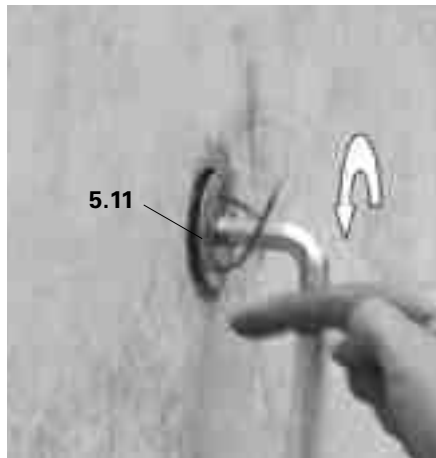


Fig. B1.16

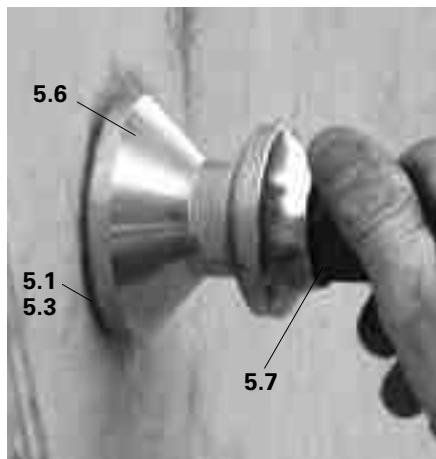


Fig. B1.17



Fig. B1.18

Mounting the CB 240 climbing unit to the first wall section



- Use appropriate 4-sling lifting gear!
- Crane sling angle max. 30°!
- Do not exceed the crane capacity!



Carriage Position

with finishing platform $X_R = 430$ mm.
without finishing platform $X_R = 650$ mm.
Platform is suspended horizontally.

Formwork Carriage

1. Move carriage into position and secure with wedge.
2. Insert two bolts $\varnothing 25$ (4.6) from an Adjustable Brace CB 164-224 at the front and rear of the carriage and secure.



Before Attaching

- Is the carriage in the correct position?
- Is the wedge securely in position on the carriage?
- Are the cotter pins in the bolts $\varnothing 25$?

Attaching

3. Attach 4-sling lifting gear to the bolts $\varnothing 25$ (4.6) on the carriage. (Fig. B1.19)
4. Remove cotter pin of the securing bolt (1.5).
5. Swivel securing bolt to one side. (Fig. B1.20)



Before Moving

- Is the locking device on the lifting hook closed?
- Is the lifting angle correct?
- Have loose parts been removed?
- Is the securing bolt (1.5) completely pivoted to one side?

Moving

6. Site personnel must leave the platform.
7. Move platform. (Fig. B1.21)



Fig. B1.19

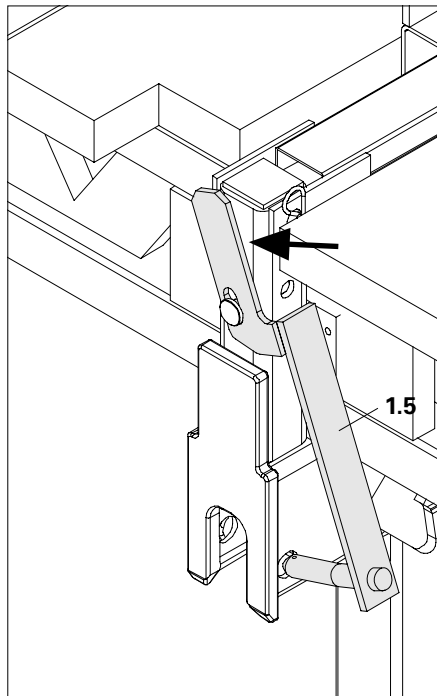


Fig. B1.20

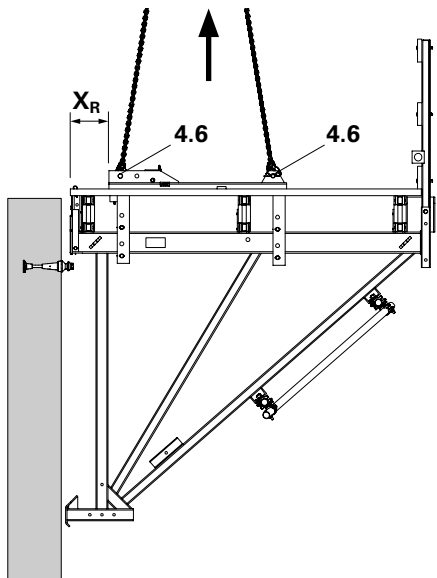


Fig. B1.21

Mounting the CB 240 climbing unit to the first wall section

Mounting

8. Raise platform and pivot over the scaffold mounting rings. (Fig. B1.22)
9. Bring platform into position and simultaneously lower without tilting.

Troubleshooting

- If no connection is made with the Scaffold Mounting Ring (5.6) or the bracket (1.1) jams, lift the platform and re-lower.
- If the bracket spacing does not correspond to the spacing of the Scaffold Mounting Rings, the spacing of the Leading Anchor on the formwork must be checked.
- If the mounting procedure is not possible, the bracket spacing must be corrected through the re-assembly of the platform.



Are the brackets (1.1) attached to both Scaffold Mounting Rings (5.6)?

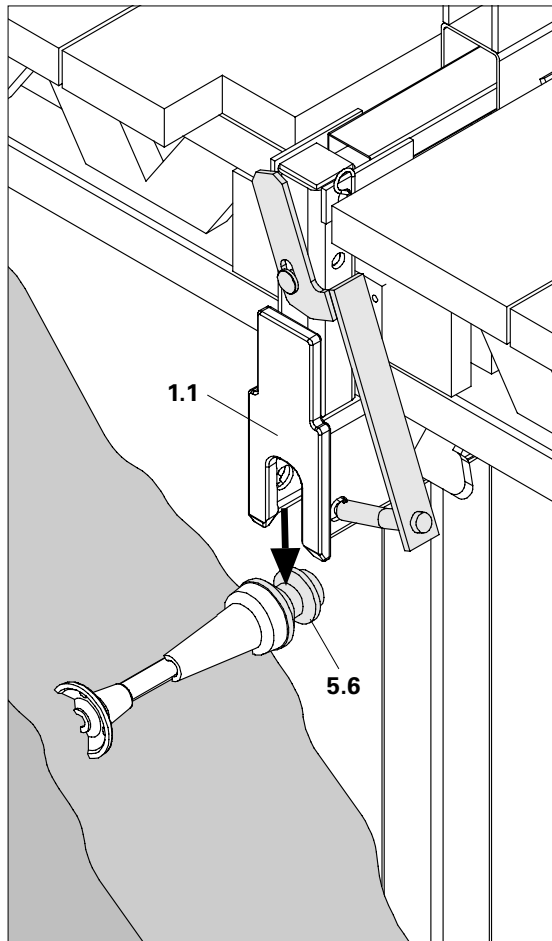


Fig. B1.22

Securing the Platform



If the securing bolts cannot be inserted, personnel are to leave the platform and then repeat the mounting procedure!

10. Access platform.
11. Lift [1] securing bolts (1.5) and pivot [2] under the Scaffold Mounting Ring (5.6).
12. Secure with cotter pins (3). (Fig. B1.23)
Use cut-out in the planking.
13. Remove crane hook.



For better visibility, some components of the reinforced concrete wall are not featured.

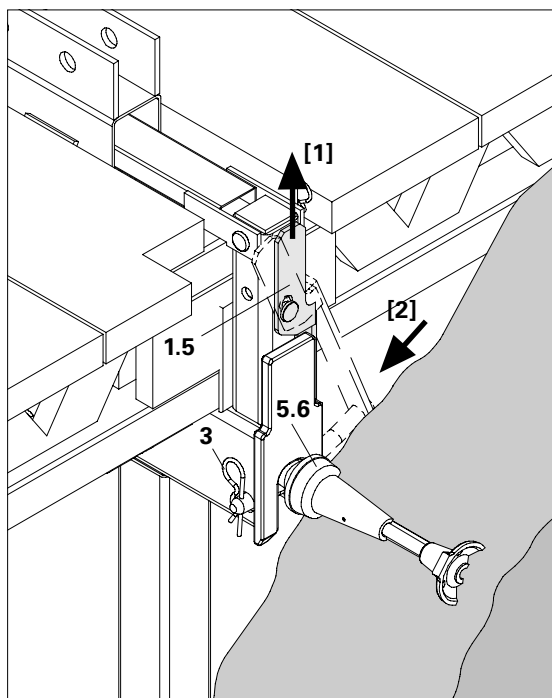


Fig. B1.23

Mounting of the CB 240 Finishing Platform

Preparation

1. Remove tacked on planking parts from both sides of the platform beam.
2. Attach 4-sling lifting gear to the four bolts and move finishing platform to the assembly area. (Fig. B1.24)

Connecting to the Brackets

Connections are done using Bolts M16 x 130 ISO 4014-8.8, nuts and spring washer (9.6) (supplied with components). Initially, only loosely tighten bolts for the articulated connections.



Fig. B1.24

9.6

Fig. B1.25

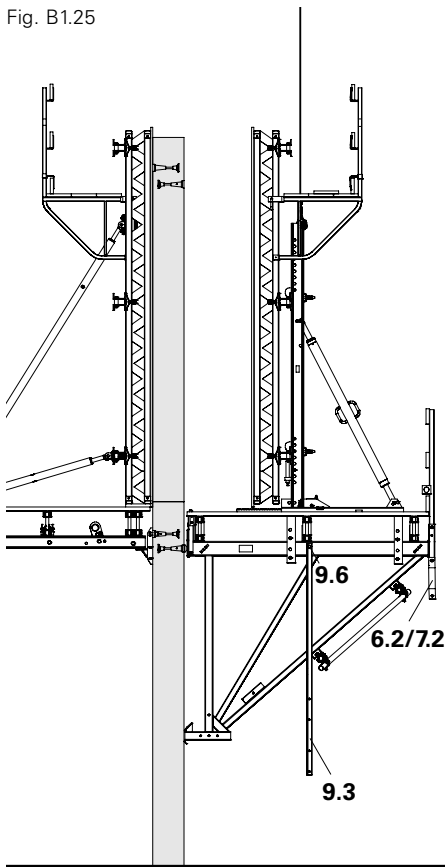


Fig. B1.26

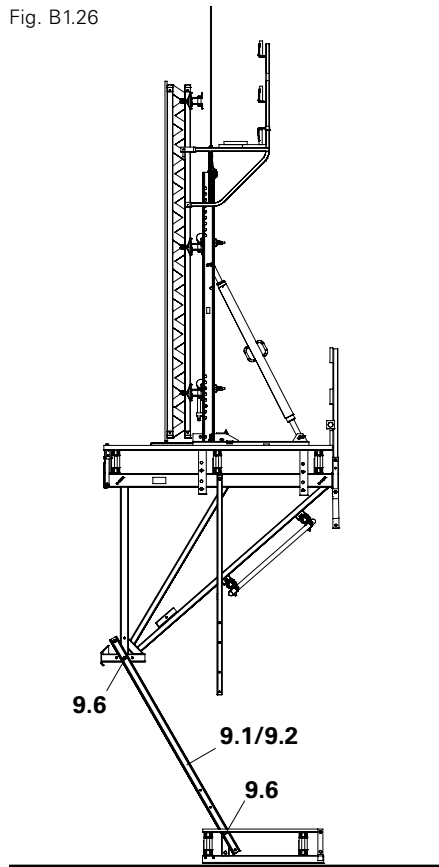
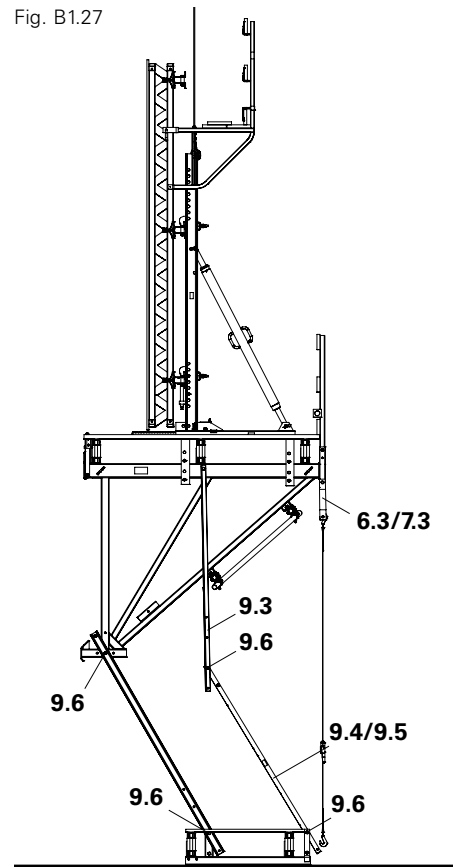


Fig. B1.27



1. Connect Guardrail Post 200 (9.3) to the bracket and tighten bolts (9.6). Bolt on top part of wind bracing (6.2/7.2).
2. Attach platform unit to the Strongback and lift out of the anchoring. (Fig. B1.25)
3. Pivot platform unit over the finishing platform.

4. Bolt Platform Post 225 (9.1) to Post Extension 180 (9.2) and fix at an angle with bolt (9.6) to the bracket and finishing platform. (Fig. B1.26) Depending on the concreting height, use top or bottom hole, see Fig B1.28.1 – B1.28.4.

5. Fix the Guardrail Post 190 (9.4) or Guardrail Post 370 (9.5) to Guardrail Post 200 (9.3) at an angle using bolt (9.6). Depending on the concreting height, use top or bottom hole, see Fig. B1.28.1 – B1.28.4. Mount wind bracing (6.3/7.3).
6. Fix the toe board at the lower end. (Fig. B1.27)

Mounting of the CB 240 Finishing Platform

Fixing points for the Platform Posts 225 and Guardrail Posts CB 190 or 370.

Firstly, only loosely tighten the bolt (9.6) for an articulated connection.

Concreting height 1.50 – 3.10 m.

Working platform – finishing platform spacing: 3.65 m. Required free space: ≥ 42 cm. Mark out Platform Post CB 225 (9.1) and Guardrail Post CB 190 (9.4). (Fig. B1.28.1)

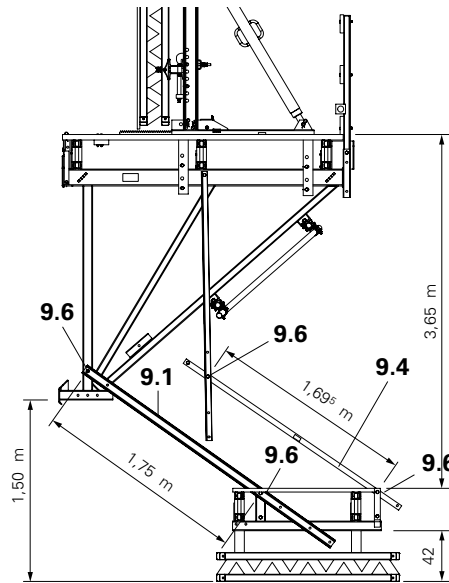


Fig. B1.28.1

Concreting height 2.00 – 3.60 m.

Working platform – finishing platform spacing: 4.15 m. Mark out Platform Post CB 225 (9.1) and Guardrail Post CB 190 (9.4). (Fig. B1.28.2)

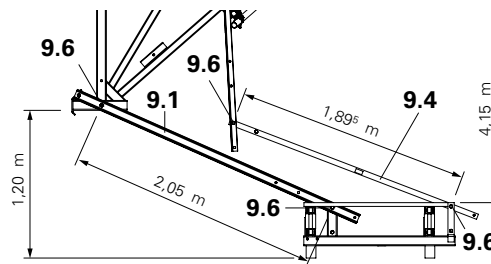


Fig. B1.28.2

Concreting height 3.30 – 4.90 m.

Working platform – finishing platform spacing: 5.45 m. Firmly bolt (9.6) Platform Post CB 225 (9.1) to the Post Extension CB 180 (9.2). Mark out Guardrail Post CB 370 (9.5). (Fig. B1.28.3)

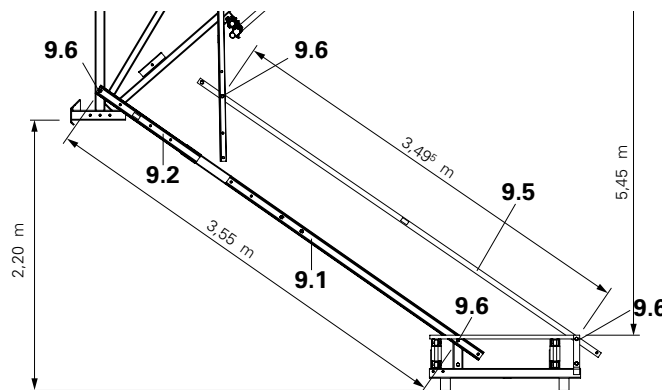


Fig. B1.28.3

Concreting height 3.80 – 5.40 m.

Working platform – finishing platform spacing: 5.95 m. Firmly bolt (9.6) Platform Post CB 225 (9.1) to the Post Extension CB 180 (9.2). Mark out Guardrail Post CB 370 (9.5). (Fig. B1.28.4)

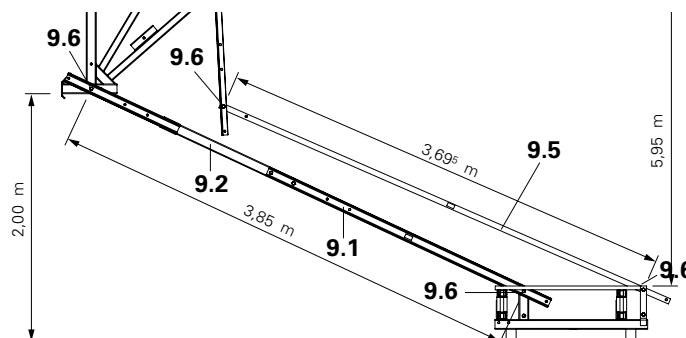


Fig. B1.28.4

Mounting of the CB 240 Finishing Platform

Finishing Tasks



If the safety cage is not used on the ladder, then the guardrails on the finishing platform are to be mounted up to the top or a safety net is to be installed!

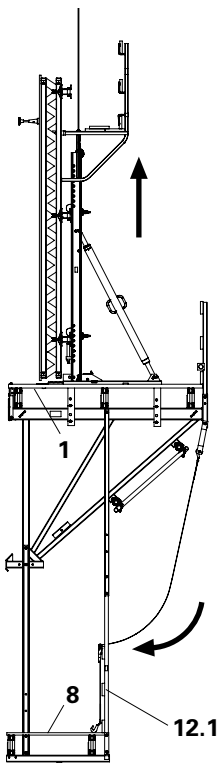


Fig. B1.29

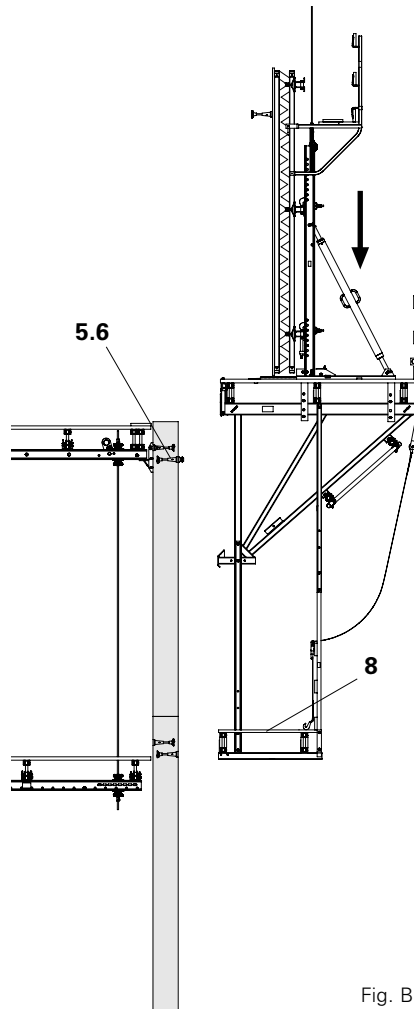


Fig. B1.30

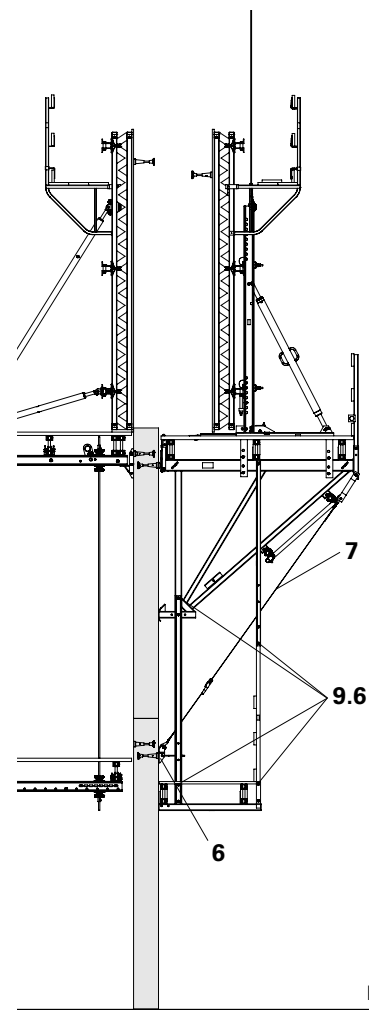


Fig. B1.31

7. Lift the platform unit. The finishing platform (8) pivots under the working platform (1).
8. Attach anti-fall protection: guardrails (12.1) and side protection for edge platforms. (Fig. B1.26)
Alternative:
guardrails can also be mounted after installing the platforms if suitable safety measures are in place.

9. Mount climbing unit to the Scaffold Mounting Rings M24 (5.6) of the next climbing cycle.
10. Close the planking on the finishing platform (8). (Fig. B1.30)

11. Mount the missing Bolts M16 x 130 ISO 4014-8.8 with nuts and spring washers (9.6) and tighten.
12. Mount wind bracing (6) and (7). (Fig. B1.31)
13. Mount access ladder.

Assembly of Wind Bracing

With Tension Belt 25 kN

Permissible tension anchor force

$$Z_z = 25 \text{ kN.}$$

1. Attach Belt Connector CB (7.2) with Bolt M16 x 100, SW 24, to the vertical tube of the bracket (1.2).
2. Mount Tension Belt (7.1) to the bolts using the end of the belt without turn-buckle. (Fig. B1.32)
3. Loosen Scaffold Mounting Ring and Bolt M24 x 120 (5.6) on the previous concreting segment with socket wrench SW 36 and remove. (Fig. B1.33)
4. Fix Bracing Shoe Wall CB M24 (6.1) to the cone using Bolt M24 x 70 (5.14) SW 36, after the bolts have been removed from the tension plate (6.2). Re-insert tension plate through the platform post and re-bolt in the bracing shoe. (Fig. B1.34)
5. Unroll Tension Belt (7.1) from ratchet.
6. Attach Tension Belt (7.1) below in the Bracing Shoe Wall CB M24 (6.1) and tighten. (Fig. B1.35)

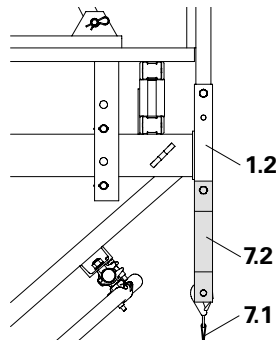


Fig. B1.32

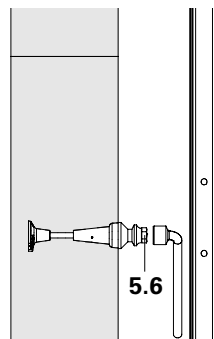


Fig. B1.33

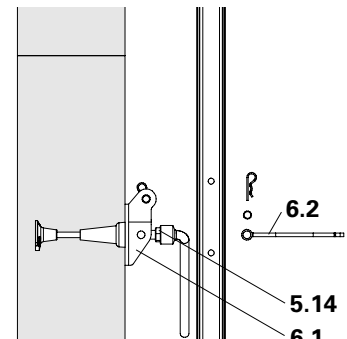


Fig. B1.34



If lateral stabilisation of the finishing platform is not required, then the Belt Connector Wall (6.3) can also be used instead of the bracing shoe. (Fig. B1.35a)



Bolt M24 tightened?
Safety catch locked into the hook of the Tension Belt?

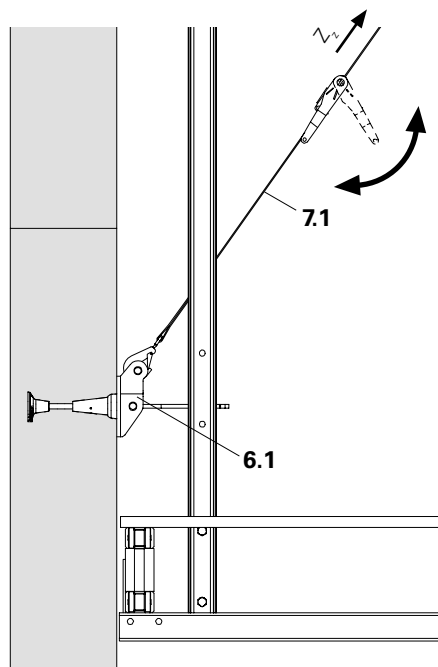


Fig. B1.35

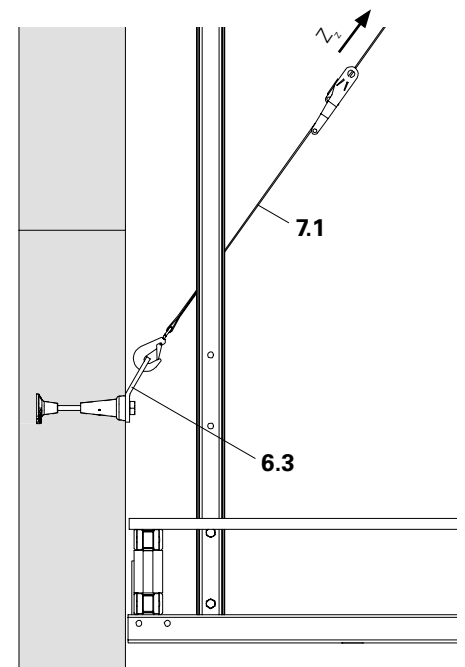


Fig. B1.35a

Assembly of Wind Bracing

With Tie Rod DW 15

Permissible tension anchor force
 $Z_z = 41 \text{ kN}$.

1. Fix Tension Anchor Connector CB (7.3) with designated Bolt M16 x 100, SW 24, to vertical tube of the bracket (1.2). (Fig. B1.36)
2. Screw in the DW 15 Tie Rod (7.4) into the nut of the Tension Anchor Connector (6.2).
3. Loosen Scaffold Mounting Ring and Bolt M24 x 120 (5.6) on the previous concreting segment with socket wrench SW 36 and remove. (Fig. B1.33)
4. Fix Bracing Shoe Wall CB M24 (6.1) to the cone using Bolt M24 x 70 (5.14) SW 36, after the bolts have been removed from the tension plate (6.2). Re-insert tension plate through the platform post and re-bolt in the bracing shoe. (Fig. B1.34)
5. Turn Turnbuckle CB Ø 25-M20L/DW 15 (7.6) on the tie rod (7.4). (Fig. B1.38) Roughly adjust length by turning the tie rod. Fine adjustment by turning the turnbuckle.
6. Insert Eyelet Bolt Ø 25-M20L (7.5) into the bracing shoe (6.1) and secure with designated bolts and cotter pins. (Fig. B1.39)
7. Turn turnbuckle, e.g. with shortened tie rod, thus tensioning the wind bracing. (Fig. B1.41)

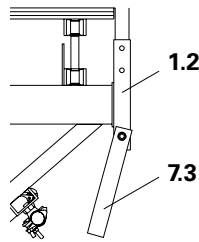


Fig. B1.36

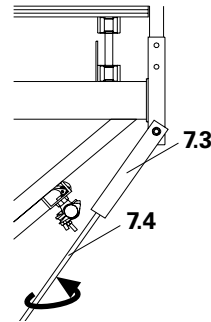


Fig. B1.37

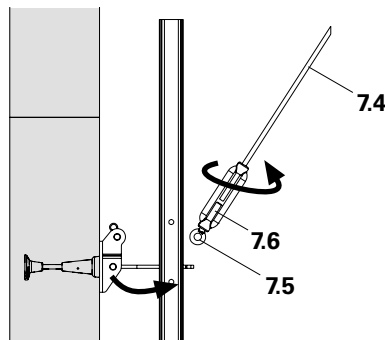


Fig. B1.38

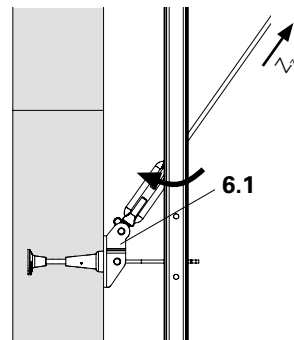


Fig. B1.39

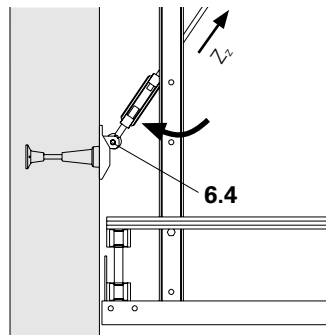


Fig. B1.40



Fig. B1.41



If lateral stabilisation of the finishing platform is not required, then the Wall Tension Anchor (6.4) can also be used. Loosen turnbuckle, turn on tie rod and insert into the Tension Anchor Connector. (Fig. B1.40)

Perm. $Z_z = 36 \text{ kN}$

Formula for calculating the length of the DW 15 Tie Rod.

With Bracing Shoe Wall CB M24
 (Fig. B1.39)

$$L = \sqrt{(H - 22.5)^2 + 232.6^2} - 44$$

H = Concreting height in cm
 L = Tie rod length in cm

With Wall Tension Anchor
 (Fig. B1.40)

$$L = \sqrt{(H - 16.4)^2 + 233.6^2} - 44$$

Removal of Climbing Cones

Assembly

1. Remove Scaffold Mounting Ring M24 or wind bracing.
2. Release cone with socket wrench SW 36. (Fig. B1.42)
3. Unscrew cone by hand. (Fig. B1.43)



For architectural concrete or gas/water impermeability of the wall, the cone hole can be closed with PERI Sealing Cones KK. See PERI Tie Technology or contact your PERI sales engineer. (Fig. B1.44)



Fig. B1.42



Fig. B1.43



Fig. B1.44

Dismantling of the Climbing Unit



Carriage Position with finishing platform $X_R = 430$ mm, without finishing platform $X_R = 650$ mm.

Assembly

1. Retract carriage.
2. Dismantle formwork.
3. Attach lifting gear to carriage by inserting Bolt $\varnothing 25 \times 180$ (4.6).
4. Remove securing bolts (1.5).
5. Lift out working platform from the anchoring and disassemble finishing platform. (Fig. B1.45)
6. Set down climbing unit on assembly area and dismantle.
7. Remove anchors from building ensuring that personnel are always in a safe working position.

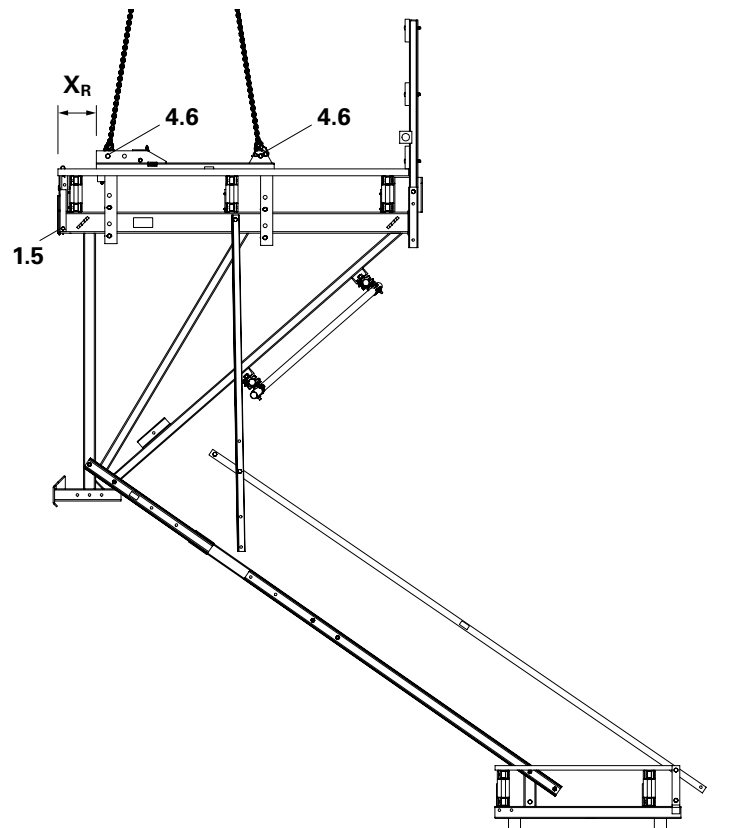


Fig. B1.45

Ladder Assembly

Overview

Mounting of ladder is dependent on the position of the finishing platform.



Parts list for ladder, see Table 1 – assembly of hatch, see A2.

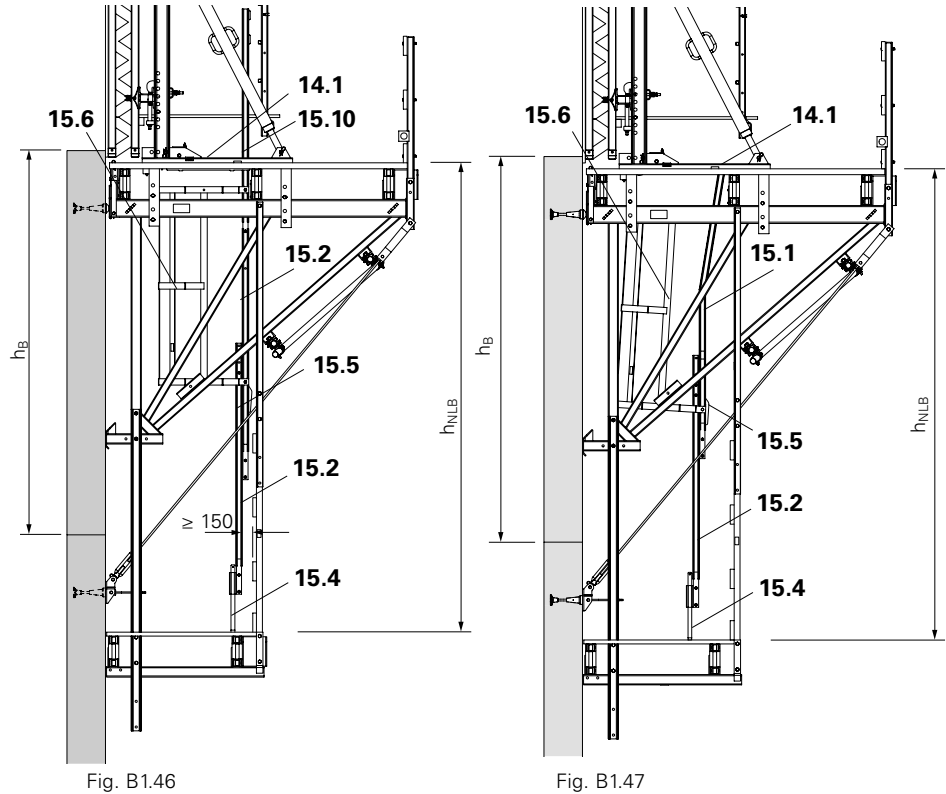


Table 1
Parts list for ladder access

Concreting height h_B [m]			1.5 – 3.0	2.0 – 3.0	3.3 – 4.9	3.8 – 5.4
Working platform – finishing platform spacing h_{NLB} [m]			3.65	4.15	5.45	5.95
Item no.	Description		Parts List			
14.1	126431	Hatch 55 x 60-2, foldable (Fig. B1.46)	1	1	1	1
15.10	103724	End Ladder 180/2	1	1 ¹⁾	1	1 ¹⁾
15.2	051410	Ladder 180/6, galv.	2	2	3	3
15.6	051450	Ladder Safety Cage 150, galv.	1	1	1	2
	104132	Ladder Safety Cage 75, galv.	–	–	1	–
15.4	109105	Ladder Base 30, galv.	1	1	1	1
15.5	103718	Ladder Hook, galv.	2	–	2	–
14.1	110608	Hatch 55 x 60, foldable²⁾ (Fig. B1.47)	1	1	1	1
15.1	051420	Ladder 220/6	1	1	1	1
15.2	051410	Ladder 180/6, galv.	1	1	2	2
15.6	051450	Ladder Safety Cage 150, galv.	1	1	1	2
	104132	Ladder Safety Cage 75, galv.	–	–	1	–
15.4	109105	Ladder Base 30, galv.	1	1	1	1
15.5	103718	Ladder Hook, galv.	2	–	2	–

¹⁾ Attach End Ladder 180/2 in second rung.

²⁾ Alternatively, the Sliding Hatch Cover (Item no. 051430) can be used. The cut-out in the planking must be adapted accordingly. Details are available on request.

Ladder Assembly

Pre-Assembly of Ladder

1. Lay out ladders, End Ladder 180/2 (15.10) or Ladder 220/6 and Ladder 180/6 (15.2).
2. Connect Ladders with bolts M12 x 40, SW 19 (15.3). (Fig. B1.48)
3. Mount Ladder Base 30 (15.4) using bolts M12 x 40 (15.3). (Fig. B1.48)
4. If the bottom ladder is of a hook-on type, fix Ladder Hook (15.5) with bolts M12 x 25, SW 19 (15.7). (Fig. B1.49)



Are the rungs of the hook-on ladder at the same height as the bottom ladder? (Fig. B1.50)

Ladder variations for access:

Ladder 220/6 bolted

1. Lift ladder using the crane. Lower ladder through hatch opening.
2. Fix ladder to hatch on both sides from the top, bolts M12 x 40 (14.3). (Fig. B1.51a)

End Ladder 180/2 attached

In addition, the Hatch 55 x 60-2 has a rung depression to accommodate a screw connection for mounting the End Ladder 180/2.

1. Lift ladder using the crane. Lower ladder through hatch opening.
2. Attach top rung or second rung on the hatch and secure with cotter pins (Fig. B1.51b + B1.51c)

Mounting the Ladder Base

For horizontal mounting of the ladder, tightly screw the drawn-out bracket of the Ladder Base 30 to the planking with 3 Torx TSS 6 x 40 (15.9).

Mounting the Ladder Safety Cage

1. Bring and hold Ladder Safety Cage (15.6) in position using a rope.
2. Slightly loosen bolts M12 x 25 (15.7) (4x) on the clamping plate (15.8), position clamping plate on the ladder longitudinal members, and tighten bolts. (Fig. B1.52)

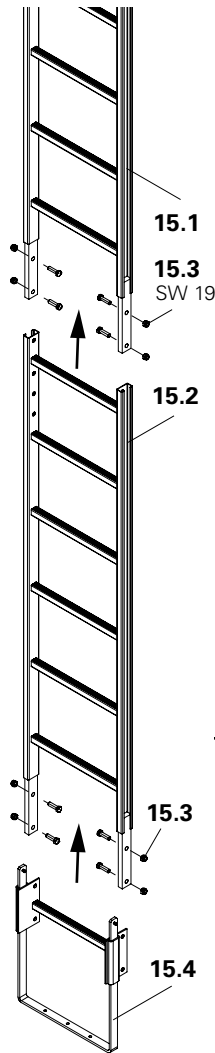


Fig. B1.48

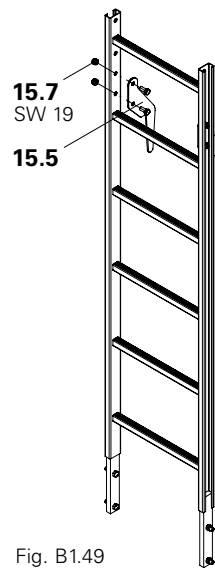


Fig. B1.49

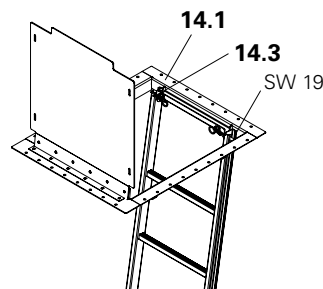


Fig. B1.51a

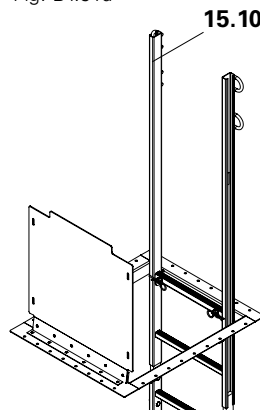


Fig. B1.51b

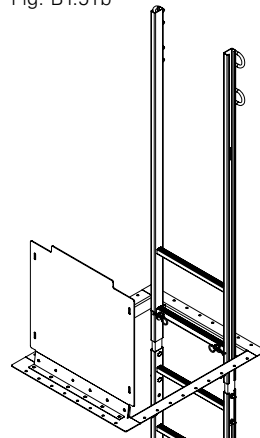


Fig. B1.51c

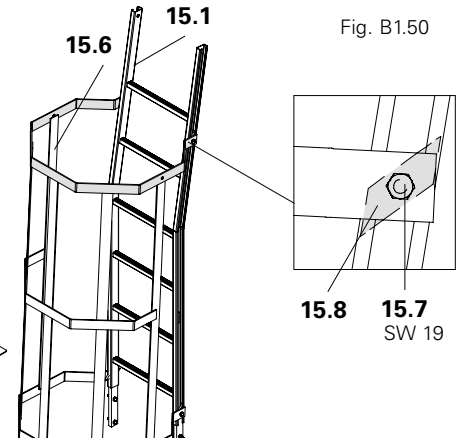


Fig. B1.52

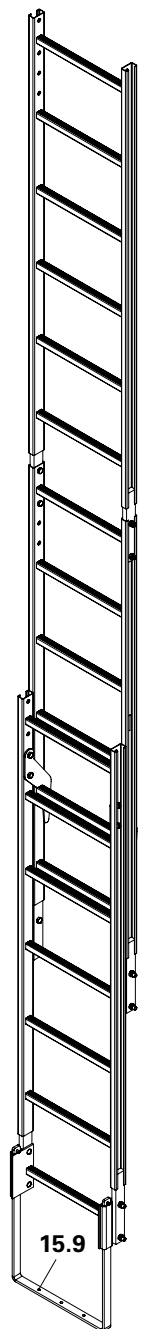


Fig. B1.50

VARIO GT 24 Element

Assembly of Strongback CB on the VARIO GT 24 Element

1. Lay Strongback CB 270 or CB 380 (4) on the steel waler of the VARIO GT 24 formwork according to the bracket spacing. Bottom projecting length: see plans or C1. (Fig. B2.01)
2. Mount Waler Fixation U100 – U120 (4.4) and secure in position by tightening the Quick Jack Nut. (Fig. B2.02)
3. Fix Height Adjusting Unit (4.3) with bolts $\varnothing 25 \times 180$ (4.6) and cotter pin to the Strongback CB. (Fig. B2.03)
4. Turn Spindle (4.8) for the Height Adjusting Unit against the formwork waler.



Fig. B2.01

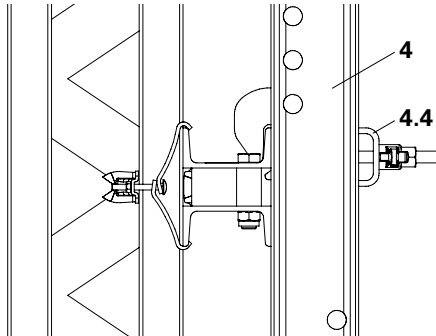


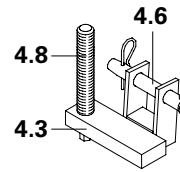
Fig. B2.02



The Waler Fixation U100 – U120 can be attached to the SRZ Steel Waler U100 and U120.



Fig. B2.03



In order to prevent any diagonal pull, a piece of timber (4.10) is clamped between the top ends of the Strongbacks, see C1, Installation of Compression Brace.

(Fig. B2.04)



Alternatively, the Lifting Beam RCS 10 t (Item no. 112986) can be used for the moving procedure.

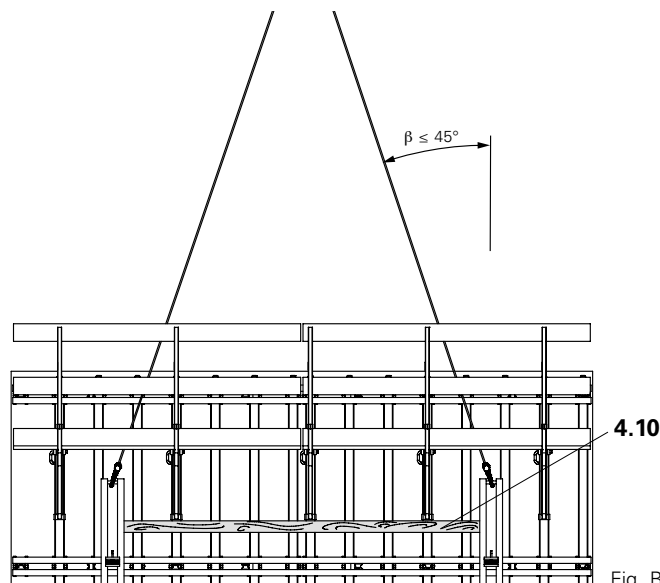


Fig. B2.04

VARIO GT 24 Element

Assembly of VARIO GT 24 Formwork Element on CB 240 Bracket

1. Retract Carriage CB 240 (2) and secure with wedge (2.2). (Fig. B2.05)
2. Fix Adjustable Brace 164-224 (3.1) to Carriage using bolts and cotter pins (3.2). Spindle out to the approximate length and attach to ladder cage to prevent tipping over. (Fig. B2.06)
3. Open concreting platform decking (10.3) above the strongback. Secure loose decking components.
4. Attach complete formwork element to the Strongback (4) and position on the CB 240 platform. (Fig. B2.07)
5. Mount Strongback CB (4) to Carriage using bolts $\varnothing 25 \times 180$ and cotter pins (4.6). Holes in Carriage, see Details. (Fig. B2.07)
6. Fix Adjustable Brace (3.1) to Strongback with bolts $\varnothing 25 \times 180$ and cotter pins (3.2). (Fig. B2.08)
7. Detach lifting gear.
8. Close decking (10.3) on concreting platform.
9. Move Carriage (2) with formwork forward to the wall and secure Carriage with wedge (2.2).
10. Align formwork. (Fig. B2.09)

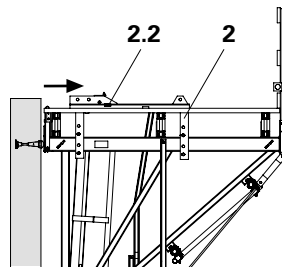


Fig. B2.05

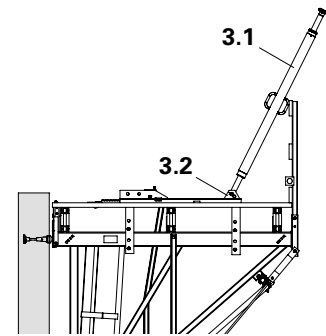


Fig. B2.06

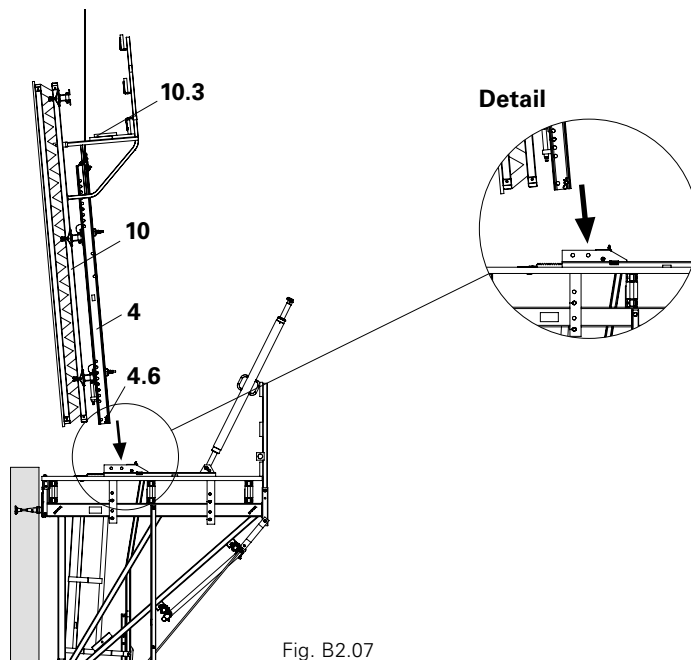


Fig. B2.07

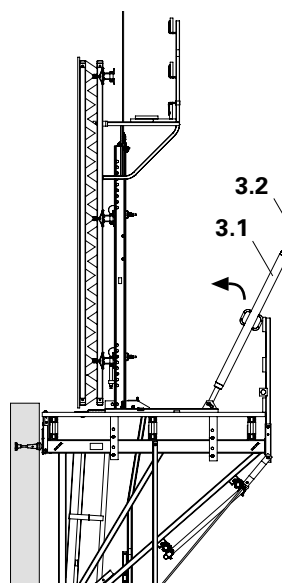


Fig. B2.08

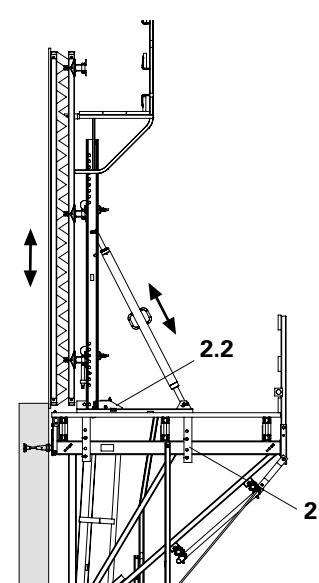


Fig. B2.09

VARIO GT 24 Element

Moving of VARIO GT 24 Elements



Follow the Instructions of Use for the Crane Splice 24!

Dismantling

1. Retract Carriage (2) and secure with wedge (2.2), see B4.1. Brace Strong-backs laterally.
2. Attach formwork to Crane Splice 24 (10.6) and tension lifting gear.
3. Remove all Waler Fixation-2 (4.4).
4. Raise formwork and remove (e.g. storage area). (Fig. B2.10)



When laying the formwork down, the guardrail (10.5) on the concreting platform (10.2) must be removed (by contractor) in order to avoid any damage caused by the lifting gear.

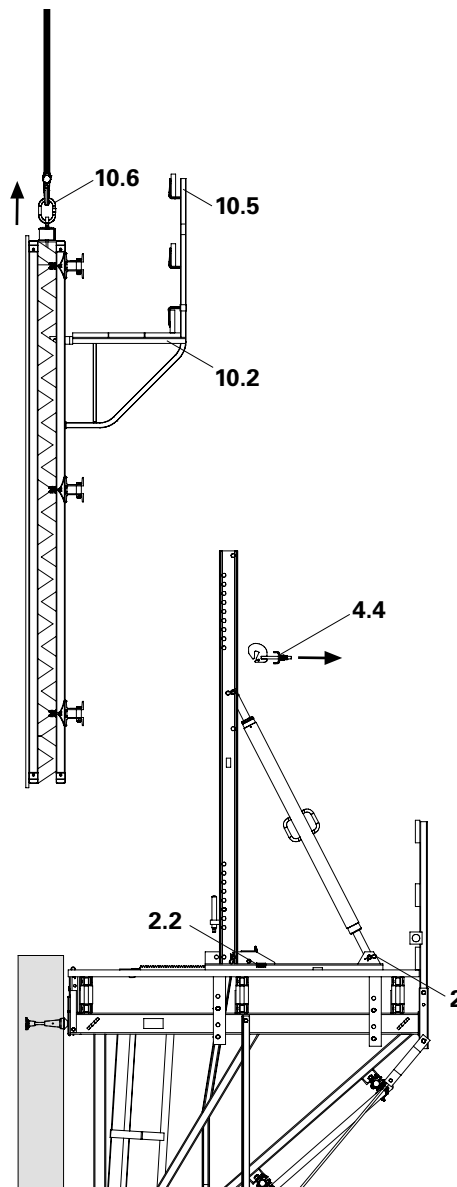


Fig. B2.10

VARIO GT 24 Element

Moving of VARIO GT 24 Elements

Preparation for Initial Assembly

1. Retract Carriage (2) and secure with wedge (2.2).
2. Mount Strongback CB (4) to Carriage using bolts $\varnothing 25 \times 180$ and cotter pins (4.6).
3. Attach Adjustable Brace (3.1) to Strongback using bolts $\varnothing 25 \times 180$ and cotter pins (3.2) and laterally brace Strongbacks, see C1 Connecting Adjustable Brace.

Assembly

4. Check that the Height Adjusting Unit (4.3) is in the correct position and adjust if necessary.
5. Lower formwork (10) with the bottom waler (10.4) onto the Height Adjusting Unit. Lifting gear remains tensioned.
6. Mount Waler Fixation (4.4) to the walers. (Fig. B2.11)
Detach crane lifting gear.
7. Move Carriage (2) with formwork forwards to the wall. Secure Carriage with wedge (2.2).
8. Align formwork. (Fig. B2.12)



Attention must be paid to ensure that the Strongback does not collide with the Scaffold Bracket GB 80 or decking. If necessary, reposition Scaffold Bracket and form recess in the decking.

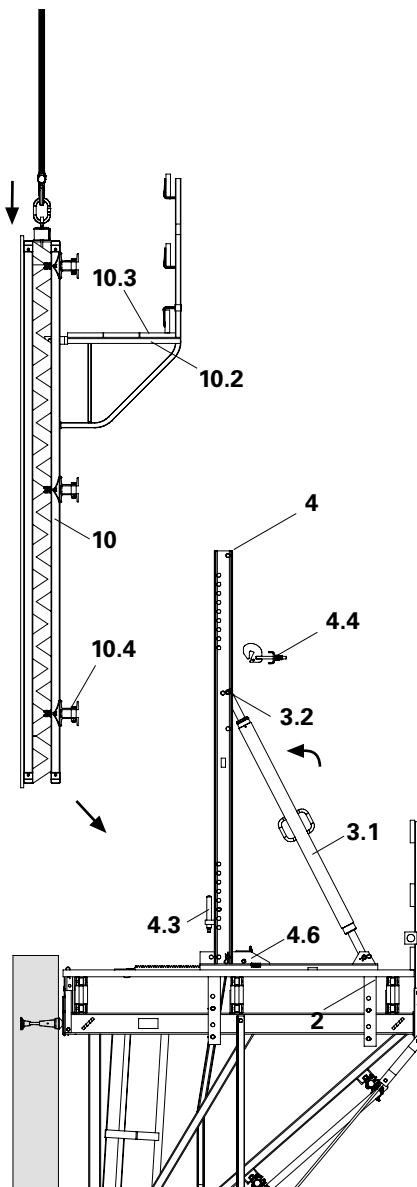


Fig. B2.11

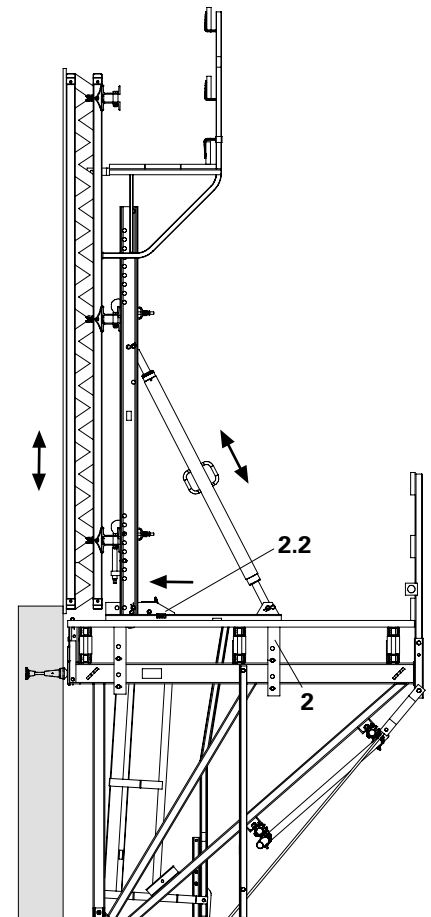


Fig. B2.12

TRIO Element

Mounting of Strongback CB on TRIO Elements

1. Assemble TRIO elements on the assembly area to form formwork units.
2. Fix Connector TRIO-CB (4.5) to panel struts with hook clamps $\varnothing 25$ (4.7), see plans for arrangement. Centre distance = bracket spacing. By changing the mounting position of the spindle (4.8), the Connector TRIO-CB can be cantilevered to the left or right. (Fig. B2.13 + B2.13a)
3. Place Strongback CB (4) on the connectors. Bottom projecting length: see Planning or C1.
4. Attach Strongback CB to bottom connector using bolts and cotter pins (4.6).
5. Adjust height on bottom connector using spindle (4.8).
6. Adjust height of top connector.
7. Fix Strongback CB at top. (Fig. B2.15)

Connector TRIO-CB

left cantilevering

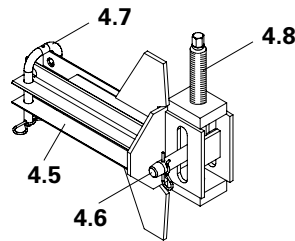


Fig. B2.13

right cantilevering

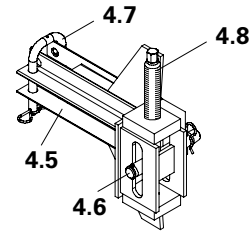


Fig. B2.13a

On horizontal struts

left cantilevering

right cantilevering

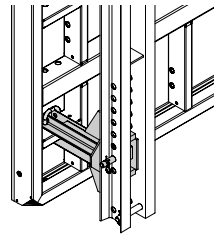


Fig. B2.14

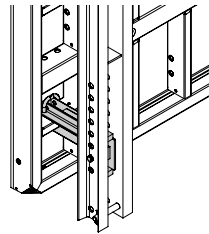


Fig. B2.14a

On vertical struts

left cantilevering

right cantilevering

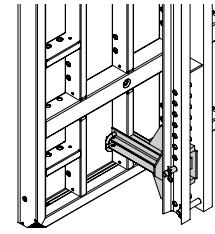


Fig. B2.14b

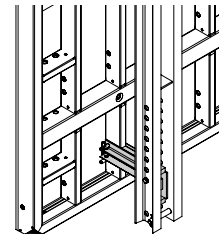


Fig. B2.14c



Fig. B2.15



In order to prevent any diagonal pull, a piece of timber (4.10) is clamped between the top ends of the Strongbacks, see C1, Installation of Compression Brace.

(Fig. B2.16)



Alternatively, the Lifting Beam RCS 10 t (Item no. 112986) can be used for the moving procedure.

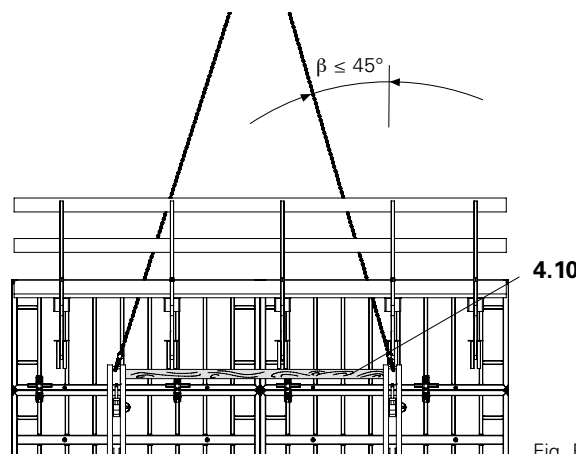


Fig. B2.16

TRIO Element

Mounting of TRIO Elements on CB 240 Brackets

1. Retract Carriage (2) and secure with wedge (2.2).
2. Fix Adjustable Brace 164-224 (3.1) to Carriage using bolts and cotter pins (3.2). Spindle out to the approximate length and attach to ladder cage to prevent tipping over.
3. Open concreting platform decking (10.3) above the Strongback. Secure loose decking components.
4. Attach formwork unit (10) with concreting platform to the Strongback (4) and position on the platform. (Fig. B2.17)
5. Mount Strongback CB (4) to Carriage using bolts $\varnothing 25 \times 180$ and cotter pins (4.6). Standard case: use holes in the Strongback and Carriage which face away from the wall. (Fig. B2.18)
6. Fix Adjustable Brace (3.1) to Strongback with bolts $\varnothing 25 \times 180$ and cotter pins (3.2). (Fig. B2.19 + B2.19a) Detach crane lifting gear. Close decking (10.3) on concreting platform.
7. Move Carriage with formwork forwards to the wall. Secure Carriage with wedge (2.2).
8. Align formwork.

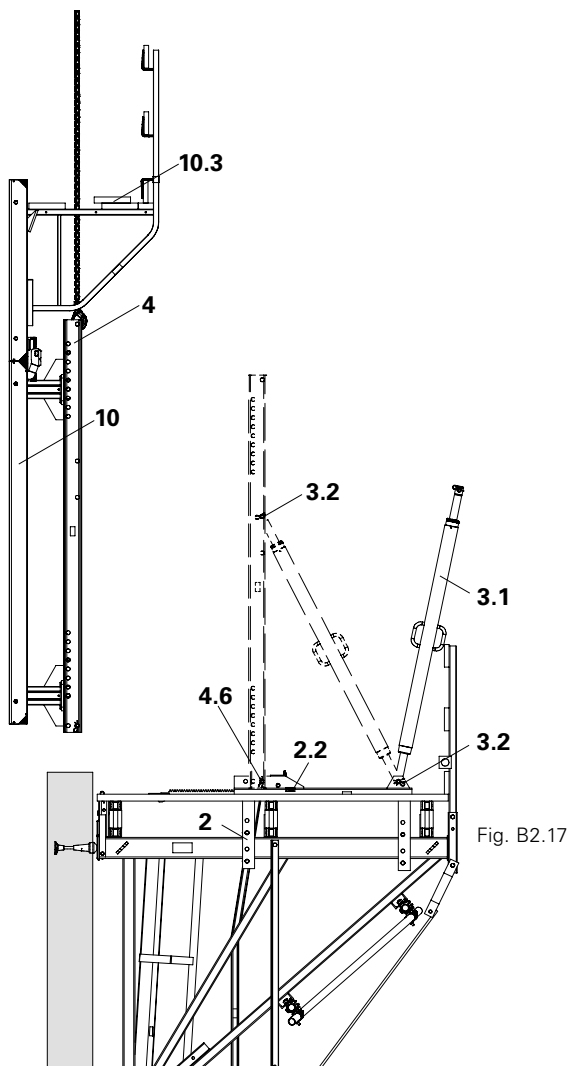


Fig. B2.17

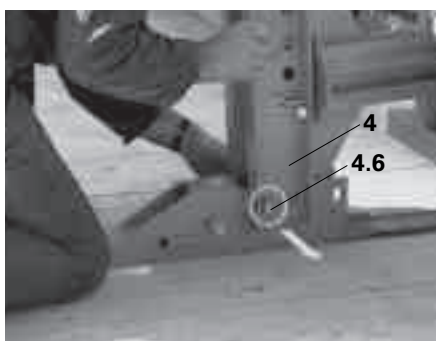


Fig. B2.18



Fig. B2.19

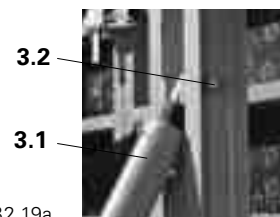


Fig. B2.19a

TRIO Element

Exchanging the Formwork



Follow Instructions for Use for the MAXIMO Lifting Hook!

Dismantling

1. Retract Carriage (2) and secure with wedge (2.2), see B4.1. Brace strong-backs laterally.
2. Fix MAXIMO Lifting Hook (10.6) to the formwork unit (10) and then attach lifting gear.
3. Tension crane lifting gear.
4. Release stirrup (4.7) of Connectors CB (4.5).
5. Raise formwork and remove (e.g. storage area). (Fig. B2.20)



When laying the formwork down, the guardrail (10.5) on the concreting platform (10.2) must be removed (by customer) in order to avoid any damage caused by the lifting gear.

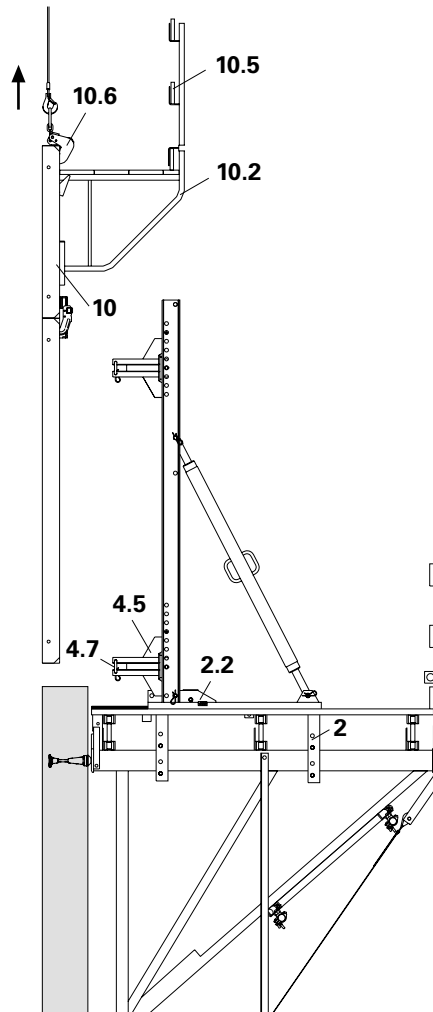


Fig. B2.20

TRIO Element

Exchanging the Formwork

Preparation for Initial Assembly

1. Retract Carriage (2) and secure with wedge (2.2), see B4.1.
2. Fix Connectors CB (4.5) to the Strongback CB (4) using bolts $\varnothing 25 \times 180$ and cotter pins (4.6).
3. Attach Strongback (4) to the Carriage (2) using bolts $\varnothing 25 \times 180$ and cotter pins (4.6).
4. Attach Adjustable Brace (3.1) to Strongback using bolts $\varnothing 25 \times 180$ and cotter pins (3.2) and laterally brace Strongbacks. (Fig. B2.21)

Assembly

5. Insert formwork unit (10) with MAXIMO Lifting Hook (10.6) into the Connectors CB (4.5) and secure using stirrup (4.7).
6. Remove lifting gear and lifting hook.
7. Move Carriage (2) with formwork forwards to the wall. Secure carriage with wedge (2.2).
8. Align formwork. (Fig. B2.22)



Attention must be paid to ensure that the Strongback does not collide with the TRIO Scaffold Bracket TRG 80 or decking. If necessary, reposition Scaffold Bracket and form recess in the decking.



Check the clearance of the top height adjustment, ≥ 5 mm.

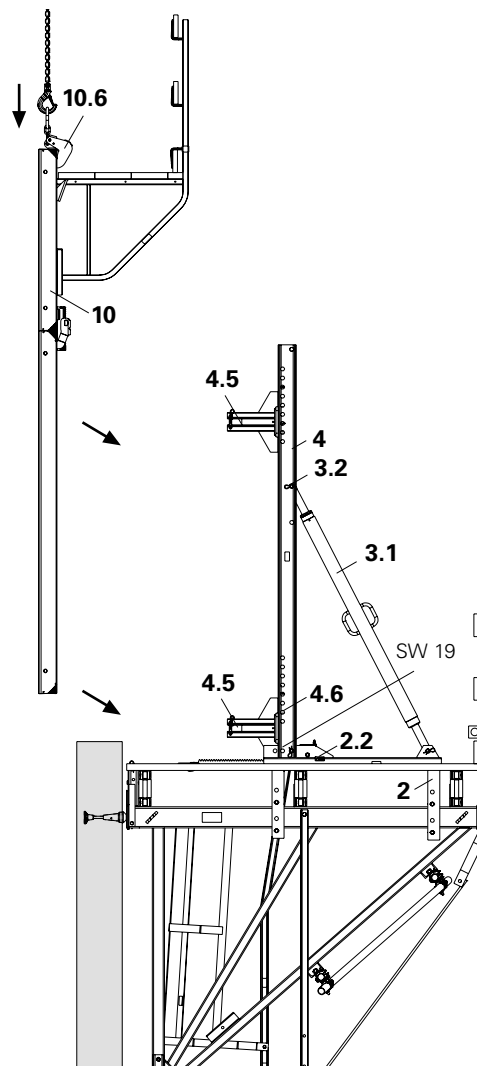


Fig. B2.21

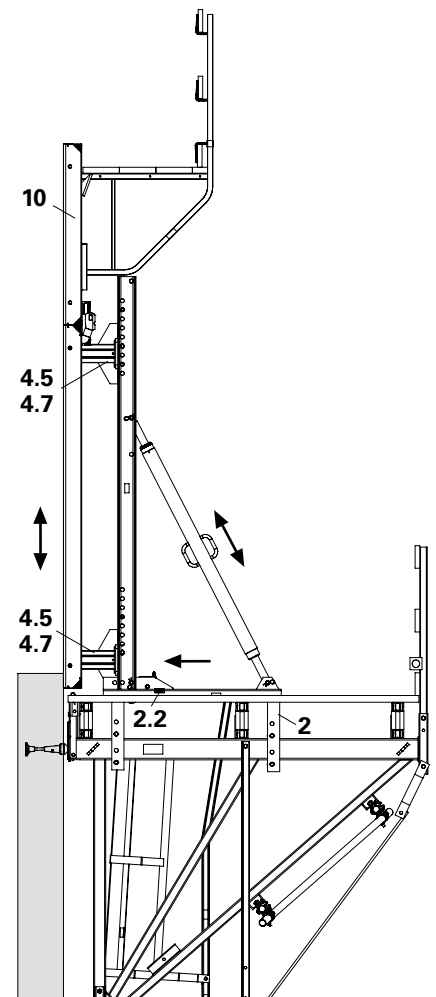


Fig. B2.22

CB Carriage Operations

Assembly

1. Release wedge (2.2) with hammer.
(Fig. B3.01)

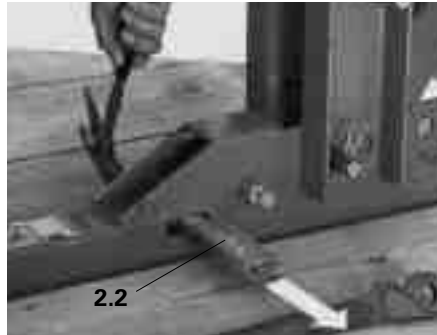


Fig. B3.01

2. Place ratchet lever, SW 19, on the transmission screw (2.5). Depending on the effect of the ratchet on the lever, the carriage is moved towards or away from the wall.
(Fig. B3.02.1 + B3.02.2)

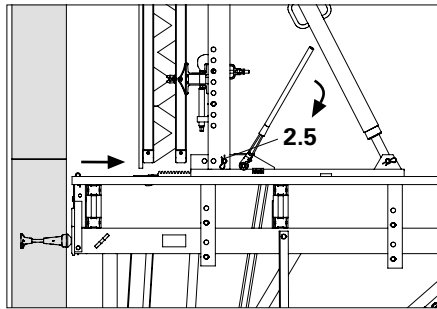


Fig. B3.02.1

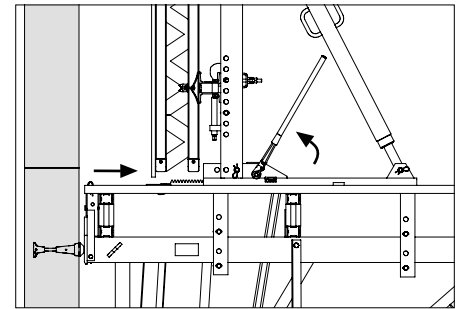


Fig. B3.02.2



If the Carriage moves in the wrong direction, turn the ratchet lever in the opposite direction.

3. Moving the carriage: carry out procedure simultaneously on both brackets.
(Fig. B3.02)



Fig. B3.02

4. When the carriage with formwork is in position, fix wedge with hammer.
Carriage is then secured. (Fig. B3.03)



If the formwork must be pressed against the previous concreting section when securing with the wedge, the ratchet lever SW 19 is to be used.



Fig. B3.03

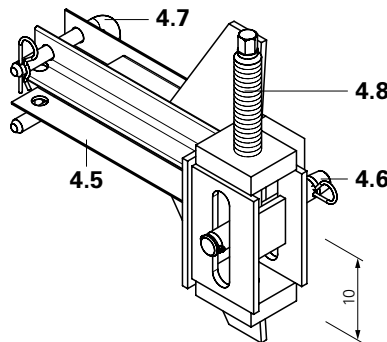
Formwork Alignment

Height Adjustment with the Connector TRIO-CB for TRIO

1. On the top Connector, alter the adjusting spindle (4.8) for necessary clearance.
2. On the lower Connector, lower adjusting spindle (4.8) onto the locking pin (4.6).
3. Turn adjusting spindle using the ratchet lever SW 19 and bring formwork into position. Depending on the rotational direction, the formwork moves upwards or downwards. (Fig. B3.04)



Fig. B3.04



Is there enough clearance for adjustment on the top connector?

Height Adjustment with the VARIO GT 24 Height Adjusting Unit

Apply ratchet lever SW 19 to adjusting spindle (4.8) of the Height Adjusting Unit CB (4.3) on the Strongback. Depending on the rotational direction, the formwork moves upwards or downwards. (Fig. B3.05)

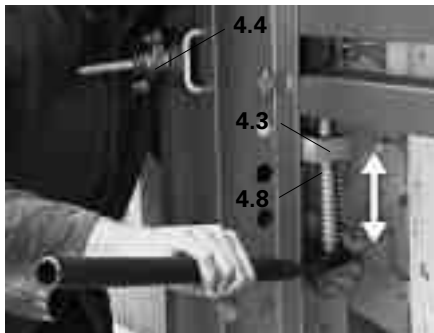
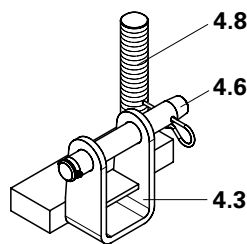


Fig. B3.05



If the formwork does not move, loosening of the Waler Fixation (4.4) will make the adjustment easier.

Formwork Alignment

Inclination Adjustment with the Adjustable Brace CB 164-224

The required inclination of the formwork is achieved by altering the Adjustable Brace CB 164-224 (3.1). Depending on the rotational direction, the formwork moves forward or retracts. (Fig. B3.06)



Fig. B3.06



By placing a spirit-level on the TRIO formwork struts or on a VARIO formwork girder, exact adjustment is possible.

Horizontal Adjustment of a VARIO Element



Strongbacks must remain in the same position.

Moving

1. Loosen the Waler Fixation-2 (4.4) until the element can be moved.
2. Move the element into the correct position by hand or by using a piece of timber as a lever.
3. Tighten the Waler Fixation. (Fig. B3.07)

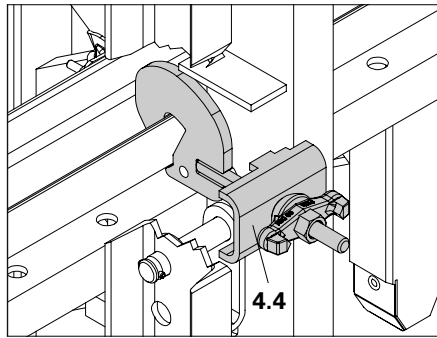


Fig. B3.07

Preparation



Do not exceed the crane capacity!



If crane capacity is insufficient, the formwork and platform can be moved separately. For this: pay close attention to B2 Assembly of the Formwork Elements.

Assembly

1. Release formwork anchor and remove.
2. Retract formwork with the Carriage (2), see Section B3. Reference values for retraction distance x , see Table on the next page.
3. Mount Scaffold Mounting Ring (5.6) with bolt M24 x 120 (5.7) on the next concreting section, see Fig. B1.03.
4. Remove wind bracing (7) on the wall and place in secure position.
5. Disassemble Bracing Shoe CB (6) for the wind bracing, SW 36, and fix to the wind bracing or remove. (Fig. B4.01a)
6. Dismantle Climbing Cones which are no longer required and remove.
7. If required, brace Strongback, e.g. with compression brace (4.10), see Fig. C1.14 with panel formwork.
8. Open concreting platform decking (10.3) above the Strongback. Attach climbing unit to Strongback (4). (Fig. B4.01)
9. Remove all loose objects.
10. Swivel securing bolt (1.5) to one side. (Fig. B4.02)
11. All personnel must leave the moving unit.



- Wind bracing dismantled and removed?
- Securing bolts completely pushed to one side?
- Is the locking device on the lifting hook closed?
- Is the lifting angle correct?
- Have loose objects been removed?
- Moving without Lifting Beam: is a compression brace between the Strongbacks?

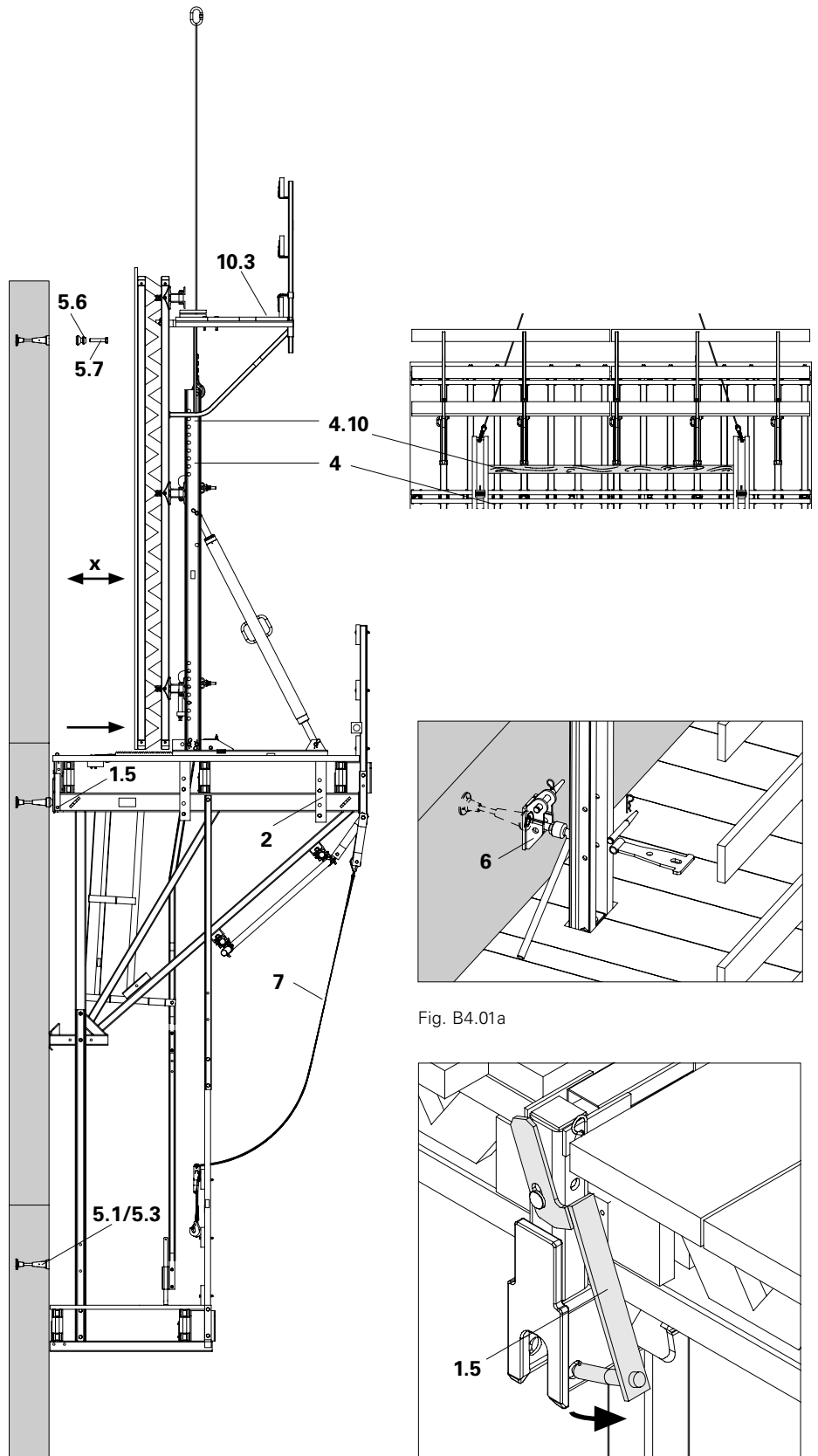


Fig. B4.01

Fig. B4.02

1. Preparation

Determining the retraction distance and estimating the platform weight

The retraction distances are reference values. They have been so designed that the platform inclines approx. up to 2.0° to the wall which makes mounting easier. Table 2.



The ideal retraction distance is determined during the first moving procedure and the length of the retraction distance is noted and marked on the decking.

Table 2
Retraction distance and weight

	Height of form-work h_s [m]	Platform length L [m]	Carriage retraction distance [cm]	Approx. total weight of form-work [kg]
With finishing platform	3.00	4.80	60	2120 ± 200
		7.20	60	3180 ± 320
		9.60	60	4020 ± 420
	4.00	3.80	60	2200 ± 220
		5.70	55	2880 ± 300
		7.60	60	3940 ± 400
	5.40	3.20	50	2220 ± 200
		4.80	45	2900 ± 320
		6.40	50	3920 ± 420
Without finishing platform	3.00	4.80	70	1700 ± 200
		7.20	70	2520 ± 300
		9.60	70	3180 ± 420
	4.00	3.80	70	1740 ± 200
		5.70	65	2320 ± 320
		7.60	65	3140 ± 420
	5.40	3.20	55	1780 ± 200
		4.80	50	2400 ± 300
		6.40	50	3200 ± 420

3. Securing the Climbing Unit



If the securing bolts cannot be inserted, personnel are to leave the platform and then repeat the mounting procedure!

1. Access platform.
2. Lift securing bolts (1.5) and pivot under the scaffold mounting ring (5.6) and secure with cotter pin. (Fig. B4.07)
3. Remove crane hook and close concreting platform decking.

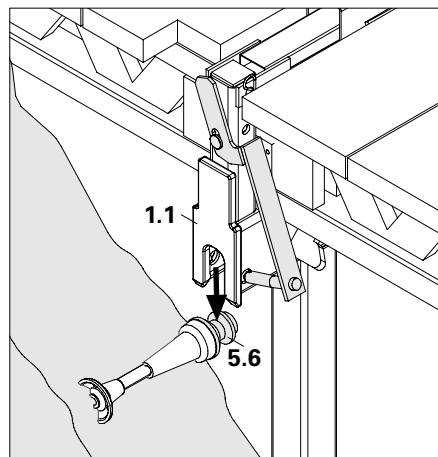


Fig. B4.06

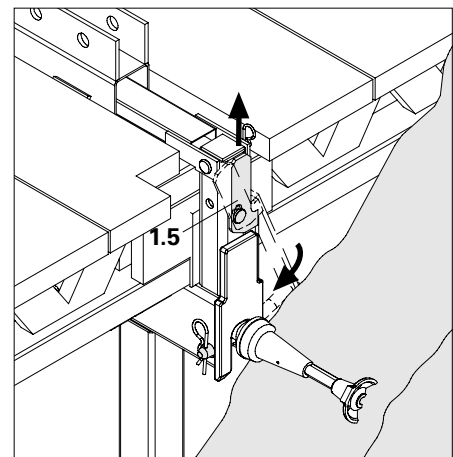


Fig. B4.07

2. Moving Procedure



- Use a guide rope to ensure controlled movements of the platform when being moved!
- Any open edges created during the climbing procedure are to be made safe or cordoned off!
- Loose components are to be secured or removed before moving takes place!



Attachment points for rope and fall arrest equipment is the crane eye (1.4) on the guardrail posts.

(Fig. B4.08)

Moving

1. Crane lifts the climbing unit out of the scaffold mounting ring (5.6a).
2. Crane lifts the climbing unit up to the next scaffold mounting ring (5.6b).
3. Bring platform into position.
4. Lower climbing unit onto scaffold mounting ring (5.6b) evenly and horizontally till the lower point of pressure (1.7) of the bracket rests against the wall. Lifting gear remains tensioned. (Fig. B4.03 – B4.05 + B4.06)

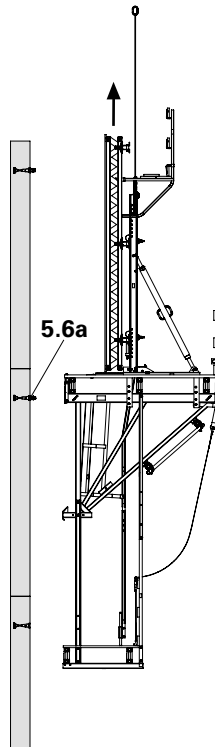


Fig. B4.03

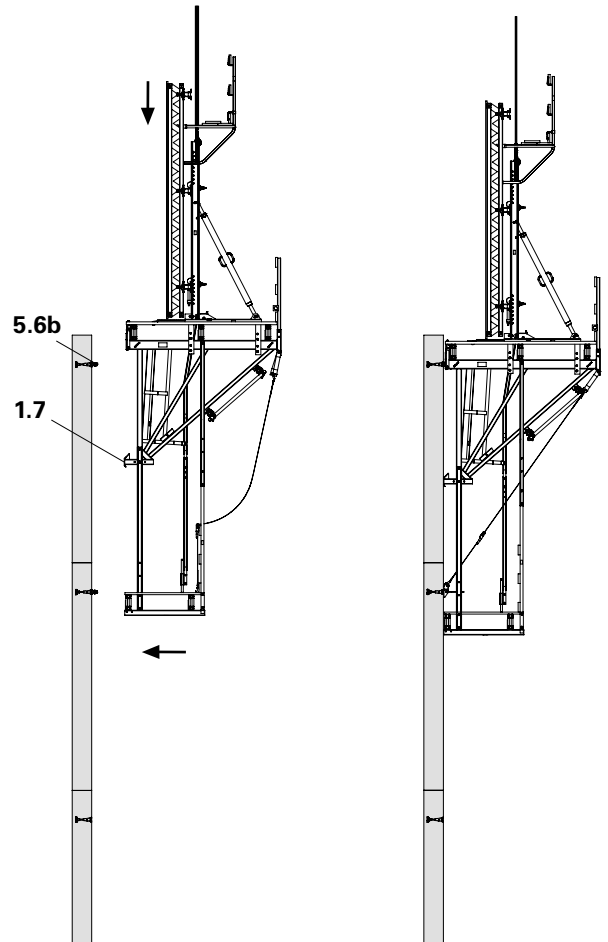


Fig. B4.04

Fig. B4.05



Are the brackets (1.1) positioned on both scaffold mounting rings (5.6)?

Troubleshooting

- If no connection is made with the scaffold mounting rings (5.6) or if the brackets (1.1) jam, lift the platform and lower it again.
- If the bracket spacing does not match that of the scaffold mounting rings, check the distance of the leading anchor to the formwork.
- If the mounting procedure is not possible, the bracket spacing must be corrected through the re-assembly of the platform.

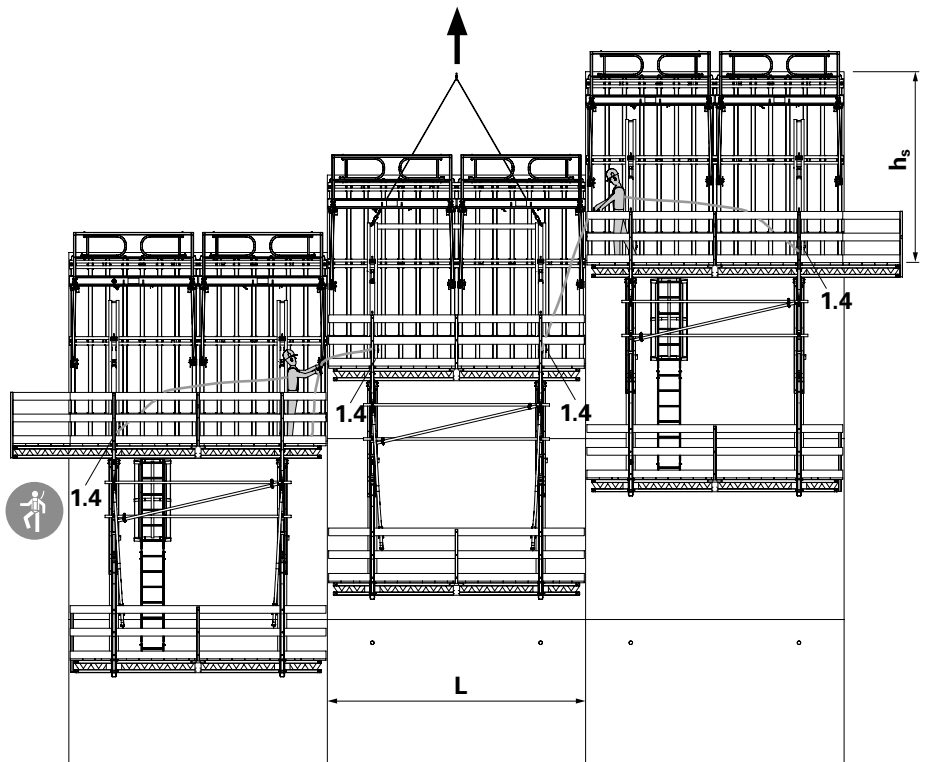


Fig. B4.08

Static System and Load Combinations

Bracket Verification

The brackets are verified by comparing the determined width of influence from the formwork with the permissible width of influence. The load-bearing capacity of the anchorage is determined by means of interaction diagrams and depends on the anchoring depth and concrete strength.

The platforms and guardrails can be verified using the assembly instructions tables.



As a general rule, the load-bearing capacity of the brackets and the anchorage are verified with the help of separate CB 240 dimensioning information which is available on request. In special cases, separate static verification may be required.

Load Combinations

The given permissible loads and operating conditions are to be maintained for the complete phase of the respective load combination.

For all load combinations, the safe transfer of the bearing forces into the building structure has to be verified.

Load Combination A Working Conditions

Wind load:
 $q = 0.25 \text{ kN/m}^2$ ($v_w = 72 \text{ km/h}$)

- formwork retracted (75 cm) or in concreting position.
- working on all platforms is allowed.
- material storage on the working platform is allowed.

Load Combination B Storm Conditions

Wind load:
 $q_k = 0.5 \text{ kN/m}^2$ up to 1.7 kN/m^2
 ($v_w = 102 \text{ km/h}$ up to 188 km/h)

- formwork in concreting position.
- working not permitted.
- when secured against lifting, materials can be left on the working platform.

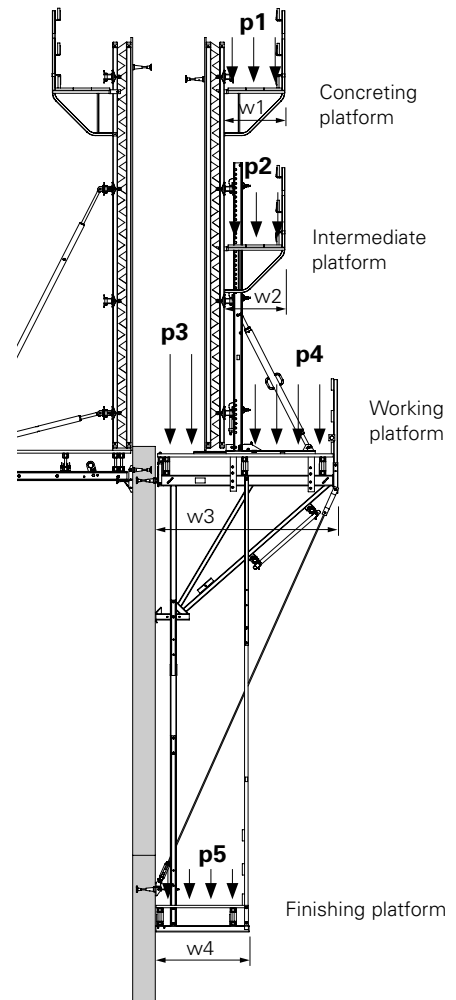


Table 3
Permissible load

Platform	Platform width w	Dead load of the platform	Life Load Capacity*
Concreting platform	$w_1 = 0.71 \text{ m}$	30 kg/m^2	$p_1 = 150 \text{ kg/m}^2$
Intermediate platform (if required)	$w_2 = 0.71 \text{ m}$	30 kg/m^2	$p_2 = 150 \text{ kg/m}^2$
Working platform	Wall side	50 kg/m^2	$p_3 = 300 \text{ kg/m}^2$
	Guardrail side		$p_4 = 200 \text{ kg/m}^2$
Finishing platform	$w_4 = 1.15 \text{ m}$	50 kg/m^2	$p_5 = 75 \text{ kg/m}^2$

* Maximum permissible live load for "Working" operating condition:

- Loads are evenly distributed. One-sided loading of cantilevered platform areas is not permitted.
- If loading several platform levels, only one level can be fully loaded – all other platform levels only up to 50%.
- Storm conditions: reduced load of $p_4 = 133 \text{ kg/m}^2$ on the working platform for material left behind.

Platform Dimensioning

Influence Factors for Dimensioning

- b Width of influence of the bracket
- h_S Formwork height
Formwork weight max. 60 kg/m²
- h_B Concreting height
- z Operating height above ground
- q_k Reduced wind flow pressure
- κ Service life factor
(up to 24 months $\kappa = 0.7$)
- $q(z)$ Dynamic wind pressure
depending on the working height
and the reference wind pressure
according to the wind zone

Actual Width of Influence

The actual width of influence is determined with the help of the strongback arrangement and taking into account the formwork cantilever, and compared with the permissible width of influence.

Permissible Width of Influence

The permissible width of influence for the formwork height h_S and the actual service duration and height-dependent dynamic wind pressure q_k is to be taken from the CB 240 dimensioning information. The different wind loads in the standard and transition areas as well as in the corners of the buildings are to be taken into account. This results in different permissible widths of influence for these areas.

Determining the wind loads according to DIN EN 1991-4 and DIN EN 12812

The dynamic wind pressure $q(z)$ is determined from the operating height z , wind load zone WZ and location, and reduced by a service life factor κ .

$$q_k = \kappa \cdot q(z)$$

According to DIN EN 12812, $\kappa = 0.7$ can be assumed for a service life up to 24 months.

Corner Platforms

In the corner area, it is normally necessary to facilitate access around the corner of the structure. For this purpose, corner platforms are formed. In so doing, a maximum overhang of 80 cm is allowed on the concreting platform. No overhang is allowed for the formwork nor finishing platform. For larger overhangs, the width of influence of the corner bracket is to be increased accordingly or a separate statistical proof is to be carried out.

Verification of the Platforms

The platform decking and platform beams can be verified using the tables, see C1 Platform Decking.

The length of the cantilevered area of the platform beams must not be larger than half the distance of the two brackets of one unit.

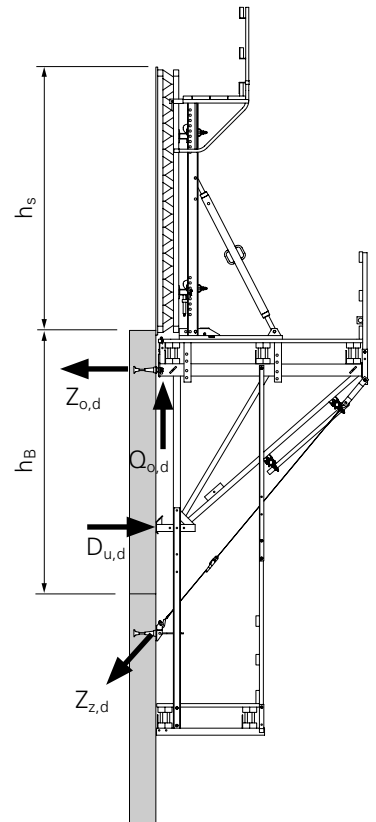
In those cases where cantilevers are longer, the main beams together with their fastenings are to be verified by the contractor and additionally secured against lifting.

Verification of the Guardrails

Verification of the guardrails for the concreting and intermediate platforms is made in accordance with the respective national regulations.

Verification of the guardrails for the working platform and finishing platform can be done with the help of the tables, see C1 Rear and Side Protection.

Reaction Forces



- $Z_{o,d}$ Design tensile force on the bracket anchoring
- $Q_{o,d}$ Vertical design shear force on the bracket anchoring
- $D_{u,d}$ Design compressive force to be supported on the base of the bracket
- $Z_{z,d}$ Design tensile force in the wind bracing

The design values of the reaction forces for the permissible width of influence are to be taken from the separate CB 240 design information and are to be linearly interpolated for the formwork height h_S and the assumed dynamic wind pressure q_k . These values must be converted with the help of the given formulae for the actual width of influence. The reaction forces Z_o and Q_o on the climbing anchor are to be verified separately with the help of the interaction charts for each load case.

Platform Decking



- Platform decking must be chosen in accordance with respective national regulations.
- Tripping hazards, unnecessary box outs and openings in the decking are to be avoided or covered.
- The distance between the decking and the structure should be max. 5 cm.
- Gaps in the decking are not permissible. Planks are to be fitted tightly together.
- The spacing between the decking of adjacent platforms must not exceed 2 cm. Larger gaps are to be covered with non-movable suitable materials or safety nets (8.4) with a max. mesh size of 2 cm are to be used.
- Any openings in the decking, which are required for normal working procedures, must be covered with non-movable suitable materials.
- Safe working conditions for tie installation are to be provided by intermediate platforms. (Fig. C1.02)
- Minimum dimensions of plankings see Table 4.
- Permissible span of girders see Table 5.

Markings

We recommend that each platform is distinctly marked as well as creating a document with the following data:

- company name
- construction site
- name of the planner
- marking in accordance with the plans
- dimensions
- weight of the unit with formwork
- weight of the unit without formwork
- maximum formwork height
- permissible loads

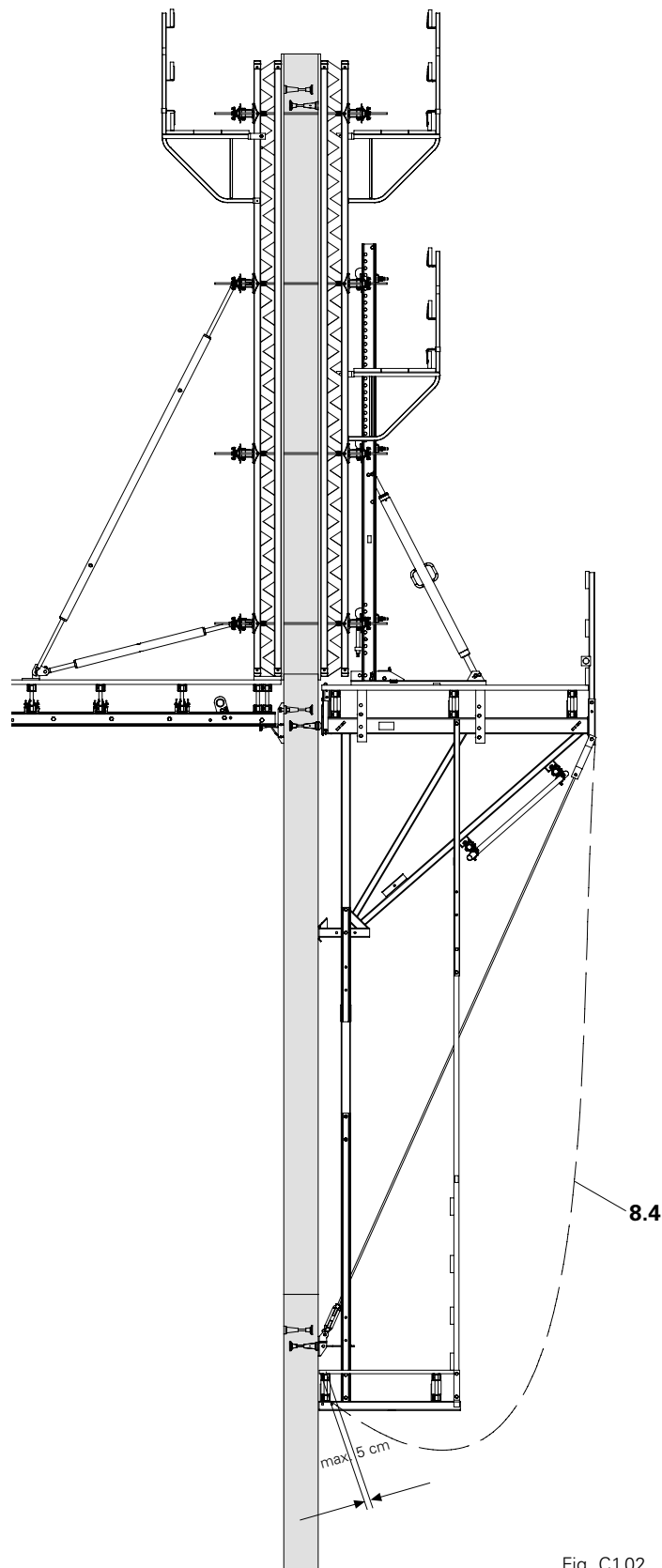


Fig. C1.02

Platform Decking

Table 4
Minimum dimensions of the planking

		Thickness	min. width	Span
Working platform Finishing platform		35 mm	240 mm	≤ 1.00 m
		40 mm	200 mm	
Concreting platform	GB 80	30 mm	200 mm	≤ 1.25 m
	TRG 80	35 mm	200 mm	≤ 1.35 m

Minimum requirements: Soft Wood Strength Class C24 according to DIN 338

Alternatively, laminated veneer timber with building inspection approval can also be used on the working and finishing platforms provided their use as a supporting and bracing component, as well as a substitute for solid wood according to DIN ENV 1995, is allowed.

Minimum thickness 35 mm. The boundary conditions of the respective approval must be observed.

Table 5
Permissible girder span of the working platform

Static system:	Main beam type	Max. cantilever $d \leq c/2$ [m]	Max. span c [m]
	Girder GT 24	1.61	4.26
	Timber 8 x 16*	1.33	2.66
	2 x Girder GT 24	2.26	5.98
	2 x Timber 8 x 16 or Timber 16 x 16*	1.86	3.72

*Minimum requirements: Soft Wood Strength Class C24 according to DIN 338

Platform Decking

Layout of Working Platform

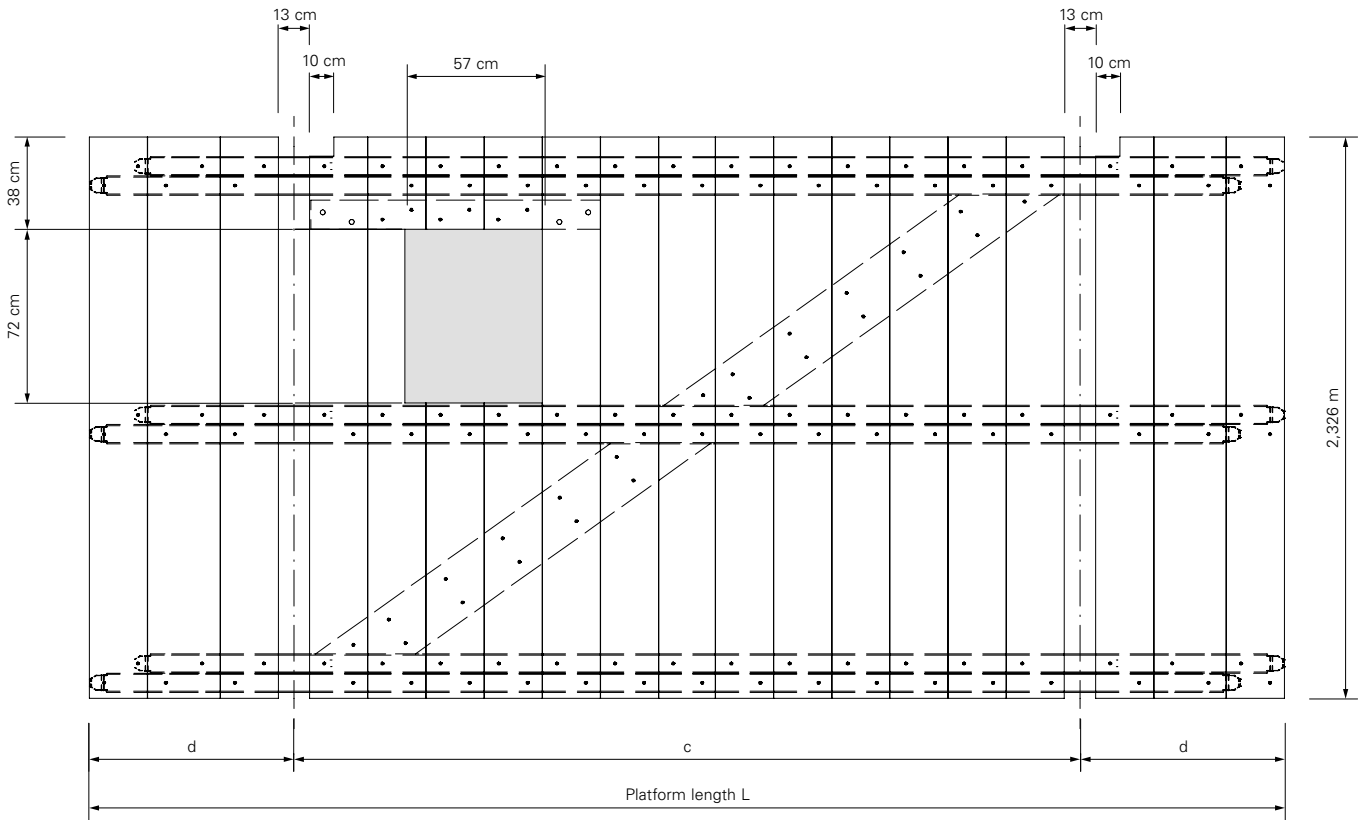


Fig. C1.03.1

Layout of Finishing Platform

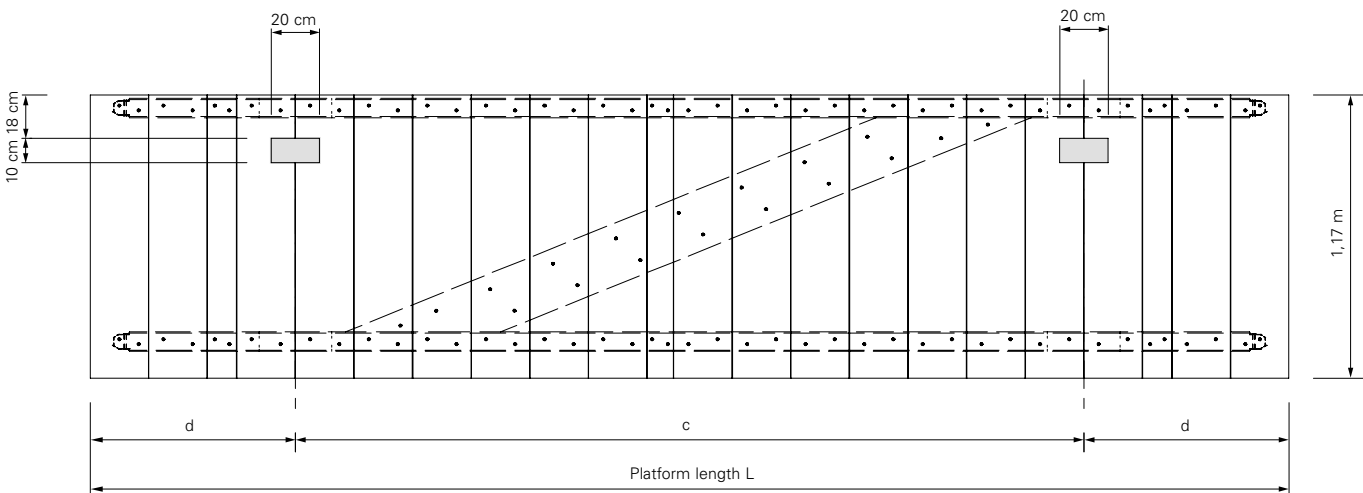


Fig. C1.03.2

Handrails and Guardrails



Rear and side protection in accordance with respective national regulations!

On all platform levels, edges are to be protected with guardrails. In order to maintain permissible spans and cantilevers, additional guardrail posts can also be mounted, see Table 6.



Working areas positioned at great heights are to be secured through the use of safety nets or by closed side protection in order to prevent objects from falling to the ground. (Fig. C1.04a + C1.04b)

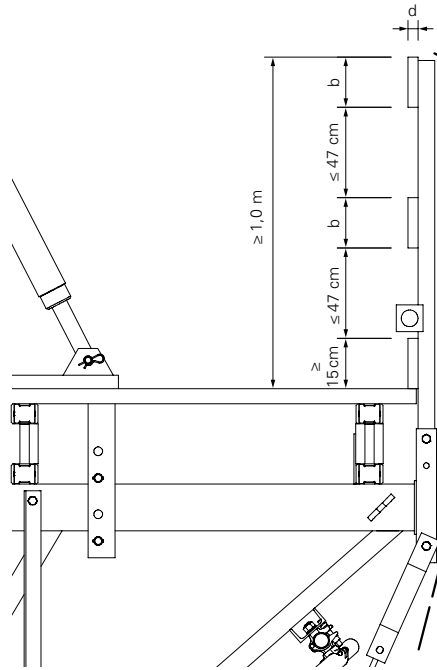


Fig. C1.04a

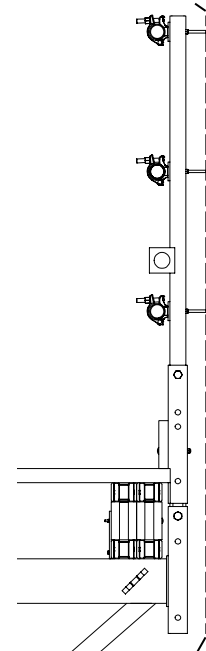
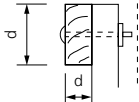
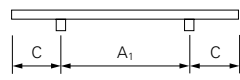
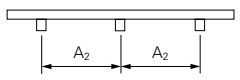


Fig. C1.04b

Table 6
Permissible spans of guardrail boards

Wall area	Dimensions of guard-rail boards	Case 1 2 guardrail posts + overhang		Case 2 3 or more guardrail posts
				
	d/b [mm]	perm. A₁ [m]	perm. C [m]	perm. A₂ [m]
Standard / transition area	40/120	3.34	0.90	4.17
	30/150	2.41	0.63	3.00
Corner area	40/120	3.23	0.89	3.56
	30/150	2.35	0.63	2.93
Building corner overhang	40/120	2.13	0.84	2.13
	30/150	1.78	0.60	1.78

Minimum requirements: Soft Wood Strength Class C24 according to DIN 338

An enclosure with nets is permissible if the solidity is a max. 50%, and if the netting is previously removed for storms with wind speeds over 125 km/h ($q = 0.75 \text{ kN/m}^2$). Otherwise a separate static analysis is required.

Connecting VARIO GT 24 formwork

Mounting the Leading Anchor

During formwork design, attention must be paid that there is sufficient spacing between the bracket axis and the GT 24 Formwork Girders.

Otherwise mounting the Leading Anchor (5) with the Anchor Positioning Stud M24 (5.9) is not possible.

(Fig. C1.05)

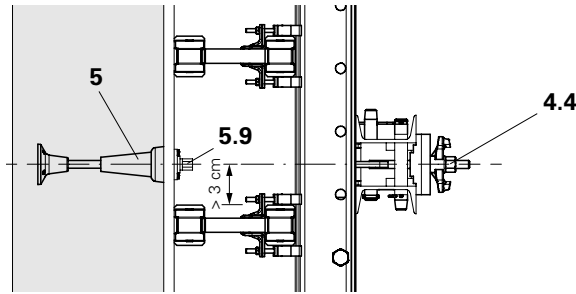


Fig. C1.05

Height Adjusting Units

Depending on the weight of the formwork, the number of height adjusting units (4.3) is to be determined for each Strongback.

(Fig. C1.06)

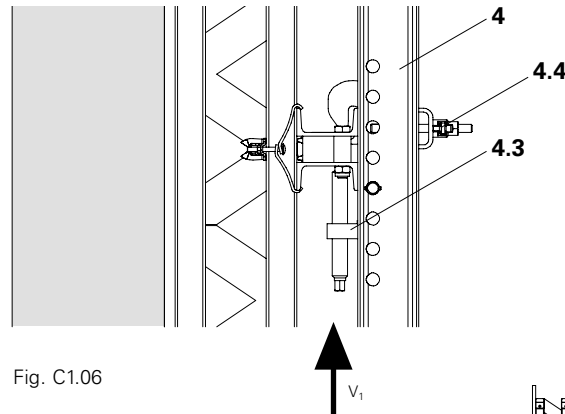


Fig. C1.06

perm. $V_1 = 12.8 \text{ kN}$

Fix all walers (10.4) in the area of the Strongback (4) with waler fixations (4.4).

Strongback CB 270 (4.1)

The top height adjusting unit is only mountable with standard waler spacings of 1.78 m or 2.07 m.

(Fig. C1.07.1)

Strongback CB 380 (4.2)

The top height adjusting units are only mountable on walers in standard spacings from 1.78 m to 3.26 m from the lowest-positioned waler.

(Fig. C1.07.2)

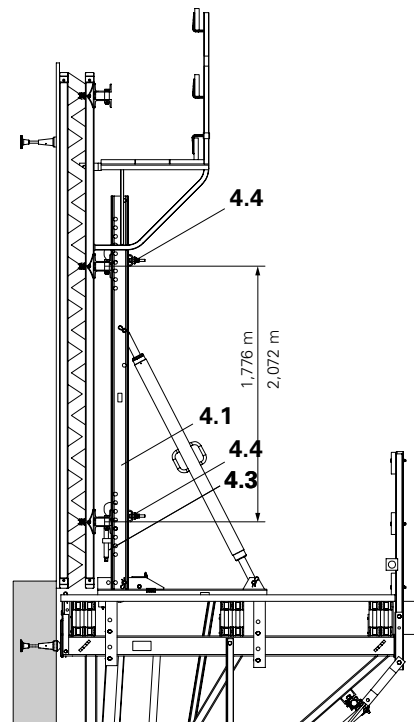


Fig. C1.07.1

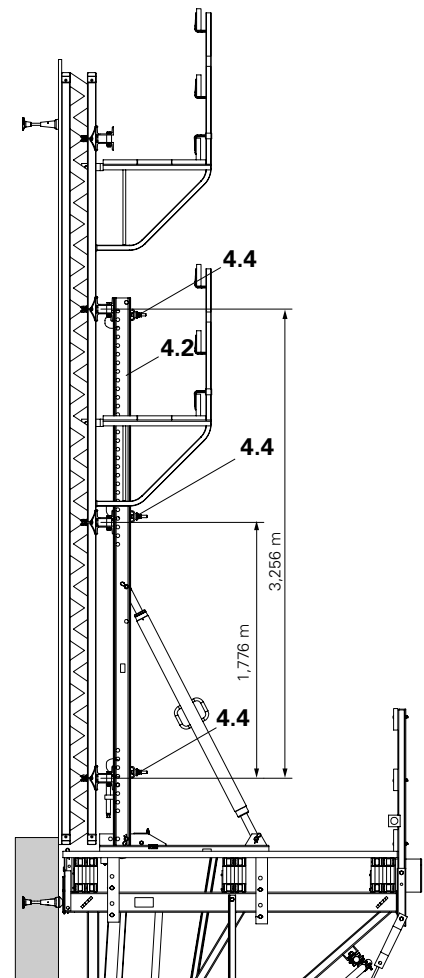


Fig. C1.07.2

Connecting VARIO GT 24 formwork

Adjustable Brace 164-224

According to the formwork waler spacing, fix the Adjustable Brace (3.1) with bolts $\varnothing 25 \times 180$ (3.2) in the bottom hole (Fig. C1.08.1) or in the top hole (Fig. C1.08.2) of the Strongback.

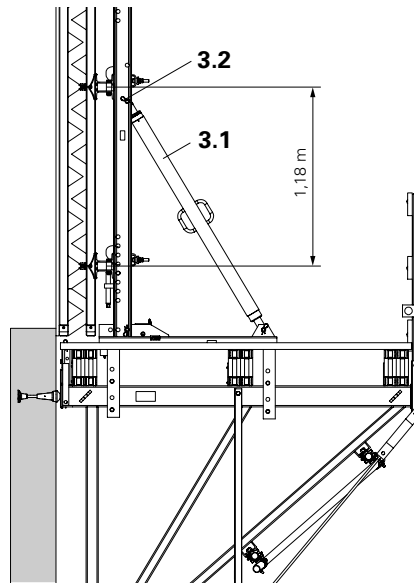


Fig. C1.08.1

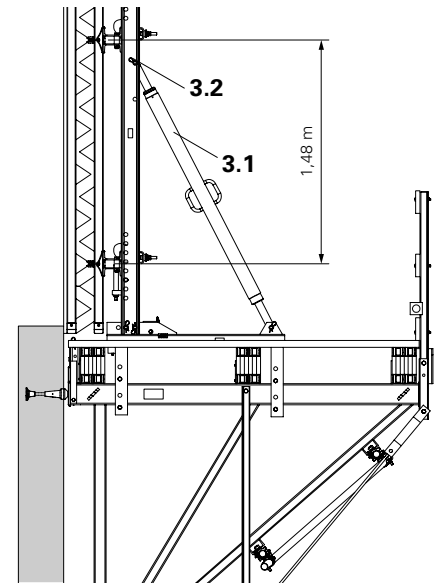


Fig. C1.08.2

Anchoring

Depending on the height of the girder (13.1), position the Carriage (2) higher or lower. (Fig. C1.09.1 + C1.09.2)

The edge distance of the anchoring (5) and the positional height of the formwork (10) remain unchanged.

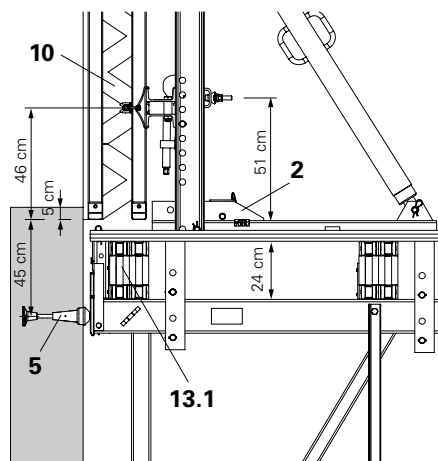


Fig. C1.09.1

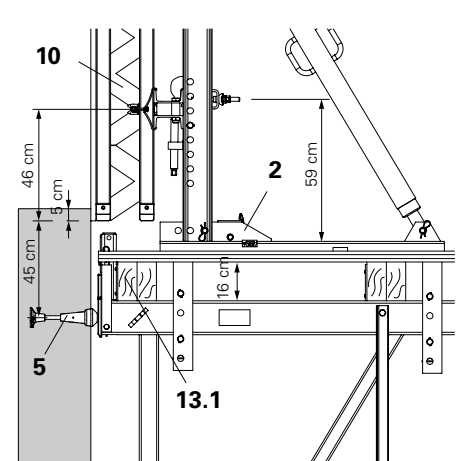


Fig. C1.09.2

Connecting TRIO formwork

Connection to Horizontal Struts

Height of girder: 24 cm
Element TR in a vertical position

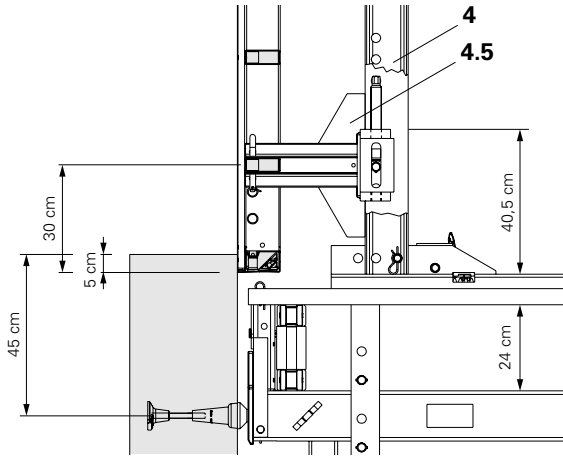


Fig. C1.10.1

Height of girder: 16 cm

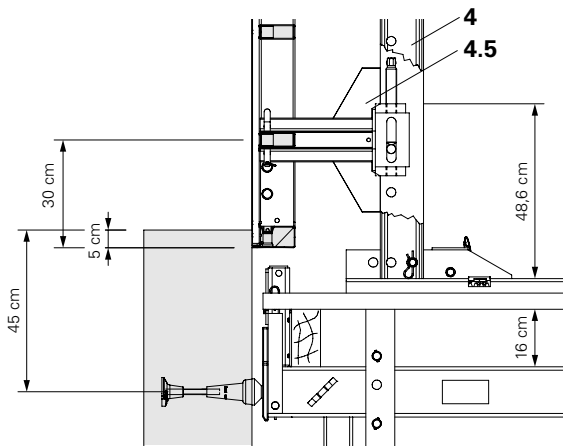


Fig. C1.10.3

Layout of C1.10.1 + C1.10.3

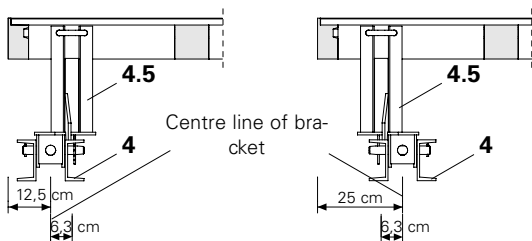


Fig. C1.11.1

Connection to Vertical Struts

Height of girder: 24 cm
Element TR in a lateral position

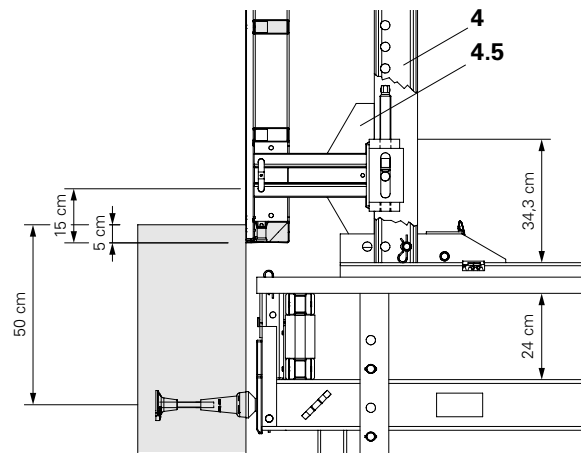


Fig. C1.10.2

Height of girder: 16 cm

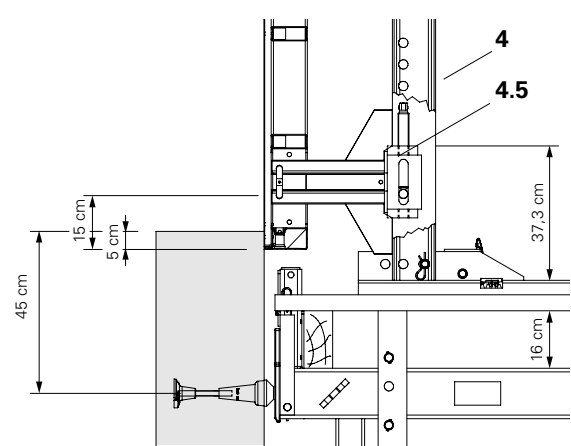


Fig. C1.10.4

Layout of C1.10.2 + C1.10.4

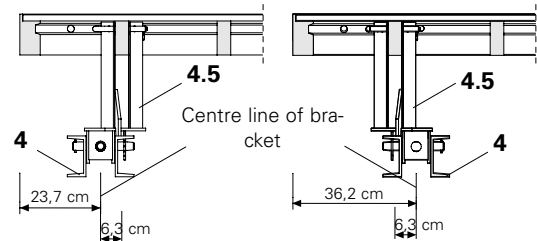


Fig. C1.11.2

Connecting TRIO formwork

Element TR 270 x 240 in a vertical position

The Connector TRIO-CB is to be bolted to the horizontal struts.

(Fig. C1.12.1 – C1.12.3)

The illustrations show girders with a height of 24 cm.

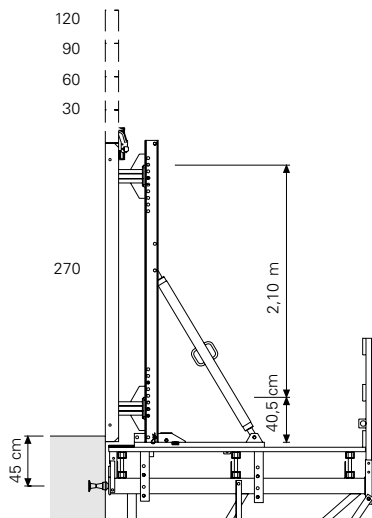


Fig. C1.12.1

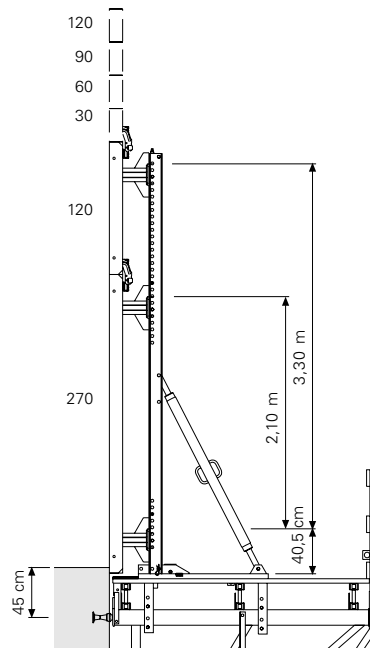


Fig. C1.12.2

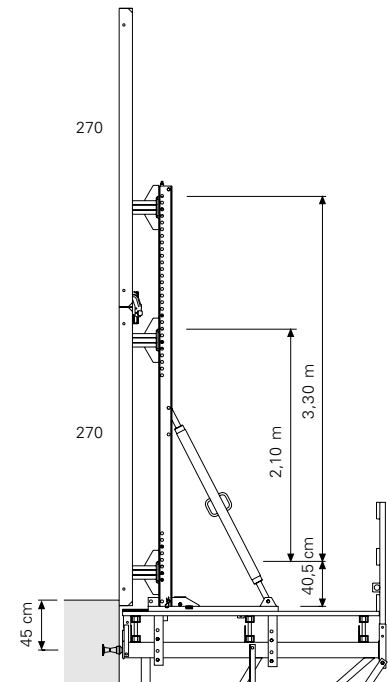


Fig. C1.12.3

Element TR 270 x 240 in a horizontal position. The Connector TRIO-CB is to be bolted to the vertical struts.

(Fig. C1.13.1 – C1.13.3)

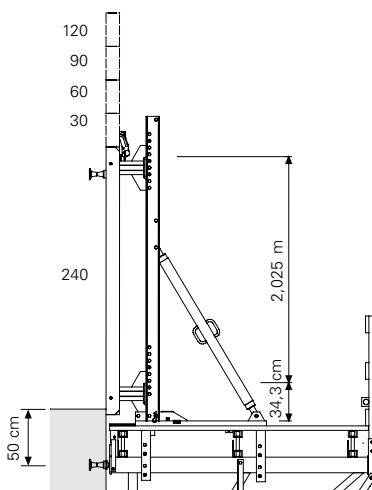


Fig. C1.13.1

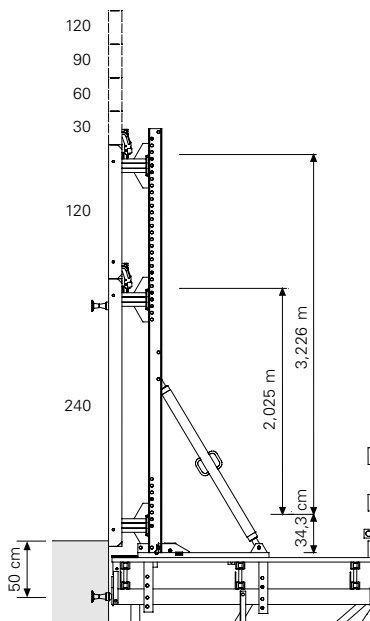


Fig. C1.13.2

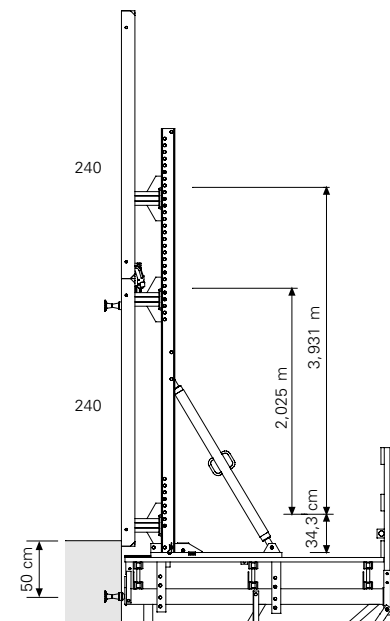


Fig. C1.13.3

CB 240 Climbing Formwork

Instructions for Assembly and Use – Standard Configuration

Moving the Units

Installation of Compression Brace

In order to prevent the Strongbacks from being pulled out of line during the lifting process due to the redirection of forces, clamp a suitable piece of timber (4.10) as a compression brace between the top ends of the Strongbacks (4). (Fig. C1.14)

Dimensions of the compression brace, see Table 7.

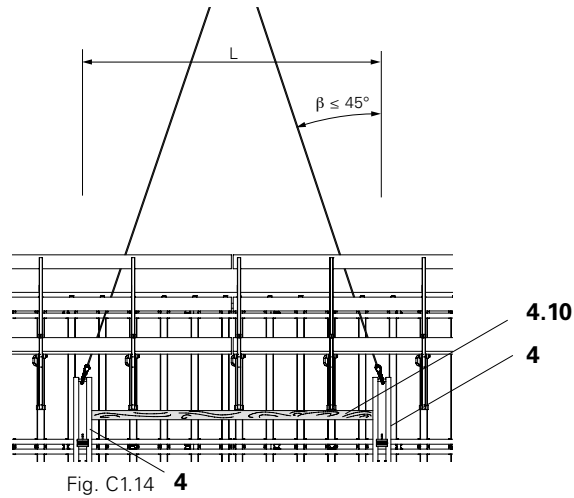


Table 7
Permissible spacing for the Strongback CB

Dimensions of the compression brace width x depth [cm]	Permissible spacing for the Strongback CB L [m]	
	Crane sling angle $\beta \leq 30^\circ$	Crane sling angle $\beta = 45^\circ$
10 x 10	4.30	3.80
12 x 12	5.20	5.20
14 x 14	6.00	6.00

The timber ends (4.10) are to be adapted to the U120 profile of the Strongback (4) through chamfering and notching. For fixing with wood screws 8 x 160 and washers (4.11), use the drilled holes in the web of the Strongback. (Fig. C1.15)

Top view

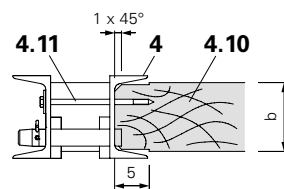


Fig. C1.15



If no compression braces are used between the Strongbacks or strongly unbalanced platforms are to be moved, we recommend the use of the Lifting Beam RCS 10 t, Item no. 112986. Follow Instructions for Use. (Fig. C1.16)

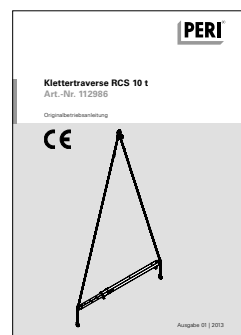


Fig. C1.16

Drawings and Plans

Assembly Drawings

The following points at least should be featured in the drawings:

- bracket spacing and bracing
- dimensions of the working and finishing platform
- dimensions, arrangement and number of concreting and intermediate platforms
- erection of girders and guardrails
- layout of end guardrail posts
- layout of lateral guardrails
- position of access ladders
- material requirements (parts list)

General Arrangement Drawings

The following points at least should be featured:

- position of the climbing anchor in the plan view and sectional view
- which climbing unit is used on which part of the building
- associated formwork and finishing platform
- installation of wind bracing
- distance of finishing platform to the working platform
- formwork and strongback connection points
- timber brace position between the strongbacks
- reference values for retraction distance during moving (see Table 2, Section B4)
- possible special measures in case of irregular concreting heights
- details of modifications
- material requirements (parts list)
- weight of the climbing unit



Appropriate, easy-to-read as well as sufficient drawings in both number and format are to be made available to the site management. The drawings are to be created clearly and professionally in the language of the country where construction is taking place.

We recommend including a plan view and sectional view of the scaffold as well as an overview plan for positioning purposes.

We recommend including a plan view and a top view of the platform.

Use on Circular Structures

Parallel Arrangement of Brackets

Depending on bracket spacing c , brackets can be positioned parallel to each other beginning from a certain radius of the building.

The maximum twist in the scaffold mounting ring is 5° .

The pressure point of the bracket is wedged to compensate for the angle. (Fig. C1.17)

Advantages:

The carriage can be used for moving forward and retracting the formwork.

Requirements for the radius of the building:

available $R \geq 5.72 \times \text{actual } c$.

System statics are verified with the application diagrams according to the type test.

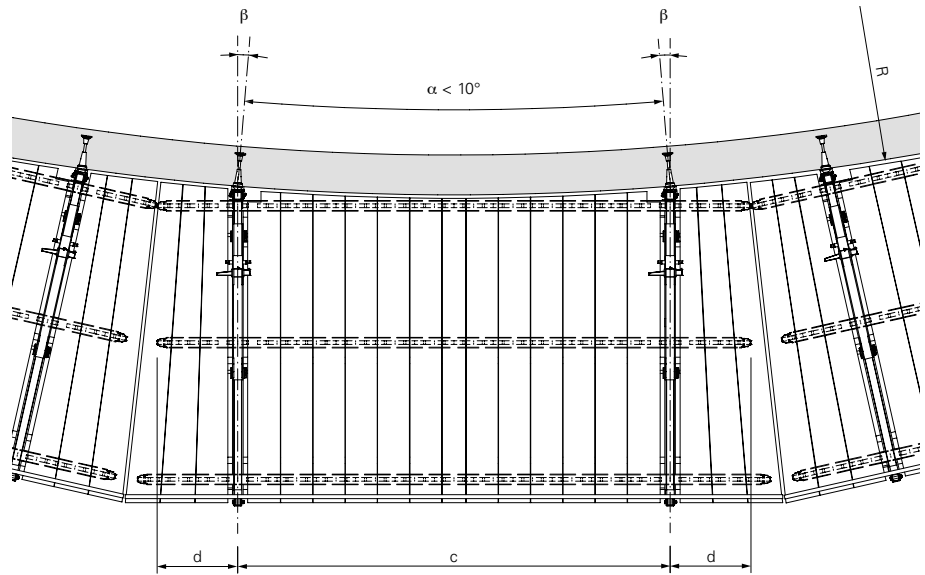


Fig. C1.17

c available bracket spacing = anchor spacing

d middle girder cantilever

$\alpha = 2 \times \text{rotation angle } \beta$

R Radius of the building

Radially-Positioned Brackets

Disadvantages:

The carriage can no longer be used for moving forward and retracting the formwork.

Wedges for compensating the angle have to be fitted between the girder and mounting plate. If the arc rise s of the building edge is too big, the innermost girder must be additionally moved outwards by means of packing in order to provide sufficient space between the girder and the building. (Fig. C1.18)

The same applies to the finishing platforms.

Special measures have to be undertaken if scaffold tube units are installed.

Static proof is to be carried out separately.

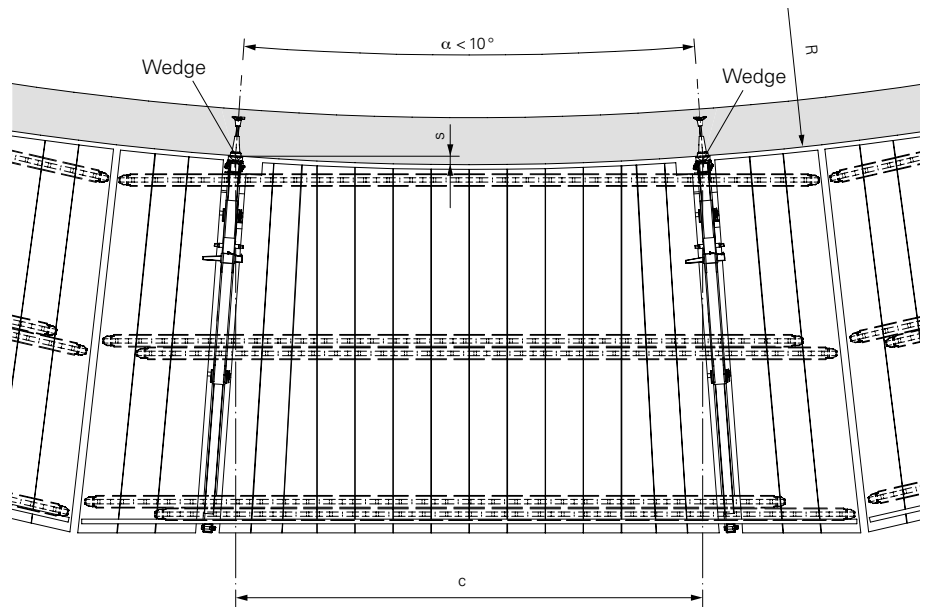


Fig. C1.18

s Arc rise of the building curvature

c Anchor spacing

Corner Platforms

Corner platforms are to be erected in such a way that free access is possible around the corners of the building when the formwork has either been moved forward or retracted.

Measures

An additional cantilever on both outside girders.

The planking is cantilevered inwards and fixed along the 45° edge on the underside of a distribution plank. Open edges at the platform ends are to be secured with end guardrails.

The concreting and intermediate platforms are to be secured accordingly, e.g. with End Handrail Frame 55 (10.7). (Fig. C1.19a + C1.19b)

In the verification process with the help of the application diagrams, the girder cantilever is to be taken into consideration.

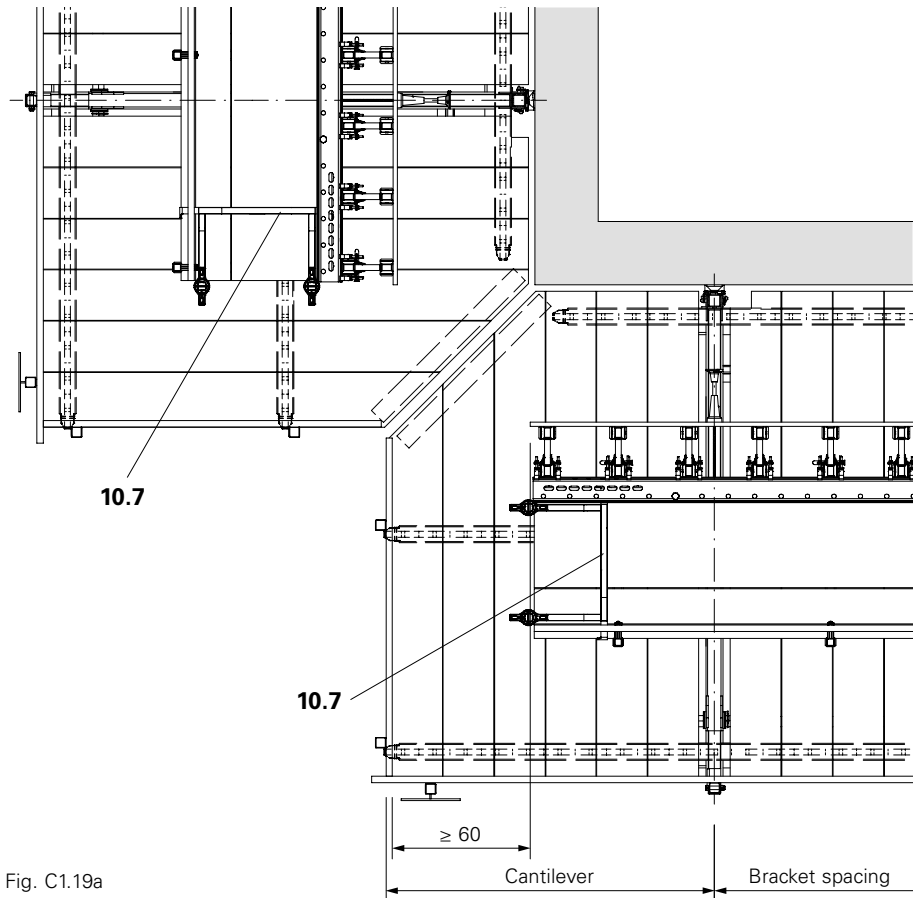


Fig. C1.19a

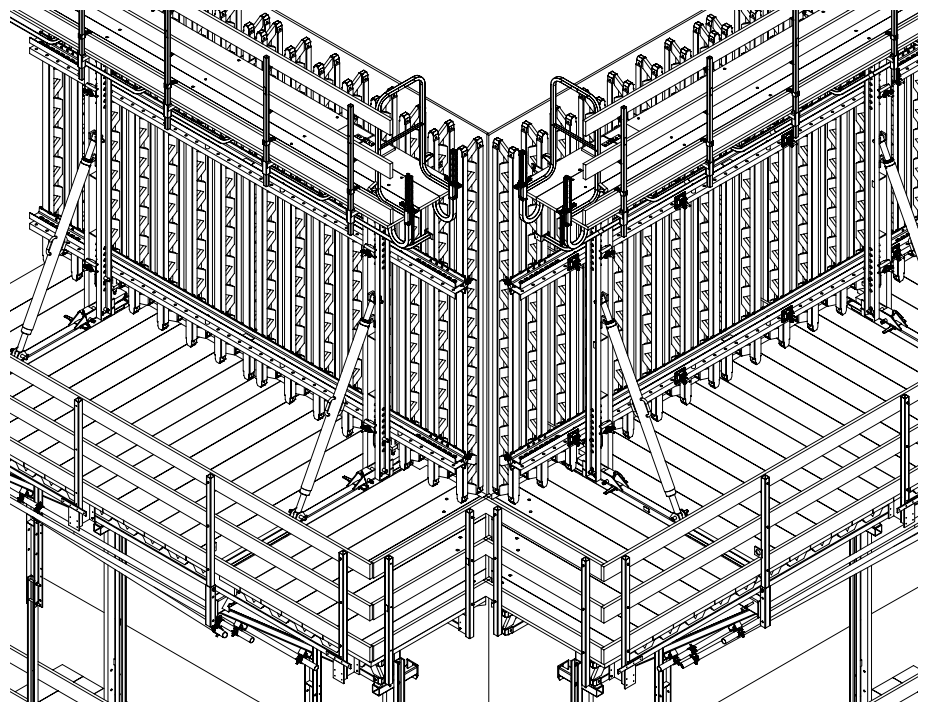


Fig. C1.19b

CB 240 Climbing Formwork



Item no.	Weight kg
051000	112.000

Climbing Bracket CB 240

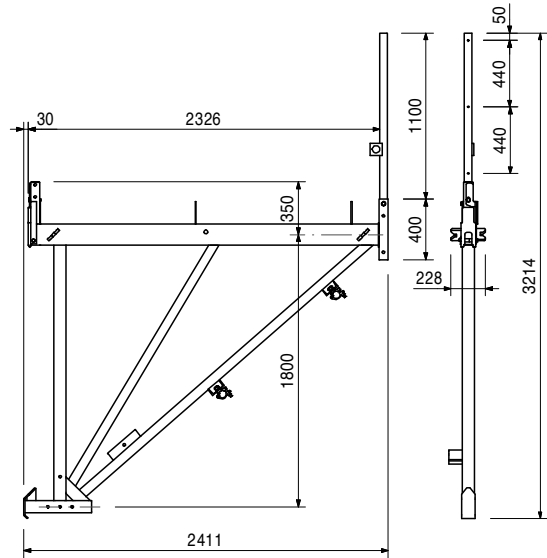
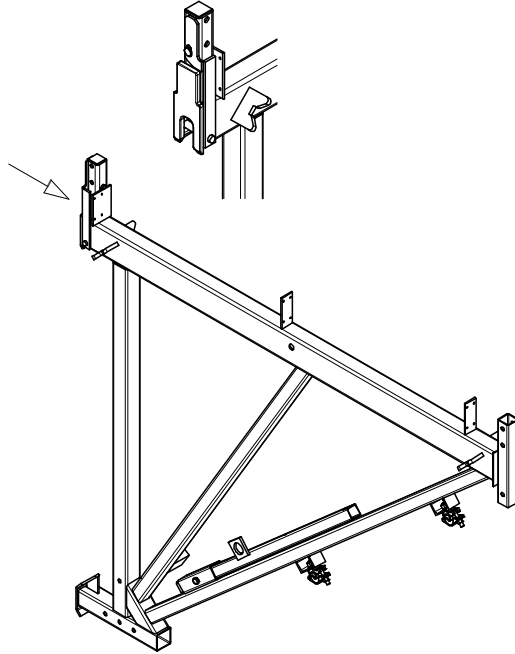
Complete Climbing Scaffold Bracket CB 240.

Complete with

- 2 pc. 017040 Screw-On Coupler AK 48, galv.
- 1 pc. 715977 Guardrail Post CB 240
- 1 pc. 710222 Bolt ISO 4014 M16 x 80-8.8, galv.
- 1 pc. 070890 Nut ISO 7042 M16-8, galv.

Note

Delivery condition: handrail post in transport securing device.



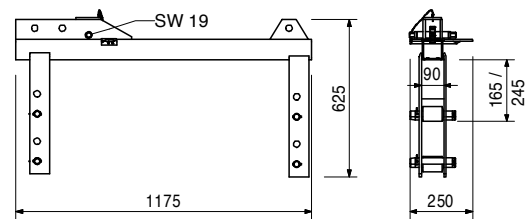
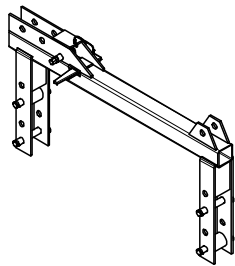
051020	33.900
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Carriage CB 240

For assembly on the Climbing Bracket CB 240.
Can be installed in 2 positions: for decking support with GT 24 girder or timber 8 x 16.

Complete with

- 1 pc. 710944 Key Wedge, FW
- 1 pc. 710859 Axle \varnothing 25 x 184
- 1 pc. 710866 Cog-Wheel \varnothing 25
- 1 pc. 710914 Split Pin ISO 8752 8 x 45, galv.



Accessories

027180	1.760
051040	8.440

Ratchet Lever SW 19

Rack CB 240

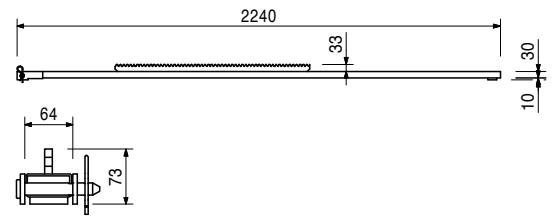
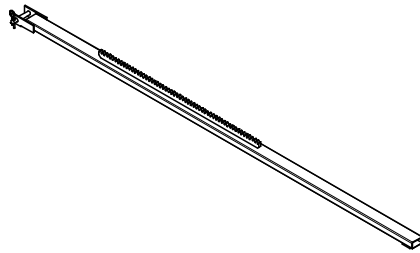
CB 240 Climbing Formwork



Item no.	Weight kg
051040	8.440

Rack CB 240
For Carriage CB 240.

Complete with
1 pc. 018050 Pin \varnothing 16 x 65/86, galv.
1 pc. 018060 Cotter Pin 4/1, galv.

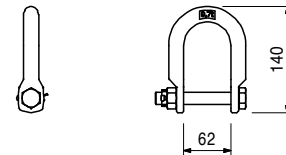


127821	0.957
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Crane Eye CB 240-2 0.7 t
For assembly on the Climbing Bracket CB 240 when used as working scaffold.

Complete with
1 pc. 128335 Bolt ISO 4015 M16 x 110
1 pc. 126248 Castle Nut M16 DIN 935-8, galv.
1 pc. 722825 Cotter Pin ISO 1234-04, 0 x 030 St

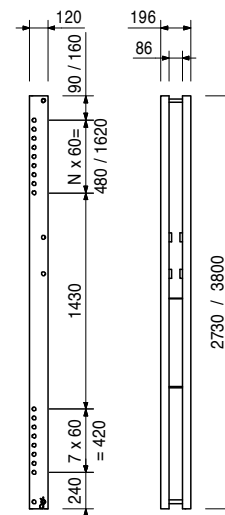
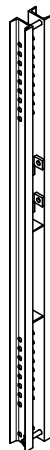
Note
Follow Instructions for Use!
Technical Data
Permissible load-bearing capacity 700 kg.



051060	73.400
051150	103.000

Strongbacks CB
Strongback CB 270
Strongback CB 380
For assembling system formwork on Climbing Brackets CB 240 and 160. For formwork heights up to 5.40 m.

Complete with
1 pc. 715936 Pin \varnothing 25 x 180, incl. dowel pin \varnothing 6
1 pc. 018060 Cotter Pin 4/1, galv.
Technical Data
Permissible load-bearing point capacity 1.9 t.



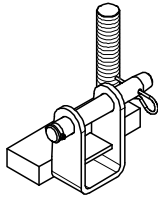
CB 240 Climbing Formwork



Item no.	Weight kg
051030	5.320

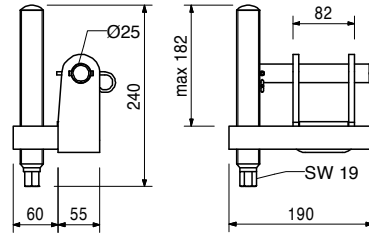
Height Adjusting Unit CB, SCS

For height adjustment of VARIO GT 24 panels on the Strongbacks CB and SCS.



Complete with

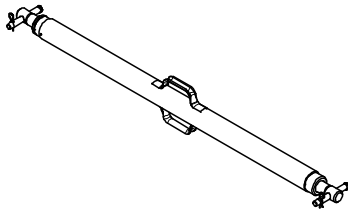
1 pc. 715936 Pin Ø 25 x 180, incl. dowel pin Ø 6
1 pc. 018060 Cotter Pin 4/1, galv.



Item no.	Weight kg
051110	25.200

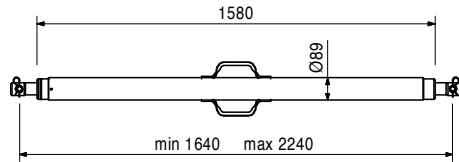
Adjustable Brace CB 164-224

For aligning the Strongback CB.



Complete with

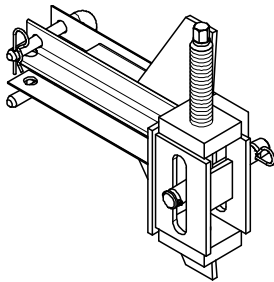
2 pc. 715936 Pin Ø 25 x 180, incl. dowel pin Ø 6
2 pc. 018060 Cotter Pin 4/1, galv.



Item no.	Weight kg
051090	13.500

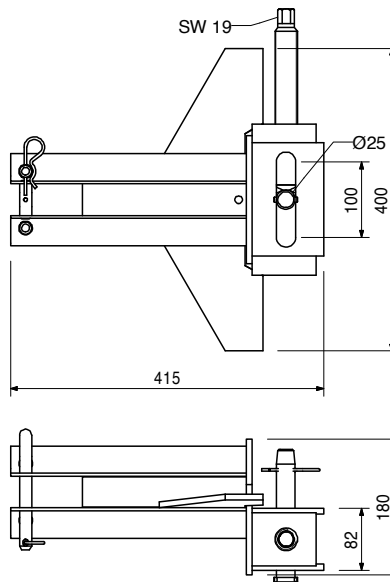
Connector TRIO-CB

For fixing TRIO panels to the Strongback CB. Used on horizontal or vertical struts. With integrated height adjustment.



Complete with

1 pc. 715936 Pin Ø 25 x 180, incl. dowel pin Ø 6
1 pc. 018060 Cotter Pin 4/1, galv.

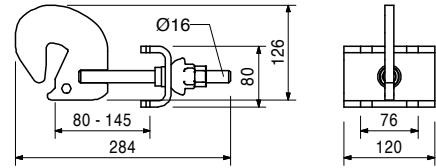
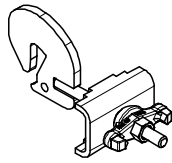


CB 240 Climbing Formwork

Item no.	Weight kg
110059	2.840

Waler Fixation U100 – U120

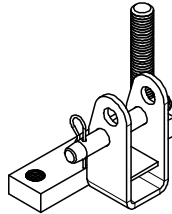
For fixing VARIO GT 24 panels to Strongbacks CB, SCS and Steel Waler SRU.



129689	6.750
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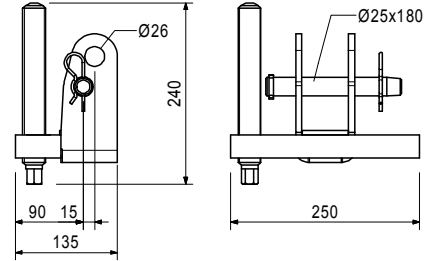
Height Adjusting Unit-2 CB/SCS/RCS

For height adjustment of RUNDFLEX panels on the Strongbacks CB/RCS/SCS.



Complete with

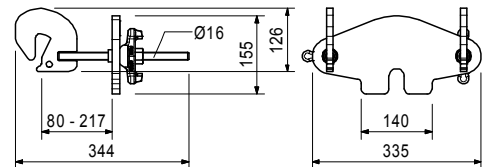
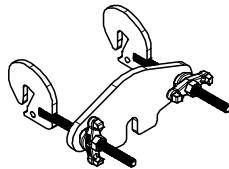
1 pc. 715936 Pin Ø 25 x 180, incl. dowel pin Ø 6
1 pc. 018060 Cotter Pin 4/1, galv.



129720	8.040
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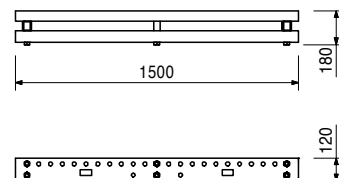
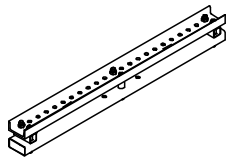
Waler Fixation-2 U100 – U120

For fixing VARIO GT 24 panels to strongbacks CB, SCS, Steel Waler SRU if anchoring is done through the strongback.



127633	38.700
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Formwork Waler 150 CB

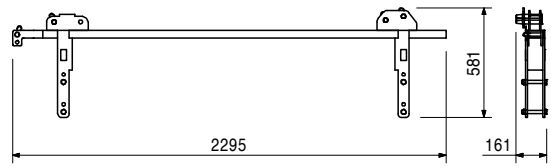
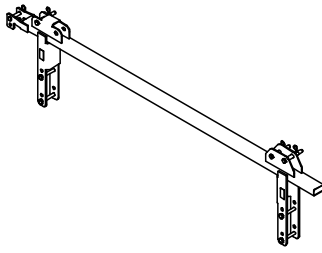


CB 240 Climbing Formwork

Item no. Weight kg

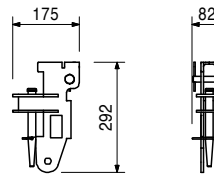
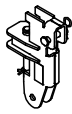
127641 30.300

Bracket Waler CB 240



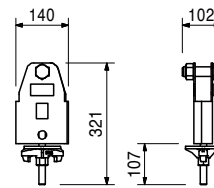
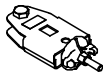
127650 3.640

Brace Connector CB



127659 4.020

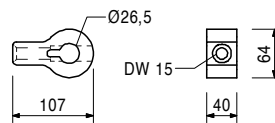
Clamp Adapter MX/TR-SRU



115378 1.080

Eye Nut RCS DW 15

As an articulated connection to the Climbing Rail RCS, Steel Waler SRU for bracing with DW 15.



Accessories

104031 0.462

Fitting Pin Ø 21 x 120

018060 0.030

Cotter Pin 4/1, galv.

111567 0.729

Fitting Pin Ø 26 x 120

022230 0.033

Cotter Pin 5/1, galv.

CB 240 Climbing Formwork



Item no. Weight kg

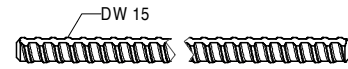
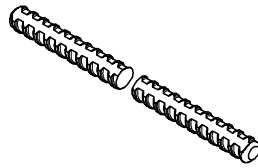
		Tie Rod DW 15
030005	0.720	Tie Rod DW 15, l = 0.50 m
030490	1.730	Tie Rod DW 15, l = 1.20 m

Note

Non-weldable! Take official approval into consideration!

Technical Data

Permissible tension force 90 kN.



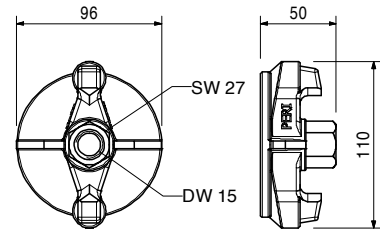
030110 0.799

Wingnut Counterplate DW 15, galv.

For anchoring with Tie Rod DW 15 and B 15.

Technical Data

Permissible load 90 kN.



051230 17.000

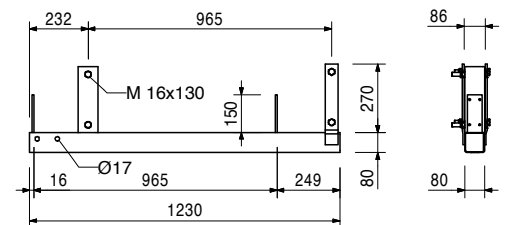
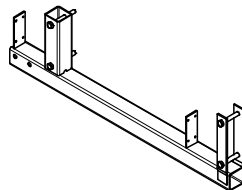
Finishing Platform Beam CB

For assembling finishing platforms.

Complete with

4 pc. 710232 Bolt ISO 4014 M16 x 130-8.8, galv.

4 pc. 070890 Nut ISO 7042 M16-8, galv.



CB 240 Climbing Formwork



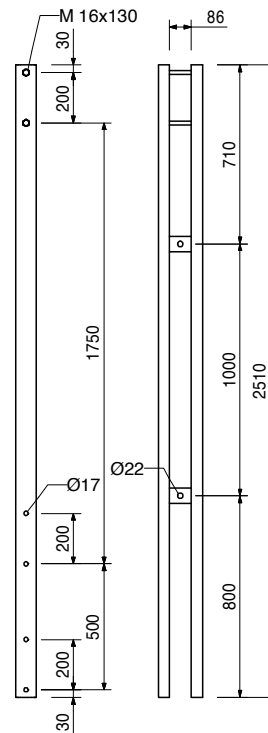
Item no.	Weight kg
051200	44.400

Platform Post CB 225

For assembling finishing platforms. For concreting heights up to 3.60 m. In combination with Post Extension CB 180 for concreting heights from 3.60 to 5.40 m.

Complete with

- 2 pc. 710232 Bolt ISO 4014 M16 x 130-8.8, galv.
- 2 pc. 070890 Nut ISO 7042 M16-8, galv.



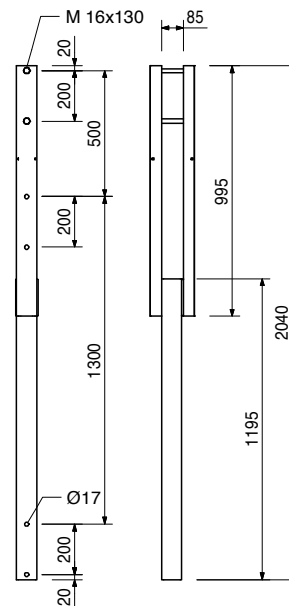
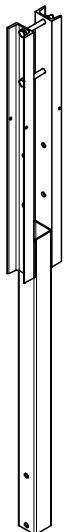
051050	26.400
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Post Extension CB 180

For assembling finishing platforms. In combination with Platform Post CB 225 for concreting heights from 3.60 to 5.40 m.

Complete with

- 2 pc. 710232 Bolt ISO 4014 M16 x 130-8.8, galv.
- 2 pc. 070890 Nut ISO 7042 M16-8, galv.



CB 240 Climbing Formwork

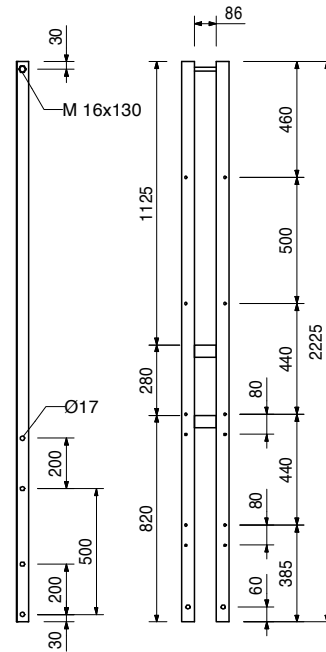
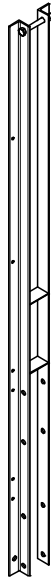
Item no.	Weight kg
051190	17.400

Handrail Post CB 200

For assembling guardrails on finishing platforms.
Basic extension for Handrail Post CB 190 and 370.

Complete with

2 pc. 710232 Bolt ISO 4014 M16 x 130-8.8, galv.
2 pc. 070890 Nut ISO 7042 M16-8, galv.



051210	19.000
051220	34.600

Handrail Posts CB

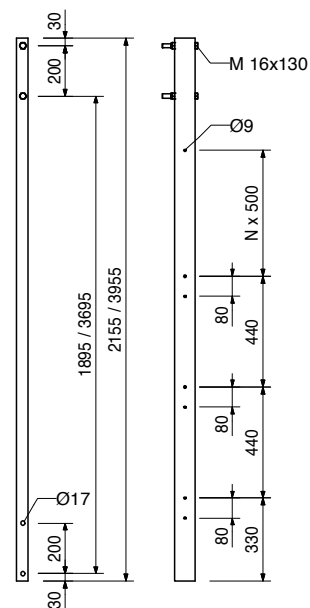
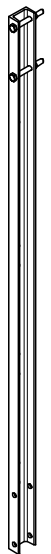
Handrail Post CB 190

Handrail Post CB 370

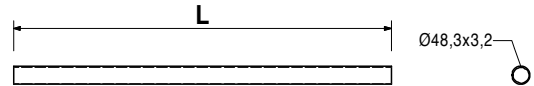
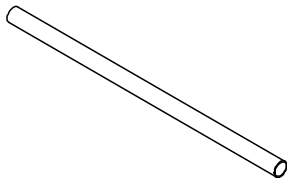
For assembling guardrails on finishing platforms.
Handrail Post CB 190 for concreting heights up to 3.60 m. Handrail Post CB 370 for concreting heights from 3.60 to 5.40 m.

Complete with

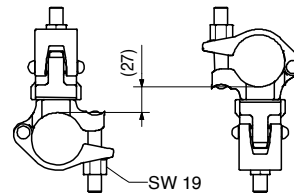
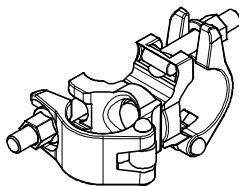
2 pc. 710232 Bolt ISO 4014 M16 x 130-8.8, galv.
2 pc. 070890 Nut ISO 7042 M16-8, galv.



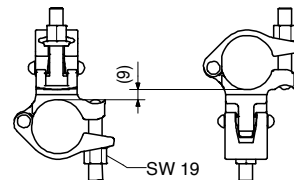
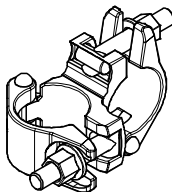
Item no.	Weight kg		L
		Scaffold Tubes Steel Ø 48	
026415	3.550	Scaff. Tube Steel Ø 48.3 x 3.2, special length	
026417	0.000	Cutting Cost Scaffold Tube	
026411	3.550	Scaff. Tube Steel Ø 48.3 x 3.2, l = 1.0 m	1000
026412	7.100	Scaff. Tube Steel Ø 48.3 x 3.2, l = 2.0 m	2000
125976	8.900	Scaff. Tube Steel Ø 48.3 x 3.2, l = 2.5 m	2500
026413	10.650	Scaff. Tube Steel Ø 48.3 x 3.2, l = 3.0 m	3000
114287	12.500	Scaff. Tube Steel Ø 48.3 x 3.2, l = 3.5 m	3500
026414	14.200	Scaff. Tube Steel Ø 48.3 x 3.2, l = 4.0 m	4000
026419	17.750	Scaff. Tube Steel Ø 48.3 x 3.2, l = 5.0 m	5000
026418	21.600	Scaff. Tube Steel Ø 48.3 x 3.2, l = 6.0 m	6000



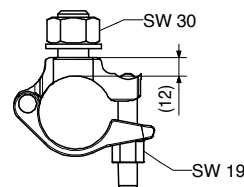
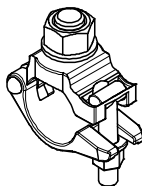
017010	1.400	Swivel Coupling DK 48/48, galv. For Scaffold Tubes Ø 48 mm.
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017020	1.120	Standard Coupler NK 48/48, galv. For Scaffold Tubes Ø 48 mm.
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017040	0.850	Screw-On Coupler AK 48, galv. For Scaffold Tubes Ø 48 mm.
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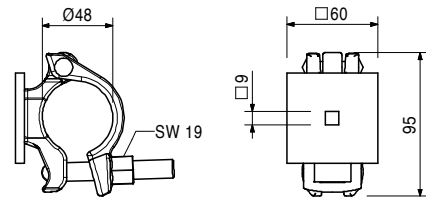
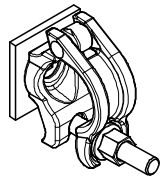


CB 240 Climbing Formwork

Item no.	Weight kg
051160	0.894

Guardrail Connector CB

For assembling scaffold tubes on handrail posts.



126228	0.030
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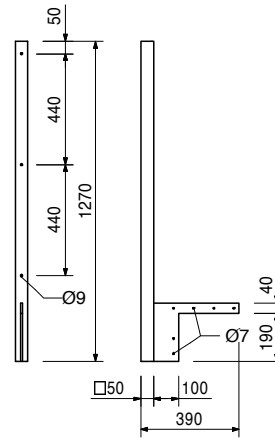
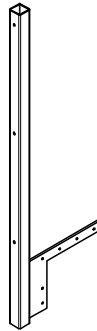
Accessories

F.H. Bolt DIN 603 M8 x 70 MU, galv.

051610	6.940
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Side Guardrail Post CB

For assembly of an end guardrail. Bolted to the platform main beam.



051640	0.014
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Accessories

Lag Screw DIN 571 6 x 80, galv.

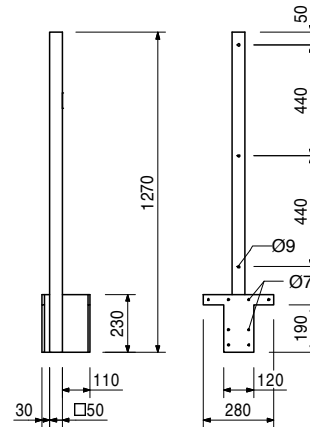
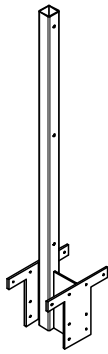
CB 240 Climbing Formwork



Item no.	Weight kg
051630	11.000

Intermediate Handrail Post CB

For assembling a guardrail with large cantilevers.
Bolted on the platform main beam.



051640	0.014
051610	6.940

Accessories

Lag Screw DIN 571 6 x 80, galv.

Side Guardrail Post CB

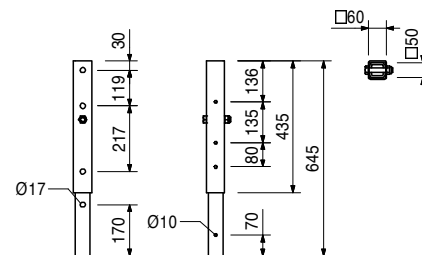
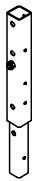
126399	4.710
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Handrail Post Extension CB

For the extension of guardrail post CB by 50 cm.

Complete with

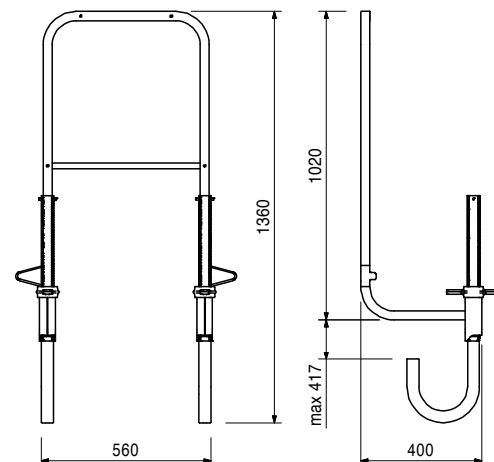
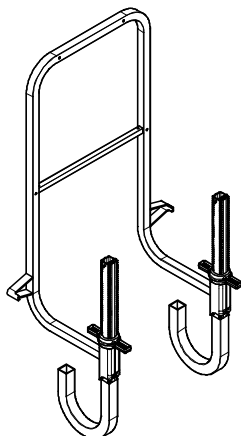
1 pc. 710222 Bolt ISO 4014 M16 x 80-8.8, galv.
1 pc. 070890 Nut ISO 7042 M16-8, galv.



065066	15.100
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End Guardrail Frame 55

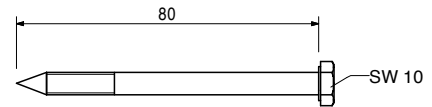
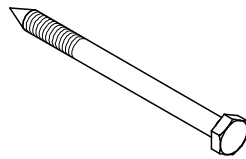
Clampable end guardrail for all PERI scaffold platforms and climbing systems.



CB 240 Climbing Formwork

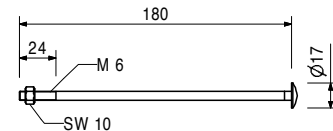
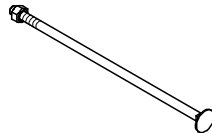
Item no. Weight kg

051640 0.014 **Lag Screw DIN 571 6 x 80, galv.**



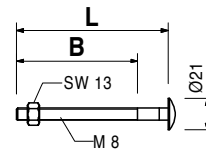
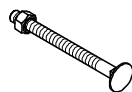
051650 0.060 **F.H. Bolt DIN 603 M6 x 180 MU, galv.**

With nut.



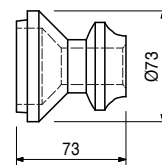
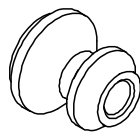
		F.H. Bolts DIN 603 M8	L	B
710240	0.050	F.H. Bolt DIN 603 M8 x 100 MU, galv.	100	80
024360	0.058	F.H. Bolt DIN 603 M8 x 125 MU, galv.	125	113
108834	0.085	F.H. Bolt DIN 603 M8 x 180 MU, galv.	180	28

With nut.



029470 0.723 **Scaffold Mounting Ring M24, galv.**

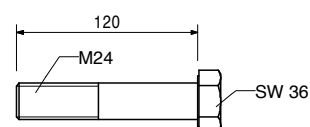
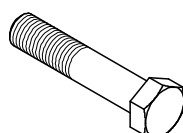
Anchor System M24.
For anchoring climbing systems.



Accessories

029560 0.535 **Bolt ISO 4014 M24 x 120-10.9, galv.**

029560 0.535 **Bolt ISO 4014 M24 x 120-10.9, galv.**
High-strength bolts for anchoring climbing systems.



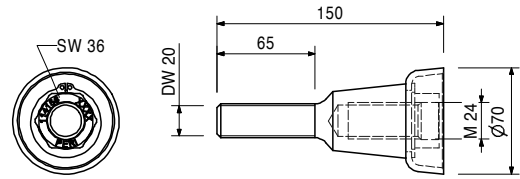
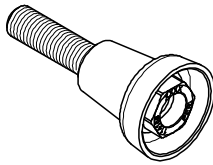
CB 240 Climbing Formwork



Item no.	Weight kg
114158	1.030

Screw-On Cone-2 M24/DW 20, galv.
Anchor system M24.
For anchoring climbing systems.

Note
Separate design information on request.



Accessories

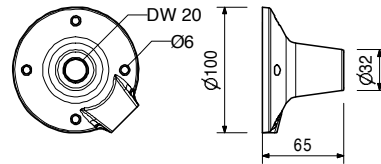
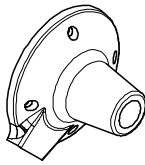
030860	0.792
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Threaded Anchor Plate DW 20

030860	0.792
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Threaded Anchor Plate DW 20
For use with Tie Rod DW 20, B 20 or Screw-On Cone-2 M24/DW 20. For anchoring in concrete.

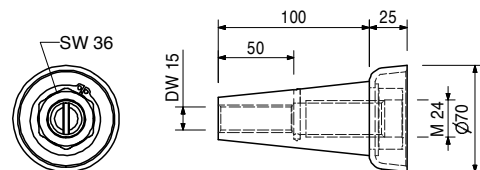
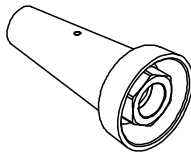
Note
Lost anchor part.



031220	1.010
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Climbing Cone-2 M24/DW 15, galv.
Anchor system M24.
For anchoring climbing systems.

Note
Separate design information on request.



Accessories

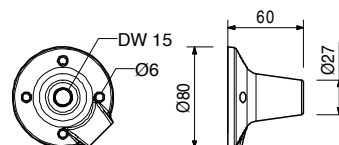
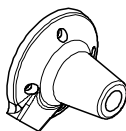
030840	0.515
030030	1.440
030740	1.550

Threaded Anchor Plate DW 15
Tie Rod DW 15, spec. length
Tie Rod B 15, spec. length

030840	0.515
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Threaded Anchor Plate DW 15
For use with Tie Rod DW 15 or B 15. For anchoring in concrete.

Note
Lost anchor part.



Item no. Weight kg

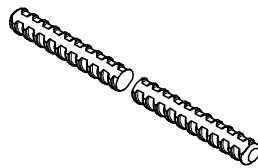
		Tie Rod DW 15
030030	1.440	Tie Rod DW 15, spec. length
030050	0.000	Cutting Cost Tie Rod DW 15, B 15

Note

Non-weldable! Take official approval into consideration!

Technical Data

Permissible tension force 90 kN.



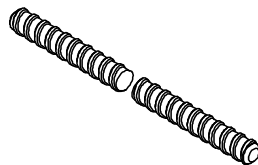
		Tie Rod B 15
030740	1.550	Tie Rod B 15, spec. length
030050	0.000	Cutting Cost Tie Rod DW 15, B 15

Note

Weldable! Take official approval into consideration!

Technical Data

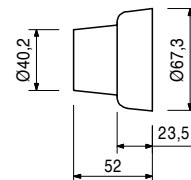
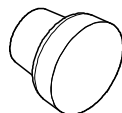
Permissible tension force 82 kN.



031652	0.247	KK Concrete Cone M24-67/52 For closing anchor points with Climbing Cone-2, M24/DW 15 and Screw-On Cone-2 M24/DW 20.
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Note

Delivery unit 50 pieces.



Accessories

113127	5.400	Glue for Concrete Cones-3, 5,4-kg-Set
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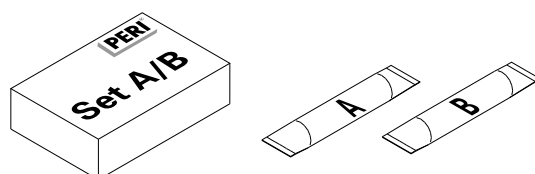
113127	5.400	Glue for Concrete Cones-3, 5,4-kg-Set For bonding PERI concrete cones.
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Note

See Safety Data sheet!

Consisting of:

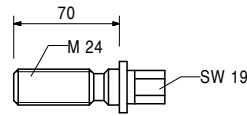
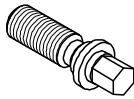
- 6 x Component A, 6 x Component B
- 2 x Stirring Container, 3 x Stirring Staff



Item no.	Weight kg
029270	0.331

Advancing Bolt M24, galv.

For fixing the M24 anchor system if the plywood formlining is drilled through.



Item no.	Weight kg
029280	0.196

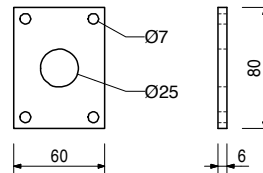
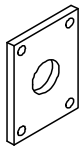
Accessories

Anchor Positioning Plate M24, galv.

029280	0.196
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Anchor Positioning Plate M24, galv.

For fixing the M24 anchor system if the plywood formlining is drilled through.



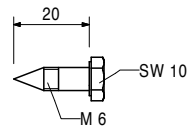
Item no.	Weight kg
029440	0.005

Accessories

Lag Screw DIN 571 6 x 20, galv.

029440	0.005
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Lag Screw DIN 571 6 x 20, galv.

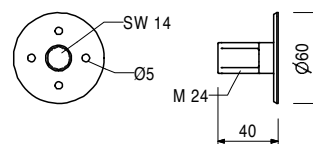


026420	0.123
--------	-------

Anchor Positioning Stud M24, galv.

For fixing the M24 anchor system if the plywood formlining is not drilled through.

Note
Allen Key SW 14.



027212	0.445
710312	0.005

Accessories

Allen Key SW 14, long
Nail 3 x 80

CB 240 Climbing Formwork



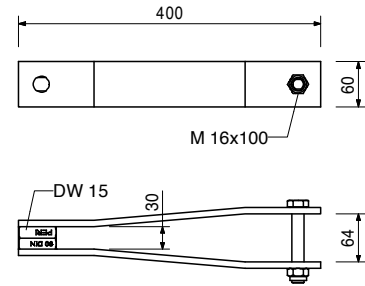
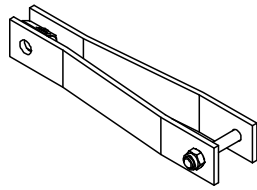
Item no.	Weight kg
107007	3.410

Tension Anchor Connector CB

To prevent tipping over due to wind loads with Tie Rod DW 15.

Complete with

1 pc. 710219 Bolt ISO 4014 M16 x 100-8.8, galv.
1 pc. 070890 Nut ISO 7042 M16-8, galv.



Accessories

116807	1.820
030030	1.440
107008	4.100
116752	5.050

Turnbuckle CB M20/DW 15

Tie Rod DW 15, spec. length

Wall Tension Anchor

Wall Bracing Shoe CB M24

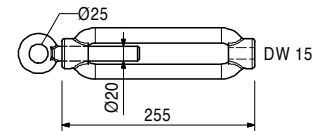
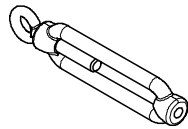
116807	1.820
--------	-------

Turnbuckle CB M20/DW 15

For tensioning of Tie Rod DW 15 to prevent tipping over due to wind loads. Connects Tie Rod DW 15 with Wall Bracing Shoe CB M24.

Complete with

1 pc. 711059 Turnbuckle for tension anchor CB
1 pc. 711060 Eye Bolt M20, left, galv.



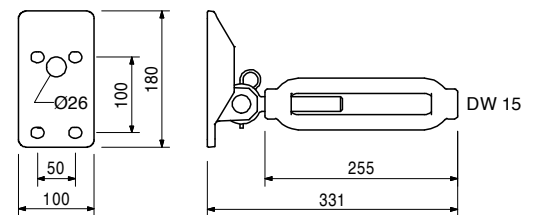
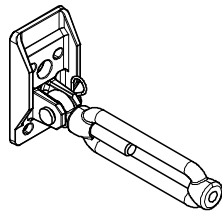
107008	4.100
--------	-------

Wall Tension Anchor

Alternative wall connector to prevent tipping over due to wind loads with Tie Rod DW 15. Including Turnbuckle CB M20/DW 15.

Complete with

1 pc. 027170 Pin Ø 16 x 42, galv.
1 pc. 018060 Cotter Pin 4/1, galv.



Accessories

026430	0.334
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Bolt ISO 4014 M24 x 70-10.9, glav.

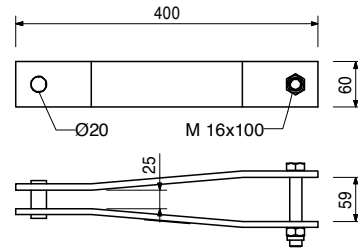
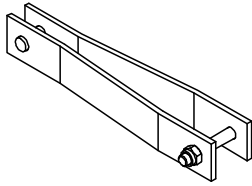
Item no.	Weight kg
051260	3.300

Tension Belt Connector CB

To prevent tipping over due to wind loads with tension belt.

Complete with

1 pc. 710219 Bolt ISO 4014 M16 x 100-8.8, galv.
1 pc. 070890 Nut ISO 7042 M16-8, galv.



051250	2.790
051270	1.620
116752	5.050

Accessories

Tension Belt, l = 5.70 m, 2.5 t

Tension Belt Connector Wall M24

Wall Bracing Shoe CB M24

051250	2.790
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Tension Belt, l = 5.70 m, 2.5 t

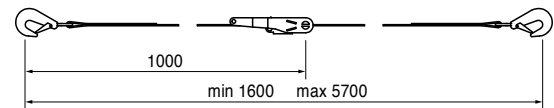
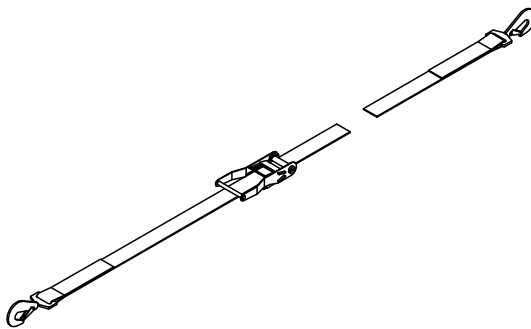
To prevent climbing systems from tipping over due to wind loads.

Note

Follow Instructions for Assembly and Use!

Technical Data

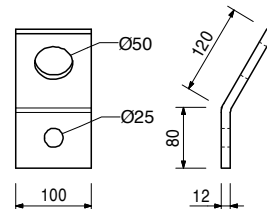
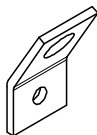
Permissible tension force 2.5 t.



051270	1.620
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Tension Belt Connector Wall M24

Wall connector to prevent tipping over due to wind loads with Tension Belt. To be used for climbing systems CB and FB.



026430	0.334
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Accessories

Bolt ISO 4014 M24 x 70-10.9, glav.

CB 240 Climbing Formwork

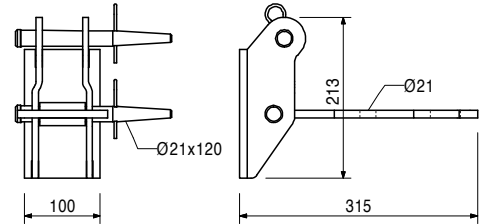
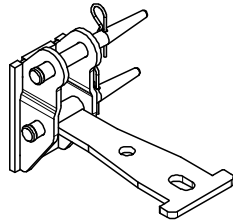
Item no.	Weight kg
116752	5.050

Wall Bracing Shoe CB M24

To prevent tipping over due to wind loads with Tension Belt or Tie Rod DW 15 and to stabilise the finishing platform. To be mounted on the Climbing Anchor M24 embedded in the concrete.

Complete with

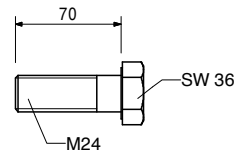
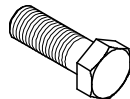
2 pc. 104031 Fitting Pin $\varnothing 21 \times 120$
2 pc. 018060 Cotter Pin 4/1, galv.



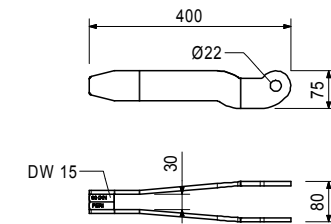
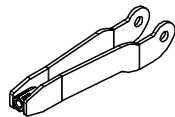
Accessories	
026430	0.334

Bolt ISO 4014 M24 x 70-10.9, glav.

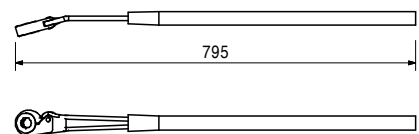
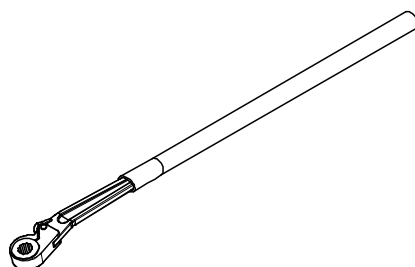
026430	0.334	Bolt ISO 4014 M24 x 70-10.9, glav. High-strength bolt for anchoring climbing systems.
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129693	3.130	Tension Anchor Connector CB/SCS For connecting the wind suspension with Tie Rod DW 15 to the Crossbeam Unit SCS 250 / 190 or CB Climbing Bracket.
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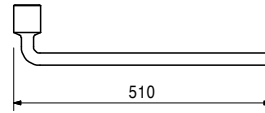
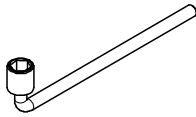
027180	1.760	Ratchet Lever SW 19 For operation of the adjusting unit and of the carriage with drive shaft SW 19.
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Accessories		
027200	0.100	Insert Socket SW 19

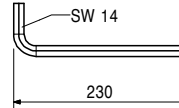
Item no.	Weight kg
031480	2.460

Socket Wrench SW 36, chrome-plated
For various purposes.



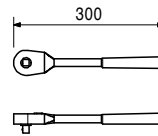
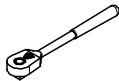
027212	0.445
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Allen Key SW 14, long
Fits to PERI Anchor Positioning Studs and Allen Key Bolts M16.



072180	0.560
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Ratchet Wrench 1/2"



029620	0.075
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Socket SW 19-1/2"
Fits to Hex. Bolts M12 or Height Adjusting Unit SW 19.

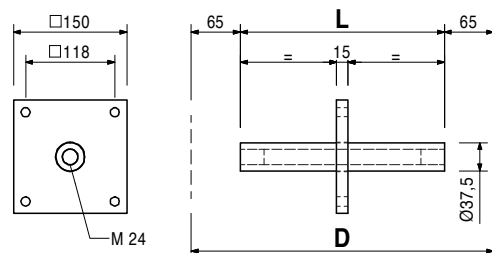
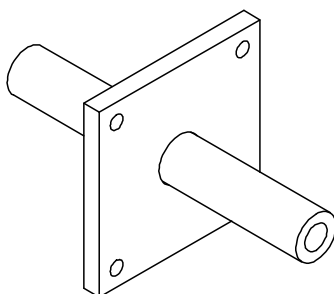


118638	8.790
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Arch. Anchor Sleeve M24-150/2
Centre piece of the double-sided architectural concrete anchoring CB. Anchor Tie DW 15 is passing through.
Plate size 150 mm.

Note
Order item!
Specify wall thickness D.
Separate design information on request.

Technical Data
Min. D = 200 mm.
Max. D = 400 mm.
L = D - 130 mm.

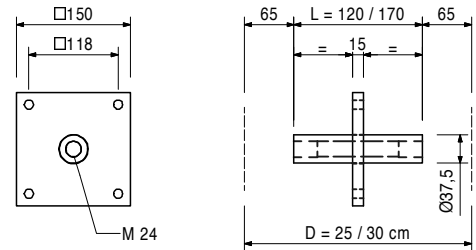
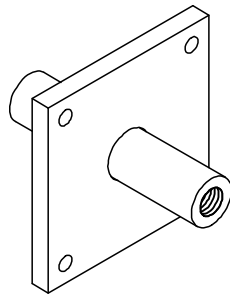


Item no. Weight kg

		Arch. Anchor Sleeves M24
126793	3.190	Arch. Anchor Sleeve M24-150/2, D = 25
126795	3.490	Arch. Anchor Sleeve M24-150/2, D = 30

Note

Seperate design information on request.



116279 7.530

Arch. Anchor Sleeve M24-120/2

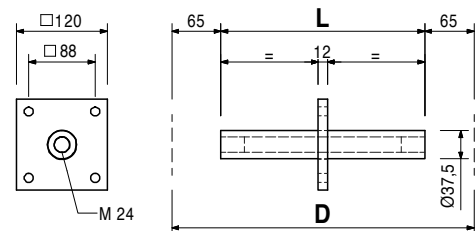
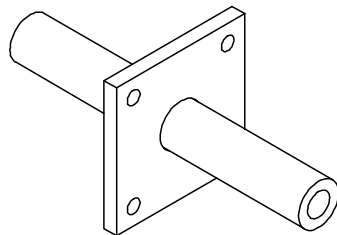
Centre piece of the double-sided architectural concrete anchoring CB. Anchor Tie DW 15 is passing through. Plate size 120 mm.

Note

Order item!
Specify wall thickness D.
Seperate design information on request.

Technical Data

Min. D = 200 mm.
Max. D = 400 mm.
L = D -130 mm.



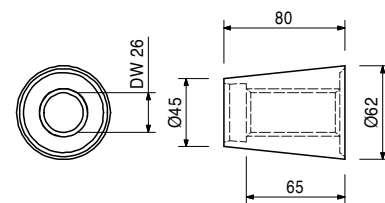
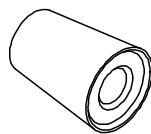
116385 0.189

Arch. Leading Cone M24/DW 26

Leading cone for single- or double-sided architectural concrete anchorings CB. Creates a recess for Arch. Mounting Cone M24 and Concrete Cone DK 58/52.

Note

Plastic version.



Accessories

115499 0.878

Leading Cone Screw DW 26

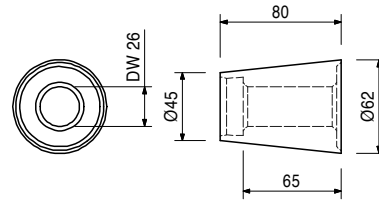
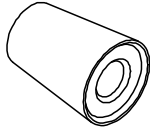
Item no.	Weight kg
125512	0.966

Arch. Leading Cone M24/DW 26 Steel

Leading cone for single- or double-sided architectural anchorings CB.
Creates a recess for Arch. Mounting Cone M24 and concrete cone DK 58/52.
Can also be used as shear cone for anchoring FB or KG Brackets.

Note

Steel version.
Seperate design information on request.



Accessories

115499	0.878
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Leading Cone Screw DW 26

125963	3.100
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Arch. Anchor Sleeve M24-150/1

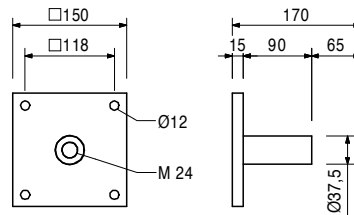
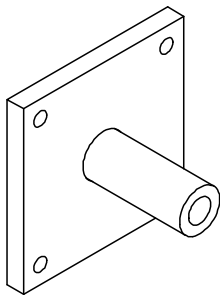
Anchor sleeve for single-sided architectural concrete anchoring CB.
Anchor Tie DW 15 is passing through.
Plate size 150 mm.

Note

Seperate design information on request.

Technical Data

Fixed embedment depth 170 mm.
Min. wall thickness 200 mm.



Accessories

065027	0.359
065033	0.010

Spacer Tube rough DR 22, l = 2.00 m Cone DR 22

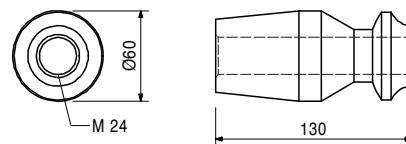
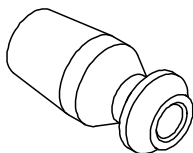
114606	1.630
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Arch. Mounting Cone M24

For anchoring climbing systems compatible with Mounting Ring M24.
Fixation to Arch. Anchor Sleeves M24-120/2, M24-150/2 or M24-150/1.

Note

Seperate design information on request.



Accessories

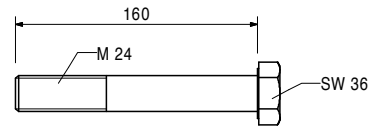
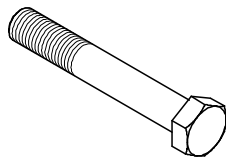
057138	0.665
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Hex. Bolt ISO 4014 M24 x 160-8.8, galv.

CB 240 Climbing Formwork

Item no.	Weight kg
057138	0.665

Hex. Bolt ISO 4014 M24 x 160-8.8, galv.



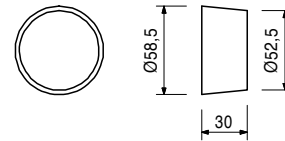
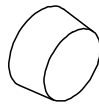
031642	0.152
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DK Concrete Cone DW 15-58/30

For closing anchor points with DK Sealing Cone DW 15/35, DW 15/55, DW 20/55, DW 26/55, SK Anchor Cone DW 15, Magnet Cone MX 15 - 55, Magnet Cone MX 18 - 55, Arch. Leading Cone M24.

Note

Delivery unit 50 pieces.



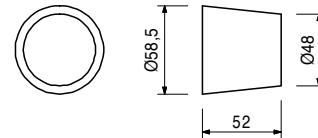
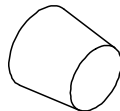
031643	0.241
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DK Concrete Cone UNI 58/52

For closing anchor points with DK Sealing Cone DW 15/55, DW 20/55, DW 26/55, SK Anchor Cone DW 15, Magnet Cone MX 15 - 55, Magnet Cone MX 18 - 55, Arch. Leading Cone M24.

Note

Delivery unit 50 pieces.



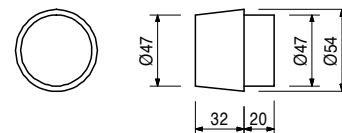
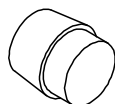
031641	0.208
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DK Concrete Cone Architec. DW 15-58/52

For closing anchor points with DK Sealing Cone DW 15/55, DW 20/55, DW 26/55, SK Anchor Cone DW 15, Magnet Cone MX 15 - 55, Magnet Cone MX 18 - 55, Arch. Leading Cone M24 with corresponding architectural requirements.

Note

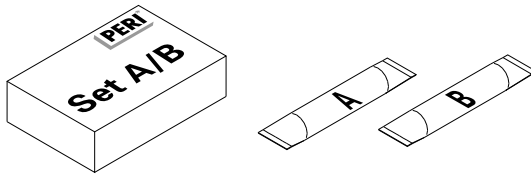
Delivery unit 50 pieces.



Item no.	Weight kg
113127	5.400

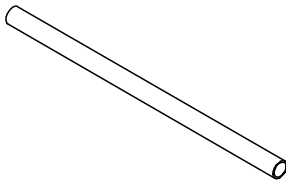
Glue for Concrete Cones-3, 5,4-kg-Set
For bonding PERI concrete cones.

Note
See Safety Data sheet!
Consisting of:
6 x Component A, 6 x Component B
2 x Stirring Container, 3 x Stirring Staff



065027	0.359
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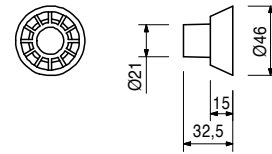
Spacer Tube rough DR 22, l = 2.00 m
Plastic Spacer Tube for DW 15, B 15.



065033	0.010
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Cone DR 22
Plastic. Suitable for Spacer Tube DR 22.

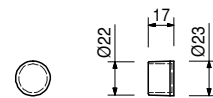
Note
Delivery unit 500 pieces.



065036	0.002
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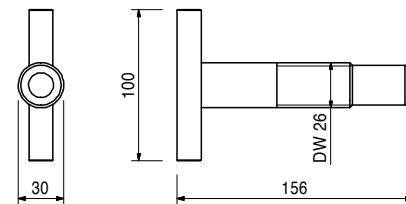
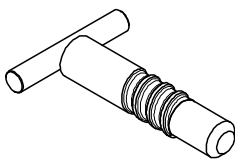
Plug DR 22
Plastic. Suitable for Spacer Tube DR 22.

Note
Delivery unit 1000 pieces.



115499	0.878
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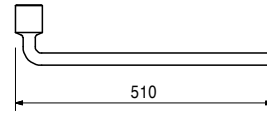
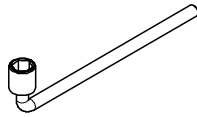
Leading Cone Screw DW 26
For recovering the Arch. Leading Cone M24/DW 26.



CB 240 Climbing Formwork

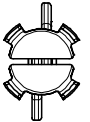
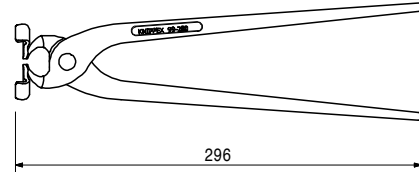
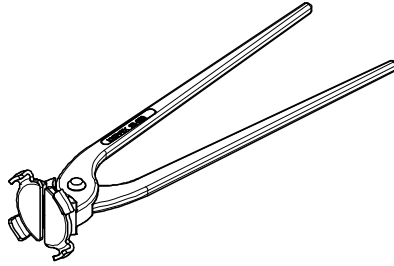
Item no.	Weight kg
031480	2.460

Socket Wrench SW 36, chrome-plated
For various purposes.



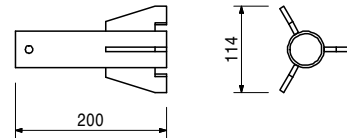
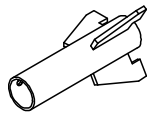
031644	0.588
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DK Tong for Concrete Cone 58
For holding DK, SK or KK Concrete Cones with corresponding diameter during installation.



101995	1.020
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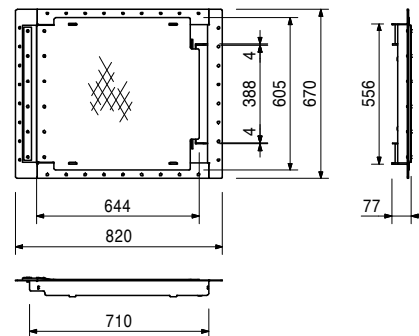
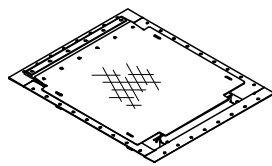
Concrete Cone Gauge
Installation of concrete cones flush with the surface.



126431	12.300
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Hatch 55 x 60-2, foldable
Self-closing hatch for ladder access. Clear opening approx. 55 x 60 cm. Ladder fixation with bolts or by hanging up.

Complete with
1 pc. 126785 Hatch Hinge RCS
12 pc. 108647 Rivet DIN 7337- A5 x 20
2 pc. 022230 Cotter Pin 5/1, galv.



710224	0.047
710381	0.017

Accessories
Bolt ISO 4017 M12 x 40-8.8, galv.
Nut ISO 7042 M12-8, galv.

CB 240 Climbing Formwork



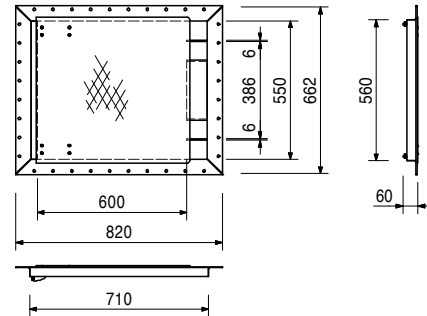
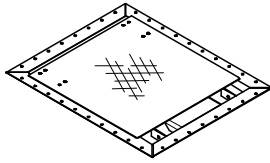
Item no.	Weight kg
110608	15.600

Hatch 55 x 60, foldable

Self-closing hatch for ladder access. Clear opening approx. 55 x 60 cm. Ladder fixation with bolts.

Complete with

- 1 pc. 110529 Hinging Plate left, galv.
- 1 pc. 110535 Hinging Plate right, galv.
- 8 pc. 721412 Rivet DIN 7337 - A4,8 x 12



710224	0.047
710381	0.017

Accessories

- Bolt ISO 4017 M12 x 40-8.8, galv.**
- Nut ISO 7042 M12-8, galv.**

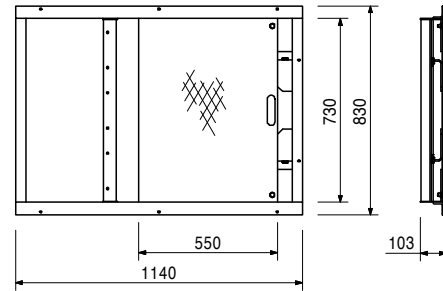
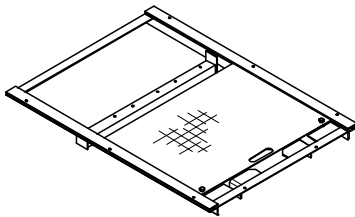
051430	37.900
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Sliding Hatch Cover

Non self-closing hatch for ladder access. Clear opening approx. 73 x 55 cm. Ladder fixation with bolts.

Complete with

- 4 pc. 710266 Bolt ISO 4017 M12 x 25-8.8, galv.
- 4 pc. 710381 Nut ISO 7042 M12-8, galv.



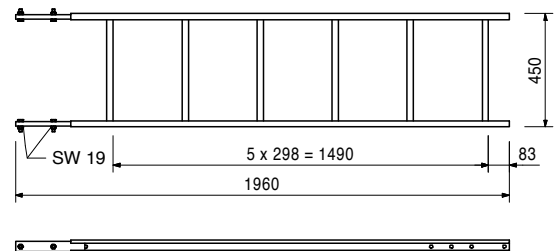
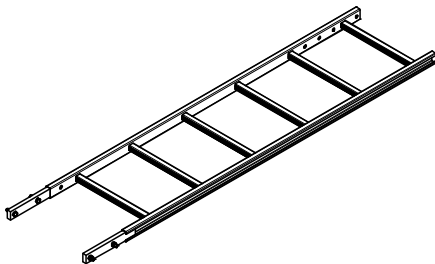
051410	11.700
--------	--------

Ladder 180/6, galv.

As access for PERI formwork systems.

Complete with

- 4 pc. 710224 Bolt ISO 4017 M12 x 40-8.8, galv.
- 4 pc. 710381 Nut ISO 7042 M12-8, galv.



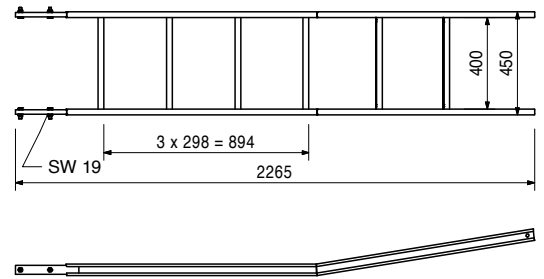
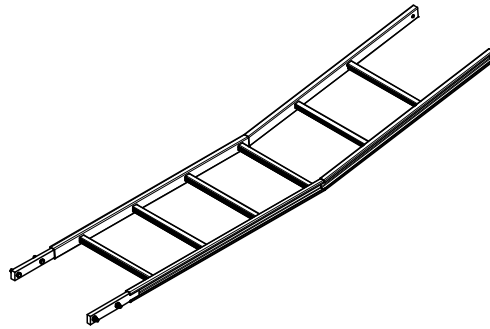
CB 240 Climbing Formwork



Item no.	Weight kg
051420	12.800

Ladder 220/6, galv.
As access for PERI formwork systems.

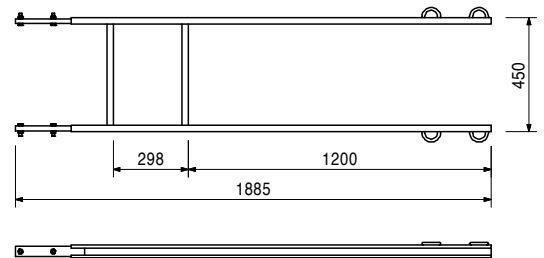
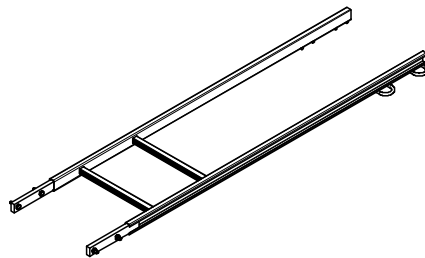
Complete with
4 pc. 710224 Bolt ISO 4017 M12 x 40-8.8, galv.
4 pc. 710381 Nut ISO 7042 M12-8, galv.



103724	10.400
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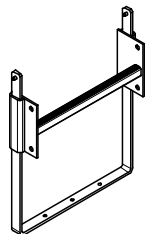
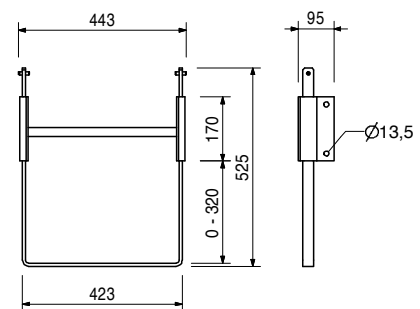
End Ladder 180/2, galv.
As access for PERI formwork systems.

Complete with
4 pc. 710224 Bolt ISO 4017 M12 x 40-8.8, galv.
4 pc. 710381 Nut ISO 7042 M12-8, galv.



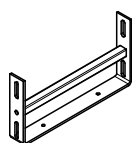
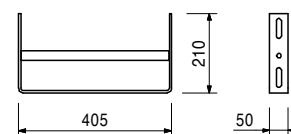
109105	5.070
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Ladder Base 30 adjustable, galv.
For horizontal fixing of ladders on the platform decking.



051460	2.180
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Ladder Base, galv.
As bottom ladder connection and for securing ladders against sliding on the scaffold decks.



Item no.	Weight kg
103718	0.684

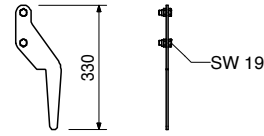
Ladder Hook, galv.

For adjusting the bottom ladder.
Always use in pairs.



Complete with

2 pc. 710266 Bolt ISO 4017 M12 x 25-8.8, galv.
2 pc. 710381 Nut ISO 7042 M12-8, galv.



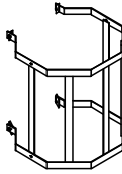
104132	15.600
051450	25.200

Ladder Safety Cages, galv.

Ladder Safety Cage 75, galv.

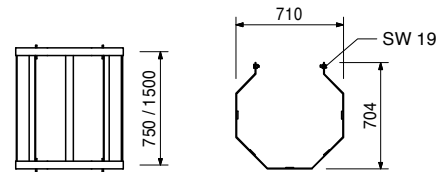
Ladder Safety Cage 150, galv.

Ladder safety cage for PERI access ladders.



Complete with

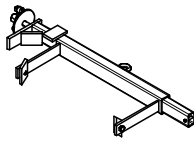
4 pc. 710266 Bolt ISO 4017 M12 x 25-8.8, galv.
4 pc. 701763 Clamping Plate FI 25 x 10 x 90



111165	6.080
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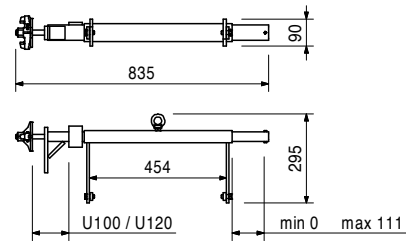
Ladder Connector VARIO, adjustable

For connecting ladders to Steel Walers SRZ and SRU, Profile U100 – U120.



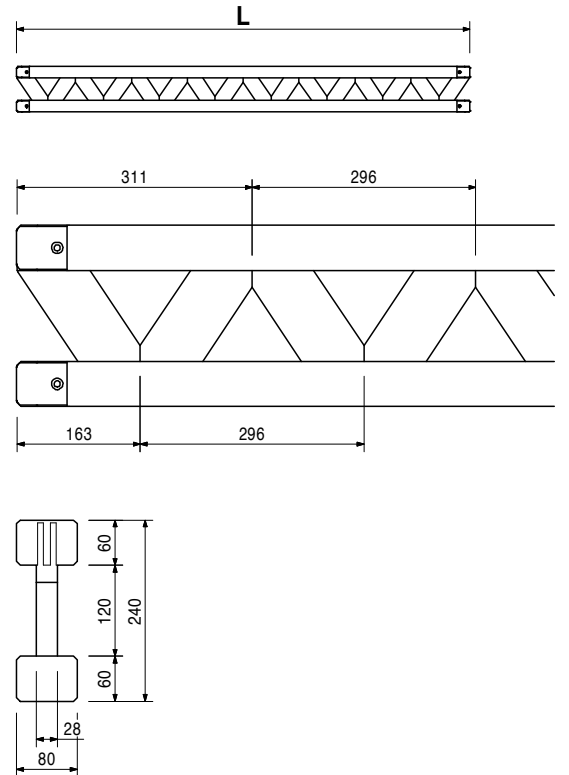
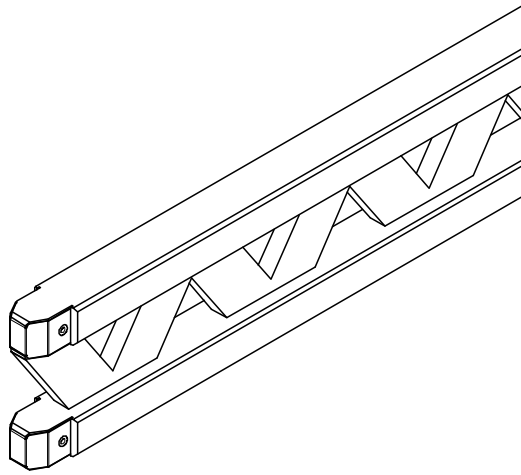
Complete with

2 pc. 710266 Bolt ISO 4017 M12 x 25-8.8, galv.
2 pc. 701763 Clamping Plate FI 25 x 10 x 90

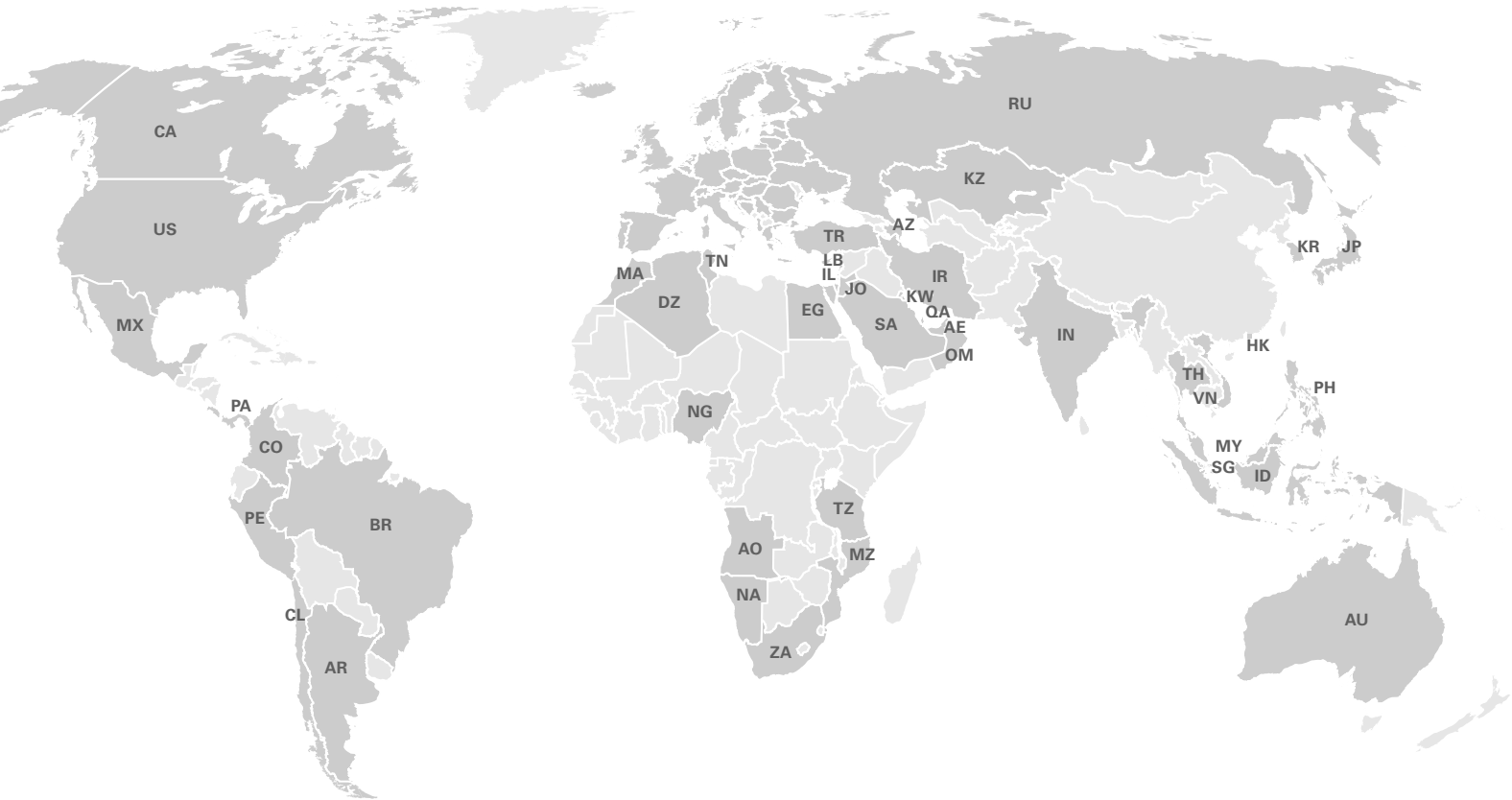


CB 240 Climbing Formwork

Item no.	Weight kg		L
075100	5.300	Girders GT 24	918
075120	7.100	Girder GT 24, l = 0.90 m	1214
075150	8.900	Girder GT 24, l = 1.20 m	1510
075180	10.600	Girder GT 24, l = 1.80 m	1806
075210	12.400	Girder GT 24, l = 2.10 m	2102
075240	14.200	Girder GT 24, l = 2.40 m	2398
075270	15.900	Girder GT 24, l = 2.70 m	2694
075300	17.700	Girder GT 24, l = 3.00 m	2990
075330	19.500	Girder GT 24, l = 3.30 m	3286
075360	21.200	Girder GT 24, l = 3.60 m	3582
075390	23.000	Girder GT 24, l = 3.90 m	3878
075420	24.800	Girder GT 24, l = 4.20 m	4174
075450	26.600	Girder GT 24, l = 4.50 m	4470
075480	28.300	Girder GT 24, l = 4.80 m	4766
075510	30.100	Girder GT 24, l = 5.10 m	5062
075540	31.900	Girder GT 24, l = 5.40 m	5358
075570	33.600	Girder GT 24, l = 5.70 m	5654
075600	35.400	Girder GT 24, l = 6.00 m	5950



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