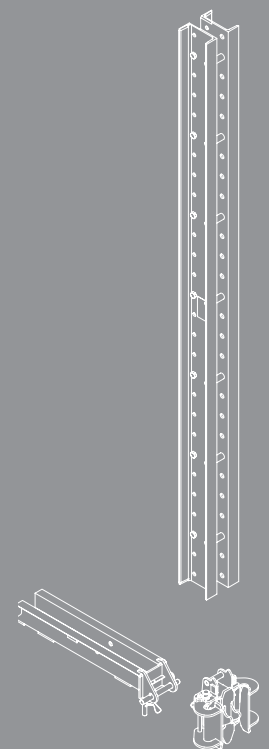
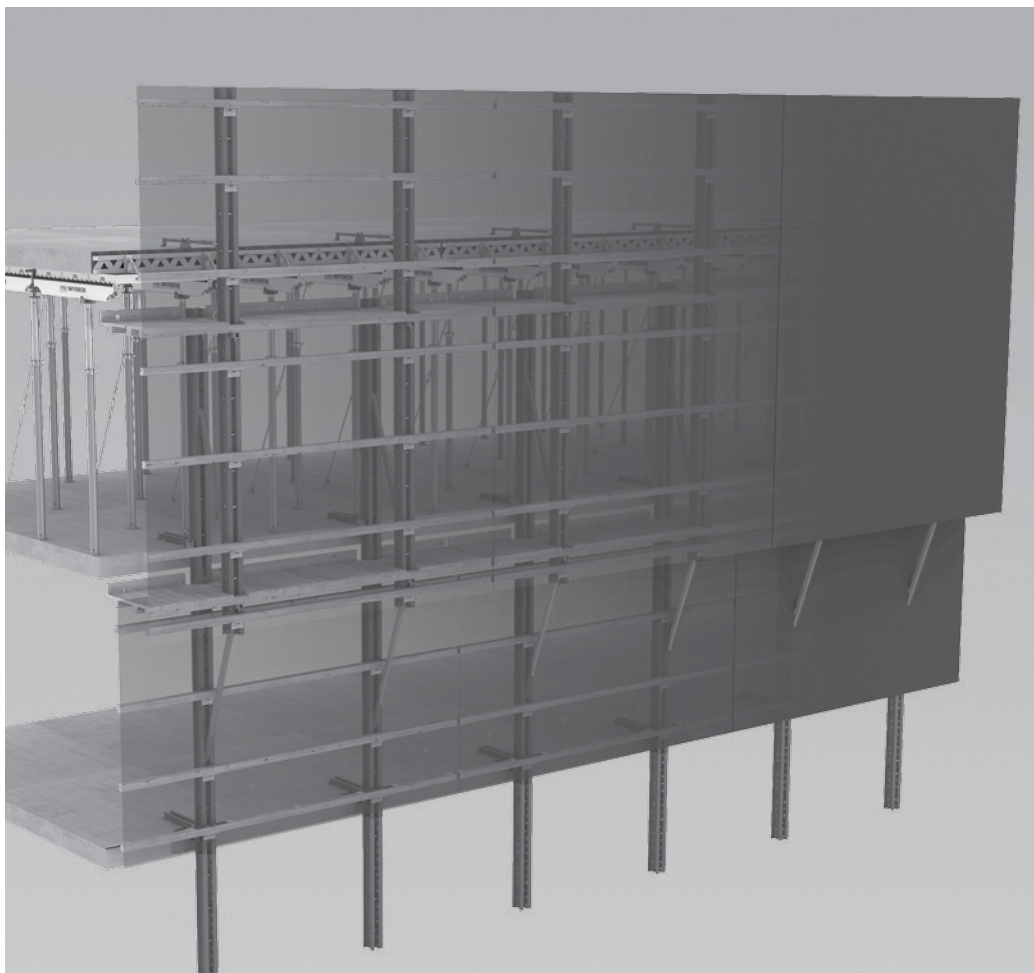


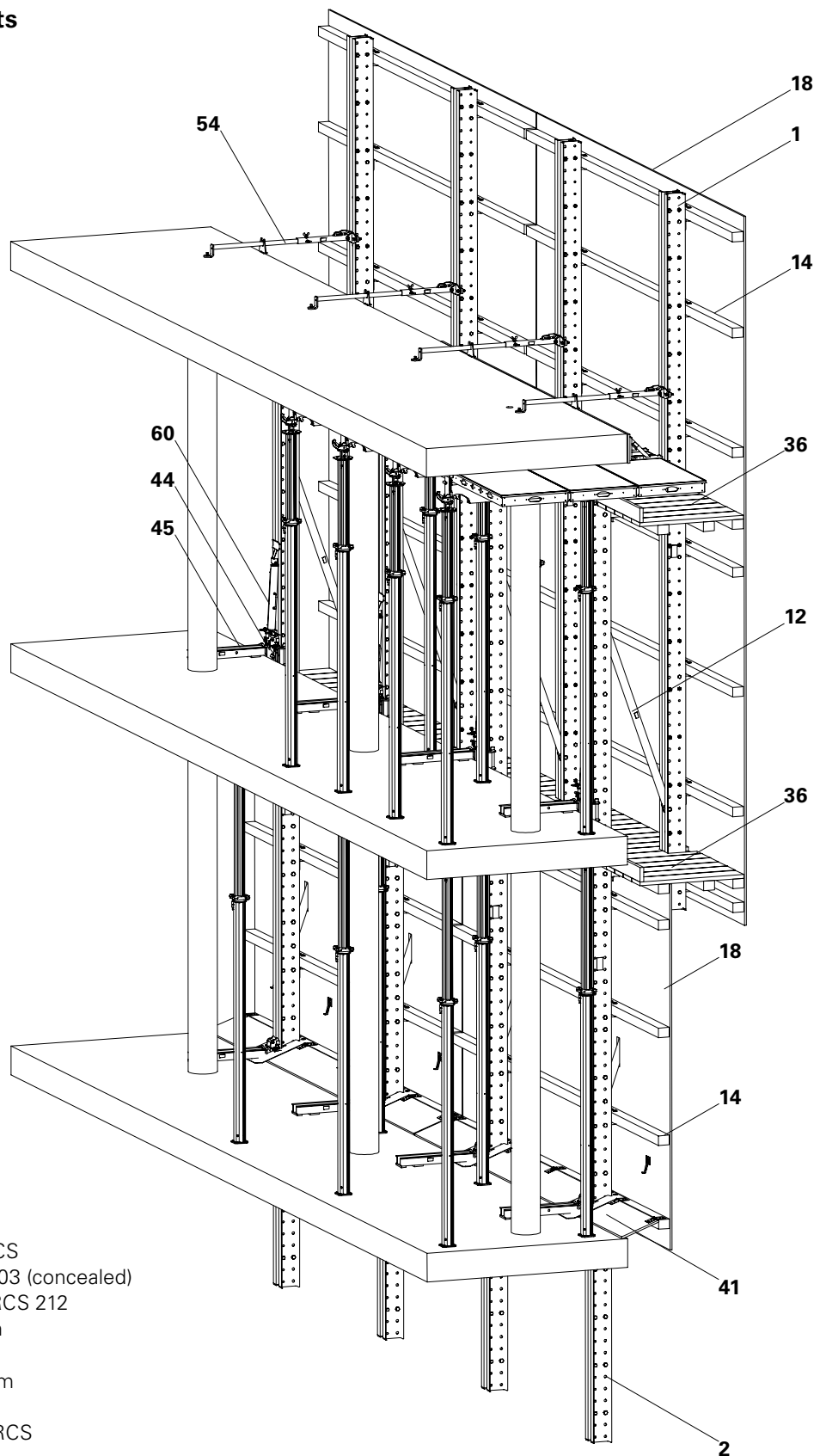
# Rail Climbing System RCS P

## Climbing Protection Panel

Instructions for Assembly and Use – Standard Configuration – Issue 01 | 2019



## Main Components



- 1 Enclosure Post
- 2 Climbing Rail RCS
- 10 Crossbar RCS 103 (concealed)
- 12 Diagonal Strut RCS 212
- 14 Enclosure Beam
- 18 Enclosure
- 36 Working Platform
- 41 Foldable Cover
- 44 Climbing Shoe RCS
- 45 Slab Shoe RCS
- 54 Slab Anchor Template 61 RCS
- 60 Climbing Device RCS 50

## Overview

Main Components	1
Key	2
Presentational Reference	2

## Introduction

Target Groups	3
Additional Technical Documentation	3
Intended Use	4
Instructions on Use	4
Cleaning and Maintenance Instructions	5

## Safety Instructions

Cross-System	6
System-Specific	7
Storage and Transportation	7

Component Overview and Tool List	14
----------------------------------	----

## A General

A1 System Overview	16
A2 Climbing Device and Hydraulics	20
A3 Operating Status and Loads	23
A4 Operating Sequence	24

## B Work Preparation

B1 Planning the Supporting Structure	28
System Dimensions	28
Framework Assembly	30
Additional Spacers	32
Additional Finishing Platforms	33
Reaction Forces	35
Suspension with the Slab Shoe	37
Suspension with the Slab Stopend Shoe	40
Horizontal Support	41
B2 Planning the Units	42
General	42
Attachment Point for the Crane	42
Planking	44
Girders	45
Protection against Falling	
Objects	46
Guardrails	49
Enclosure	51
B3 Corner Platforms	52
General	52
External Corners	53
Internal Corners	59
Non Right-Angled Building Corners	60
B4 Special Applications	62
Units on Circular Structures	62
Anchoring on Columns or Walls	63
Anchoring on the Front Side of the Slab	64

## C Assembly

C1 Pre-Assembly of Brackets	66
General	66
Preparation of the Climbing Rails	66
Assembly of the Attachment Points	69
Mounting the Climbing Rail Connector	71

Assembly of the Bracket Framework	72
-----------------------------------	----

Overview of the Bracket Framework	76
-----------------------------------	----

C2 Assembly of the Working Platforms	78
--------------------------------------	----

General	78
---------	----

Mounting the Girders	78
----------------------	----

Mounting the Platform Decking and	
-----------------------------------	--

Toeboards	79
-----------	----

Foldable Cover	80
----------------	----

C3 Assembly of the Enclosure	84
------------------------------	----

Mounting the Timber Fixation	84
------------------------------	----

Mounting the Enclosure Beam	85
-----------------------------	----

Mounting the Girder VT 20	86
---------------------------	----

Cover - Version 1	88
-------------------	----

Mounting the Trapezoidal Metal Sheeting	89
---	----

Mounting the Protection Edges	90
-------------------------------	----

Scaffold Tubes with Nets or Tarpaulins	91
--	----

C4 Suspension on the Structure	94
--------------------------------	----

Attaching the Climbing Unit	94
-----------------------------	----

Assembly of the Climbing Unit	95
-------------------------------	----

Troubleshooting	100
-----------------	-----

## D Utilisation

D1 Suspension and Anchoring	102
-----------------------------	-----

Mounting the Leading Anchor	102
-----------------------------	-----

Mounting the Stopend Slab Anchor	105
----------------------------------	-----

Assembly of the Suspension	106
----------------------------	-----

Bracing the Corner Elements	110
-----------------------------	-----

Horizontal Support	112
--------------------	-----

Dismantling the Suspension	115
----------------------------	-----

Removing the Anchoring	117
------------------------	-----

D2 Operating the Climbing Shoe	120
--------------------------------	-----

Opening / Closing the Climbing Shoe	120
-------------------------------------	-----

Activating / Deactivating the	
-------------------------------	--

Climbing Pawl	122
---------------	-----

D3 Moving by Crane	124
--------------------	-----

Safety Instructions	124
---------------------	-----

Preparations	125
--------------	-----

Moving Procedure	126
------------------	-----

Troubleshooting	127
-----------------	-----

Finishing Tasks	127
-----------------	-----

D4 Moving with the Climbing Device	128
------------------------------------	-----

Safety Instructions	128
---------------------	-----

Initial Operation of the	
--------------------------	--

Climbing Hydraulics	129
---------------------	-----

Preparations	129
--------------	-----

Hydraulic Diagram	129
-------------------	-----

Remedial Measures for Malfunctions	129
------------------------------------	-----

Moving Procedure	130
------------------	-----

Self-Climbing Procedure	131
-------------------------	-----

Finishing Tasks	137
-----------------	-----

E Dismantling	
---------------	--

Removing the Climbing Enclosure	138
---------------------------------	-----


Dismantling the Climbing Enclosure	140
------------------------------------	-----

## Components


**142**


## Key

### Pictogram | Definition

 Danger / warning / caution

 Information

 To be complied with

 Load-bearing point

 Visual check

 Tip


 Misapplication

 Safety helmet

 Safety shoes


 Safety gloves

 Safety glasses

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

### Arrows

 Arrow representing an action

 Arrow representing a reaction of an action\*

 Forces

\* if not identical to the action arrow.

### Safety instruction categories

The safety instructions alert site personnel to the risks involved and provide information on how to avoid these risks. Safety instructions are featured at the beginning of the section or ahead of the instructions, and are highlighted as follows:

#### **Danger**

This sign indicates an extremely hazardous situation which, if not avoided, will result in death or serious injury.

#### **Warning**

This sign indicates a hazardous situation which, if not avoided, could result in death or serious injury.

#### **Caution**

This sign indicates a hazardous situation which, if not avoided, could result in minor or moderate injury.

#### **Information**

This sign indicates situations in which failure to observe the information can result in material damage.

### Set-up of the safety instructions

#### **Signal word**

Type and source of the danger!  
Consequences of non-compliance.  
⇒ Avoidance measures.

### Dimension specifications

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

### Conventions

- Instructions are numbered with: 1. ...., 2. ...., 3. ....
- The result of an instruction is shown by: →
- Position numbers are clearly provided for the individual components and are given in the drawing, e.g. **1**, in the text in brackets, for example (1).
- Multiple position numbers, i.e. alternative components, are represented with a slash: e.g. **1 / 2**.

### Presentational reference

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 accordingly for all component sizes contained in the standard configuration.

For a better understanding, detailed illustrations are partly incomplete. Some safety installations which have possibly not been shown in these detailed descriptions must nevertheless be available.

## Target Groups

### Contractors

These Instructions for Assembly and Use are designed for contractors who either

- assemble, modify and dismantle the formwork system, or
- use them for, e.g. concreting, or
- allow them to be used for other operations, e.g. carpentry or electrical work.

### Competent person

(Construction Site Coordinator)

The Safety and Health Protection Coordinator\*

- is appointed by the client,
- must identify potential hazards during the planning phase,
- determines measures that provide protection against risks,
- creates a safety and health plan,
- coordinates the protective measures for the contractor and site personnel so that they do not endanger each other,
- monitors compliance with the protective measures.

### Competent person qualified to carry out inspections

Due to the specialist knowledge gained from professional training, work experience and recent professional activity, the competent person qualified to carry out inspections has a reliable understanding of safety-related issues and can correctly carry out inspections. Depending on the complexity of the inspection to be undertaken, e.g. scope of testing, type of testing or the use of certain measuring devices, a range of specialist knowledge is necessary.

### Qualified personnel

Formwork systems may only be assembled, modified or dismantled by personnel who are suitably qualified to do so. For the work to be carried out, the qualified personnel must have received instruction\*\* covering at least the following points:

- Explanation of the plan for the assembly, modification or dismantling of the formwork in an understandable form and language.
- Description of the measures for assembling, modifying or dismantling the formwork.

- Naming of the preventive measures to be taken to avoid the risk of persons and objects falling.
- Designation of the safety precautions in the event of changing weather conditions which could adversely affect the safety of the formwork system as well as the persons concerned.
- Details regarding permissible loads.
- Description of all other risks and dangers associated with assembly, modification or dismantling operations.



- **In other countries, ensure that the relevant national guidelines and regulations in the respective current version are complied with!**
- **If no country-specific regulations are available, it is recommended to proceed according to German guidelines and regulations.**
- **A competent person must be present on site during formwork operations.**

\* Valid in Germany: Regulations for Occupational Health and Safety on Construction Sites 30 (RAB 30)

\*\* Instructions are given by the contractor himself or a competent person selected by him.

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## Additional Technical Documentation

- Instructions for Use:
  - RCS Climbing Device and Hydraulics
  - Rail Climbing System RCS Climbing Scaffold with Carriage
  - Lifting Beam RCS 9 t
- Product approvals:
  - Z-21.6-1766 PERI Screw-On Cone
  - Z-21.6-1767 PERI Climbing Cone
- Separate design information
- Design Tables 2015 – Formwork and Shoring

## Product Description

### Standard configuration

These Instructions for Assembly and Use describe the standard assembly of the Rail Climbing System LPS as a Climbing Protection Panel.

### Version 1:

Minimum width with a narrow working platform for 1 storey in advance.

### Version 2:

Several wide working platforms for 1 storey in advance.

### Version 3:

Several wide working platforms for 2 storeys in advance.

### Version 4:

Without working platforms, with straight protection screen.

### Features

The RCS Climbing Protection Panel is a standard application of the RCS Rail Climbing System.

The Climbing Protection Panel RCS P is a bracket-type framework construction and has been designed as protection scaffold according to DIN 4420. Wind load assumptions are accepted in accordance with DIN 1055.

The Climbing Protection Panel basically consists of 2 bracket structures which are connected to each other by means of working platforms and the enclosure.

Two Climbing Rails RCS connected with walers and struts form the bracket structure. The platforms are realised using planking and platform beams. The enclosure is attached to the Climbing Rails and consists of timbers and cladding comprising wooden multi-layer panels or trapezoidal metal sheets. Alternatively, other components can be used for the enclosure providing static proof has been obtained.

The lower Climbing Rail RCS is anchored in the floor slabs of the structure by means of Climbing Shoes and Slab Shoes. The top Climbing Rail is offset and supports the enclosure which is projecting upwards.

### Intended use

- Use in building construction projects
- Provides anti-fall protection for site personnel
- Protection against falling objects
- Protection against the effects of the weather

PERI products have been designed for exclusive use in the industrial and commercial sectors by qualified personnel only.

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## Instructions on Use

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

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

Changes to PERI components are not permitted.

The system described in these Instructions for Assembly and Use may contain patent-protected components.

## Cleaning and Maintenance Instructions

In order to maintain the value and operational readiness over the long term, clean the surface areas after every use.

The following points should help to keep cleaning and maintenance costs as low as possible.

For cleaning and maintenance of the hydraulic system, observe the Instructions for Use for the RCS Climbing Device and hydraulics.

Remove concrete residue with water immediately after concreting; this avoids any time-consuming and costly cleaning operations.

Never clean powder-coated components, e.g. elements and accessories, with a steel brush or hard metal scraper; this ensures that the powder-coating remains intact.

Mechanical components, e.g. spindles or gear mechanisms, must be cleaned of dirt or concrete residue before and after use, and then greased with a suitable lubricant.

Provide suitable support for the components during cleaning so that no unintentional change in their position is possible.

Do not clean components suspended on crane lifting gear.

Do not spray working platforms or access ways with a concrete release agent - slipping hazard!

Any repairs to PERI products are to be carried out by qualified PERI personnel only.

## Cross-System

### General

The contractor must ensure that the Instructions for Assembly and Use supplied by PERI are available at all times and understood by the site personnel.

These Instructions for Assembly and Use can be used as the basis for creating a risk assessment. The risk assessment is compiled by the contractor. However, these Instructions for Assembly and Use do not replace the risk assessment!

Always take into consideration and comply with the safety instructions and permissible loads.

For the application and inspection of PERI products, the current safety regulations and guidelines valid in the respective countries must be observed.

Materials and working areas are to be inspected on a regular basis, especially before each use and assembly, for:

- signs of damage,
- stability and
- functionality.

Damaged components must be exchanged immediately on site and may no longer be used.

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

Components provided by the contractor must conform to the characteristics required in these Instructions for Assembly and Use, as well as all valid construction guidelines and standards. Unless otherwise indicated, this applies in particular to:

- 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.

Deviations from the standard configuration are only permitted after a further risk assessment has been carried out by the contractor.

Appropriate measures for working and operational safety, as well as stability, are defined on the basis of this risk assessment.

Corresponding proof of stability can be provided by PERI on request if the risk assessment and resulting measures to be implemented are made available.

Before and after exceptional occurrences that may have an adverse effect on the safety of the formwork system, the contractor must immediately

- create another risk assessment, with appropriate measures being carried out based on the results to ensure the stability of the formwork system,
- arrange for an extraordinary inspection to be carried out by a competent person qualified to do so. The aim of this inspection is to identify and rectify any damage in good time, in order to guarantee the safe use of the formwork system.

Exceptional occurrences can include:

- accidents,
- longer periods of non-use,
- natural events, e.g. heavy rainfall, icing, heavy snowfall, storms or earthquakes.



## Assembly, modification and dismantling work

Assembly, modification or dismantling of climbing enclosures may only be carried out by qualified persons under the supervision of a competent person. The qualified persons must have received appropriate training for the work to be carried out with regard to specific risks and dangers.

On the basis of the risk assessment and Instructions for Assembly and Use, the contractor must create installation instructions, in order to ensure safe assembly, modification and dismantling of the climbing enclosure.

The contractor must ensure that the personal protective equipment required for the assembly, modification or dismantling of the climbing enclosure, e.g.

- safety helmet,
- safety shoes,
- safety gloves,
- safety glasses,

is available and used as intended.

If personal protective equipment against falling (PPE) is required or specified in local regulations, the contractor must determine appropriate attachment points on the basis of the risk assessment.

The contractor stipulates the PPE to be used to prevent falling.

The contractor must

- 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.
- ensure stability during all stages of construction, in particular during assembly, modification and dismantling operations.
- ensure and prove that all loads can be safely transferred.

## Utilisation

Every contractor who uses or allows the climbing enclosure to be used, is responsible for ensuring that the equipment is in good condition.

If the climbing enclosure is used successively or at the same time by several contractors, the health and safety coordinator must point out any possible mutual hazards, and all work must be then coordinated.

## System-Specific

### Assembly work

The contractor must ensure that the user has the appropriate and sufficient number of tools, lifting equipment and slings, suitable and sufficient space for assembly and storage, as well as adequate crane capacity at his disposal.

There is always the possibility of unforeseen risks arising during assembly work. The level of risk is to be estimated according to each individual case and, if necessary, measures are to be taken to avoid or at least to minimise the risk.

If anti-fall protection cannot be used or has to be removed due to operational reasons, safety equipment must be installed in its place in order to prevent or arrest falls from any height. If the use of fall arrest equipment is deemed to be inappropriate, personal protection equipment (PPE) can be used if suitable fixing points are available.

Use a guide rope to ensure that assembly units suspended from the crane are fully under control when being moved.

Persons are not allowed to remain under suspended loads. If work under suspended loads cannot be avoided, determine and apply all appropriate measures. Avoid entering the area between suspended loads and the building.

Site personnel are forbidden to remain in areas below where assembly work is being carried out unless the area of risk has been provided with sufficient protection against falling, overturning, sliding or rolling objects and masses. The area of risk is to be cordoned off.

### Maintenance and repairs

The system components are to be inspected before each use to ensure that they are in perfect condition and function correctly. Only materials in perfect condition are to be used.

The units are to be inspected for signs of damage at regular intervals by authorised personnel. Dirt which affects the functionality is to be removed immediately. Damaged components are to be inspected, removed and replaced.

If the maximum permissible wind speed has been exceeded, temperatures are outside the scope of application or after any extraordinary event has taken place such as a fire or earthquake, the functionality and load-bearing capacity of all safety components as well as the supporting structure are to be checked.

### Safety components:

- Visual checks are to be carried out by authorised personnel at regular intervals.
- Before any climbing or assembly, a functionality check is carried out by qualified personnel.
- If parts need to be replaced, only PERI original components may be used.
- Repairs are only allowed to be carried out by PERI qualified personnel.
- In the case of overloading or recurrent damage, stop work operations on and under the platforms, determine the cause and rectify.

### Supporting structure:

- A visual inspection is to be carried out by authorised personnel before initial use.
- Only PERI original components are to be used for repairs or replacement.
- In the case of overloading or recurrent damage, stop work operations on and under the platforms, determine the cause and rectify.

### Other components:

- Repairs are carried out by authorised personnel and the contractor/site management is to be informed.
- Determine the cause of any damage that occurs on a recurring basis and rectify.

## **Access means**

Safe access to all working areas must be guaranteed at all times.

Preferred options are walkways, stairs, stair towers or site lifts. Ladders are only suitable for use as access means in exceptional cases.

In the case of an emergency situation, the working areas must have escape routes in place or suitable rescue equipment is available. It must also be ensured that at least one emergency escape route or piece of rescue equipment can still be used if the power supply fails.

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

## **Protection against falling objects**

Avoid installing working areas and access points in areas of risk. If this is not possible due to work procedures, suitable protection equipment must be available. This also applies to work requiring only a short period of time.

Tools and materials are to be secured to prevent them from falling to the ground. Concrete excess and other forms of dirt are to be removed at regular intervals. The platforms are to be kept clean at all times.

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

## Climbing procedure

The climbing enclosure cannot be mounted for the next concreting step until the required concrete strength has been achieved.

As a result of the moving procedure, unprotected leading edges are formed. Such affected areas are to be cordoned off and additional equipment must be in place to secure those persons working at the falling edge, e.g. personal protective equipment against falling from a height (PPE)!

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 on the basis of a corresponding risk assessment.

The climbing procedure must be monitored by a competent and qualified person.

During the climbing procedure, clamping and crushing hazards are present that result from moving components. Those persons carrying out the climbing procedure must be fully informed about all possible hazards.

All persons who are not required to carry out the climbing procedure must leave the area of risk.

When climbing with the hydraulic climbing device, specifications regarding the arrangement of the hydraulic hoses are to be observed. If the standard arrangement is not possible, an authorised person must determine a safe and secure alternative.

In case of a malfunction, lower the platform to the next possible position, leave the climbing unit in a safe and secure manner and notify an authorised person immediately!

## Storage and Transportation

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

Do not drop the components.

Use PERI lifting accessories and slings and only those load-bearing points provided on the component.

During the moving procedure

- ensure that components are picked up and set down so that unintentional falling over, falling apart, sliding, falling down or rolling is avoided.
- no persons are allowed to remain under the suspended load.

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

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

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



# Component Overview and Tool List



Pos.-Nr.	Bezeichnung Bauteil	Art.-Nr.
<b>1</b>	Enclosure Post	
<b>1.1</b>	Climbing Rail RCS 498	109471
<b>1.2</b>	Climbing Rail RCS 748	109472
<b>1.3</b>	Climbing Rail RCS 248	109469
<b>1.4</b>	Climbing Rail RCS 148	114166
<b>1.5</b>	Climbing Rail RCS 298	112102
<b>2</b>	Climbing Rail RCS	
<b>2.1</b>	Climbing Rail RCS 748	109472
<b>2.2</b>	Climbing Rail RCS 998	109610
<b>2.3</b>	Climbing Rail RCS 248	109469
<b>2.4</b>	Climbing Rail RCS 348	109470
<b>2.5</b>	Climbing Rail RCS 398	112141
<b>3</b>	Spacer M20-82	110022
<b>4</b>	Spacer M24-82	110023
<b>7</b>	Girder VT 20	
<b>8</b>	Crane Eye BR-2 2.5 t	127834
<b>9</b>	Compression Brace (timber)	
<b>10</b>	Crossbar RCS 103	110234
<b>11</b>	Crossbar RCS 69	111631
<b>12</b>	Diagonal Strut RCS 212	110012
<b>13</b>	Timber Fixation RCS 12/20	110290
<b>14</b>	Enclosure Beam (timber)	000000
<b>15</b>	Adapter VT20 / RCS-P	126430
<b>17</b>	Climbing Rail Connector RCS 73	128671
<b>18</b>	Enclosure (multi-layer plywood sheeting)	
<b>19</b>	Enclosure (trapezoidal metal sheeting)	
<b>20</b>	Protection Edge	
<b>21</b>	Climbing Rail Extension RCS 100	109791
<b>22</b>	Climbing Rail Connector RCS 33	109743
<b>23</b>	Plate Connector Ø 48/12 mm	070030
<b>24</b>	Fitting Pin Ø 21 x 120	104031
<b>25</b>	Fitting Pin Ø 26 x 120	111567
<b>26</b>	Cotter Pin 4/1	018060
<b>27</b>	Cotter Pin 5/1	022230
<b>31</b>	Climbing Rail Connector RCS 73	113744
<b>36</b>	Working platform decking	000000
<b>37</b>	Working platform decking (planks)	
<b>39</b>	Toeboard	
<b>39.1</b>	Toeboard Angle 90°	123478
<b>40</b>	Girder (timber)	
<b>41</b>	Foldable cover	
<b>42</b>	Hinge DIN 7957-200-ST	111436
<b>43</b>	Cover RCS 70 x 70	114113
<b>44</b>	Climbing Shoe RCS	109468
<b>45</b>	Slab Shoe RCS	109567

Pos.-Nr.	Bezeichnung Bauteil	Art.-Nr.
<b>45.2</b>	Bolt ISO 4014 M24 x 70-10.9	026430
<b>46</b>	Slab Shoe RCS Corner	110375
<b>47</b>	Anchoring	
<b>47.1</b>	Screw-On Cone-2 M24/DW 20	114158
<b>47.2</b>	Threaded Anchor Plate DW 20	030860
<b>47.3</b>	Anchor Sleeve M24	026230
<b>47.4</b>	Cone for Anchor Sleeve	
<b>47.5</b>	Climbing Cone-2 M24/DW 15	031220
<b>47.6</b>	Tie Rod DW 15, Special Length	030030
<b>47.7</b>	Threaded Anchor Plate DW 15	030840
<b>47.8</b>	Spacer Tube Ø 22	
<b>47.9</b>	Cone DR 22	065033
<b>47.10</b>	Plug PP Ø 26 mm	026250
<b>48</b>	Stopend Slab Shoe RCS	113232
<b>49</b>	Bolt ISO 4017 M30 x 70-8.8	029420
<b>50</b>	Reducing Bushing Ø 30 - 25	113822
<b>51</b>	Stopend Slab Anchor M30/25-160	113821
<b>52</b>	Stopend Slab Anchor M24/20-128	113820
<b>53</b>	Bolt ISO 4014 M24 x 70-10.9	026430
<b>54</b>	Slab Anchor Template 61 RCS	114947
<b>59</b>	Wall Shoe RCS	109503
<b>60</b>	Climbing Device RCS 50	109765
<b>61</b>	Hydraulic Twin Hoses RCS 10 m	110069
<b>62</b>	Hydraulic Twin Hoses RCS 20 m	110070
<b>63</b>	Hydraulic Pump RCS 4 x 190 bar	109766
<b>64</b>	Adapter Cable RCS	110280
<b>65</b>	Plug Socket RCS, black	110279
<b>78</b>	Fitting Pin Ø 21 x 120	104031
<b>79</b>	Fitting Pin Ø 26 x 120	111567
<b>80</b>	Steel Scaffold Tube Ø 48.3 x 3.2	
<b>81</b>	Clamp A64 DIN 3570	110296
<b>82</b>	Hex. Nut ISO 4032 M12-8	710330
<b>84</b>	Standard Coupling NK 48/48	017020
<b>85</b>	Guardrails	
<b>86</b>	L-Angle RCS	110289
<b>87</b>	Timber 50 x 50	
<b>88</b>	Safety net	
<b>89</b>	Slab Prop	
<b>90</b>	Bolt ISO 4017 M12 x 140-8.8	110598
<b>91</b>	Bolt ISO 4017 M12 x 240-8.8	110599
<b>92</b>	Bolt ISO 4014 M20 x 120-8.8	104477
<b>93</b>	Hex. Nut ISO 7042 M20-8	781053
<b>94</b>	Bolt ISO 4014 M24 x 130-8.8	109612
<b>95</b>	Hex. Nut ISO 7042 M24-8	105032
<b>96</b>	Nut ISO 4032 M12-8	710330

Pos.-Nr.	Bezeichnung Bauteil	Art.-Nr.
97	Washer ISO 7093 200HV, A12	750350
98	TSS-Torx 6 x 80	024690
99	TSS-Torx 6 x 60	024470
109	Spax Screw TX25, 5 x 20	111437
110	Spax Screw TX25, 5 x 40	110642
111	Spax Screw TX30, 6 x 120	024960
117	Heavy-Duty Dowel Ø22	
118	Heavy-Duty Dowel Ø30	
119	Hex. Nut DW 15 SW 30/50	030070
120	Heavy-Duty Spindle SLS 100/180	101774
121	Spindle Shoe SLS/RCS M24	115298
122	Bracing Shoe RCS DW 15	114997
123	Eye Nut RCS DW 15	115378
124	Forkhead Adapter RCS/SLS	115388
125	Articulated Spanner RCS DW 15	115375
126	Guide-in Tool RCS	114317
136	Fixation Bar RCS	114937
137	Scaffold Tube Connector LPS/RCS Ø48	125856
138	Flap Hinge LPS D48/M10	125461
139	Flap Safety Plate LPS D=48	125458
150	Reinforcing Bar	
151	PERI Anchor Bolt 14/20x130	124777

Tool name
Ratchet Wrench
Extension for the Ratchet Wrench
Spirit Level
Cordless Screwdriver
Screw Bits TORX 25 / 30 / 35
Ring Wrench, Open-End Wrench, Socket Wrench SW 16 / 18 / 21 / 30 / 36 / 46
Forstner Drill Ø 45
Wood Drill Ø 7 / 11 / 12 / 14
Circular Saw
Torque Wrench
Hammer
Round Slings
4-Sling Lifting Gear

## Abbreviations used in these Instructions for Assembly and Use:

$a_D$	Anchor spacing to slab edge
$b_n$	Width n-te designated section
C	Climbing Rail spacings
$d_n$	Thickness n-te designated section
$d_x$	Distance to the slab edge
F	Direction of fibres
G	Weight force
V	Vertical force
$V_{AY}$	Anchor shear force
$N_A$	Anchor tension force
$P_c$	Support force of the slab
H	Height
$h_n$	Height n-te designated section
$h_B$	Storey height
$h_p$	Projecting height of the protection panel
$h_{nom}$	Installation depth of the anchoring
$H_x$	Horizontal force
L	Length
$L_n$	Length n-te designated section
$L_s$	Length of tie rod
$L_T$	Length of Spacer Tube
$L_{1,2}$	Length of Climbing Rail
q	Wind load
V	Vertical force
v	Speed

## Tightening torque

For non-defined lubricated screw connections, PERI recommends the following guide values as "hand-tightened" tightening torque  $M_A$ . These guide values are based on EN 15048 with Safety Factor 3 against breakage of a bolt with Strength Class 4.6.

Bolt M8	8 Nm
Bolt M10	16 Nm
Bolt M12	30 Nm
Bolt M16	65 Nm
Bolt M20	100 Nm
Bolt M24	150 Nm
Bolt M30	260 Nm
Bolt M36	350 Nm

Tightening torque has been determined for the following components:

Bolt of Spacer M20	100 Nm
Bolt of Spacer M24	150 Nm
Scaffold tube coupling	50 Nm
Clamping Plate for the Slab Anchor Template	120 Nm

## Climbing enclosure

The climbing enclosure can be assembled in 4 basic versions.

### Version 1:

Minimum width with a narrow working platform for one storey in advance.  
Storey height ( $h_b$ ) = 2.80 - 4.50 m.

### Version 2:

Several wide working platforms for one storey in advance.  
 $h_b$  = 2.80 - 4.50 m.

### Version 3:

Several wide working platforms for two storeys in advance.  
 $h_b$  = 2.80 - 4.00 m.

### Version 4:

Without working platforms, with straight protection screen.  
 $h_b$  = 2.80 - 4.50 m.

In all versions, the Climbing Rails (2) are supported by Slab Shoes (45) which are mounted on pre-completed floor slabs.

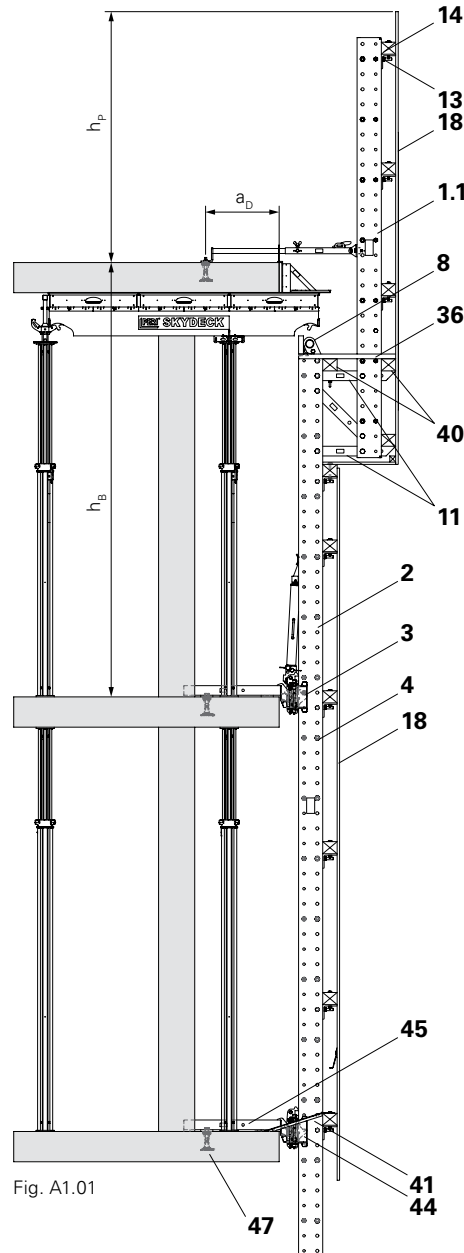
The enclosures, e.g. multi-layer plywood sheets (18) or trapezoidal metal sheeting (19), are mounted on the Climbing Rails (2) using timbers (14) and Timber Fixations (13).

Spacings between floor slabs and the climbing enclosure are closed with foldable covers (41).

During the climbing procedure, these are folded up and secured in position.

Assembly of the climbing enclosure varies depending on the storey height, projection of the slab formwork and type of anti-fall protection used.

## Version 1





## Components

- 1.1 Climbing Rail RCS 498
- 1.2 Climbing Rail RCS 748
- 2 Climbing Rail
- 2.2 Climbing Rail RCS 998
- 3 Spacer M20-82
- 4 Spacer M24-82
- 8 Crane Eye BR-2 2.5 t
- 10 Crossbar RCS 103
- 11 Crossbar RCS 69
- 12 Diagonal Strut RCS 212
- 13 Timber Fixation RCS 12/20
- 14 Enclosure Beam (timber)
- 18 Enclosure (multi-layer plywood sheeting)
- 36 Working platform decking
- 40 Girder (timber)
- 41 Foldable Cover
- 44 Climbing Shoe RCS
- 45 Slab Shoe RCS
- 47 Anchoring

## Version 2

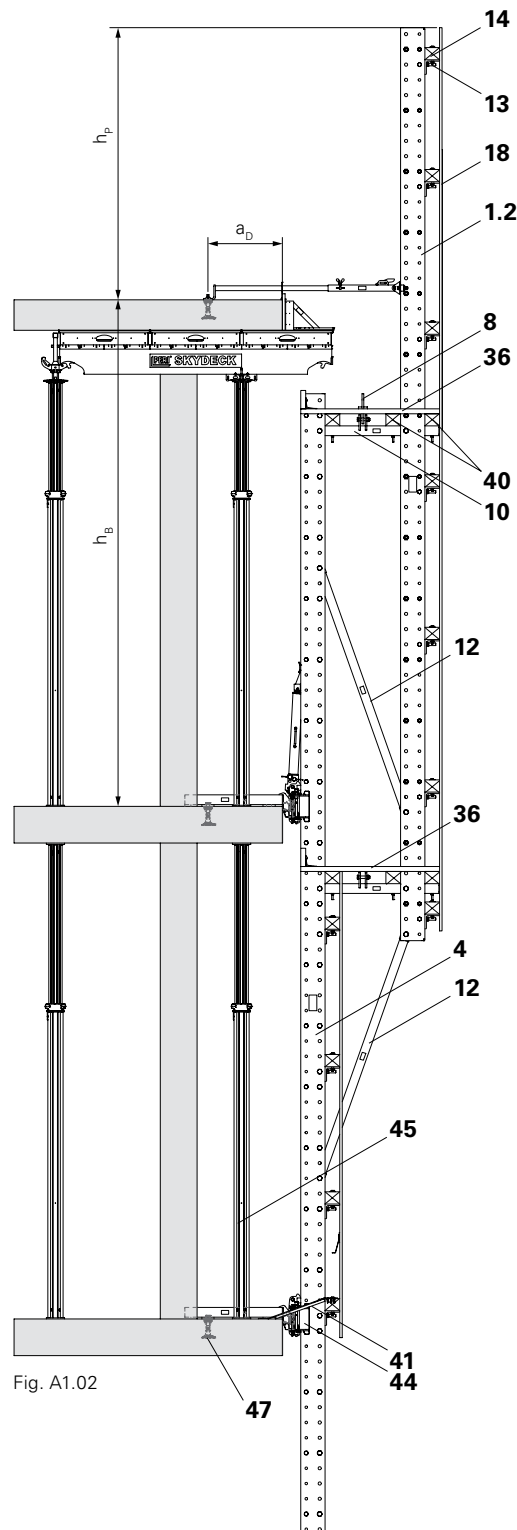


Fig. A1.02

## Components

- 1.2 Climbing Rail RCS 748
- 1.4 Climbing Rail RCS 148
- 1.5 Climbing Rail RCS 298
- 2 Climbing Rail
- 8 Crane Eye BR-2 2.5 t
- 10 Crossbar RCS 103
- 12 Diagonal Strut RCS 212
- 13 Timber Fixation RCS 12/20
- 13.1 Eyebolt M20
- 14 Enclosure Beam (timber)
- 17 Climbing Rail Connector RCS/PLS 73
- 18 Enclosure (multi-layer plywood sheeting)
- 31 Climbing Rail Connector RCS 73
- 36 Working platform decking
- 39 Toeboard
- 40 Girder (timber)
- 41 Foldable cover (multi-layer plywood sheeting)
- 42 Hinge DIN 7957-200-ST
- 44 Climbing Shoe RCS
- 45 Slab Shoe RCS
- 47 Anchoring
- 60 Climbing Device RCS 50
- 90 Bolt ISO 4017 M12 x 140-8.8
- 91 Bolt ISO 4017 M12 x 240-8.8
- 92 Bolt ISO 4014 M20 x 120-8.8
- 94 Bolt ISO 4014 M24 x 130-8.8
- 96 Nut ISO 4032 M12-8
- 120 Heavy-Duty Spindle SLS 100/180

## Version 3

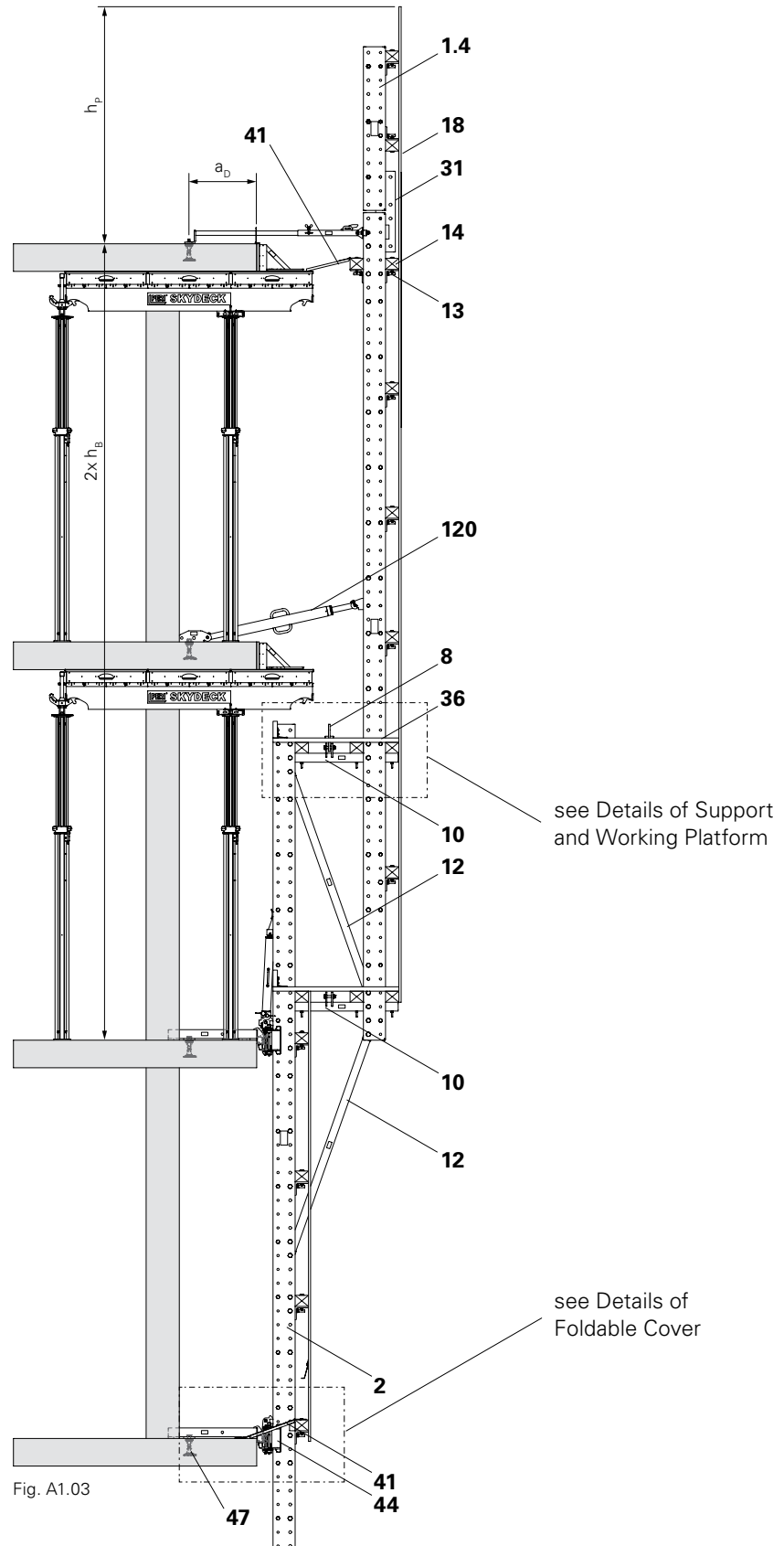


Fig. A1.03

Version 4

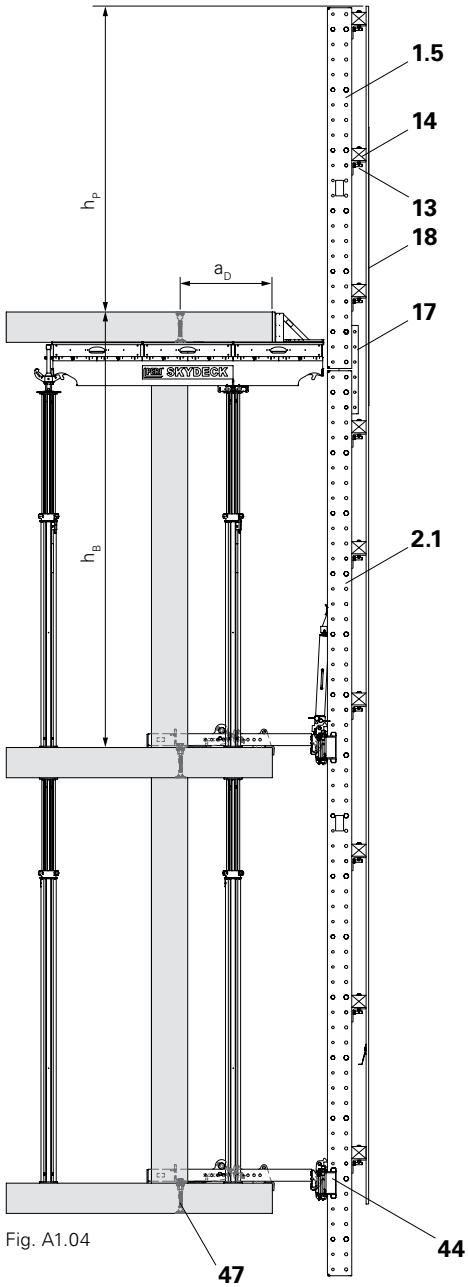


Fig. A1.04

Details of Support and Working Platform

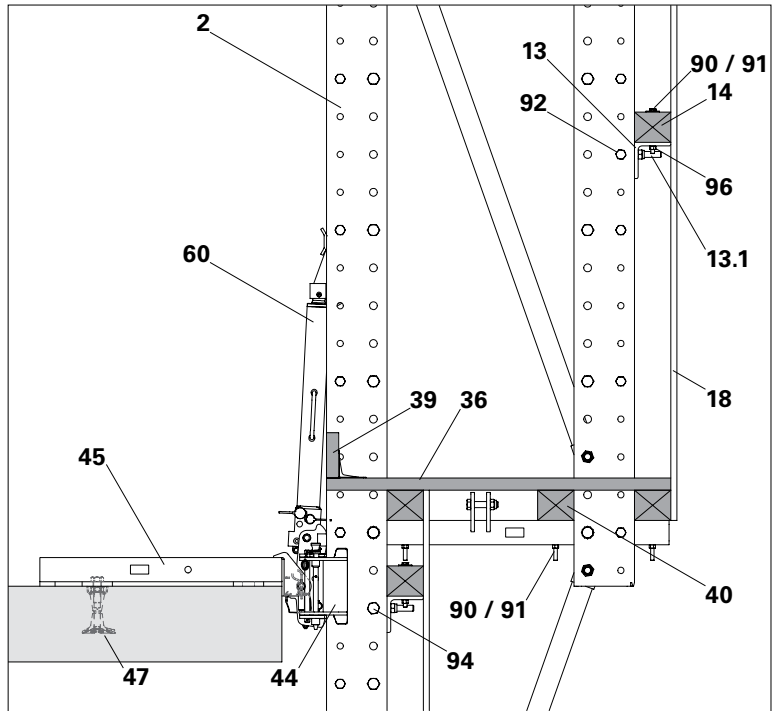
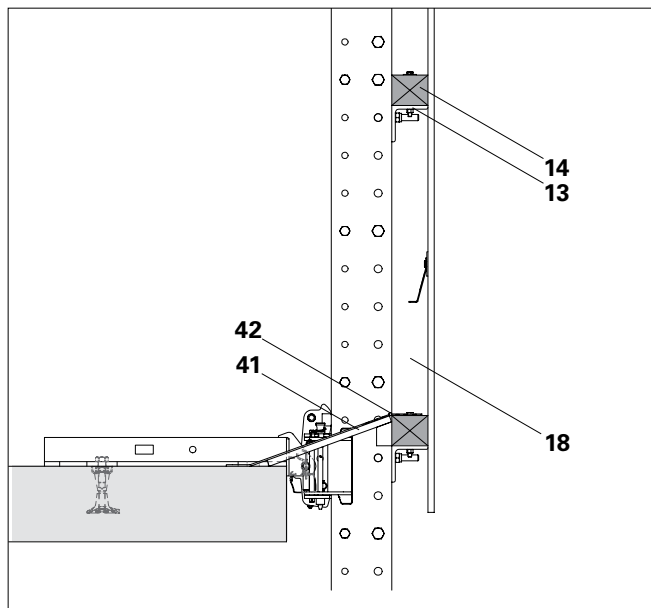


Fig. A1.05

Details of Foldable Cover



## Climbing Device and Hydraulics

This section provides basic information about the Climbing Device and Hydraulic Pump. Further information is provided in the following sections, as well as in the separate Instructions for Use for the RCS Climbing Device and hydraulics.

### Climbing Device RCS 50

The Climbing Device RCS 50 is used to gradually climb the climbing enclosure. After the climbing procedure is completed, the climbing enclosure must be placed on the climbing pawls of the Climbing Shoes ensuring that the load is fully supported. The Climbing Device must be load-free.

(Fig. A2.01 + A2.02)

#### Main components

- 60** Climbing Device RCS 50 1\*
- 60.1** Piston head with claw and roller
- 60.2** Cylinder base
- 60.3** Return from the piston-rod side with the hydraulic quick coupler (nipple) left + right with protective cover
- 60.4 Inflow to the piston base with the hydraulic quick coupler (bushing) left + right with protective cover**
- 60.5** Cylinder reposition device (spring-loaded)
- 60.6** Locking lever (spring-loaded)

The quick couplers on the Climbing Device and Hydraulic Pump are interchangeable. Feed line and return line cannot be mixed up.

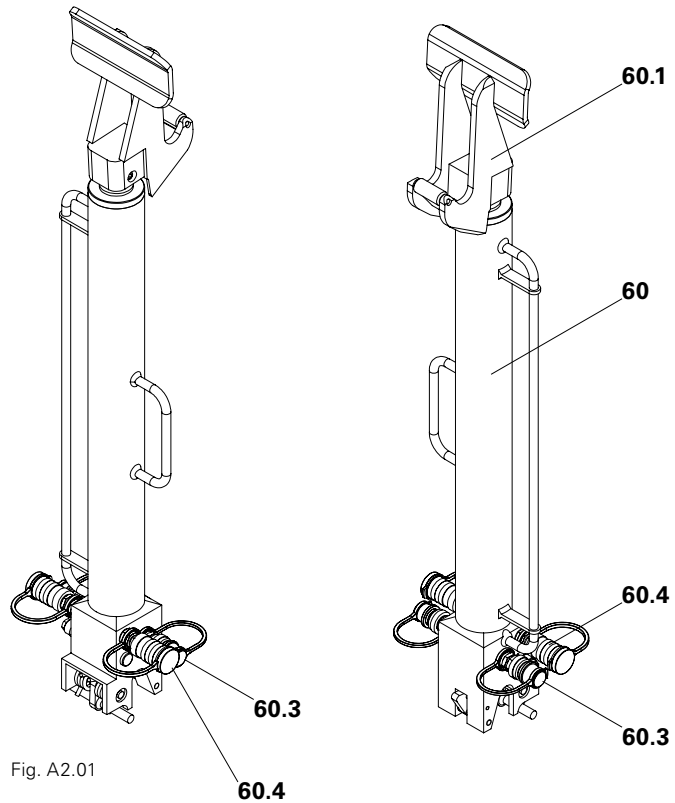


Fig. A2.01

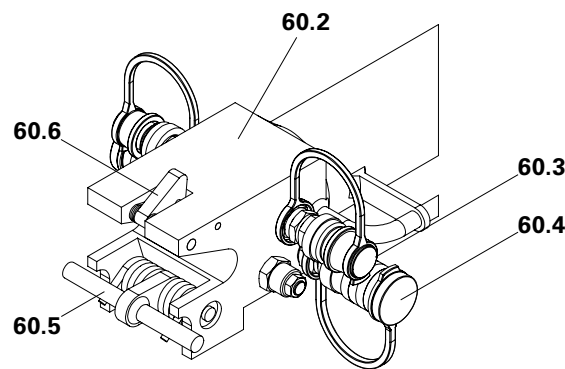


Fig. A2.02



To prevent the quick couplers from colliding with the platforms or other parts of the climbing protection panel when climbing, it is possible to arrange the couplings vertically using angle pieces.  
→ Contact PERI!

1\* safety components.

## Hydraulic Pump

Hydraulic Pump RCS 4 x 190 bar,  
380 – 460 V (63) for 4 Climbing  
Devices 1\*  
(Fig. A2.03)

### Main components

- 63** Hydraulic Pump RCS  
RCS 4 x 190 bar, 380 - 460 V
- 63.1** Operating lever
- 63.2** Switch unit
- 63.3** Electricity socket with phase in-  
verter
- 63.4** Hydraulic oil tank
- 63.5** Filling piece
- 63.6** Oil level indicator; thermometer
- 63.7** Oil filter
- 63.8** Return from the piston-rod side  
of the cylinder with the hydraulic  
quick coupler (bushing)
- 63.9** Inflow to the piston head side  
of the cylinder with hydraulic  
quick coupler (nipple)
- 63.10** Rotary field control lamp

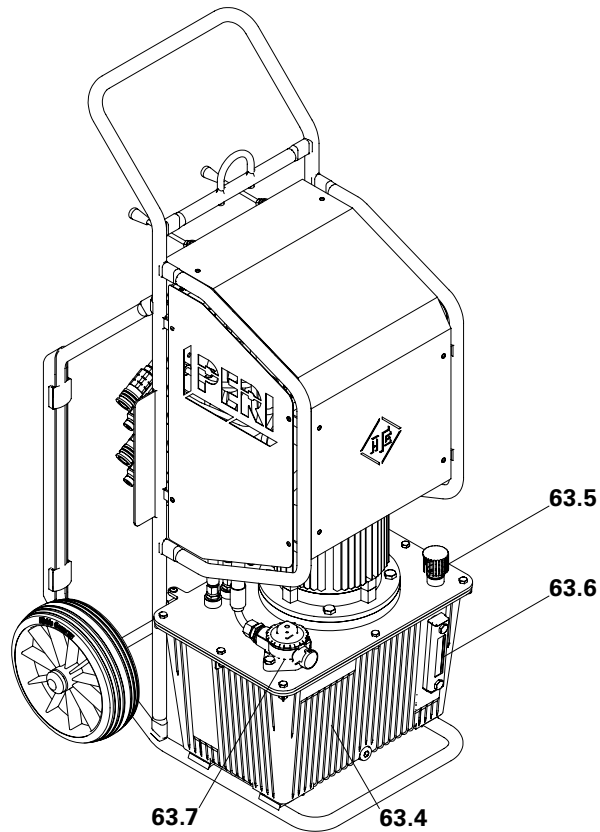


Fig. A2.03

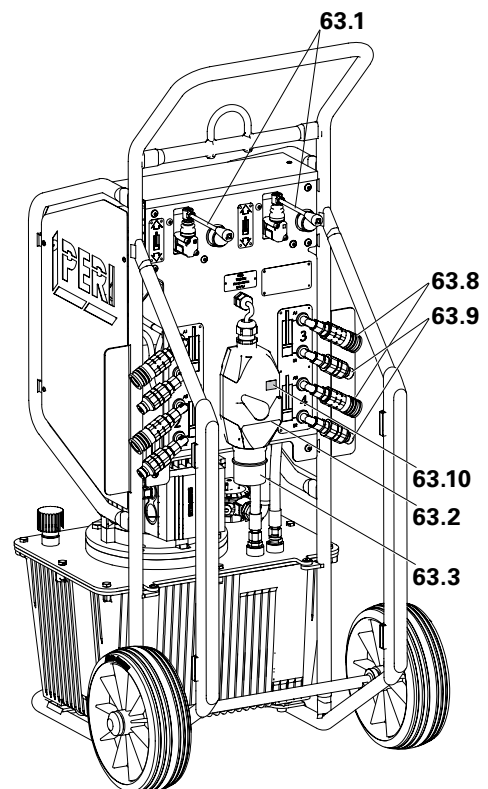


Fig. A2.03a

## Accessories

(Fig. A2.04 + A2.05)

- 64** Adapter Cable RCS for supply line with CEE socket, operational voltage 380 - 400 V / 16A, 50 Hz
- 65** Plug Socket RCS, black for mounting an adapter cable carried out by a qualified electrician. Operational voltage 380 - 460 V, 50 - 60 Hz

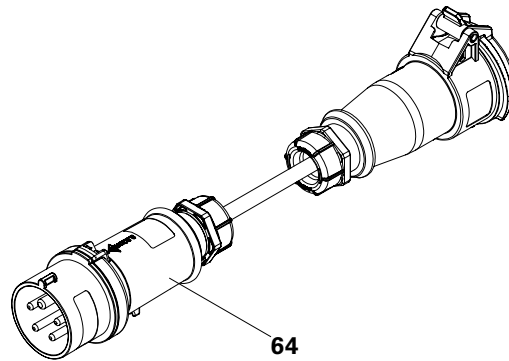


Fig. A2.04

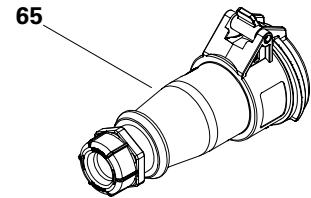


Fig. A2.05

## Hydraulic hose

The hydraulic twin hose is available in lengths of 10 m and 20 m.

(Fig. A2.06 + A2.07)

## Main components

- 61** Hydraulic Twin Hoses RCS 10 m
- 62** Hydraulic Twin Hoses RCS 20 m
- 61.3** Hydraulic Quick Coupler (bushing)
- 61.4** Hydraulic Quick Coupler (nipple)

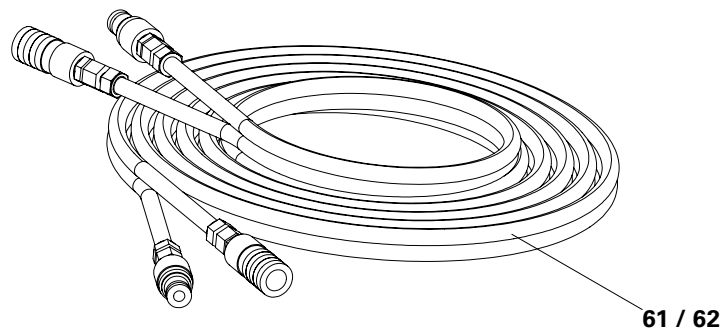


Fig. A2.06



During transport, join the two coupling ends together to protect the hoses.

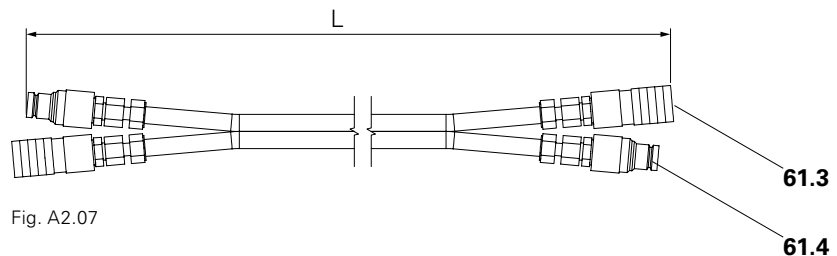


Fig. A2.07

1\* safety components.

## Operating Status and Loads

### Operating status: working

All work carried out with protection provided by the climbing protection panel and on its working platforms: assembly of the slab and column formwork, concreting and striking, inspection and maintenance.

- Platforms must be freely accessible for the required work to be carried out.
- Max. wind speed 100 km/h.

### Operating status: climbing

Moving the climbing unit by crane or by means of the hydraulic climbing device.

- Non-planned loads on the platforms are to be removed.
- Crane-assisted climbing:  
**Personnel are not allowed on the platforms during the climbing procedure.**
- Self-climbing:  
**Personnel required for climbing are usually positioned on the floor slab.**
- Max. wind speed 72 km/h. <sup>(0.25 kN/m<sup>2</sup>)</sup>



The project-related assumed dynamic wind pressure, which was taken as basis for the design, has to be stated on the execution plan.

### Live loads

Concreting platform	150 kg/m <sup>2</sup>
Working platform*	150 kg/m <sup>2</sup>
Finishing platform*	75 kg/m <sup>2</sup>

\*if mounted

### Non-operational

During longer work breaks, overnight, in the case of storm warnings, with assumed or recorded wind speeds over 100 km/h.

- Accessing the platform during storm conditions is prohibited.
- Materials and equipment are to be removed from the platforms.
- The assumed wind speed (dynamic wind pressure) during storm conditions is calculated based on the respective application height, wind zone and terrain category according to DIN EN 1991-1-4 or (EC 1).  
 $q = 0.8 \text{ kN/m}^2$ :  $v = 129 \text{ km/h}$   
 $q = 1.1 \text{ kN/m}^2$ :  $v = 151 \text{ km/h}$   
 $q = 1.3 \text{ kN/m}^2$ :  $v = 164 \text{ km/h}$   
 $q = 1.7 \text{ kN/m}^2$ :  $v = 187 \text{ km/h}$
- If given limits are exceeded, a visual inspection of all bearing components and a functional check of all safety components are necessary for further use.
- If a storm warning has higher wind speeds than originally stated, the site management has to be informed. All enclosure tarpaulins are to be removed and the climbing protection panel is to be supported by means of additional struts.
- On the instructions of authorised site personnel, the climbing protection panel can be climbed down to the previous storey. For this, additional instructions are required.
- If a storm warning with wind speeds of more than 100 km/h is assumed, additional safety measures on all corner elements are required.

## Operating Sequence

The difference in the operating sequence of Versions 1 - 3 and 4 is primarily due to when the slab is struck.

All versions can be climbed using the hydraulic self-climbing device or by crane.

### Version 1 - 3

Climbing enclosure with working platform.

The slab formwork is in the way for the climbing procedure. PERI recommends a slab formwork system, e.g. SKYDECK, which allows early striking. The example shows the operating sequence with SKYDECK Slab Formwork.

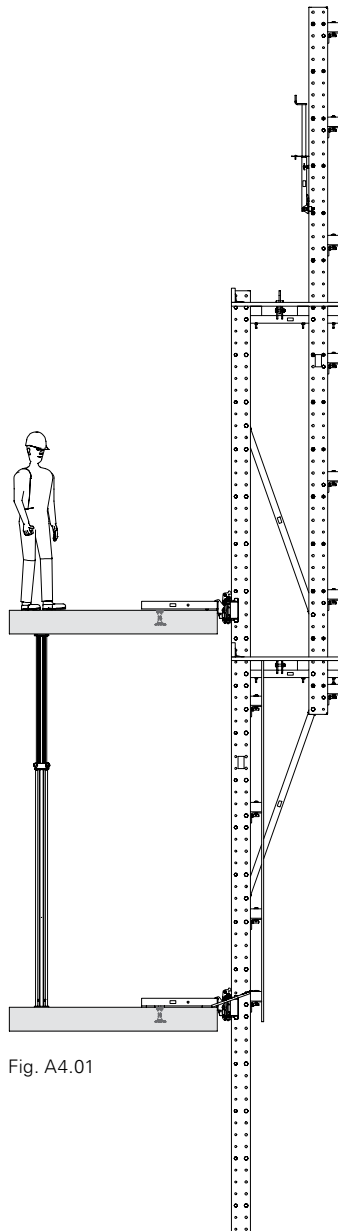


Fig. A4.01

**Step 1**  
Climbing enclosure is in position.  
Close cover flaps.  
Concrete the columns.

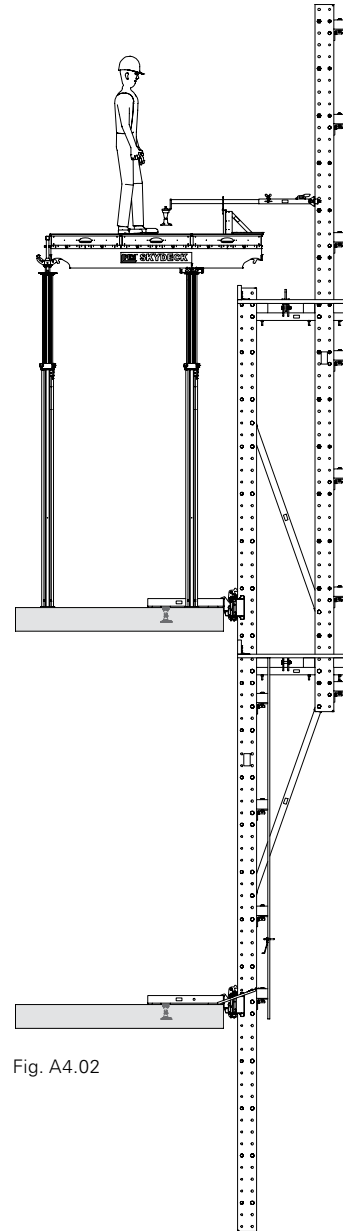


Fig. A4.02

**Step 2**  
Erect slab formwork with stopends.  
Install leading anchor with the aid of the Slab Anchor Template.



# A4 Operating Sequence

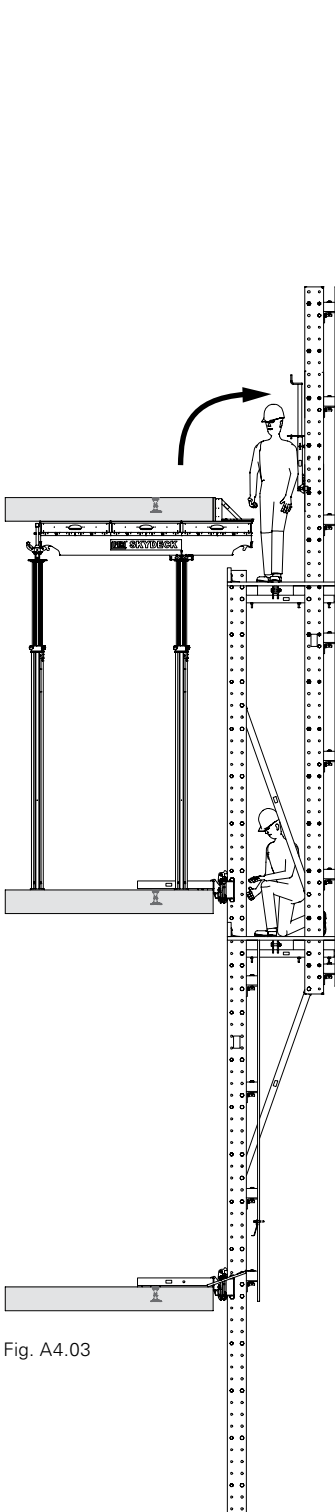


Fig. A4.03

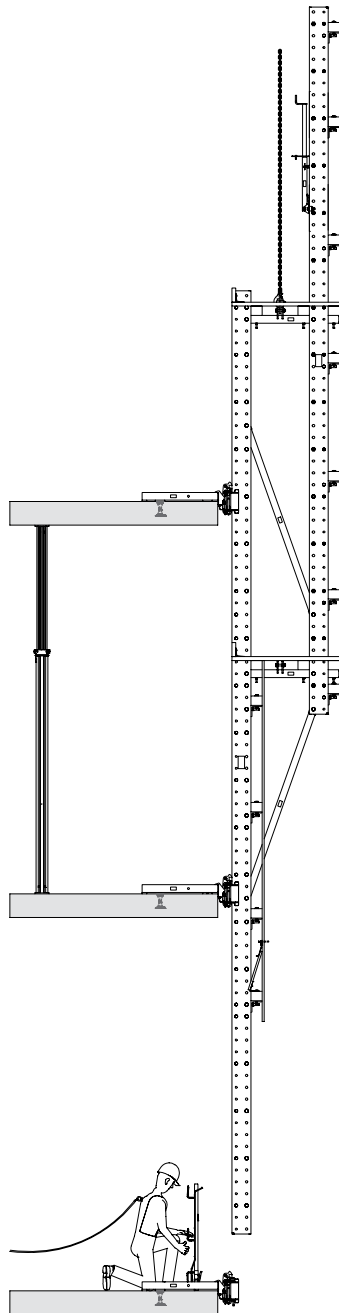


Fig. A4.04

Step 3  
 Concrete the slab.  
 Fold up the Slab Anchor Template.  
 Rework slab.  
 Assemble subsequent guardrails.

Step 4  
 Mount top Slab Shoe.  
 Strip slab formwork and back-prop.  
 Open cover flaps.  
 Climb climbing enclosure hydraulically  
 (as depicted above) or by crane.  
 Dismantle bottom Slab Shoe.

# A4 Operating Sequence

## Version 4

Climbing enclosure with straight protection screen.

The slab formwork can remain in position. The climbing enclosure can climb past the slab formwork.

## Example

Operating sequence with shortened cycle times if two sets of SKYDECK Slab Formwork are used.

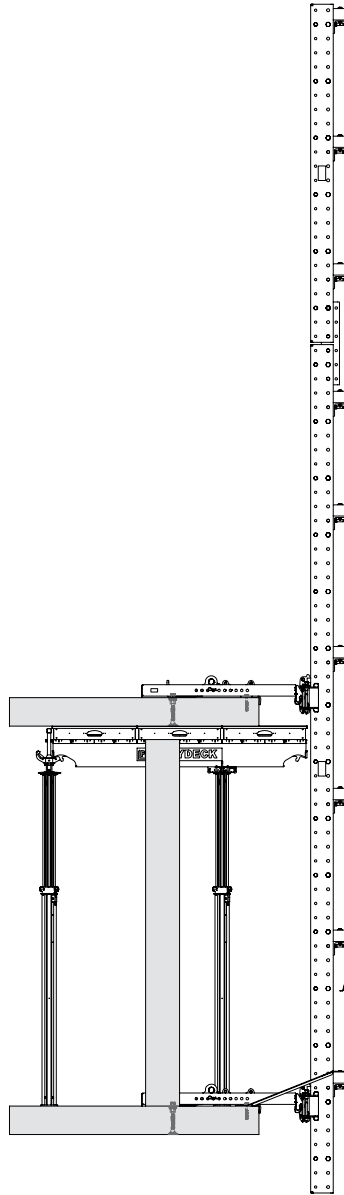


Fig. A4.05

Step 1  
Climbing enclosure is in position.  
Close cover flaps.  
Concrete the columns.

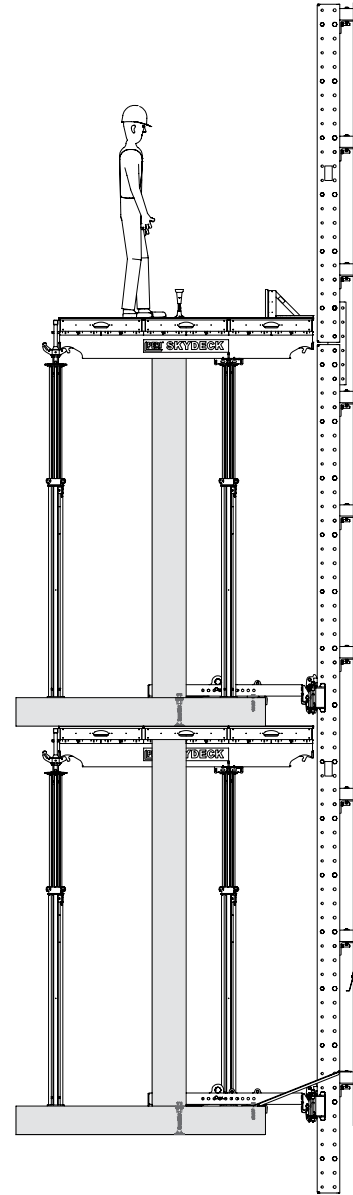


Fig. A4.06

Step 2  
Erect slab formwork with stopends.  
Install leading anchor with the aid of the Slab Anchor Template.

# A4 Operating Sequence

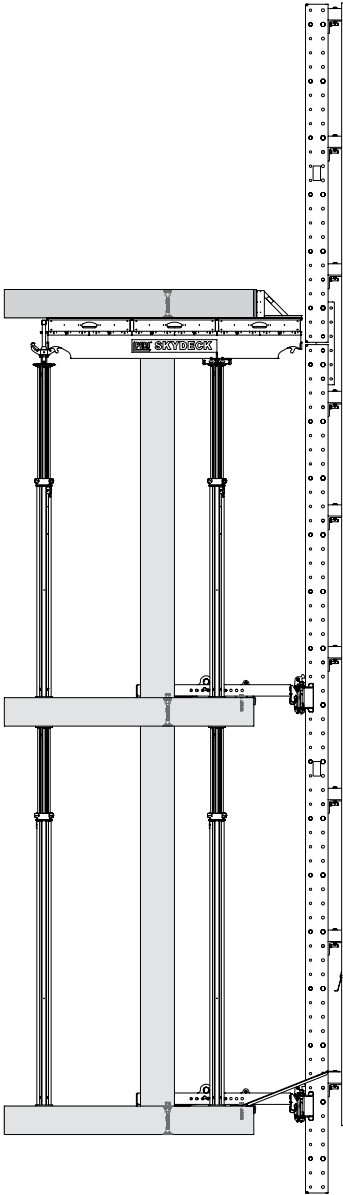


Fig. A4.07

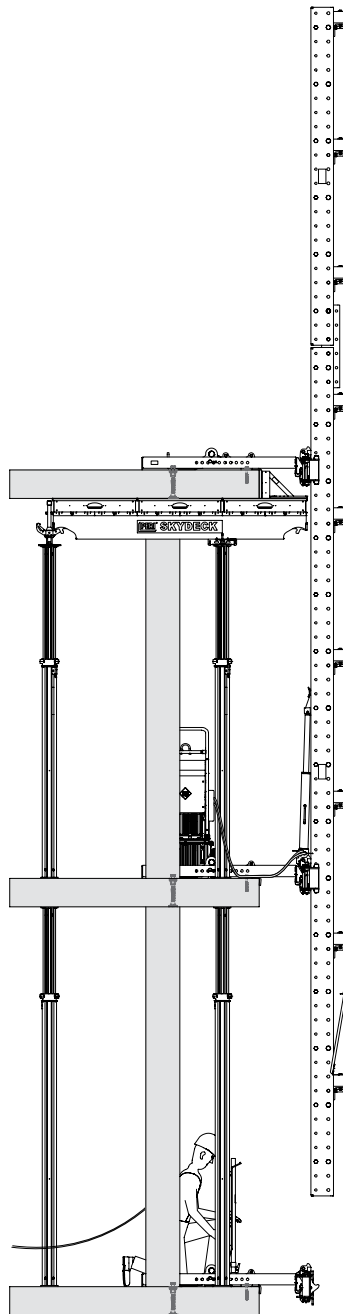


Fig. A4.08

Step 3  
Concrete the slab.  
Fold up the Slab Anchor Template.  
Rework slab.  
Remove bottom slab formwork and back-prop.  
Assemble subsequent guardrails.

Step 4  
Mount top Slab Shoe.  
Open cover flaps.  
Climb climbing enclosure hydraulically  
(as depicted above) or by crane.  
Dismantle bottom Slab Shoe.

## System Dimensions

### Climbing Rails

The length of Climbing Rail L1 (2) corresponds to the height of the storeys  $h_B$ . It must correspond to at least the height of two successive storeys plus an overlap for safety reasons.

With changing storey heights, the largest dimension of two consecutive storeys must be selected.

Projecting height of the protection panel  $h_p \geq 2.00$ .



- At least 2 Slab Shoes must guide each Climbing Rail at all times.
- It is possible to plan so that the Climbing Rail does not overlap 2 entire storeys for those intermediate storeys with larger storey heights. In this case, self-climbing is not possible. When climbing with the crane, special measures are required because there is no guide in place for the Climbing Rail. These special measures must be defined in manufacturer-specific assembly instructions.

### Calculation: Version 1

(Fig. B1.01)

Climbing Rail RCS (2)

$L_1 \geq h_{B1} + h_{B2} + 28$  cm.

Enclosure Post RCS (1)

$L_2 \geq h_3 + h_4 + h_p$

### Calculation: Version 2

(Fig. B1.02)

Climbing Rail RCS (2)

$L_1 \geq h_{B1} + h_{B2} + 28$  cm.

Enclosure Post RCS (1)

$L_2 \geq h_{B2} + h_p$ .

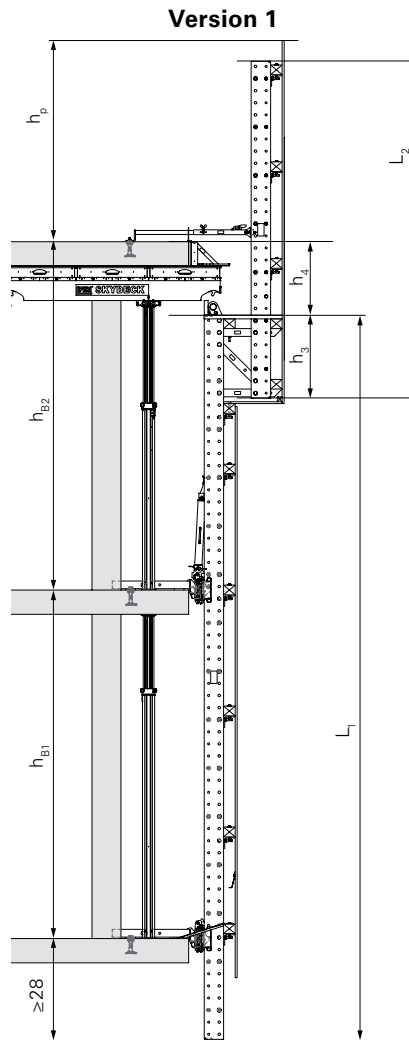


Fig. B1.01

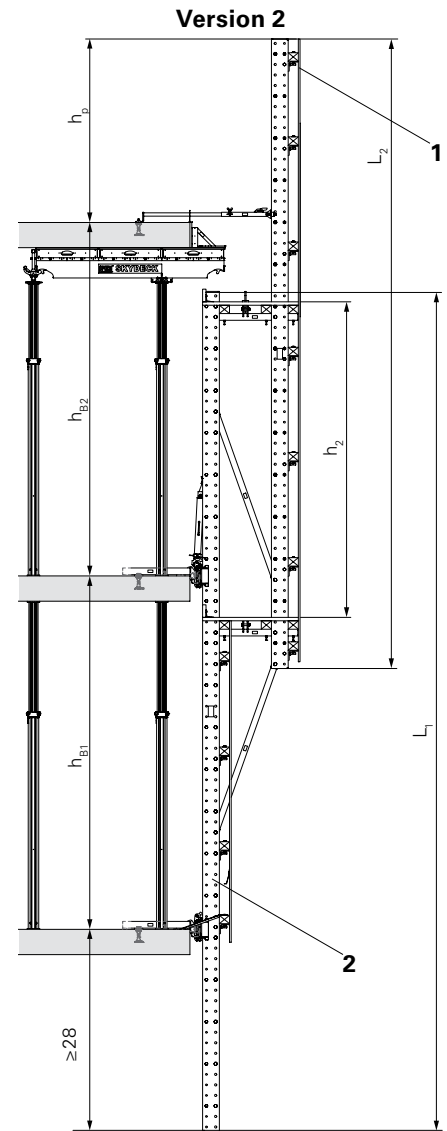


Fig. B1.02

### Climbing Rails depending on storey height $h_B$

Climbing Rails	max. storey heights $h_{B1} + h_{B2}$	with a constant storey height max. $h_{B1} = h_{B2}$
7.48 m	7.20 m	3.60 m
9.98 m	9.70 m	4.85 m

## Calculation: Version 3

(Fig. B1.03)

Climbing Rail RCS (2)

$$L_1 \geq h_{B1} + h_{B2} + 28 \text{ cm.}$$

Enclosure Post RCS (1)

$$L_2 \geq h_{B2} + h_{B3} + h_p$$

## Calculation: Version 4

(Fig. B1.04)

Climbing Rail RCS (2) with projecting protection panel.

$$L_1 \geq h_{B1} + h_{B2} + h_p + 28 \text{ cm.}$$

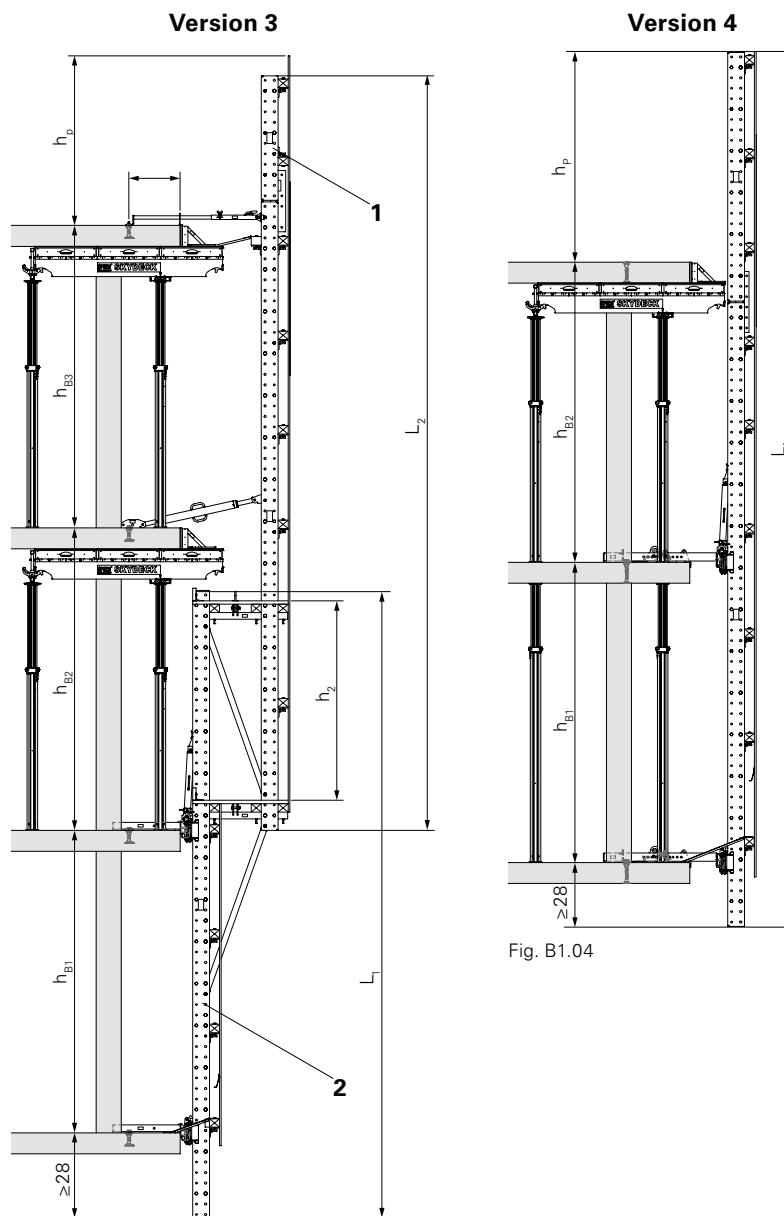


Fig. B1.03

Fig. B1.04

## Framework Assembly

### General

Depending on the assembly version, install different framework components between the Climbing Rail (2) and Enclosure Post (1).

The Bolts ISO 4014 M24 x 130-8.8 and Nuts ISO 7040 M24-8 that are provided are to be used.

### Climbing Rail spacings

The spacing between the Climbing Rails is determined and proven on a project-specific basis.



The respective dimensions for the assembly are based on the specified design and must be included on separate assembly drawings. All separate connecting means which are not standard PERI components must be identified.

### Version 1

(Fig. B1.04)

### Components

<b>1</b>	Enclosure Post
<b>2</b>	Climbing Rail
<b>4</b>	Spacer M24-82
<b>11</b>	Crossbar RCS 69

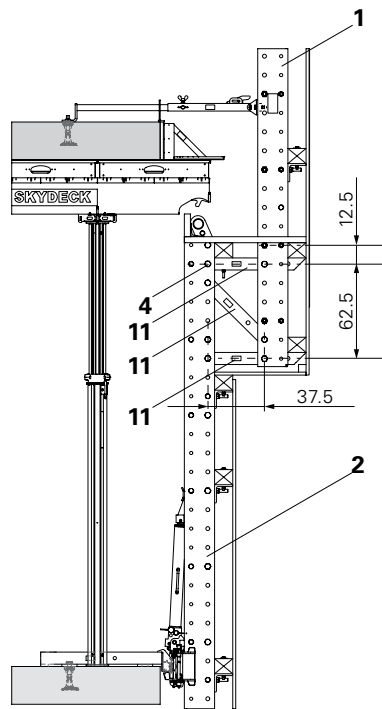


Fig. B1.04



- Offset dimension of the Spacers in the Climbing Rail and Enclosure Post: 125 mm.
- The Crossbar RCS 69 is used as a horizontal Platform Beam and as a diagonal truss strut.
- In the arrangement shown, a Spacer must be moved in the Climbing Rail. See Section "Additional Spacers" on page 32.

**Version 2 and 3**  
(Fig. B1.05)

### Components

- |           |                        |
|-----------|------------------------|
| <b>1</b>  | Enclosure Post         |
| <b>2</b>  | Climbing Rail          |
| <b>10</b> | Crossbar RCS 103       |
| <b>12</b> | Diagonal Strut RCS 212 |



- **No offset of the Spacers (A) in the Climbing Rail and Enclosure Post.**
- **With the arrangement of the Diagonal Struts shown, Spacers do not have to be removed.**

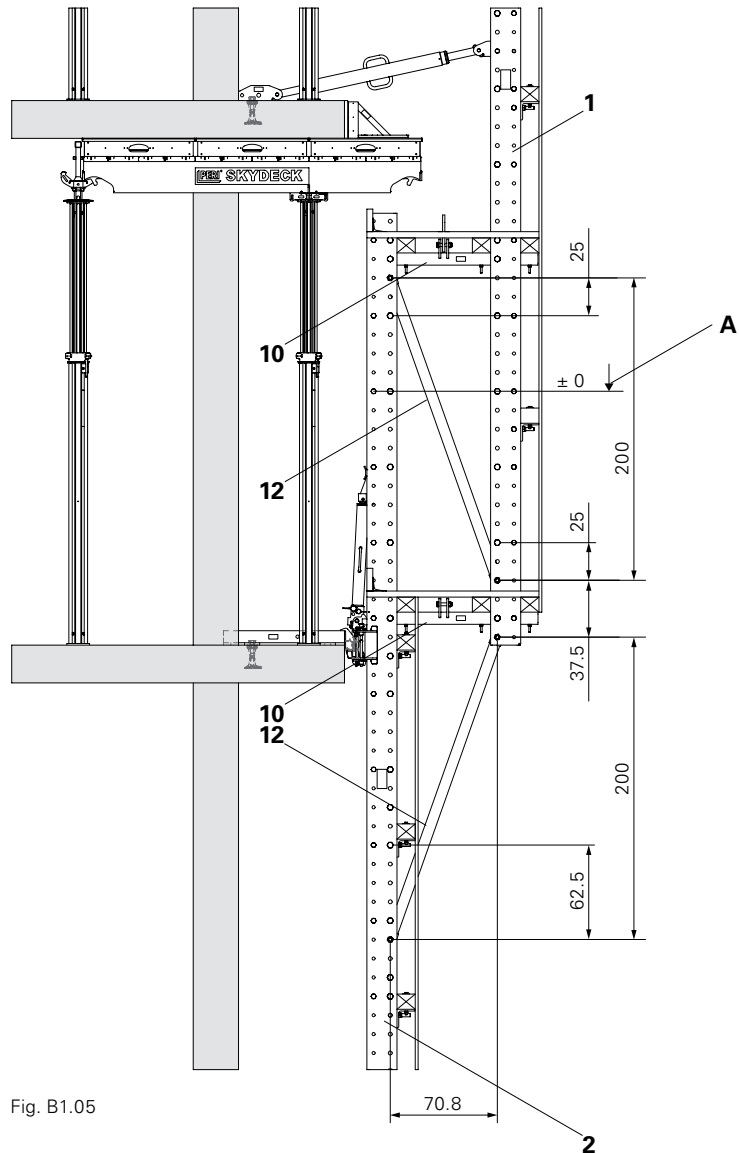


Fig. B1.05

## Additional Spacers

Spacers are mounted at a distance of 50 cm on the Climbing Rails.

Additional Spacers M20-82 (3) can be installed on the Climbing Rail (2) as climbing bolts.

This allows the height of the climbing enclosure and working platform to be adjusted in increments of 12.5 cm.

(Fig. B1.06)

Spacers are used to support the climbing enclosure on Slab Shoes during working operations.



PERI recommends mounting an additional Spacer M20-82 for the bottom Slab Shoe for standard storey heights that are multiples of 50 cm.

This ensures a definite bearing on the planned Slab Shoe without having to deactivate the other Slab Shoes.

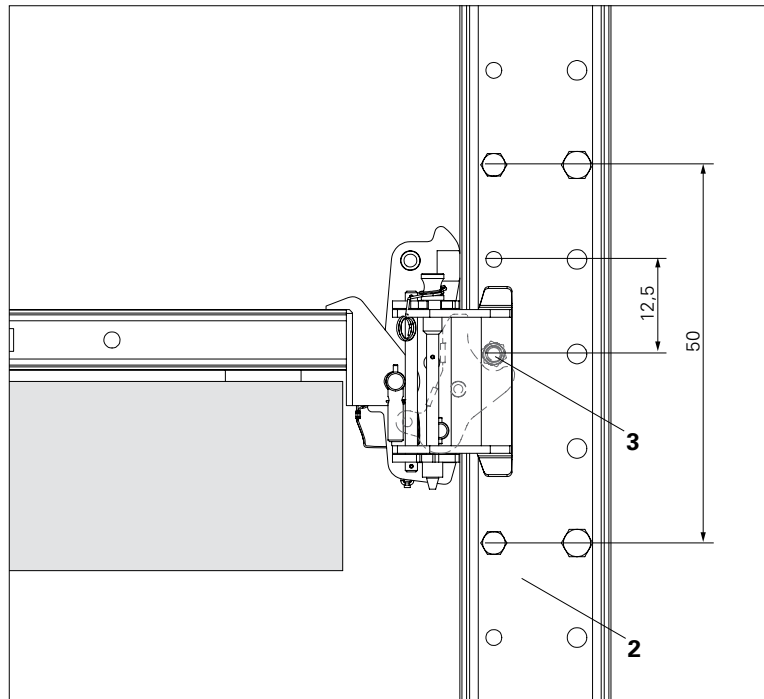


Fig. B1.06

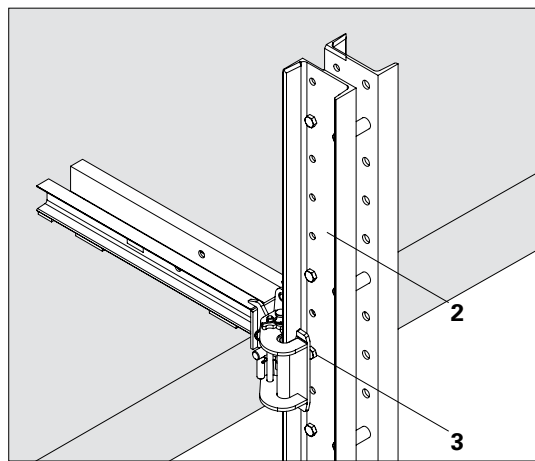


Fig. B1.07



## Additional Finishing Platforms



Only for Versions 2 and 3 with the Crossbar RCS 103. See Section A1 System Overview, Fig. A1.02 + A1.03.

Finishing platforms can be installed for work operations in the area of the bottom Slab Shoe.

The execution takes place corresponding to the working platforms positioned above.

Screw in additional Crossbars RCS 103 (10) into the Climbing Rail (2) and the extension of the Enclosure Post.

### Components

- |     |                                 |
|-----|---------------------------------|
| 1   | Enclosure Post                  |
| 2   | Climbing Rail                   |
| 2.3 | Climbing Rail RCS 248           |
| 2.4 | Climbing Rail RCS 348           |
| 10  | Crossbar RCS 103                |
| 14  | Enclosure Beam (timber)         |
| 21  | Climbing Rail Connector RCS 100 |
| 22  | Climbing Rail Connector RCS 33  |

### Version 1

If only a short extension of Enclosure Post 1 is required, the finishing platform can be suspended by means of a Climbing Rail Extension 100 RCS (21). (Fig. B1.08)

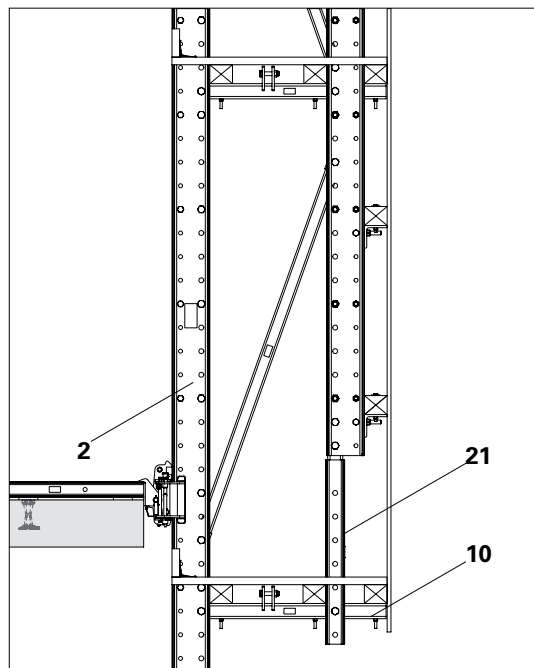


Fig. B1.08

## Version 2

To mount the Enclosure Post with a lower-positioned finishing platform (14), install a Climbing Rail RCS 248 (5) (L = 2.48 m) or Climbing Rail RCS 348 (6) (L = 3.48 m).

Attach Climbing Rails with Climbing Rail Connectors RCS 33 (22) to Enclosure Post 1.  
(Fig. B1.09)

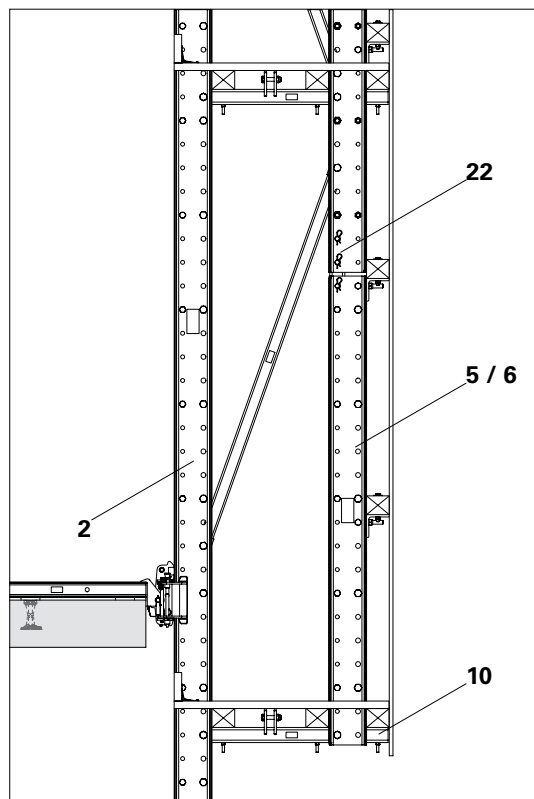


Fig. B1.09

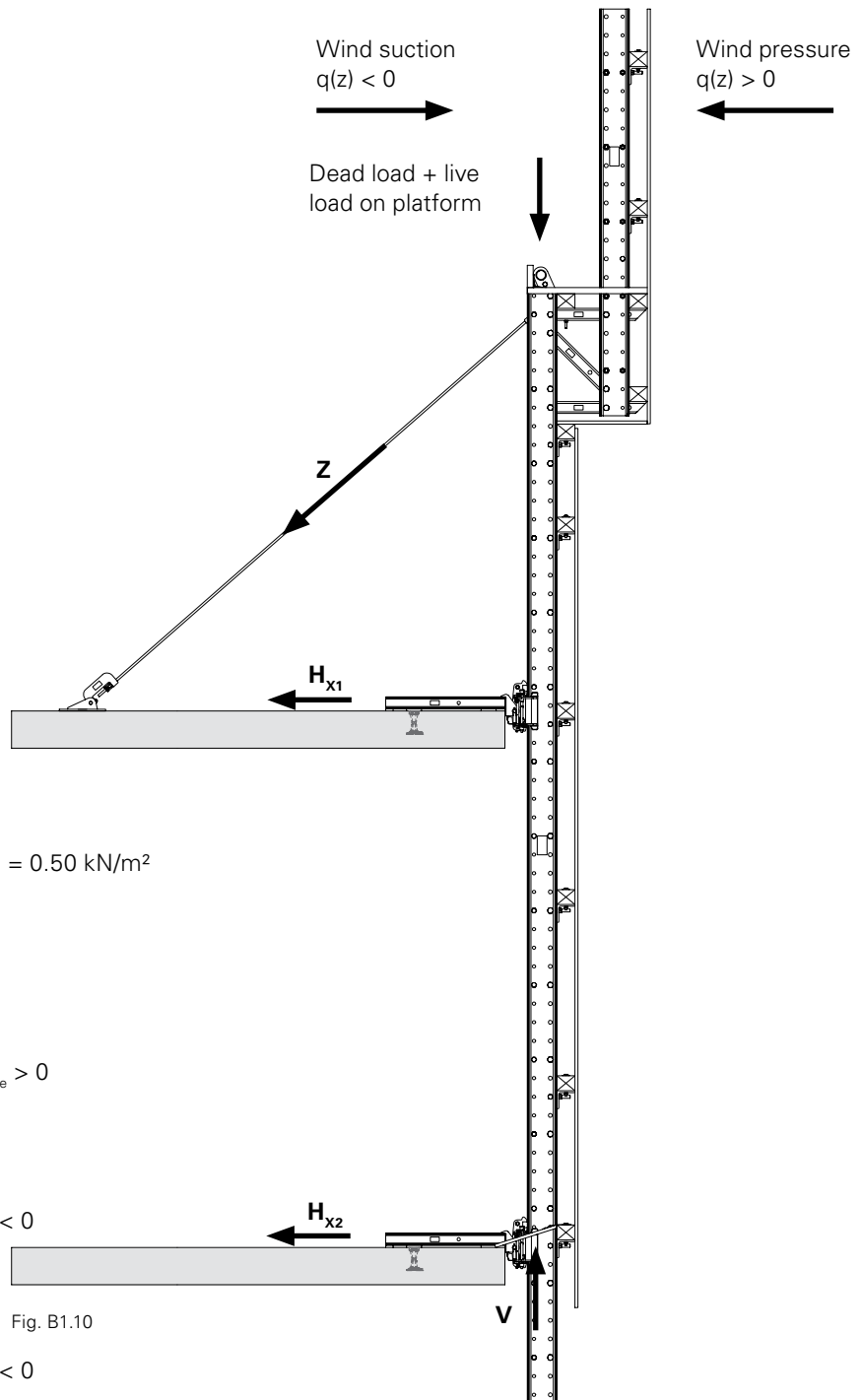
## Reaction Forces

### Reaction forces

- $H_{x1}$ : horizontal force on the top Slab Shoe (positive: tension, negative: compression)
- $H_{x2}$ : horizontal force on the bottom Slab Shoe (positive: tension, negative: compression)
- V: vertical force on the bottom Slab Shoe
- Z: diagonal tension anchor force on the corner elements.



PERI recommends temporary bracing of the corner elements in the case of expected wind speeds of more than 100 km/h. See Section "Bracing the Corner Elements" on page 110.



### Load cases

- A: Working conditions
  - Wind load from wind suction with  $q(z) = 0.50 \text{ kN/m}^2$  ( $v = 100 \text{ km/h}$ )
  - 100 % live load on one level,
  - 50 % live load on a second level.
  - Without bracing.
- B1: Storm conditions
  - max. wind load from wind pressure  $w_e > 0$
  - no live loads
  - Bracing not effective ( $Z = 0$ )
- B2: Storm conditions
  - max. wind load from wind suction  $w_e < 0$
  - no live loads
  - Bracing is effective ( $Z > 0$ )
- B3: Storm conditions
  - max. wind load from wind suction  $w_e < 0$
  - no live loads
  - Corner element with bracing ( $Z > 0$ )

Fig. B1.10

- $w_e = q(z) \times \chi \times c_p$
- $= q(z) \times \chi \times c_t$
- $q(z)$  = peak velocity pressure
- $c_p$  = aerodynamic pressure coefficient
- $c_t$  = aerodynamic force coefficient
- $\chi$  = service life factor for temporary constructions

## Anchor forces

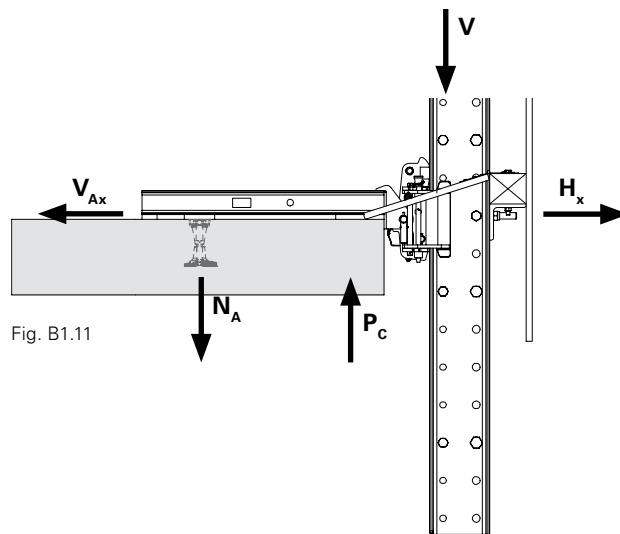
$H_x$ : horizontal force on the Slab Shoe  
(positive: tension,  
negative: compression)

$V$ : vertical force on the Slab Shoe

$V_{Ax}$ : anchor shear force

$N_A$ : anchor tension force

$P_C$ : support force of the slab  
If the concrete slab is not sufficiently stable, then a slab prop, e.g. MULTIPROP, is to be installed under the slab to provide load relief. (Fig. B1.11)



- Slab props that have already been installed may fall over due to unscheduled load relief of the slab. Secure slab props against falling over especially on the edge of the structure.



## Take into consideration PERI expert information "Design Chart for RCS Climbing Protection Panel"!

- The load-bearing capacity of the Slab Shoe RCS and anchoring must be verified separately.
- The load-bearing capacity of the anchoring depends on the type of anchor, anchoring depth, edge distances and the concrete strength. Deviating conditions may require the installation of additional back-draft reinforcement or reinforcement for the edge surrounding.
- The contractor is responsible for the correct transfer of the reaction forces into the building structure.

## Suspension with the Slab Shoe

### Suspension overview

- 2** Climbing Rail RCS
- 3** Spacer M20-82
- 44** Climbing Shoe RCS
- 45** Slab Shoe RCS
- 45.1** Locking Pin
- 45.2** Bolt ISO 4014 M24 x 70-10.9
- 47** Anchoring
- 54** Slab Anchor Template 61 RCS

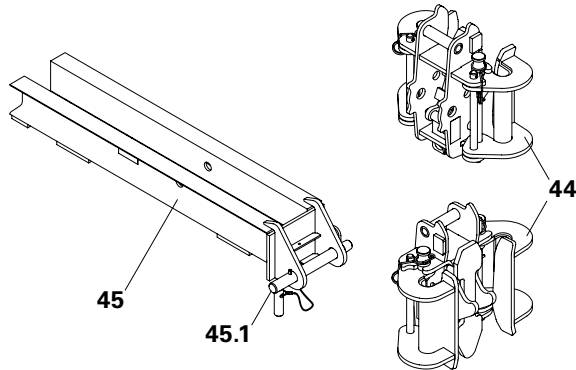


Fig. B1.12

### Anchor fixations

Anchoring M24 is possible in 3 versions:

Version 1

Screw-On Cone M24/DW 20

Version 2

Anchor Sleeve M24

Version 3

Climbing Cone-2 M24/DW 15

Anchor spacing to slab edge:

$a_D = 600 \text{ mm}$

Leading anchors (47) are fixed in their respective position during concreting by means of the Anchor Support M24 of the Slab Anchor Template RCS (54). The Slab Anchor Template with the support plate rests on the stopend formwork.

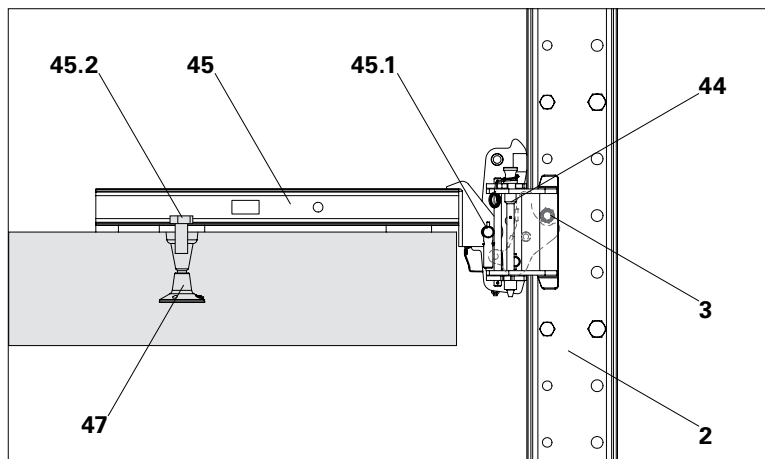


Fig. B1.13



The stop on the support plate creates an impression in the concrete.

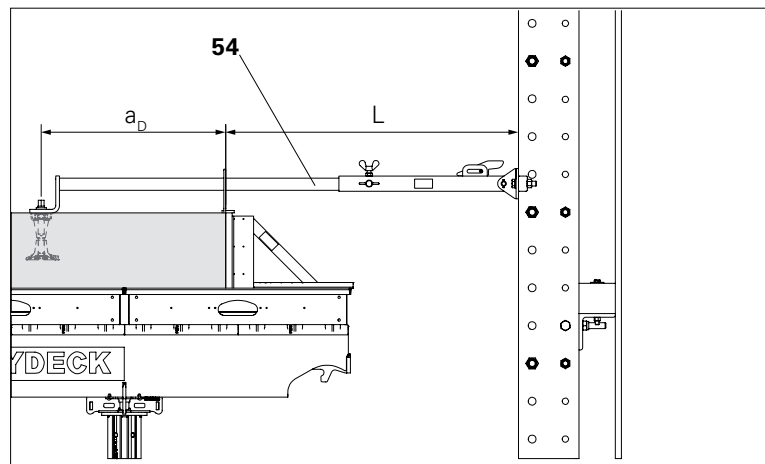


Fig. B1.14

## Anchoring

### Version 1:

with Screw-On Cone M24/DW 20.  
(Fig. B1.15)

### Components

- 47.1** Screw-On Cone-2 M24/DW 20
- 47.2** Threaded Anchor Plate DW 20

Approval No. Z-21.6-1766  
or expert's report for the PERI Climbing  
Anchor.

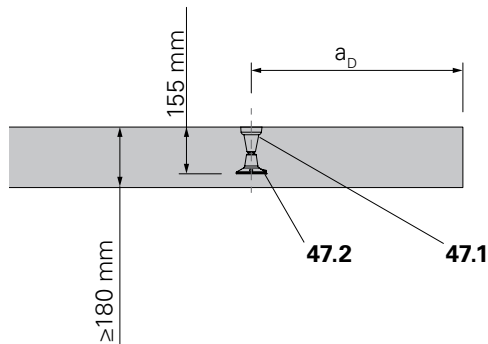


Fig. B1.15

### Version 2:

with Climbing Cone-2 M24/DW 15.  
(Fig. B1.17)

### Components

- 47.5** Climbing Cone-2 M24/DW 15 1\*
- 47.6** Tie Rod DW 15 1\* 2\* or  
Tie Rod B 15 1\* 2\*  
LS = h<sub>nom</sub> – 80 mm
- 47.7** Threaded Anchor Plate DW 15  
1\* 2\* Ø 80 mm

Approval No. Z-21.6-1767  
or expert's report for the PERI Climbing  
Anchor

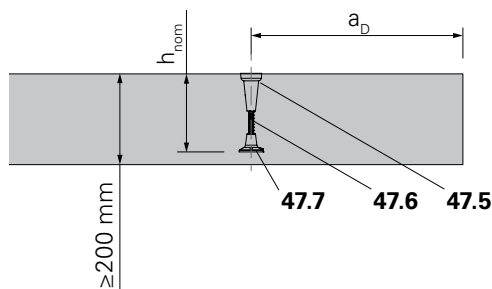


Fig. B1.17

1\* All suspension and anchoring parts  
are safety components.

2\* Non-reusable component.

## Version 3:

with Climbing Cone-2 M24/DW 15. completely re-usable.

(Fig. B1.18)

## Components

- 47.5** Climbing Cone-2 M24/DW 15 1\*  
h<sub>nom</sub> = h ≥ 185 mm
- 47.6** Tie Rod DW 15 1\*  
or Tie Rod B 15 1\*  
LS = h<sub>nom</sub> – 80 mm
- 47.7** Threaded Anchor Plate DW 15 1\*  
Ø 80 mm, nailed for positioning on the slab formwork
- 47.8 Spacer Tube Ø 22,**  
LT = h - 185 mm 2\*

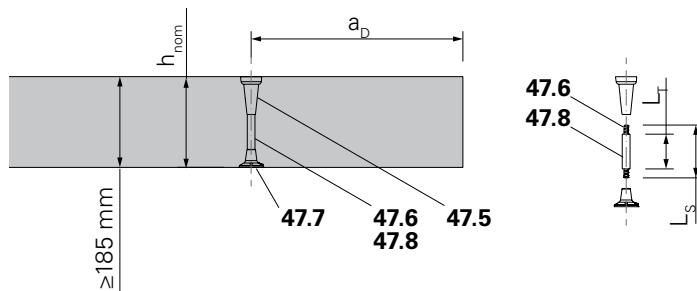


Fig. B1.18

Approval No. Z-21.6-1767

or expert's report for the PERI Climbing Anchor.



- With Tie Rod B15 (with circumferential thread), the load-bearing capacity of the anchoring may be lower than with the Tie Rod DW15 (with interrupted thread)! For this, see building authority approval or corresponding product information
- Fixing the Threaded Anchor Plate to the slab formwork is not allowed especially with architectural concrete.

1\* All suspension and anchoring parts are safety components.

2\* Non-reusable component.

## Suspension with the Slab Stopend Shoe

For installing a Slab Stopend Anchor during the assembly of the Slab Stopend Shoe.

### Components

- 44** Climbing Shoe RCS
- 48** Stopend Slab Shoe RCS
- 48.1** Locking Pin 25 mm

### Stopend Slab Anchor M30

#### Components

- 49** Bolt ISO 4017 M30 x 70-8.8
- 51** Stopend Slab Anchor M30/25-160

Alternatively:

- Climbing Cone-2 M30/DW 20
- Tie Rod DW 20 or B20
- Threaded Anchor Plate DW 20

### Stopend Slab Anchor M24

#### Components

- 53** Bolt ISO 4014 M24 x 70-10.9
- 50** Reducing Bushing Ø 30 - 25
- 52** Stopend Slab Anchor M24/20-128

Alternatively:

- Climbing Cone-2 M24/DW 15
- Tie Rod DW 15 or B15
- Threaded Anchor Plate DW 15

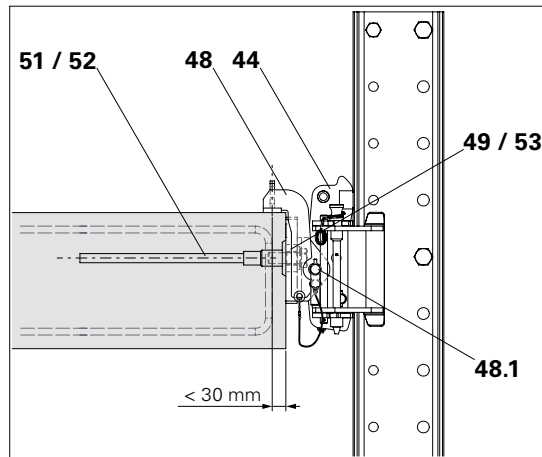


Fig. B1.19

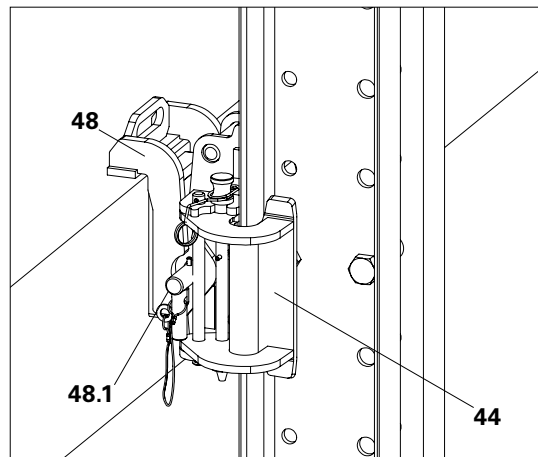


Fig. B1.20



## Horizontal Support

The Climbing Protection Panel Version 3 requires additional horizontal support due to the enclosure spread over 2 storeys.

Mount the Heavy-Duty Spindle on the Enclosure Post with one Fitting Pin  $\varnothing$  21 mm and Fitting Pin  $\varnothing$  26 mm respectively. Use the anchoring on the slab which will subsequently carry the Slab Shoe.

Permissible angle of inclination  $\alpha = 10 \pm 5^\circ$

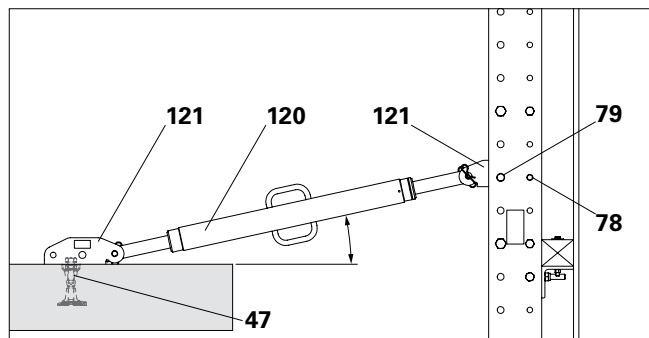


Fig. B1.21

## Components

- |             |                                 |
|-------------|---------------------------------|
| <b>78</b>   | Fitting Pin $\varnothing$ 21 mm |
| <b>79</b>   | Fitting Pin $\varnothing$ 26 mm |
| <b>120</b>  | Heavy-Duty Spindle SLS 100/180  |
| <b>121</b>  | Spindle Shoe SLS/RCS M24        |
| <b>45.2</b> | Bolt ISO 4014 M24 x 70-10.9     |
| <b>47</b>   | Anchoring                       |

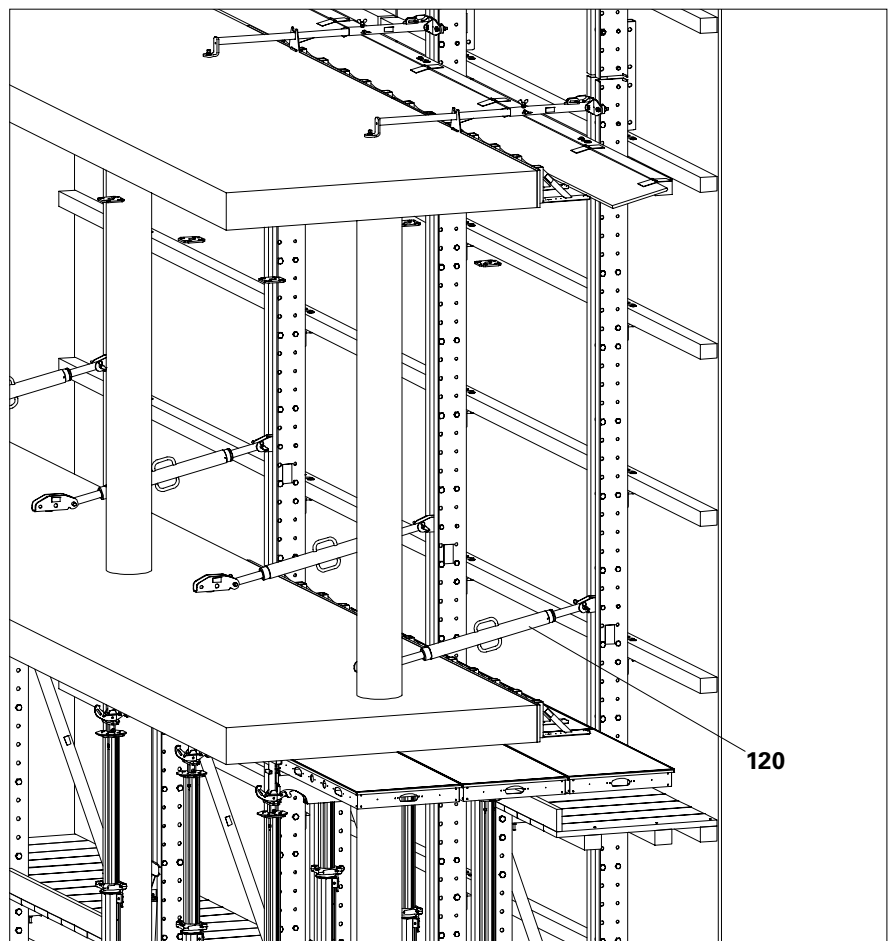


Fig. B1.22

### General

Observe the following points for the planning and work instructions for the climbing sequence:

- Especially on the corner and internal platforms, the decking is to be installed so that it does not collide with the platforms of adjacent climbing enclosures during the climbing procedure.
- If overlapping components are planned between the climbing enclosures, then the climbing sequence is to be planned accordingly and be clearly indicated on the general arrangement drawings. Overlapping components are, for example, covering for the gaps between the climbing enclosures.
- Access means and ladders are planned to ensure that there is secure access to all climbing units at all times.
- The climbing sequence must be planned around the complete structure. Suitable installation of the hydraulic hoses and the climbing of the last climbing unit must to be determined accordingly.
- When climbing by crane, always provide safe access for attaching and detaching the crane lifting gear. Additional double crane slings that remain on the climbing enclosure may be necessary until they can be safely removed.
- A hydraulics plan shows how the climbing device with the hydraulic hoses is to be correctly attached to the hydraulic pump.
- Appropriate measures are to be specified regarding safety barriers or guardrails.

### Attachment Point for the Crane

The size of the climbing enclosures can be limited by the permissible load of the attachment point on the Crossbar RCS. For this, the weight of the relevant panels is to be determined during the planning phase.

When assembling and dismantling the climbing enclosures that are to be used with the self-device, the permissible load of the attachment points must also be observed.

The weight G of the climbing units is to be specified in the general arrangement drawings.

#### **Standard case:**

Attachment point with Crane Eye BR-2 2.5 t (8)

Girder (40) as compression brace (Fig. B2.01)

## Components

<b>8</b>	Crane Eye BR-2 2.5 t
<b>10</b>	Crossbar RCS 103
<b>40</b>	Girder (timber)



- Always lift and move the climbing units with the Lifting Beam RCS 9t.
- For safe attachment and removal of the crane hook, provide suitable measures to prevent falls.
- Permissible load per Crane Eye BR 2.5 t: max. 25 kN.
- With heavy climbing units where a load of more than 25 kN per attachment point must be lifted, attach the PERI Lifting Beam RCS 9t to a Spacer. (Fig. B2.01)
  - Follow Instructions for Use at all times!
  - Ensure loads are evenly balanced when being picked up.

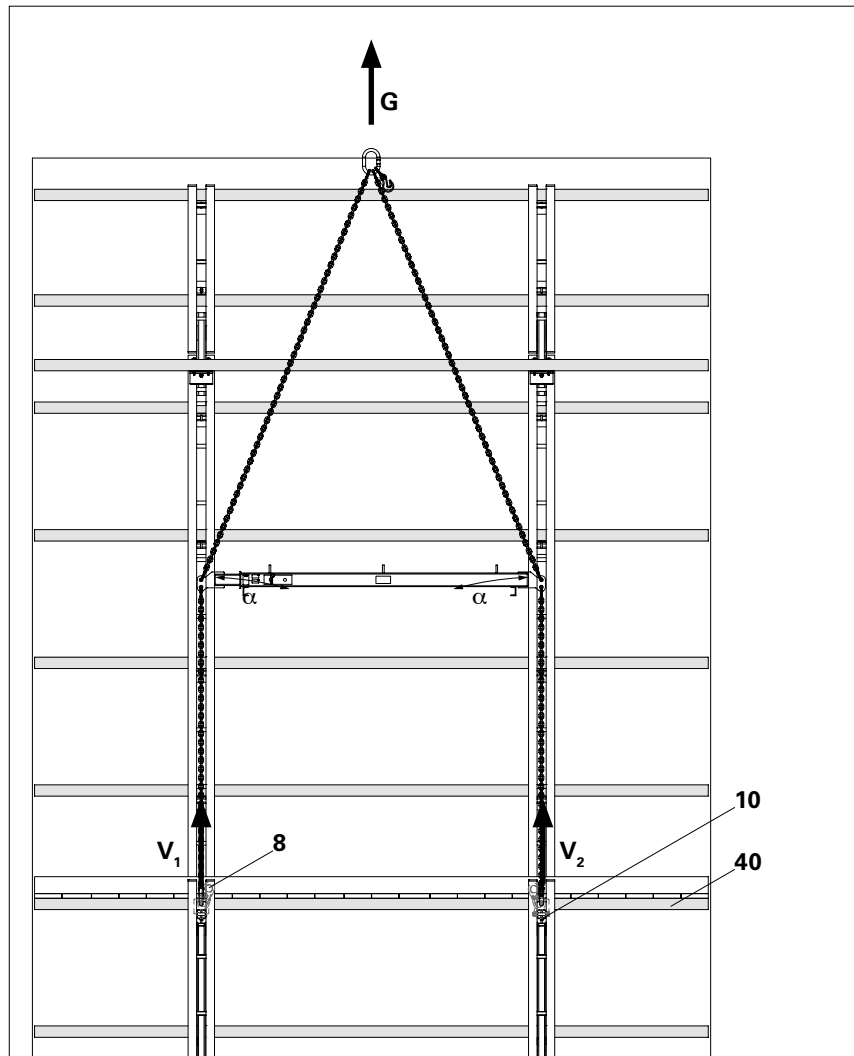


Fig. B2.01

## Plancking

### Platform plancking

Load Class 2 working scaffold  
max. load 150 kg/m<sup>2</sup> corresponds to  
DIN EN 12811-1

Solid Wood Strength Class C24 -  
EN 338 (Coniferous Wood Grade S10).  
Minimum dimensions of the plancking:  
w x d = 24 x 4 cm

Dimension B depends on the dimen-  
sions of the Girder (40) as well as the  
overhang of the decking above the  
Climbing Rails.

Alternatively:

Solid Wood Strength Class C16 -  
EN 338 (Coniferous Wood Grade S7).  
Minimum dimensions of the plancking:  
w x d = 24 x 5 cm

**For use as safety scaffold for  
heights up to 3.00 m, decking with  
planks w x d = 24 x 4.5 cm is re-  
quired - see DIN 4420-1**

### Toeboards:

Toeboards made of Solid Wood C24  
(softwood S10).  
Minimum dimensions:  
w x d = 3 x 15 cm.



When using plancking with a lower  
strength class or plywood sheets, stat-  
ic verification is required!

### Components

- |             |                                      |
|-------------|--------------------------------------|
| <b>1</b>    | Enclosure Post                       |
| <b>2</b>    | Climbing Rail                        |
| <b>8</b>    | Crane Eye BR-2 2.5 t                 |
| <b>37</b>   | Working platform decking<br>(planks) |
| <b>39</b>   | Toeboard                             |
| <b>39.1</b> | Angle Bracket 90°                    |
| <b>40</b>   | Girder (timber)                      |
| <b>98</b>   | TSS-Torx 6 x 80                      |

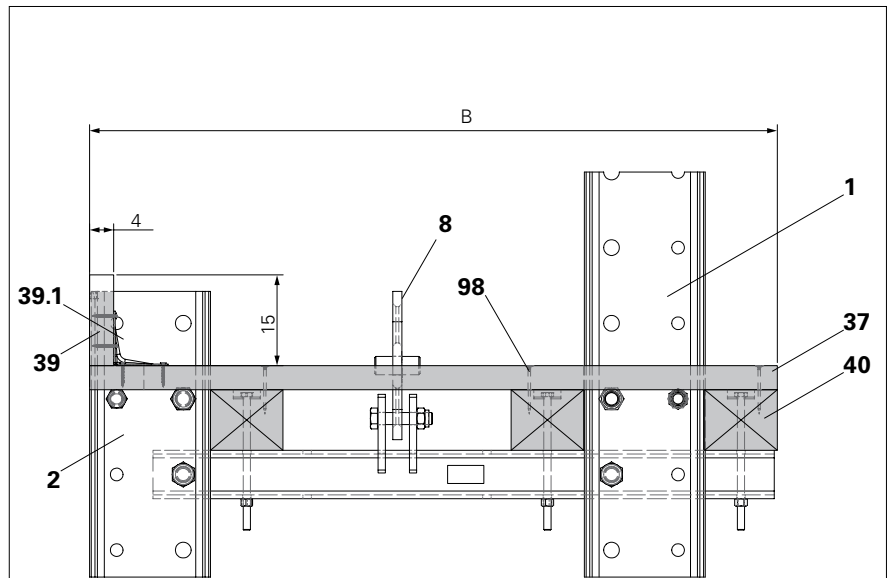


Fig. B2.02

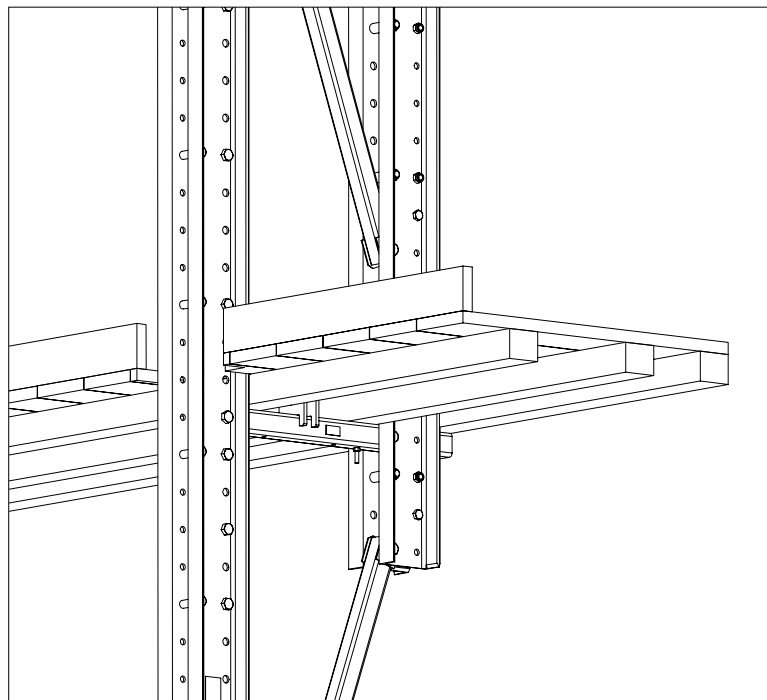


Fig. B2.03

## Platform Girder

The Platform Girders (timbers) are dimensioned and proven on a project-specific basis.

Solid Wood Strength Class C24 - EN 338 (Coniferous Wood S10).  
Max. width of influence (eB) of the Girder 0.50 m

Working platform load according to Scaffold Group 2:  
Max. live load 150 kg/m<sup>2</sup>  
Max. cantilever  $d \leq 0.5 \cdot c$

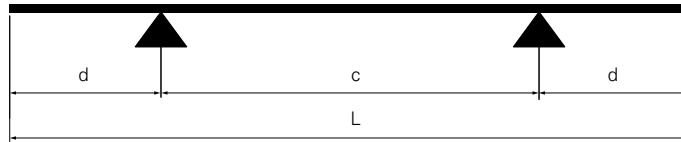


Fig. B2.04

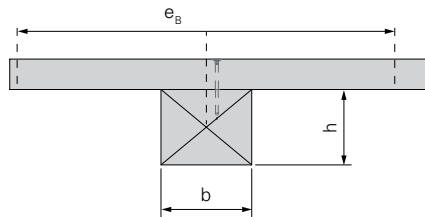


Fig. B2.05

## Protection against Falling Objects

The enclosure and platforms should completely enclose the working area. Openings > 20 mm are to be covered in a non-displaceable manner or filled with installation foam.



- Setting down and storage of materials and tools on the coverings is prohibited.
- Foldable covers are not decking surfaces and are planned as areas not to be walked on or subjected to loads.
- Take into account the fibre direction (F) of the surface layer! (Fig. B2.06a)

### Securing the slab edge

In the area of the lower storey slab, mount multi-layer plywood sheeting (41) on the Enclosure Beam (14) by means of hinges (42).

Screw on chamfered timber (14.1) to support the cover flap.

Alternatively, mount Scaffold Tube (80) on the Climbing Rail by means of the Scaffold Tube Connector (137). Mount Foldable Covers (41) using Flap Hinges (138) and Flap Safety Plates (139).

Cover any remaining gaps in the area of the Slab Shoe with Cover RCS 70x70 (43).

### Components

- 14** Enclosure Beam (timber)
- 41** Foldable Cover (multi-layer plywood sheeting)
- 42** Hinge DIN 7957-200-ST
- 43** Cover RCS 70 x 70
- 80** Steel Scaffold Tube Ø 48.3 x 3.2
- 137** Scaffold Tube Connector Ø RCS
- 138** Flap Hinge LPS D48/M10
- 139** Flap Safety Plate LPS D=48 RCS

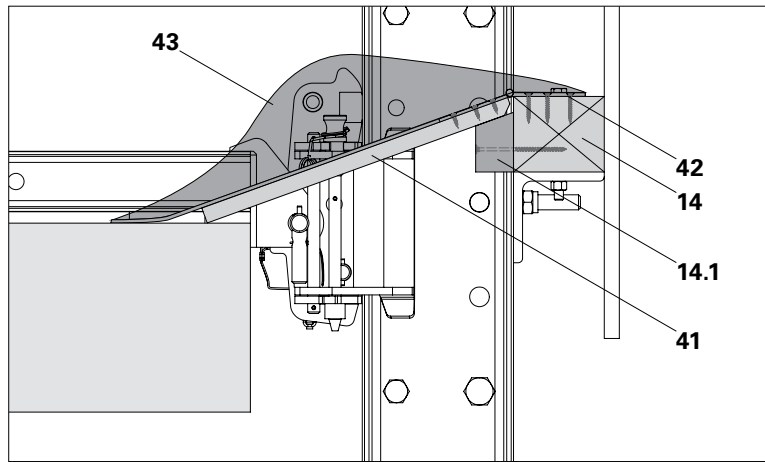


Fig. B2.06

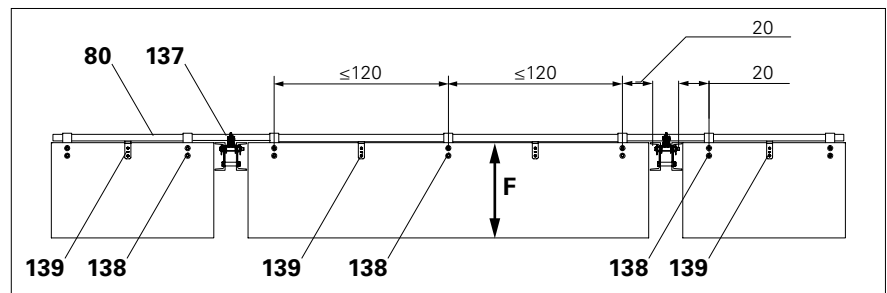


Fig. B2.06a

Flap material:	Untreated plywood ≥ 20 mm
Permissible inclination:	10° – 30°
Permissible depth:	≤ 0.75 m
Hinge spacing:	≤ 1.20 m, minimum 2 hinges per flap
Hinge spacing to Climbing Rail (2):	≤ 20 cm

Table B2.02



PERI recommends a distance between the climbing units of 50 mm.

For climbing units in an operational status, fix immovable covering over any gaps e.g. with:

- boards which are screwed on and that are removed or folded up during climbing.
- Alternatively, gaps can be covered with rubber lips.



In order to ensure a simple moving procedure with the crane without jamming the Enclosure Beams (14), protection edges (20) can be arranged on the front side. The width ( $b_1$ ) depends on the design of the enclosure with multi-layer plywood sheeting (18.1) or trapezoidal metal sheets (19).

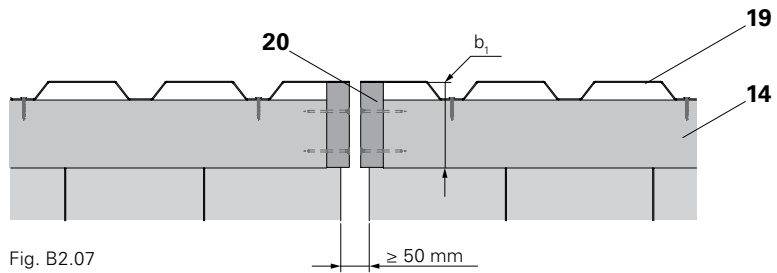


Fig. B2.07

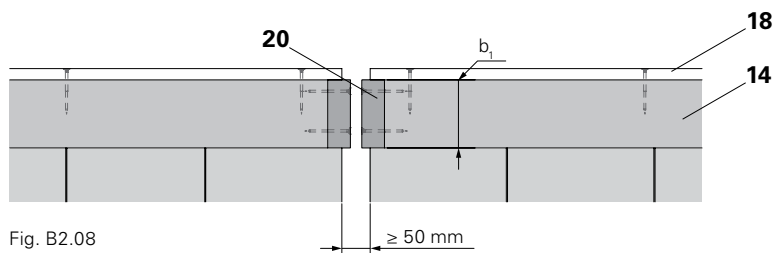


Fig. B2.08

## Components

- |           |  |
|-----------|--|
| <b>14</b> | Enclosure Beam (timber)                  |
| <b>18</b> | Enclosure (multi-layer plywood sheeting) |
| <b>19</b> | Enclosure (trapezoidal metal sheeting)   |
| <b>20</b> | Protection Edge                          |

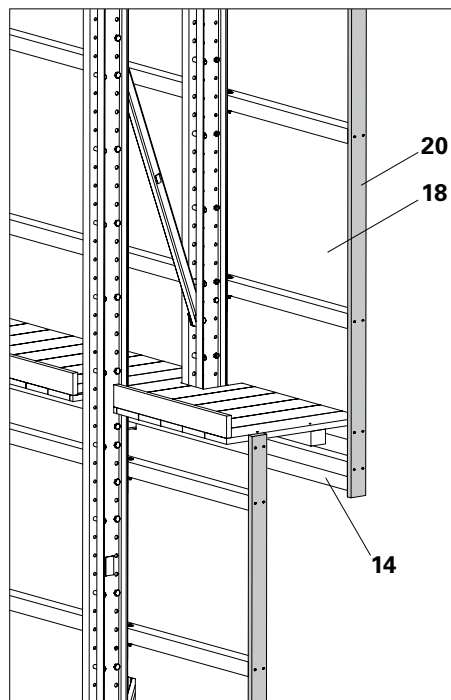


Fig. B2.09

### Guardrails

Guardrails and safety barriers must be fitted according to valid safety regulations!

Guardrails must be fitted to all leading edges on all platform levels.

High working positions must be secured in order to prevent objects falling to the ground. For this, mount safety nets or closed side protection.

The following can be used as side protection:

- handrail boards
- galvanised Steel Scaffold Tubes  $\varnothing 48.3$  or  $\varnothing 60.3$
- timbers with enclosure made of netting, tarpaulin, plywood or trapezoidal metal sheeting

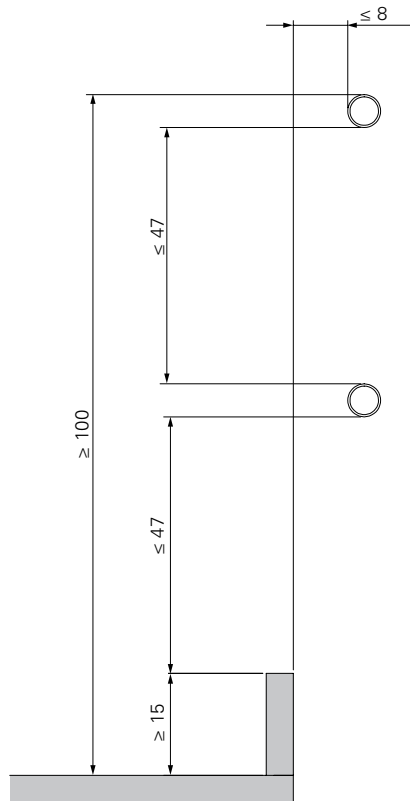


Fig. B2.10



## Guardrails with Scaffold Tubes

### Requirements:

Steel Scaffold Tubes (80) minimum quality St37-2.  
 Dimensions  $\varnothing \times t = 48.3 \times 3.2$  or  $60.3 \times 4.5$  mm

### Mounting:

Clamp A64 DIN 3570 (81)  
 Hex. Nut ISO 4032 M12-8 (82) (2x)  
 Mount Scaffold Tube on inner side, with netting or tarpaulin also on the outer side with spacing of  $a = 50$  cm.

Max. cantilever  $d \leq 0.5 \cdot c$   
 (Fig. B2.11)

At the ends and in the middle of the span the Scaffold Tubes are to be connected to each other using vertical Scaffold Tubes or supported to prevent any overloading.

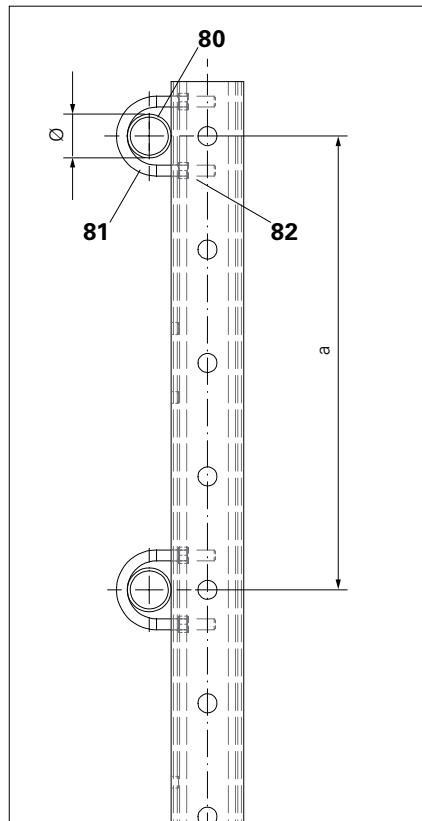


Fig. B2.11

### Components

- |           |   |
|-----------|---|
| <b>80</b> | Steel Scaffold Tube $\varnothing 48.3 \times 3.2$ |
| <b>81</b> | Clamp A64 DIN 3570                                |
| <b>82</b> | Hex. Nut ISO 4032 M12-8                           |

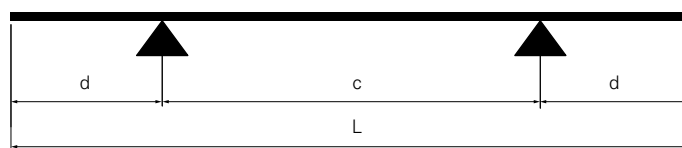


Fig. B2.12

## Enclosure

### Requirements for the Enclosure

#### Beam :

Timbers (14) made of Solid Wood C24 (Coniferous Wood S10).  
 Dimensions w/h = 12/10, 12/12, 14/10, 14/14, 15/7.5 cm or 15/15  
 Spacing a and span according to static proof. Mount the timbers on the outer side.

#### Fixing the Enclosure Beams:

Attach the Timber Fixation RCS (13) to the Enclosure Post RCS (1) using Eyebolts (13.1) and to the Climbing Rail with Bolts (92 / 94) according to the hole diameter respectively.  
 Spacers (3) can be used.

Hole Ø 26:

bolt ISO 4014-M24 x 130-8.8 (94)  
 with hex. nut ISO 7042 M24-8 (95)

Hole Ø 21:

bolt ISO 4014 M20 x 120-8.8 (92)  
 with hex. nut ISO 7042 M20-8 (93)

Attach Enclosure Beam (14) to the Timber Fixation RCS (13) using bolt ISO 4017:

for  $h \leq 120$  mm: M12 x 140-8.8 (2x)  
 for  $h > 120$  mm: M12 x 240-8.8 (2x)  
 hex. nut ISO 4032 M12-8 (2x)  
 washer ISO 7093 200HV, A12 (2x).  
 (Fig. B2.13 + B2.14 + B2.15)

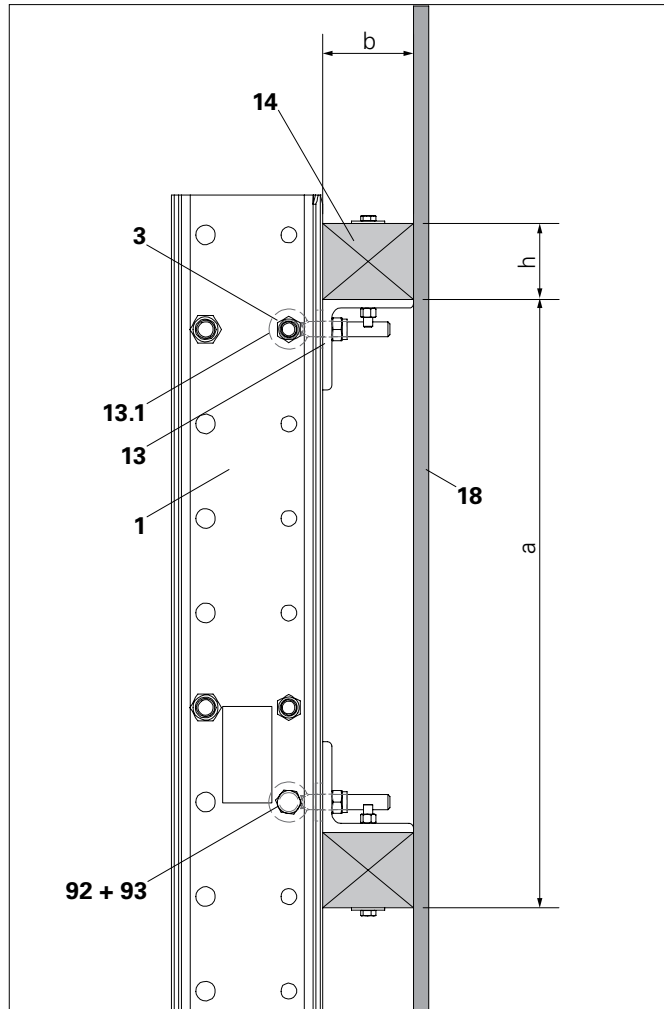


Fig. B2.13

### Components

1	Enclosure Post
3	Spacer M20-82
13	Timber Fixation RCS 12/20
13.1	Eyebolt M20
14	Enclosure Beam (timber)
18	Enclosure (multi-layer plywood sheeting)
19	Enclosure (trapezoidal metal sheeting)
23	Plate Connector Ø 48/12 mm
90	Bolt ISO 4017 M12 x 140-8.8
91	Bolt ISO 4017 M12 x 240-8.8
92	Bolt ISO 4014 M20 x 120-8.8
93	Hex. Nut ISO 7042 M20-8
94	Bolt ISO 4014 M24 x 130-8.8
95	Hex. Nut ISO 7042 M24-8
96	Hex. Nut ISO 4032 M12-8
97	Washer ISO 7093 200HV, A12
98	TSS-Torx 6 x 80
99	TSS-Torx 6 x 60

### Fixing: Version 1

perm. Z = 6.2 kN  
(Fig. B2.14)

### Fixing: Version 2

mount an additional Plate Connector (23) between the Enclosure Beam (14) and Timber Fixation (13).  
perm. Z = 9.0 kN  
(Fig. B2.15)

### Enclosure with multi-layer plywood sheeting

Install enclosure (18) in accordance with the static proof.  
Weight max. 15 kg/m<sup>2</sup>  
Attachment by means of TSS-Torx 6x60 (99) or 6x80 (98) with given spacing e in accordance with the static proof.  
(Fig. B2.14 + B2.14a)

### Enclosure with trapezoidal metal sheeting

Design of enclosure (19) and its mounting (19.1) in accordance with the static proof.  
Weight max. 15 kg/m<sup>2</sup>  
(Fig. B2.15 + B2.15a)



The enclosure should completely enclose the working area.

### Version 1 with multi-layer plywood sheets

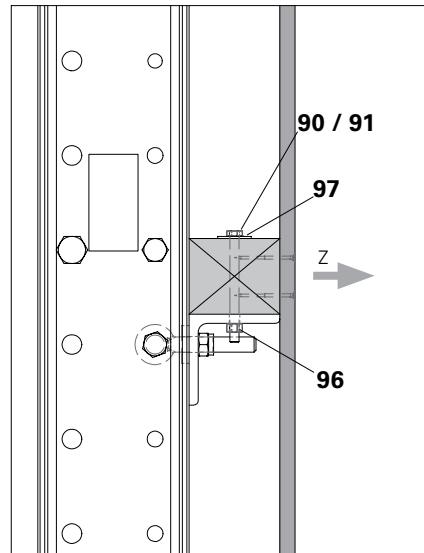


Fig. B2.14

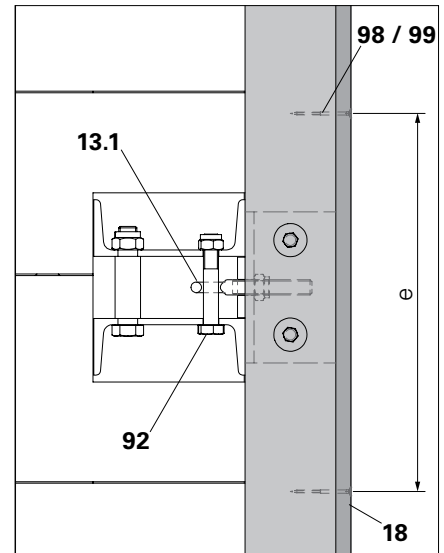


Fig. B2.14a

### Version 2 with trapezoidal sheeting

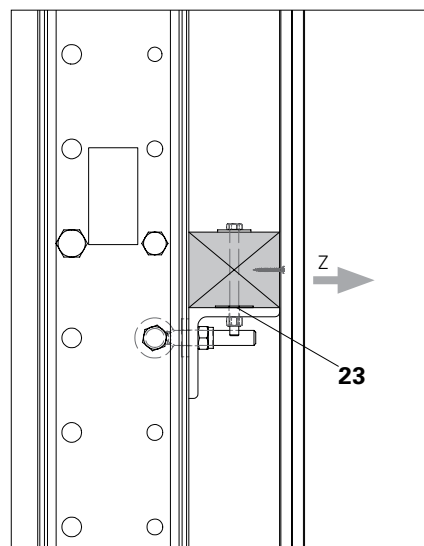


Fig. B2.15

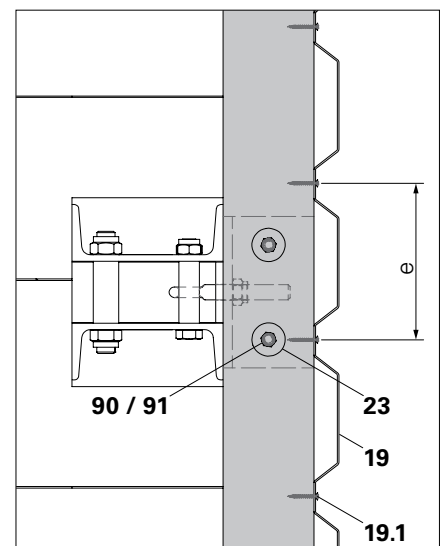


Fig. B2.15a

## General

- When planning all corner solutions ensure that the enclosure on the climbing rail does not collide with the platform of the neighbouring unit during climbing.
- Maintain a distance between the climbing units of 50 mm.
- Cover gaps between the enclosure elements, e.g. with Elastomer cover strips, or foldable covers consisting of multi-layer plywood sheet - ensure covering does not move out of position. Remove coverings during the climbing procedure.
- Close all open edges with Toe-boards.



If there is a risk of the platforms colliding with the enclosure of the neighbouring unit during climbing, then the climbing sequence has to be specified during planning and has to be pointed out explicitly during the briefing and introduction.

For a load-optimised corner solution, arrange the Slab Shoes as close to the building corner as possible.



Going below a lateral edge distance  $c_1$  for the anchoring is not advisable without additional static proof. If necessary, measure and arrange edging reinforcement in the slab.

Anchoring applicable for  $c_1$ : Screw-On Cone, Climbing Cone 3210 mm.

## Gap Covering with Cover Strips

Fix cover strips to the enclosure or platform decking using Spax screws.

### Units straight next to each other

Fix cover strip on one side.

### Units on external corners

Fix one cover strip respectively on both enclosures.

### Units on internal corners

Fix one cover strip respectively on both enclosures.

### Working platforms

Fix cover strip on one side.

## External Corners

### Mitred corner element

Standard corner elements e.g. for internal building columns with an edge distance of  $x \geq 400$  mm. (Fig. B3.02)

At the corner of the building: a cross-wise arrangement of the Slab Shoe RCS (45) and Slab Shoe Corner RCS (46). (Fig. B3.01)

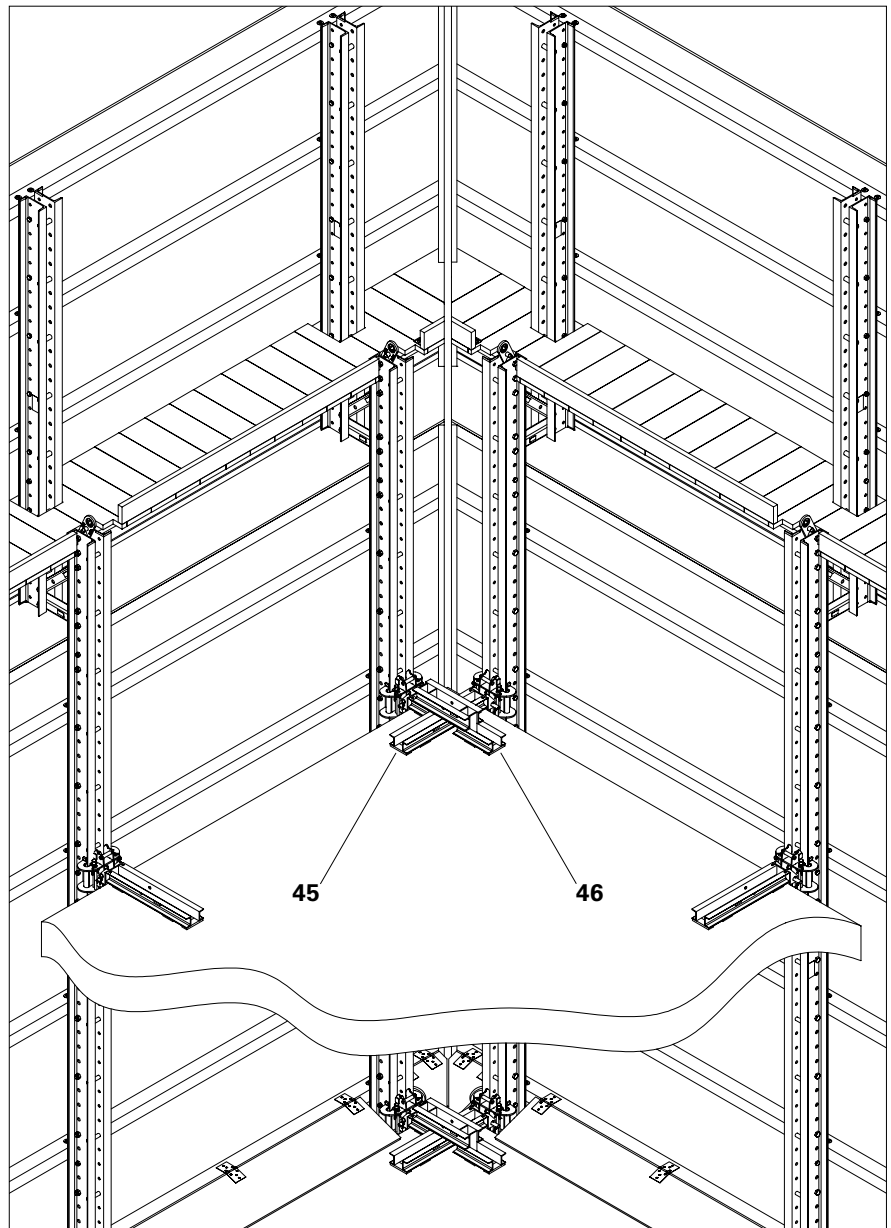


Fig. B3.01

## Climbing Protection Panel: Version 1

with narrow working platform, see Section A1 System Overview.

Working platform is mitred accordingly. Push Enclosure Beam (14) and Girder (40) up to the mitre.

Assemble platform decking using multi-layer plywood sheeting in the mitred area.

Cover the gap between the mitred enclosure elements. (Fig. B3.02)

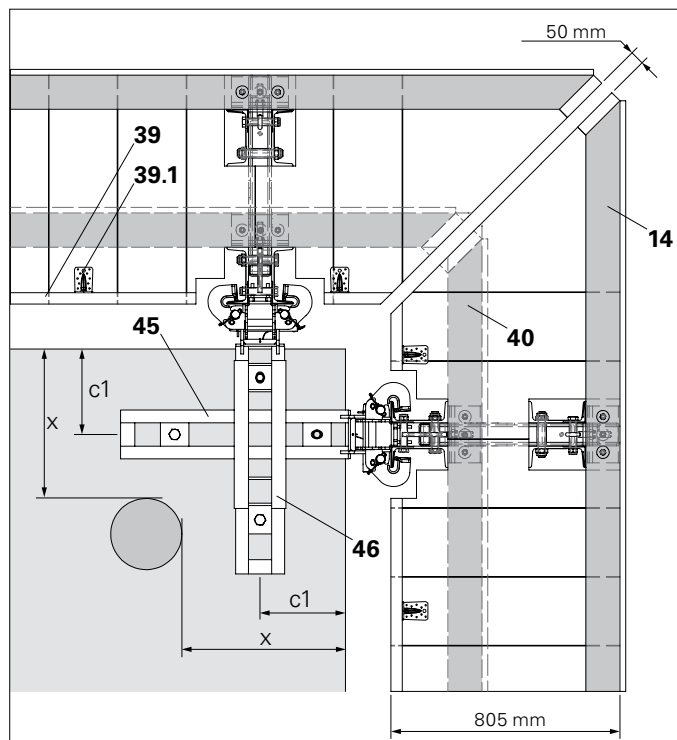


Fig. B3.02

## Climbing Protection Panel: Version 2 + 3

with wider working platforms, see Section A1 System Overview.

Working platform is mitred accordingly. Push Enclosure Beam (14) and Girder (40) up to the mitre.

Assemble platform decking using multi-layer plywood sheeting in the mitred area. Cover the gap between the mitred enclosure elements.

(Fig. B3.03)

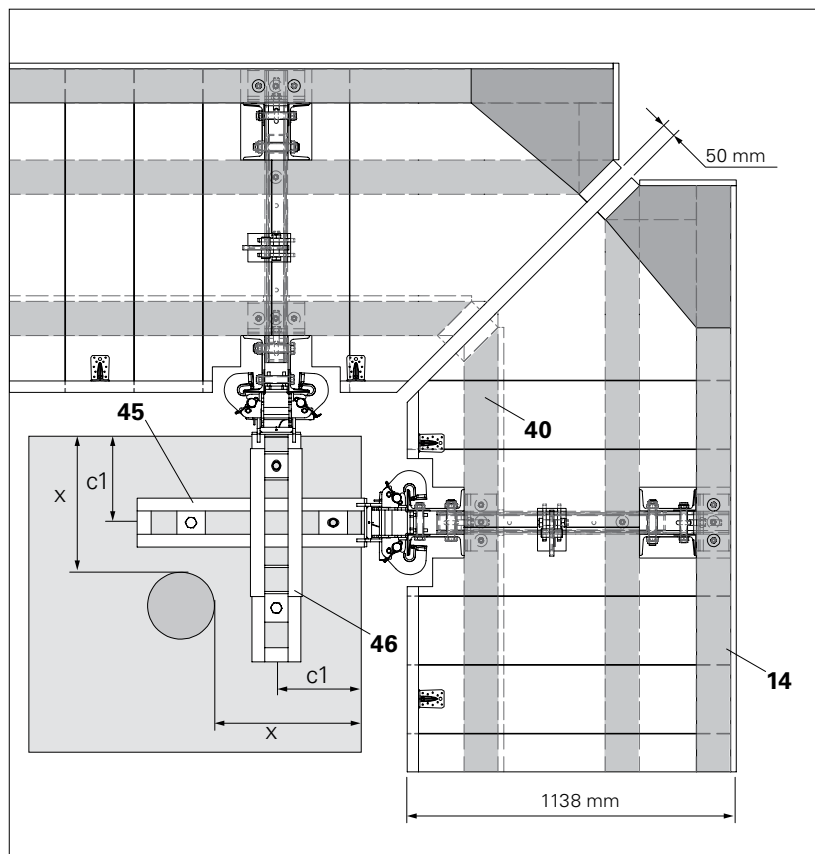


Fig. B3.03

## Components

- |             |                         |
|-------------|-------------------------|
| <b>14</b>   | Enclosure Beam (timber) |
| <b>39</b>   | Toeboard                |
| <b>39.1</b> | Angle Bracket 90°       |
| <b>40</b>   | Girder (timber)         |
| <b>45</b>   | Slab Shoe RCS           |
| <b>46</b>   | Slab Shoe RCS Corner    |

## Climbing Protection Panel: Version 2 +3

with wider working platforms, see Section A1 System Overview.

Provide inclined support for the working platform in the mitred area. Guide the Enclosure Beam (14) around the corner up to the platform joint.

Reinforce the top and undersides of the Enclosure Beam with multi-layer plywood sheeting (14.1).

Assemble platform decking using multi-layer plywood sheeting in the mitred area.

Cover the gap between the mitred enclosure elements.

(Fig. B3.04 + B3.05)

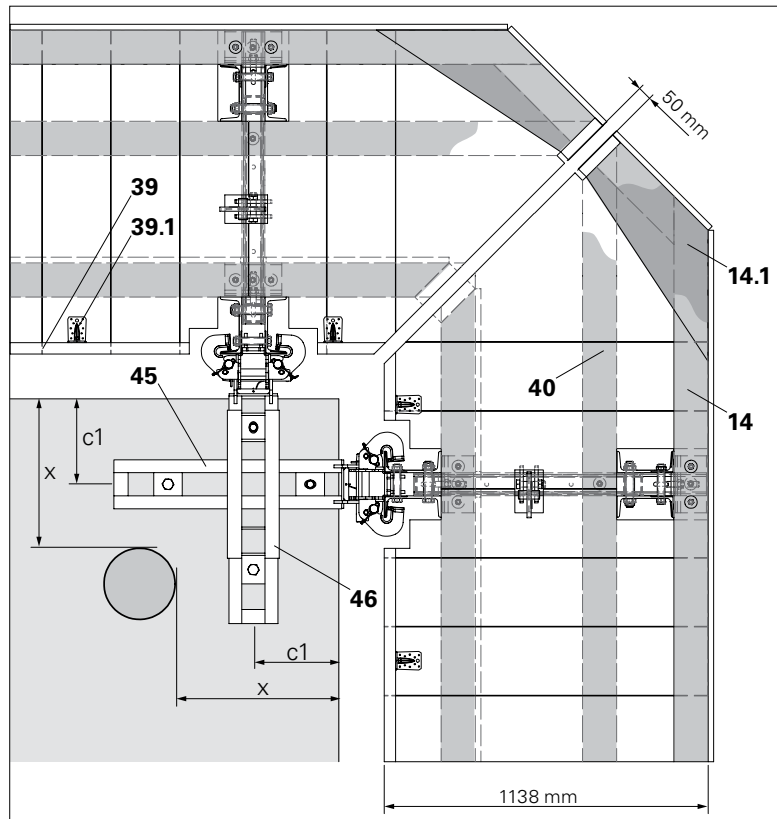


Fig. B3.04

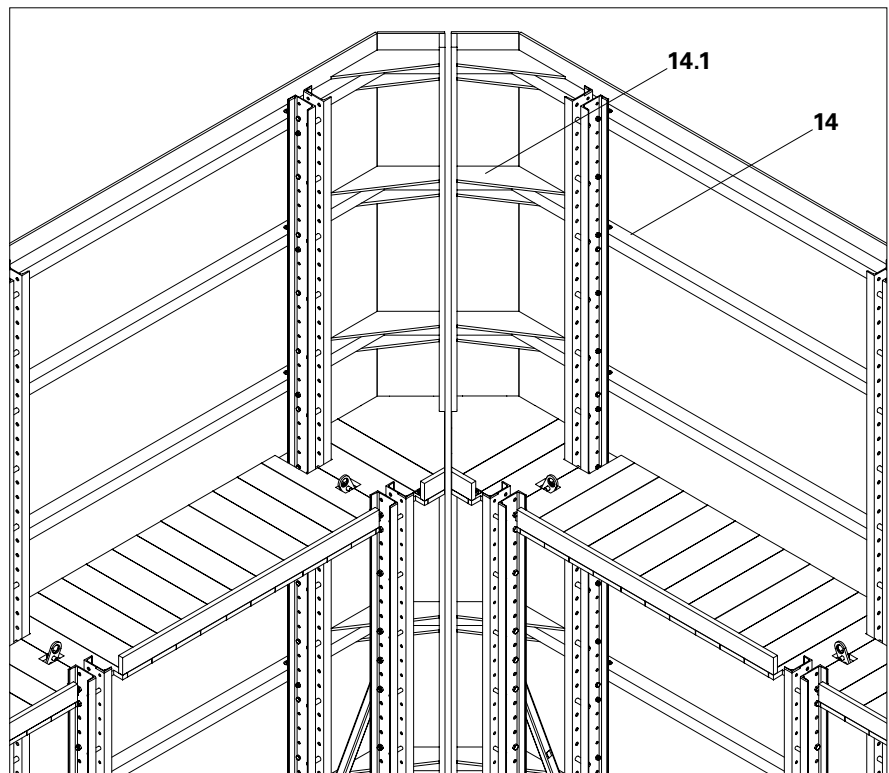


Fig. B3.05

## Components

- 14** Enclosure Beam (timber)
- 14.1** Bracing (multi-layer plywood sheeting)
- 39** Toeboard
- 39.1** Angle Bracket 90°
- 40** Girder (timber)
- 45** Slab Shoe RCS
- 46** Slab Shoe RCS Corner

## Corner supports at the edge of the building

For corner support, mount the Stopend Slab Shoe RCS (48).

Realisation of the working platform in the mitered area is carried out as previously described.

The corresponding Stopend Slab Anchor (51 / 52) enables anchoring through the column reinforcement. Due to load transfer through the bond, the Stopend Slab Anchor can be positioned very close to the slab edge (Fig. B3.06)  
See Section B4 "Anchoring on the Slab Front Side".



Going below a lateral edge distance  $c_1$  for the anchoring is not advisable without additional static proof. If necessary, measure and arrange edging reinforcement in the slab.

Anchoring applicable for  $c_1$ : Screw-On Cone, Climbing Cone 320 mm.  
(Fig. B3.06)

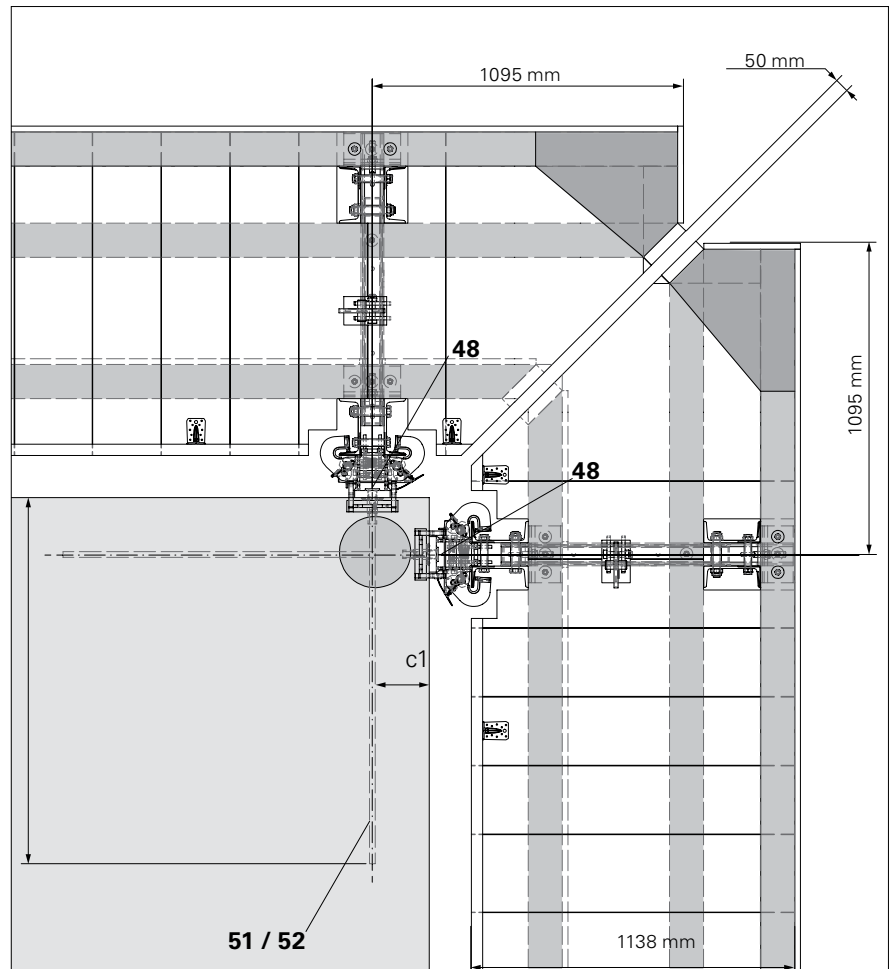


Fig. B3.06

## Components

- |           |                                |
|-----------|--------------------------------|
| <b>48</b> | Stopend Slab Shoe RCS          |
| <b>51</b> | Stopend Slab Anchor M30/25-160 |
| <b>52</b> | Stopend Slab Anchor M24/20-128 |



## Overlapping corner elements

With large building supports in the corner of a building, the corner elements can also be overlapped.

In order to keep the cantilever of the corner element to a minimum, a Wall Shoe RCS (59) can be used for anchoring in the support. See Section B4 "Anchoring on Supports and Walls".

The side wind load on corner platforms is kept to a minimum through an open, multi-part design of the lateral guardrails (85).

PERI recommends scaffold tube bracing.

An enclosure consisting of netting or sheeting which is attached to this, must be removed if wind speeds of over 100 km/h are expected.

For transferring force under the L-Angle (86), screw on planks (37a) transversely to the direction of the decking (37). Fix lateral planking to planking as well as the planking to Girders (40) by means of Torx screws (99).

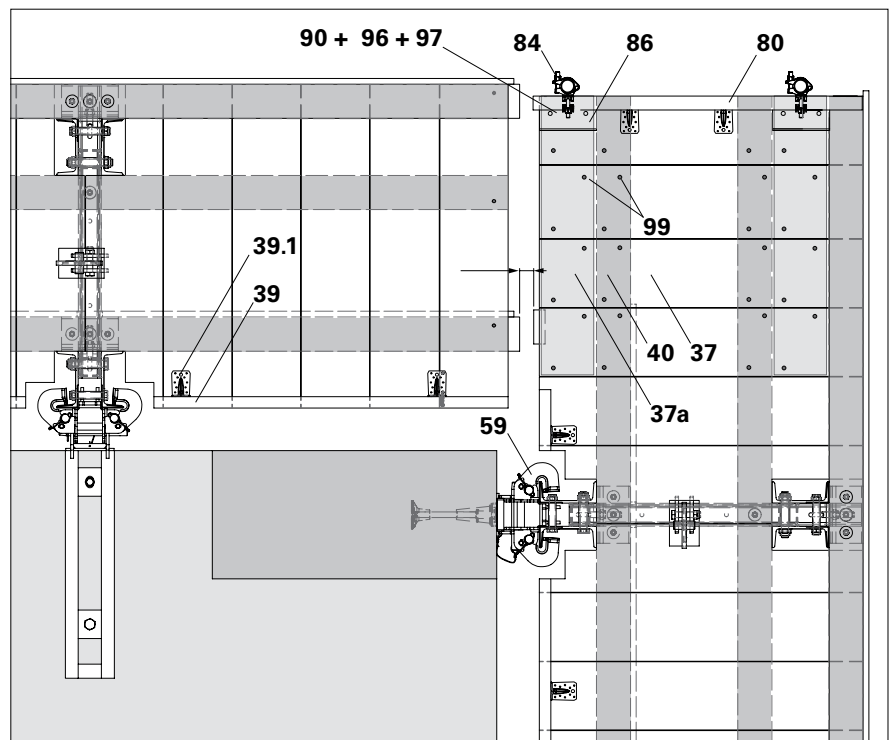


Fig. B3.07

## Components

- |             |                                   |
|-------------|-----------------------------------|
| <b>37</b>   | Working platform decking (planks) |
| <b>39</b>   | Toeboard                          |
| <b>39.1</b> | Angle Bracket 90°                 |
| <b>40</b>   | Girder (timber)                   |
| <b>59</b>   | Wall Shoe RCS                     |
| <b>80</b>   | Steel Scaffold Tube Ø 48.3 x 3.2  |
| <b>84</b>   | Standard Coupling NK 48/48        |
| <b>85</b>   | Guardrails                        |
| <b>86</b>   | L-Angle RCS                       |
| <b>90</b>   | Bolt ISO 4017 M12 x 140-8.8       |
| <b>96</b>   | Nut ISO 4032 M12-8                |
| <b>97</b>   | Washer ISO 7093 200HV, A12        |
| <b>99</b>   | TSS-Torx 6 x 60                   |

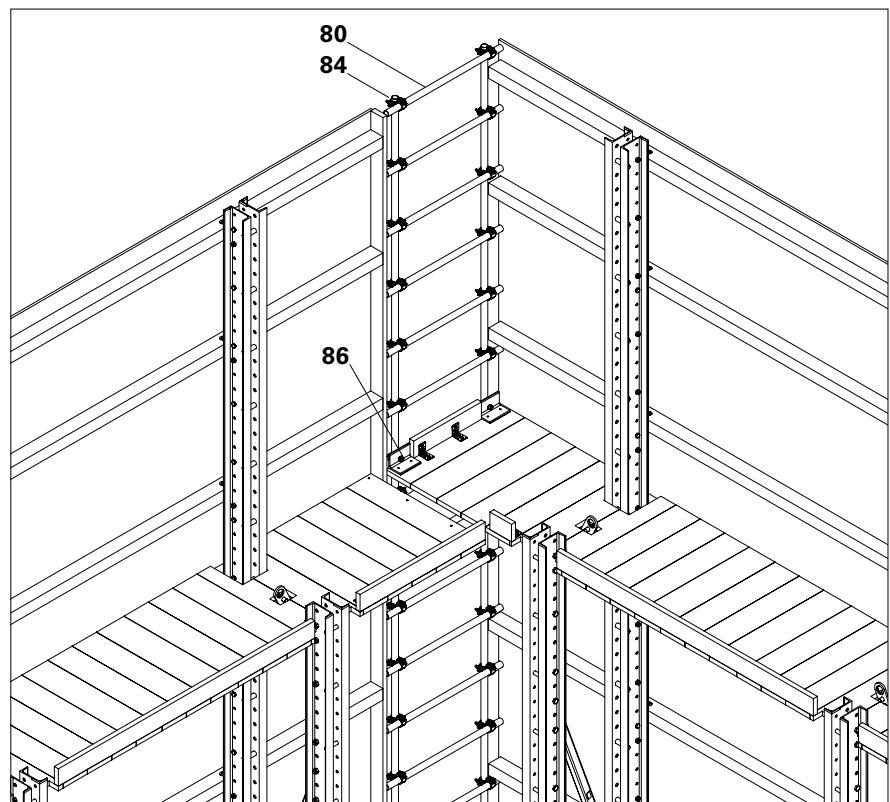


Fig. B3.08

## Bracing of Corner Elements

In the case of expected wind speeds of more than 100 km/h, corner elements are to be additionally secured with temporary diagonal bracing.

Angle of inclination  $\alpha = 45 \pm 5^\circ$

Anchoring with

4 x heavy-duty dowel  $\varnothing 22$  (117),  
dowel spacings 130 x 230 mm,  
e.g. Hilti HDA-T M12

alternatively

2 x heavy-duty dowel  $\varnothing 30$  (118),  
dowel spacings 230 mm,  
e.g. Hilti HDA-T M16.

## Components

- 47.6** Tie Rod DW 15, Special Length
- 79** Fitting Pin  $\varnothing 26$  mm
- 117** Heavy-Duty Dowel  $\varnothing 22$
- 118** Heavy-Duty Dowel  $\varnothing 30$
- 119** Hex. Nut DW 15 SW 30/50
- 121** Spindle Shoe SLS/RCS M24
- 122** Bracing Shoe RCS DW 15
- 123** Eye Nut RCS DW 15
- 125** Articulated Spanner RCS DW 15

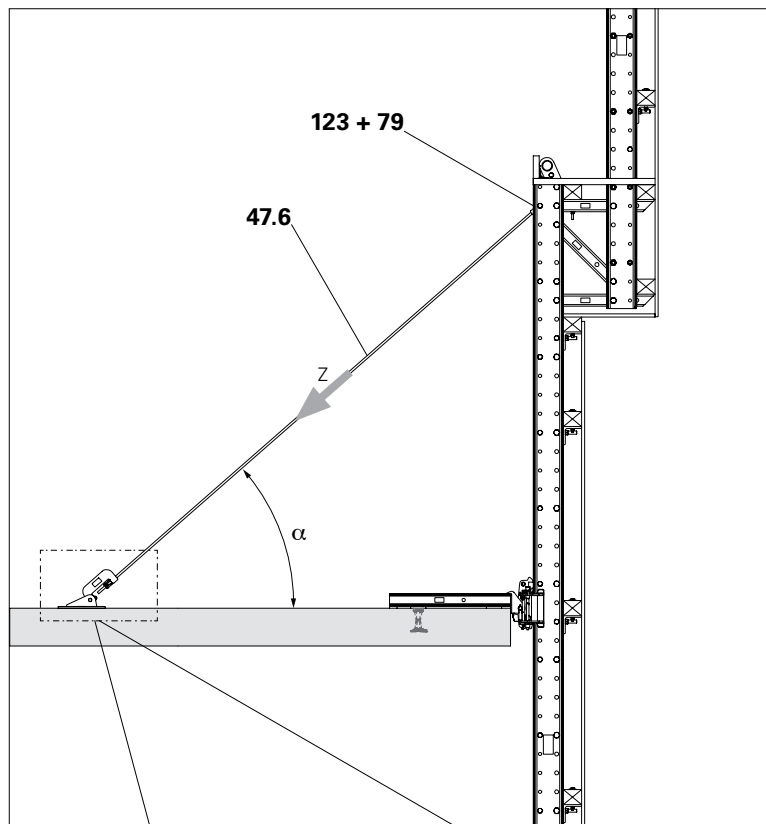


Fig. B3.08



The used heavy-duty dowels have to be statically verified for the oblique tension force Z.

The given minimum slab thicknesses and edge distances are valid for the mentioned dowels only.

Take into consideration the technical documentation of the dowel that has been used!

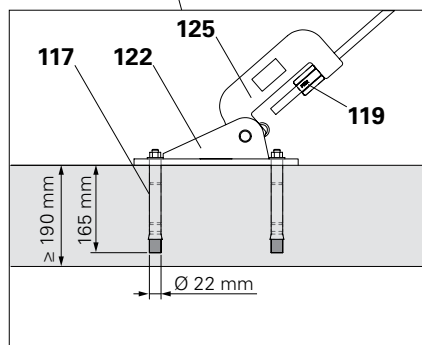


Fig. B3.08a

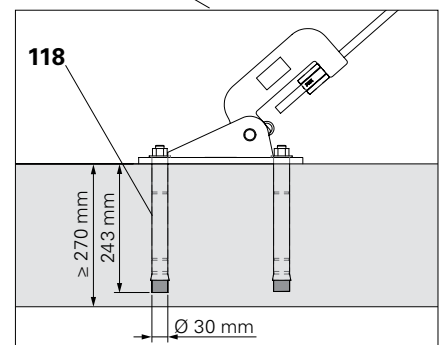


Fig. B3.08c

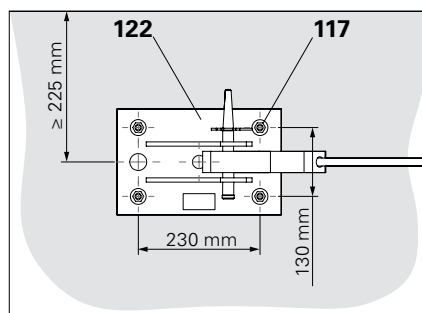


Fig. B3.08b

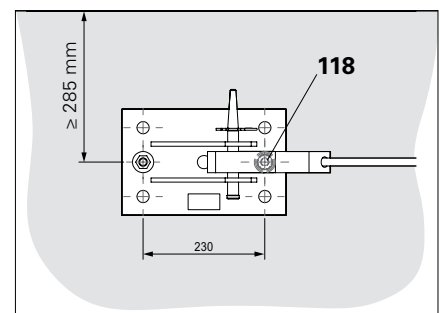


Fig. B3.08d

## Internal Corners

For internal corners, PERI recommends having a mitred arrangement.

Working platform is mitred accordingly. Push Enclosure Beam (14) and Girder (40) up to the mitre.

Assemble platform decking using multi-layer plywood sheeting in the mitred area. Cover the gap between the mitred enclosure elements. (Fig. B3.09)

### Components

- |             |                         |
|-------------|-------------------------|
| <b>14</b>   | Enclosure Beam (timber) |
| <b>39</b>   | Toeboard                |
| <b>39.1</b> | Angle Bracket 90°       |
| <b>40</b>   | Girder (timber)         |

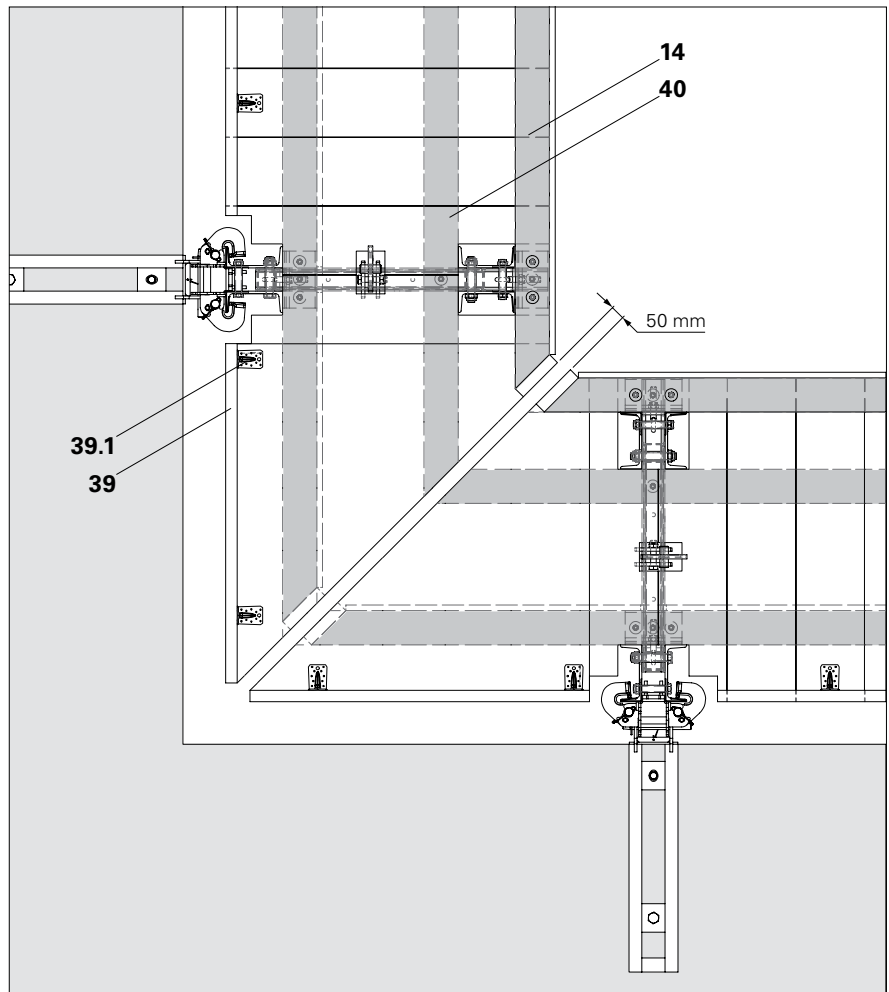


Fig. B3.09

## Non-Rectangular Building Corners

A combination of the Slab Shoe RCS (45) with the Slab Shoe Corner RCS (46) in the corner.

Using the Slab Shoe Corner RCS on non-rectangular corners, results in an application range of min. 65° and max. 115°.

The anchor arrangement is determined by the edge distance in the direction of force of 600 mm and through the intersecting point distance of the slab shoe axes to the slab edge of 300 mm.



Going below a lateral edge distance  $c_1$  for the anchoring is not advisable without additional static proof. If necessary, measure and arrange edging reinforcement in the slab.

Anchoring applicable for  $c_1$ : Screw-On Cone, Climbing Cone 320 mm. (Fig. B3.10)

### Obtuse-angled corners

Working platform is mitred accordingly. Push Enclosure Beam (14) and Girder (40) up to the mitre.

Assemble platform decking using multi-layer plywood sheeting in the mitred area.

Cover the gap between the mitred enclosure elements.

(Fig. B3.10)

### Components

- |           |                         |
|-----------|-------------------------|
| <b>14</b> | Enclosure Beam (timber) |
| <b>40</b> | Girder (timber)         |
| <b>45</b> | Slab Shoe RCS           |
| <b>46</b> | Slab Shoe RCS Corner    |

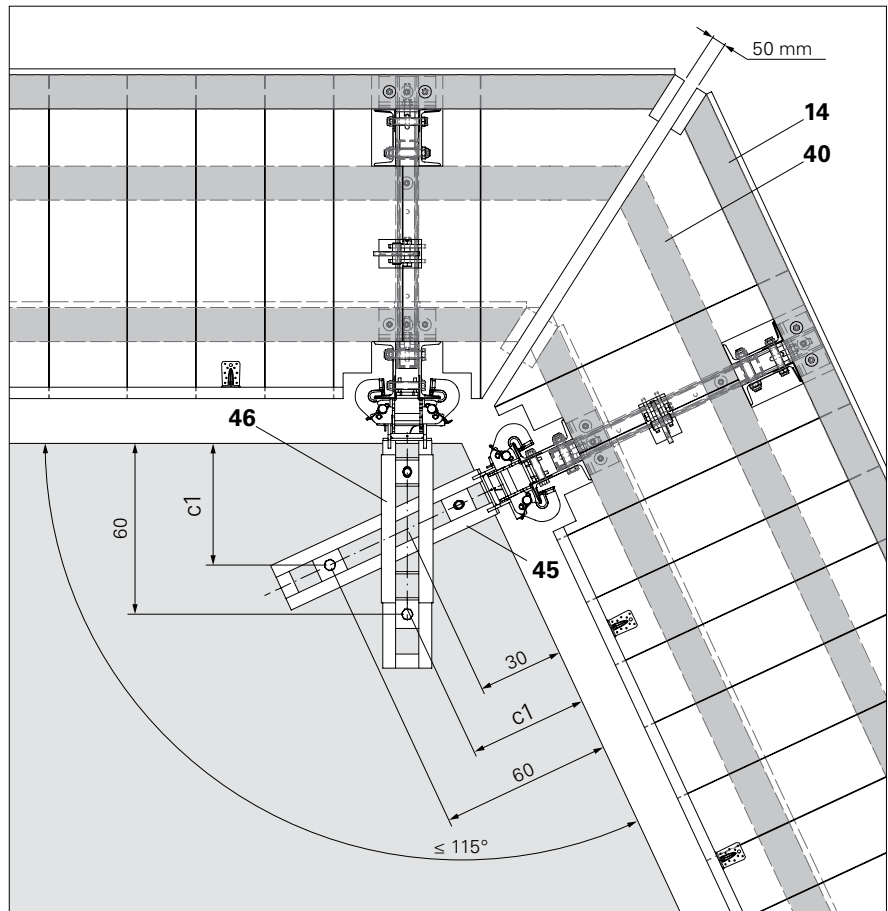


Fig. B3.10

## Acute-angled corners

Provide inclined support for the working platform in the mitred area. Guide the Enclosure Beam (14) around the corner up to the platform joint.

Reinforce the top and undersides of the Enclosure Beam with multi-layer plywood sheeting (14.1).

Assemble platform decking using multi-layer plywood sheeting in the mitred area.

Cover the gap between the mitred enclosure elements.

(Fig. B3.11)



Depending on the assumed wind load, additional transverse bracing may be required.

## Components

- 14** Enclosure Beam (timber)
- 14.1** Multi-layer plywood sheeting
- 40** Girder (timber)
- 45** Slab Shoe RCS
- 46** Slab Shoe RCS Corner

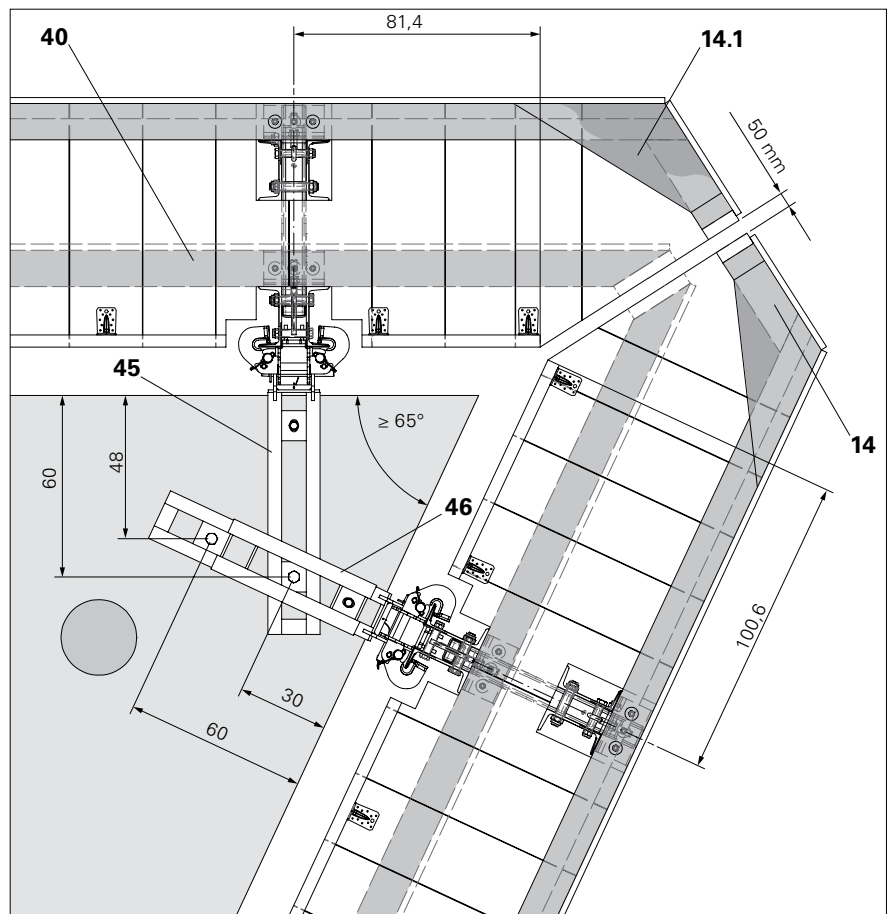


Fig. B3.11

## Units on Circular Structures

On circular structures, the working platforms are generally jointed with a mitre cut.

Slab Shoes (45), Climbing Rails (2) and Crossbars (10) are arranged parallel to each other for each climbing unit.

Plan the anchoring of the Slab Shoes to be at least 20 cm apart. Otherwise static proof is to be provided.

The smallest possible building radius is to be shown on the drawing. During the planning process, take into consideration a gap  $s \geq 30$  mm between the working platform decking (36) and edge of the building.

The foldable covering must be wide enough so that it covers all areas of the building edge.

The position of the anchoring is to be determined on the drawing and must be clearly dimensioned. Ensure covering for the gaps cannot move out of position.



The lateral adjustability of the Slab Shoe (45) must be guaranteed. Therefore, during the planning phase, ensure that the gap  $x$  between the building edge and the stop plate of the Slab Shoe is a min. 5 mm along the whole width of the shoe.

This is ensured if using the Slab Anchor Template 61 RCS. (Fig. B4.01a + B4.01b)

### Components

- |           |                          |
|-----------|--------------------------|
| <b>10</b> | Crossbar RCS 103         |
| <b>14</b> | Enclosure Beam (timber)  |
| <b>36</b> | Working platform decking |
| <b>45</b> | Slab Shoe RCS            |

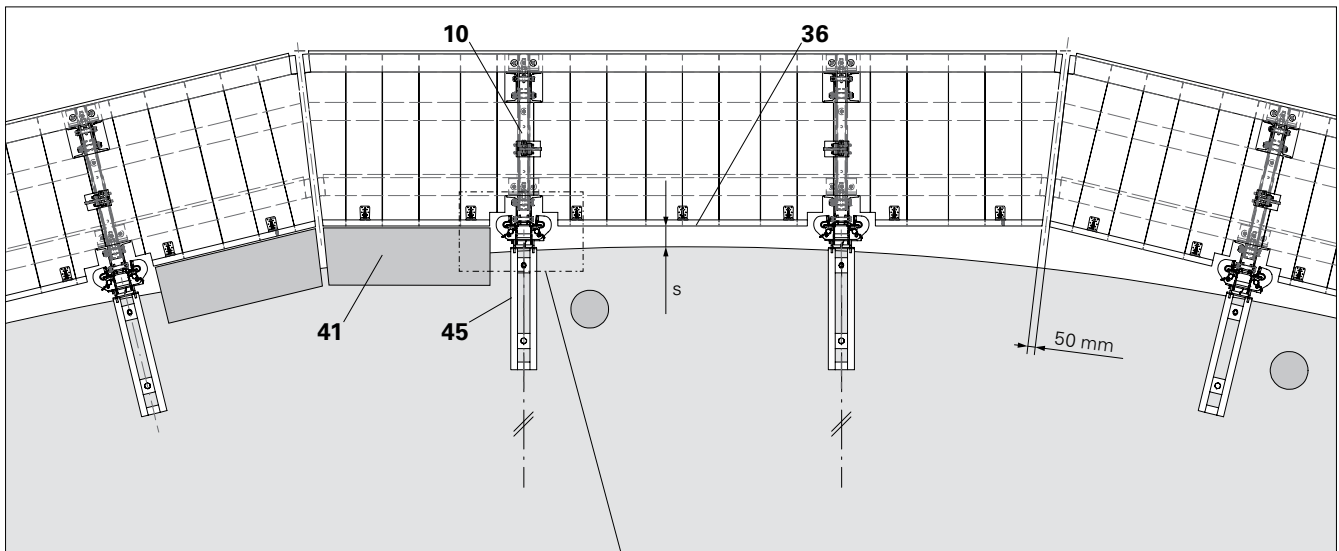


Fig. B4.01

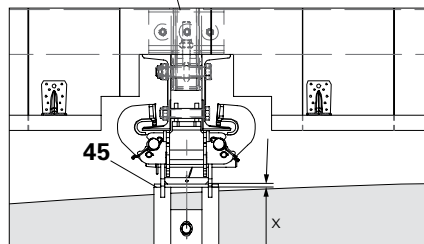


Fig. B4.01a

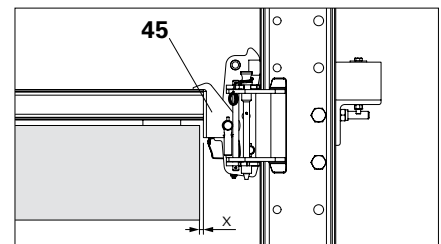


Fig. B4.01b

## Anchoring on Columns or Walls

### Suspension with Wall Shoe RCS

The Climbing Shoe (44) is bolted by means of a locking pin (59.1) to the Wall Shoe RCS (59).

Slab Shoes and Wall Shoes must be in the same vertical system grid. For this, the suspension of the Wall Shoe (59) is height-adjusted by  $\Delta h$  in 125-mm increments to the top edge of the slab. (Fig. B4.02 + B4.02b)

If the climbing enclosure is to be moved with the self-climbing device, an offset  $\Delta h$  of 500 mm is required.

Anchoring for the Wall Shoe:

Threaded Anchor Plate DW 20 (47.2)

Tie Rod DW 20 L = t - 77 mm (47.10)

Climbing Cone M30/DW 20 (47.9)

Fix the Wall Shoe RCS (59) to the anchorage (47) using a hex. bolt ISO 4014 M30x70-8.8.

Adapt foldable covers to suit the building columns.

Close remaining gaps with cover mat and cover strip.



- Determine the required anchoring depth and concrete strength according to separate static calculations in accordance with Building Authority Approval Z-21.6-1767.
- Separate static proof and determination of the bearing loads in each case is required!
- The negative offset of the Wall Shoe is to be added to the storey height itself and taken into account in the design.

### Components

<b>44</b>	Climbing Shoe RCS
<b>47.2</b>	Threaded Anchor Plate DW 20
<b>47.9</b>	Climbing Cone M30/DW 20
<b>47.10</b>	Tie Rod DW 20, Special Length
<b>49</b>	Bolt ISO 4017 M30 x 70-8.8
<b>59</b>	Wall Shoe RCS

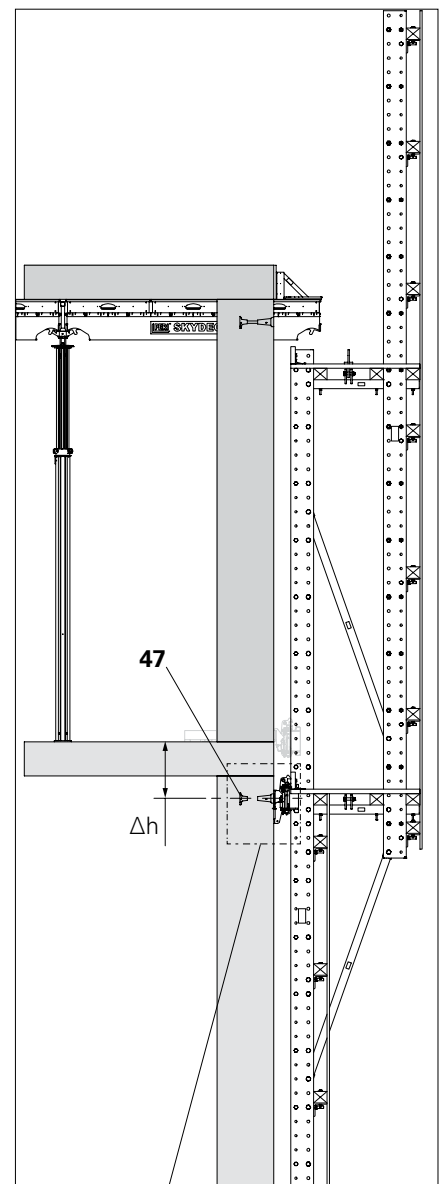


Fig. B4.02

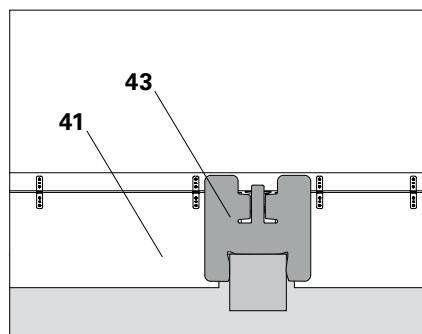


Fig. B4.02a

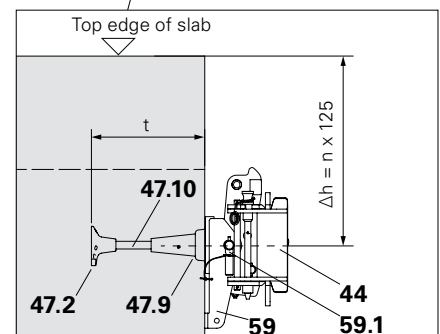


Fig. B4.02b

## Anchoring on the Front Side of the Slab

### Suspension with the Slab Stopend Shoe RCS

The Slab Stopend Shoe RCS transfers vertical forces by contact into the slab edge. As a result, the anchoring is loaded with tension forces only.

Due to the slotted hole in the Slab Stopend Shoe RCS, two Stopend Slab Anchors can be installed crosswise and vertically offset at the corners of the building.

The Slab Stopend Shoe RCS (48) is fixed according to the anchoring type with corresponding bolts M30x70 (49) or bolt M24x70 (53) and reducing bushing Ø30-25 (50) to the Slab Stopend Anchor M30/25-160 (51) or M24/20-128 (52). (Fig. B4.03)

The mounting height is offset by 125 mm to the top edge of the slab (mounting height of the standard Slab Shoe).

If the climbing unit is to be moved with the climbing device, the mounting height must not change for each element. In order to ensure even mounting of all elements, additional Spacers have to be positioned in the Climbing Rail.

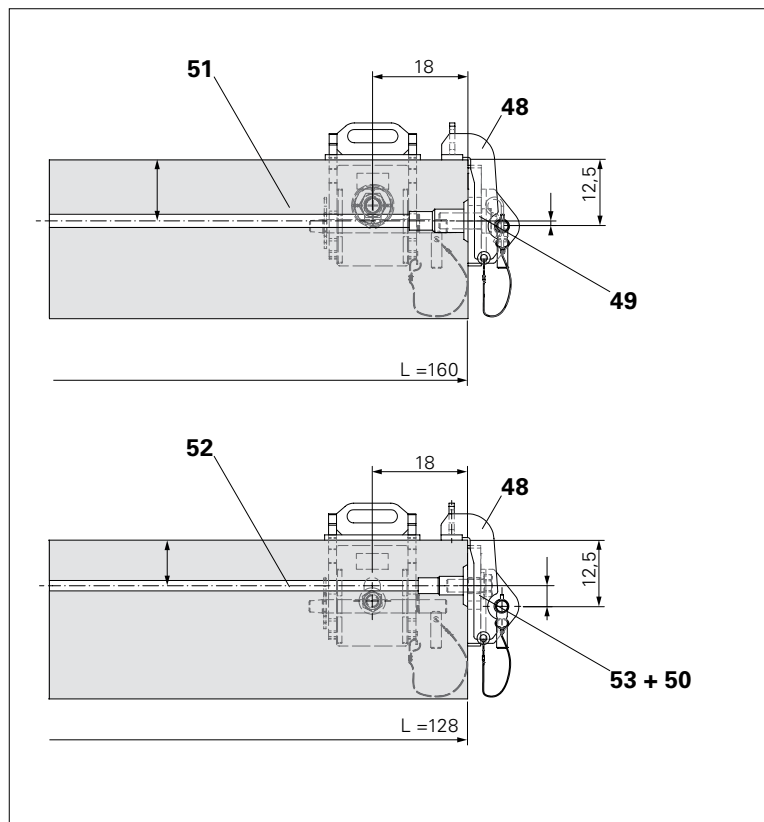


Fig. B4.03

### Components

<b>48</b>	Stopend Slab Shoe RCS
<b>49</b>	Bolt ISO 4017 M30 x 70-8.8
<b>50</b>	Reducing Bushing Ø 30 - 25
<b>51</b>	Stopend Slab Anchor M30/25-160
<b>52</b>	Stopend Slab Anchor M24/20-128
<b>53</b>	Bolt ISO 4014 M24 x 70-10.9
<b>89</b>	Slab Prop





- Determine the required anchoring depth, additional reinforcement, support and concrete strength according to separate static calculations.



### Warning

Falling connecting means (49, 50, 53) could hit site personnel below and seriously injure them.

- ⇒ Attach a trailing catching box (87) to the climbing unit. (Fig. B4.04)
- ⇒ Cordon off the areas of risk.
- ⇒ Areas of risk to be protected by safety roofs.

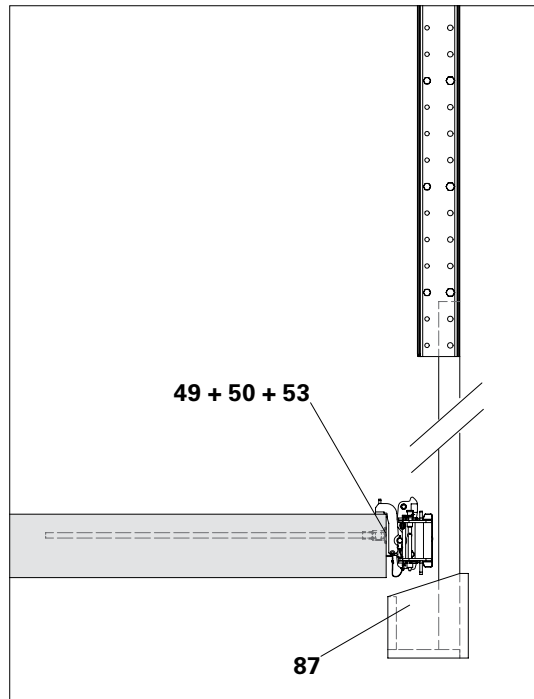


Fig. B4.04

If the stirrup reinforcement (B) at the slab edge is located behind the vertical load transfer point (max. 30 mm), then the slab edge has to be supported separately.

PERI recommends a steel plate to be securely fixed to the head of a prop (89) and positioning it at the slab edge. Hole diameter in the plate 13 mm, hole arrangement depends on the type of slab prop used. Countersink plate approx. 7 mm deep at 90°. Use the holes with 14 mm Ø in the prop head. Provide at least 2 bolt connections.

Bolted connection: countersunk bolt M12x35 8.8 with nut.

(Fig. B4.05)

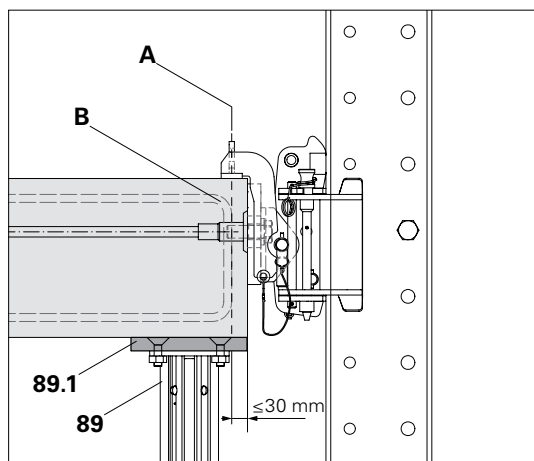


Fig. B4.05



The safe transfer of the loads into the reinforced concrete slab and further transfer have to be verified separately by a structural analysis.

## General

For pre-assembly, there must be a sufficiently large and level assembly area available, as well as sufficient space for intermediate storage.

A crane or other lifting equipment is required.

Any intermediate status is to be correctly secured by means of temporary supports to prevent any tipping over.

Assembly is carried out on aligned timbers.

## Preparation of the Climbing Rails

Position Climbing Rails RCS on timbers. Observe centre of gravity position with the Enclosure Post.



### Note

Risk of collision!

Only use the specified bolt lengths and nuts.

## Mounting the Spacer M20

In some cases, the additional installation of a Spacer M20-82 (3) may be required as a Climbing Bolt in the Climbing Rail, see "Additional Spacers" on Page 32.

## Components

---

- 3** Spacer M20-82
  - 3.1** Spacer Tube  $\text{Ø}26.9 \times 2.6$  82
  - 3.2** Bolt ISO 4014 M20 x 120-8.8
  - 3.3** Nut ISO 7042 M20-8
-

## Assembly

1. Position spacer tube  $\text{Ø}26$  (3.1) of the Spacer M20 (3) in the Climbing Rail RCS with the help of a hammer.
2. Insert bolt M20 $\times$ 120 (3.2) through the holes  $\text{Ø}21$  of the Climbing Rail and through the spacer tube.
3. Attach self-locking nut M20-8 (3.3) to the bolt and tighten. Tightening torque min. 100 Nm.

(Fig. C1.01)

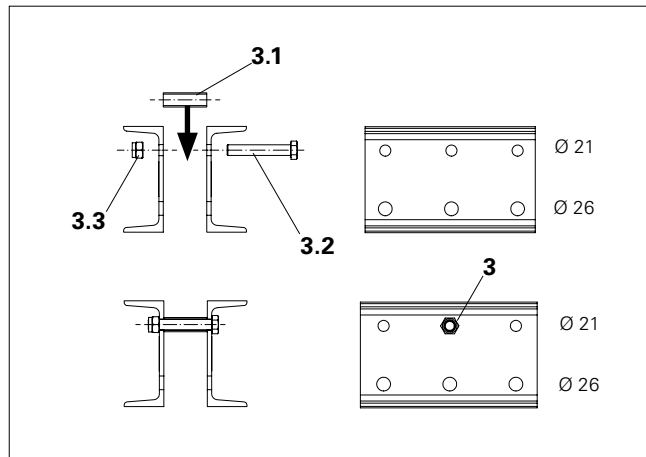


Fig. C1.01



- Spacers M20 (Climbing Bolts) must not be moved in the Climbing Rail, but additionally installed. The stroke of the climbing device allows a maximum distance of 50 cm from the Spacers.
- It could be necessary to release the adjacent Spacers in the Climbing Rail. After mounting the additional Spacer, re-tighten all previously loosened bolts. Tightening torque min. 60 Nm.



Have the nuts (3.3) been tightened?

## Re-positioning Spacer M24

In some cases, the re-positioning of Spacers M24 in the Climbing Rail or Enclosure Post is required.

### Components

- 4** Spacer M24-82
- 4.1** Spacer Tube  $\text{Ø}33.7 \times 4 \dots 82$
- 4.2** Bolt ISO 4014 M24 x 130-8.8
- 4.3** Nut ISO 7042 M24-8

### Assembly

1. Remove nut M24-8 (4.3) (SW36).
2. Remove bolt M24x130 (4.2).
3. Re-position spacer tube  $\text{Ø}33.7$  (4.1) of the Spacer M24 with the help of a hammer.
4. Insert bolt M24x130 (4.2) through the holes  $\text{Ø}26$  of the Climbing Rail and through the spacer tube.
5. Attach self-locking nut M24-8 (SW36) on the bolt and tighten. Tightening torque min. 150 Nm. (Fig. C1.02)

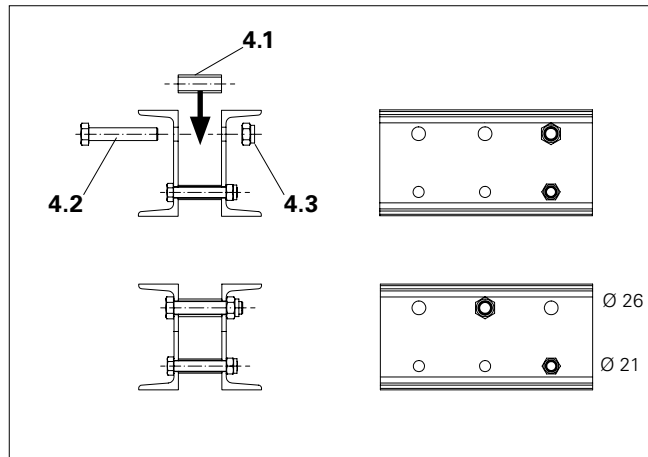


Fig. C1.02



It may be necessary to release adjacent Spacers in the Climbing Rail. After mounting the additional Spacer, re-tighten all previously loosened bolts. Tightening torque min. 150 Nm.

## Assembly of the Attachment Points

### Version 1 with Crossbar RCS 69:

The Crane Eye BR-2 2.5 t (7) is fixed to the Climbing Rail RCS (2) with the Spacer M24 (4).

#### Components

- |            |  |
|------------|--|
| <b>4</b>   | Spacer M24-82                                |
| <b>4.1</b> | Spacer Tube $\text{Ø}33.7 \times 4 \dots 82$ |
| <b>4.2</b> | Bolt ISO 4014 M24x130-8.8                    |
| <b>4.3</b> | Nut ISO 7042 M24-8                           |
| <b>8</b>   | Crane Eye BR-2 2.5 t                         |

#### Assembly

1. Position spacer tube  $\text{Ø}33.7$  (4.1) of the Spacer M24 together with Crane Eye BR 2.5t (8) on the topmost hole  $\text{Ø}26$  of the Climbing Rail (2) with the help of a hammer.
2. Insert bolt M24x130 (4.2) through the holes  $\text{Ø}26$  of the Climbing Rail and through the spacer tube.
3. Attach self-locking nut M24-8 (SW36) to the bolt and tighten.

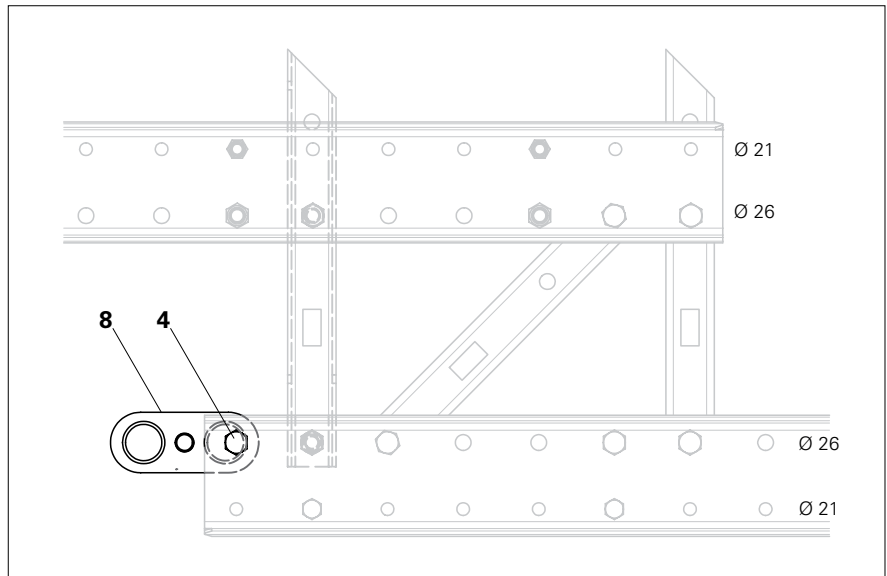


Fig. C1.03



Has the Nut been tightened?



Permissible load per Crane Eye BR-2 2.5 t: max. 25 kN.

For moving heavy climbing units, use Lifting Beam 9 t. Use a Spacer as an attachment point.

Follow Instructions for Use at all times!

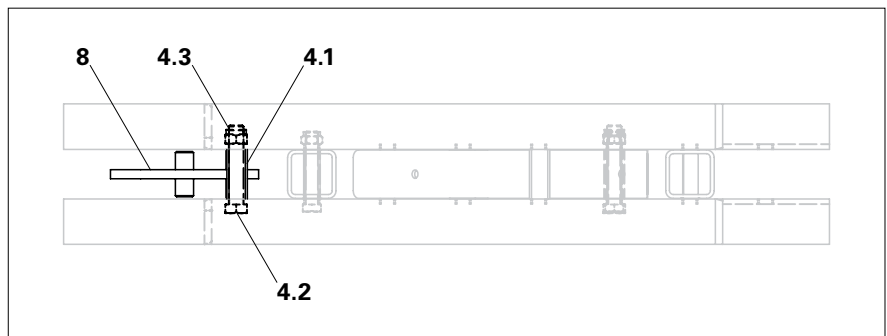


Fig. C1.03a

## Version 2 and 3 with Crossbar RCS 103:

Attach the Crane Eye BR-2 2.5 t to the Crossbar 103 RCS.

### Components

- 8** Crane Eye BR-2 2.5 t
- 10** Crossbar RCS 103
- 10.1** Hex. Bolt ISO 4014 M 20x90-8.8
- 10.2** Nut ISO 4032 M20-8
- 10.3** Lug

### Assembly

1. Attach Crane Eye BR-2 2.5t (8) with the provided bolts M20x90-8.8 (94) and nuts M20-8 (95) to the lug (10.3) of the Crossbar RCS 103 (10).



Has the nut been tightened?



Permissible load per Crane Eye BR-2 2.5 t: max. 25 kN.  
For moving heavy climbing units, use Lifting Beam 9 t.  
Follow Instructions for Use at all times!

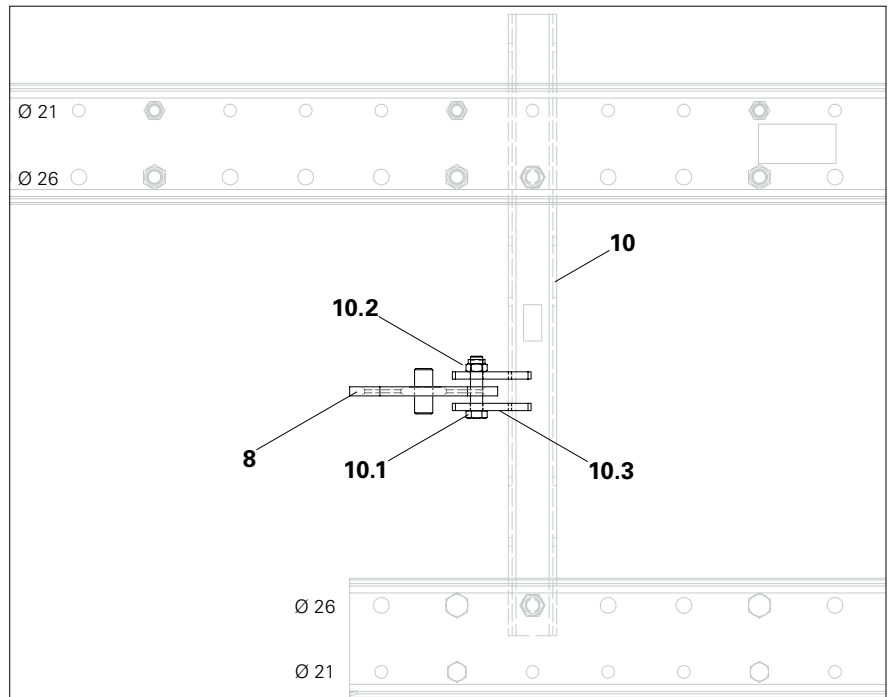


Fig. C1.04

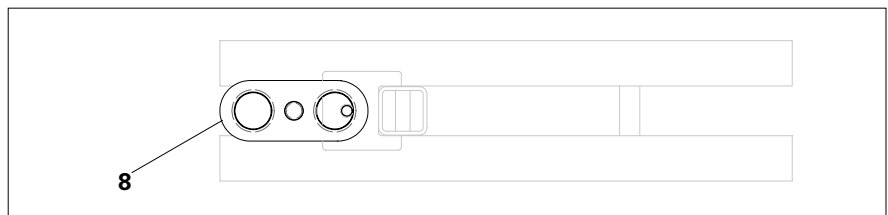


Fig. C1.04a

## Assembly of Climbing Rail Connector RCS 73

### Enclosure Post Version 3:

The Climbing Rail RCS 748 (1.2) is extended with a Climbing Rail RCS 148 (1.4) or 248 (1.3). For connecting the Climbing Rails, mount a Climbing Rail Connector RCS 73 (17).

### Components

- 1.2** Climbing Rail RCS 748
- 1.3** Climbing Rail RCS 248
- 1.4** Climbing Rail RCS 148
- 17** Climbing Rail Connector RCS 73
- 24** Fitting Pin  $\varnothing 21 \times 120$
- 26** Cotter Pin 4/1

### Assembly

1. Remove or re-position Spacers in the Climbing Rail that are in the way. See "Preparing the Climbing Rails" on page 66.
2. Insert Climbing Rail Connector (17) into the Climbing Rail RCS 748 (1.2) and connect with 2x fitting pins  $\varnothing 21$  (24) in holes  $\varnothing 21$ .
3. Insert short Climbing Rail RCS (1.3 / 1.4) into the Climbing Rail Connector and connect with 2x fitting pins  $\varnothing 21$  in holes  $\varnothing 21$ .
4. Secure all fitting pins with cotter pins (26).

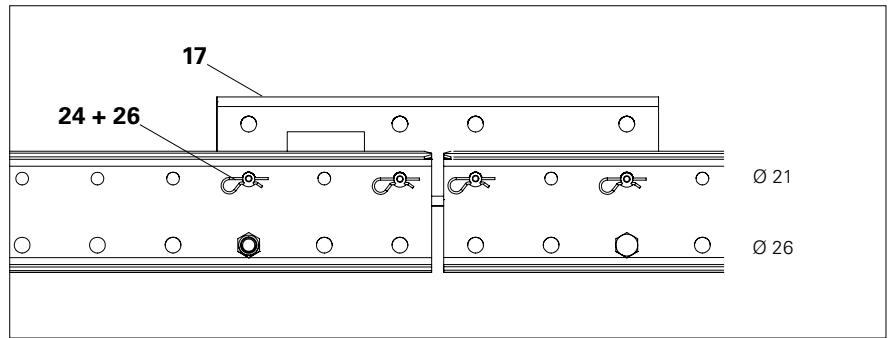


Fig. C1.05

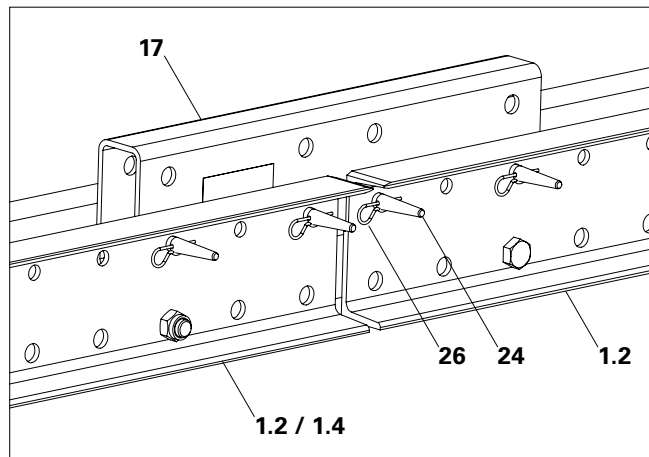


Fig. C1.05a

## Assembly of the Bracket Framework



- Assembly is explained using Version 2. The assembly of the other versions is analogous.
- The respective dimensions for the assembly are specified in the site-specific assembly drawings.

## Mounting the Climbing Rails

### Components

<b>2</b>	Climbing Rail RCS
<b>13</b>	Timber Fixation RCS 12/20
<b>14</b>	Enclosure Beam (timber)

### Assembly

1. Prepare two Climbing Rails (2), with Spacers  $\varnothing$  26 mm above on timbers and align them according to the planned dimensions between axes.
  2. Mount several Enclosure Beams (14) with Timber Fixations (13) according to plan. See Section "C3 Assembly of the Enclosure" on page 84.
    - The axial dimension of the Climbing Rails is fixed.
    - The Enclosure Beam also acts simultaneously as anti-tilt protection for bracket units.
- (Fig. C1.06 + C1.06a)

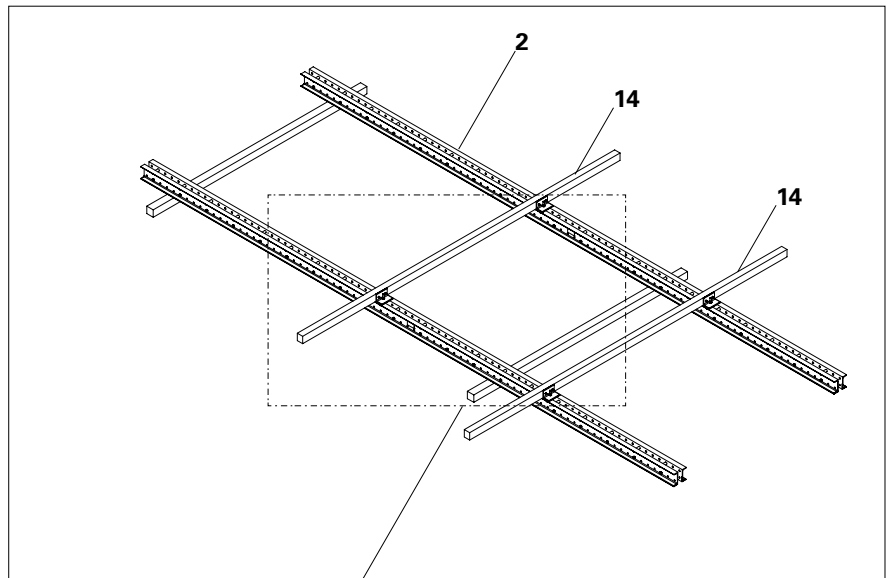


Fig. C1.06

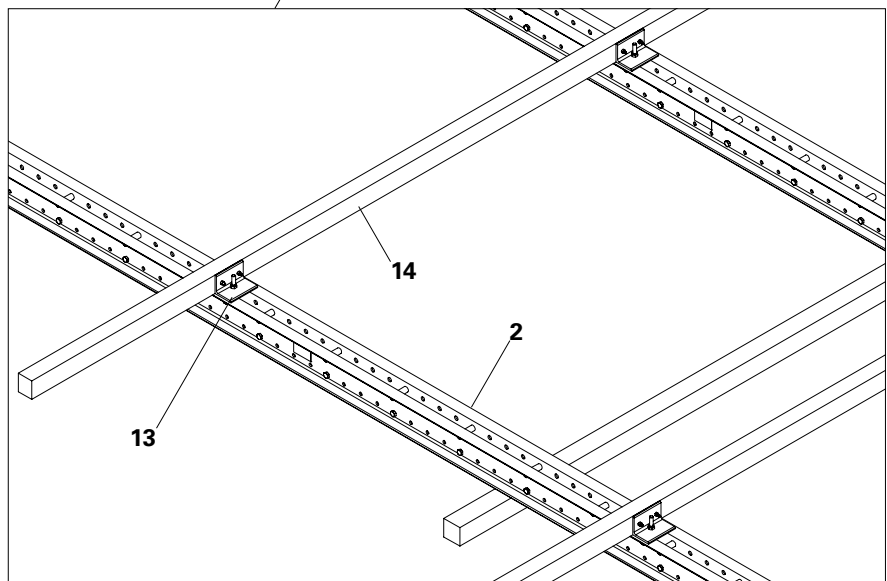


Fig. C1.06a



## Mounting the Framework

### Components

<b>2</b>	Climbing Rail RCS
<b>10</b>	Crossbar RCS 103
<b>12</b>	Diagonal Strut RCS 212
<b>40</b>	Girder (timber)
<b>91</b>	Bolt ISO 4017 M12 x 240-8.8
<b>94</b>	Bolt ISO 4014 M24 x 130-8.8
<b>95</b>	Hex. Nut ISO 7042 M24-8
<b>96</b>	Nut ISO 4032 M12-8
<b>97</b>	Washer ISO 7093 200HV, A12

### Assembly

1. Bolt on Crossbar (10) and Diagonal Strut (12) with the provided bolts M24 x 130 (94) and nuts M24 (95). Fold down the Diagonal Strut.
2. Position Crossbar (10) vertically and secure the Girder (40) to the Crossbar. Preparing the Girder, see Section "C2 Assembly of the Working Platforms" on page 80.
3. Temporarily clamp Crossbars on which no working platform is mounted by means of a screw clamp and timber.  
(Fig. C1.07 + C1.07a)



Depending on the work organisation, pre-assembled working platforms can be mounted up to the outer Decking Transom.

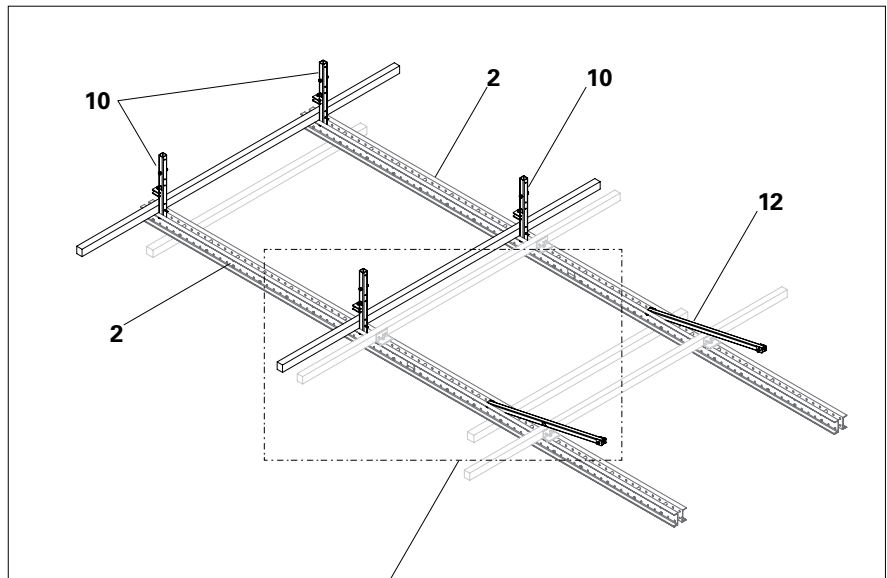


Fig. C1.07

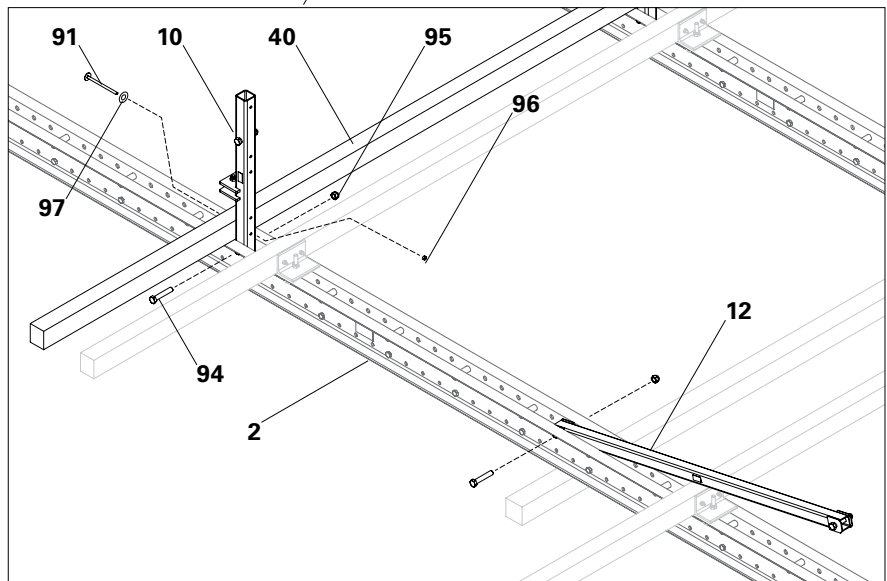


Fig. C1.07a

## Mounting the Enclosure Post

### Components

<b>1.2</b>	Climbing Rail RCS 748
<b>2</b>	Climbing Rail RCS
<b>10</b>	Crossbar RCS 103
<b>94</b>	Bolt ISO 4014 M24 x 130-8.8
<b>95</b>	Hex. Nut ISO 7042 M24-8
<b>12</b>	Diagonal Strut RCS 212
<b>40</b>	Girder (timber)

### Assembly

1. Position Climbing Rail RCS (1.2) as Enclosure Post, with Spacer  $\varnothing$  26 mm below, on the Crossbar (10) from above.
2. Secure Enclosure Post on Crossbar using bolts M24 x 130 (94) and nuts M24 (95). (Fig. C1.08)
3. Align Enclosure Post with the crane until the Crossbar is in a vertical position.
4. Fold down bottom Diagonal Strut (12) and secure with bolt (94) and nut (95) to the Enclosure Post (1.2). (Fig. C1.08 + C1.08a)

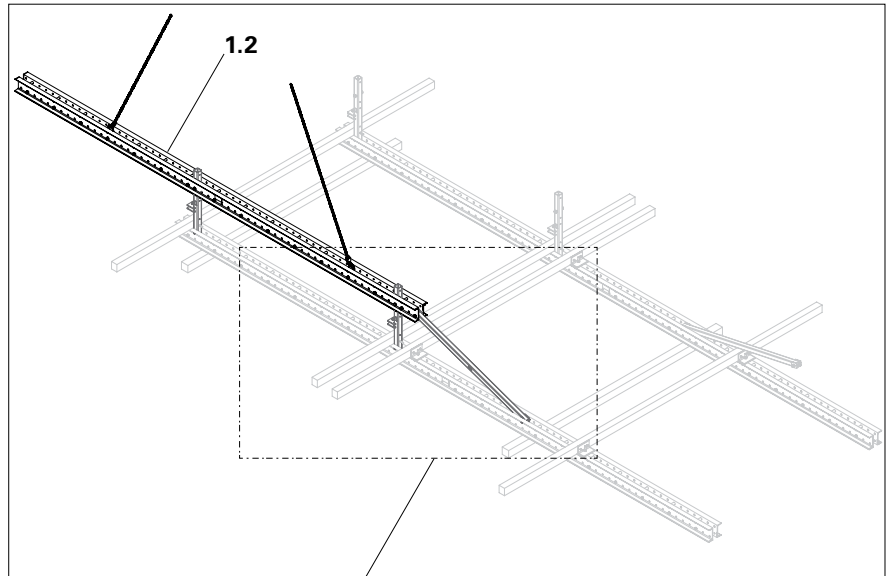


Fig. C1.08

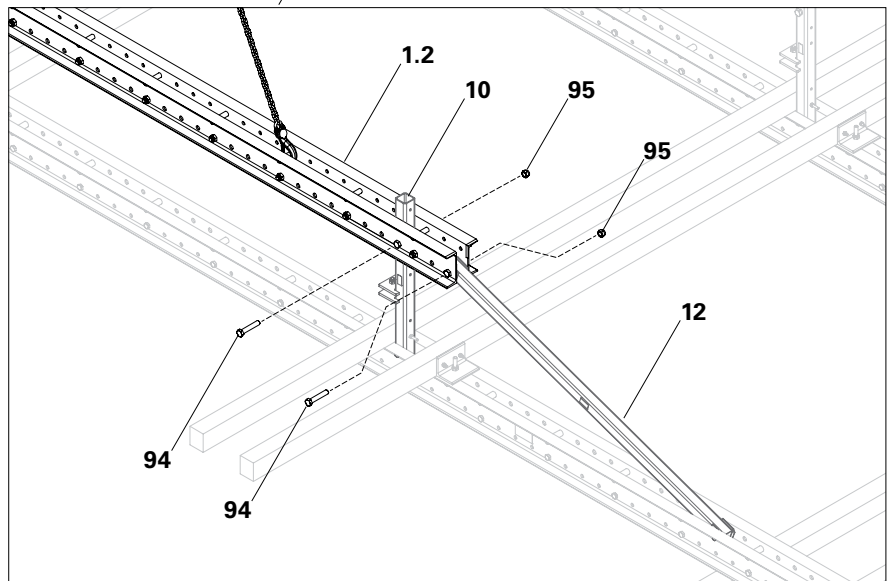


Fig. C1.08a

# C1 Pre-Assembly of Brackets

5. Install middle Diagonal Strut (12) using bolts M24 x 130 (94) and nuts M24 (95). (Fig. C1.09a)
  6. Release Enclosure Post from the crane lifting gear.
  7. Mount additional Enclosure Posts.
  8. Check for right-angled and parallel alignment in all directions before proceeding with assembly operations. For fixing, mount diagonal bracing if necessary.
- The Bracket Framework Version 2 has now been mounted. (Fig. C1.09)

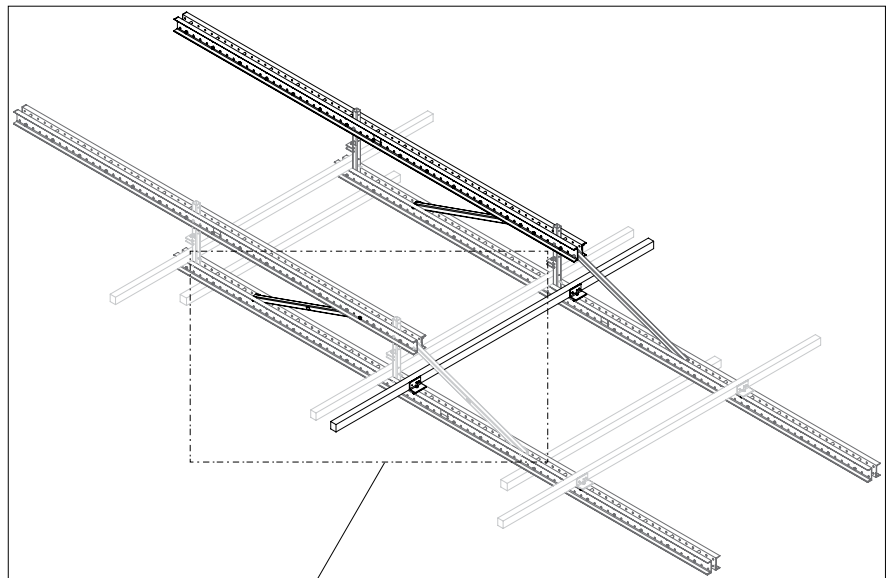


Fig. C1.09

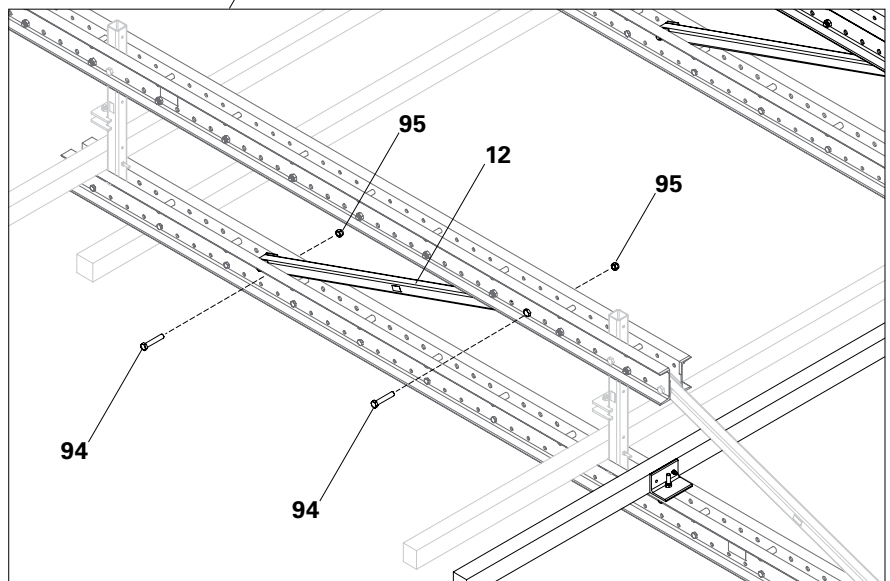


Fig. C1.09a

## Overview of the Bracket Framework

(Enclosure Post and Girder not shown in order to provide a better overview)

### Version 1

#### Components

- 1.1** Climbing Rail RCS 348 or 498
- 2** Climbing Rail RCS
- 11** Crossbar RCS 69
- 94** Bolt ISO 4014 M24 x 130-8.8
- 95** Hex. Nut ISO 7042 M24-8

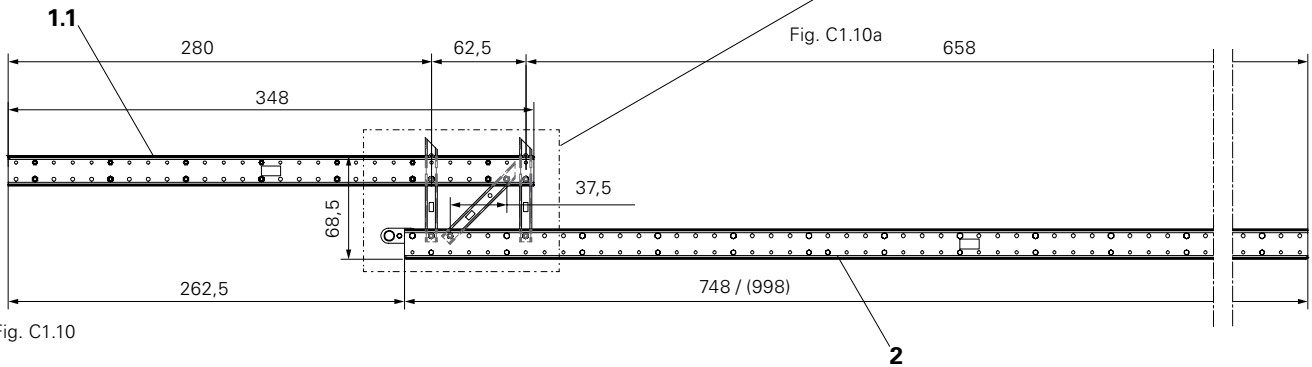
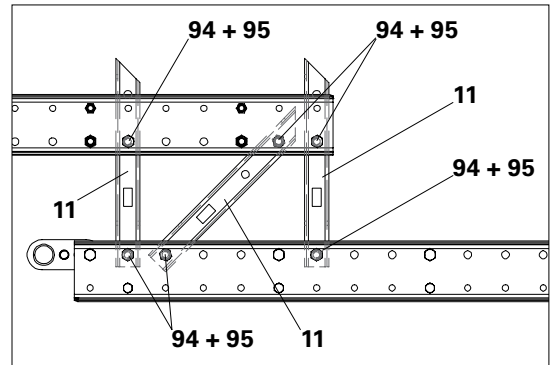


Fig. C1.10

### Version 2

#### Components

- 1.2** Climbing Rail RCS 748
- 2** Climbing Rail RCS
- 10** Crossbar RCS 103
- 12** Diagonal Strut RCS 212
- 94** Bolt ISO 4014 M24 x 130-8.8
- 95** Hex. Nut ISO 7042 M24-8

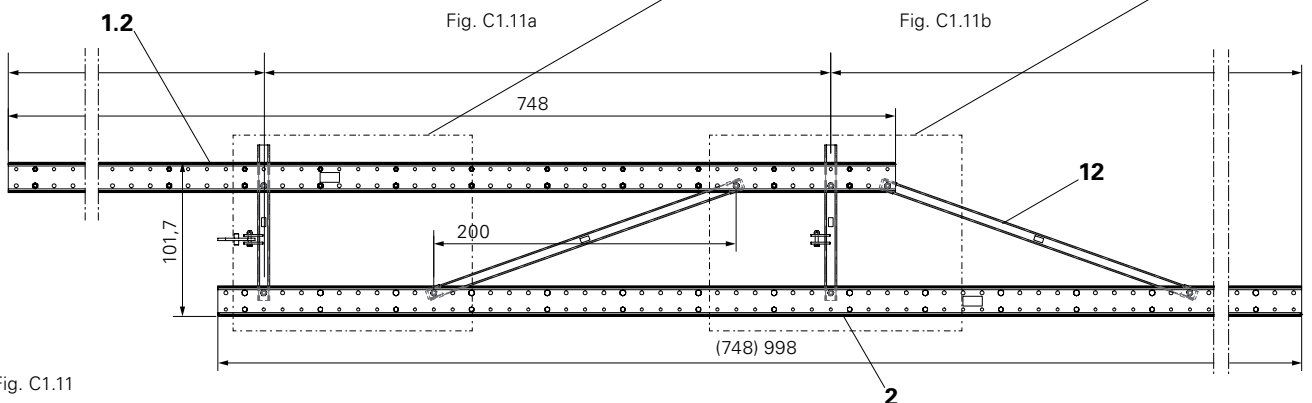
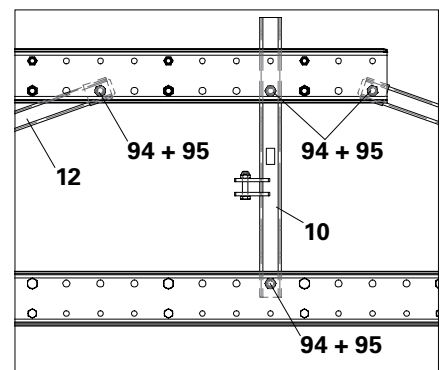
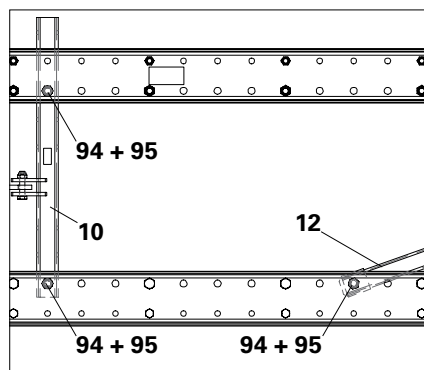


Fig. C1.11

# C1 Pre-Assembly of Brackets

## Version 3

### Components

- 1.2** Climbing Rail RCS 748
- 1.3** Climbing Rail RCS 248
- 1.4** Climbing Rail RCS 148
- 2** Climbing Rail RCS
- 10** Crossbar RCS 103
- 12** Diagonal Strut RCS 212
- 31** Climbing Rail Connector RCS 73
- 94** Bolt ISO 4014 M24 x 130-8.8
- 95** Hex. Nut ISO 7042 M24-8

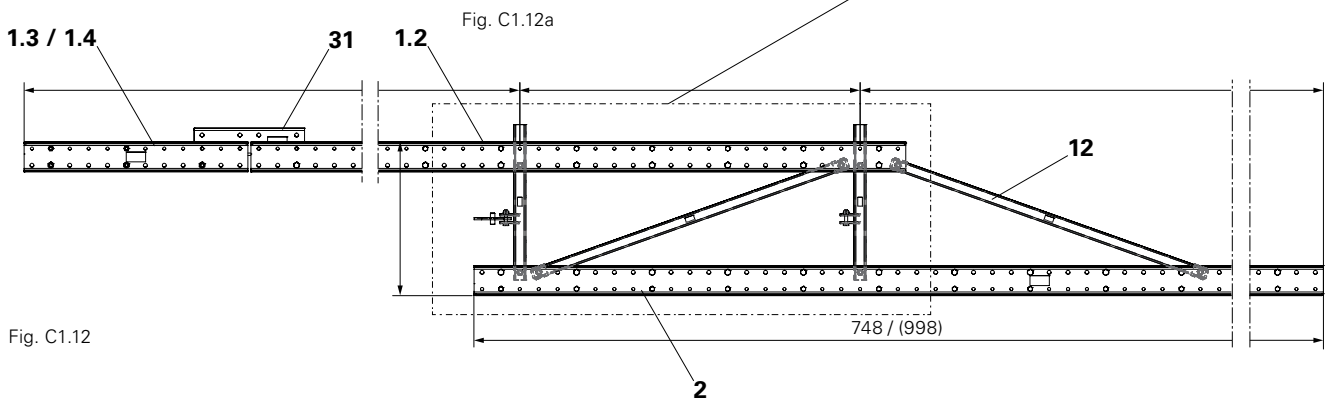
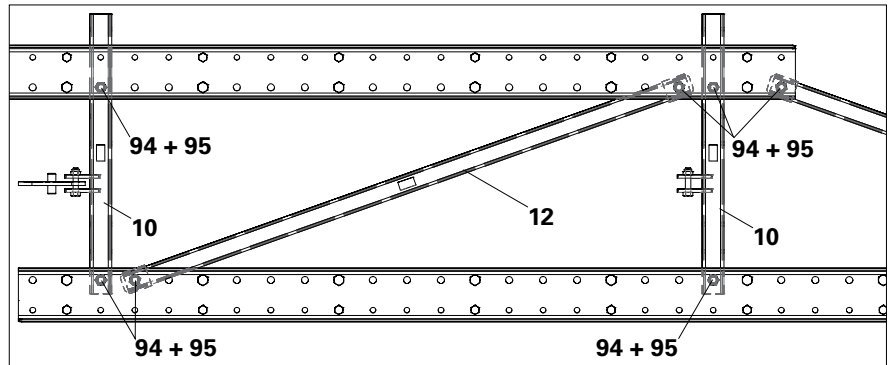


Fig. C1.12

## Version 4

### Components

- 2.4** Climbing Rail RCS 348
- 2** Climbing Rail RCS
- 31** Climbing Rail Connector RCS 73

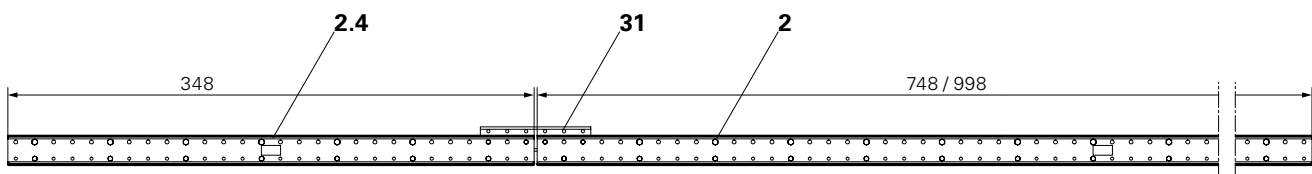


Fig. C1.13

## General

Cut the timber and platform decking according to site-specific planning documents.

Working platforms for Version 2 and 3 can be pre-assembled up to the outer Girder.

## Mounting the Girders

Secure Girder (timber) to the truss girder.

## Components

<b>10</b>	Crossbar RCS 103
<b>40</b>	Girder (timber)
<b>91</b>	Bolt ISO 4017 M12 x 240-8.8
<b>96</b>	Nut ISO 4032 M12-8
<b>97</b>	Washer ISO 7093 200HV, A12

## Assembly

1. Countersink Girder (40) min. 15 mm, e.g. with a forstner drill  $\varnothing$  45 mm, so that the planking does not project on the screw head.

For timbers more than 160 mm thick, increase the countersink depth.

Countersink depth  $x =$   
timber thickness  $d - 145$  mm

2. Drill timber with  $\varnothing$  14 mm.
3. Insert bolt M12 x 240 (91) with washer (97) through the hole in the timber and Crossbar, and tighten with nut (96). For the bolt M12 x 240, the maximum clamping length is  $a = 220$  mm.

(Fig. C1.07)

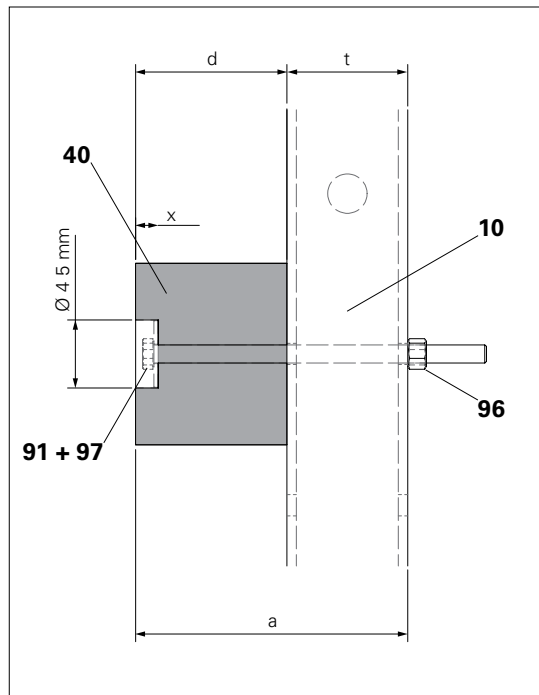


Fig. C2.01

## Mounting the platform decking and Toeboards

The decking must be tightly installed and flush with the enclosure. Install Toeboards on all leading edges.

### Components

<b>10</b>	Crossbar RCS 103
<b>11</b>	Crossbar RCS 69
<b>37</b>	Working platform decking (planks)
<b>39</b>	Toeboard
<b>39.1</b>	Angle Bracket 90°
<b>40</b>	Girder (timber)
<b>98</b>	TSS-Torx 6 x 80
<b>110</b>	Spax Screw TX25, 5 x 40

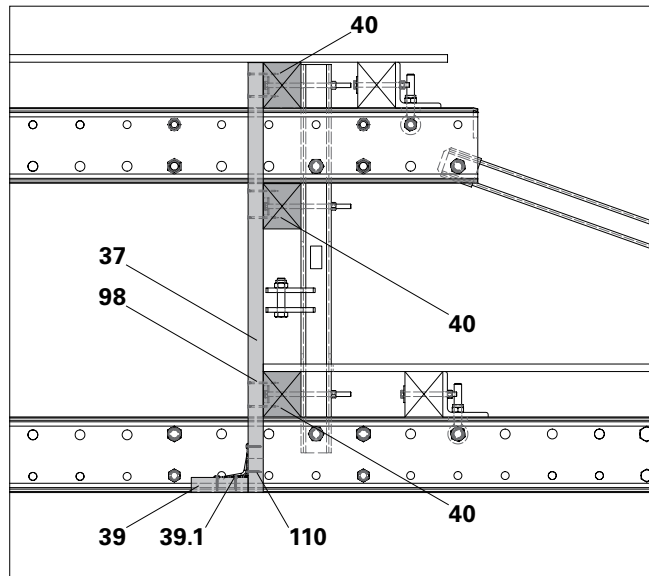


Fig. C2.02

### Assembly

1. Secure each individual plank (37), 2x per intersection with each Girder, with Screws 6 x 80 (98).
2. Secure Angle Bracket 90° (39.1) to the planking at a distance of approx. 100 cm using Screws 5 x 40 (110).
3. Mount Toeboards to Angle Bracket 90° using SPAX 5 x 25.
4. Fix Toeboards (39) to corners with TSS Torx 6 x 60 (110).



Cantilevered planking or cut-to-size decking made of multi-layer plywood sheeting is to be secured against lifting. Requirements for decking and Toeboards, see Section "B2 Planning of the Units".

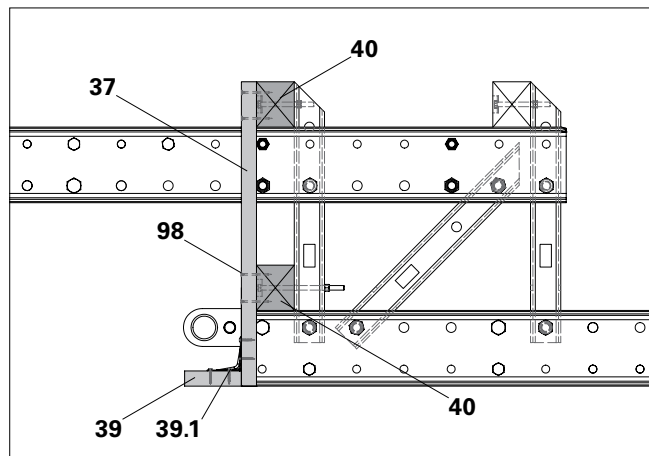


Fig. C2.02

## Foldable Covers

### Assembly on the scaffold tube

#### Components

- 2** Climbing Rail RCS
- 41** Foldable Cover (multi-layer plywood sheeting)
- 80** Steel Scaffold Tube  $\varnothing$  48.3 x 3.2
- 137** Scaffold Tube Connector LPS/RCS  $\varnothing$  48
- 138** Flap Hinge LPS D48/M10
- 139** Flap Safety Plate LPS D=48 RCS
- 150** Reinforcing Bar

#### Assembly

1. Mount Scaffolding Tube Connector (137) on the Climbing Rail (2) using fitting pin and cotter pin. The assembly position is specified in the planning documents.
2. As a transport locking device, screw one reinforcing bar (150) with cam nuts into both Climbing Rails. The reinforcing bar on the outer side must not project over the enclosure.  
(Fig. C2.03 + C2.03a)

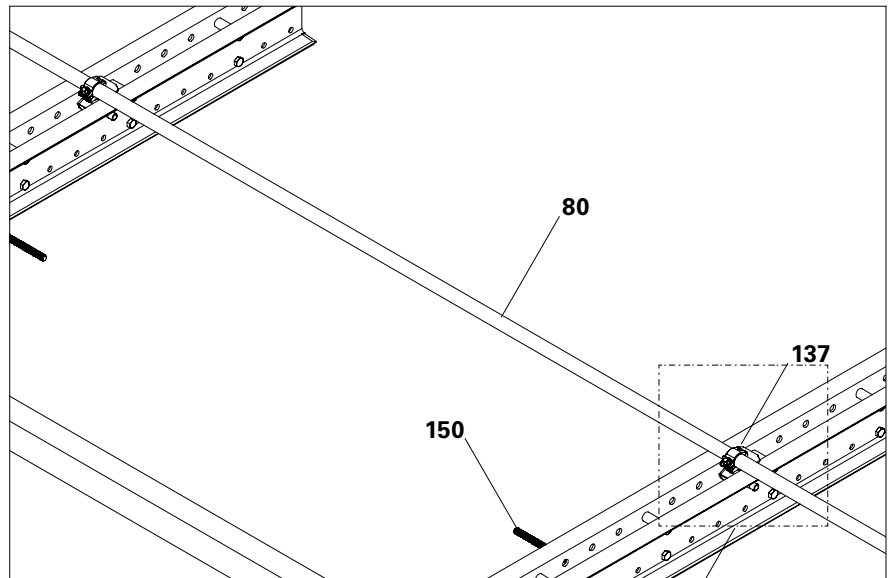


Fig. C2.03

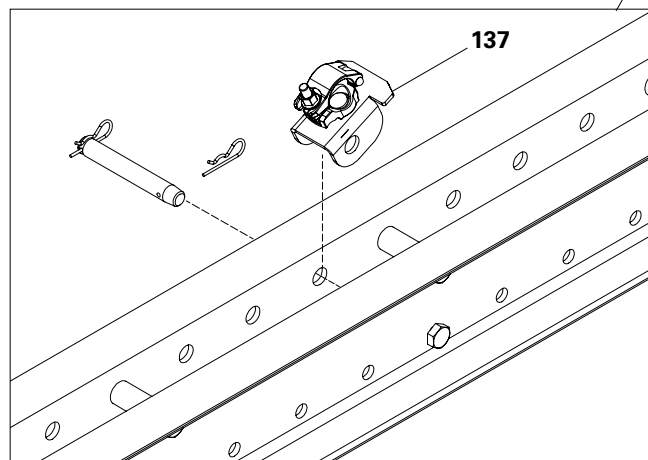


Fig. C2.03a



## C2 Assembly of the Working Platforms

3. Cut the multi-layer plywood sheeting (41.1) to required size and pre-drill with  $\varnothing$  11 mm.
4. Mount Flap Hinges (138) with the provided bolts M10x50-8.8 (138.1) and washers. Permissible arrangement, see "Fig. B2.06" on page 46 and "Table B2.02" on page 46.
5. Mount the foldable cover (41) on the scaffold tube (80) and place on the reinforcing bar (150).
6. For each foldable cover, mount at least one Flap Safety Plate (42) approximately in the centre using 2 SPAX Screws TX 30 8x20. Foldable cover is now secured. (Fig. C2.04)

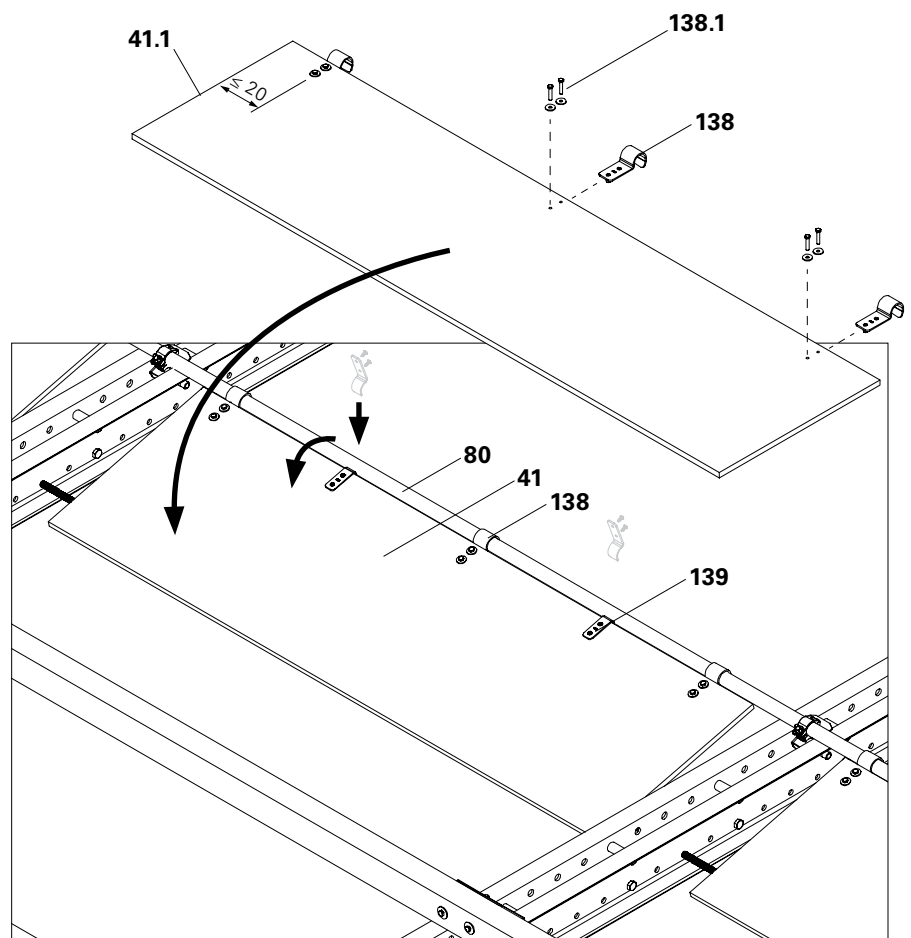


Fig. C2.04

### Assembly on the Enclosure Beam

#### Components

- 14** Enclosure Beam (timber)
- 14.1** Support (timber)
- 41** Foldable Cover (multi-layer plywood sheeting)
- 42** Hinge DIN 7957-200-ST
- 109** Spax Screw TX25, 5 x 20
- 111** Spax Screw TX30, 6 x 120
- 136** Fixation Bar RCS

#### Assembly

1. Position the pre-assembled Enclosure Beam (14), turned by half a turn, on the Climbing Rails.
2. As support (14.1) for the foldable cover, chamfer one timber to approx. 30°.
3. Secure the support (14.1) with screws 6 x 120 (111) at a distance of approx. 60 cm to the Enclosure Beam (14). (Fig. C2.05)

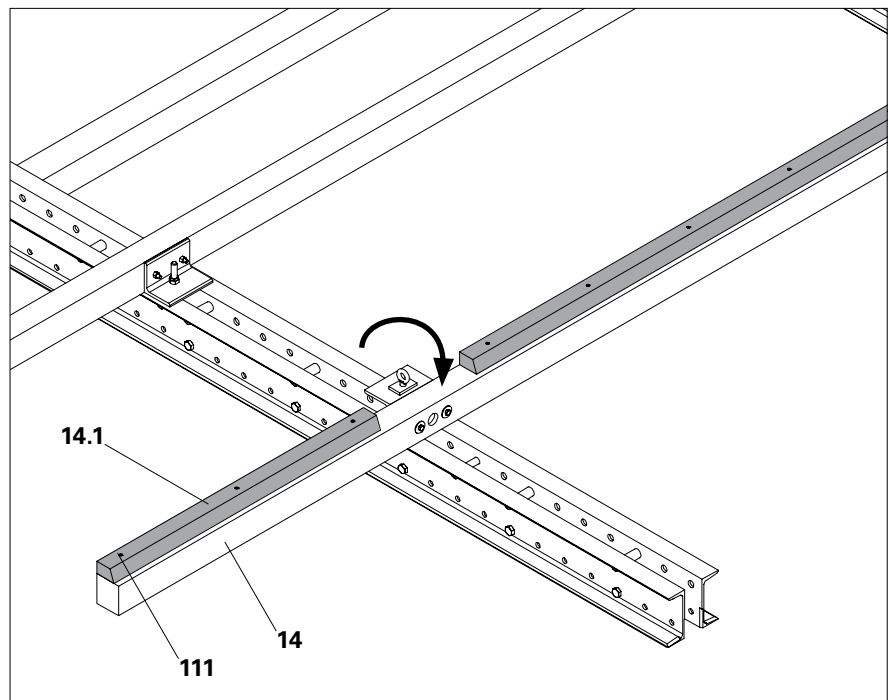


Fig. C2.05

## C2 Assembly of the Working Platforms

3. Cut foldable cover (41) made of weather-resistant multi-layer plywood sheeting according to site-specific assembly drawings.
4. On the enclosure side (41.1), chamfer the edges to under approx. 30°.
5. Secure each flap to the Enclosure Beam using at least 2 Hinges (42). Secure Hinges to flap and Enclosure Beam using 2 × 4 screws 5 × 20 (109). (Fig. C2.06 + C2.06a)
6. Turn the Enclosure Beam back half a turn and mount on the Climbing Rails using the eyelets. See Section "C3 Assembly of the Enclosure" on page 84. (Fig. C2.07)
7. Provide a Fixation Bar (136) for each cover for the opened position. Secure each Fixation Bar to the enclosure using 4 screws 5 × 20 (109). The position is given in the project-specific planning documents.

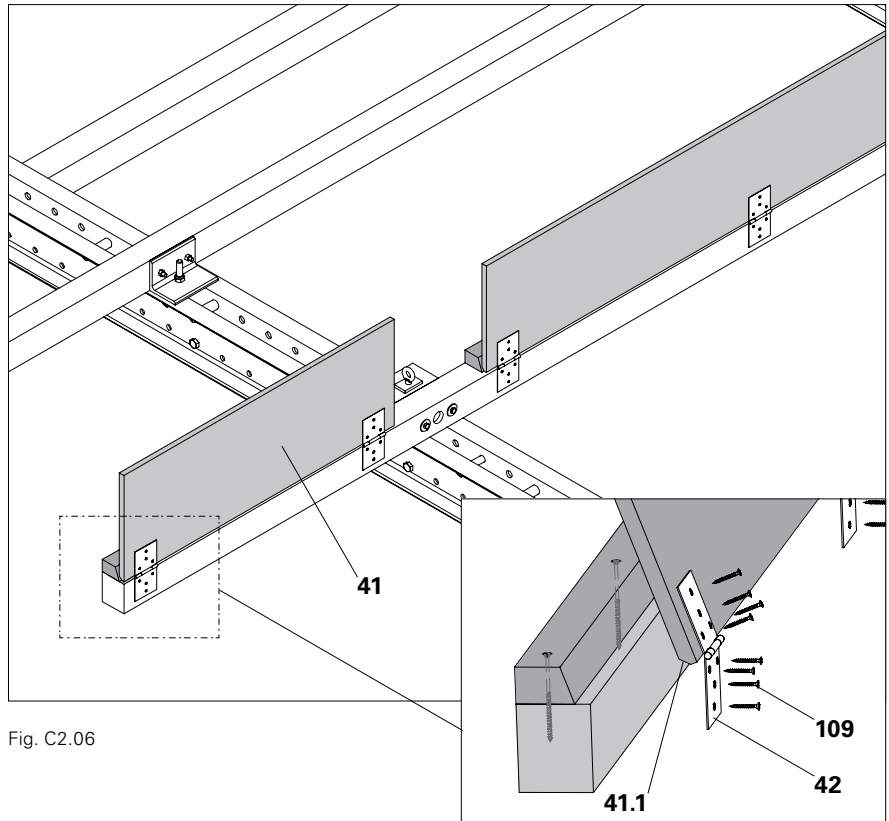


Fig. C2.06

Fig. C2.06a

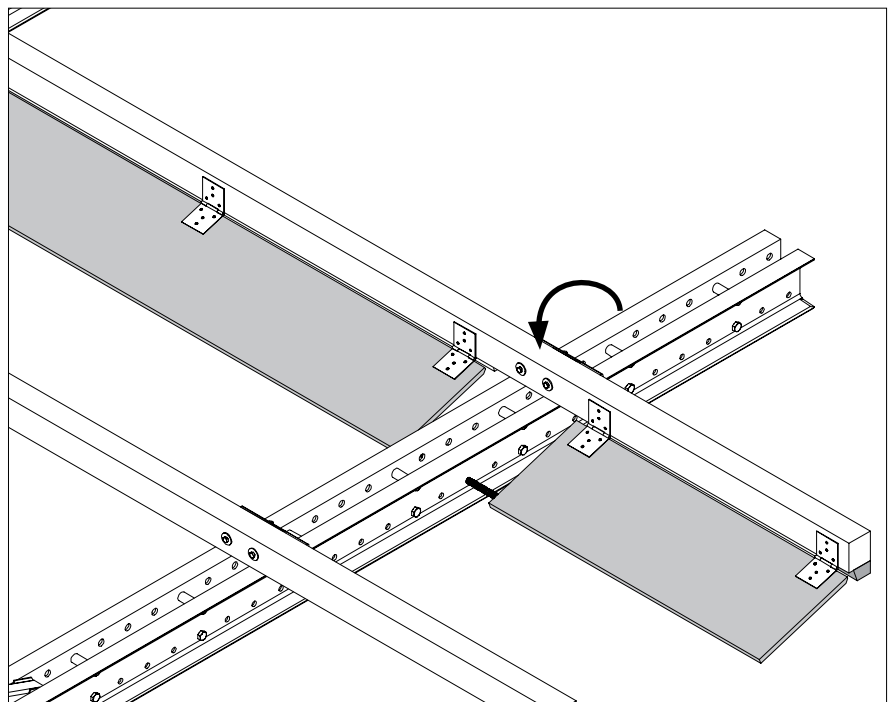


Fig. C2.07

## Mounting the Timber Fixation

Enclosure Beams (timbers) are attached to the Climbing Rail or Enclosure Post by means of the Timber Fixation.

### Components

- 1** Climbing Rail RCS
- 13** Timber Fixation RCS 12/20
- 13.1** Eyebolt M20
- 13.2** Nut M20
- 13.3** Stop Plate
- 14** Enclosure Beam (timber)
- 23** Plate Connector Ø 48/12 mm
- 92** Bolt ISO 4014 M20 x 120-8.8
- 93** Hex. Nut ISO 7042 M20-8
- 94** Bolt ISO 4014 M24 x 130-8.8
- 95** Hex. Nut ISO 7042 M24-8

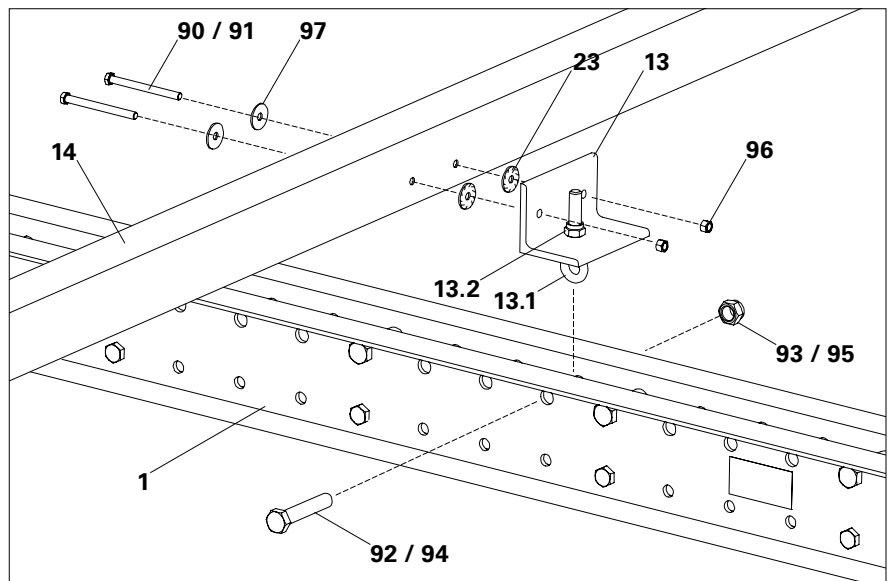


Fig. C3.01

### Assembly

1. Adjust the projection of the eyebolt (13.1) with the nut (13.2) so that the eyelet corresponds to the hole of the Climbing Rail.
2. Position the Timber Fixation, with the stop plate (13.3) laterally turned, between the U-profile of the Climbing Rail. The stop plate ensures the central alignment of the Timber Fixation on the Climbing Rail.
3. Insert bolts (92 / 94) through the holes in the Climbing Rail or Enclosure Post and eye (13.1). Secure bolts with nuts (93 / 95).
4. Tighten the nut on the eyebolt. (Fig. C3.01 + C3.02)

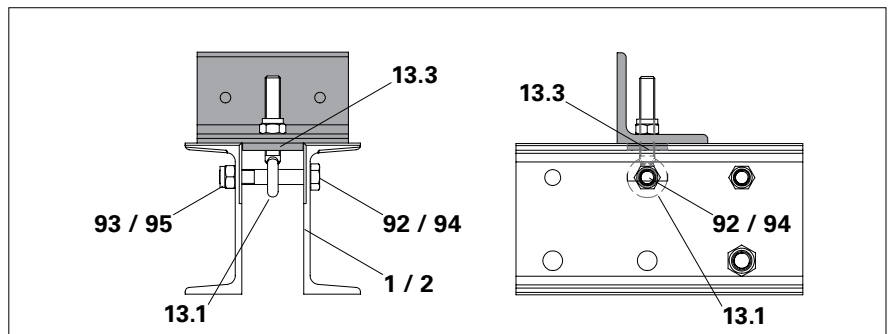


Fig. C3.02

### Specified bolt connection

Rail	Drilled hole	Bolt	Nut
Climbing Rail	Ø 26 mm	M24 x 130 (94)	M24-8 (95)
Enclosure Post	Ø 20 mm	M20 x 120 (92)	M20-8 (93)

Table C3.01

## Mounting the Enclosure Beam

The Enclosure Beams (timbers) ensure the required axial dimension A of the Bracket Unit during bracket assembly. Use the dimensions specified in the site-specific assembly drawings!

### Components

- |             |  |
|-------------|--|
| <b>1</b>    | Climbing Rail RCS                      |
| <b>13</b>   | Timber Fixation RCS 12/20              |
| <b>13.4</b> | Drilled hole                           |
| <b>14</b>   | Enclosure Beam (timber)                |
| <b>23</b>   | Plate Connector $\varnothing$ 48/12 mm |
| <b>90</b>   | Bolt ISO 4017 M12 x 140-8.8            |
| <b>91</b>   | Bolt ISO 4017 M12 x 240-8.8            |
| <b>96</b>   | Nut ISO 4032 M12-8                     |
| <b>97</b>   | Washer ISO 7093 200HV, A12             |

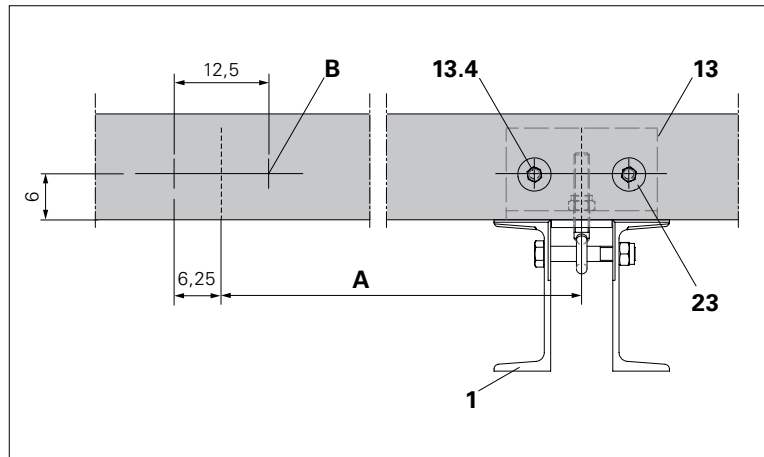


Fig. C3.03

### Assembly

1. Carry over the position of bracket axes A to the Enclosure Beam and mark drilled holes B which correspond to Fig. C3.03.
2. Place Timber Fixation (13) in the subsequent mounting position as drilling jig. Drill through timber with  $\varnothing$  12 mm. (Fig. C3.03)
3. If statically required: hammer in Plate Connectors (23) congruently into the holes of the Enclosure Beam, on the side of the Timber Fixation. Secure Plate Connectors with wire nails. (Fig. C3.01)
4. Depending on the clamping length (timber height), insert bolts M12 x 140 (90) or M12 x 240 (91) through the holes of the Timber Fixation and Enclosure Beam. Secure bolt with washer (97) and nut (96). (Fig. C3.01)

## Mounting the Girder VT 20

Use the Adapter VT20 / RCS-P when mounting the Girder VT 20 as an Enclosure Beam. Use the dimensions specified in the site-specific assembly drawings!

### Components

<b>1</b>	Climbing Rail RCS
<b>7</b>	Girder VT 20
<b>15</b>	Adapter VT20 / RCS-P
<b>92</b>	Bolt ISO 4014 M20 x 120-8.8
<b>93</b>	Hex. Nut ISO 7042 M20-8
<b>94</b>	Bolt ISO 4014 M24 x 130-8.8
<b>95</b>	Hex. Nut ISO 7042 M24-8
<b>99</b>	TSS-Torx 6 x 60

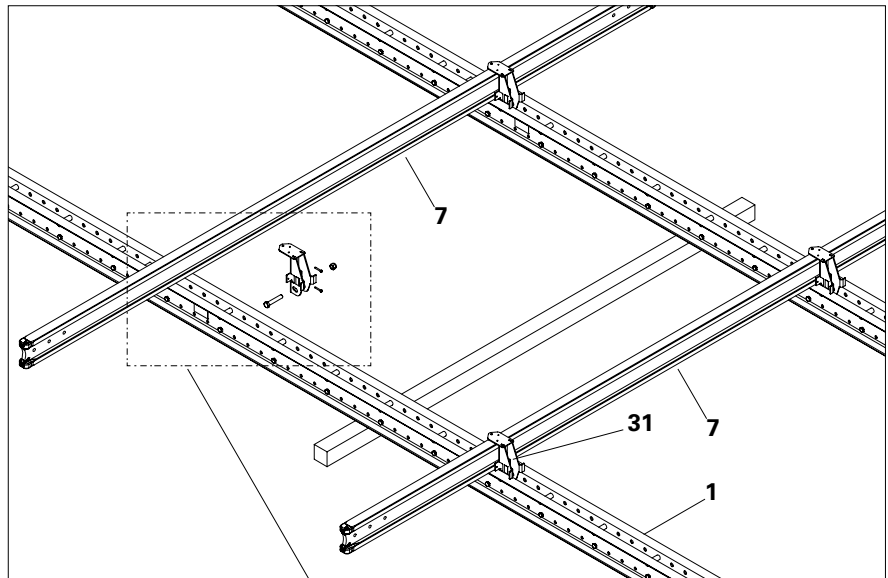


Fig. C3.04

### Assembly

1. Align the Climbing Rails according to the axial dimension.
2. Insert Adapter VT 20 / RCS-P (15) with the support above into the Climbing Rail or Enclosure Post.
2. Insert bolts (92 / 94) through the holes in the Climbing Rail or Enclosure Post and Adapter (15). Secure bolts with nuts (93 / 95). (Fig. C3.04a)
3. Align Girder VT 20 on the Adapter (15) accordingly and secure with 2 Torx screws 6 x 60 (99) per Adapter. Use the marked screw holes. (Fig. C3.04b)

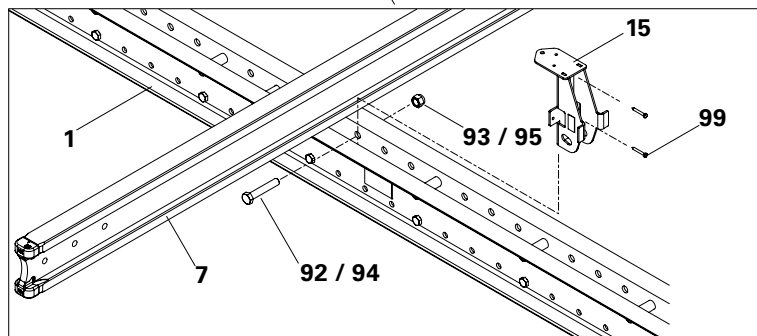


Fig. C3.04a

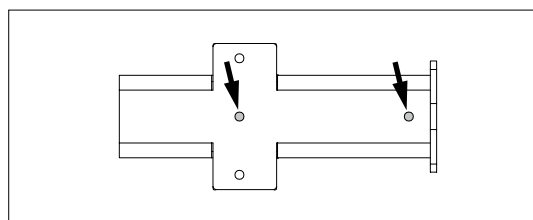


Fig. C3.04b

Specified bolt connection			
Rail	Drilled hole	Bolt	Nut
Climbing Rail	Ø 26 mm	M24 x 130 (94)	M24-8 (95)
Enclosure Post	Ø 20 mm	M20 x 120 (92)	M20-8 (93)

Table C2.01

## Mounting the Multi-Layer Plywood Sheeting

The dimensions for cutting the multi-layer plywood sheeting, as well as screw spacing  $e$ , are provided in the site-specific assembly drawings.

### Components

<b>1</b>	Climbing Rail RCS
<b>14</b>	Enclosure Beam (timber)
<b>18</b>	Enclosure (multi-layer plywood sheeting)
<b>99</b>	TSS-Torx 6 x 60

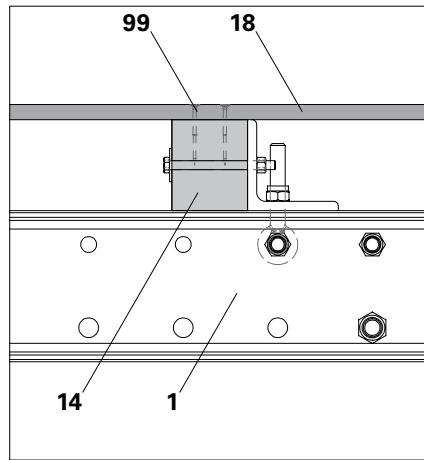


Fig. C3.05

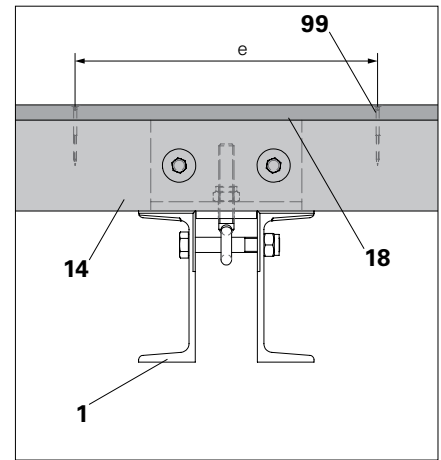


Fig. C3.05a

### Assembly

1. Cut the multi-layer plywood sheeting according to the plans, position on the Enclosure Beams and align.
  2. Mark the position of the Enclosure Beam, e.g. with a chalk line, and mark bolt positions according to site-specific assembly drawings.
  3. Push the multi-layer plywood sheeting to one side and pre-drill with  $\varnothing 7$  mm. Do not pre-drill the Enclosure Beam.
  4. Align the multi-layer plywood sheeting and secure on the Enclosure Beam using Torx screws (99).
- (Fig. C3.05 + C3.05a)

## Cover: Version 1



In order to provide protection against falling objects, a non-accessible covering made of multi-layer plywood sheeting is to be installed in Version 1.

### Components

- 1** Climbing Rail RCS
- 14** Enclosure Beam (timber)
- 18** Enclosure (multi-layer plywood sheeting)
- 87** Timber 50 x 50
- 98** TSS-Torx 6 x 80
- 99** TSS-Torx 6 x 60
- 110** Spax Screw TX25, 5 x 40

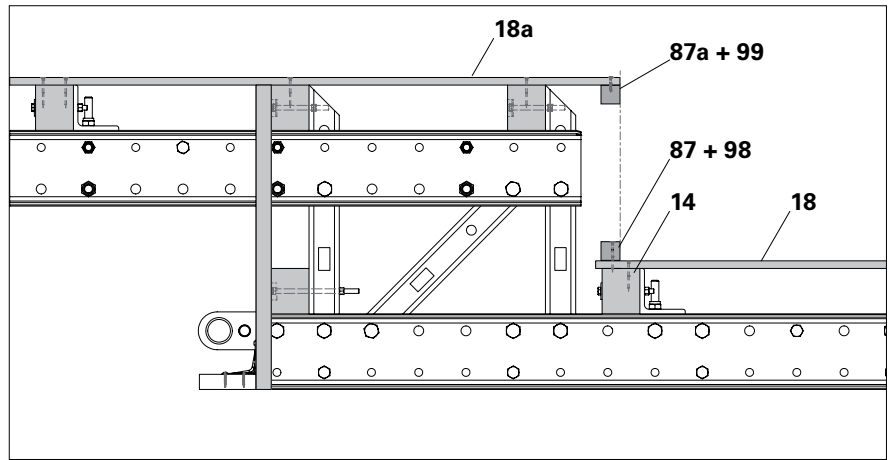


Fig. C3.06

### Assembly

1. Mount the enclosure panel (18) on the Climbing Rail so that the top Enclosure Beam (14) is completely covered.
2. Pre-drill timber 50 x 50 (87) with  $\varnothing$  7 mm and secure with screws 6 x 80 (98) to the Enclosure Beam.
3. Align the enclosure panel (18a) on the Enclosure Post so it is flush with the timber (87) on the Enclosure Beam.
4. Secure timber 50 x 50 (87a) to pre-drilled enclosure panel (18a) with screws 6 x 60 (99). (Fig. C3.06)
5. Pre-drill cover sheet (18b) and fix to timbers (87 + 87a) using screws 6 x 60 (99). (Fig. C3.06a)

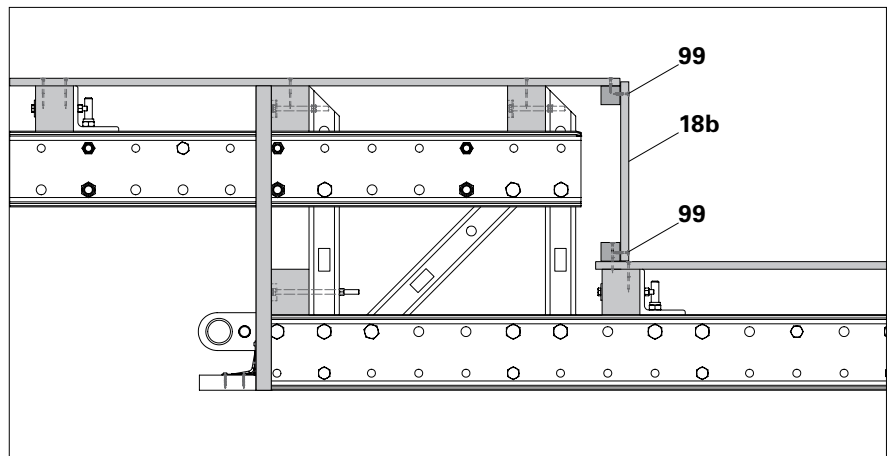


Fig. C3.06a



## Mounting the Trapezoidal Metal Sheeting



- To provide protection against falling objects: in the area of the working platforms and hinged covers, cover the cavities between the trapezoidal metal sheeting and the timbers.
- The dimensions for cutting the trapezoidal metal sheeting, as well as screw spacing  $e$ , are provided in the site-specific assembly drawings.

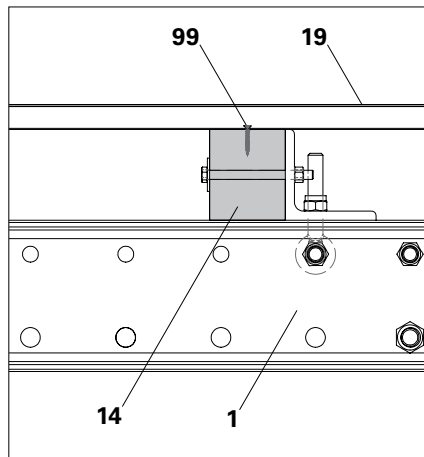


Fig. C3.07

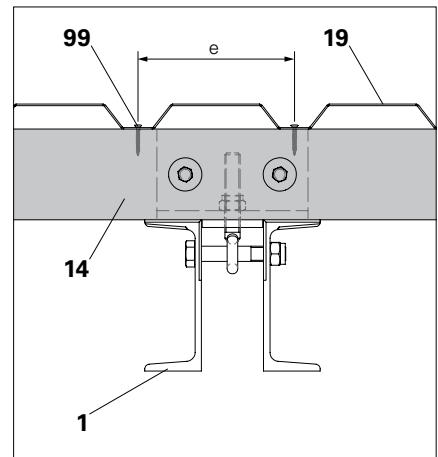


Fig. C3.07a

### Components

- |           |  |
|-----------|--|
| <b>1</b>  | Climbing Rail RCS                      |
| <b>14</b> | Enclosure Beam (timber)                |
| <b>19</b> | Enclosure (trapezoidal metal sheeting) |
| <b>99</b> | TSS-Torx 6 x 60                        |

### Assembly

1. Cut the trapezoidal metal sheeting according to the plans, position on the Enclosure Beams and align.
2. Mark the position of the Enclosure Beam, e.g. with a chalk line, and mark bolt positions according to site-specific assembly drawings.
3. Align the trapezoidal metal sheeting and fix to the Enclosure Beam using connection means recommended by the trapezoidal sheeting manufacturer.
4. Cover the cavities between the timber and trapezoidal sheeting, e.g. with Elastomer cover strip.

(Fig. C3.07 + C3.07a)

## Mounting the Protection Edges

Secure the protection edges to the Enclosure Beams according to the site-specific assembly drawings. For mounting the protection edges, the Enclosure Beams are shortened by approx. 20 mm.

### Components

- 14** Enclosure Beam (timber)
- 18** Enclosure (multi-layer plywood sheeting)
- 19** Enclosure (trapezoidal metal sheeting)
- 20** Protection Edge
- 99** TSS-Torx 6 x 60

### Assembly

1. Cut solid wood boards 30 mm thick to match dimension b. Dimension b depends on the thickness of the Enclosure Beam and the enclosure materials used. Chamfer protection edges on one side above and below approx. 10 mm.
  2. Fix the protection edges (20) to the front side of the Enclosure Beam (14) with screws 6 x 60 (99). Use 2 screws per Enclosure Beam.
- (Fig. C3.08 - C3.08c)

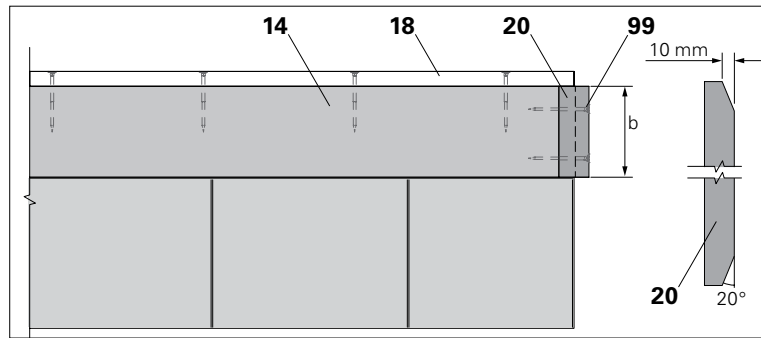


Fig. C3.08

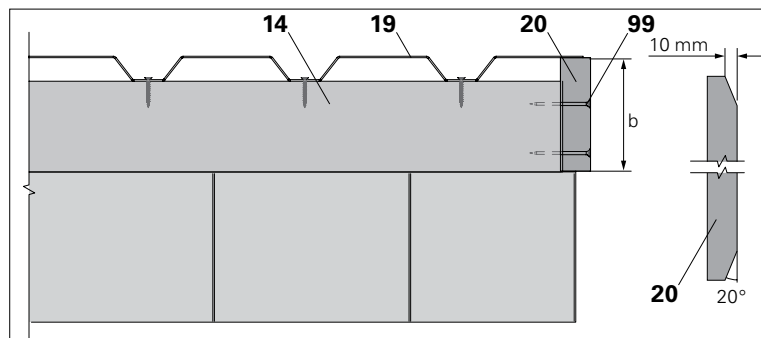


Fig. C3.08a

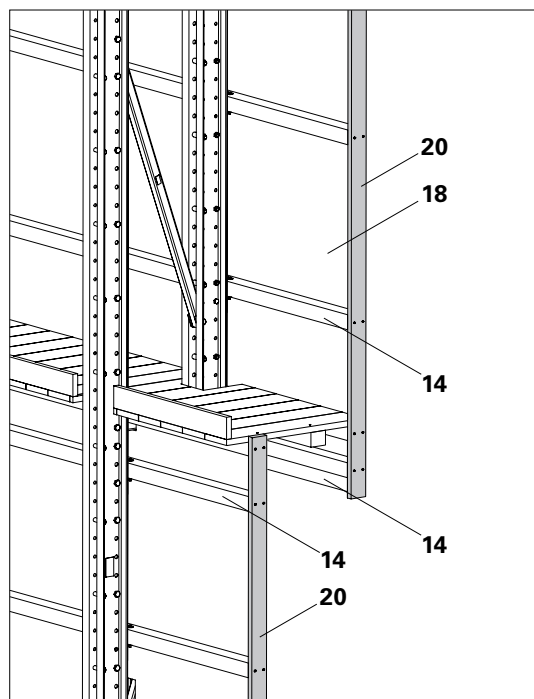


Fig. C3.08b

## Scaffold Tubes with Nets or Tarpaulins



Mesh size for enclosure nets  $\leq 20$  mm.  
Scaffold tube spacing  $a = 50$  cm.

### Components

- |             |   |
|-------------|---|
| <b>1</b>    | Enclosure Post                                  |
| <b>3</b>    | Spacer M20-82                                   |
| <b>4</b>    | Spacer M24-82                                   |
| <b>80</b>   | Steel Scaffold Tube $\text{Ø } 48.3 \times 3.2$ |
| <b>80.1</b> | Scaffold Tube Steel $\text{Ø } 60.3 \times 3.2$ |
| <b>83.1</b> | Swivel Coupling DK 60/48                        |
| <b>88</b>   | Safety Net                                      |
| <b>88.1</b> | Cable Tie, UV-resistant.                        |
| <b>137</b>  | Scaffold Tube Connector $\text{Ø } \text{RCS}$  |

### Mounting Scaffold Tube $\text{Ø } 48$ mm

1. Remove cotter pins and bolts from Scaffold Tube Connector (137).
2. Insert Scaffold Tube Connector with retaining lug (137.1) into the drilled hole of the Enclosure Post (1).
3. Insert bolts (137.2) through the holes in the Enclosure Post and Scaffold-ing Tube Connector and secure with cotter pins (137.3).
4. Mount Scaffold Tube  $\text{Ø } 48$  mm (80) in the tube coupling. Tighten coupling nut with 50 Nm.  
(Fig. C3.09)

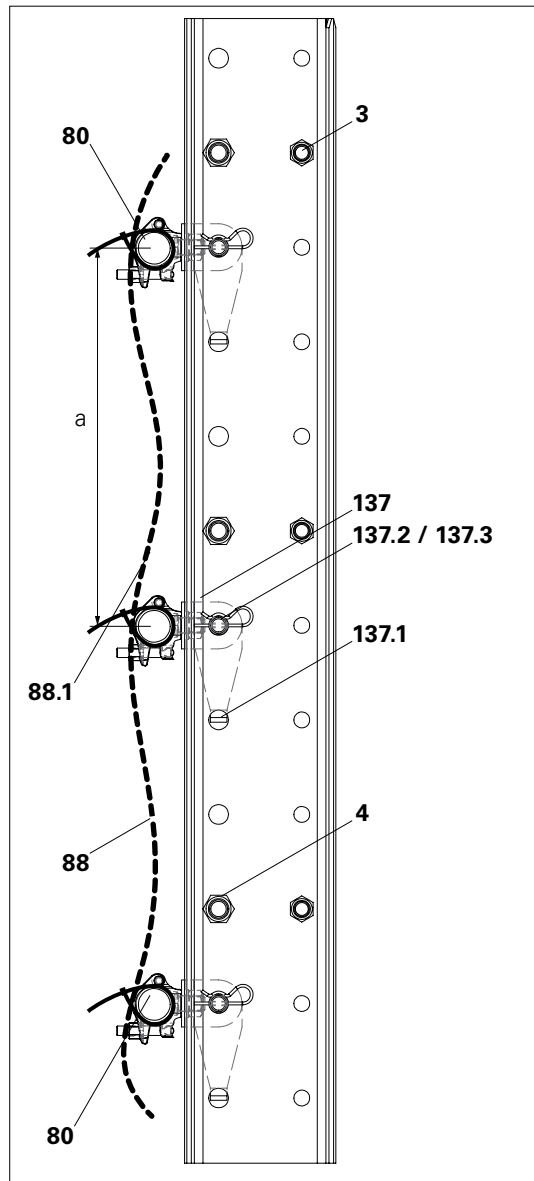


Fig. C3.09

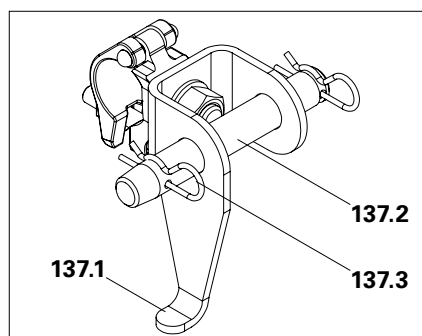


Fig. C3.09a

## Mounting Scaffold Tubes Ø 60 mm

1. Install scaffold tube pieces Ø 48 mm (80.1) L = 80 mm with Spacers M20 (3) or M24 (4) in the Enclosure Post (1).
2. Mount Scaffold Tube Ø 60 mm on the scaffold tube pieces with Swivel Coupler 60/48. Tighten coupling nut with 50 Nm.  
(Fig. C3.09b)

## Mounting the safety net

1. Secure the safety net according to the manufacturer's specifications.
2. Ensure bottom edge of the safety nets reach to the building.
3. Ensure there is a sufficient overlap with other enclosure parts.

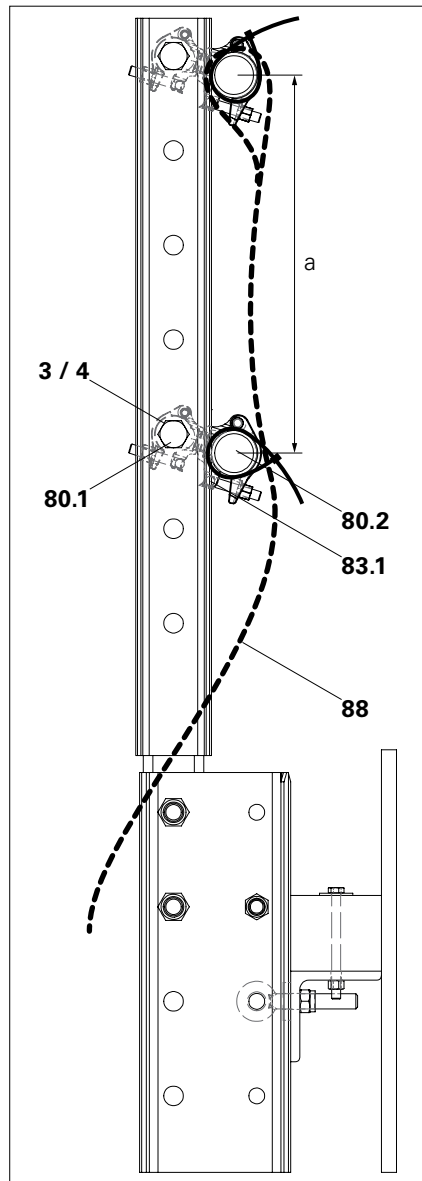


Fig. C3.09b



## Attaching the Climbing Unit

### Assembly

1. Fold up the pre-assembled Foldable Covers and attach to the enclosure using Fixation Bars.
2. Remove or secure all loose components.
3. Install bolt with cotter pin on the Enclosure Post as an attachment point for the crane lifting gear.
4. Cut out enclosure panels in the area of the crane lifting gear in order to prevent any damage when lifting. (Fig. C4.01)
5. Attach guide ropes to the climbing enclosure.
6. Attach crane lifting gear to the bolt.
7. Align and lift the Climbing Unit. (Fig. C4.02)

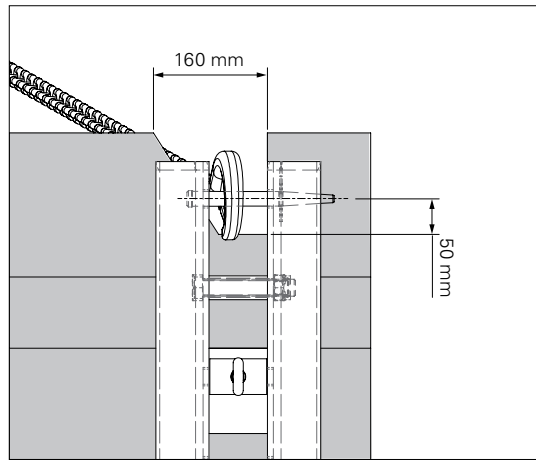
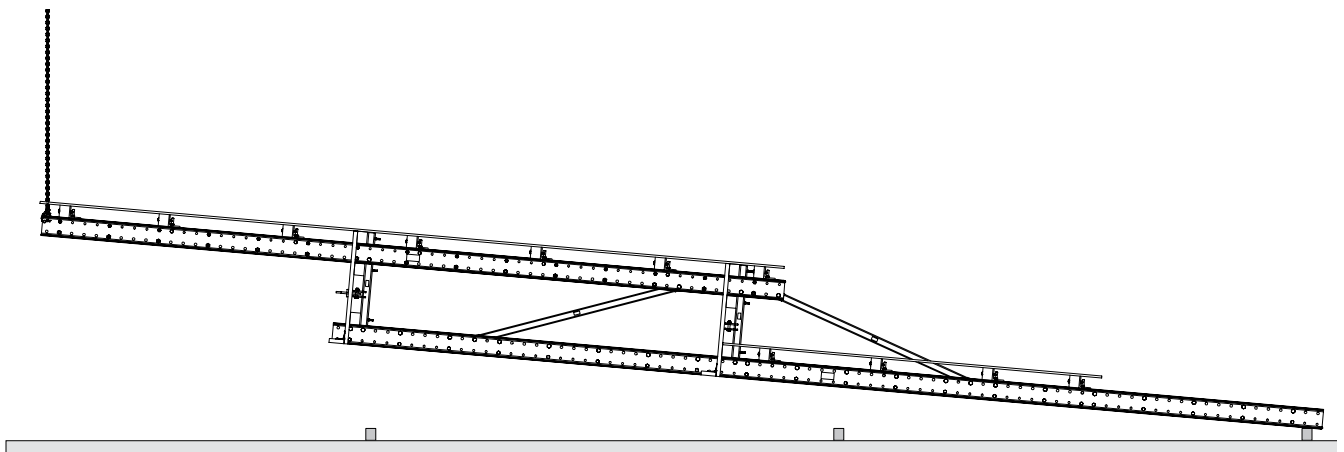


Fig. C4.01



## Assembly of the Climbing Unit



### Warning

- Risk of falling from unsecured building edges. A fall can result in serious injury or even death.
  - ⇒ Install guardrails.
  - ⇒ Use personal protective equipment to prevent falling from a height (PPE).
- During assembly on the construction site, components may fall to the ground and hit people below. This could lead to serious injuries or even death.
  - ⇒ Cordon off areas of risk under the working areas.
  - ⇒ Release the Climbing Unit from the crane lifting gear only when all Climbing Shoes are closed and the Climbing Unit fully rests on the bottom Slab Shoes.

### Components

- 44** Climbing Shoe RCS
- 44.1** Climbing Pawl
- 44.2** Guiding Skids
- 45** Slab Shoe RCS

### Preparations

1. Mount required guardrails on all leading slab edges or ensure that PPE is used.
2. Attach top (45a) and bottom Slab Shoes (45b) to the slab.
3. Open the guiding skids (44.2) of the Climbing Shoes (44a) and (44b), see Section "Opening and Closing the Climbing Shoe" on Page 120.
4. Lock the climbing pawl (44.1) of the bottom Climbing Shoe (44b), in order to prevent unintentional locking into place, in the event  $h_B = n \times 50$  cm.
5. Activate the climbing pawl of the top Climbing Shoe. See Section "Activating and Deactivating the Climbing Pawl" on Page 122 (Fig. C4.03).

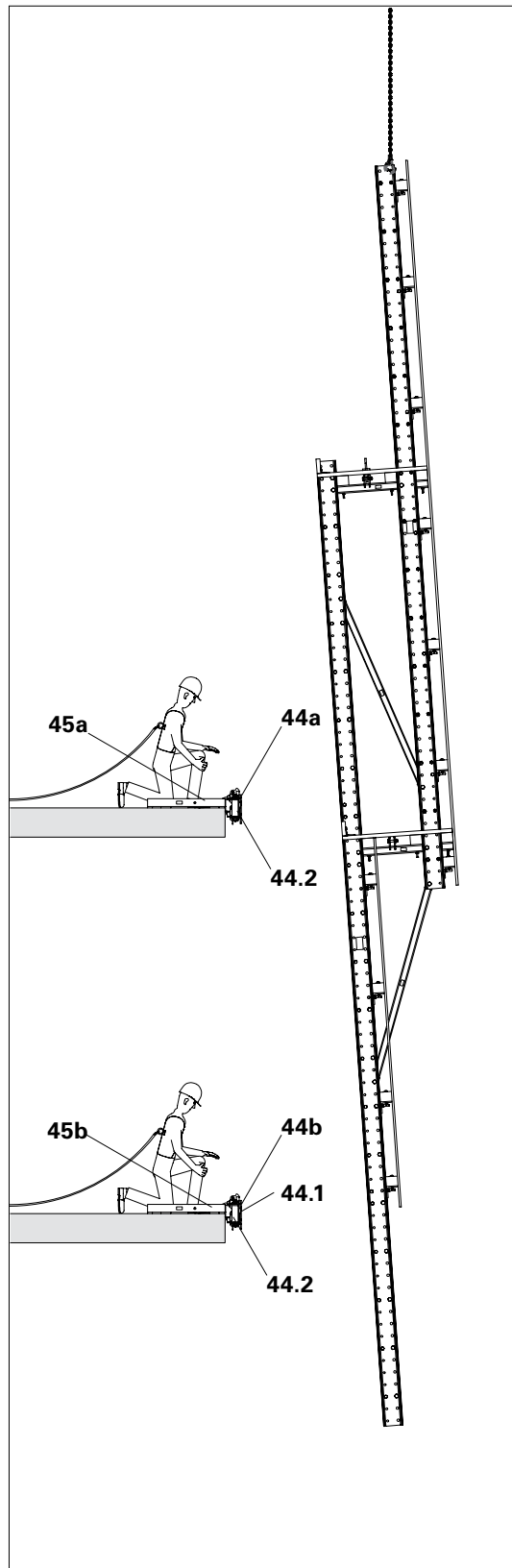


Fig. C4.03



## Warning

Parts of the body can get caught between the Climbing Rail and Slab Shoe and become trapped. This can cause serious injuries.

- ⇒ Do not take hold of anything between the Rail Guidance Shoes and Climbing Rails.
- ⇒ Use the Guide-in Tool.
- ⇒ Guide the climbing enclosure with ropes.



- Immediately place the correct Spacer (3) on the pawl (44.1) of the Climbing Shoe.
- In order to facilitate threading through, do not tighten the Anchor Bolts (44.6) until the climbing enclosure has been mounted.

## Components

- |             |                   |
|-------------|-------------------|
| <b>3</b>    | Spacer M20-82     |
| <b>44</b>   | Climbing Shoe RCS |
| <b>44.1</b> | Climbing Pawl     |
| <b>44.2</b> | Guiding Skids     |
| <b>45</b>   | Slab Shoe RCS     |
| <b>126</b>  | Guide-in Tool RCS |

## Assembly

1. Position the Climbing Rail in front of the open top Climbing Shoe (44a). Use the Guide-in Tool (126). (Fig. C4.04a)
2. Close the guiding skids (44.2) of the top Climbing Shoe (44a) and secure, see Section "Opening and Closing the Rail Guidance Shoe" on Page 110.
3. Remove the Guide-In Tool (126).
4. Place the climbing enclosure with Spacer (3) on the climbing pawl (44.1). (Fig. C4.04b)

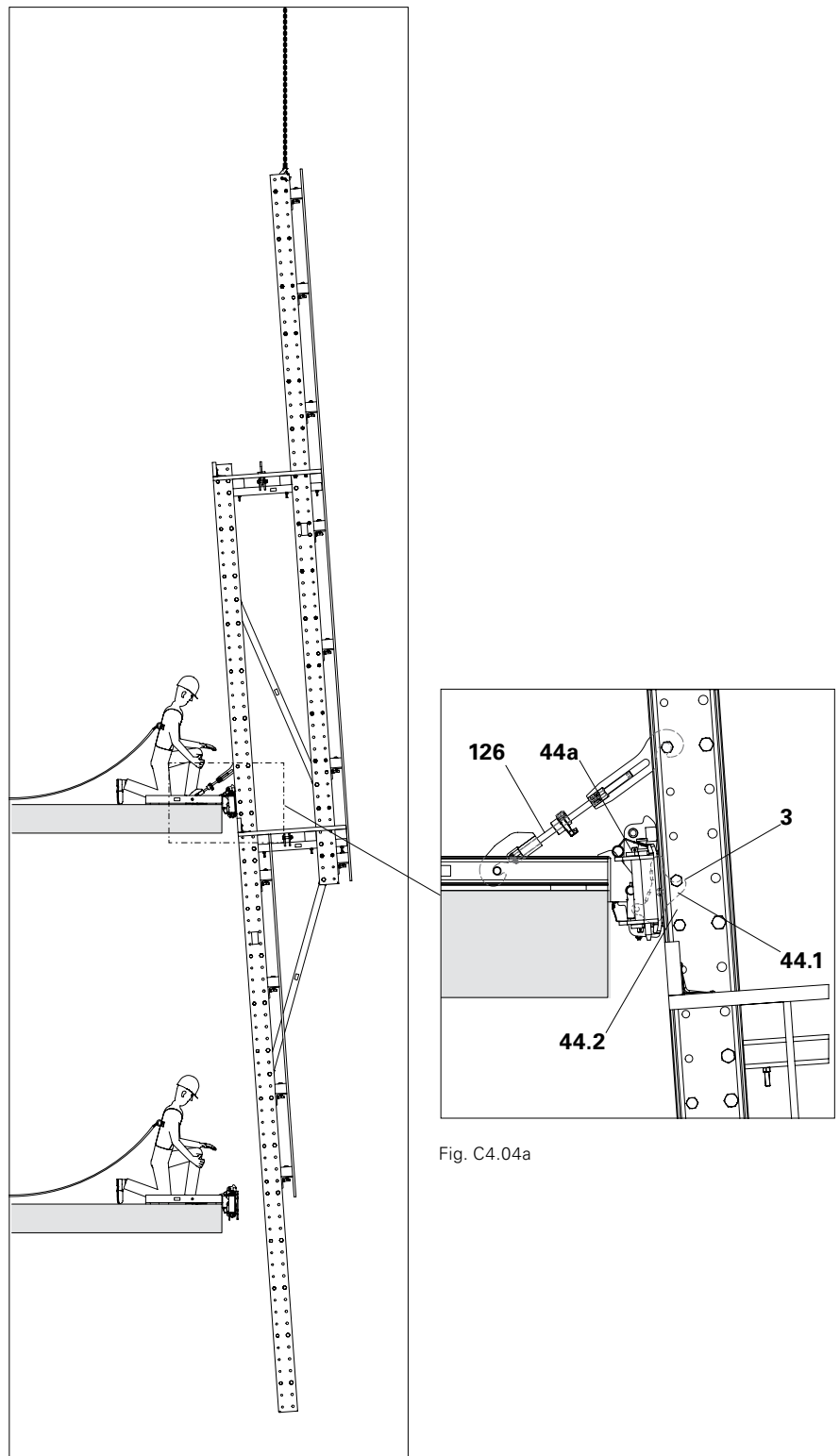


Fig. C4.04a

Fig. C4.04



# C4 Suspension on the Structure

5. Continue to relieve the crane lifting gear and thereby position the Climbing Rail in front of the bottom Climbing Shoe (44b).
6. Close the guiding skids (44.2) of the bottom Climbing Shoe and secure.
7. Tighten the Anchor Bolts (44.6) of all Slab Shoes.
8. Raise climbing unit approx. 10 cm.
9. Activate the climbing pawls of the bottom Slab Shoe and deactivate the top Slab Shoe.  
(Fig. C4.05 + C4.05a)
10. Completely relieve crane and release crane lifting gear whilst standing in a safe position.

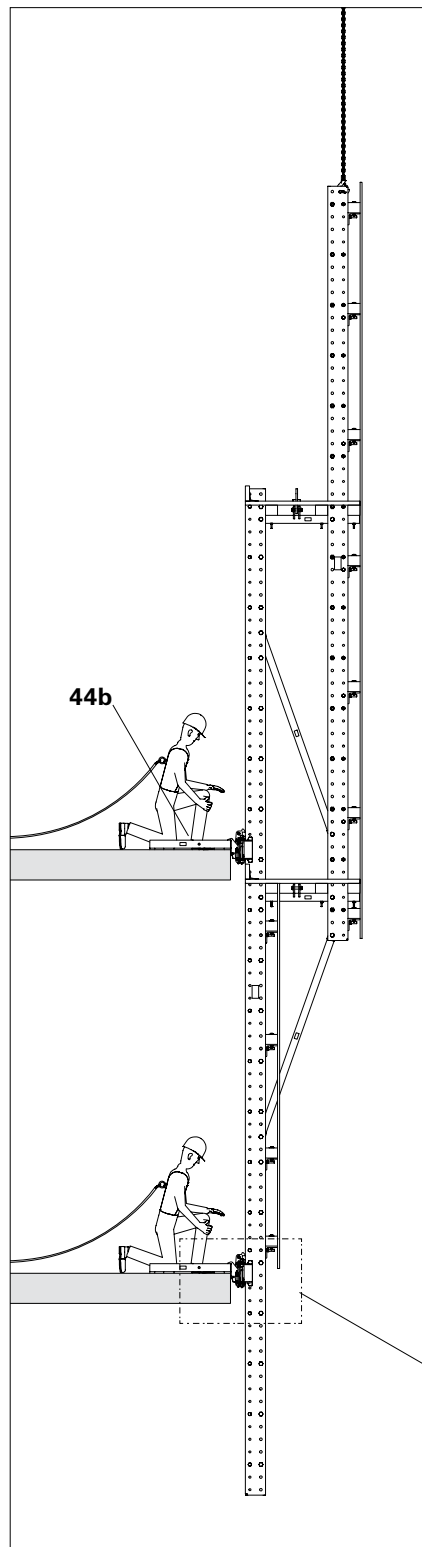


Fig. C4.05

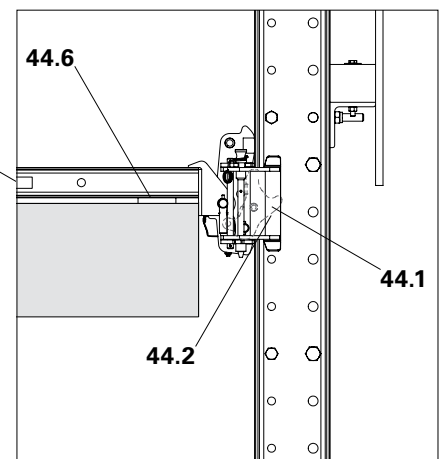


Fig. C4.05a

## After Mounting



### Warning

- There is a risk of falling during assembly work on the suspended enclosure! A fall can result in serious injury or even death.  
⇒ Use personal protective equipment to prevent falling from a height (PPE).
- During the assembly work, tools, for example, may fall to the ground and hit people below  
⇒ Cordon off all areas of risk below.

## Components

- |            |   |
|------------|---|
| <b>41</b>  | Foldable Cover (multi-layer plywood sheeting) |
| <b>109</b> | Spax Screw TX25, 5 x 20                       |
| <b>136</b> | Fixation Bar RCS                              |

## Assembly

1. Close the Foldable Covers.
  2. If not yet installed: provide a Fixation Bar (136) for each cover for the opened position. Secure each Fixation Bar to the enclosure using 4 screws 5 x 20 (109).
  3. If necessary, carry out adjustments, e.g. in the area of the Climbing Shoes.
- (Fig. C4.06)

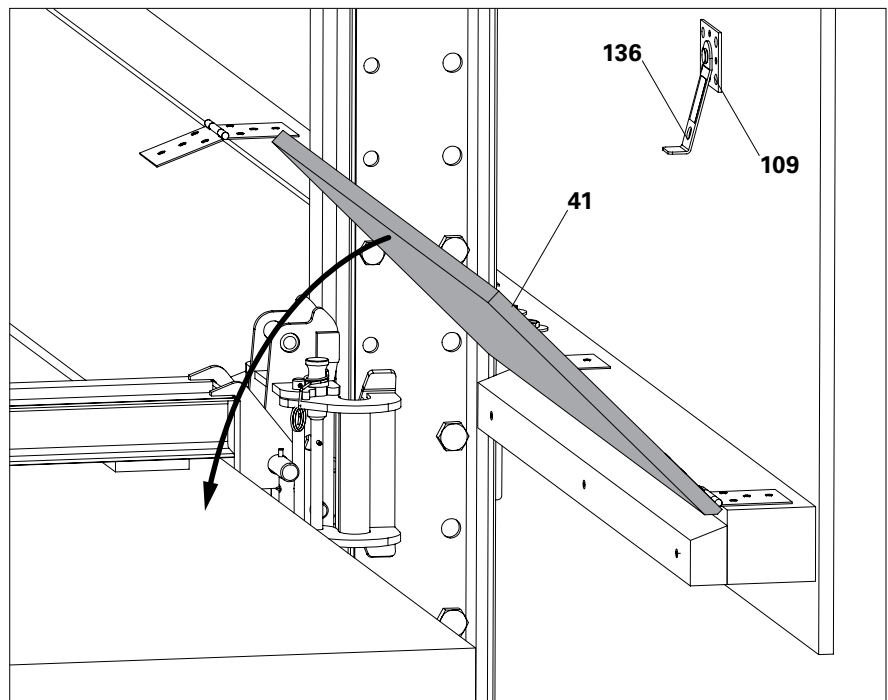


Fig. C4.06

## Closing Gaps

### Components

- 41** Foldable Cover (multi-layer plywood sheeting)
- 43** Cover RCS 70 x 70
- 45** Slab Shoe RCS

1. Cover all gaps in the area of the Slab Shoe with Cover RCS 70x70 (43). (Fig. C4.07)
2. If necessary, nail the Cover on the Foldable Cover.



Cover any remaining gaps with suitable means, e.g. Elastomer cover strips. Make sure that neither the climbing procedure nor the opening of the flaps is impaired in any way.

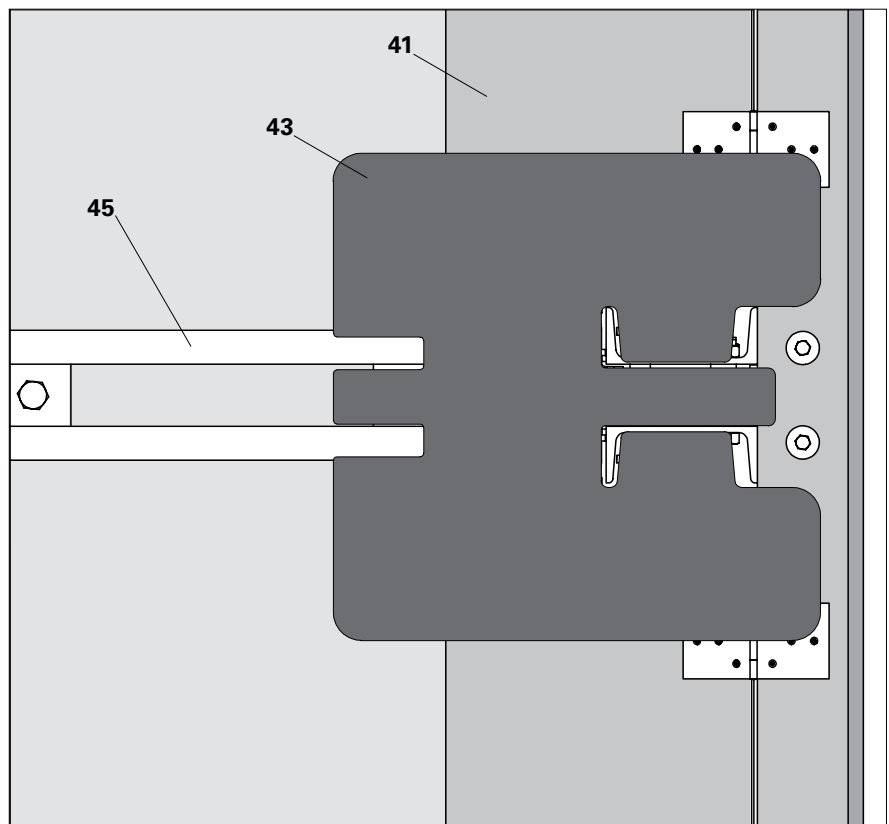


Fig. C4.07

## Troubleshooting



### Warning

During assembly on the construction site, components may fall to the ground and hit people below. This could lead to serious injuries or even death.

⇒ Cordon off areas of risk under the working areas.

Problem	Cause	Measures
Guiding skids cannot be closed.	– Climbing Rail is not completely in the right position in the Guide Shoe.	– Pull Climbing Rail inwards with the Guide-in Tool.
	– Climbing rail spacing not correct.	– Detach climbing enclosure and adjust spacing of Climbing Rail.
	– Slab Shoe spacing is not correct.	– Slightly loosen the leading Anchor Bolt, close the guiding skids and tighten them using component tolerances. Alternatively: – Mount new anchoring through the slab with tie rods and wingnut counterplates.
Climbing Unit does not lie on the planned Spacers on both sides.	– Climbing Rail rests on a Slab Shoe that is positioned below. – Floor height is approx. a multiple of 50 cm.	– Raise the Climbing Unit by approx. 10 cm using the crane. Deactivate the pawls of all Slab Shoes positioned above. Position Climbing Unit with the planned Spacer on the pawl of the bottom Slab Shoe.



## Mounting the Leading Anchor



With the Slab Anchor Template RCS 61 (54), the Leading Anchor (47) is fixed in position during concreting.  
Variable length L = 61 to 102 cm.

The stop on the support plate creates an impression in the concrete which is suitable for the Slab Shoe.

### Components

- |           |                             |
|-----------|-----------------------------|
| <b>1</b>  | Enclosure Post              |
| <b>47</b> | Anchoring                   |
| <b>53</b> | Bolt ISO 4014 M24 x 70-10.9 |
| <b>54</b> | Slab Anchor Template 61 RCS |

### Assembly

1. Loosen bolt connections of the clamping plates (54.4).
2. Insert Slab Anchor Template in the Enclosure Post.
3. Turn the clamping plates behind the profile of the Enclosure Post (1) and slightly tighten the bolted connection.

### Adjusting the length

1. Loosen wing screws (54.1).
2. Move telescopic piece (54.2) until the support plate (54.3) sits flush on the stopend formwork.
3. Place support plate on stopend formwork and fix using nails.

### Adjusting the height

1. Slightly loosen the bolted connections of the clamping plates (54.4).
2. Push the Slab Anchor Template on the Enclosure Post until it is in a horizontal position.
3. Tighten the bolted connection. (Tightening torque 120 Nm)
4. Tighten wing screws (54.1). (Fig. D1.01 + D1.02)

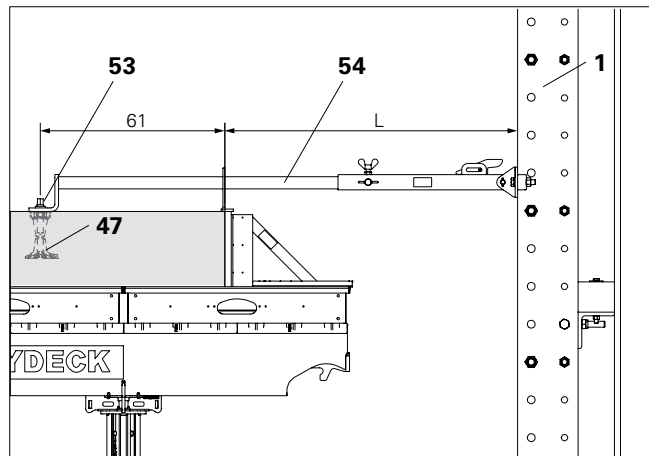


Fig. D1.01

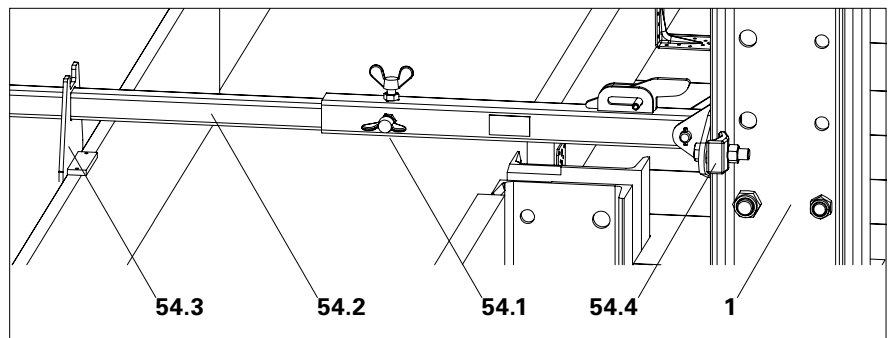


Fig. D1.02

## Pivoting downwards

1. Mount Leading Anchor (47) on the Slab Anchor Template (54) using bolts M24 x 70 (53).
  2. Press the Slab Anchor Template lightly against the Enclosure Post, hold in place and push the locking bar (54.5) upwards.
  3. Swivel the Slab Anchor Template downwards.
  4. Fix support plate (54.3) to the stopend formwork using nails.
- (Fig. D1.03+ D1.03a)

## Pivoting upwards



Swivel the Slab Anchor Plate upwards only after the concrete has sufficiently hardened.

1. Remove bolts M 24 x 70 (53) from the Leading Anchor.
  2. Pull out nails which have been used to fix the support plate (54.3) to the stopend formwork.
  3. Hold the locking bar (54.5) up and pivot the Slab Anchor Template vertically upwards. Drop the locking bar behind the mounting plate. The locking bar (54.5) fixes the Slab Anchor Template in a vertical position.
- (Fig. D1.03b + D1.03)

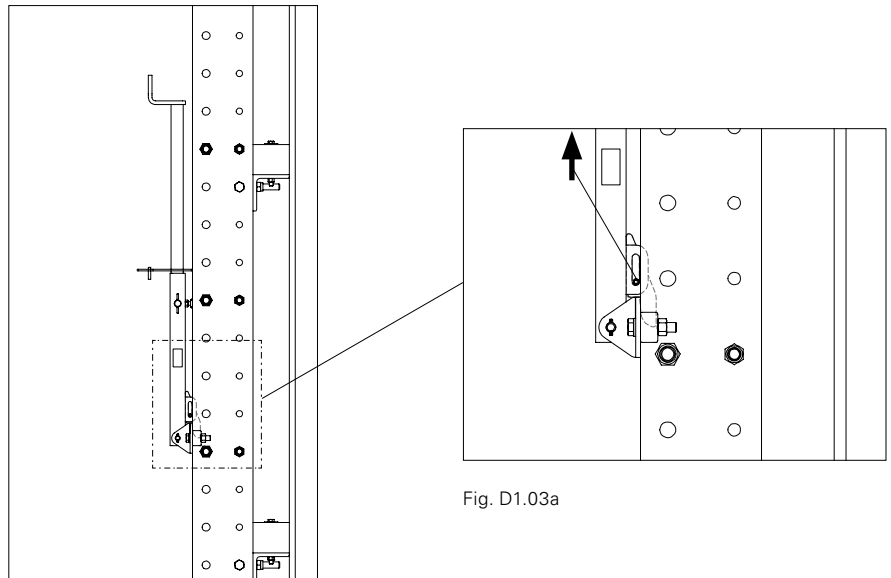


Fig. D1.03a

Fig. D1.03

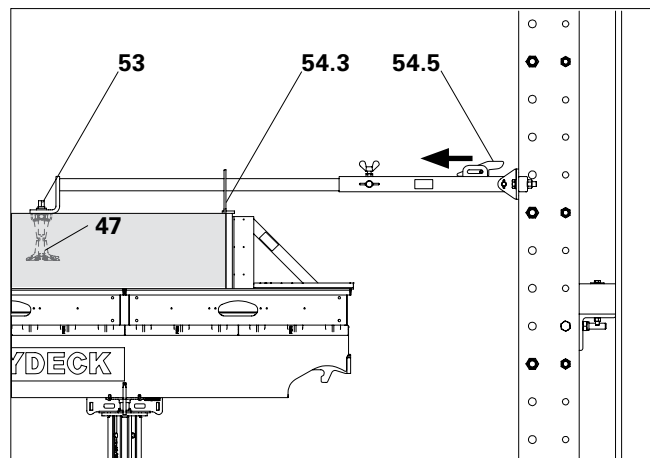


Fig. D1.03b

## Fixing the Slab Anchor in the Reinforcement



In order to prevent the Climbing Anchor from moving, PERI recommends fixing the anchor to the top reinforcement of the slab.

### Components

- 47.2** Threaded Anchor Plate DW 20
- 47.5** Climbing Cone-2 M24/DW 15
- 54** Slab Anchor Template 61 RCS
- 150** Reinforcement

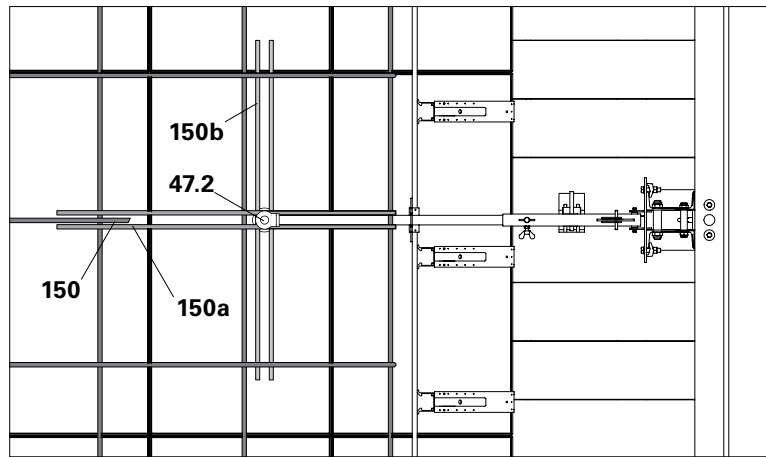


Fig. D1.04

### Assembly

1. Create an opening in the reinforcement for the Threaded Anchor Plate (47.2). If necessary, move colliding reinforcement bars. For mesh reinforcement, cut rod and replace it with reinforcement bars of the same diameter.
  2. Insert two pairs of reinforcement bars crosswise in the top (150a) and bottom (150b) positions of the top reinforcement.
  3. Fold down Slab Anchor Template (54) and install Climbing Cone (47.5). Align Slab Anchor Template and secure.
  4. Push the 4 reinforcement bars (150a + 150b) all the way up to the Climbing Cone (47.5) so that they touch it on each side. Wire reinforcement bars to the slab reinforcement.
- (Fig. D1.04 + D1.04a)

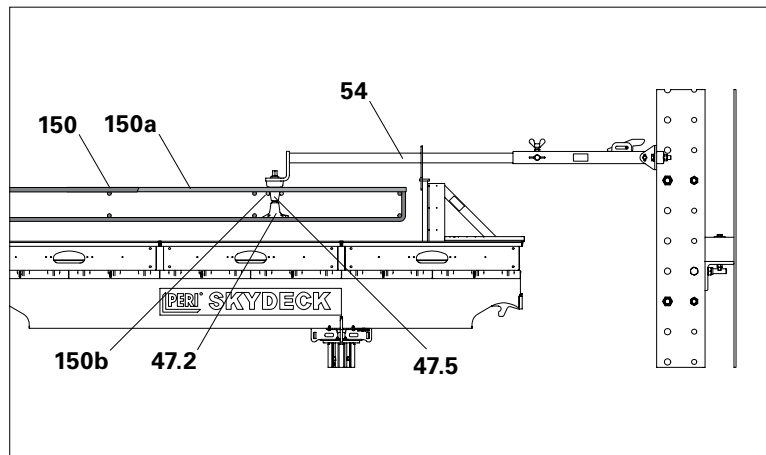


Fig. D1.04a



## Mounting the Stopend Slab Anchor

### Anchoring M30

Stopend Slab Anchor M30/25-160  
with red advancing cap

### Anchoring M24

Stopend Slab Anchor M24/20-128  
with grey advancing cap

### Components

- |           |                                |
|-----------|--------------------------------|
| <b>51</b> | Stopend Slab Anchor M30/25-160 |
| <b>52</b> | Stopend Slab Anchor M24/20-128 |

### Assembly

1. Nail the advancing cap (51.1) to the stopend formwork. ①
  2. Twist Stopend Slab Anchor (51) on the thread of the cap. ②
  3. Wire the Stopend Slab Anchor to the slab reinforcement. ③
- Stopend Slab Anchor is ready.

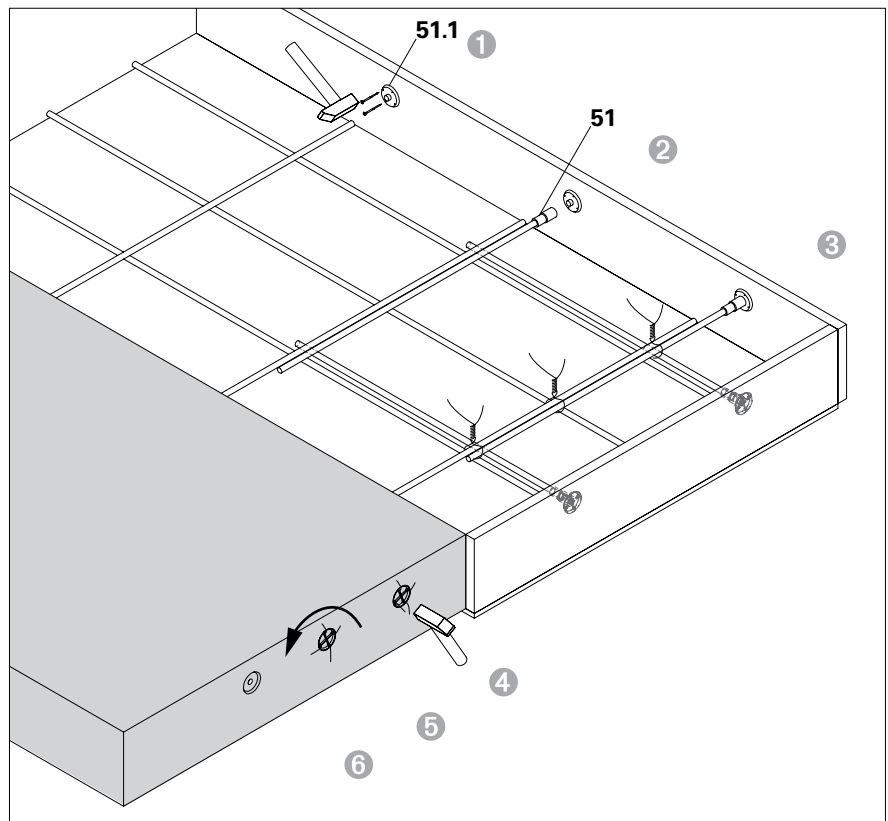


Fig. D1.05

### Striking



#### Caution

There is a risk of injury from the protruding nails of the advancing cap.  
⇒ Bend over nails immediately after striking.

4. Bend over protruding nails immediately after striking. ④
  5. Loosen the advancing cap (51.1) by turning it counterclockwise and remove. ⑤
- Anchoring point is now ready. ⑥

## Assembly of the Suspension



### Warning

If not correctly assembled, the Slab Shoe and Climbing Shoe can tip over the edge of the slab, fall to the ground and hit people below. This could lead to serious injuries or even death.

- ⇒ Cordon off areas of risk under the working areas.
- ⇒ Loosely screw Slab Shoe onto the anchoring (47), then position over the edge of the slab.
- ⇒ Secure Climbing Shoes against falling to the ground by means of ropes.



- Assembly of the Slab Shoe is usually carried out with protection provided by the climbing enclosure. If this is not possible in exceptional cases or the gap to the enclosure is too large, use personal protective equipment to prevent falls.

### Components

---

<b>45</b>	Slab Shoe RCS
<b>47</b>	Anchoring
<b>48</b>	Stopend Slab Shoe RCS
<b>51</b>	Stopend Slab Anchor M30/25-160
<b>52</b>	Stopend Slab Anchor M24/20-128
<b>53</b>	Bolt ISO 4014 M24 x 70-10.9
<b>49</b>	Bolt ISO 4017 M30 x 70-8.8
<b>151</b>	PERI Anchor Bolt 14/20x130

---

## Assembly of the Slab Shoe RCS

1. Place Slab Shoe (45) on the slab at an angle.
2. Fix to the anchoring (47) using bolts M24 x 70 (53).
3. Turn Slab Shoe into the correct position and lower it.
4. Tighten bolt M24x70 (53).
5. Secure the front slotted hole (47.6) to the floor slab using Anchor Bolts (151). Alternatively, secure with suitable heavy-duty dowels or on embedded bolts and long nuts.

(Fig. D1.06 + D1.06a)



According to plan, there is a gap between the slab edge and the stop plate of the Slab Shoe:

a = 600 mm,  
b = 100 mm,  
dx = 10 mm play



Have all fixings been correctly tightened?

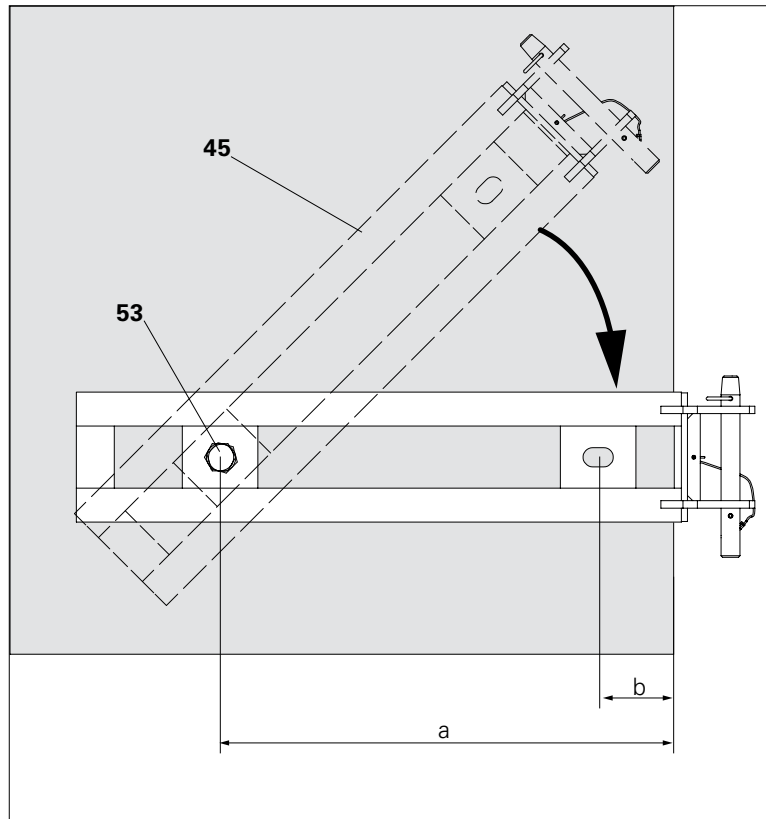


Fig. D1.06

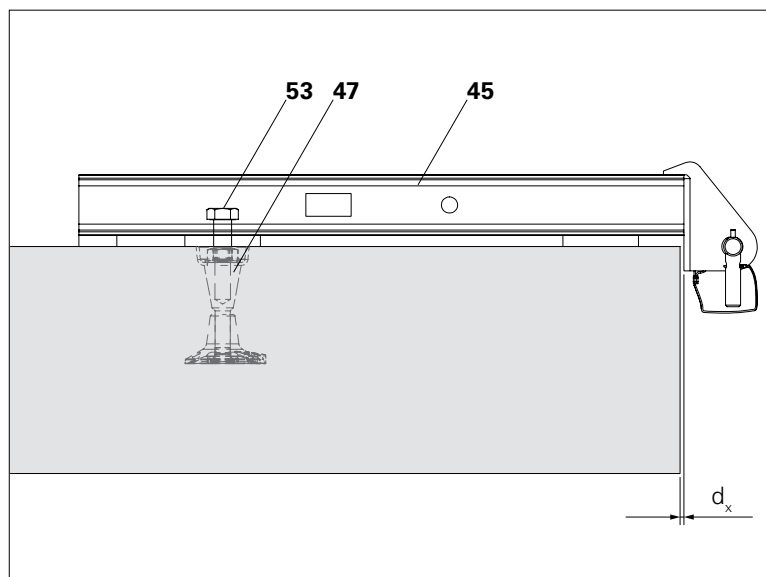


Fig. D1.06a

## Assembly of the Stopend Slab Shoe RCS

### Components

<b>48</b>	Stopend Slab Shoe RCS
<b>50</b>	Reducing Bushing Ø 30 - 25
<b>51</b>	Stopend Slab Anchor M30/25-160
<b>53</b>	Bolt ISO 4014 M24 x 70-10.9
<b>49</b>	Bolt ISO 4017 M30 x 70-8.8

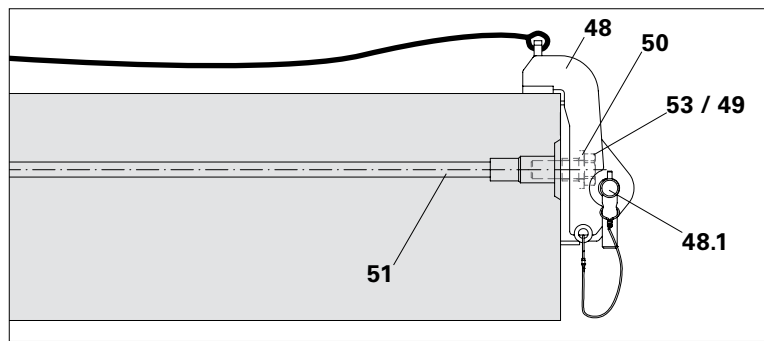


Fig. D1.07

### Assembly

1. Secure the Slab Stopend Shoe against falling to the ground, e.g. with a rope.
2. Secure the Stopend Slab Shoe RCS (48) to the Stopend Slab Anchor (51/52) using bolt M30 x 70 (49) or bolt M24 (53) with the reducing bushing (50).
3. Remove guardrails.  
(Fig. D1.07)



Have all fixings been correctly tightened?

## Assembly of the Climbing Shoe RCS



For operation of the Climbing Shoe, see Section D2.

### Components

- 44** Climbing Shoe RCS
- 44.1** Climbing Pawl
- 45** Slab Shoe RCS
- 45.1** Locking Pin

### Assembly

1. Secure Climbing Shoe RCS (44) on bolts for connecting the Climbing Device (44.6) against falling to the ground.
2. Close guiding skids.
3. As a rule, lock the climbing pawl (44.1) with the pawl lock (44.4).
4. Insert the Climbing Shoe into the Slab Shoe RCS (45) or the Stopend Slab Shoe RCS.
5. Insert the locking pin (45.1) or (48.1) through the lateral cheeks of the Wall Shoe and Climbing Shoe and secure with cotter pin.
6. Open guiding skids (44.2) on the Climbing Shoe to allow easier insertion of the Climbing Rail.

(Fig. D1.08 + D1.08a)



- Are all locking pins on the guide skids fully inserted and secured?
- Are all locking pins of the Slab Shoes / Stopend Slab Shoes secured with cotter pins?

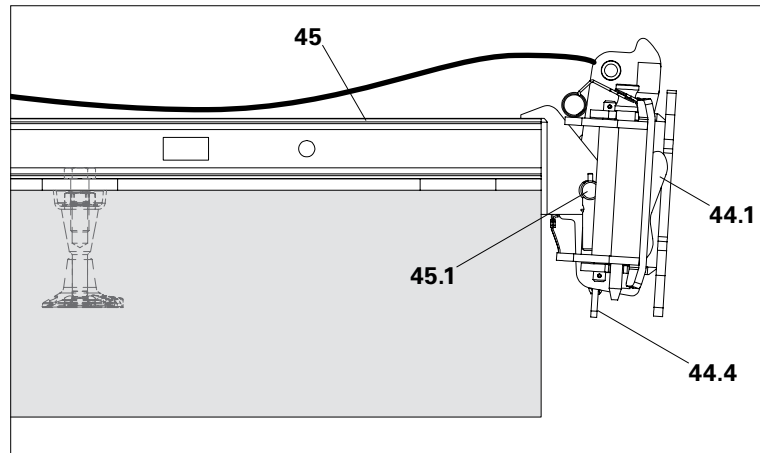


Fig. D1.08

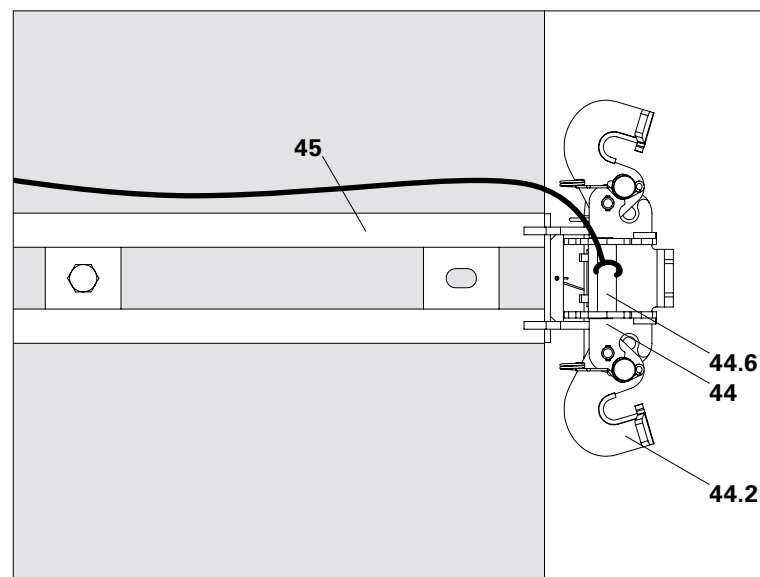


Fig. D1.08a

## Bracing the Corner Elements



Install temporary bracing in the case of expected wind speeds of more than 100 km/h.

### Components

<b>2</b>	Climbing Rail RCS
<b>24</b>	Fitting Pin $\varnothing$ 21 x 120
<b>26</b>	Cotter Pin 4/1
<b>47.6</b>	Tie Rod DW 15, Special Length
<b>117</b>	Heavy-Duty Dowel $\varnothing$ 22
<b>118</b>	Heavy-Duty Dowel $\varnothing$ 30
<b>119</b>	Hex. Nut DW 15 SW 30/50
<b>122</b>	Bracing Shoe RCS DW 15
<b>123</b>	Eye Nut RCS DW 15
<b>125</b>	Articulated Spanner RCS DW 15

### Assembly:

1. Turn Tie Rod (47.6) in the eye nut (123) (Fig. D1.09a)
2. Connect Tie Rod to Articulated Spanner (125) by means of nut DW 15 (119).
3. Mount eye nut (123) in the Climbing Rail RCS (2) using the fitting pin  $\varnothing$  21 x 120 (24) and cotter pin (26) whilst standing on the platform.
4. Connect Articulated Spanner (125) to the Bracing Shoe RCS DW15 (122) with the fitting pin. (Fig. D1.09b)

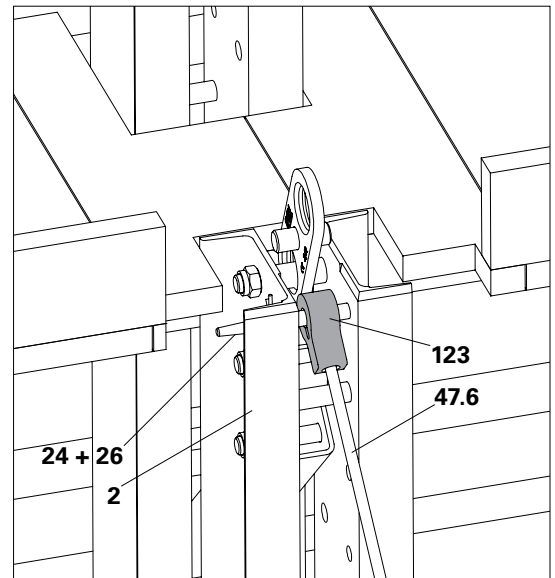


Fig. D1.09a

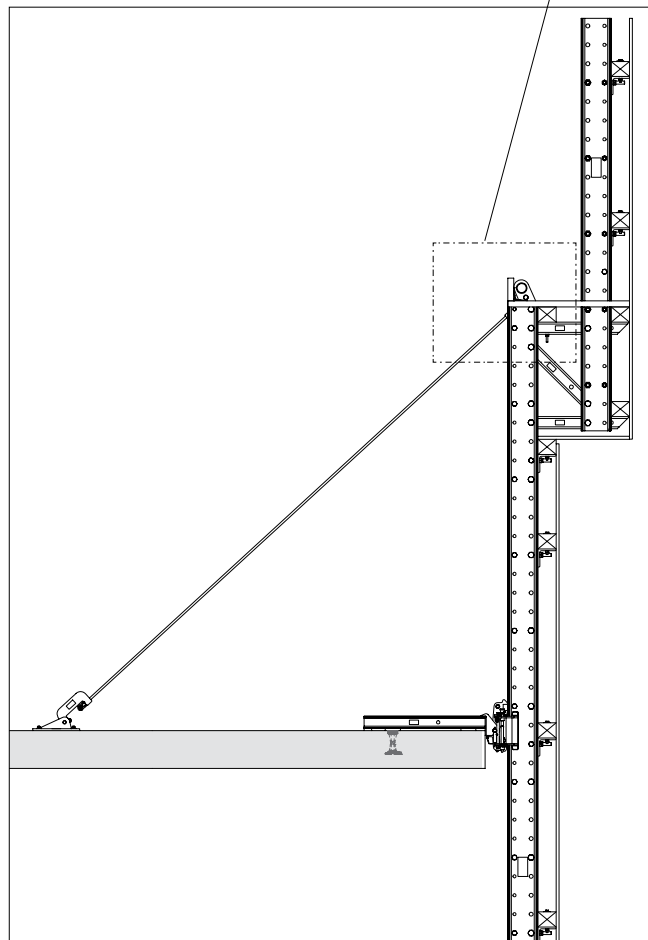


Fig. D1.09

5. Position Bracing Shoe on the slab and drill the holes for the heavy-duty dowels in accordance with the plan.
6. Brush and blow out holes according to installation instructions of the dowel manufacturer.
7. Attach Bracing Shoe with heavy-duty dowels (117) (4 x Ø 22) or (118) (2 x Ø 30) (Fig. D1.09b - D1.09e).
8. Turn the nut (119) in a clockwise direction in order to pre-tension the bracing.

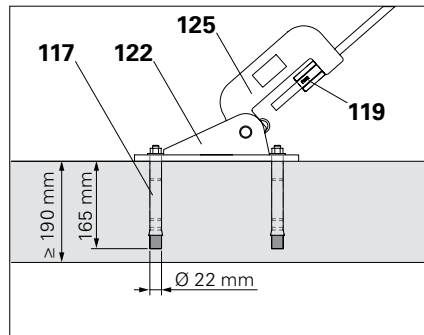


Fig. D1.09b

### Storage:

Assembled or packaged on the platforms outside of the walkways. Secure bracing to prevent it falling to the ground.

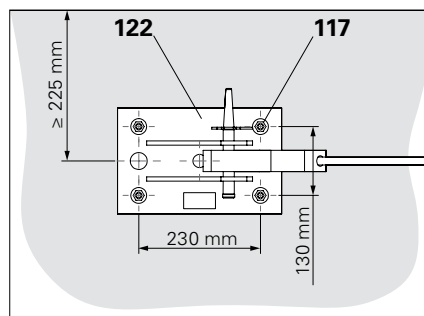


Fig. D1.09c

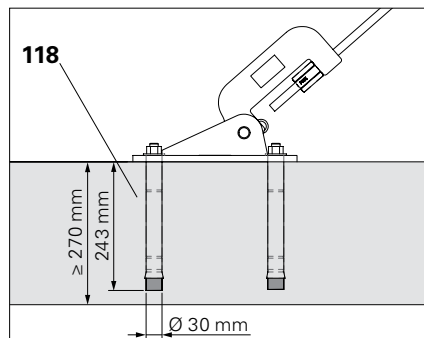


Fig. D1.09d

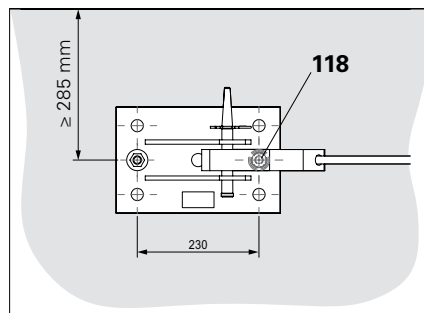


Fig. D1.09e

## Horizontal Support



The horizontal bracing is a required anchoring to the building and serves to transfer the acting wind loads during working and storm conditions. During the climbing procedure, the horizontal bracing is to be swivelled up and fixed in position in order to prevent a collision with the building or formwork.

### Components

<b>1</b>	Enclosure Post
<b>24</b>	Fitting Pin $\varnothing$ 21 x 120
<b>25</b>	Fitting Pin $\varnothing$ 26 x 105 VRB
<b>26</b>	Cotter Pin 4/1
<b>27</b>	Cotter Pin 5/1
<b>47</b>	Anchoring
<b>48</b>	Stopend Slab Shoe RCS
<b>53</b>	Bolt ISO 4014 M24 x 70-10.9
<b>120</b>	Heavy-Duty Spindle SLS 100/180
<b>121</b>	Spindle Shoe SLS/RCS M24
<b>124</b>	Forkhead Adapter RCS/SLS

### Assembly on the Enclosure Post

1. Connect the Spindle Shoe SLS/RCS (121a) to the Enclosure Post (1) using one fitting pin  $\varnothing$  26 (25) and one fitting pin  $\varnothing$  21 (24). Secure both fitting pins with cotter pins (26 + 27). Angle of inclination  $\alpha = 10 \pm 5^\circ$ .
2. Connect Heavy-Duty Spindle SLS 100/180 (120) to the Spindle Shoe (121a) using fitting pin  $\varnothing$  21 mm (24) and cotter pin (26).
3. Attach second Spindle Shoe (121b) to the Heavy-Duty Spindle (120) using fitting pin  $\varnothing$  21 and cotter pin (26). (Fig. D1.10)

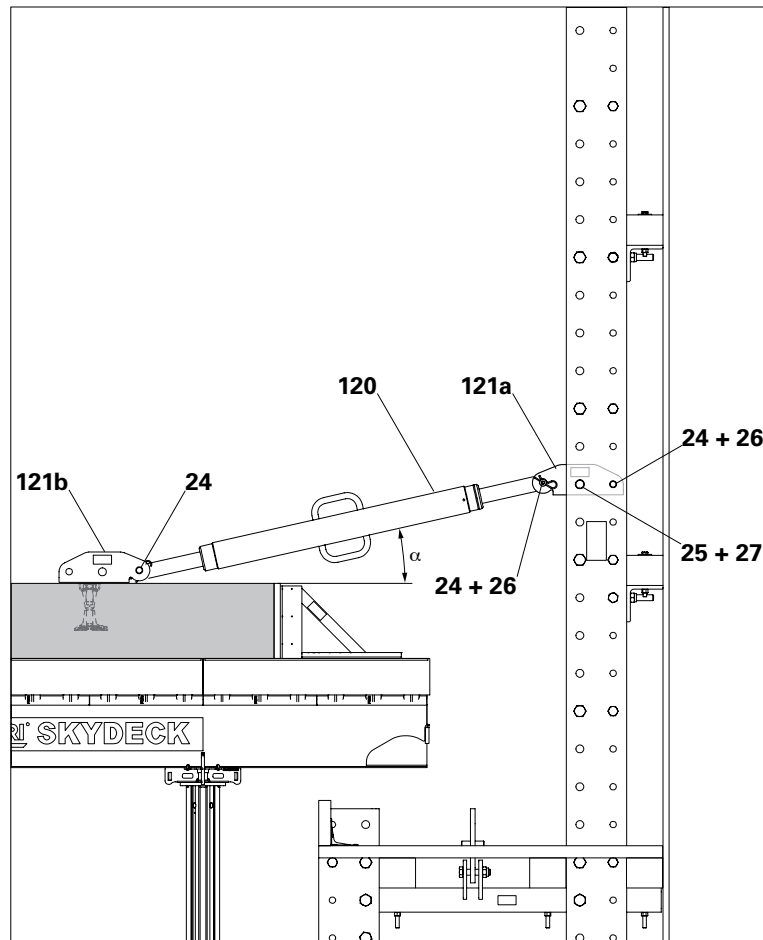


Fig. D1.10



Have all bolts been secured with cotter pins?



## Anchoring position A:

Heavy-Duty Spindle in the climbing position:

1. Remove fitting pin  $\varnothing$  21 mm (24) in the Spindle Shoe (121b) and store in hole of the Climbing Rail.
2. Swivel down Heavy-Duty Spindle (120) with Spindle Shoe.

Assembly on the anchoring:

3. Adjust the Heavy-Duty Spindle so that the position of the hole in the Spindle Shoe corresponds to the anchoring (47).
4. Connect Spindle Shoe (121b) to the anchoring using bolt M24 x 70 (53).



Have all bolts been secured with cotter pins?

## Climbing position B:

Heavy-Duty Spindle in the anchoring position:

1. Remove bolts M24 x 70 (53) from the anchoring (47).
2. Swivel up the Heavy-Duty Spindle (120) with the Spindle Shoe.
3. Fix Spindle Shoe (121b) in the hole  $\varnothing$  26 of the Enclosure Post (1) using fitting pins  $\varnothing$  21.

(Fig. D1.10a)



Have all bolts been secured with cotter pins?

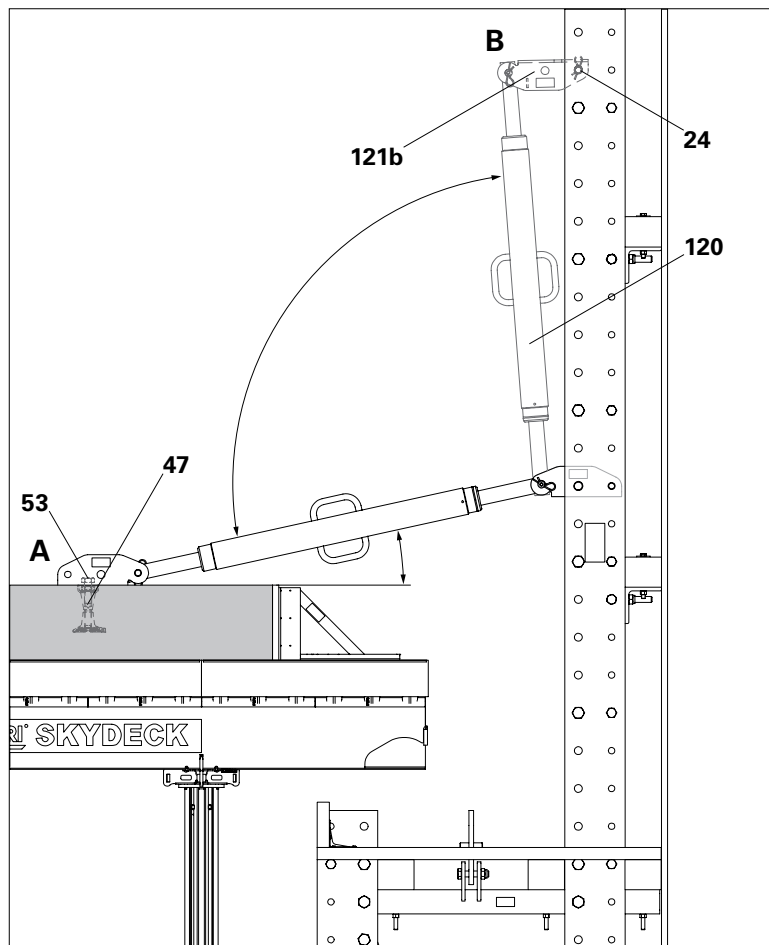


Fig. D1.10a

## Assembly on the Stopend Slab Shoe

1. Mount the Forkhead Adapter (124) on the building side of the Heavy-Duty Spindle (120) using the provided bolt and nut. (Fig. D1.11)
2. Connect the Spindle Shoe SLS/RCS (121a) to the Enclosure Post (1) using one fitting pin  $\varnothing$  26 (25) and one fitting pin  $\varnothing$  21 (24). Secure both fitting pins with cotter pins (26 + 27).
3. Connect Heavy-Duty Spindle (120) to the Spindle Shoe (121a) using the fitting pin  $\varnothing$  21 mm (24) and cotter pin (26).

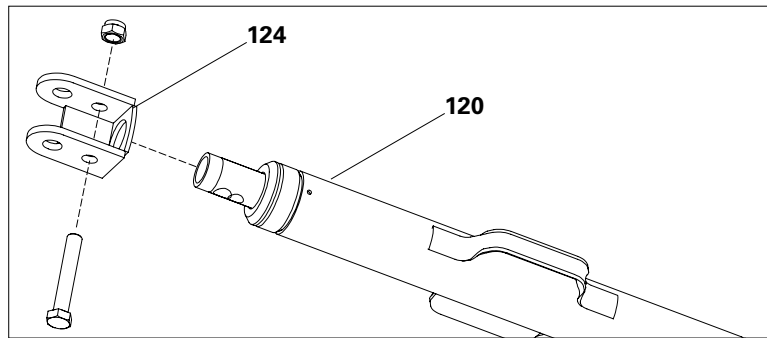


Fig. D1.11

## Anchoring position A:

4. Connect Heavy-Duty Spindle with attached Forkhead Adapter (124) to Stopend Slab Shoe RCS (48) using bolts  $\varnothing$  25 (48.1).

## Climbing position B:

3. Fix Heavy-Duty Spindle to the Enclosure Post using binding wire.
- (Fig. D1.11a)



Have all bolts been secured with cotter pins?

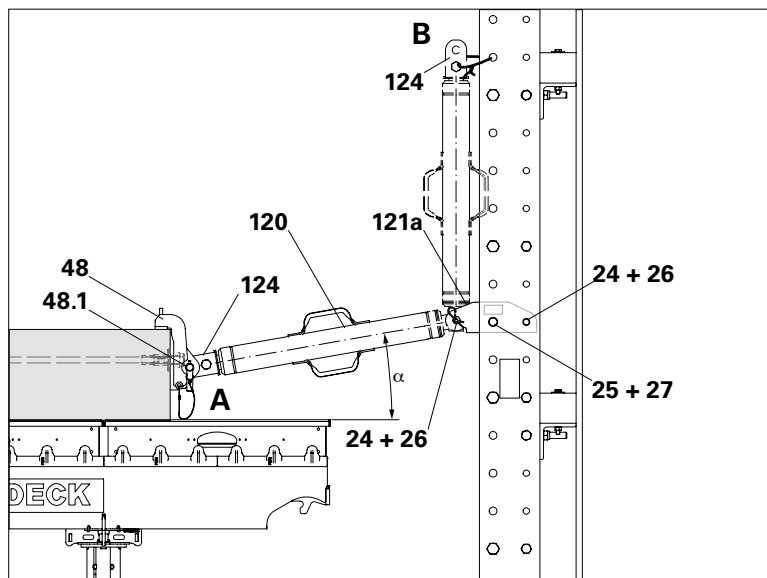


Fig. D1.11a

## Dismantling the Suspension



### Warning

- There is a risk of falling from unsecured slab edges. A fall can result in serious injury or even death!
  - ⇒ Mount guardrails before climbing.
  - ⇒ Use personal protective equipment to prevent falling from a height.
- The Slab Shoe and Climbing Shoe can tip over the edge of the slab if the dismantling procedure is incorrect, fall to the ground and hit people below. This could lead to serious injuries or even death.
  - ⇒ Cordon off areas of risk under the working areas.
  - ⇒ First loosen the anchoring (47) slightly and turn the Slab Shoe to a secure position.



If possible, install guardrails on the slab edge before dismantling the Slab Shoe. Supplement Toeboard after dismantling the Slab Shoe.

### Components

---

- 44** Climbing Shoe RCS
  - 44.1** Climbing Pawl
  - 45** Slab Shoe RCS
  - 45.1** Locking Pin
  - 53** Bolt ISO 4014 M24 x 70-10.9
-

## Dismantling

1. Secure Climbing Shoe RCS (44) on bolts for connecting the Climbing Device (44.6) against falling to the ground.
2. Hold Climbing Shoe against bolt (44.6), pull out locking pin (45.1) of the Slab Shoe.
3. Pull Climbing Shoe upwards and lay on floor slab; then insert locking pin (45.1) into the Slab Shoe again. (Fig. D1.12)
4. Loosen bolt M24 x 70 (53) approx. 15 mm, but do not remove. (Fig. D1.12a)
5. Lift Slab Shoe RCS (45) and turn it inwards to a secure position.
6. Remove bolt M24 x 70. (Fig. D1.12b)

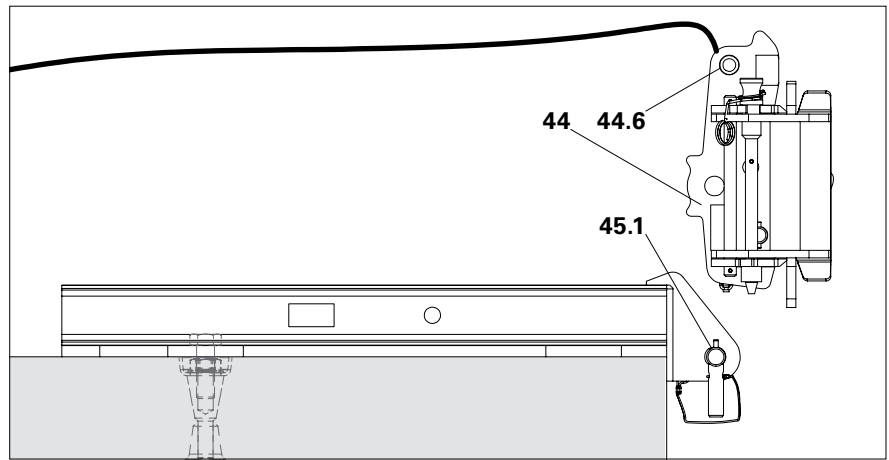


Fig. D1.12

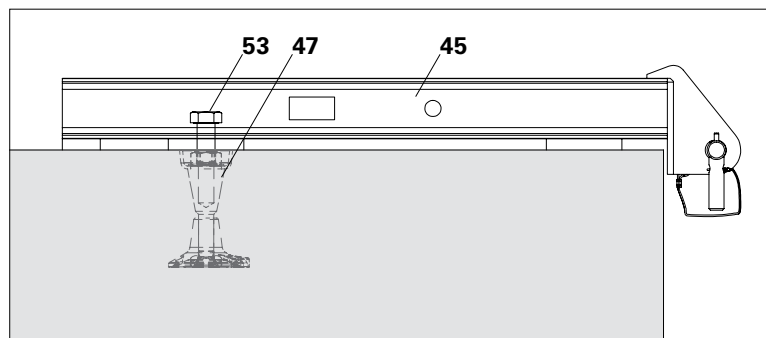


Fig. D1.12a

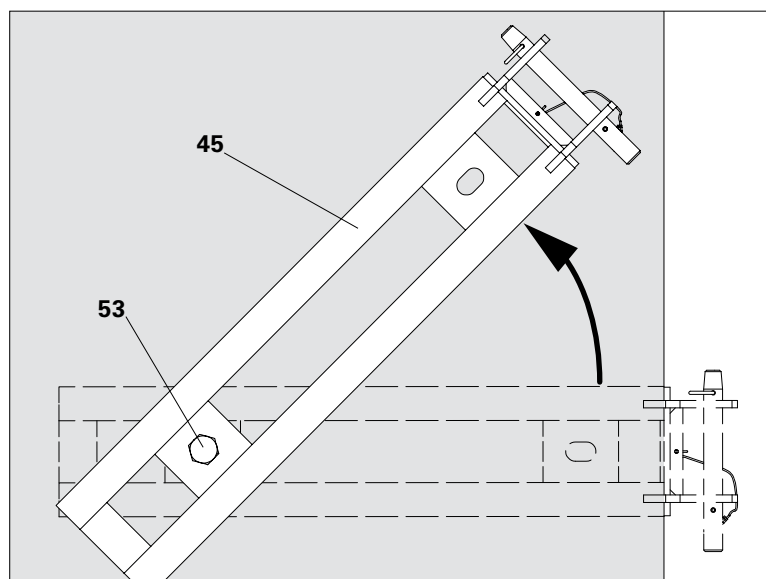


Fig. D1.12b

## Removing the Anchoring



### Warning

There is a risk of falling from unsecured slab edges. A fall can result in serious injury or even death!

- ⇒ Mount guardrails before climbing.
- ⇒ Use personal protective equipment to prevent falls.



- Work to be carried out with site personnel protected by guardrails that follow the climbing protection panel.
- For fixing the concrete cones, observe the separate Instructions for Use!

### Components

- 47.1** Screw-On Cone-2 M24/DW 20
- 47.7** Threaded Anchor Plate DW 15 Ø 80 mm
- 47.9** KK Concrete Cone M24

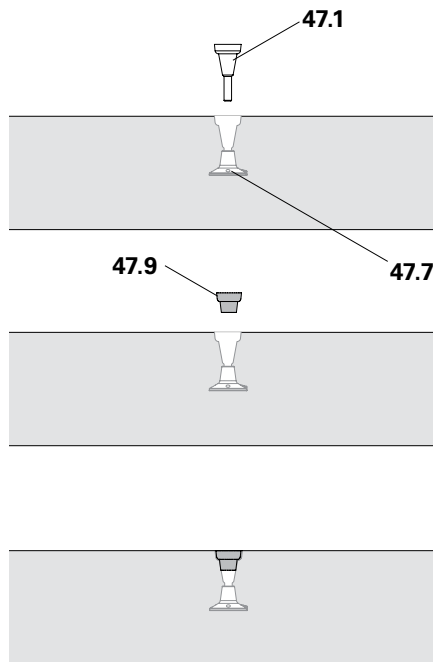


Fig. D1.13a

### Anchoring M24 Version 1

Screw-On Cone M24/DW 20 (47.1) partially re-usable.

1. Release Screw-On Cone with socket wrench SW 36 and remove.
2. Close remaining hole with suitable KK Concrete Cone (47.9) and matching adhesive.

(Fig. D1.13a)

## Anchoring M24 Version 2

Climbing Cone-2 M24/DW 15 (47.5)  
partially re-usable.

### Components

- 47.5** Climbing Cone-2 M24/DW 15
- 47.7** Threaded Anchor Plate DW 15  
Ø 80 mm
- 47.9** KK Concrete Cone M24

1. Release Climbing Cone by means of Socket Wrench SW 36 and remove.
  2. Close remaining hole with suitable KK Concrete Cone (47.9) and matching adhesive.
- (Fig. D1.13b)

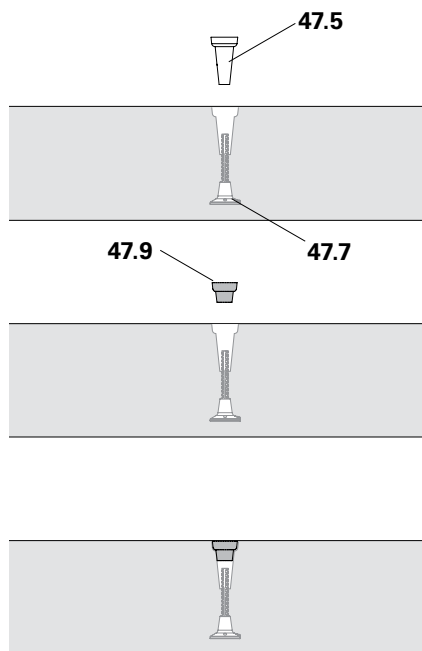


Fig. D1.13b



## Warning

During dismantling, anchoring components may fall to the ground and hit people below. This could lead to serious injuries or even death.

⇒ Cordon off areas of risk under the working areas.

⇒ In order to prevent personnel falling out of the building, install anti-fall protection with a dense mesh underneath, e.g. PROKIT.

## Anchoring M24 Version 3

Climbing Cone-2 M24/DW 15 completely re-usable.

## Components

- 47.5** Climbing Cone-2 M24/DW 15
- 47.7** Threaded Anchor Plate DW 15  
Ø 80 mm
- 47.9** KK Concrete Cone M24

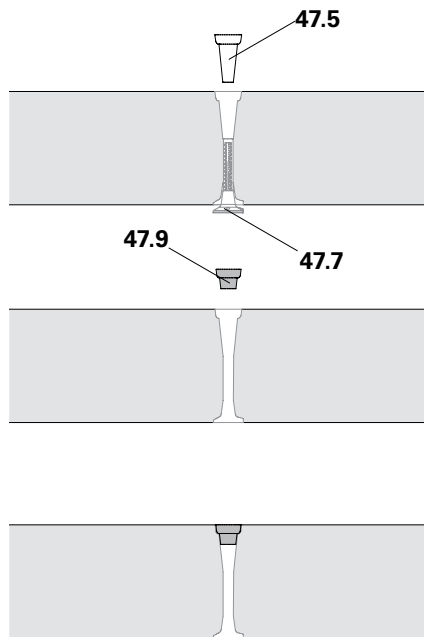


Fig. D1.13c

1. Loosen Climbing Cone (47.5) using a Socket Wrench SW36 and screw out approx. 1 cm.
2. Hammer the Cone downwards so that the Threaded Anchor Plate DW 15 (47.7) is loosened.
3. Now completely remove the Cone. Remove the Threaded Anchor Plate together with Tie Rod DW 15 from below using a secured mobile scaffold.
4. Close remaining hole with suitable KK Concrete Cone (47.9) and matching adhesive.

(Fig. D1.13c)

# D2 Operating the Climbing Shoe

## Opening and Closing the Climbing Shoe

The Safety Bolts (44.3) hold the guiding skids (44.2) in a closed position. (Fig. D2.01 + D2.01a)

### Components

- 44** Climbing Shoe RCS
- 44.1** Climbing Pawl
- 44.2** Guiding Skids
- 44.3** Securing Pin
- 44.6** Locking Spring

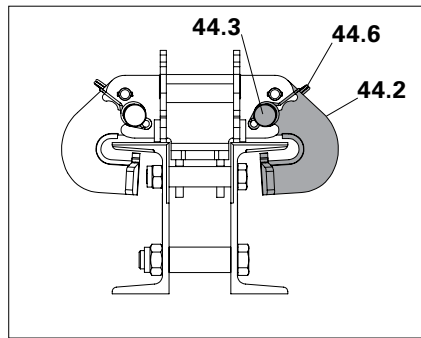


Fig. D2.01

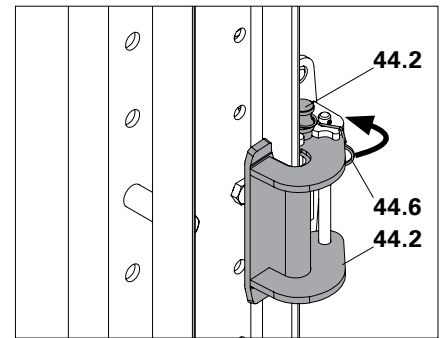


Fig. D2.01a

### Opening the Climbing Shoe:

1. Release the locking spring (44.6).  
For this, pull out the ring under the guiding skid (44.2).  
(Fig. D1.01 + D1.01a)
2. Lift securing pins (44.3).
3. Fold up guiding skids (44.2).  
(Fig. D1.02 + D1.02a)
4. Re-insert securing pins (44.3) in the opened position; place the locking spring (44.6) only loosely on the guiding skid.  
(Fig. D1.03 + D1.03a)
5. Proceed in the same way with the other guiding skid.  
(Not shown)

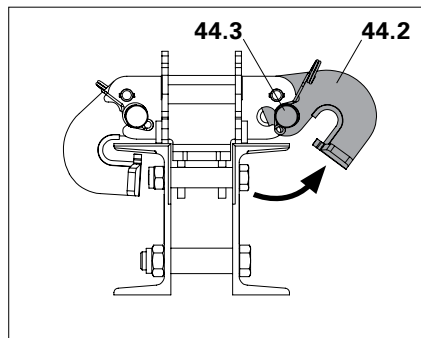


Fig. D2.02

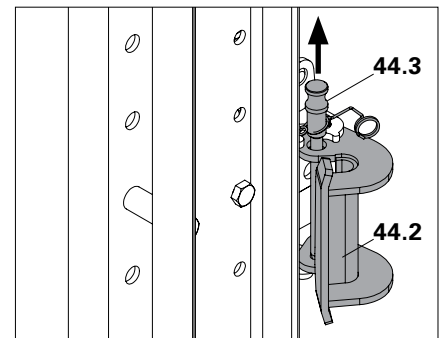


Fig. D2.02a



Opening the guiding skids facilitates inserting the Climbing Rail during climbing and allows inserting the Climbing Rail during initial assembly.

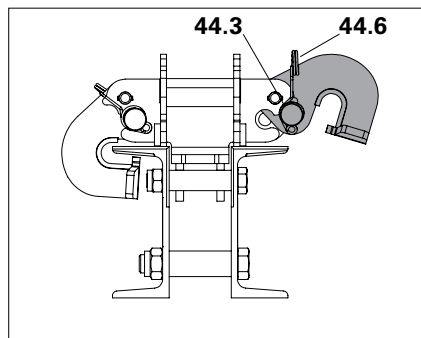


Fig. D2.03

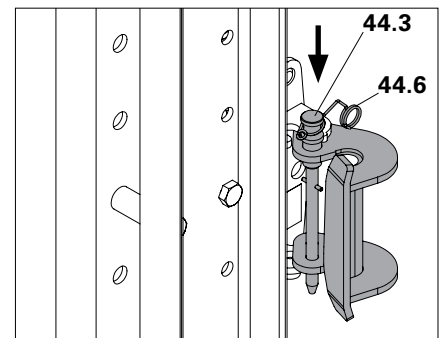


Fig. D2.03a



## D2 Operating the Climbing Shoe

### Closing the Climbing Shoe:

1. Lift securing pins (44.3).  
(Fig. D2.04 + D2.04a)
2. Fold guiding skid (44.2) forwards.  
(Fig. D2.05 + D2.05a)
3. Fully re-insert the securing pin (44.3) in the closed position.
4. Fix the locking spring (44.6) in position. For this, the ring is snapped into place under the guiding skid (44.2).
5. Proceed in the same way with the other guiding skid.

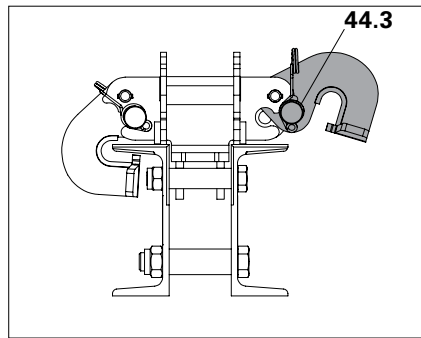


Fig. D2.04

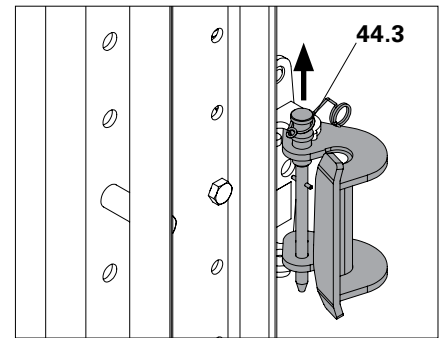


Fig. D2.04a



Are both locking pins completely inserted and is the locking spring fixed in position?

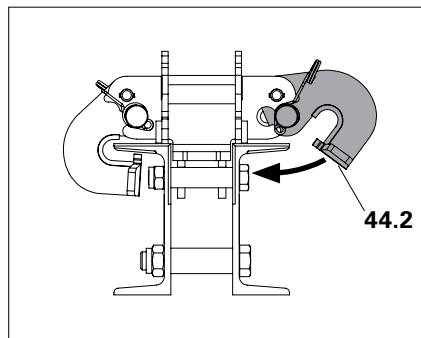


Fig. D2.05

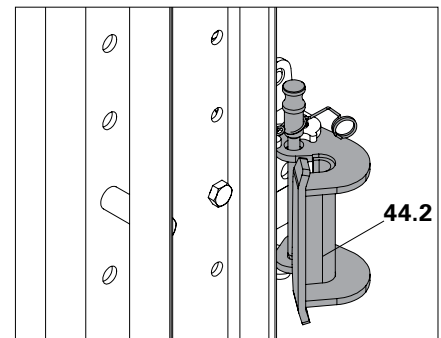


Fig. D2.05a

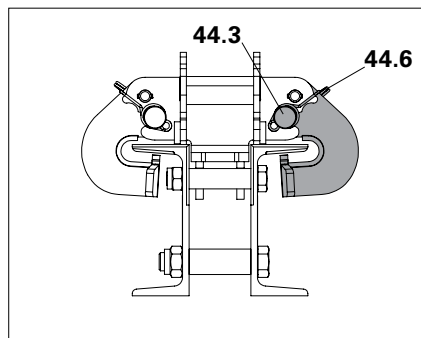


Fig. D2.06

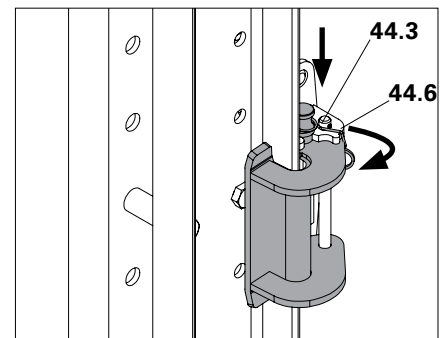


Fig. D2.06a

## Activating and Deactivating the Climbing Pawl



### Warning

- This can cause serious injuries.
- ⇒ Only activate or deactivate the climbing pawl when the Climbing Unit has stopped moving.
- ⇒ Do not reach into the Climbing Rail during the climbing procedure!

### Deactivating the climbing pawl

#### Components

<b>44</b>	Climbing Shoe RCS
<b>44.1</b>	Climbing Pawl
<b>44.4</b>	Pawl Lock
<b>44.5</b>	Hinged Bail

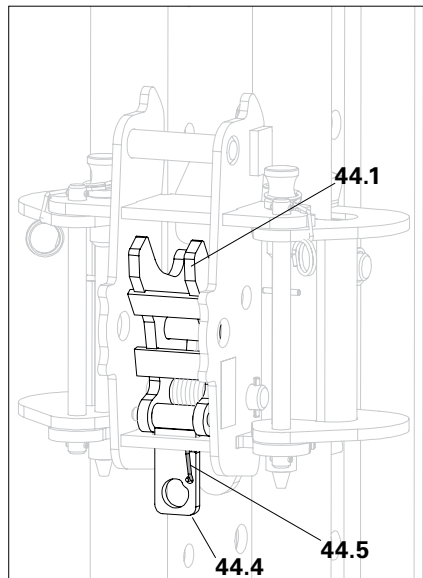


Fig. D2.07

1. Ensure that the Climbing Unit is stationary.
  2. Pull down the pawl lock (44.4) on the Climbing Shoe.
  3. Fold up the hinged bail (44.5) on the pawl lock (5.4) and then let go of the pawl lock.
    - The hinged bail is then clamped and blocks the climbing pawl.
    - The climbing pawl is deactivated and therefore non-operational.
- (Fig. D2.07 + D2.07a)



In this position, no vertical forces from the Climbing Rail can be transferred via this particular shoe.

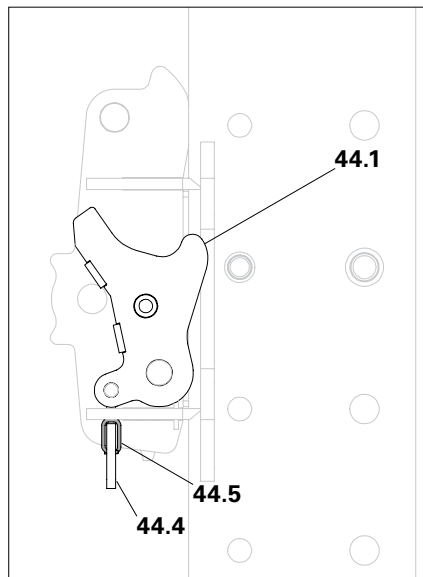


Fig. D2.07a

## Activating the Climbing Pawl

### Components

- 44** Climbing Shoe RCS
- 44.1** Climbing Pawl
- 44.4** Pawl Lock
- 44.5** Hinged Bail

1. Ensure that the Climbing Unit is stationary.
  2. Pull down the pawl lock (44.4) on the Climbing Shoe.
  3. Fold up the hinged bail (44.5) on the pawl lock (5.4) and then let go of the pawl lock.
    - The climbing pawl (44.1) jumps into its working position.
    - The climbing pawl is activated and therefore operational.
- (Fig. D2.08 + D2.08a)

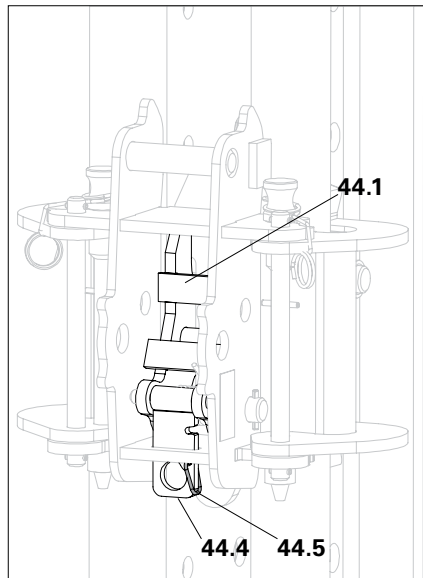


Fig. D2.08



Can the climbing pawl move freely?  
Is the hinged bail hanging downwards?



- This position serves the purpose of transferring vertical forces from the Climbing Rail during working operations and climbing.
- For storey heights that are dividable by 50 cm, only activate the pawls on the Climbing Shoes that serve as the planned vertical support. Deactivate all other Climbing Shoes.

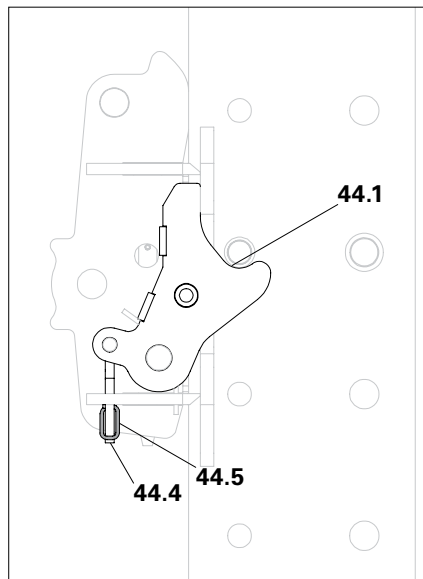


Fig. D2.08a

## Safety Instructions



### Warning

- There is a risk of falling from unsecured slab edges.
- As a result of the moving procedure, leading edges are formed between the platforms.

A fall can result in serious injury or even death!

- ⇒ Mount guardrails before climbing.
- ⇒ Areas of risk are to be cordoned off.
- ⇒ Use personal protective equipment to prevent falls.



### Warning

Parts of the body can get caught between the Climbing Rail and Slab Shoe and become trapped. This can cause serious injuries.

- ⇒ Do not take hold of anything between the Rail Guidance Shoes and Climbing Rails while the climbing enclosure is moving.



- The load-bearing capacity of the structural elements, which carry the load-carrying Slab Shoes, must be ensured!
- Do not transport persons, building materials or tools when moving with the crane. These could fall off and cause serious injury or even death.
- Material or other components must not protrude beyond the slab edge. This could hinder climbing or fall off.
- In the event of a malfunction, the climbing unit is to be set down in the next possible position and an authorised person is to be informed immediately!
- When climbing by crane, always provide safe access for attaching and detaching the crane lifting gear. Additional double crane slings that remain on the climbing enclosure may be necessary until they can be safely removed.

## Preparations

### Components

- |           |   |
|-----------|---|
| <b>41</b> | Foldable Cover (multi-layer plywood sheeting) |
| <b>44</b> | Climbing Shoe RCS                             |
| <b>85</b> | Guardrails                                    |

### Assembly

1. Mount the top Slab and Climbing Shoes (44a) on the next floor slab. Open guiding skids on the top Climbing Shoe (44a), deactivate the climbing pawl.
  2. Activate climbing pawls on the middle Slab Shoe (44b). The load is still carried on the bottom Slab Shoe (44c).
  3. Remove temporary connections between the Climbing Units.
  4. Dismantle formwork in the area of the slab edge.
  5. Mount trailing guardrails (85).
  6. Fold up Foldable Covers (41) and secure.
  7. From a safe position, attach crane lifting gear to Crane Eye BR-2 2.5 t.
  8. Leave climbing enclosure and area of risk.
- (Fig. D3.01)

For operating the Climbing Shoes, see Section "Opening and Closing the Climbing Shoe" on Page 120 as well as Section "Activating and Deactivating the Climbing Pawl" on Page 122.

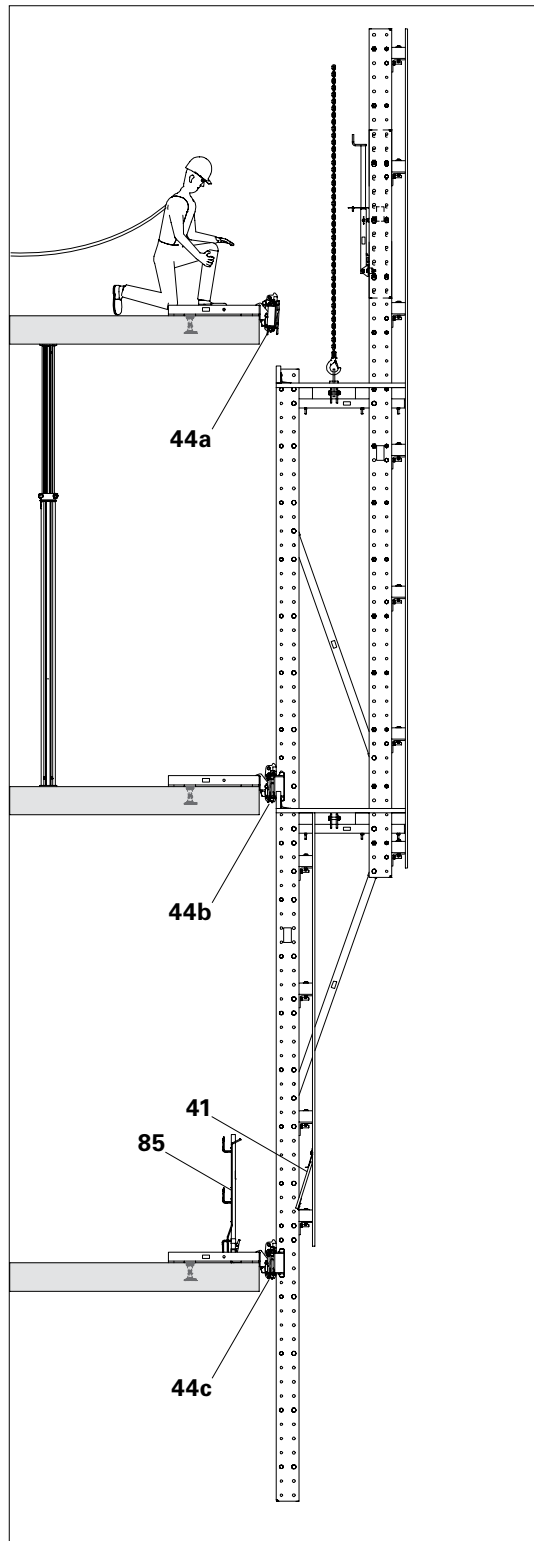


Fig. D3.01

## Moving Procedure

### Components

- 
- 44** Climbing Shoe RCS
  - 126** Guide-in Tool RCS
- 

1. Raise the Climbing Unit to the top Climbing Shoes (44a) using the crane; not necessary with Version 4.
2. Insert Climbing Rail (2) into the top Climbing Shoes (44a) using the Guide-In Tool (126).
3. Close the guiding skids of the top Slab Shoe. Climbing pawl remains deactivated. (Fig. D4.03a)
4. If necessary, deactivate pawls of the bottom Slab Shoe (44c).
5. Raise climbing unit up to the planned end position until the climbing pawls of the middle Slab Shoe (44b) engage.
6. Lower the Climbing Unit until the Spacers are fully load-bearing on the climbing pawls of the middle Slab Shoe (44b). (Fig. D3.02)

### If climbed too far:

1. Raise the Climbing Unit by approx. 10 cm using the crane.
2. Deactivate all pawls of the Slab Shoes of this Climbing Unit. See Section "Activating and Deactivating the Climbing Pawl" on Page 122.
3. Lower the Climbing Unit until the correct Spacer is approx. 10 cm above the pawl of the load-bearing Slab Shoe (44b).
4. Activate pawl of the load-bearing Slab Shoe (44b).
5. Position Climbing Unit on the Spacer.

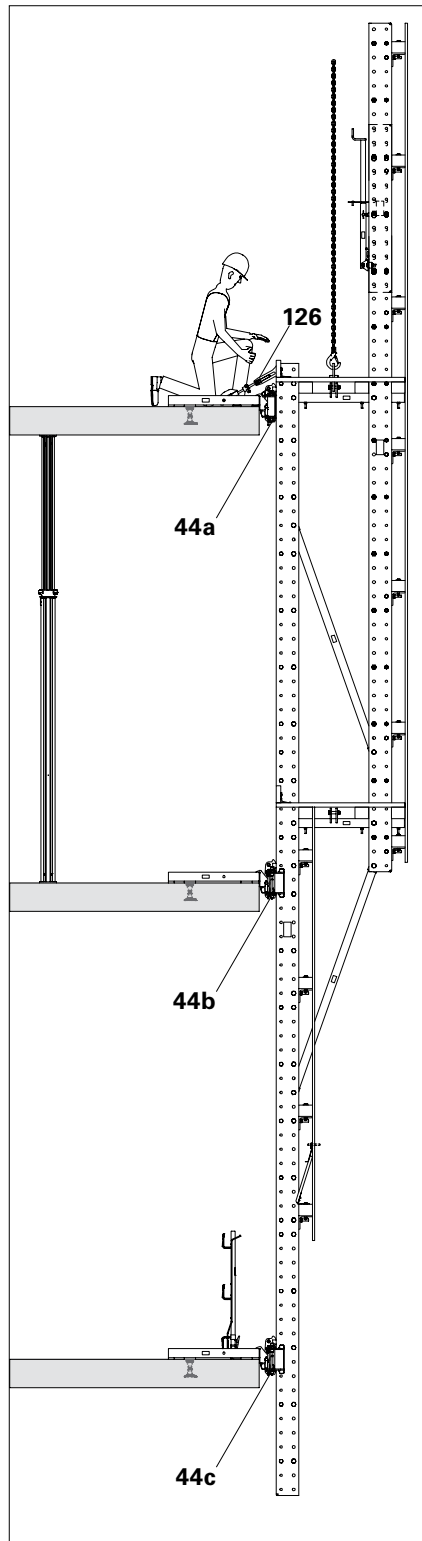


Fig. D3.02

## Troubleshooting

Problem	Cause	Measures
Guiding skids cannot be closed.	– Climbing Rail is not completely in position in the Guide Shoe.	– Pull Climbing Rail inwards with the Guide-in Tool.
	– Slab Shoe spacing is not correct.	– Slightly loosen the leading Anchor Bolt, close the guiding skids and tighten them using component tolerances. Alternatively: – Mount new anchoring through the slab with tie rods and wingnut counterplates.
Climbing Unit does not lie on the planned Spacers on both sides.	– Climbing Rail rests on a Slab Shoe that is positioned below. – Floor height is approx. a multiple of 50 cm.	– Raise the Climbing Unit by approx. 10 cm using the crane. Deactivate the pawls of all Climbing Shoes positioned above. Position Climbing Unit with the planned Spacer on the pawl of the bottom Climbing Shoe.

## Finishing tasks

1. Detach crane lifting gear from a safe position, e.g. mobile scaffold. Alternatively, leave two-sling lifting gear attached to the climbing enclosure until it can be safely dismantled.
2. Supplement guardrails.
3. Dismantle trailing Slab Shoe, see Section "Dismantling the Suspension" on page 115.
4. Remove anchoring that is no longer needed, see Section "Dismantling the Anchoring" on page 117.

## Safety Instructions



### Warning

- There is a risk of falling from unsecured slab edges.
- As a result of the moving procedure, leading edges are formed between the platforms.

A fall can result in serious injury or even death!

- ⇒ Mount guardrails before climbing.
- ⇒ Areas of risk are to be cordoned off.
- ⇒ Use personal protective equipment to prevent falls.
- ⇒ Keep Foldable Covers closed after assembling the climbing hydraulics.



### Warning

Parts of the body can get caught between the Climbing Rail and Slab Shoe and become trapped. This can cause serious injuries.

- ⇒ Do not take hold of the Climbing Shoes and Climbing Rails while the climbing enclosure is being moved.



- The load-bearing capacity of the structural elements, which carry the load-carrying Slab Shoes, must be ensured!
- Do not transport persons, building materials or tools when moving with the crane. These could fall off, leading to serious injury or even death.
- Materials or other components must not protrude beyond the slab edge. This could hinder climbing or fall off.
- If manual intervention is necessary during the climbing procedure, the platform to be climbed may only be accessed after consultation with the operating personnel.
- In the event of a malfunction, the climbing enclosure is to be set down in the next possible position and an authorised person is to be informed immediately!
- Install hydraulic hoses so that
  - no loops or knots are created,
  - no loops form beyond the edge of the slab,
  - they do not get tangled with the climbing platforms.
- Up to 2 units can be climbed at the same time.

### Significant differences between Versions 1 - 3 and 4

With Version 1 - 3, the Climbing Rail is pulled into the top Slab Shoe during the climbing procedure.

With Version 4, the Slab Shoe must be swivelled into the projecting Climbing Rail before climbing begins, then anchored and closed.



## Initial Operation of the Climbing Hydraulics

See "Instructions for Use for the RCS Climbing Device and Hydraulics".

## Preparations

The self-climbing procedure takes place from the slab level with the middle Slab Shoe.

Carry out preparatory work as described in Section "Preparations" on page 125; however, the Foldable Covers remain closed at this level until the Climbing Unit has been mounted!

### In addition:

1. Prepare climbing hydraulics. See "Instructions for Use for the RCS Climbing Device and Hydraulics".
2. Ensure hydraulic pump is available.
3. Lay out hydraulic hoses on the slab without any loops or entanglement.
4. Prepare Climbing Device RCS 50.

## Hydraulic Diagram

See Fig. D4.01.

The arrangement of the plug connectors and bushings of the quick couplers is clearly shown.

## Remedial measures for malfunctions

See "Instructions for Use for the RCS Climbing Device and Hydraulics".

- Uneven cylinder extension and retraction
- Cylinder sinks
- Hydraulic oil leaks
- Cylinder does not extend

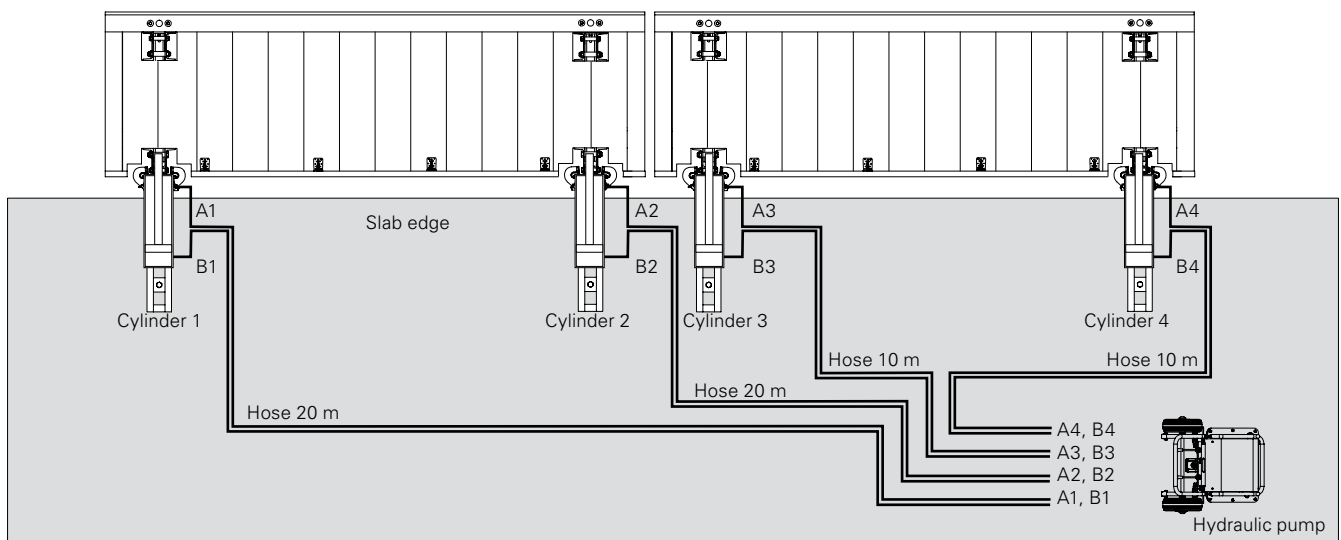


Fig. D4.01

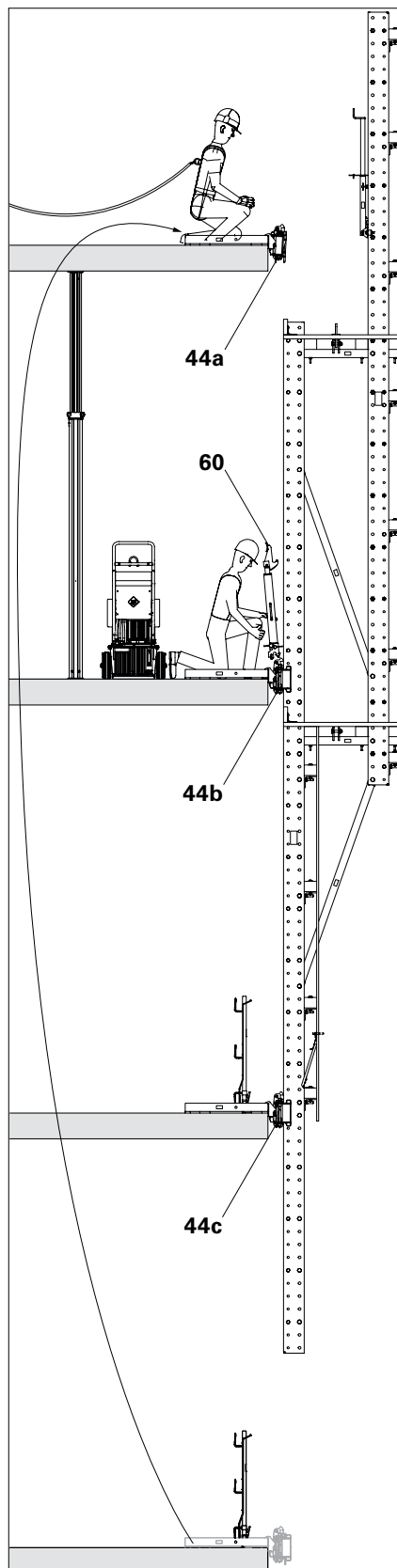
## Moving Procedure

For a detailed explanation of the individual steps, see the following section.

### Components

- 44** Climbing Shoe RCS
- 60** Climbing Device RCS 50

1. Activate climbing pawls on the middle Climbing Shoe (44b).
2. Only Version 4: mount and anchor the top Slab Shoe on the protruding Climbing Rail.
3. Insert Climbing Device (60) and engage with the bolt of the middle Climbing Shoe (44b).
4. Fold up Foldable Covers (41) and secure.
5. All personnel to leave the climbing enclosure; control climbing procedure from a safe position.
6. Raise the climbing enclosure from the middle Climbing Shoe with the Climbing Device (60) in 50-cm steps. (Fig. D4.01)
7. Only Version 1 - 3: when the Climbing Rail (2) has reached the top Climbing Shoe (44a):
  - Stop the climbing procedure and insert the Climbing Rail into the Slab Shoe.
  - Continue climbing.
8. After the required protection height has been reached:
  - Stop the climbing procedure.
  - Position the Climbing Unit with Spacer on the middle Slab Shoes.



### Only Version 4:

Deactivate climbing pawls of the top Climbing Shoes (44a). Open the guiding skids. Place Climbing Shoes on protruding Climbing Rail. Anchor the Slab Shoe (45). Pull the Climbing Rail onto the Climbing Shoe using the Guide-In Tool. Close the guiding skids. Remove the Guide-in Tool.

Fig. D4.01

## Self-Climbing Procedure

### Components Step 1

- 44** Climbing Shoe RCS
- 44.1** Climbing Pawl
- 44.6** Bolt
- 60** Climbing Device RCS 50
- 60.6** Locking Lever

### Step 1

1. Remove cover mat from over the Slab Shoe.
2. Position the Climbing Device RCS (60) on the Bolts (44.6) of the middle Climbing Shoe (44b) and engage. The Climbing Device is pressed against the Climbing Rail through spring force. Guide the claw into the Climbing Rail. (Fig. D4.02 + D4.02a)
3. Attach twin hoses to the hydraulic pump and create a short-circuit connection at the other end by coupling them together.
4. Switch on the hydraulic pump and flush the hose for approx. 1 minute by operating the hand valve.
5. Disconnect the hose ends from one another and connect to the cylinder.

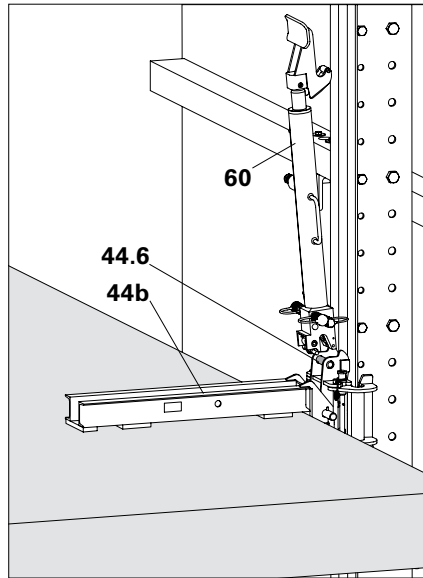


Fig. D4.02

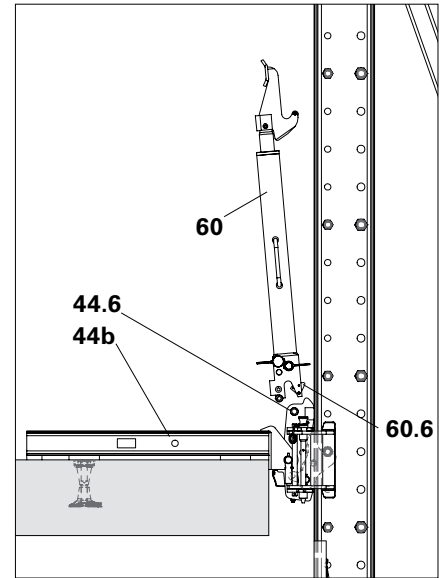


Fig. D4.02a



- Is the locking lever (60.6) fully engaged on the cylinder base?
- No possibility of the hydraulic hoses becoming entangled?

## Components Step 2 - 4

- 3** Spacer M20-82
- 44** Climbing Shoe RCS
- 44.1** Climbing Pawl
- 60** Climbing Device RCS 50
- 60.1** Claw

### Step 2

#### Warning!

Use personal protective equipment to prevent falling from a height.

1. Fold up Foldable Covers and secure.
2. Extend the hydraulic cylinder (60) up to the first Spacer (3).
3. Load is now carried by the piston with claw (60.1). (Fig. D4.03)
4. If necessary, activate the climbing pawls of the middle Slab Shoes (44b) and deactivate the others.



Are all claws engaged in the Spacers?



If the Foldable Covers (41) collide with the hoses or hydraulic climbing device during opening:

- Cut cover mat.

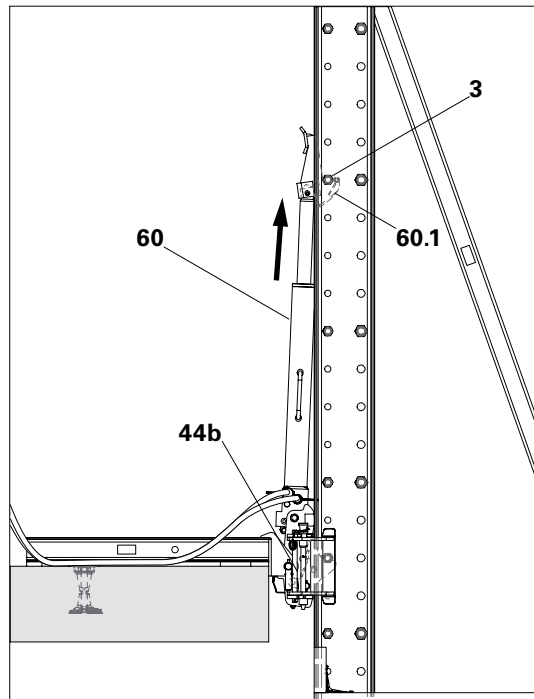


Fig. D4.03

## Step 3

1. Completely extend the hydraulic cylinder.
2. Climbing pawl (44.1) in the Climbing Shoe is pressed inwards by the Spacer when climbing past, then unfolded again by means of the spring force (audible click).

(Fig. D4.04)



Are the climbing pawls (44.1) of all middle Slab Shoes (44b) engaged in the Climbing Rail?

If not:

- Completely extend the hydraulic cylinder. Due to the end position compensation, the following cylinder moves very slowly.
- Climb back, remove cylinder and bleed.

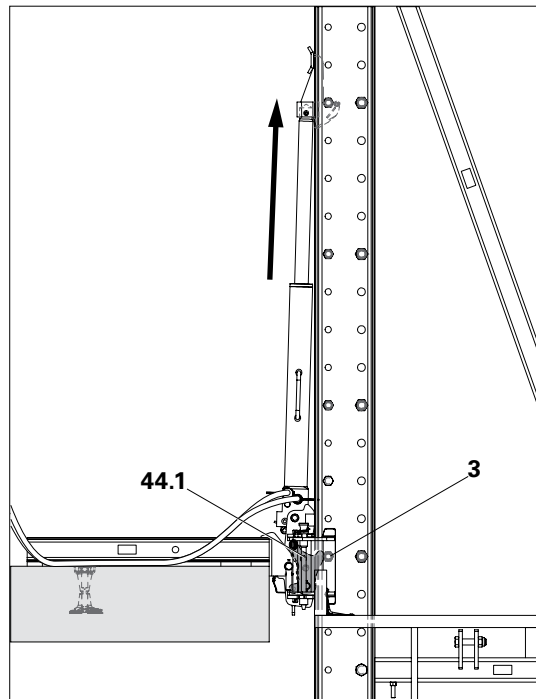


Fig. D4.04

## Step 4

1. Retract all hydraulic cylinders until:
  - Load is carried by the climbing pawl (44.1) in the middle Slab Shoe (44b),
  - Claw is relieved of the Spacer.

(Fig. D4.05)

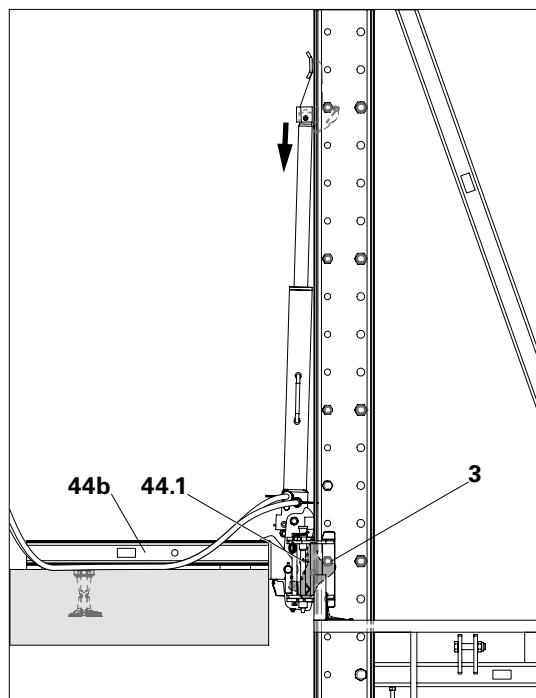


Fig. D4.05

## Components Step 5 – 7

- 3** Spacer M20-82
- 44** Climbing Shoe RCS
- 44.2** Guiding Skid
- 60** Climbing Device RCS 50
- 60.1** Claw
- 126** Guide-in Tool RCS

### Step 5

1. Retract hydraulic cylinder until it tilts backwards, claw (60.1) slides past the Spacers (3) positioned underneath and engages again below. (Fig. D4.06)



Are all claws under the Spacers correctly engaged?  
Otherwise press down by hand.  
If necessary, further retract hydraulic cylinder.

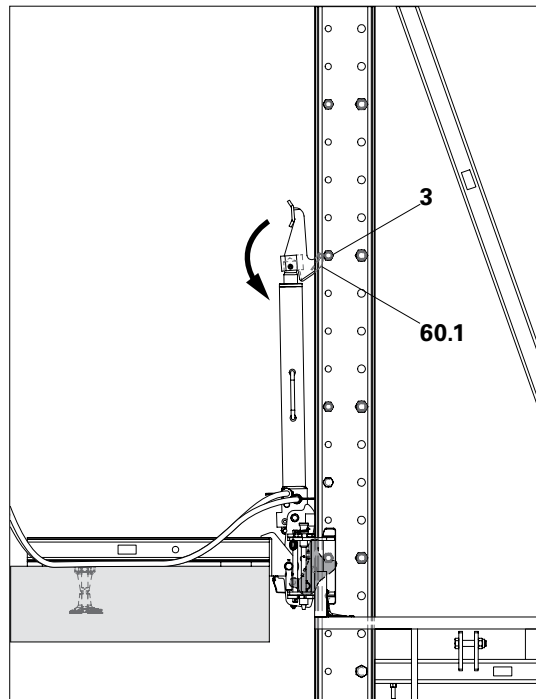


Fig. D4.06

### Step 6

1. Extend hydraulic cylinder.  
→ Claw grips Spacer and raises the Climbing Rail.
2. By repeating Steps 3 to 6 several times, the Climbing Unit is gradually climbed upwards in increments of 50cm. (Fig. D4.07)



If the hydraulic hoses become taut or entangled, immediately stop the climbing procedure and eliminate the problem!

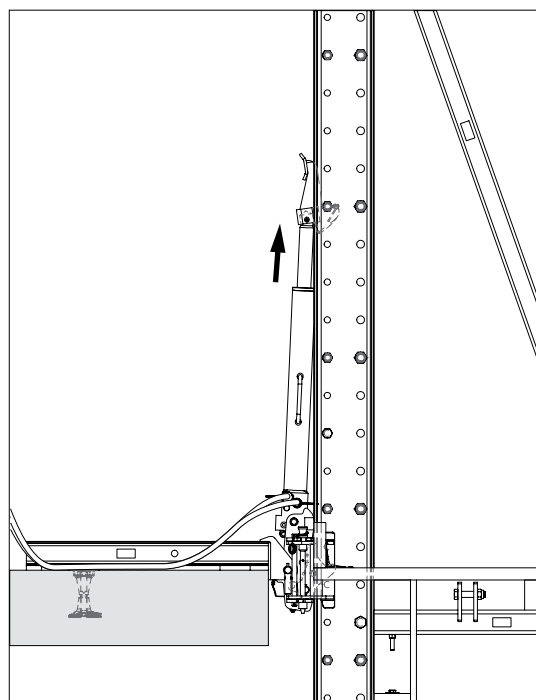


Fig. D4.07

## Step 7 (Version 1 – 3)

When the top Climbing Shoe has been reached:

1. Stop the climbing procedure.
  2. Pull Climbing Rail inwards by means of the Guide-in Tool (126).
  3. Close the guiding skids (44.2) of the top Climbing Shoe (44a). Deactivate the climbing pawls.
  4. Remove Guide-in Tool.
  5. Continue climbing procedure.
- (Fig. D4.08 + D4.08a)

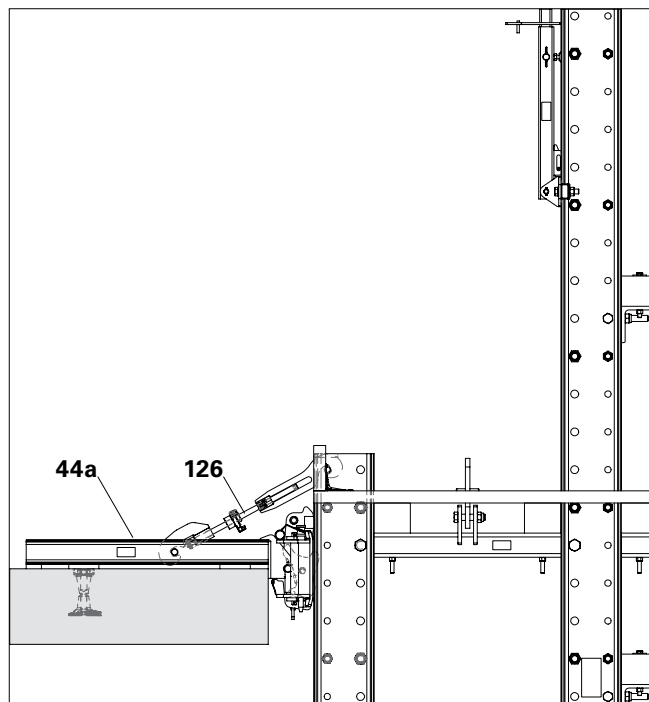


Fig. D4.08

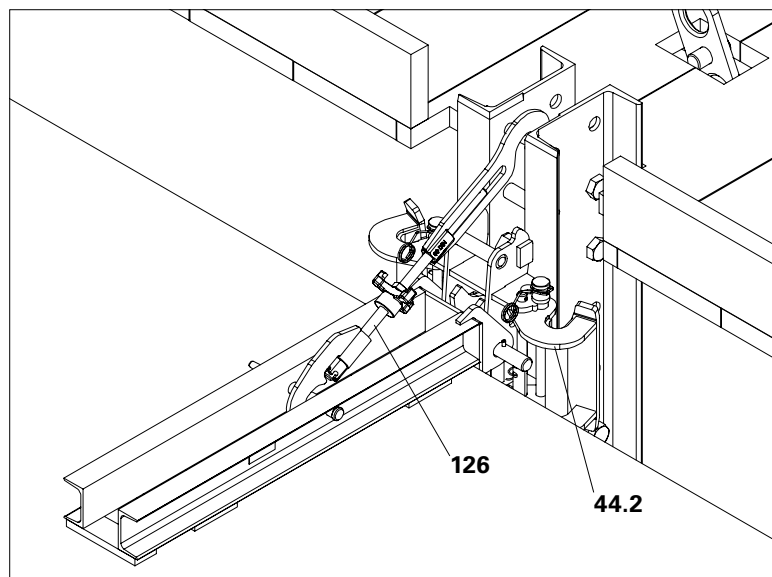


Fig. D4.08a

## Components Step 8 – 9

- 3** Spacer M20-82
- 41** Foldable Cover
- 44** Climbing Shoe RCS
- 60** Climbing Device RCS 50
- 60.1** Claw
- 60.6** Locking Lever

### Step 8

During the final lift:

1. Extend hydraulic cylinders until all climbing pawls of the middle Climbing Shoes (44b) engage in the correct Spacers.

(Fig. D4.09)



Are the climbing pawls of all middle Climbing Shoes (44b) engaged?

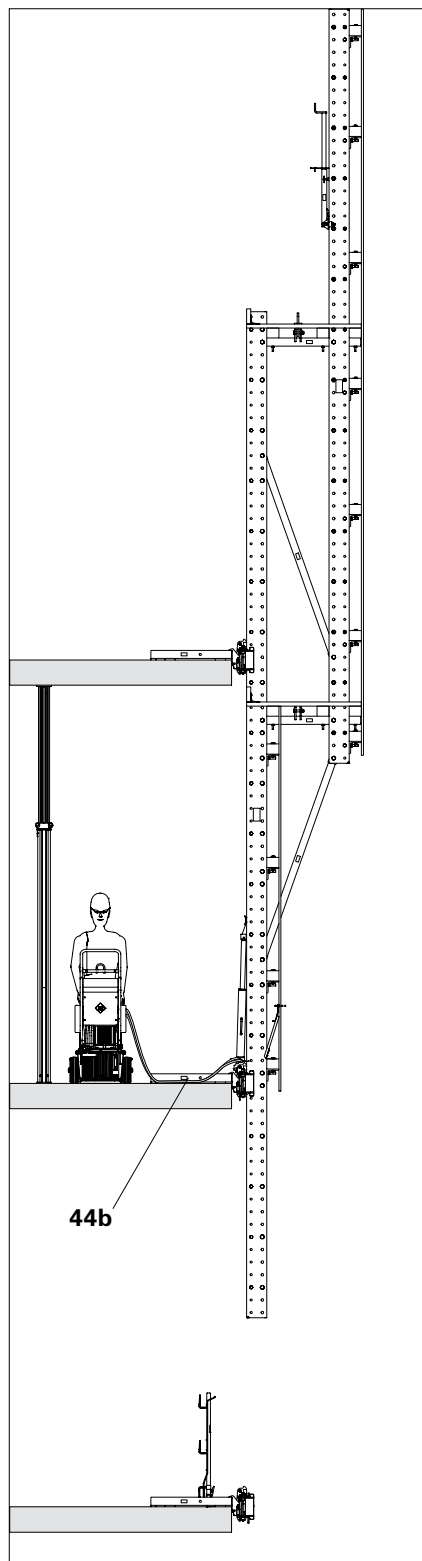


Fig. D4.09



## Step 9

1. Completely retract all hydraulic cylinders until:
  - Load is carried by the climbing pawl in the middle Slab Shoe (44b),
  - Claw (60.1) is released from the Spacer (3).
2. Detach hydraulic hoses from the Climbing Device using the quick couplers.
3. Close the Foldable Covers (41).
4. Tilt the Climbing Device backwards, operate the locking lever (60.6) on the cylinder base and lift out the Climbing Device. (Fig. D4.10 + D4.10a)
5. Transport the Hydraulic Pump, Climbing Device and hydraulic hoses to the next climbing enclosure.



In order to prevent the locking lever immediately engaging again after releasing, press the Climbing Device slightly to the side.



When the hydraulic cylinders are not being used, always completely retract the pistons.

## Finishing tasks

1. Fold down the Foldable Covers and close any remaining gaps.
2. Supplement guardrails.
3. Dismantle trailing Slab Shoe, see Section "Dismantling the Suspension" on page 115.
4. Remove anchoring that is no longer needed, see Section "Dismantling the Anchoring" on page 117.

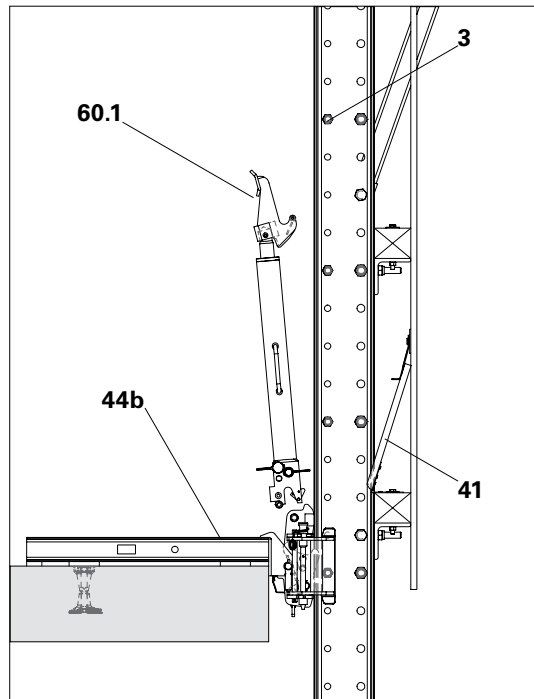


Fig. D4.10

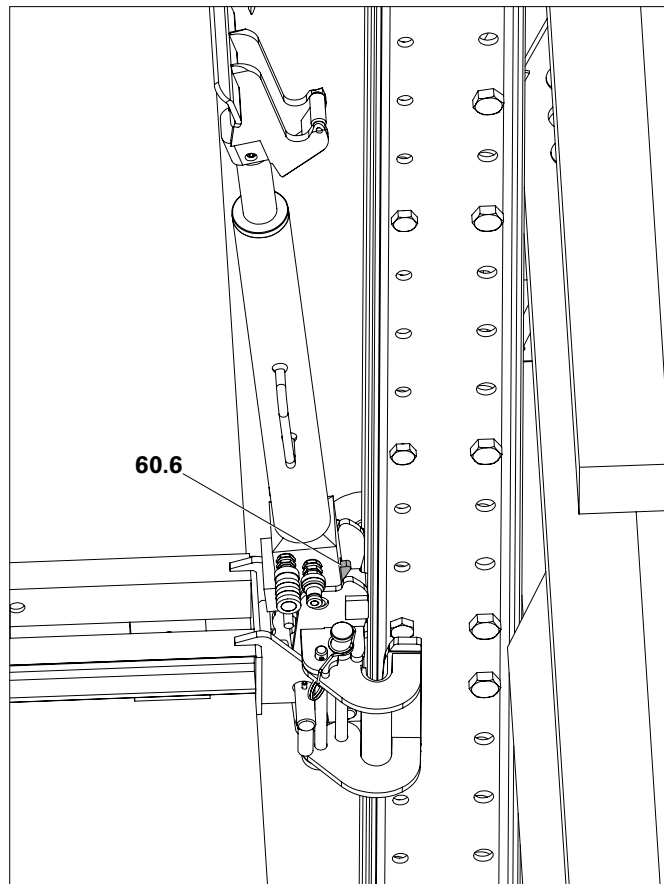


Fig. D4.10a

## Removing the Climbing Enclosure



### Warning

As a result of removing the climbing enclosure, unsecured building edges are formed.

A fall can result in serious injury or even death!

⇒ Install guardrails before removing the climbing enclosure.

⇒ Areas of risk are to be cordoned off.

⇒ Use personal protective equipment to prevent falls.

### Components

- 41** Foldable Cover
- 44** Climbing Shoe RCS
- 85** Guardrails

### Preparations

1. Remove connections between the climbing enclosures.
  2. Dismantle formwork in the area of the slab edge.
  3. Mount guardrails (85) on all unsecured slab edges.
  4. Remove cover mats, fold up and secure foldable covers (41).
  5. Remove or secure all loose components.
  6. Install Crane Eye BR-2 2.5 t, see Section "Assembly of Attachment Points" on page 69.
  7. Attach guide ropes to the climbing enclosure.
  8. Attach crane lifting gear to Crane Eye BR-2.
- (Fig. E.01)

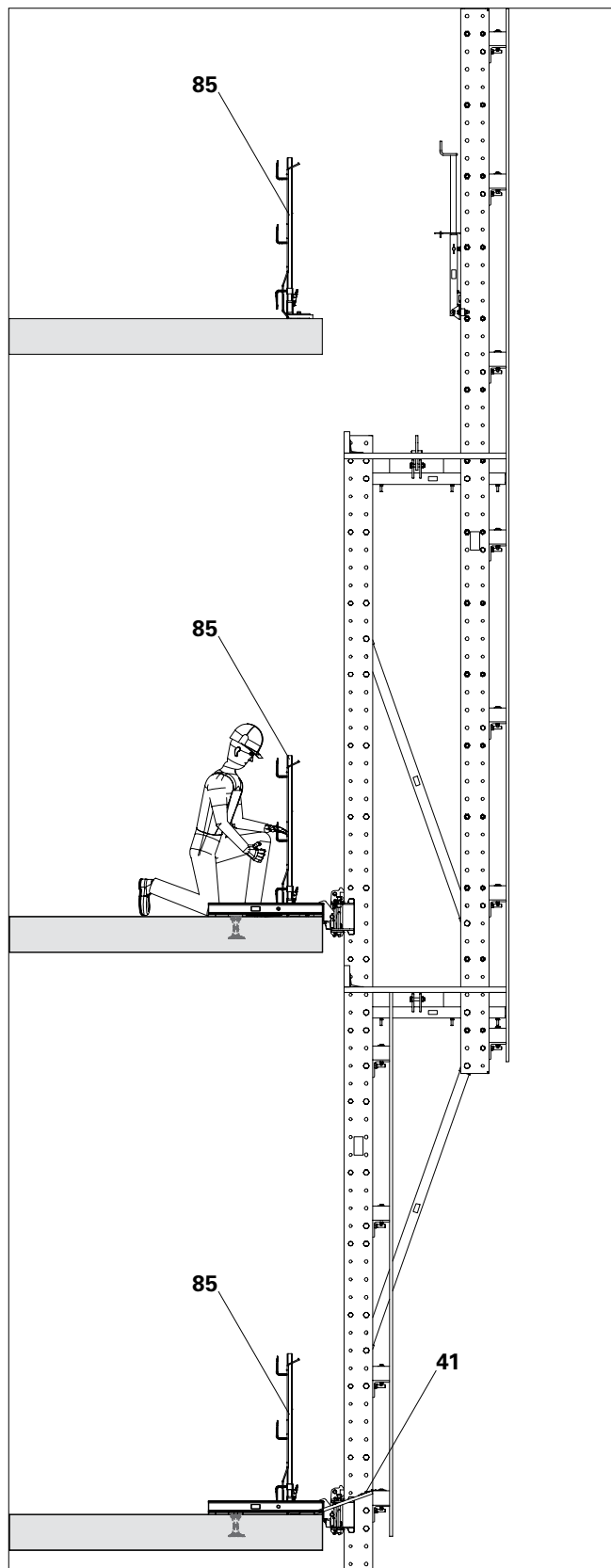


Fig. E.01

## Removing the Climbing Enclosure



### Warning

Hands can get caught between the Climbing Rail and Slab Shoe and become trapped. This can cause serious injuries.

- ⇒ Do not take hold of anything between the Rail Guidance Shoes and Climbing Rails while the climbing enclosure is moving.
- ⇒ Do not open the foldable skids if the Climbing Rail is pressing against them.

1. Personnel must leave the platforms of the climbing enclosure.
2. Open guiding skids of the bottom Climbing Shoe (44c).
3. Lift climbing enclosure slightly with the crane in order to relieve the middle Slab Shoes (44b).
4. Open the guiding skids on the middle Slab Shoes (44b).
5. Move climbing enclosure away from the building with the crane and transport to a suitable dismantling area.
6. Dismantle the remaining Slab Shoes (44b, 44c) and remove the anchoring.
7. Complete guardrails.

(Fig. E.02)

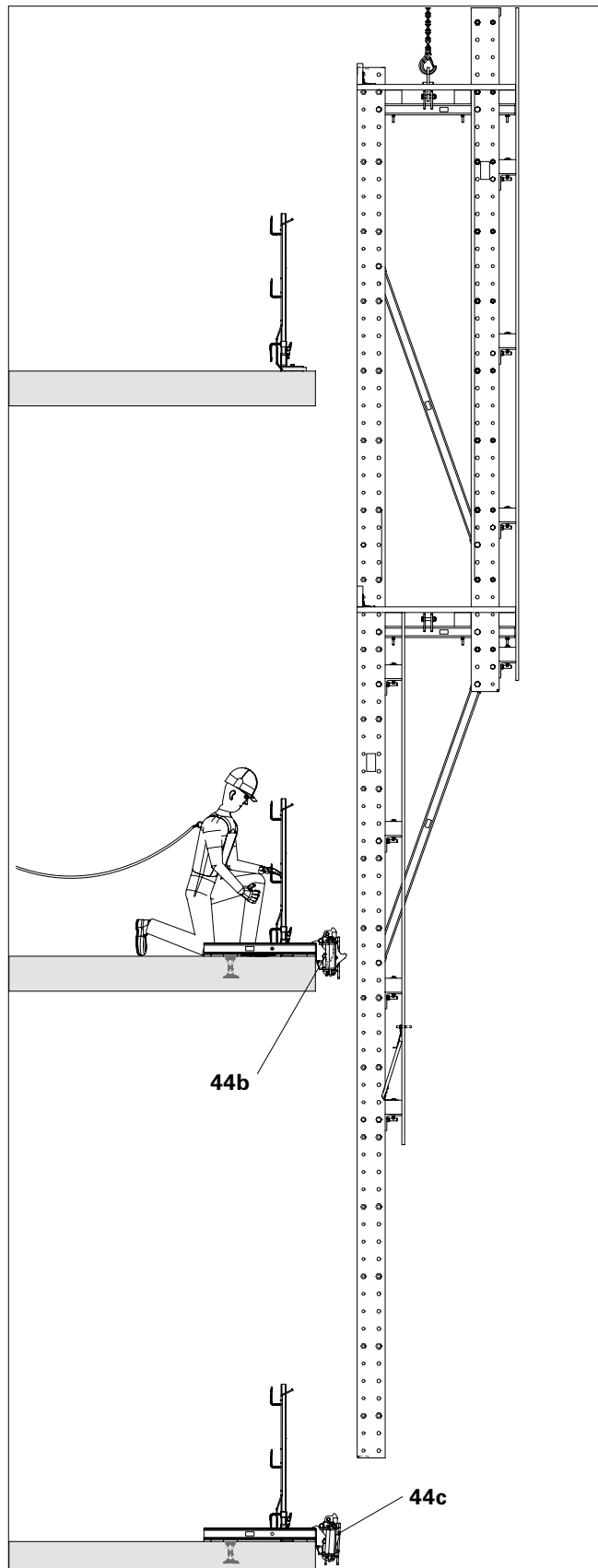


Fig. E.02

## Dismantling the Climbing Enclosure

### Components

- |           |                         |
|-----------|-------------------------|
| <b>1</b>  | Enclosure Post          |
| <b>2</b>  | Climbing Rail RCS       |
| <b>10</b> | Crossbar RCS 103        |
| <b>12</b> | Diagonal Strut RCS 212  |
| <b>14</b> | Enclosure Beam (timber) |
| <b>40</b> | Girder (timber)         |

### Dismantling the enclosure

1. Place the Climbing Unit with the enclosure above on the dismantling area.
2. Remove the enclosure from the Enclosure Beams.
3. Remove decking from the Girders.
4. Dismantle the foldable covers.
5. Remove any remaining bracing.

### Dismantling the framework

1. Remove Enclosure Beams from the Enclosure Posts.
  2. Remove Girders (40) from the Crossbars (10).
  3. Remove Enclosure Posts (1) from both bracket units.
- (Fig. E.03 + E.04)

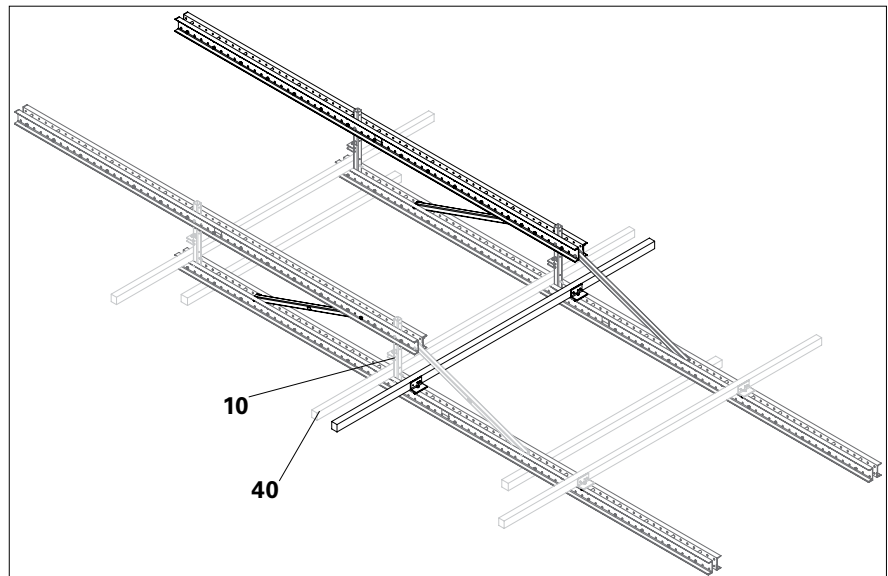


Fig. E.03

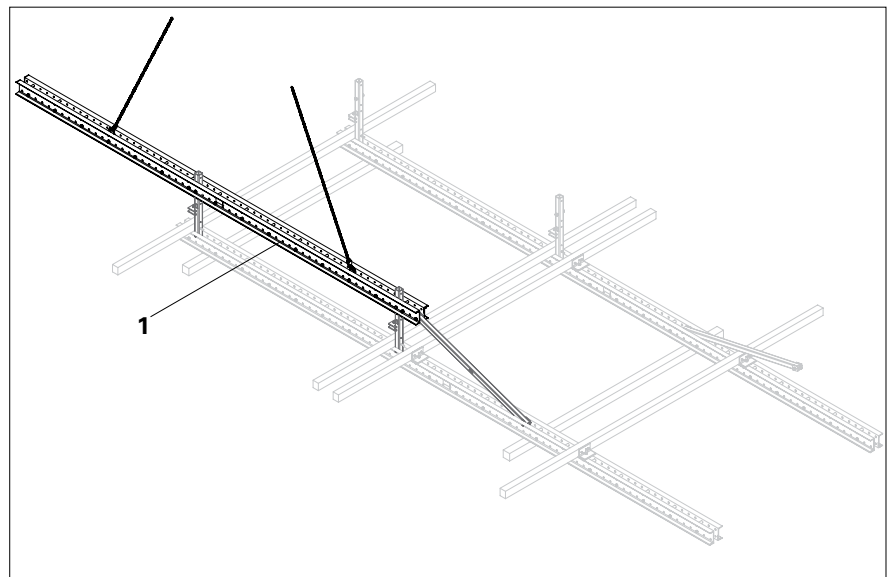


Fig. E.04

4. Remove Crossbars (10) and Diagonal Struts (12) from the Climbing Rails (2). (Fig. E.05)
5. Remove Enclosure Beam (14) from the Climbing Rails. (Fig. E.06)
6. Put Spacers back in original position, remove any additional Spacers.
7. Remove Timber Fixation, lifting eyes and other mounting parts.



- Spacers in the Climbing Rails must be moved back to their original positions, see Section "C1 Pre-assembly of Brackets - Preparation of Climbing Rails". Failing to do so can lead to considerable malfunctions during climbing operations with corresponding additional assembly work during the next use due to displaced or additional Spacers.
- With rental equipment, PERI may invoice the client for the costs incurred for the dismantling work.
- Non-reusable materials are to be disposed of in a suitable and environmentally-friendly manner.

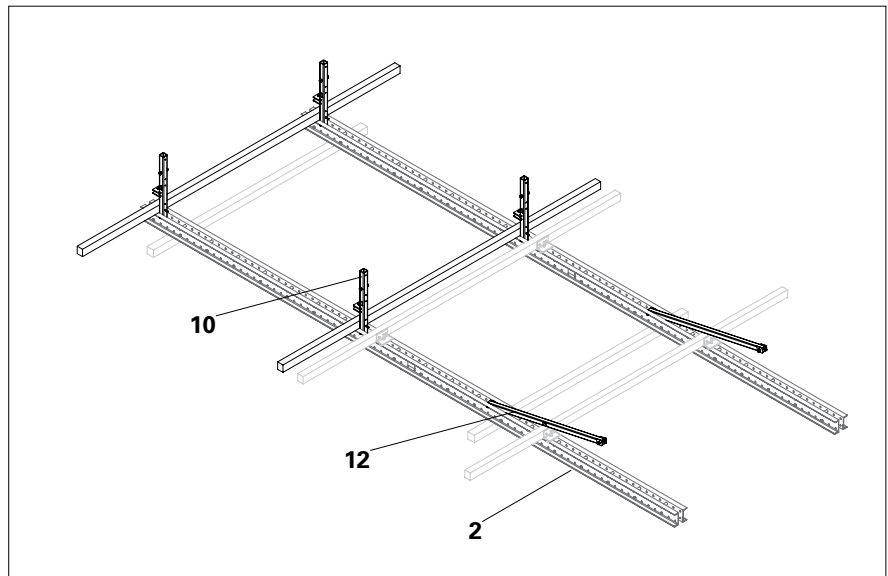


Fig. E.05

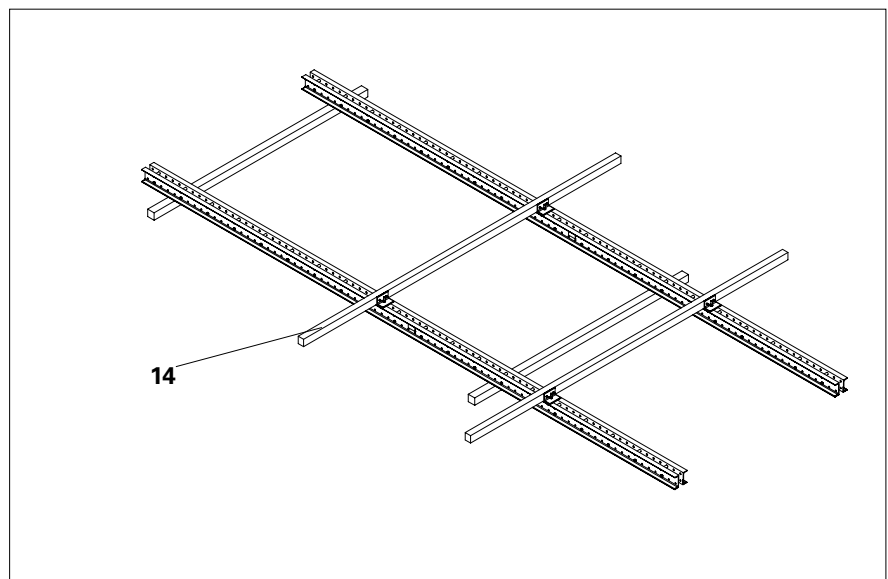
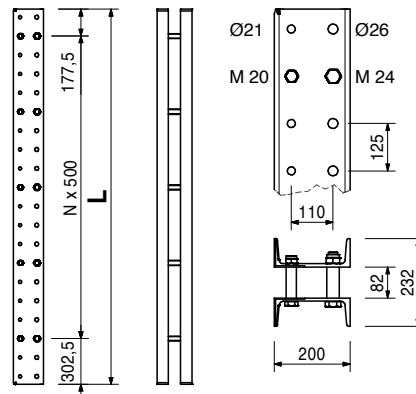


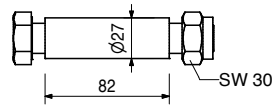
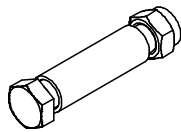
Fig. E.06

Item no.	Weight kg		L
114166	78.200	<b>Climbing Rails RCS</b>	1480
109469	130.000	<b>Climbing Rail RCS 148</b>	2480
112102	156.000	<b>Climbing Rail RCS 298</b>	2980
109470	182.000	<b>Climbing Rail RCS 348</b>	3480
112141	209.000	<b>Climbing Rail RCS 398</b>	3980
109471	262.000	<b>Climbing Rail RCS 498</b>	4980
109472	393.000	<b>Climbing Rail RCS 748</b>	7480
109610	524.000	<b>Climbing Rail RCS 998</b>	9980

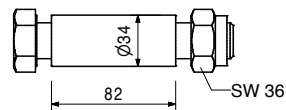
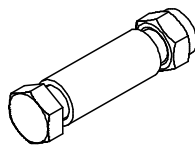
Steel profile for all-purpose use of climbing application or civil constructions. With Spacers M20-82 and M24-82.



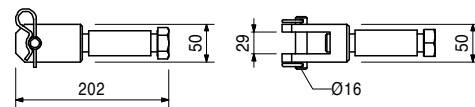
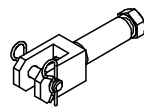
110022	0.491	<b>Spacer M20-82</b> Spacer for Climbing Rails RCS.	<b>Complete with</b> 1 pc. 104477 Bolt ISO 4014 M20 x 120-8.8, galv. 1 pc. 130341 Nut ISO 7042 M20-8, galv.
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110023	0.910	<b>Spacer M24-82</b> Spacer for Climbing Rails RCS.	<b>Complete with</b> 1 pc. 109612 Bolt ISO 4014 M24 x 130-8.8, galv. 1 pc. 130342 Nut ISO 7042 M24-8, galv.
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115626	1.880	<b>M24 Kicker Connector RCS</b> Bolted in holes Ø 26 of the Climbing Rail RCS. Serves for connecting Kicker AV or Bracing DW 15.	<b>Complete with</b> 1 pc. 115916 Pin Ø = 16, L = 70 mm, geomet. 2 pc. 018060 Cotter Pin 4/1, galv. 1 pc. 109612 Bolt ISO 4014 M24 x 130-8.8, galv.
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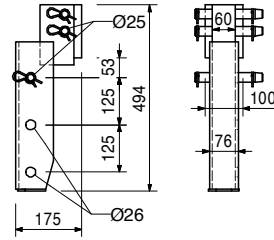
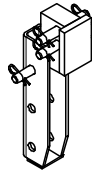
Item no.	Weight kg
110569	16.700

### Climbing Rail Hinge RCS

For an articulated connection of the Climbing Rails RCS and as pressure point on the RCS Climbing Brackets.

### Complete with

3 pc. 710894 Pin  $\varnothing$  25 x 180, geomet.  
4 pc. 018060 Cotter Pin 4/1, galv.



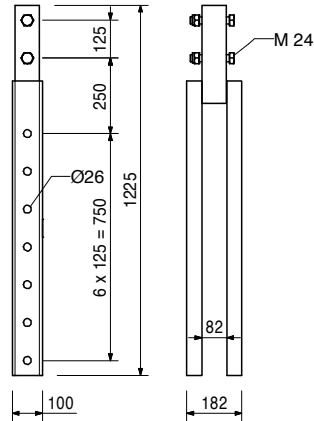
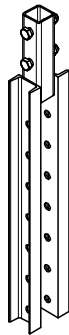
109791	25.900
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### Climbing Rail Extension RCS 100

As extension of the Climbing Rail RCS for connecting the finishing platform.

### Complete with

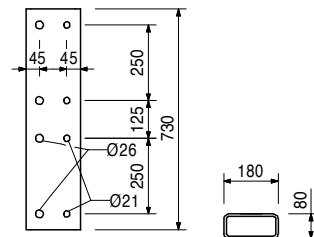
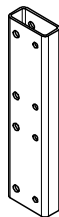
2 pc. 109612 Bolt ISO 4014 M24 x 130-8.8, galv.  
2 pc. 105032 Nut ISO 7040 M24-8, galv.



113744	21.000
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### Climbing Rail Connector RCS 73

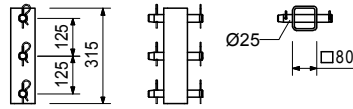
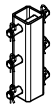
For rigid connection of Climbing Rails RCS. Perm. bending moment limited.



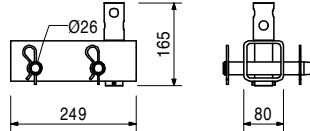
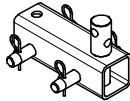
### Accessories

104031	0.462	<b>Fitting Pin <math>\varnothing</math> 21 x 120</b>
018060	0.014	<b>Cotter Pin 4/1, galv.</b>
111567	0.729	<b>Fitting Pin <math>\varnothing</math> 26 x 120</b>
022230	0.033	<b>Cotter Pin 5/1, galv.</b>

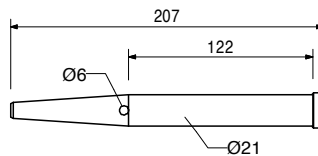
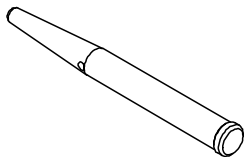
Item no.	Weight kg		
109743	6.370	<b>Climbing Rail Connector RCS 33</b> For an articulated connection of Climbing Rails RCS.	<b>Complete with</b> 3 pc. 710894 Pin Ø 25 x 180, geomet. 6 pc. 018060 Cotter Pin 4/1, galv.



123534	5.910	<b>Brace Connector RCS DW 15/M20</b> For mounting diagonal bracing with Tie Rod DW 15 and a compression strut to the Climbing Rail RCS.	<b>Complete with</b> 2 pc. 710894 Pin Ø 25 x 180, geomet. 4 pc. 018060 Cotter Pin 4/1, galv.
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104031	0.462	<b>Fitting Pin Ø 21 x 120</b> For different connections.	
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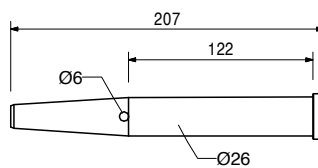
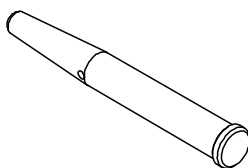


018060	0.014	Accessories <b>Cotter Pin 4/1, galv.</b>	
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018060	0.014	<b>Cotter Pin 4/1, galv.</b>	
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111567	0.729	<b>Fitting Pin Ø 26 x 120</b> For different connections.	
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022230	0.033	Accessories <b>Cotter Pin 5/1, galv.</b>	
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Item no.	Weight kg
022230	0.033

**Cotter Pin 5/1, galv.**



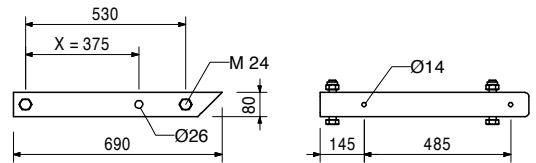
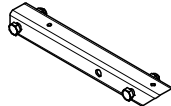
111631	10.100
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**Crossbar RCS 69**

As horizontal bar or strut for assembly as Climbing Protection Panel (platform width 1.00 m).

**Complete with**

2 pc. 109612 Bolt ISO 4014 M24 x 130-8.8, galv.  
2 pc. 105032 Nut ISO 7040 M24-8, galv.



710330	0.017
113348	0.043
110599	0.242

Accessories

**Nut ISO 4032 M12-8, galv.**  
**Washer ISO 7094 100 HV, A 12, galv.**  
**Bolt ISO 4017 M12 x 240-8.8, galv.**

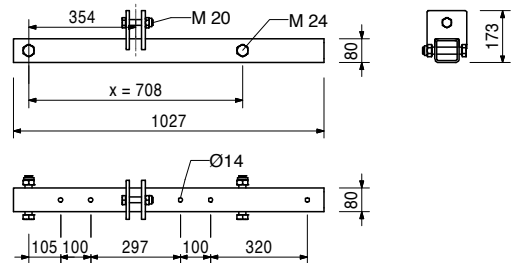
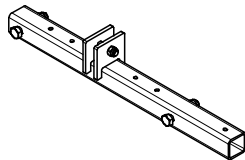
110234	18.200
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**Crossbar RCS 103**

As horizontal bar for assembly as Climbing Protection Panel (platform width 1.32 m).

**Complete with**

1 pc. 710226 Bolt ISO 4014 M20 x 90-8.8, galv.  
1 pc. 781053 Nut ISO 7040 M20-8, galv.  
2 pc. 109612 Bolt ISO 4014 M24 x 130-8.8, galv.  
2 pc. 105032 Nut ISO 7040 M24-8, galv.



710330	0.017
113348	0.043
110599	0.242

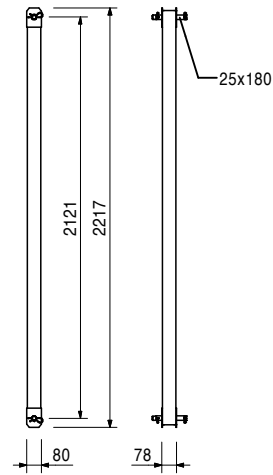
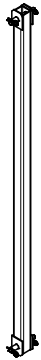
Accessories

**Nut ISO 4032 M12-8, galv.**  
**Washer ISO 7094 100 HV, A 12, galv.**  
**Bolt ISO 4017 M12 x 240-8.8, galv.**

Item no.	Weight kg
110012	23.500

**Diagonal Strut RCS 212**  
For bracing RCS Framework Brackets.

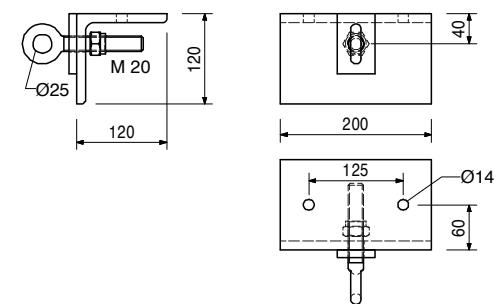
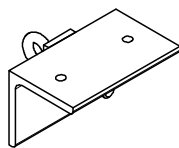
**Complete with**  
1 pc. 710894 Pin  $\varnothing$  25 x 180, geomet.  
1 pc. 018060 Cotter Pin 4/1, galv.  
2 pc. 109612 Bolt ISO 4014 M24 x 130-8.8, galv.  
1 pc. 105032 Nut ISO 7040 M24-8, galv.



110290	5.030
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**Timber Fixation RCS 12/20**  
For assembly of timbers on the Climbing Rails RCS for use as climbing protection panel.

**Complete with**  
1 pc. 110281 Eye Bolt M20, right, galv.  
1 pc. 781053 Nut ISO 7040 M20-8, galv.



Accessories

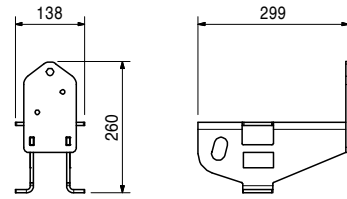
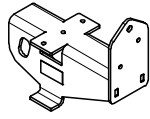
070030	0.015
018330	0.140
027340	0.180
113348	0.043

**Plate Connector  $\varnothing$  48/12 mm, single**  
**Bolt ISO 4016 M12 x 140-4.6 MU, galv.**  
**Bolt ISO 4016 M12 x 180-4.6 MU, galv.**  
**Washer ISO 7094 100 HV, A 12, galv.**

Item no.	Weight kg
126430	4.460

**Adapter VT 20 / RCS-P**

For mounting a horizontal positioned Girder VT 20 onto the Climbing Profile RCS.



024470	0.008
109612	0.600
105032	0.070
104477	0.300
781053	0.065

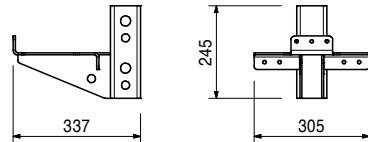
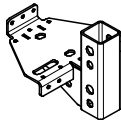
Accessories

- TSS-Torx 6 x 60, galv.**
- Bolt ISO 4014 M24 x 130-8.8, galv.**
- Nut ISO 7040 M24-8, galv.**
- Bolt ISO 4014 M20 x 120-8.8, galv.**
- Nut ISO 7040 M20-8, galv.**

128519	6.840
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**Enclosure Adapter RCS Ø 26 - Ø 21**

For the fixation of horizontal Enclosure Girders GT 24 or Climbing Rails profile RCS U200 on vertical Climbing Rails RCS.



109612	0.600
105032	0.070
104477	0.300
781053	0.065

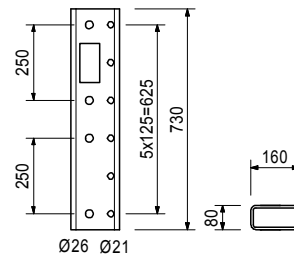
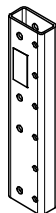
Accessories

- Bolt ISO 4014 M24 x 130-8.8, galv.**
- Nut ISO 7040 M24-8, galv.**
- Bolt ISO 4014 M20 x 120-8.8, galv.**
- Nut ISO 7040 M20-8, galv.**

128671	19.100
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**Climbing Rail Connector RCS/LPS 73**

For height extension of Climbing Rails RCS in combination with Screen Elements LPS.

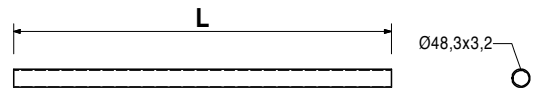
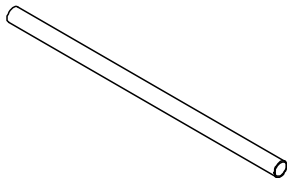


127875	2.000
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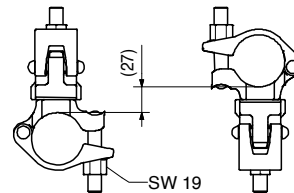
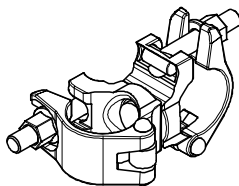
Accessories

- Screen Support LPS M20**

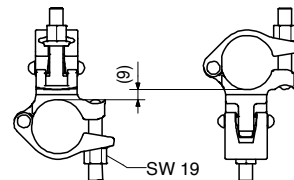
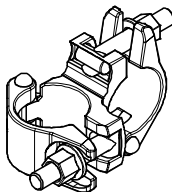
Item no.	Weight kg		L
		<b>Scaff. Tubes Steel</b>	
026415	3.550	<b>Scaff. Tube Steel Ø 48.3 x 3.2, special length</b>	
026417	0.000	<b>Cutting Cost Scaffold Tube</b>	
026411	3.550	<b>Scaff. Tube Steel Ø 48.3 x 3.2, l = 1.0 m</b>	1000
026412	7.100	<b>Scaff. Tube Steel Ø 48.3 x 3.2, l = 2.0 m</b>	2000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



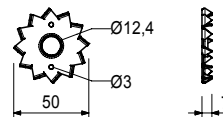
017010	1.400	<b>Swivel Coupling SW 48/48, galv.</b> For Scaffold Tubes Ø 48 mm.
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017020	1.120	<b>Standard Coupler RA 48/48, galv.</b> For Scaffold Tubes Ø 48 mm.
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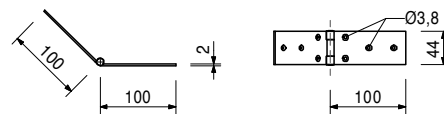
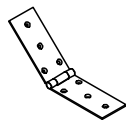
070030	0.015	<b>Plate Connector Ø 48/12 mm, single</b> To strengthen the timber fixation and for other connections of timber with steel.
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Item no.	Weight kg
111436	0.150

**Hinge DIN 7957-200-ST, yellow galv.**

For mounting the cover flap at the climbing protection panel.



Accessories

111437	0.004
110642	0.006

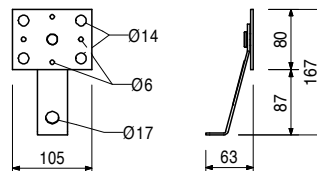
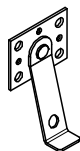
**Spax Screw TX25, 5 x 20, yellow galv.**

**Spax Screw TX25, 5 x 40, yellow galv.**

114937	0.402
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**Fixation Bar RCS**

For fixing the cover flap to the climbing protection panel during climbing.



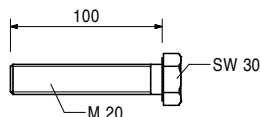
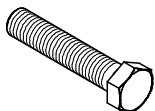
Accessories

111437	0.004
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**Spax Screw TX25, 5 x 20, yellow galv.**

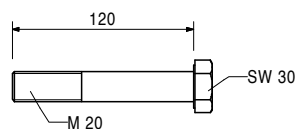
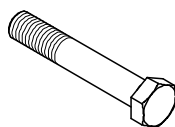
114727	0.321
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**Bolt ISO 4017 M20 x 100-8.8, galv.**



104477	0.300
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**Bolt ISO 4014 M20 x 120-8.8, galv.**



Accessories

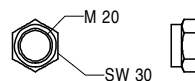
781053	0.065
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**Nut ISO 7040 M20-8, galv.**

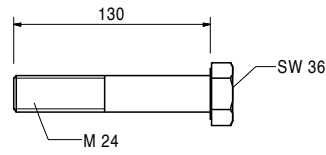
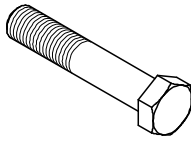
781053	0.065
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**Nut ISO 7040 M20-8, galv.**

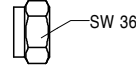
Self-locking.



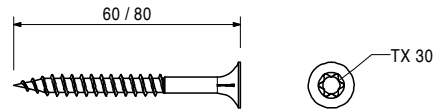
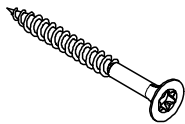
Item no.	Weight kg	
109612	0.600	<b>Bolt ISO 4014 M24 x 130-8.8, galv.</b>



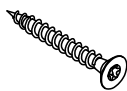
105032	0.070	<b>Nut ISO 7040 M24-8, galv.</b> Self-locking.
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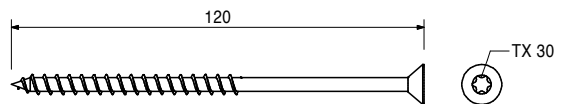
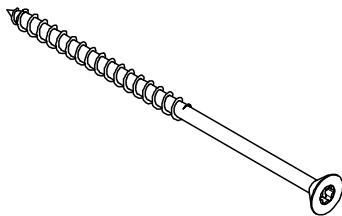
024470	0.008	<b>TSS-Torxs, galv.</b>
024690	0.008	<b>TSS-Torx 6 x 60, galv.</b>
		<b>TSS-Torx 6 x 80, galv.</b>
For Torx Blade TX 30. Self-drilling.		



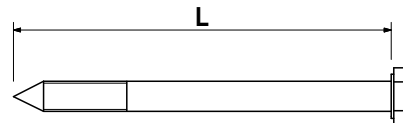
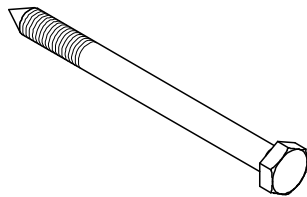
		<b>Spax Screws TX 25</b>	<b>L</b>
111437	0.004	<b>Spax Screw TX25, 5 x 20, yellow galv.</b>	20
110642	0.006	<b>Spax Screw TX25, 5 x 40, yellow galv.</b>	40



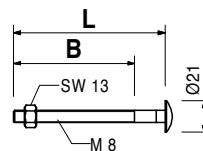
024960	0.015	<b>Spax Screw TX 30 6 x 120, yellow galv.</b> For Torx Blade TX 30. Self-drilling.
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Item no.	Weight kg		L
051640	0.014	<b>Lag Screws DIN 571</b>	80
024270	0.023	<b>Lag Screw DIN 571 6 x 80, galv.</b> <b>Lag Screw DIN 571 8 x 60, galv.</b>	60



			L	B
051650	0.060	<b>F.H. Bolts DIN 603</b>		
024140	0.033	<b>F.H. Bolt DIN 603 M6 x 180 MU, galv.</b>	180	24
710240	0.050	<b>F.H. Bolt DIN 603 M8 x 70 MU, galv.</b>	70	58
024390	0.090	<b>F.H. Bolt DIN 603 M8 x 100 MU, galv.</b>	100	80
024410	0.109	<b>F.H. Bolt DIN 603 M8 x 200 MU, galv.</b>	200	150
		<b>F.H. Bolt DIN 603 M8 x 250 MU, galv.</b>	250	150

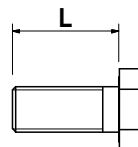
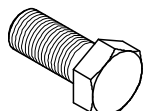


With nut.

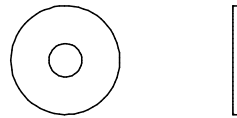
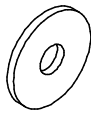
780354	0.002	<b>Washer ISO 7089 200 HV, A 8, galv.</b>
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			L
110598	0.142	<b>Bolt ISO 4017 M12</b>	140
110599	0.242	<b>Bolt ISO 4017 M12 x 140-8.8, galv.</b> <b>Bolt ISO 4017 M12 x 240-8.8, galv.</b>	240



Item no.	Weight kg	
113348	0.043	<b>Washer ISO 7094 100 HV, A 12, galv.</b>



127320	158.000	<b>Lifting Beam 9 t</b> For moving climbing units.
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**Complete with**

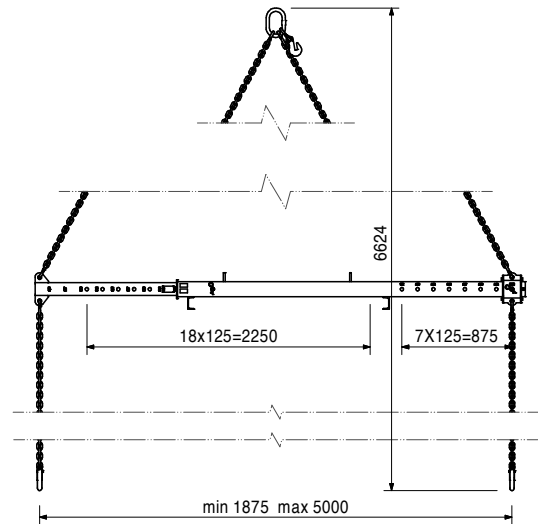
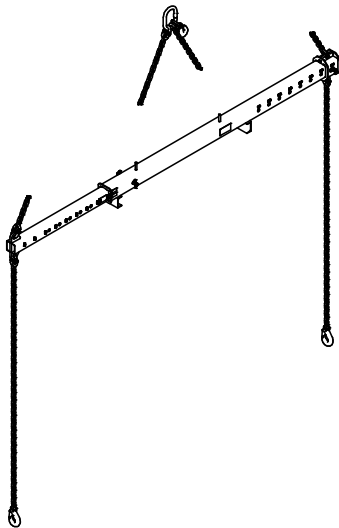
- 1 pc. 112865 Bolt 25 x 180
- 1 pc. 022230 Cotter Pin 5/1, galv.
- 1 pc. 107297 Bolt ISO4014-M12 x 140-8.8, galv.
- 1 pc. 710330 Nut ISO 4032 M12-8, galv.

**Note**

Follow Instructions for Use.

**Technical Data**

Permissible load-bearing capacity 9 t.



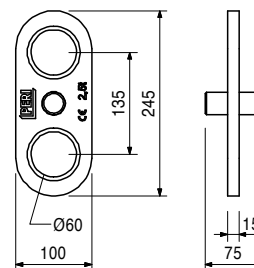
127834	2.210	<b>Crane Eye BR-2 2.5 t, galv.</b> As attachment point for moving climbing systems or Platform Beam BR.
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**Note**

Follow Instructions for Use!

**Technical Data**

Permissible load-bearing capacity 2.5 t.



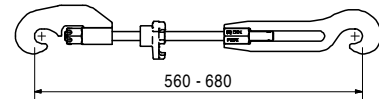
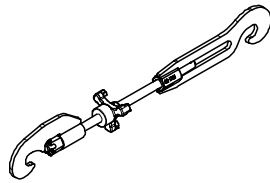
020620	0.561	Accessories <b>Spacer for Platform Beam BR</b>
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Item no.	Weight kg
114317	3.210

**Guide in Tool RCS**

For pulling up the Climbing Rail RCS in order to close the folding runners of the Climbing Shoe.



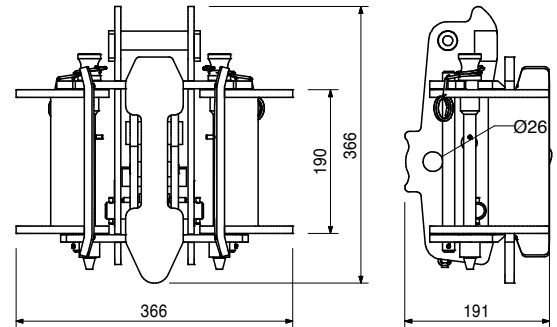
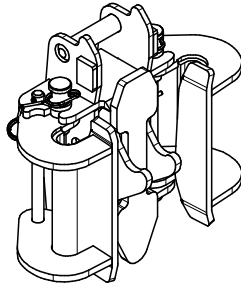
109468	19.800
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**Climbing Shoe RCS**

Guide and support for Climbing Rail RCS. With foldable leading runners and self-actuating bearing pawl.

**Complete with**

- 2 pc. 116067 Locking Device
- 2 pc. 109902 Pin  $\varnothing$  30 x 290, galv.
- 4 pc. 711063 Dowel Pin  $\varnothing$  5 x 35
- 2 pc. 109508 Pin  $\varnothing$  16 x 239, galv.
- 4 pc. 750329 Dowel Pin  $\varnothing$  5 x 20
- 1 pc. 109903 Spring Lock



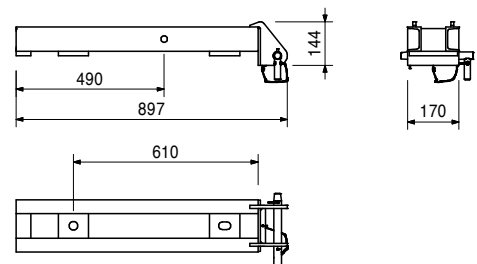
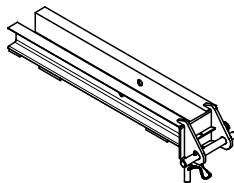
109567	20.200
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**Slab Shoe RCS**

Anchor System M24. For mounting Climbing Shoe RCS to slab edges.

**Complete with**

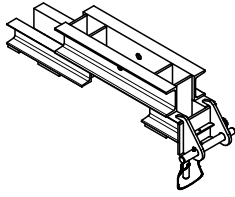
- 1 pc. 715585 Pin  $\varnothing$  25 x 240, SKS, galv.
- 1 pc. 022230 Cotter Pin 5/1, galv.



Item no.	Weight kg
110375	30.800

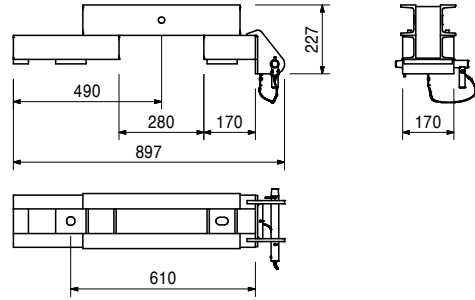
**Slab Shoe RCS Corner**

Anchor System M24. For mounting Climbing Shoe RCS to the corners of slab edges.



**Complete with**

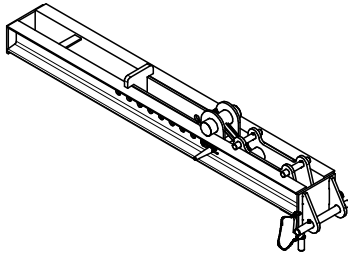
- 1 pc. 715585 Pin Ø 25 x 240, SKS, galv.
- 1 pc. 022230 Cotter Pin 5/1, galv.



115570	54.400
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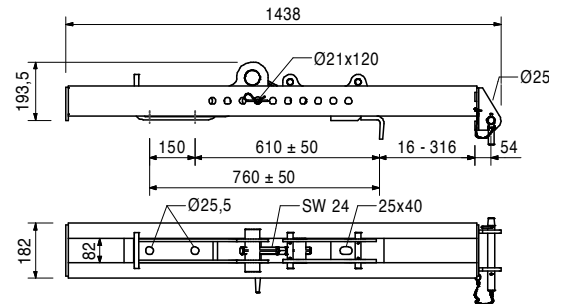
**Slab Shoe Adjustable RCS 30**

Anchor System M24. For mounting the Climbing Shoe RCS to slab edges. Offset up to 30 cm. Anchor distance variable  $61 \pm 5$  cm or  $76 \pm 5$  cm.



**Complete with**

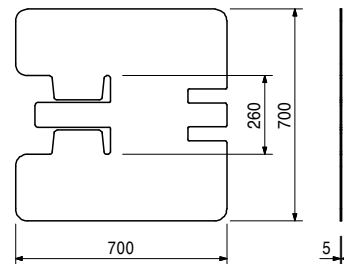
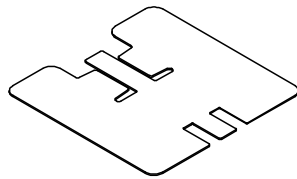
- 1 pc. 715585 Pin Ø 25 x 240, SKS, galv.
- 2 pc. 022230 Cotter Pin 5/1, galv.
- 1 pc. 104031 Fitting Pin Ø 21 x 120



114113	2.030
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**Cover RCS 70 x 70**

Elastic covering for the area of the climbing shoe for use as climbing protection panel.



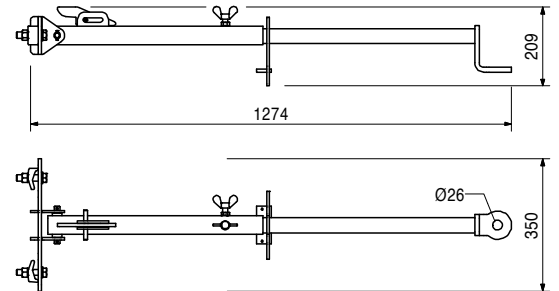
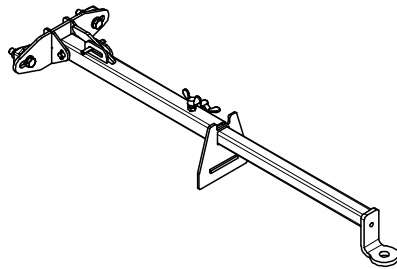
Item no.	Weight kg
114947	12.600

**Slab Anchor Template 61 RCS**

For positioning the Advancing Bolt M24 for the Slab Shoe RCS. Fixed on the stopend formwork.

**Complete with**

- 1 pc. 115112 Wing-Bolt DIN 316 M12 x 25-GT, galv.
- 1 pc. 714093 Bolt ISO 4014 M16 x 70-8.8, galv.
- 1 pc. 710229 Nut ISO 4032 M16-8, galv.
- 1 pc. 711074 Washer ISO 7089 200 HV, A 16, galv.
- 1 pc. 112815 Clamping Plate M16 Nova Grip



Accessories

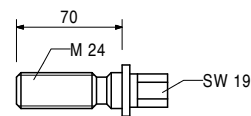
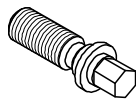
029270	0.331
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**Advancing Bolt M24, galv.**

029270	0.331
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**Advancing Bolt M24, galv.**

For fixing the M24 Anchor System if the plywood formlining is drilled through.



Accessories

029280	0.196
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**Anchor Positioning Plate M24, galv.**

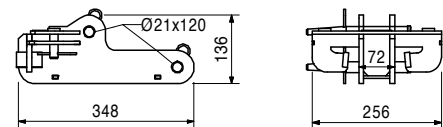
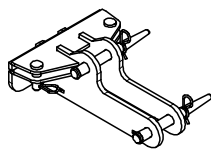
115918	9.380
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**Slab Shoe Adapter RCS/AV/SLS**

Mounted on the Slab Shoe RCS and serves for connecting Kicker AV or SLS Spindles and Bracing DW 15.

**Complete with**

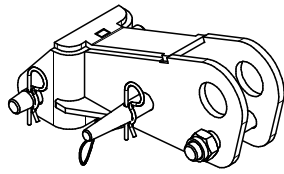
- 2 pc. 104031 Fitting Pin Ø 21 x 120
- 2 pc. 027170 Pin Ø 16 x 42, galv.
- 4 pc. 018060 Cotter Pin 4/1, galv.



Item no.	Weight kg
115850	11.200

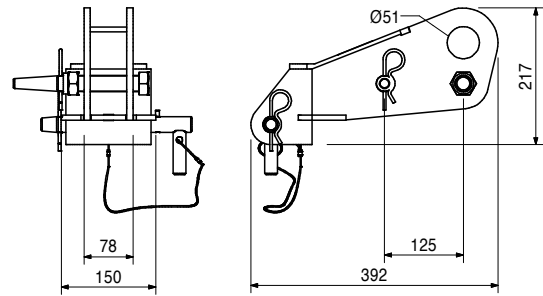
**Slab Support Adapter RCS**

For attaching the Climbing Shoe RCS to a slab support with horizontal Climbing Rail RCS.



**Complete with**

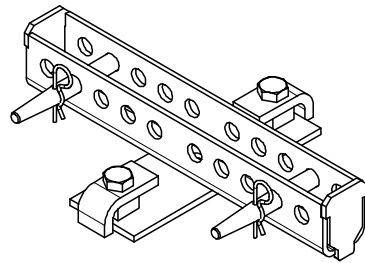
- 1 pc. 111567 Fitting Pin  $\varnothing$  26 x 120
- 1 pc. 715585 Pin  $\varnothing$  25 x 240, SKS, galv.
- 2 pc. 022230 Cotter Pin 5/1, galv.



112359	15.000
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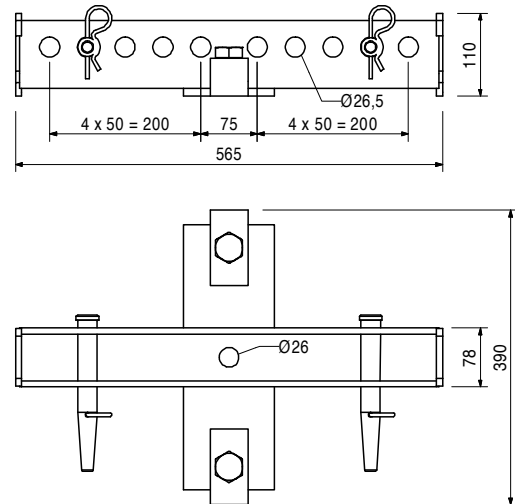
**Slab Support Anchor Shoe RCS M24**

Anchor System M24. For anchoring the slab support with horizontal Climbing Rail RCS.



**Complete with**

- 2 pc. 111567 Fitting Pin  $\varnothing$  26 x 120
- 2 pc. 022230 Cotter Pin 5/1, galv.
- 2 pc. 026290 Bolt ISO 4017 M24 x 50-10.9, galv.



Accessories

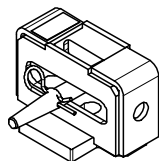
026430	0.334
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**Bolt ISO 4014 M24 x 70-10.9, galv.**

Item no.	Weight kg
116538	6.900

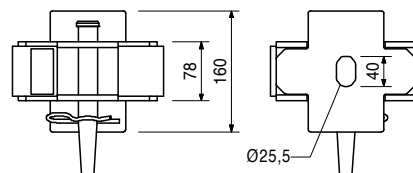
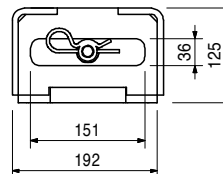
**Slab Support Alignment RCS**

As compression point and for alignment of the slab support with horizontal Climbing Rail RCS. Fixation with the Anchor Bolt 14/20 x 130 or the anchor system M24.



**Complete with**

- 1 pc. 111567 Fitting Pin  $\varnothing$  26 x 120
- 1 pc. 022230 Cotter Pin 5/1, galv.



Accessories

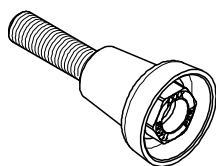
124777	0.210
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**Anchor Bolt PERI 14/20 x 130**

114158	1.030
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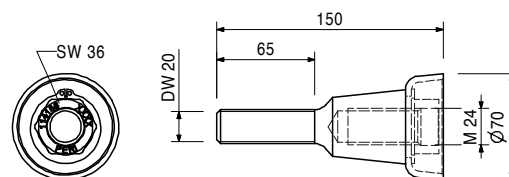
**Screw-On Cone-2 M24/DW 20, galv.**

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**

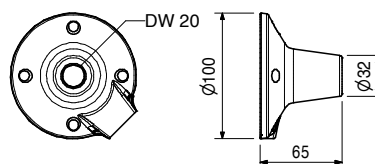
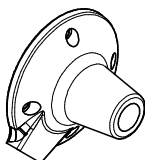
030860	0.792
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**Threaded Anchor Plate DW 20**

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

**Note**

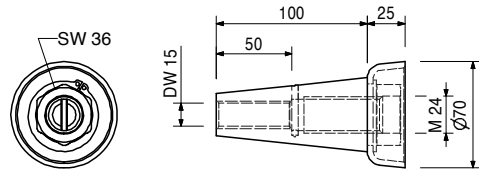
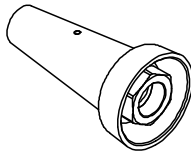
Lost anchor part.



Item no.	Weight kg
031220	1.010

**Climbing Cone-2 M24/DW 15, galv.**  
Anchor System M24.  
For anchoring climbing systems.

**Note**  
Seperate design information on request.



Accessories

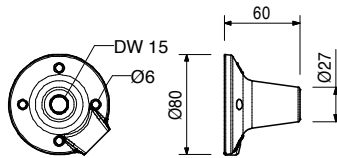
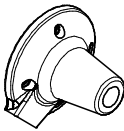
030840	0.515
030030	1.440
030740	1.550

**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.

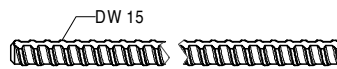
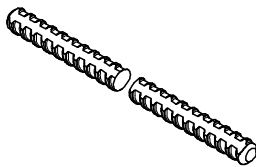
**Note**  
Lost anchor part.



030030	1.440
030050	0.000

**Tie Rods DW 15**  
**Tie Rod DW 15, spec. length**  
**Cutting Cost Tie Rod DW 15, B 15**

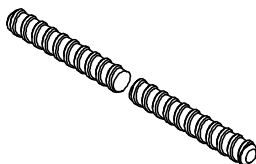
**Note**  
Non-weldable! Take official Approval into consideration!  
**Technical Data**  
Permissible tension force 90 kN.



030740	1.550
030050	0.000

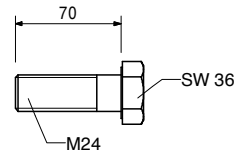
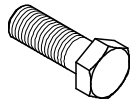
**Tie Rods B 15**  
**Tie Rod B 15, spec. length**  
**Cutting Cost Tie Rod DW 15, B 15**

**Note**  
Weldable! Take official Approval into consideration!  
**Technical Data**  
Permissible tension force 82 kN.



Item no.	Weight kg
026430	0.334

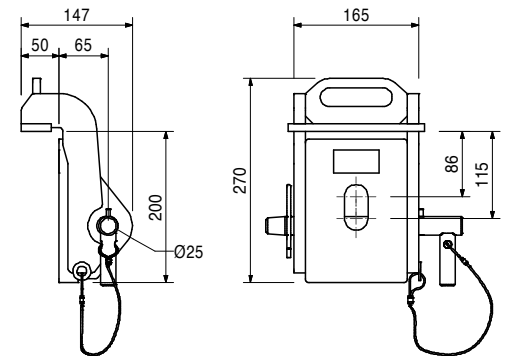
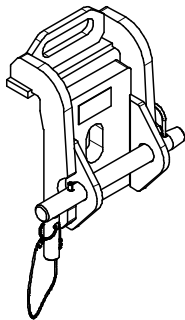
**Bolt ISO 4014 M24 x 70-10.9, galv.**  
High-strength bolt for anchoring climbing systems.



113232	10.500
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**Slab Stopend Shoe RCS**  
For anchoring the Climbing Shoe RCS at the front end of the slab. Anchor System M30. With the Reduction Bush  $\text{\O} 30 - 25$ , Item no. 113822, also usable with Anchor System M24.

**Complete with**  
1 pc. 113247 Pin  $\text{\O} 25 \times 260$ , mont.  
1 pc. 022230 Cotter Pin 5/1, galv.



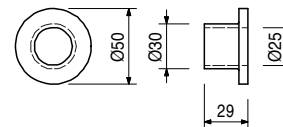
Accessories

029420	0.590
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**Bolt ISO 4017 M30 x 70-8.8, galv.**

113822	0.108
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**Reducing Bush  $\text{\O} 30 - 25$**   
For using Stopend Slab Anchor M24/20-128 on the Stopend Slab Shoe RCS.



Accessories

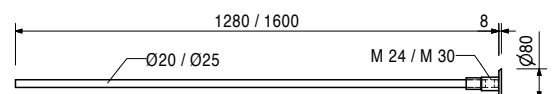
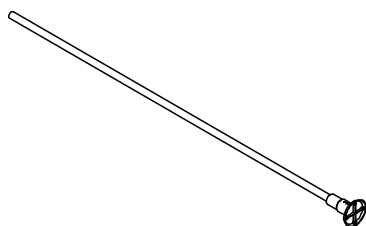
026430	0.334
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**Bolt ISO 4014 M24 x 70-10.9, galv.**

113820	3.450
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**Stopend Slab Anchor M24/20-128**  
Anchor System M24 or M30 for transferring clear tension forces into the slab with the use of Slab Stopend Shoe RCS.  
Inclusive Positioning Plate M24 (grey) or M30 (red).

**Note**  
Separate design information on request.



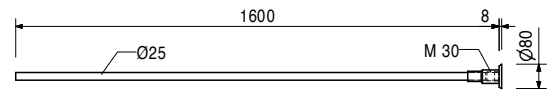
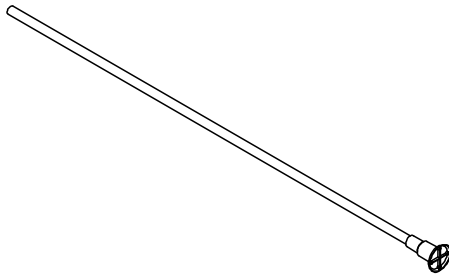
Item no.	Weight kg
113821	6.700

**Stopend Slab Anchor M30/25-160**

Tie System M24 or M30 for transferring clear tension forces into the slab with the use of Front Slab Shoe RCS.  
With Stecksteller M24 (grey) and M30 (red).

**Note**

Permissible load: see PERI product information.



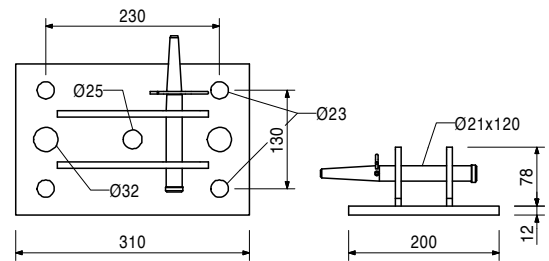
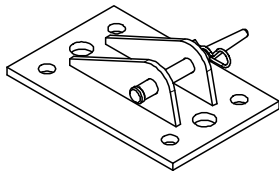
114997	7.160
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**Bracing Shoe RCS DW 15**

For anchoring the bracing with DW 15 to the building slab. Fixation with Anchor System M24 or corresponding dowels.

**Complete with**

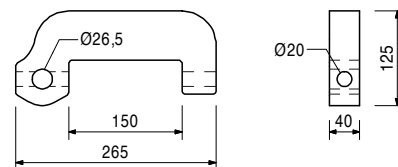
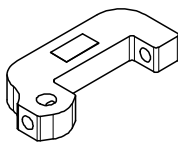
- 1 pc. 104031 Fitting Pin Ø 21 x 120
- 1 pc. 018060 Cotter Pin 4/1, galv.



115375	6.100
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**Articulated Spanner RCS DW 15**

For tensioning and as an articulated connection to the Climbing Rail RCS, Steel Waler SRU or Bracing Shoe RCS for bracing with DW 15.



Accessories

104031	0.462
018060	0.014
111567	0.729
022230	0.033
030070	0.222
030030	1.440

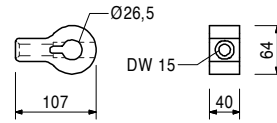
- Fitting Pin Ø 21 x 120**
- Cotter Pin 4/1, galv.**
- Fitting Pin Ø 26 x 120**
- Cotter Pin 5/1, galv.**
- Hex. Nut DW 15 SW 30/50, galv.**
- Tie Rod DW 15, spec. length**



Item no.	Weight kg
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.



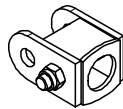
Accessories

104031	0.462	<b>Fitting Pin Ø 21 x 120</b>
018060	0.014	<b>Cotter Pin 4/1, galv.</b>
111567	0.729	<b>Fitting Pin Ø 26 x 120</b>
022230	0.033	<b>Cotter Pin 5/1, galv.</b>

115388	1.910
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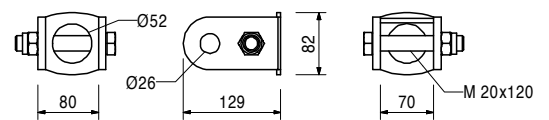
**Forkhead Adapter RCS/SLS**

For horizontal bracing of the climbing protection panel against the Slab Stopend Shoe RCS with a Heavy Duty Spindle SLS.



**Complete with**

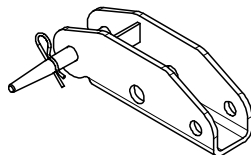
1 pc. 104477 Bolt ISO 4014 M20 x 120-8.8, galv.  
1 pc. 781053 Nut ISO 7040 M20-8, galv.



115298	4.210
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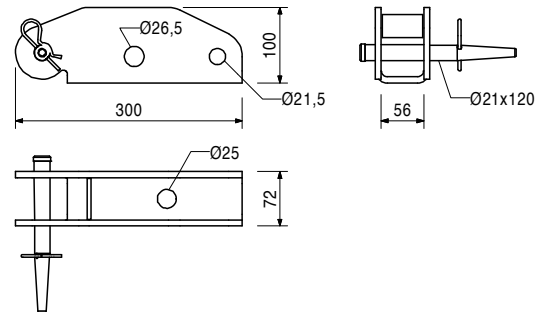
**Spindle Shoe SLS/RCS M24**

For horizontal bracing of the climbing protection panel against the Advancing Anchor M24 with a Heavy Duty Spindle SLS.



**Complete with**

1 pc. 104031 Fitting Pin Ø 21 x 120  
1 pc. 018060 Cotter Pin 4/1, galv.



Accessories

104031	0.462	<b>Fitting Pin Ø 21 x 120</b>
111567	0.729	<b>Fitting Pin Ø 26 x 120</b>

Item no.	Weight kg
109765	45.400

**Climbing Device RCS 50**

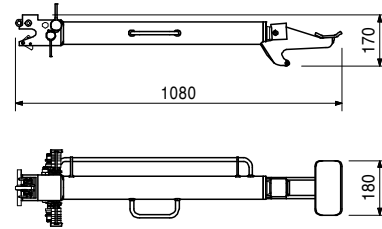
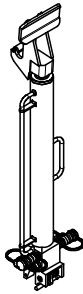
For crane-independent climbing of RCS Climbing Units.

**Note**

Follow Instructions for Use!

**Technical Data**

Maximum lifting capacity 50 kN.



109766	109.000
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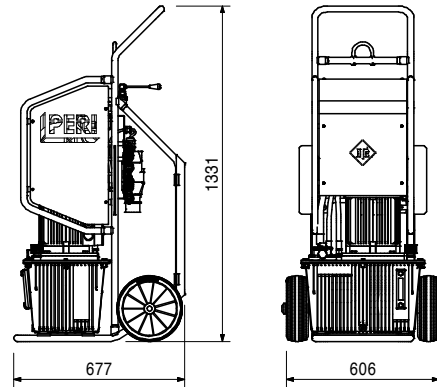
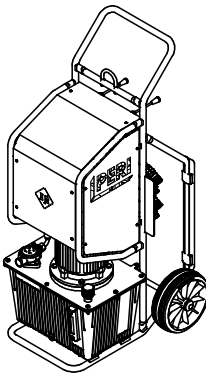
**Hydraulic Pump RCS 4-fold, 380 – 460 V**

Hydraulic pump for actuating the Climbing Device RCS 50 and LPS 30.

**Note**

Follow Instructions for Use.

Use only original PERI Hydraulic Oil HV LP46.



Accessories

057376	18.300
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**Hydraulic Oil ISO 11158 HVI46, 20 l**

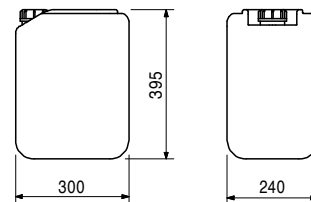
057376	18.300
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**Hydraulic Oil ISO 11158 HVI46, 20 l**

High quality synthetic hydraulic oils for PERI Hydraulic Units.

**Note**

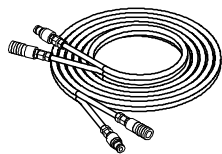
Observe the safety data sheet and applicable national safety regulations regarding hydraulic oil, in particular for transport, storage and disposal! Observe the technical documentation for the hydraulic unit! Product data sheet on request.



Item no.	Weight kg
110069	8.500
110070	15.300

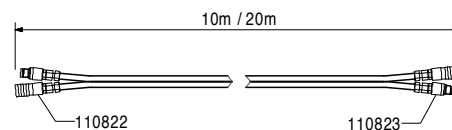
**Hydraulic Twin Hoses RCS**  
**Hydraulic Twin Hose RCS, 10 m**  
**Hydraulic Twin Hose RCS, 20 m**

Two permanently connected hydraulic hoses for connecting hydraulic pumps with hydraulic climbing devices.



**Complete with**

- 2 pc. 128992 Pin ISO16028 DN10 R3/8IG
- 2 pc. 128993 Sleeve ISO16028 DN10 R3/8IG
- 4 pc. 051750 Male Stud Coupler X-GE12PSR-ED



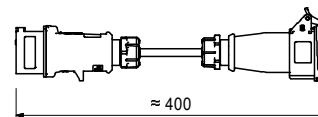
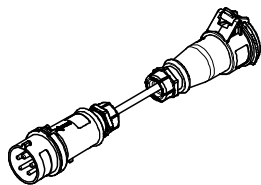
110280	0.500
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**Adapter Cable RCS**

For the power supply to the Hydraulic Pump RCS.

**Note**

Follow Instructions for Use!  
 With CEE plug connector 400 V 16 A.



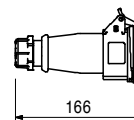
110279	0.250
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**Plug Socket RCS, black**

For providing the power supply to the Hydraulic Pump RCS with 380 – 460 V, 50 – 60 Hz.

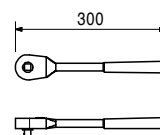
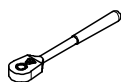
**Note**

Follow Instructions for Use!



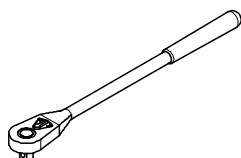
072180	0.560
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**Ratchet Wrench 1/2"**



051764	2.650
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**Ratchet Wrench 3/4"**

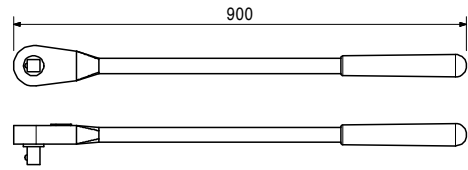
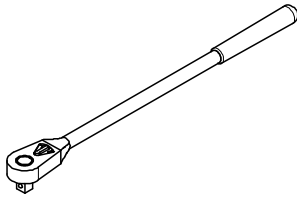


Item no. Weight kg

029610

5.300

**Ratchet Wrench 1"**



029620

0.075

**Socket SW 19-1/2"**

Fits to Hex. Bolts M12 or Height Adjusting Unit SW 19.

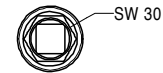
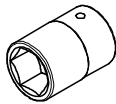


057276

0.625

**Socket SW 30-3/4"**

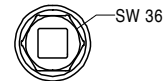
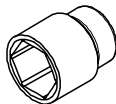
Fits to Hex. Bolts M20.



102785

0.452

**Socket SW 36-3/4"**

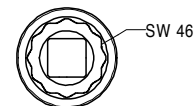
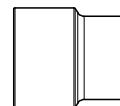
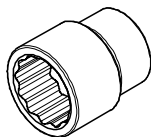


029630

0.580

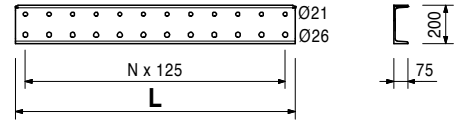
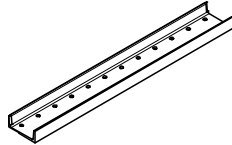
**Socket SW 46-1"**

Fits to Hex. Bolts M30.



Item no.	Weight kg		L
117585	24.300	<b>Climbing Rail Profiles RCS</b>	980
116478	37.000	<b>Climbing Rail Profile RCS 98</b>	1480
116479	61.500	<b>Climbing Rail Profile RCS 148</b>	2480
116480	86.300	<b>Climbing Rail Profile RCS 248</b>	3480
113705	98.700	<b>Climbing Rail Profile RCS 398</b>	3980
116481	124.000	<b>Climbing Rail Profile RCS 498</b>	6980
116482	186.000	<b>Climbing Rail Profile RCS 748</b>	7480
116483	248.000	<b>Climbing Rail Profile RCS 998</b>	9980

Steel profile for all-purpose use of climbing application or civil constructions. Single profile.



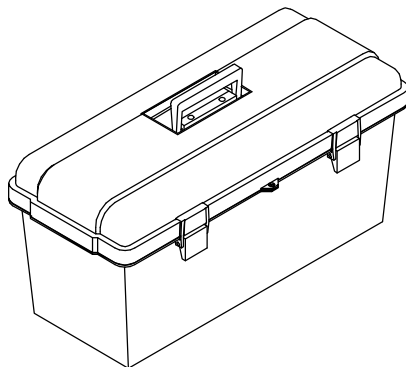
Accessories

110022	0.491	<b>Spacer M20-82</b>
110023	0.910	<b>Spacer M24-82</b>

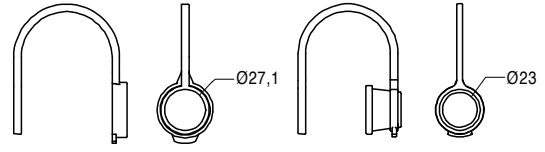
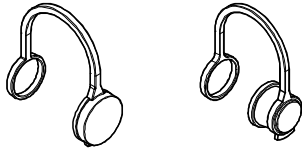
115581 10.280 **Hydraulic Service Case**

Consisting of:

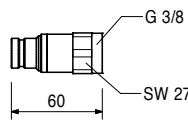
- 1 pc. 115590 Tool Box 580 x 260 x 285 mm
- 6 pc. 115583 Pressure Gauge Typ 570 VA-Geh.
- 6 pc. 115584 Hose MKT 6-02 DN 02
- 12 pc. 115582 Measuring Coupl. SMK 20-G 1/4-PC
- 2 pc. 115591 Double Spanner SW 10 x 13
- 1 pc. 115592 Double Spanner SW 13 x 17
- 1 pc. 115588 Double Spanner SW 19 x 24
- 1 pc. 051778 Double Spanner SW 24 x 27
- 1 pc. 115589 Double Spanner SW 27 x 32
- 1 pc. 057278 Allen Key Set, 8 pcs.
- 1 pc. 115585 Allen Key SW 12
- 1 pc. 057279 Allen Key SW 14
- 1 pc. 115587 Standard Screwdriver 6.5 mm
- 1 pc. 057282 Pipe Wrench
- 1 pc. 115147 Angle Fitting Set PS
- 2 pc. 115396 Fitting Set PS



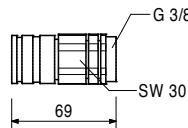
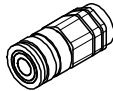
Item no.	Weight kg		
125632	0.050	<b>Protect. Covers Climb. Device RCS</b> To protect unplugged quick couplings X-GE 12PSR-ED+ against dirt and damage.	<b>Technical Data</b> 1 set for 1 Climbing Device RCS 50 (2x bushing and 2x nipple each).



110823	0.171	<b>Quick Coupler Nipple RCS</b>	
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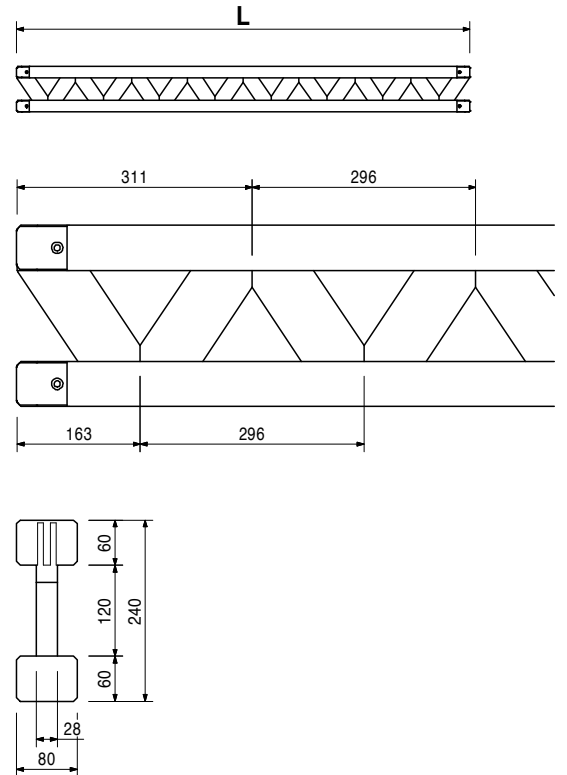
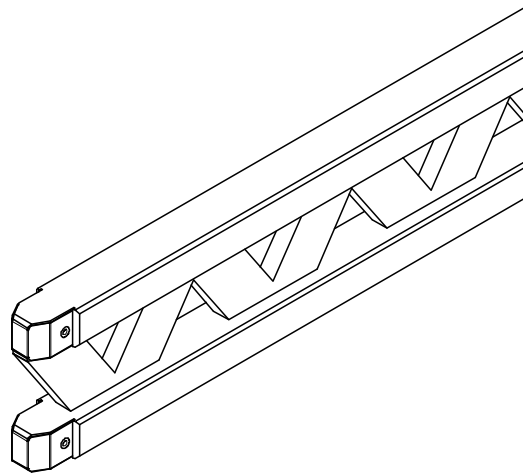
110822	0.297	<b>Quick Coupler Bushing RCS</b>	
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115147	0.750	<b>Angle Fitting Set PS</b> Conversion set for 1 cylinder (item-no. 109765 Climbing Device RCS50) to arrange quick couplers vertically on one side.	<b>Note</b> consisting of: 2 pc. Screw Plug K006.080 2 pc. Angle Screwing K018.740 2 pc. Screwing K018.294 1 pc. Hose Safety Device 109.063G.00.015
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115396	0.720	<b>Fitting Set PS</b> Spare fitting set for 1 cylinder (item-no. 109765 Climbing Device RCS 50) for Quick Coupler Bushings and Nipples.	<b>Note</b> consisting of: 4 pc. Screwing G 3/8 - G 3/8 2 pc. Dust Cover Nipple 2 pc. Dust Cover Bushing
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Item no.	Weight kg		L
075100	5.300	<b>Girder GT 24</b>	918
075120	7.100	<b>Girder GT 24, l = 0.90 m</b>	1214
075150	8.900	<b>Girder GT 24, l = 1.20 m</b>	1510
075180	10.600	<b>Girder GT 24, l = 1.80 m</b>	1806
075210	12.400	<b>Girder GT 24, l = 2.10 m</b>	2102
075240	14.200	<b>Girder GT 24, l = 2.40 m</b>	2398
075270	15.900	<b>Girder GT 24, l = 2.70 m</b>	2694
075300	17.700	<b>Girder GT 24, l = 3.00 m</b>	2990
075330	19.500	<b>Girder GT 24, l = 3.30 m</b>	3286
075360	21.200	<b>Girder GT 24, l = 3.60 m</b>	3582
075390	23.000	<b>Girder GT 24, l = 3.90 m</b>	3878
075420	24.800	<b>Girder GT 24, l = 4.20 m</b>	4174
075450	26.600	<b>Girder GT 24, l = 4.50 m</b>	4470
075480	28.300	<b>Girder GT 24, l = 4.80 m</b>	4766
075510	30.100	<b>Girder GT 24, l = 5.10 m</b>	5062
075540	31.900	<b>Girder GT 24, l = 5.40 m</b>	5358
075570	33.600	<b>Girder GT 24, l = 5.70 m</b>	5654
075600	35.400	<b>Girder GT 24, l = 6.00 m</b>	5950



078010	36.875	<b>Girder GT 24, l = 6.25 m</b>
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Item no.	Weight kg
074990	8.600
074905	12.700
074910	14.500
074890	15.600
074920	17.100
074930	19.500
074940	21.200
074950	23.000
074960	26.700
074970	29.900
074980	34.800

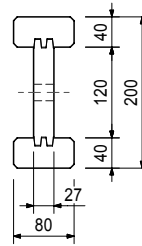
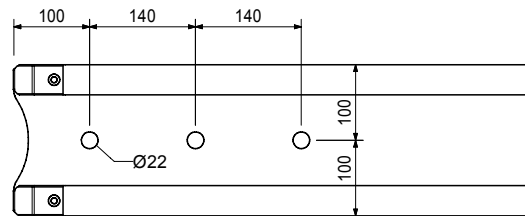
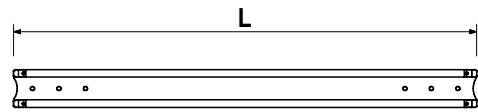
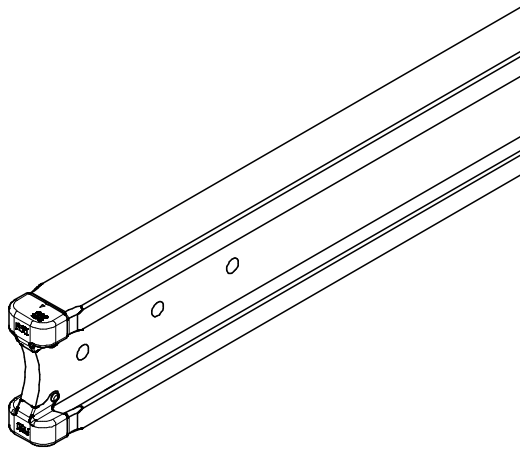
**Girder VT 20K**  
**Girder VT 20K, l = 1.45 m**  
**Girder VT 20K, l = 2.15 m**  
**Girder VT 20K, l = 2.45 m**  
**Girder VT 20K, l = 2.65 m**  
**Girder VT 20K, l = 2.90 m**  
**Girder VT 20K, l = 3.30 m**  
**Girder VT 20K, l = 3.60 m**  
**Girder VT 20K, l = 3.90 m**  
**Girder VT 20K, l = 4.50 m**  
**Girder VT 20K, l = 4.90 m**  
**Girder VT 20K, l = 5.90 m**

Universal formwork girder made of wood.

L
1447
2152
2452
2652
2902
3292
3592
3892
4492
4902
5902

**Note**

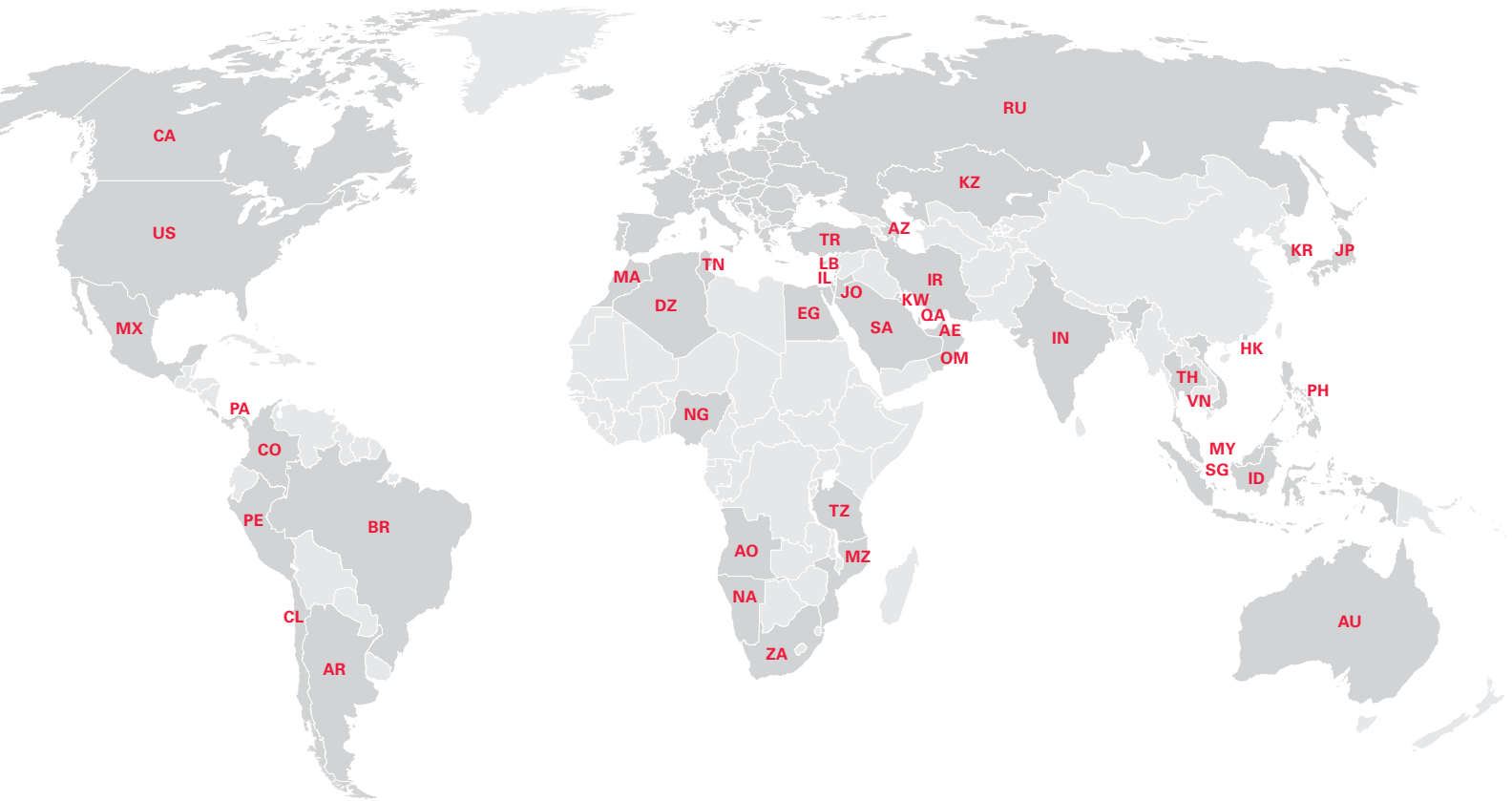
The girder fulfils all requirements of DIN EN 13377 class P20 (Declaration of Conformity).







# PERI International



## North America

- CA** Canada  
PERI Formwork Systems, Inc.  
[www.peri.ca](http://www.peri.ca)
- MX** Mexico  
PERI Cimbras y Andamios, S.A. de C.V.  
[www.peri.com.mx](http://www.peri.com.mx)
- PA** Panama  
PERI Panama Inc.  
[www.peri.com.pa](http://www.peri.com.pa)
- US** USA  
PERI Formwork Systems, Inc.  
[www.peri-usa.com](http://www.peri-usa.com)

## South America

- AR** Argentina  
PERI S.A.  
[www.peri.com.ar](http://www.peri.com.ar)
- BR** Brazil  
PERI Formas e Escoramentos Ltda.  
[www.peribrasil.com.br](http://www.peribrasil.com.br)
- CL** Chile  
PERI Chile Ltda.  
[www.peri.cl](http://www.peri.cl)
- CO** Colombia  
PERI S.A.S.  
[www.peri.com.co](http://www.peri.com.co)
- PE** Peru  
PERI Peruana S.A.C.  
[www.peri.com.pe](http://www.peri.com.pe)

## Africa

- AO** Angola  
Pericofragens, Lda.  
[www.peri.pt](http://www.peri.pt)
- DZ** Algeria  
S.A.R.L. PERI  
[www.peri.dz](http://www.peri.dz)
- EG** Egypt  
Egypt Branch Office  
[www.peri.com.eg](http://www.peri.com.eg)
- MA** Morocco  
PERI S.A.  
[www.peri.ma](http://www.peri.ma)
- MZ** Mozambique  
PERI (Pty.) Ltd.  
[www.peri.co.mz](http://www.peri.co.mz)
- NA** Namibia  
PERI (Pty.) Ltd.  
[www.peri.na](http://www.peri.na)
- NG** Nigeria  
PERI Nigeria Ltd.  
[www.peri.ng](http://www.peri.ng)
- TN** Tunisia  
PERI S.A.U.  
[www.peri.es](http://www.peri.es)
- TZ** Tanzania  
PERI Formwork and Scaffolding Ltd  
[www.peri.co.tz](http://www.peri.co.tz)
- ZA** South Africa  
PERI Formwork Scaffolding (Pty) Ltd  
[www.peri.co.za](http://www.peri.co.za)

## Asia

- AE** United Arab Emirates  
PERI (L.L.C.)  
[www.peri.ae](http://www.peri.ae)
- AZ** Azerbaijan  
PERI Representative Office  
[www.peri.com.tr](http://www.peri.com.tr)
- HK** Hong Kong  
PERI (Hong Kong) Limited  
[www.perihk.com](http://www.perihk.com)
- ID** Indonesia  
PT Beton Perkasa Wijaksana  
[www.betonperkasa.com](http://www.betonperkasa.com)
- IL** Israel  
PERI F.E. Ltd.  
[www.peri.co.il](http://www.peri.co.il)
- IN** India  
PERI (India) Pvt Ltd  
[www.peri.in](http://www.peri.in)
- IR** Iran  
PERI Pars. Ltd.  
[www.peri.ir](http://www.peri.ir)
- JO** Jordan  
PERI GmbH – Jordan  
[www.peri.com](http://www.peri.com)
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