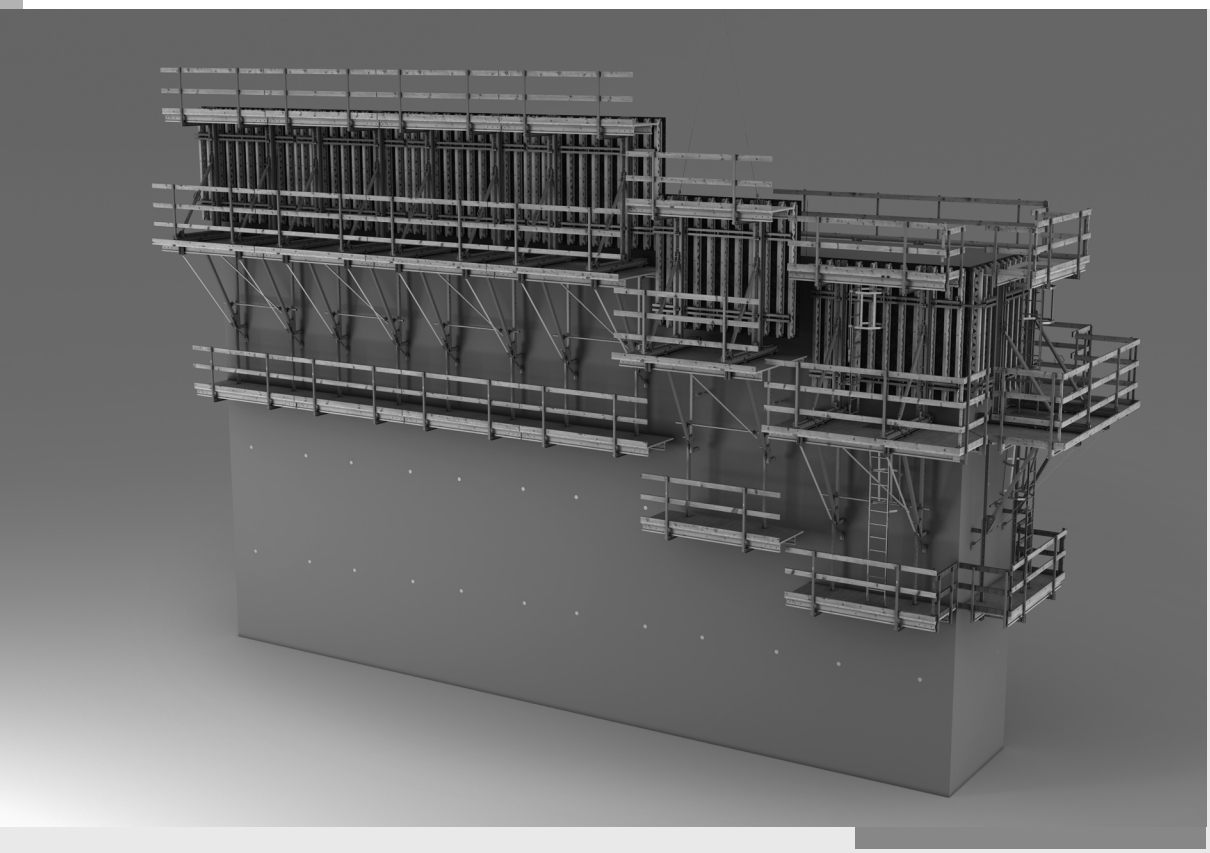
SCS 190 and SCS 250

Single-Sided Climbing Formwork

Instructions for Assembly and Use – Standard Configuration - Version 2.0



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Main Components

Single-Sided Climbing Formwork SCS 190

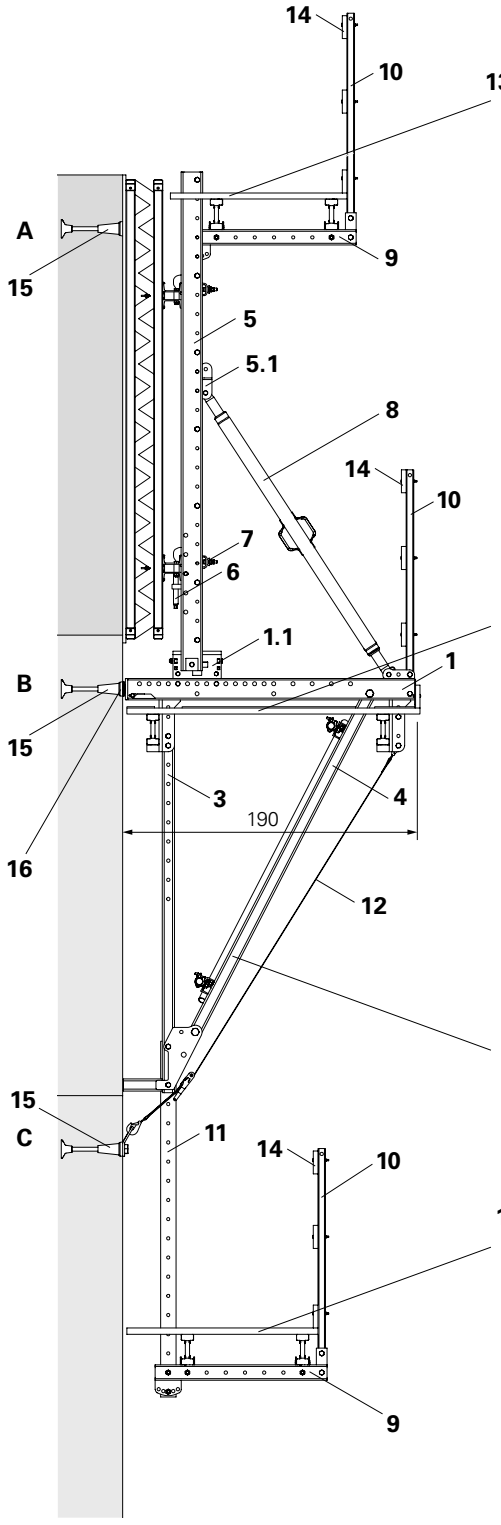


Fig. 01

Single-Sided Climbing Formwork SCS 250
with Carriage

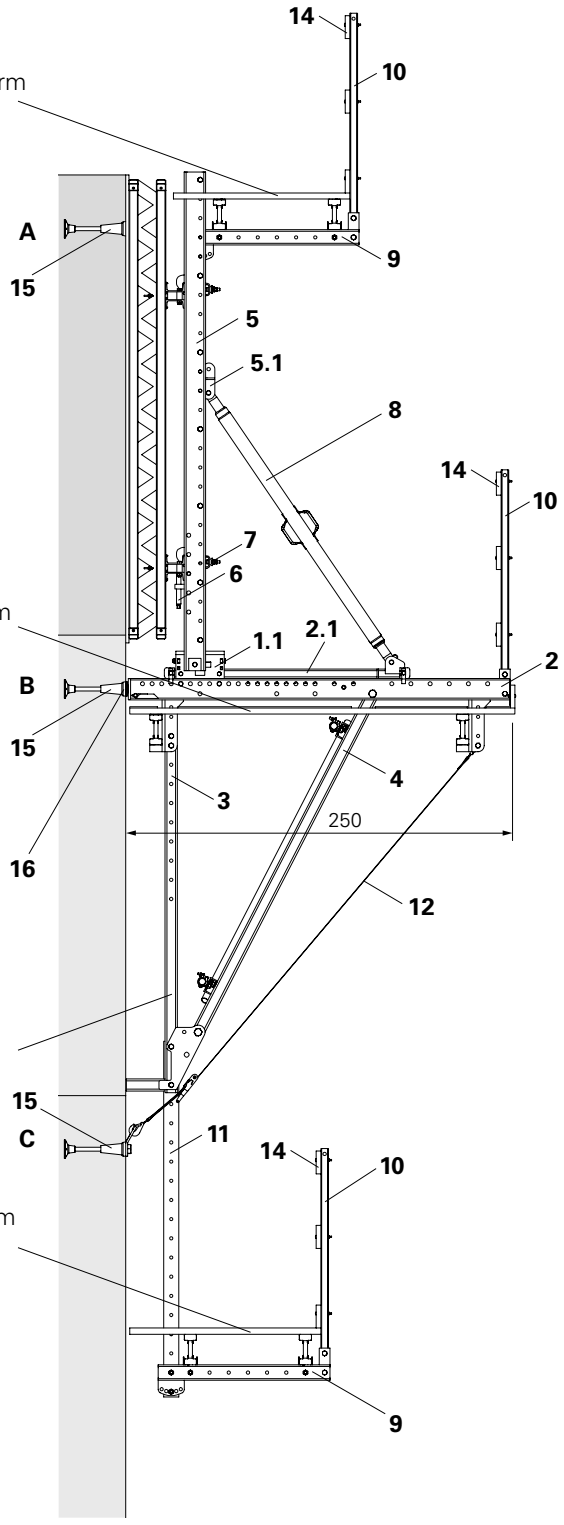


Fig. 02

Starter Brace Frame and Inclined Applications

Vertical SCS Starter Brace Frame

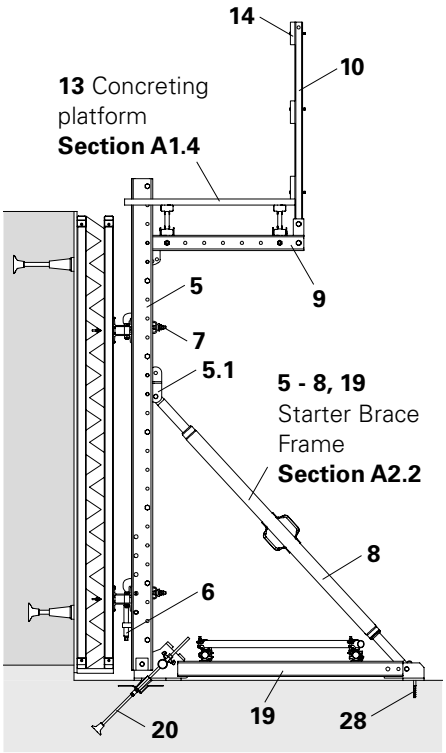


Fig. 03

SCS 190 - 30° forward inclination

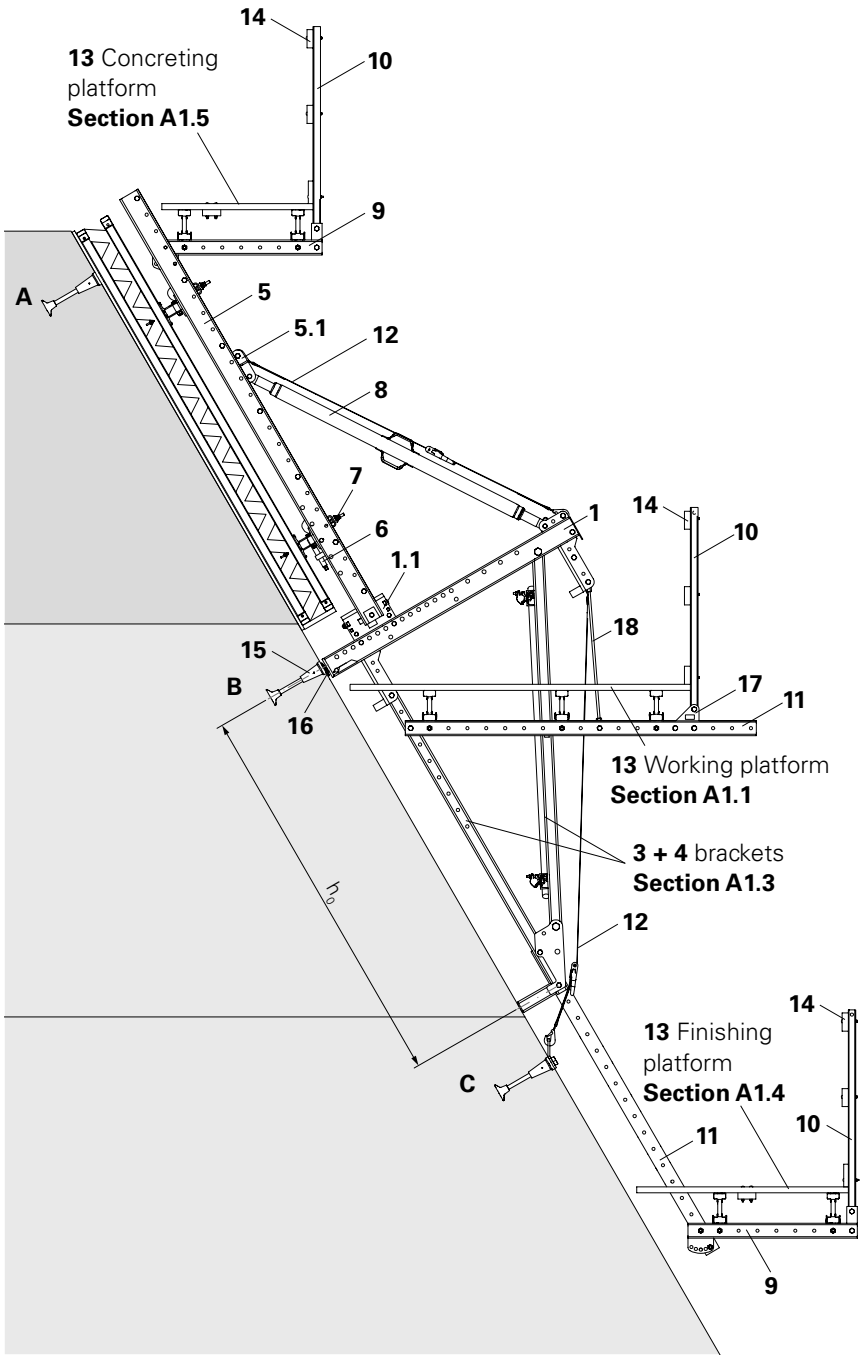


Fig. 04

Overview

Key

1 Crosbeam Unit SCS 190
1.1 Height Adjusting Unit SCS
2 Crossbeam Unit SCS 250
2.1 Carriage SCS
3 Vertical Strut SCS 237
4 Diagonal Strut SCS 257
5 Strongback SCS 325
5.1 Spindle Connector SCS
6 Height Adjusting Unit CB, SCS
7 Waler Fixation U 100-120
8 Heavy Duty Spindle SCS 198-250
9 Platform Beam SCS 112
10 Guardrail Post SCS 150
11 Platform Post SCS 232
12 Tension Belt
13 Platforms (working, finishing or concreting platform)
14 Guardrails
15 Leading Anchor (A), Bracket Anchor (B), and Following Anchor (C)
16 Mounting Ring or Mounting Bolt
17 Connecting Plate SCS Ø 21 – Ø 125
18 Platform Suspension with DW 15
19 Starter Bar SCS 187
20 Brace Frame Anchor (45° inclined)
28 Anchoring to prevent tipping

Pictogram | Definition


Safety Instructions


Note


Visual Check


Tip


Load-bearing point


Warning of suspended load


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

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

Conventions
- Instructions are numbered (1....., 2....., ...)
- The result of an instruction is shown by: →
- Multiple position numbers, i.e. alternative components, are represented with a slash: 1/2.e.

Arrows
- Arrow representing an action →
- Arrow representing a reaction of an action* ⇨
- Arrow representing forces ➞

* if not identical to the action arrow

Terms and Definitions

Standard
Preferred construction method.

Alternative
Alternative constuction method as standard.

Variants
Equivalent construction methods but different versions.

Climbing anchor
A = Leading Anchor
B = Bracket Anchor
C = Following Anchor

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

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

Combination Possibilities

Components			Climbing Unit	
Description	**Size**	**Variant**	**SCS 190***	**SCS 250**
Crossbeam Unit		SCS 190	x	–
		SCS 250	–	x
Girder		VT 20	x	x
		GT 24	x	x
		Timber 80 x 160	x	x
Guardrails / Lateral Anti-Fall Protection Posts		Guardrail Post SCS 150**	x	x
		End Guardrail Post CB	x	x
Guardrails / Lateral Anti-Fall Protection Planking		Boards	x	x
		Tubes	x	x
Guardrails / Lateral Anti-Fall Protection Fixing Guardrail Post Holder Multi		Torx 6 x 80	x	x
		F.H. Bolt DIN 603 M8 x 45 MU	x	x
Guardrails / Lateral Anti-Fall Protection Fixing Tubes		Guardrail Connection Plate ACS / SCS	x	x
		Guardrail Connector CB	x	x
Static bracket height h_0	2,58 m		x	x
	2,40 m		x	x
Anchoring DW 15 in ground		SRU Waler	x	x
		SRS Tie Yoke	x	x
Anchoring in the wall***	M30	Climbing Cone-2 M30 / DW 20	x	x
	M36	Climbing Cone-2 M36 / DW 26	x	x
Bracket Anchor	M30	Mounting Ring SCS M30	x	x
	M36	Mounting Ring SCS M36	x	x
		Mounting Bolt SCS M36	x	x
Fixing of the Leading Anchor on the formwork	M30	Positioning Plate + Screws	x	x
		Positioning Stud + Nails	x	x
	M36	Positioning Plate + Screws	x	x
		Positioning Stud + Nails	x	x

* mostly inclined climbing units
** for lateral anti-fall protection with Guardrail Post Holder Multi
*** according to static specifications

Anchoring in the wall

Climbing Anchors
There are two sizes
– M30 or
– M36
The size to be used depends on the load according to the static calculations.

Climbing Anchor M30

Pos.	Components	Item no.
15.1	Climbing Cone-2 M30/DW 20	030920
15.2	Tie Rod DW 20 or B 20*	030700
15.3	Threaded Anchor Plate DW 20*	030860

* non-reusable components

The load-bearing capacity is reduced when using Tie Rod B 20 with a continuous thread, see separate SCS dimensioning information.

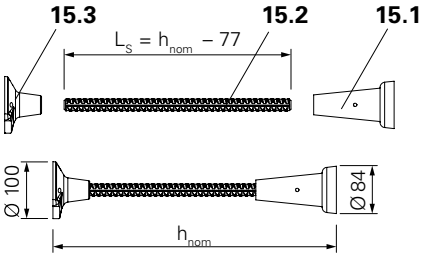


Fig. 05

Climbing Anchor M36

Pos.	Components	Item no.
15.7	Climbing Cone-2 M36/DW 26	030940
15.8	Tie Rod DW 26*	030340
15.9	Threaded Anchor Plate DW 26*	030870

* non-reusable components

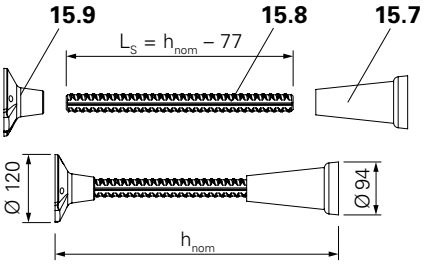


Fig. 06

Concreted anchor point

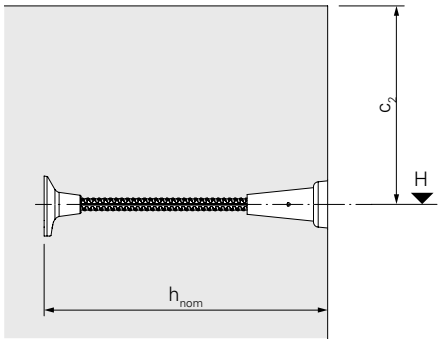


Fig. 07

H = height measurement
L_s = length of tie rod
h_{nom} = anchoring depth
c_2 = distance of anchor to concreting joint

c_2 = 350 mm
Standard distance to the concreting joint if not specified in the plan.

Spray the climbing cone with a release agent before installation.
→ Facilitates easier removal.

Check anchor point
All individual components
– Anchor type
– Completeness
– Intactness
Position
– Height
– Alignment
– Distance to edge
– Anchor spacings
Assembly
– Anchoring depth h_{nom}
– Screw-in depths
Concrete
– Sufficient concrete strength
– Cavity-free anchor base

Intended Use of the Standard Configuration

Product Description

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

The Single-Sided Climbing Formwork SCS is normally used as a load-bearing system in order to support single-sided, anchorless wall formwork in accordance with DIN EN 12812.

The load-bearing system of the climbing unit consists of two climbing brackets with accessories, platform beams with planking, strongbacks with formwork and spindles.

The climbing bracket consists of crossbeams along with vertical and diagonal struts. The Crossbeam contains either an Adjusting Unit (SCS 190) or an Adjusting Unit with Carriage (SCS 250). The brackets are connected to each other by scaffold tubes and the working platform. The forces arising from the dead load, live load, wind load and concrete pressure are transferred from the brackets via the climbing anchors and pressure point into the structure. Additional tension belts prevent the system from tipping when empty or in a forward-inclined position.

In the standard configuration, VARIO GT 24 girder wall formwork is connected to the platform unit and together this forms the climbing unit. The climbing unit is moved with the crane.
The load-bearing point is above on the Strongback.

A finishing platform can be suspended on the brackets, and a concreting platform can be attached to the Strongback. Access via ladders with hatches are possible with PERI standard components. All-round side protection can be attached to all platforms.

Before concreting, the formwork is pressed against the previously concreted section by means of controlled pressure with the Adjusting Unit. Striking is carried out by turning the Heavy Duty Spindles and relieving the Adjusting Unit.

For the first casting segment, a Starter Brace Frame with the strongback, spindle and additional Starter Bars can be assembled in order to support the single-sided formwork. The Starter Brace Frame is anchored in the concrete base with diagonal anchors.

Technical Data
SCS 250:
Reach approx. 2.50 m.
Static height H_0 = 2.58 m or 2.40 m.
Depending on the formwork type, the formwork can be retracted approx. 63 cm in order to work in front of the formwork.

SCS 190:
Reach approx. 1.90 m.
Static height h_0 = 2.58 m or 2.40 m.
The formwork can be inclined by turning the Heavy Duty Spindle.

Instructions on Use

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

Only PERI original components may be used. The use of other products and spare parts represents a misapplication with associated safety risks.

Changes to PERI components are not permitted.

Safety Instructions

General
These Instructions for Assembly and Use serve as basis for the project-related risk assessment and the instructions for the provision and use of the system by the contractor. However, they do not replace them.

The contractor must ensure that the Instructions for Assembly and Use provided by PERI are available at all times for the users, and must also ensure they are fully understood. Safety instructions and permissible loads must be observed at all times.

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

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

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

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

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

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

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

Deviations from the standard configuration may only be carried out after a separate risk assessment has been completed by the contractor. On this basis, appropriate measures for the working and operational safety as well as the stability are to be implemented. Appropriate proof of stability can be provided by PERI if the risk assessment and measures deriving from this are readily available.

Components provided by the contractor must conform with the characteristics required in these Instructions for Assembly and Use as well as 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 Ø 48.3 x 3.2 mm according to EN 12811-1:2003 4.2.1.2.
– Scaffold tube couplings according to EN 74.

In the event of unfavourable weather conditions, e.g.
– poor visibility (fog),
– strong winds,
– snow,
suitable precautions and measures are to be taken in order to ensure both work and operational safety as well as stability.

In case of extraordinary events which could compromise the safety, e.g.
– storms,
– earthquakes,
– accidents,
– longer downtimes,
the system must be comprehensively checked by a qualified person on behalf of the contractor regarding the working and operational safety as well as the stability. The results of the inspection are to be documented.

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

Do not drop the components.

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

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

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

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

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

Safety Instructions

System-specific
The contractor must ensure that assembly, modifications and dismantling, moving as well as the use and handling of the product is managed and supervised by professionally qualified and authorized personnel.

All persons working with the product must be familiar with the operating instructions and safety information.

The contractor must ensure that the Instructions for Assembly and Use, other instructions required for operations or assembly, relevant planning documents, parts lists and other data are available to users.

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

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

Close hatch cover immediately after climbing through the hatch.

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 that unforeseen risks arise during assembly work. Assess the degree of risk in each individual case and, if necessary, take measures to prevent or at least minimize 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.

Do not remain under any 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, overturned, sliding or rolling objects and masses. Cordon off areas of risk.

Maintenance and repairs
The components of the climbing formwork are to be inspected before each use to ensure that they are in perfect condition and function correctly. Basically, only materials in perfect condition are to be used.

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

In case of overload or damage, stop work on and under the platforms, determine the cause, set down and replace damaged components.

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:
– Regular visual inspections are to be carried out by qualified personnel.
– Before any climbing or assembly, a functionality check is to be carried out by qualified personnel.
– Only PERI original components are to be used when replacing parts.
– Repairs are to be carried out by PERI qualified personnel only.

Supporting structure:
– A visual inspection is to be carried out by authorised personnel before the initial use.
– Only PERI original components are to be used for repairs or replacement.

Other components:
– Inform authorised persons.
– Repairs are carried out by authorised personnel.

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

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

Ladders must not be connected to each other for more than two levels and should be offset against one another. They must be secured on the outer side by means of appropriate anti-fall equipment such as rear safety protection or safety nets.

Suitable equipment must be available on hatches and openings on accessible areas in order to prevent accidents. After the ladder access is used each time, ensure that the hatch cover is closed.

In the case of danger, it must be ensured that working areas can be vacated via emergency escape routes or rescue equipment. 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.

Protection against falling components
Work activities may not not be carried out simultaneously on areas positioned on top of each other unless the lower working areas and access routes are provided with protection against falling objects such as tools or materials.

Avoid positioning 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.

Operational working areas at great heights are to be secured against falling objects by means of appropriate constructional measures. Safety nets (mesh size ≤ 2 cm) and planking are considered to be suitable means and are to be installed very close to the structure (distance ≤ 5 cm).

Working areas positioned below must be protected using suitable protective roofs along the entire area at risk.

Secure all pins with cotter pins and all bolts with nuts.

Climbing Procedure
Retract components only when the concrete has sufficiently hardened and the person in charge has given the go-ahead for striking to take place. Suspend climbing units on the next concreting section only after the required concrete strength has been reached.

As a result of the moving procedure, falling edges are formed between the platforms. These areas are to be cordoned off!

Do not transport persons, building materials or tools when moving with the crane. Exceptions to this can be determined through the operational working and assembly instructions on the basis of a corresponding risk assessment.

In case of a malfunction, lower the platform to the next possible position, personnel are to leave the climbing unit in a safe and secure manner and an authorized person is to be notified immediately!

Care and Maintenance Instructions

Formwork

Regular cleaning and care is necessary in order to maintain the value and usability of the formwork materials over the long-term. Additionally, some repair work may also be inevitable due to the tough working conditions. The following points should help to keep care and maintenance costs as low as possible.

The elements (used or new) should be sprayed all over with the PERI Bio Clean concrete release agent before every use. This makes it easier and quicker to clean the formwork. The concrete release agent should always be sprayed on thinly and evenly!

Spray rear side of the formlining with water immediately after concreting. This saves on time-consuming cleaning operations.

The formlining of the panels must be sprayed with the release agent immediately after striking if in continuous use. Only then cleaning can take place with a scraper, brush or rubber lip scraper. Important: do not clean plywood formlining with a high-pressure cleaner as this can lead to damage.
During cleaning, always ensure that the panels are in a secure position!
Do not clean the elements when suspended from the crane!

Box outs and built-in parts should be fixed with double-headed nails. This makes it easier to remove the nails later on and to a large extent prevents damage to the formlining.

Any unneccessary anchor holes should be sealed with plugs. As a result, this eliminates subsequent cleaning or repair work. Anchor holes accidentally blocked with concrete are freed by means of a steel pin from the formlining side.

When putting down bundles of reinforcement bars or other heavy objects on horizontally stored formwork elements, suitable support items, e.g. square timbers, are to be used. This prevents indentations and damage being caused to the formlining.

If possible, concrete internal vibrators are to be used with rubber caps. This reduces the risk of damage to the formlining if accidentally "inserting" the internal vibrator between the reinforcement and formlining.

The panels should not be treated with concrete release agent immediately before transport due to safety reasons.

Steel brushes or hard metal scrapers must not be used for cleaning powder-coated elements or accessories. Such cleaning processes will destroy the high-quality powder coating.

Use spacers for reinforcement with large-area support or flat supports. This prevents indentations being created in the formlining by the load.

Moving components, such as spindles or gears, are to be cleaned before and after use in order to remove dirt or concrete residue, sprayed with a release agent and, if necessary, lubricated with acid-free grease.

For longer storage periods, e.g. bad weather, store components in a clean condition and sprayed. Repair damage to the paintwork with rust protection paint.

Additional technical documentation

- Instructions for Assembly and Use for VARIO GT 24 Girder Wall Formwork
- Instructions for Assembly and Use for TRIO Panel Formwork
- Instructions of Use for the Crane Splice 24
- Instructions of Use for the Lifting Beam 10 t
- SCS 190 and SCS 250 Dimensioning Information - Single-Sided Climbing Formwork*
- PERI Design Tables
- PERI Services
- PERI Rental Service
- PERI Cleaning and Repair Service

*The short form "SCS Dimensioning Information" is used in the sections that follow.

Operating states

Operational status
- Cleaning of formwork, wall reinforcement, closing and striking of formwork, anchor installation and dismantling, inspection and maintenance.
- Platforms are freely accessible for the work to be carried out.
- Loads are evenly distributed. Single-sided loads on cantilevered platform areas are only allowed if an appropriate fixation against lift-off is fitted to the bracket positioned opposite.

Climbing status

During the climbing procedure, site personnel are not allowed to remain on the platform.
- Moving the climbing unit with the crane.
- Formwork is retracted or inclined to the rear.
- Non-intended loads on the platform must be removed.

When concreted
- Concreting the casting segment.
- Concreting platform is freely accessible for the work to be carried out. Working platform: only access - no additional loads. Finishing platform: no access.

Non-operational
- During longer work breaks or storm warnings with wind speeds over 102 km/h.
- Bring formwork in concreting position.
- Accessing the platform during storm conditions is forbidden.
- If appropriately secured, materials or equipment can remain on the platform.
- Max. resulting wind speed (wind flow pressure) for storms depends on the utilisation height, wind zone and terrain category in accordance with DIN 1055 or EC 1.
- For storm warnings with higher wind speeds than assumed, an authorized person is to be informed and, if necessary, all enclosure netting and tarpaulin removed. The climbing unit can be climbed back to the previous concreting section if instructed to do so. Remove materials and equipment from the platforms.

Permissible loads

Component / Requirement	Operational status	When concreted	Non-operational
Concreting platform	150 kg/m²	150 kg/m²	–
Working platform	300 kg/m²	75 kg/m²	75 kg/m²
Finishing platform	150 kg/m²	–	–
Max. wind speed	102 km/h	72 km/h	According to specifications
Max. wind flow pressure	0,50 kN/m²	0,25 kN/m²	According to specifications
Concrete pressure [kN/m²]	–	According to specifications	–
Position of the formwork	Retracted or in concreting position	In concreting position	In concreting position

The stability for the loads and conditions must be checked by means of a static calculation in accordance with separate SCS dimensioning information!

Standard Operating Sequence

Preparation

1. Assemble wall formwork.
2. Mount working platform including hatch and brackets if necessary, see A1.1 + A1.2 + A1.3.
3. Assemble finishing platform, see A1.4.
4. Mount concreting platform, see A1.5.

Starter Brace Frame

1. Install anchoring for the Starter Brace Frame, see A2.1.
2. Assemble Starter Brace Frame with wall formwork for the first casting segment, see A2.2.
3. Fix Leading Anchor, see A2.6.
4. Carry out reinforcement work.
5. Concrete the first section.

(Fig. 08)

Preparation for initial use

1. Release Leading Anchor, see A2.7.
2. Strike the formwork,
   - SCS 190 see A4.4.
   - SCS 250 see A4.5.
3. Install Mounting Ring or Mounting Bolt, see A2.8.

(without illustration)

Initial use

1. Suspend working platform unit, see A2.3.
2. Insert locking pins, see A5.2. → secured position.
3. If necessary: fix Tension Belt, see A2.5.
4. If necessary: clean and align formwork, see A4.
5. Fix Strongback on the formwork, see A3.1.
6. If required, install Compression Brace, see A3.2.
7. Fix concreting platform to the Strongbacks, see A3.3.
8. Connect formwork to the platform unit, see A3.4.
9. Carry out reinforcement work.
10. Fix Leading Anchor, see A2.6.
11. Close and align formwork, see A4.
12. Concrete second section.

(Fig. 09)

Striking

1. Release fixation of the Leading Anchor, see A2.7.
2. Strike formwork,
   - SCS 190 see A4.4.
   - SCS 250 see A4.5.
3. Install Mounting Ring or Mounting Bolt, see A2.8.
4. Availability of mounted finishing platform, see A1.4.

(Fig. 10)

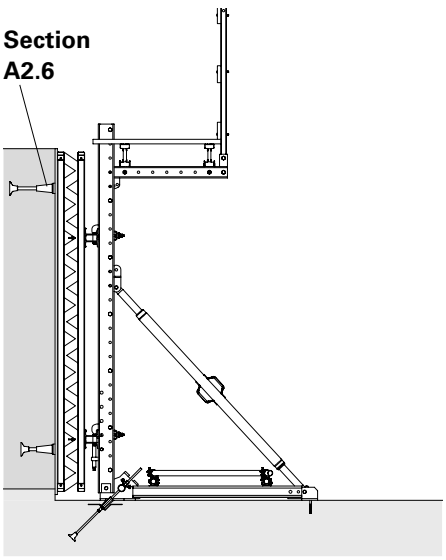


Fig. 08

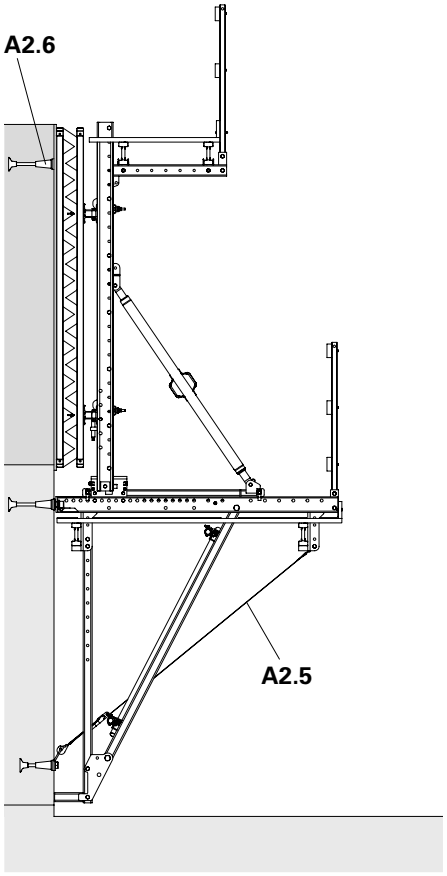


Fig. 09

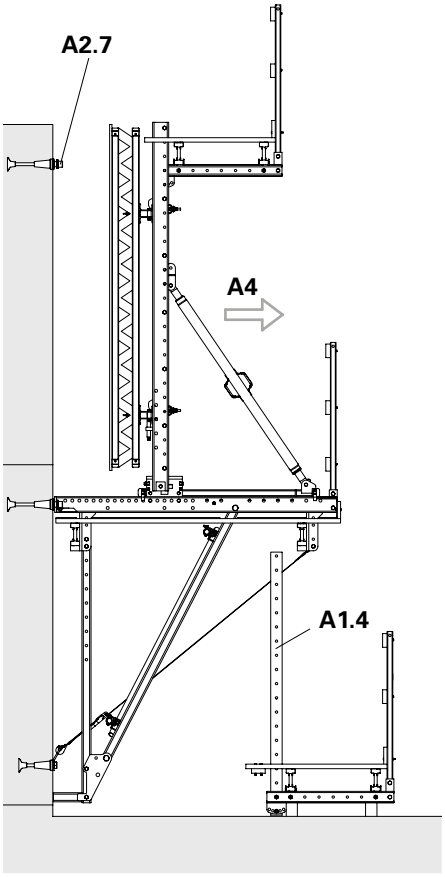


Fig. 10

Standard Operating Sequence

Moving

- **Persons are not to be transported!**
- **No loose components or other loads are to be transported!**
- **Persons are to keep away from the area of risk!**

1. Release Tension Belt on the Following Anchor, see A2.5.
2. Connect the finishing platform, see A2.4.
3. If necessary: mount lateral anti-fall protection, see A1.6.
4. Move climbing unit to the next section, see A5.
5. If necessary: mount access ladder to the finishing platform, see A2.10.

(Fig. 11)

Standard cycle

1. If necessary: fix Tension Belt to the Following Anchor, see A2.5.
2. If necessary: clean* formwork and align, see A4.
3. Carry out reinforcement work.
4. Fix Leading Anchor, see A2.6.
5. Close and align formwork, see A4.

(Fig. 12)

* if formwork is worn, replace formwork, see A3.5.

6. Concrete standard section.
7. Release fixation of the Leading Anchor, see A2.7.
8. Strike the formwork,
   -SCS 190 see A4.4.
   -SCS 250 see A4.5.
9. Install Mounting Ring or Mounting Bolt, see A2.8.
10. Release Tension Belt on the Following Anchor, see A2.5.
11. Close anchor hole, see A2.9.
12. Move climbing unit to the next section, see A5.1.
13. Insert locking pins, see A5.2.
    → secured position

(Fig. 13)

Dismantling

Dismantling the climbing formwork, see A6.

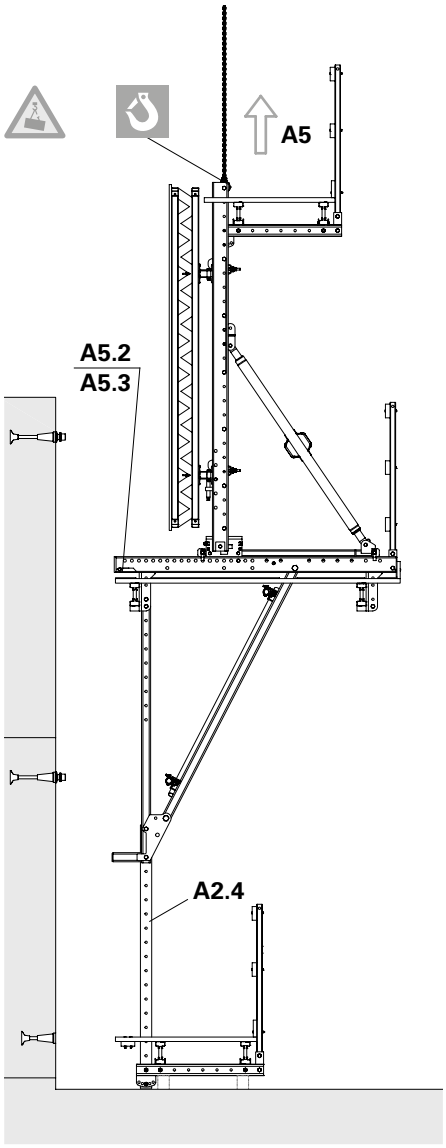


Fig. 11

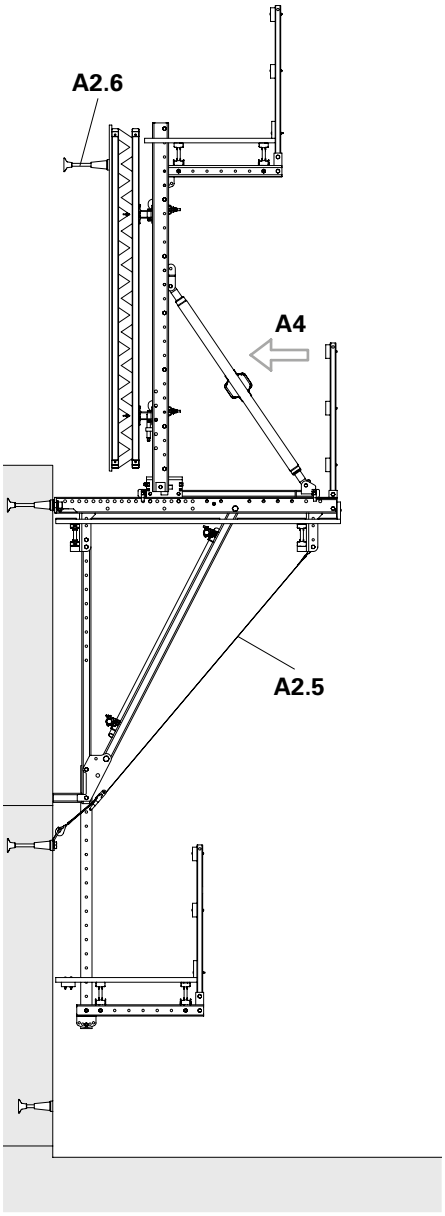


Fig. 12

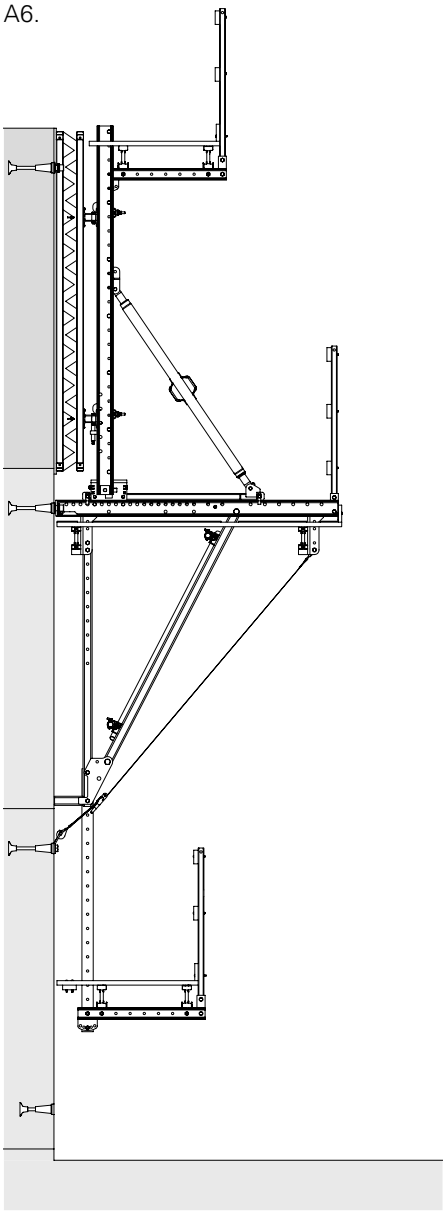


Fig. 13

A1.1 Mounting the working platform

- Provide and prepare an appropriate area for the assembly.
- Minimum width: standard planks = 240 mm. Cut planking ≥ 100 mm (compensation).
- The bracket spacing **c** and cantilevers $\mathbf{d_1}$ and $\mathbf{d_2}$ as well as the complete length **L** are provided in the planning details.

There are three girder options:
- VT 20 - standard girder
- GT 24 - alternative girder.
- Timber 80 x 160 mm - alternative girder.

Alternative platform assembly
As an option, the Crossbeam Units are retrofitted, see page 17.
(Fig. A1.07 + A1.08)

Pos.	Components per platform	Qty	Item no.
13.4	Planking 40 x 240 mm	–	–
	TSS-Torx 6 x 80 (per plank)	4	024690
13.5	Toe Board 30 x 150 mm	1	–
	F.H. Bolt DIN 603 MB x 45 MU	4	710295
	Angle Connector 90	3	123478
	TSS-Torx 6 x 40	12	024540
13.7	Covering - 4 mm formlining	6	–
13.8	Support timber as assembly aid	4	–

Pos.	Components - alternative	Qty	Item no.
1	Crossbeam Unit SCS 190	2	118730
2	Crossbeam Unit SCS 250	2	118737
13.1	Girders - according to static specifications		–
	– Girder VT 20	2	Length L
	Hex. Wood Screw DIN 571 8 x 60	16	024270
	– Lattice Girder GT 24	2	Length L
	Hex. Wood Screw DIN 571 8 x 60	16	024270
	– Timber 80 x 160 mm	2	Length L
	Bolt ISO 4014 M8 x 100	8	710285
	Nut ISO 4032 M8	8	024090
	Washer ISO 7089 200 HV, A 8	8	780354
	– Timber 80 x 160 mm	2	Length L
	Bolt ISO 4014 M16 x 100	4	710219
	Nut ISO 4032 M16	4	710229
	Washer ISO 7089 200 HV, A 16	4	711074

Working Platform SCS 190
Assembly with VT 20

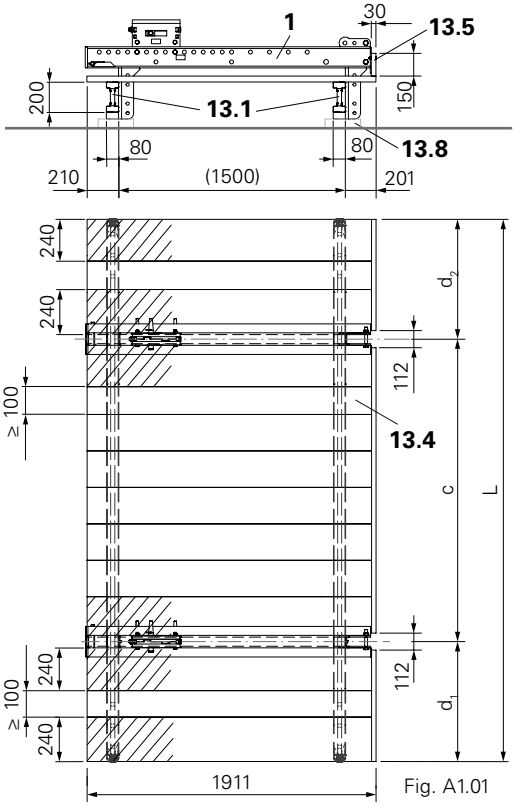


Fig. A1.01

Working Platform SCS 250
Assembly with VT 20

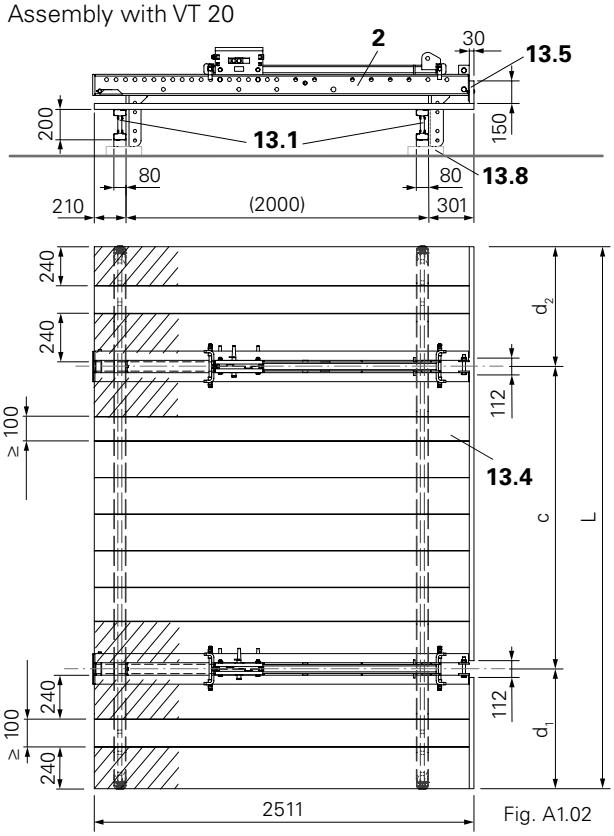


Fig. A1.02

A1 Pre-Assembly

Platform assembly with VT 20

Preparation
Cut planking (13.4) to the required length.
SCS 190: 1911 mm. (Fig. A1.01)
SCS 250: 2511 mm. (Fig. A1.02)

Assembly
1. Position Crossbeam (1/2) on the support timber (13.8) and align. (Fig. A1.01 or A1.02)
2. Place VT 20 (13.1) in the support of the Crossbeam and align components at right angles to each other. (Fig. A1.01 or A1.02 + Fig. A1.03a)
3. Fix VT 20 to the Crossbeam:
   – Pre-drill (Ø 6) every VT 20, laterally spaced at distance c and below with 25 and 180 mm spacings.
   – Fix VT 20 to the Crossbeam using 2 x wood screws 8 x 60 in each case. (Fig. A1.01 or A1.02 + Fig. A1.03a)
4. Place planking at right angles to the girder starting with the planks next to the crossbeam - width may have to be cut to required size.

Note: cut planking width ≥100 mm! (Fig. A1.01 or A1.02))

Girder VT 20

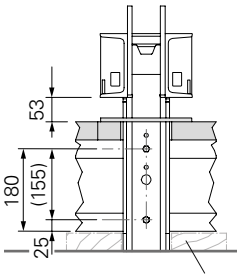


Fig. A1.03a

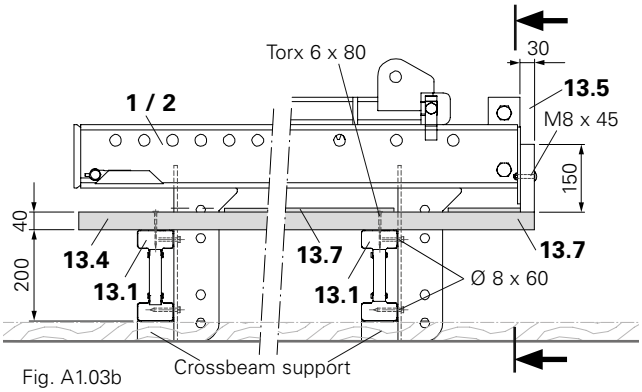


Fig. A1.03b

5. Fix each plank with 4 Torx 6 x 80 (2x per crossing with VT 20) to the VT 20. (Fig. A1.03b)
6. Place Toe Board (13.5) on the planking.
7. Fix Toe Board to the Crossbeam:
   – Pre-drill (Ø 8 mm) Toe Board.
   – Fix Toe Board with F.H. Bolt M8 x 45 MU to Crossbeam. (Fig. A1.03b)
   – Fix Toe Board to cantilevers and between the Crossbeams with Angle Connectors 90°, and Torx 6 x 40 to the platform.
     → Bracing.
8. Close gaps in the decking below the Crossbeam with 4 mm thick formlining strips (13.7) or boards. Leave open gaps for anchor positions and diagonal struts.
   → No material or dirt falls through the gaps in the decking.

Platform assembly with GT 24

Preparation
Cut planking (13.4) to the required length.
SCS 190: 1911 mm. (Fig. A1.01)
SCS 250: 2511 mm. (Fig. A1.02)

Assembly
1. Position Crossbeams (1/2) on support timbers (13.8) and align. (Fig. A1.04b)
2. Place GT 24 (13.1) in the Crossbeam support (1/2) and align components at right angles to each other. (Fig. A1.04b)
3. Fix GT 24 to Crossbeam:
   – Pre-drill (Ø 6) every GT 24, laterally spaced at distance c and below with 25 and 180 mm spacings.
   – Fix GT 24 to the Crossbeam using 2 x wood screws 8 x 60 in each case. (Fig. A1.01 or A1.02 + Fig. A1.04a)

Girder GT 24

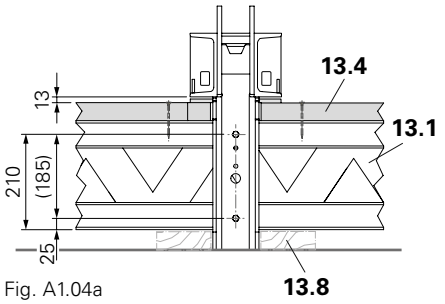


Fig. A1.04a

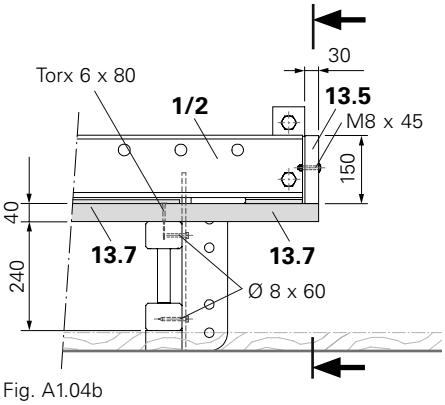


Fig. A1.04b

4. From Point 4 onwards identical with VT 20, see above.In addition: remove planking on the toe board fixation 40 x 50 mm. (Fig. A1.04c)

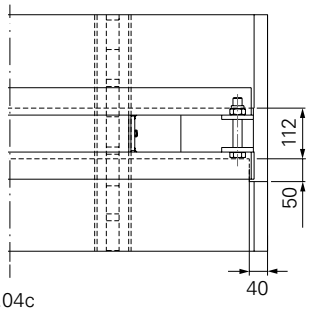


Fig. A1.04c

Platform assembly with timbers 80 x 160

Preparation

Cut planking (13.4) to required length.
SCS 190: 1911 mm. (Abb. A1.01)
SCS 250: 2511 mm. (Abb. A1.02)

Note: cut planking width ≥100 mm!
(Fig. A1.01 or A1.02)

Assembly

1. Position crossbeam (1/2) on support timber (13.8) and align. (Fig. A1.01 or A1.02)
2. Place timber 80 x 160 mm (13.1) in the support of the crossbeam and align components at right angles to each other. (Fig. A1.01 or A1.02)
3. Fix timber to crossbeam. There are two options:
   – **Standard:**
   Pre-drill timber (Ø 8).
   Fix pre-drilled timber to Crossbeam Unit using **2x F.H. Bolt M8 x 100 with Nut M8 and Washer A8** in each case. (Fig. A1.05a)
   – **Alternative:**
   Pre-drill timber with Ø16.
   Fix pre-drilled timber to Crossbeam Unit using **1x Bolt M16 x 100 with Nut M16 and Washer A16** in each case. (Fig. A1.06a)
4. Place planking at right angles on the timber starting with the planks next to the crossbeam - width may have to be cut to required size.
5. Fix each plank with 4x Torx 6 x 80 (2x when crossing the timber) to the timber. (Fig. A1.03b)
6. Place Toe Board (13.5) on the planking.
7. Fix Toe Board to the crossbeam.
   – Pre-drill (Ø 6) Toe Board.
   – Fix Toe Board to the crossbeam using F.H. Bolt M8 x 45 MU. (Fig. A1.03b)
   – Fix Toe Board to cantilevers and between the crossbeams with Angle Connectors 90°, and Torx 6 x 40 to the platform.
   → Bracing.
8. Close gaps in the decking below the crossbeam with 4 mm thick form-lining strips (13.7) or boards. Leave open gaps for anchor positions and diagonal struts.
   → No material or dirt falls through the gaps in the decking.

Standard: 2x F.H. Bolt DIN 603 M8 x 100 MU

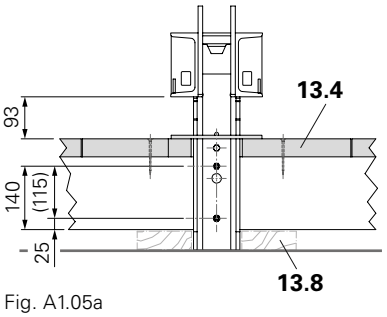


Fig. A1.05a

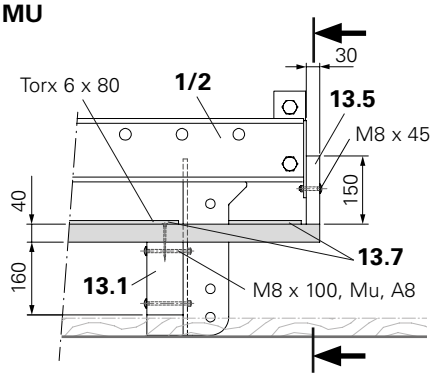


Fig. A1.05b

Alternative: 1x Bolt ISO 4014 M16 x 100 MU

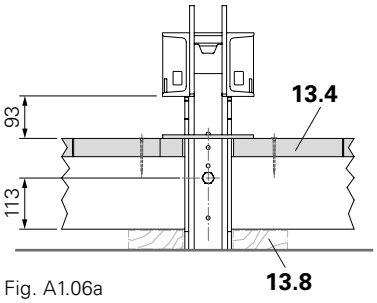


Fig. A1.06a

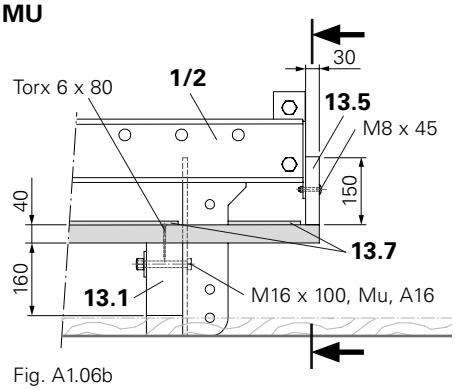


Fig. A1.06b

Subsequent mounting of the crossbeam.

Alternative platform assembly

– Optionally, the crossbeam can be subsequently mounted.
– The illustrations show the Girder VT 20.

Preparation

1. Pre-drill (Ø 6) every girder. For the different girders or timber, take into account the different dimensions:
   – VT 20: see Fig. A1.03a.
   – GT 24: see Fig. A1.04a.
   – 80 x 160 mm: see Fig. A1.05a.
2. Cut planking (13.4) to the required length.
   – SCS 190: 1911 mm. (Abb. A1.01)
   – SCS 250: 2511 mm. (Abb. A1.02)

SCS 190

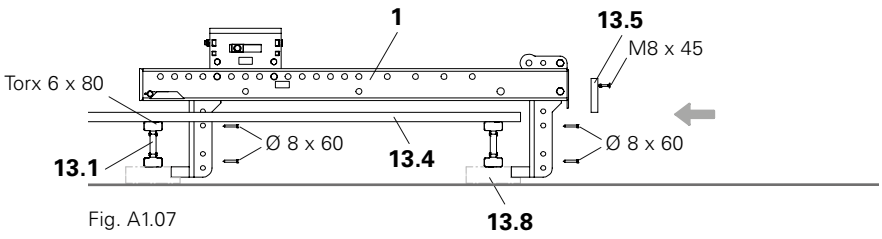


Fig. A1.07

SCS 250

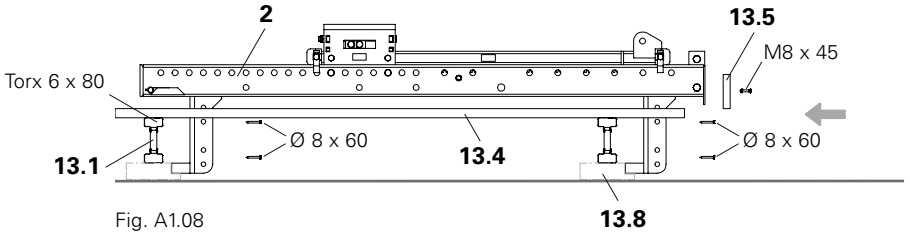


Fig. A1.08

Platform assembly

1. Position girders and timber (13.1) on the support timber (13.8) and align.
2. Fix planking with Torx 6 x 80 (2x when crossing) to the girders or timber.
3. Insert crossbeam (1/2).
   – SCS 190 (1) Fig. 1.07.
   – SCS 250 (2) Fig. 1.08.
4. Align girders or timber and crossbeam at right angles to each other.
5. Fix Toe Board (13.5) to the crossbeam and planking:
   – Pre-drill Toe Board with Ø 8 mm.
   – Fix Toe Board to the crossbeam using F.H. Bolt M8 x 45 MU.
   – Fix Toe Board to cantilevers and between the crossbeams with Angle Connectors 90°, and Torx 6 x 40 to the platform.
   → Bracing.
6. Fix girders or timber to each crossbeam using 2x Torx 8 x 60.
7. Close gaps in the decking below the crossbeam with 4 mm thick formlining strips (13.7) or boards. Leave open gaps for anchor positions and diagonal struts.
   → No material or dirt falls through the gaps in the decking.

Securing the planking

Necessary if d_1 or d_2 are larger than the half-distance of the bracket spacing (c/2), see Fig. A1.01 or A1.02.
In order to avoid any tilting of the planking lining on the cantilevers, wedge the spacing between the crossbeams and the decking with timber (13.9), and secure with nails.
(Fig. A1.09)

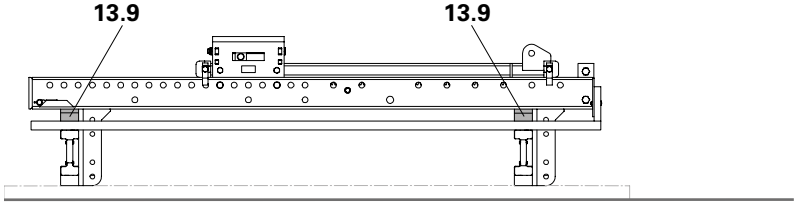


Fig. A1.09

A1.2 Hatch installation

Pos.	Components per platform	Qty	Item no.
31	Hatch RCS 55 x 60-2. foldable alternative: Hatch 55 x 60, foldable - sliding hatch*	1	126431 110608 051430
32	Timber L ~ 125 cm, min. 120 x 40 mm	2	–
33	F.H. Bolt DIN 603 M8 x 100 MU	8	710240
34	ISO 7094 100 HV, A8	8	113347
35	TSS-Torx 6 x 40	20	024540
36	TSS-Torx 6 x 60	12	024470

*Important! The recess of the sliding hatch in the decking has a different size. Details are available on request.

Preparation

1. Cut recess 72 x 57 cm between the crossbeams in the planking. Remaining planking width on crossbeam: 10 cm.
2. Place timber (32) laterally on both sides under the pieces of planking. → Support.
3. Pre-drill end-to-end planking (min. 24 cm wide) and timber with Ø 8 mm: 4x in each case.
4. Screw on timber and end-to-end planking from above using 4x F.H. Bolt M8 x 100 MU (33) and Washer A8 (34) in each case.
5. Screw on pieces of planking and timber from above using 2x Torx 6 x 60 (36) in each case.

(Fig. A1.10)

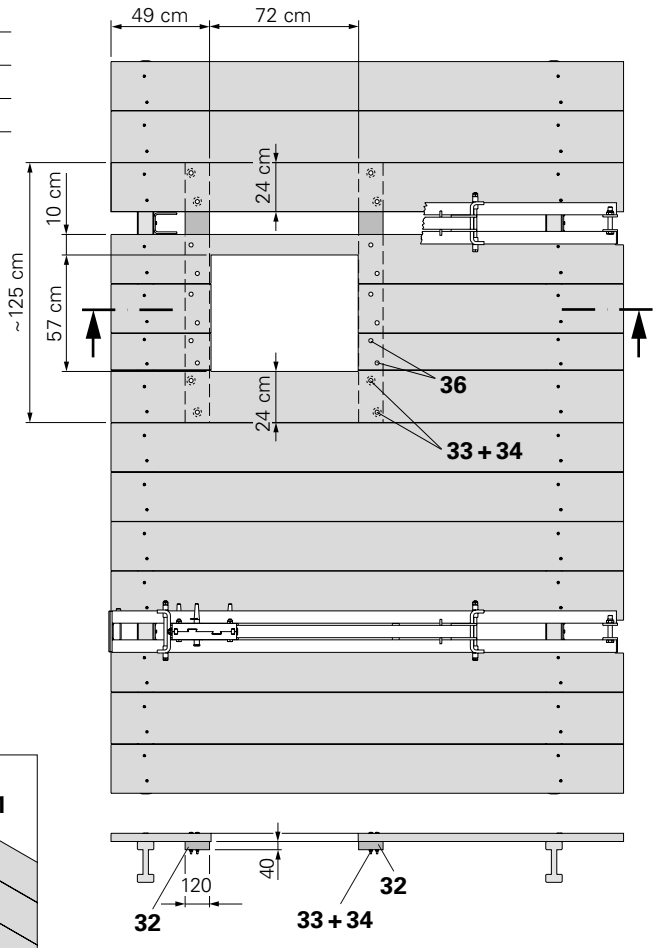


Fig. A1.10

Assembly

1. Place Hatch RCS 55 x 60-2, foldable (31) in the prepared recess. When opened, the hatch cover (31.1) points to the wall side. (Fig. A1.11a)
2. Screw on hatch frame and planking with approx. 20x TORX 6 x 40 (35). (Fig. A1.11)

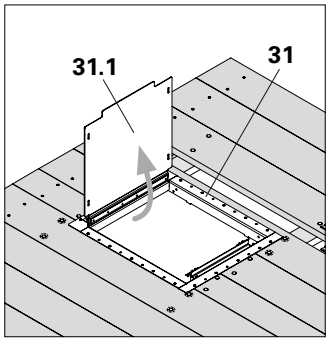


Fig. A1.11a

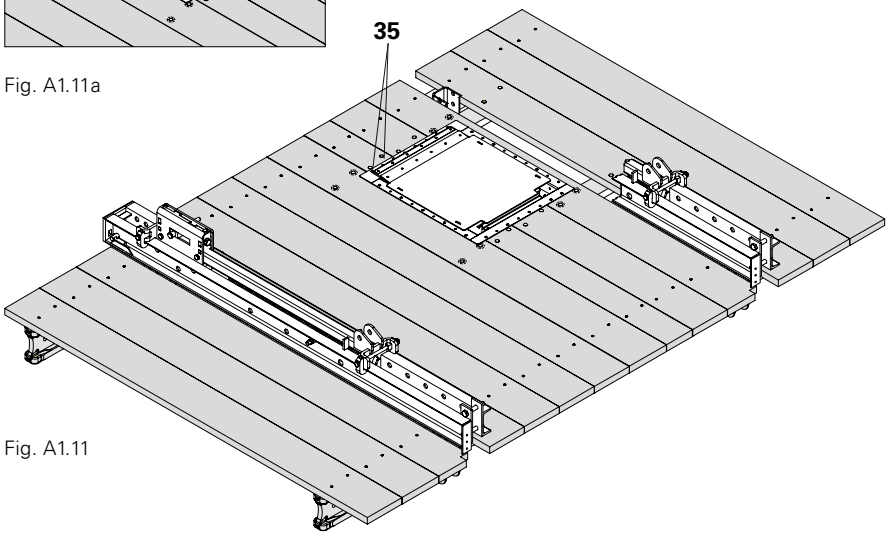


Fig. A1.11

Mount hatches and ladder access on corner platforms.
→ Free access to hatch possible.

A1.3 Mounting the brackets

From the working platform with Crossbeam SCS 190 or SCS 250 mount the brackets with the following components. (Fig. A1.12a + A1.12b)

Pos.	Components per platform	Qty	Item no.
3	Vertical Strut SCS 237	2	118710
4	Diagonal Strut SCS 257	2	118714
5.3	Scaffold Tube Ø 48.3 x 3.2, Special Length	3	026415
22	Swivel Coupling DK 48/48	2	017010
	Fitting Pin Ø 26 x 120	3	111567
	Cotter Pin 5/1	3	022230

SCS 190

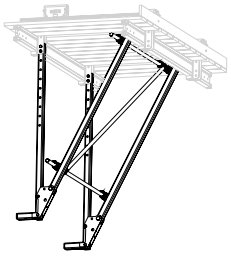


Fig. A1.12a

SCS 250

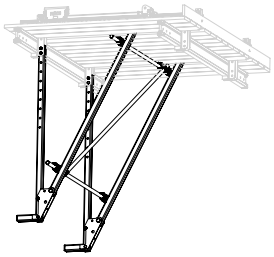


Fig. A1.12b

– Depending on the planned static height h_0, the various M20 and M30 screw positions for connecting the crossbeams and diagonal struts to the vertical struts must be taken into consideration. (Fig. A1.13 / A1.14)
– The illustrations shown are for the Crossbeam Unit SCS 250.

Preparation

Loosen the screws and nuts and put to one side.
– 2x M20 on the Vertical Strut (3).
– 2x M30 on the Diagonal Strut (4).

Assembly

1. Position the Vertical Struts (3) on a flat surface.
2. Place supports under the Vertical Struts (here: timber and formwork girders).
   → Create 260 dimension.
3. Attach crane lifting gear to the spindle connection point of the Carriage SCS 250 (2.1) or Crossbeam SCS 190 (1).
   – Insert Fitting Pins Ø 26 x 120 into the drilled holes of the spindle connection and secure with cotter pin 5/1.
   – Attach crane slings to Fitting Pins.
4. Lift working platform with the crane, and place crossbeam at the top end of the Vertical Strut. Support crossbeam head with a 2 cm board to prevent unit from tipping.
5. Fix Vertical Struts (3) to the crossbeams (2) using bolts and Nuts M20 x 130. (Fig. A1.13a or A1.14a)
6. Fix Diagonal Struts (4) to the crossbeams and Vertical Struts using bolts and Nuts M30 x 140.
   (Fig. A1.13b or A1.14b)
7. Release crane lifting gear.
8. Fix two parallel scaffold tubes to the Diagonal Struts.
9. Align scaffold tubes at right angles to the Vertical Struts.Diagonally mount scaffold tube (5.3) to the horizontal scaffold tubes using swivel couplings (22).
   → Bracing.

(Fig. A1.13 or A1.14)

Bracket h_0 = 2.58 m

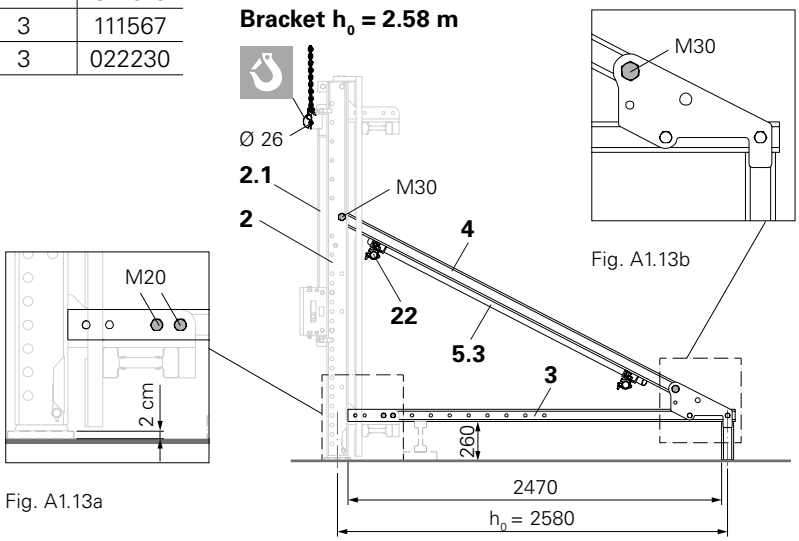


Fig. A1.13b

Fig. A1.13a

Fig. A1.13

Bracket h_0 = 2.40 m

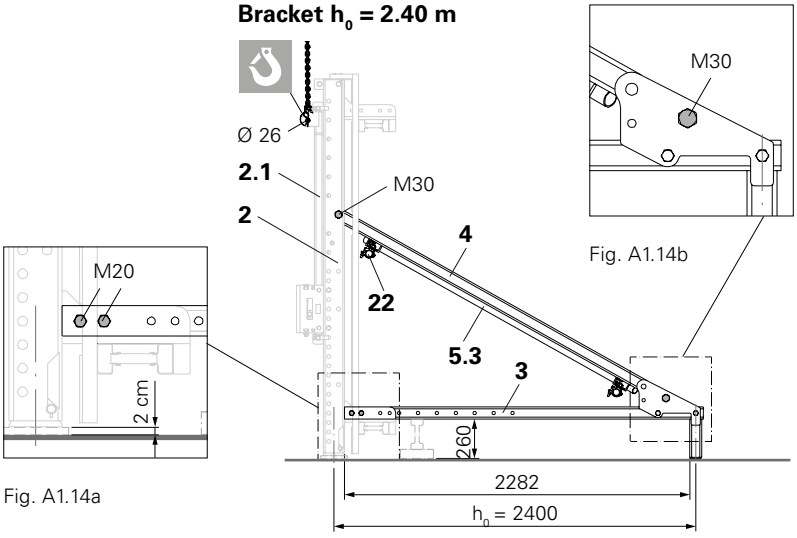


Fig. A1.14b

Fig. A1.14a

Fig. A1.14

On working platforms with hatches, fix the diagonal scaffold tube at the top next to the hatch. As a result, any collision with the ladder is avoided.

Mount guardrails

Install Guardrail Post SCS 150

Pos.	Components per platform	Qty	Item no.
10	Guardrail Post SCS 150	2	118579

Preparation

1. Attach crane lifting gear to the cross-beam of the platform unit.
2. Remove cotter pins from Fitting Pins Ø 26 (1.2 + 1.3) and remove Fitting Pins from the adjusting unit (1.1).
3. One Fitting Pin (1.4) remains in the adjusting unit. (Fig. A1.16a)
4. Insert Fitting Pins (1.2 + 1.3) into the holes on the crossbeam and secure with cotterpins. (Fig. A1.16a + A1.16b)
5. Attach crane lifting gear to these two Fitting Pins (1.2 + 1.3).

Assembly

1. Loosen the 2 Bolts and Nuts M20 on the holder of the platform beam (9) and remove.
2. Fix Guardrail Post (10) to the Platform Beam (9) using the 2x Bolts and Nuts M20. (Fig. A1.16b)

– There are two options for anti-fall protection:
– Standard handrail boards: 40 x 120 mm
– Standard scaffold tubes: Ø 48 x 3.2 mm.
Fix by means of:
Guardrail Connection Plate ACS/SCS
or
Guardrail Connector CB.

SCS 190

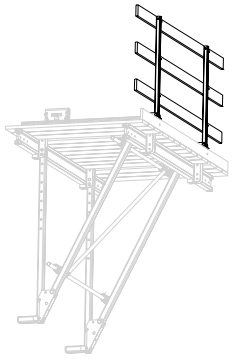


Fig. A1.15a

SCS 250

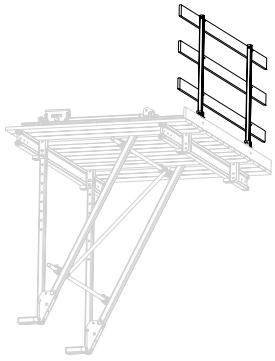


Fig. A1.15b

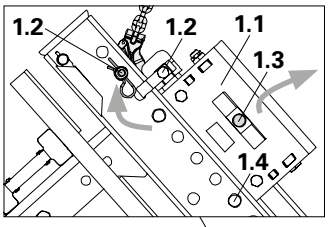


Fig. A1.16a

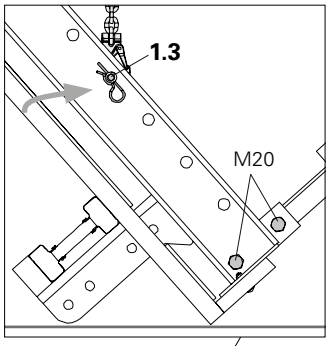


Fig. A1.16b

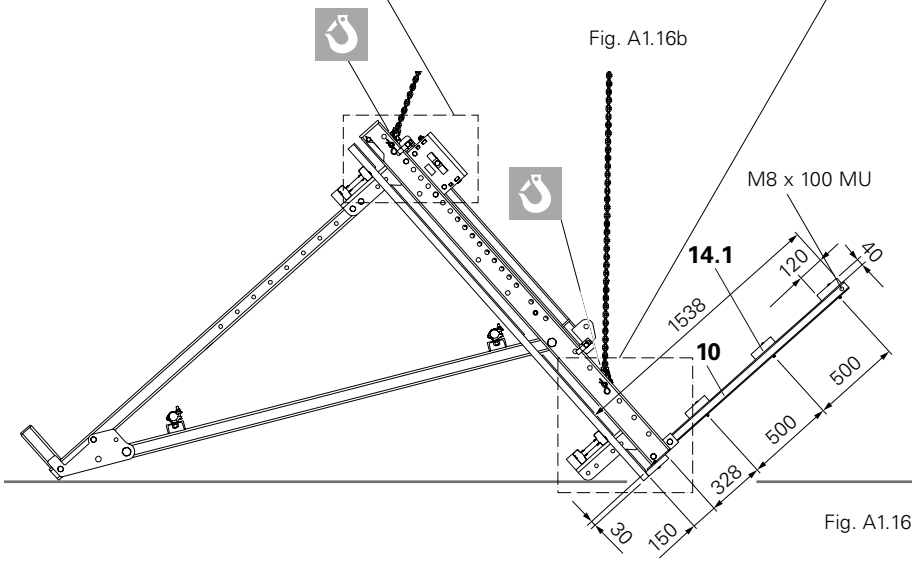


Fig. A1.16

Mount handrail boards

Pos.	Components - alternative	Qty	Item no.
14.1	Handrail boards 40 x 120 mm	3	–
	F.H. Bolt DIN 603 M8 x 100 MU	6	710240

1. Position board (14.1) on the Guardrail Post (10).
2. Align board with platform.
3. Pre-drill board.
4. Connect Guardrail Post and boards using F.H. Bolt M8 x 100 and Nut M8.

(Fig. A1.14)

Mount scaffold tubes

Guardrail Connection Plate ACS / SCS

Pos.	Components - alternative	Qty	Item no.
5.3	Scaffold Tube Ø 48.3 x 3.2, Special Length	3	026415
14.2	Guardrail Connection Plate ACS / SCS	6	113762
	F.H. Bolt DIN 603 M8 x 100 MU	6	710240
14.3	Clamp A64 DIN 3570 M12	6	110296
	Nut ISO 4032 M12	12	710330

1. Fix Guardrail Connection Plate (14.2) to the holes on the Guardrail Post using F.H. Bolts M8 x 100 and Nuts M8.
2. Fix scaffold tubes (5.3) to the Guardrail Connection Plate using Clamp A64 M12 (14.3) and Nuts M12.
3. Repeat steps 1 and 2 twice.

(Fig. A1.17)

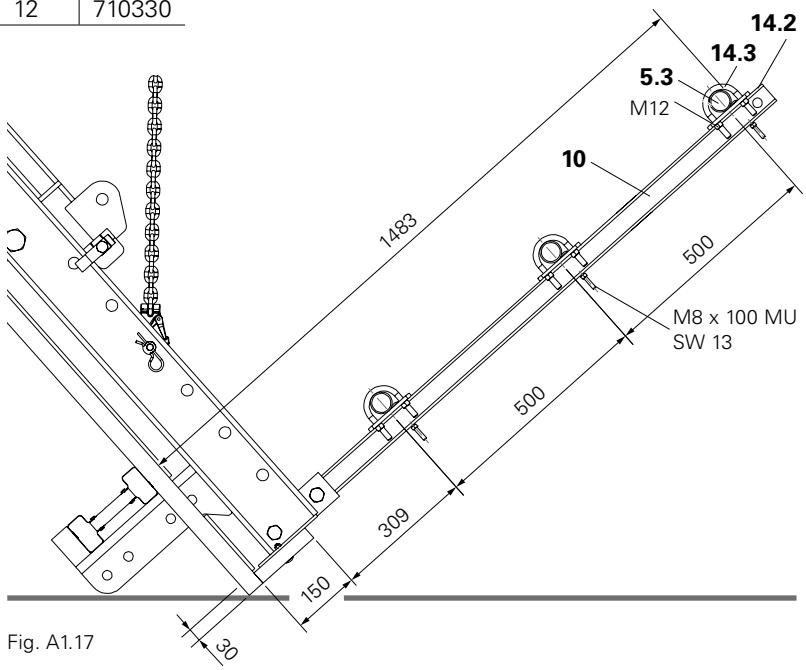


Fig. A1.17

Guardrail Connector CB

Pos.	Components - alternative	Qty	Item no.
5.3	Scaffold Tube Ø 48.3 x 3.2, Special Length	3	026415
14.4	Guardrail Connector CB	6	051160
	Screw ISO4762-M8x70-8.8-ga	6	125956

1. Position scaffold tube (5.3) on the Guardrail Post.
2. Align scaffold tube with the platform.
3. Connect Guardrail Connector CB (14.4) to the Guardrail Post using Screw ISO4762-M8x70-8.8-ga.
4. Repeat steps 1 to 3 twice.

(Fig. A1.18)

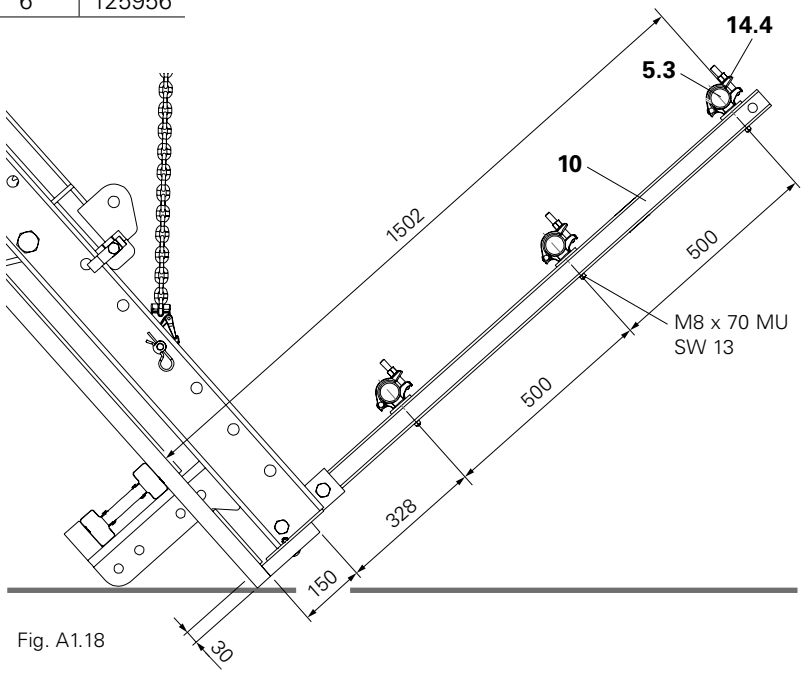


Fig. A1.18

A1.4 Mount finishing platform.

During the assembly:
- Support Platform Beams (9) on square timbers.
- The centre lines of the brackets are offset to the Platform Beams and Guardrail Posts.
- Platform Post (11) is installed at a later time, see A2.4.
- Planking: thickness ≥ 40 mm.
  Standard width 240 mm
  Cut planking width ≥ 100 mm.
- For inclined applications, change the size of the platform as well as the size and position of the openings.

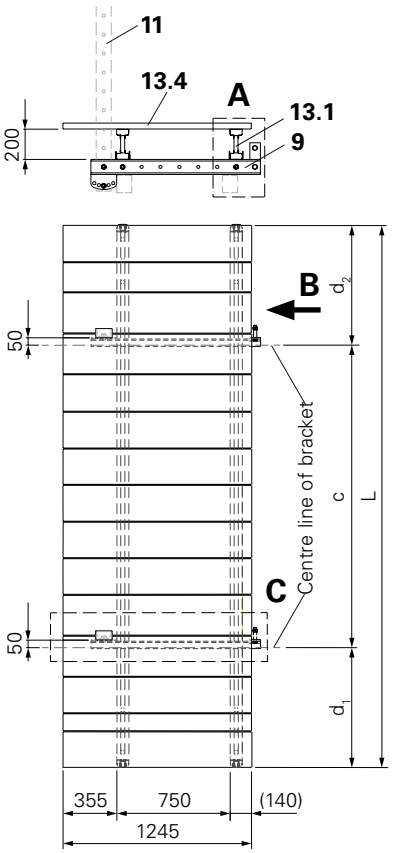


Fig. A1.19

Pos.	Components per platform	Qty	Item no.
9	Platform Beam SCS 112	2	118583
10	Guardrail Post SCS 150	2	118579
13.1	Girder - here: VT 20	3	Length L
13.2	Girder Fixation M20	2	110330
	TSS-Torx 6 x 40	16	024540
	TSS-Torx 6 x 80 / per plank	4	024690
13.4	Planking 240 x 40 mm	Length L	–

Assembly
1. Connect Girder (13.1) and Platform Beam (9) using the Girder Fixation M20 (13.2) and Torx 6 x 40 (2x per side of the fastening).
   (Fig. A1.19a + A1.19b)
2. Cut planking to the required size.
   (Fig. A1.19)
3. Mount planking at the end of the platform beam.
4. Align platform beam and planking at right angles to each other.
5. Fix planking on the girders using Torx 6 x 80 (2x per crossing).
   (Fig. A1.19b)
6. Cut out openings for the Platform Posts SCS 232 (11).
   (Fig. A1.19c)

„A"

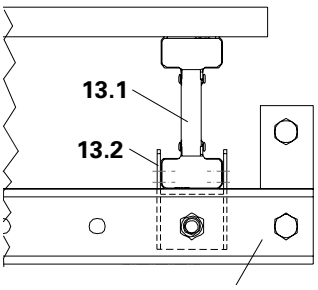


Fig. A1.19a

„B"

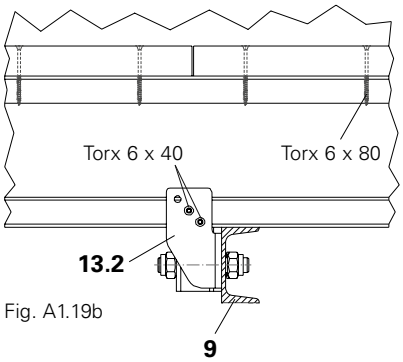


Fig. A1.19b

„C"

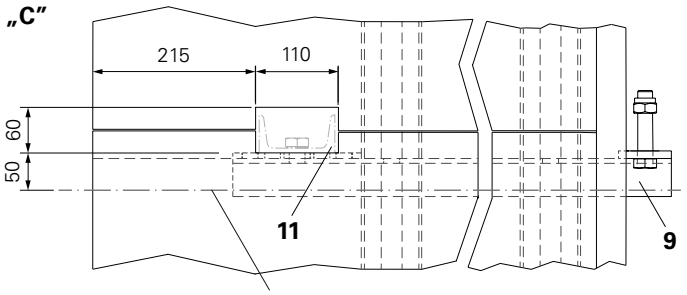


Fig. A1.19c Centre line of bracket

Mount guardrails.

Pos.	Components per platform	Qty	Item no.
10	Guardrail Post SCS 150	2	118579
13.5	Toe Board 30 x 150 mm	1	–
	F.H. Bolt DIN 603 M8 x 100 MU	2	710240

Pos.	Components - alternative	Qty	Item no.
14.1	Handrail board 40 x 120 mm	2	–
	F.H. Bolt DIN 603 M8 x 100 MU	4	710240
5.3	Scaffold Tube Ø 48.3 x 3.2, Special Length	2	026415
14.4	Guardrail Connector CB	4	051160
	Screw ISO4762-M8x70-8.8-ga	4	024140
	Nut ISO7040-M8-8-ga	4	711071
	Washer ISO7090-8-200HV	4	722356

Mount Guardrail Post SCS 150

1. Loosen the 2 Bolts and Nuts M20 on the holder of the Platform Beam (9) and remove.
2. Fix Guardrail Post (10) to the Platform Beam (9) using the 2x Bolts and Nuts M20. (Fig. A1.20)

There are two anti-fall options:
– Standard handrail boards: 40 x 120 mm.
– Standard scaffold tubes: Ø 48 x 3.2 mm

Mount handrail boards

1. Position board (13.5) on the Guardrail Post (10).
2. Align board on the platform.
3. Pre-drill board.
4. Connect Guardrail Posts and boards using F.H. Bolts M8 x 100 and Nuts M8.

(Fig. A1.20)

Mount scaffold tubes

1. Position scaffold tubes (5.3) on the Guardrail Posts.
2. Align board on the platform.
3. Fix Guardrail Connector CB (14.4) to the Guardrail Posts (10) using Screw ISO4762-M8x70-8.8-ga

(Fig. A1.21)

In case the finishing platform is to be transported to the jobsite, the guardrails will not be mounted until on the construction site itself.

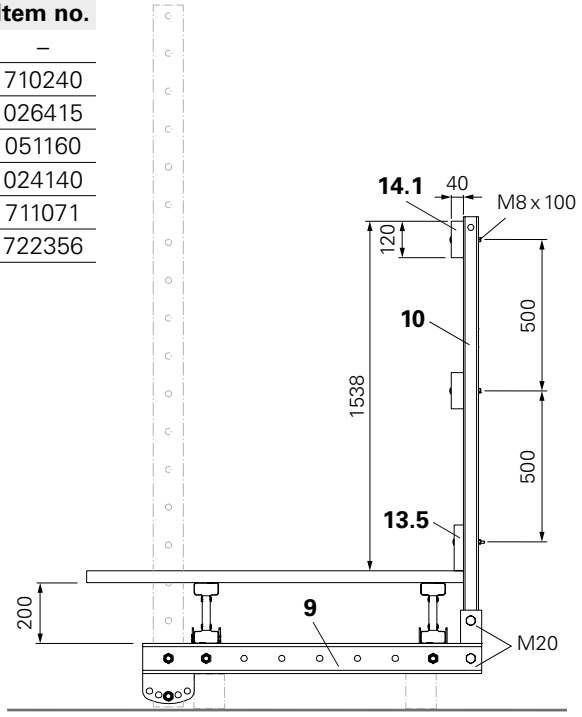


Fig. A1.20

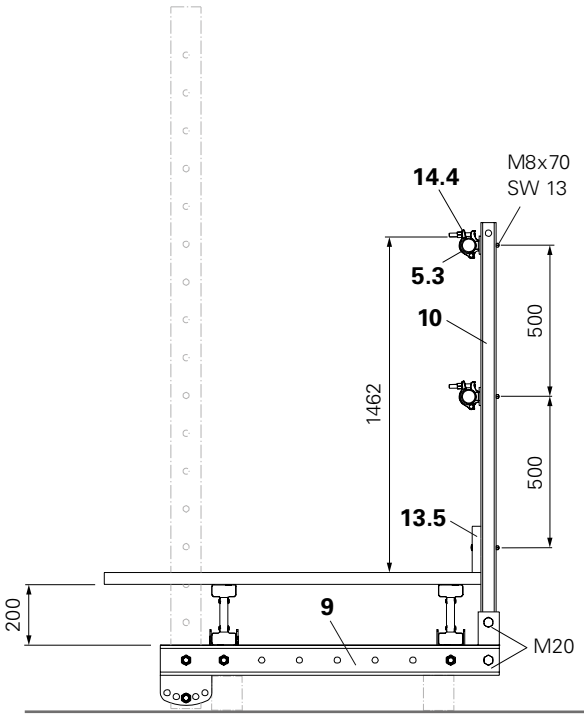


Fig. A1.21

A1.5 Mount concreting platform

- During the assembly, support the Platform Beams (9) on timbers.
- Mount the concreting platform to the Strongback (5) at a later time, see A3.3.
- For inclined applications, modify the platform dimensions as well as the size and position of the openings.
- The centre lines of the brackets are offset to the Platform Beams and Guardrail Posts.
- Cut planking: width ≥ 100 mm.

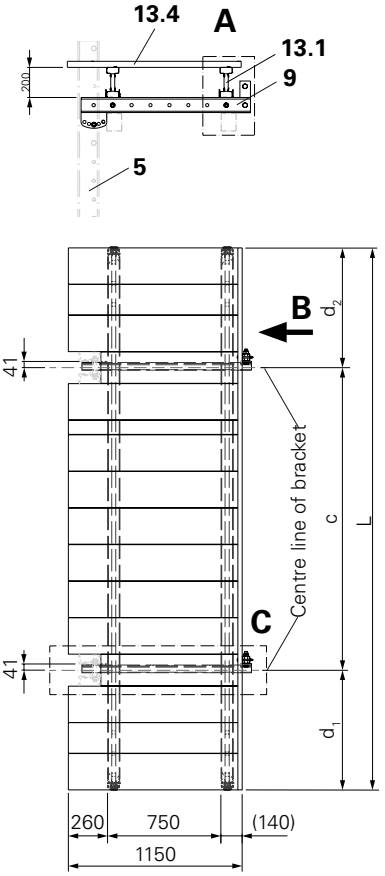


Fig. A1.22

Pos.	Components per platform	Qty	Item no.
9	Platform Beam SCS 112	2	118583
10	Guardrail Post SCS 150	2	118579
13.1	Girder - here: VT 20	2	–
13.2	Girder Fixation M20	4	110330
	TSS-Torx 6 x 40	16	024540
	TSS-Torx 6 x 80 / per plank	4	024690
13.4	Planking 40 x 240 mm	Length L	–

Assembly

1. Connect Girder (13.1) and Platform Beam (9) using the Girder Fixation M20 (13.2) and Torx 6 x 40 (2x per girder). (Fig. A1.22 + A1.22a)
2. Cut planking to the required size.
3. Mount planking at the ends of the platform beam.
4. Align platform beam and planking at right angles to each other.
5. Fix planking on the girders using Torx 6 x 80 (2x). (Fig. A1.22b)
6. Cut out openings for the Strongbacks (5). (Fig. A1.22c)

Mount guardrails

Assembly procedure is identical to finishing platform, see A1.4 on previous page.
(Fig. A1.20 + A1.21)

„A"

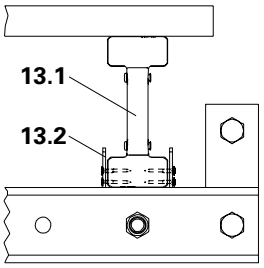


Fig. A1.22a

„B"

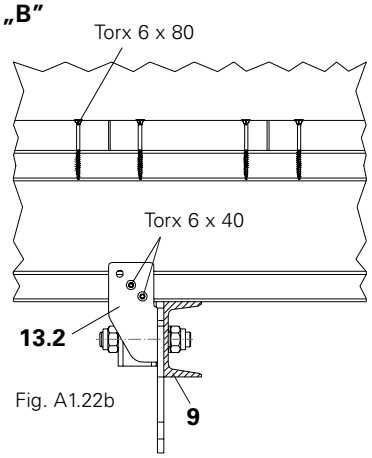


Fig. A1.22b

„C"

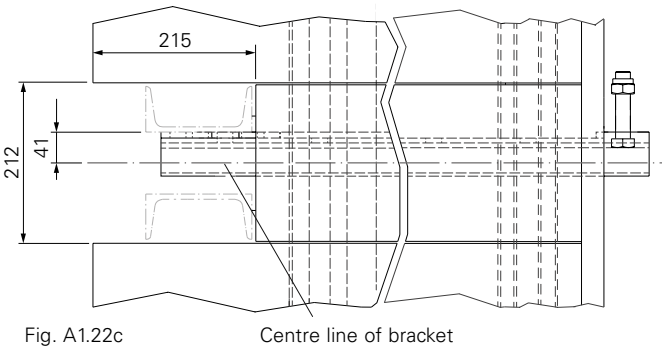


Fig. A1.22c

Centre line of bracket

A1.6 Mount side protection

Lateral guardrail is required to be installed on all end platforms without adjacent platforms.

There are two Guardrail Post options for guardrails:
– Guardrail Post SCS 150 with Guardrail Post Holder Multi.
– End Guardrail Post CB (integrated holder).

The following can be used for both Guardrail Posts:
– Handrail boards 40 x 120 mm.
– Toe Boards 30 x 150 mm.
– Scaffold tubes.

The scaffold tubes can be fixed with the following:
– Guardrail Connection Plate ACS/SCS.
– Guardrail Connector CB.

SCS 250

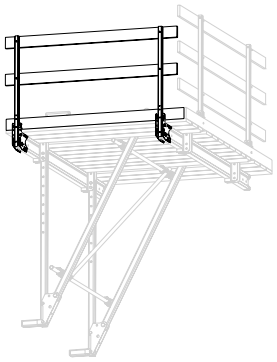


Fig. A1.23

The length of the boards and tubes must correspond to the width of the platforms.

Standard guardrails

Guardrail Posts SCS 150 with Guardrail Post Holder Multi and handrail boards

Pos.	Components per platform	Qty	Item no.
10.1	Guardrail Post Holder Multi	2	126088
	TSS Torx 6 x 60	24	024470
10	Guardrail Post SCS 150	2	118579
	Bolt ISO 4014 M20 x 120	4	104477
	Nut ISO 7042 M20	4	781053
13.5	Toe Board 30 x 150 mm	1	–
	F.H. Bolt DIN 603 M8 x 45 MU	2	710295
14.1	Handrail boards 40 x 120 mm	2	–
	F.H. Bolt DIN 603 M8 x 100 MU	4	024140

Assembly
1. Fix Guardrail Post Holder Multi (10.1) to the platform girders using Torx 6 x 60 (6x per side) or M8 x 100 MU (6x).
2. Insert Guardrail Post (10) into the Guardrail Post Holder Multi and connect using Bolts and Nuts M20 x 120.
3. Fix Toe Board in bottom holes of the Guardrail Post using F.H. Bolts M8 x 70 MU.
4. Fix two handrail boards in the holes of the Guardrail Posts using F.H. Bolts M8 x 100 MU.

(Fig. A1.23 + A1.23a)

Alternatively, the Guardrail Post Holder Multi can also be fixed to the girders using F.H. Bolts DIN 603 M8 x 100 MU (6x per holder). (Fig. A1.23a)

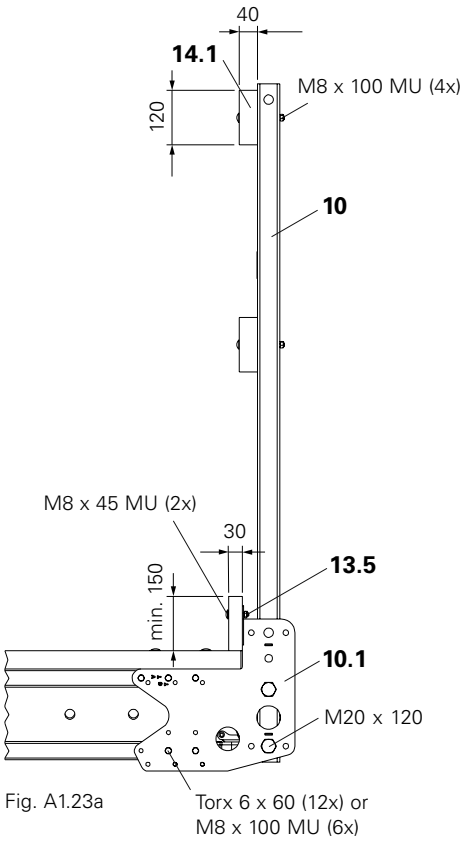


Fig. A1.23a

Alternative anti-fall protection

Assemble Guardrail Connection Plate ACS/SCS with scaffold tubes

Alternatively, mount scaffold tubes instead of boards 40 x 120 mm.
(Fig. A1.20)

Pos.	Components per platform	Qty	Item no.
5.3	Scaffold Tube Ø 48.3 x 3.2, Special Length	2	026415
14.2	Guardrail Connection Plate ACS/SCS	4	113762
	F.H. Bolt DIN 603 M8 x 100 MU	4	710240
14.3	Clamp A64 DIN 3570 M12	4	110296
	Nut ISO 4032 M8	8	710330

Assembly

1. Fix Guardrail Connection Plate (14.2) to guardrail post with F.H. Bolt M8 x 100 MU.
2. Cut scaffold tube (5.3) to required length.
3. Fix scaffold tube with Clamp A64 (14.3) and Nut M8 to the Guardrail Connection Plate.

(Fig. A1.24)

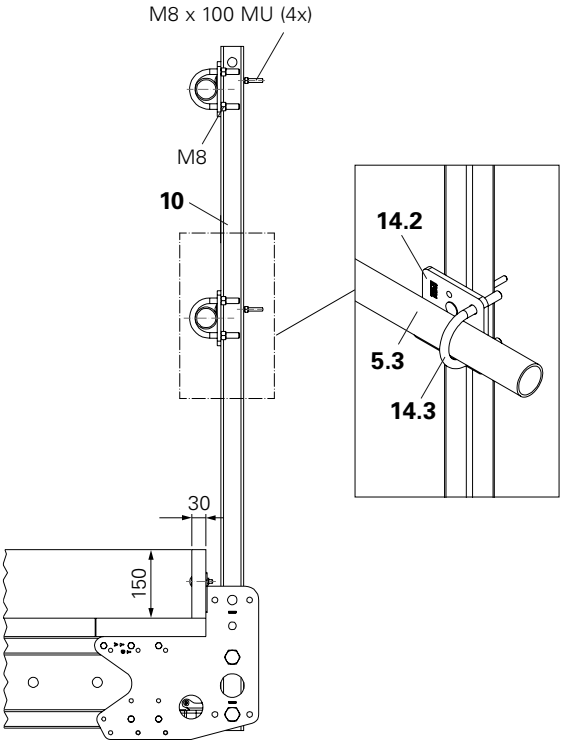


Fig. A1.24

Alternative guardrail posts

Alternatively, the scaffold tubes can be mounted with:

– **Guardrail Connector CB. (not shown)**
– **End Guardrail Post CB. (Fig. A1.25)**

Assemble End Guardrail Post CB with Toe Boards

Pos.	Components per platform unit	Qty	Item no.
13.3	End Guardrail Post CB	2	051610
	Hex. Wood Screw DIN 571 6 x 80	10	051640
13.5	Toe Board 30 x 150 mm	3	–
	F.H. Bolt DIN 603 M8 x 100 MU	6	024140

1. Fix two End Guardrail Posts (13.3) using Hex. Wood Screws 6 x 80 (5x) at the end of the girders or timbers of each platform.
2. Place Toe Board (13.5) on the End Guardrail Post and align to the platform.
3. Pre-drill Toe Board (Ø 8 mm).
4. Fix Toe Board on End Guardrail Posts (13.3) using F.H. Bolts M8 x 100 MU.

(Fig. A1.25)

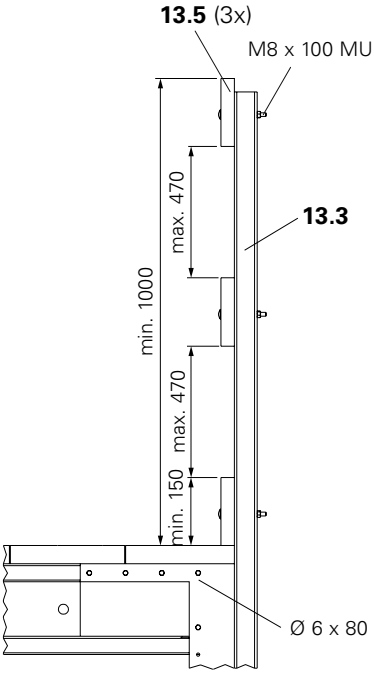


Fig. A1.25

A2.1 Anchoring of the Starter Brace Frame

Create a separate static calculation for:
- **Anchoring of the Starter Brace Frame.**
- **Starter Brace Frame.**

Before concreting the bottom slab

- Install anchor of Starter Brace Frame according to plan.
- Determine anchor spacing x_A depending on the formwork depth x_F:
  $x_A = x_F + 10$ cm,
  e.g. VARIO with SRZ U100:
  $x_A = 46$ cm
  (Abb. A2.01)

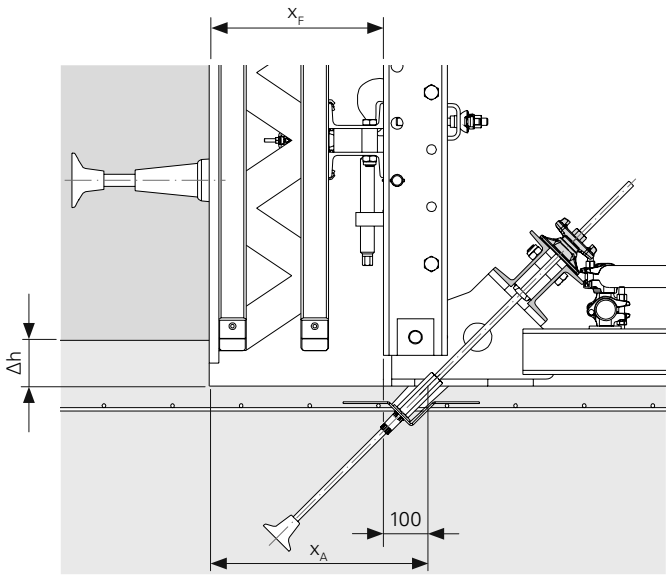


Fig. A2.01

Install anchoring of the Starter Brace Frame

Pos.	Components per Starter Bar	Qty	Item no.
20.1	Threaded Anchor Plate DW 15	2	030840
20.2	Tie Rod Special Length DW 15	2	030030
20.3	V-Tie Holder DW 15	2	031580
20.4	Leading Anchor Coupler DW 15	2	031631
20.5	Hex. Nut SW 30/108	2	030090

Assembly
1. Screw Threaded Anchor Plate DW 15 (20.1) onto Tie Rod DW 15 (20.2).
2. Connect tie rod with V-Tie Holder DW 15 (20.3).
3. Push anchor through the reinforcement.
4. Screw Leading Anchor Coupler DW 15 (20.4) onto tie rod. (Fig. A2.02a)
5. Fix Leading Anchor Coupler to the reinforcement using tie wire.
6. Before concreting: check anchoring depth and position.
7. Concrete bottom slab.
8. Allow bottom slab to harden.
9. Remove Leading Anchor Coupler (20.4).
10. Attach Hex. Nut DW 15 SW 30/108 (20.5) to Tie Rod DW 15 (20.2). (Fig. A2.02b)

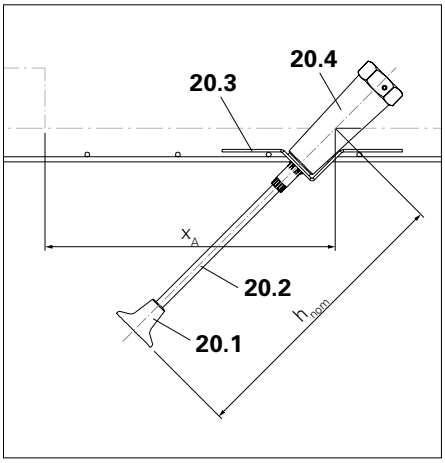


Fig. A2.02a

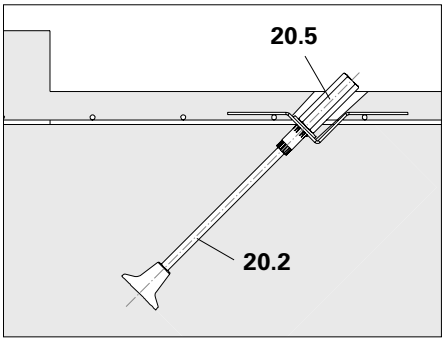


Fig. A2.02b

We recommend concreting a starter base Δh as a stop in order to ensure the exact position and tightness of the formwork. (Fig. A2.01)

A2.2 Assembling the Starter Brace Frame

Pos.	Components per Starter Brace Frame	Qty	Item no.
5	Strongback SCS 235	2	118584
5.1	Spindle Connector SCS Ø 26/21	2	118580
5.3	Scaffold Tube Ø 48.3 x 3.2, Special Length	3	026415
6	Height Adjusting Unit CB, SCS	2	051030
7	Waler Fixation U100 - U120	4	110059
8	Heavy Duty Spindle SCS 198 - 250	2	118585
19	Starter Bar SCS 187	2	118799
22	Swivel Coupling DK 48/48	2	017010
28	Anchor Bolt PERI 14/20 x 130	2	124777

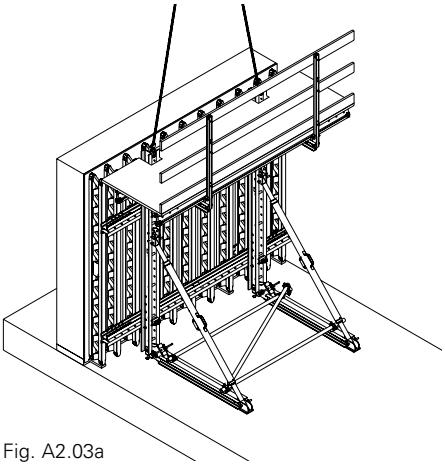


Fig. A2.03a

Assembly

1. Lay the Starter Bar (19) on the bottom slab.
2. Secure Strongback (5) to the formwork, see A3.1.
3. Secure concreting platform to the Strongbacks, see A3.3.
4. Attach crane lifting gear to the Strongbacks.
5. Move formwork with concreting platform to the Starter Bars (19) by means of the crane.
6. Connect Strongback and Starter Bar using Fitting Pins Ø 26.
7. Adjust length S of the two Heavy Duty Spindles (8).
8. Secure Heavy Duty Spindles using the two Fitting Pins Ø 26 and Cotter Pins 5/1.
   – at the top on the Spindle Connector (5.1),
   – at the bottom on the Starter Bar (19).
9. Screw Anchor Bolt PERI 14/20 x 130 (28) onto the end of the Starter Bar.
   → Secure against tipping.
10. Remove crane lifting gear.
11. Turn Heavy Duty Spindle (8) until the formwork has been vertically adjusted.
12. Mount scaffold tubes (5.3) with swivel couplings (22) on the Starter Bar. (Fig. A2.03a)
13. Spray Leading Anchor (15B) with release agent.
14. Secure the Leading Anchor (15B), see A2.6.
15. If a Tension Belt is to be fitted, a bottom Anchor (15A) is to be mounted.

(Fig. A2.03)

Alternatives:

Every Starter Bar can - instead of being symmetrically anchored with two Tie Rods DW 15 - also be centrally anchored using one Tie Rod DW 20 or DW 26. (not shown)

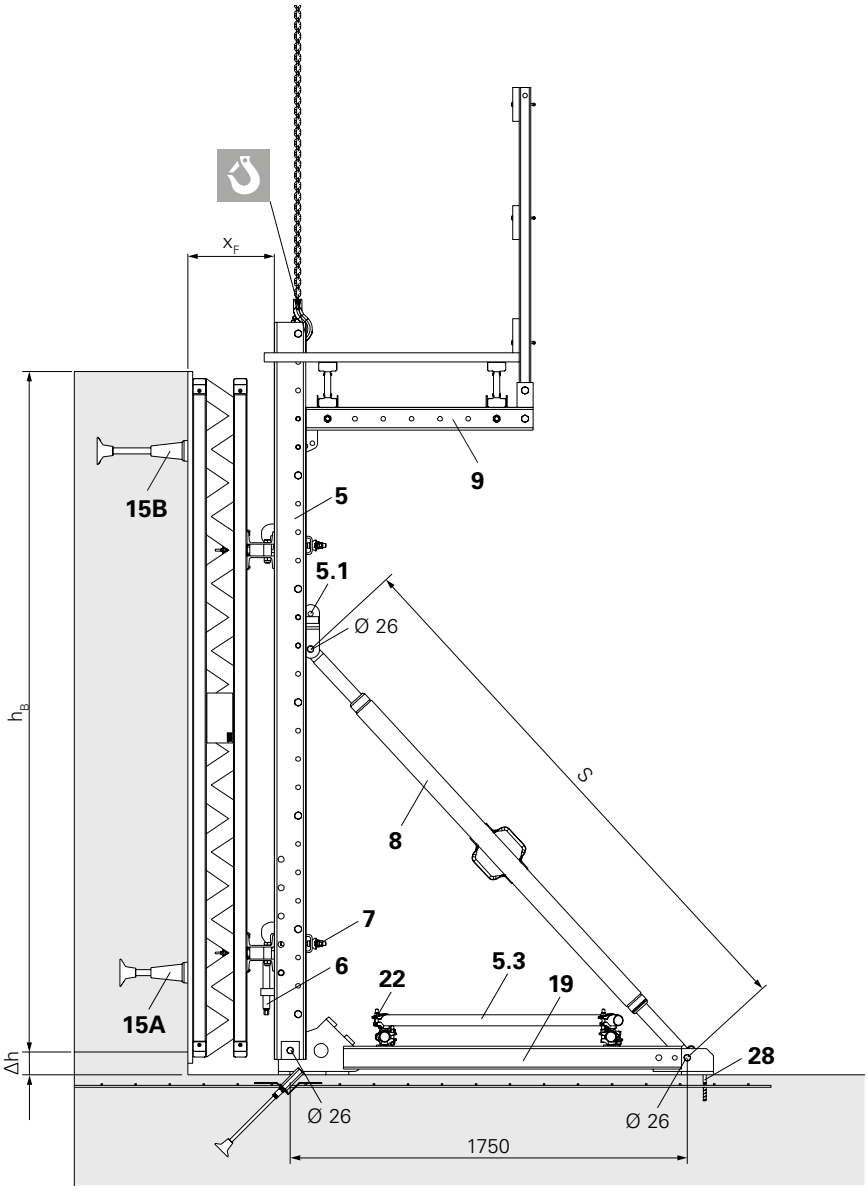


Fig. A2.03

Installing the anchor fixations

There are two options:
– Waler SRU.
– Tie Yoke SCS.

Waler SRU

Pos.	Components with Waler SRU	Qty	Item no.
20.6	Tie Rod 0.5 m DW 15	2	030005
20.7	Waler SRU U120	1	according to L
20.8	Wingnut Pivot Plate DW 15	2	030370

– Max. anchor spacing = 35 cm.
– Perm. anchoring force per DW 15 = 90 kN.

The anchor may not be fitted in the slotted hole area of the Waler SRU otherwise the force is reduced to 70 kN per Tie Rod DW 15.
– Anchor inclination = 45°.

Assembly

1. Place Waler SRU (20.7) on two Starter Bars (19).
2. Push Tie Rod (20.6) through the Waler and screw into the Hex. Nut DW 15 SW 30/108 (20.5).
3. Tighten Wingnut Pivot Plate DW 15 (20.8) on the Tie Rod.

(Fig. A2.04)

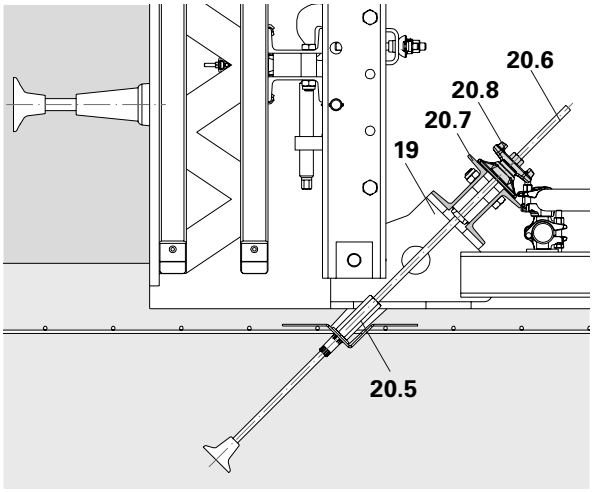


Fig. A2.04

Tie Yoke SCS

Pos.	Components with Tie Yoke SCS	Qty	Item no.
20.6	Tie Rod 0.5 m DW 15	2	030005
20.9	Tie Yoke SCS	2	124630
20.10	Wingnut DW 15	4	030100

– Anchor spacing = 20 cm.
– Perm. anchoring force per DW 15 = 90 kN. (Fig. A2.05a)
– Anchor inclination ≥ 45°.

Assembly
1. Insert Tie Yoke SCS (20.9) into the hole of the Starter Bar (19).
2. Insert Tie Rod (20.6) and screw into the Hex. Nut SW 30/108 (20.5).
3. Screw Wing Nut DW 15 (20.10) onto the Tie Rod.
   → Tie Yoke (20.9) is secured.

(Fig. A2.05)

SCS

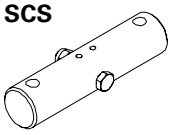


Fig. A2.05a

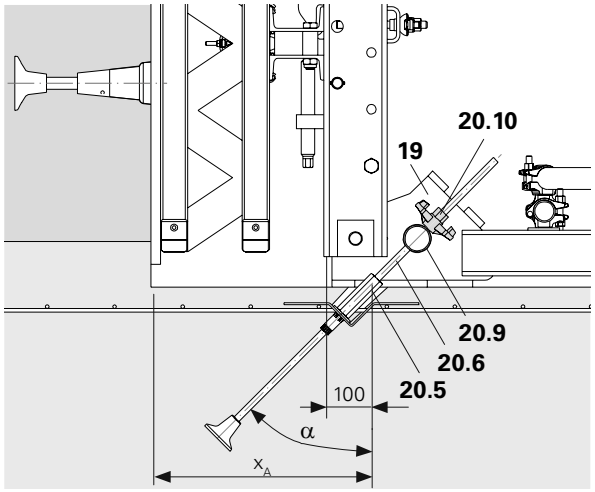


Fig. A2.05

– Tie Yoke SRU - previous version.
– With middle hole parallel to the holes on the side.
– Limited to 65 kN anchoring force per Tie Rod DW 15.

(Fig. A2.05b)

SRU – previous version.

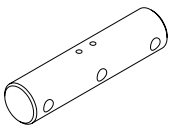


Fig. A2.05b

Alternative:
Double Anchor Tie Yoke DSW
Item no. 027520 (not shown)
– Anchor spacing = 23 cm.
– Perm. anchoring force per DW 15 = 80 kN.
– Anchor inclination > 45°, e.g. if starter is inclined forwards at a large angle, see B4.3.

A2.3 Initial use

Preparation

1. Loosen fixation of the Leading Anchor, see A2.7.
2. Strike starter formwork.
3. Install Mounting Ring (16)* on the bracket anchor (15B), see A2.8.
4. Attach crane lifting gear to the platform unit.
   – Pull cotter pins out of Fitting Pins Ø 26 (1.2 + 1.3) and Fitting Pins from the Adjusting Unit (1.1).(Fig. A2.06a)
   – One Fitting Pin (1.4) remains in the Adjusting Unit (1.1). (Fig. A2.06a)
   – Insert Fitting Pins Ø 26 (1.2 + 1.3) into the holes of the Crossbeam, and secure Fitting Pins with cotter pins. (Fig. A2.06)
   – Attach crane lifting gear to these two Fitting Pins.

*alternative: Mounting Bolt.

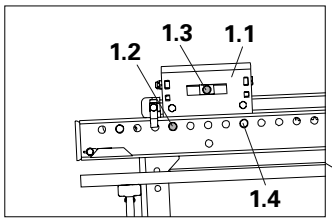


Fig. A2.06a

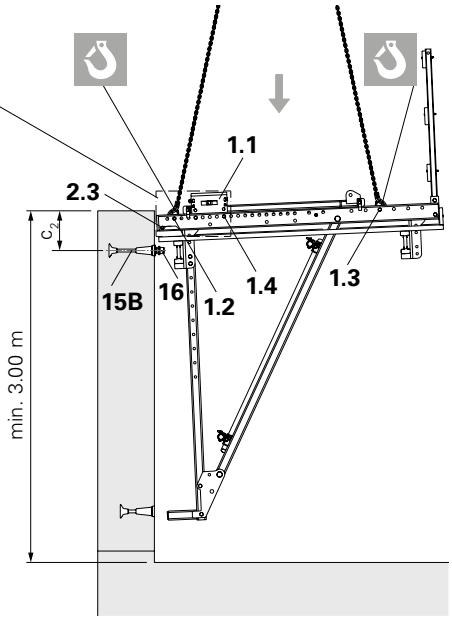


Fig. A2.06

If the height of the Starter is insufficient, another configuration for the initial use is to be selected.
Min. h_B = 3.00 m for c_2 = 35 cm, see B3.1.

Suspend working platform unit

- **Persons are not to be transported!**
- **Do not transport any loose materials or other loads!**
- **Site personnel must keep clear of the danger area!**

1. Pull Locking Pins (2.3) and bring into climbing position, see A5.3.
2. Lift platform unit with the crane and move to required position.
3. Lower platform unit and insert crossbeam heads into the Mounting Rings (16). (Fig. A2.06)

Are both crossbeam heads completely and securely in the correct position? (Fig. A2.07a)

Secure platform unit

1. Insert Locking Pins (2.3) in the securing position in order to prevent lift off, see A5.2.
2. If necessary, connect the platform unit with Tension Belts (12) and additional Following Anchor (15C) in the starter section, see A2.5.
3. Release crane lifting gear.
4. Re-insert Fitting Pins Ø 26 (1.2 + 1.3) in the Adjusting Unit and secure with cotter pins. (Fig. A2.06a)
   → Adjusting Unit and ctossbeam are once again securely connected.

Place formwork

1. Secure formwork to the platform unit, see A3.4.
2. Fix Leading Anchor (15A) to the formwork, see A2.6.

(Fig. A2.07)

Troubleshooting

– If installation in the Mounting Ring is unsuccessful or the bracket jams, lift the platform and lower again.
– If the bracket spacing does not correspond to the spacing of the Mounting Rings, check the distance of the Leading Anchor to the formwork.
– If the mounting procedure is not possible, correct the bracket spacing by modifying the platform.

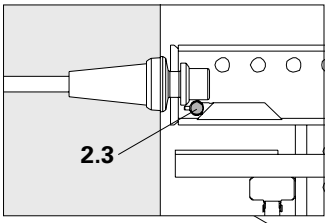


Fig. A2.07a

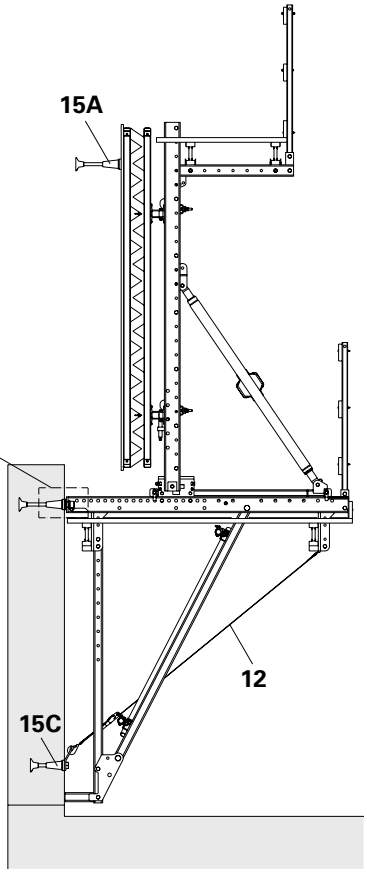


Fig. A2.07

A2.4 Connecting the finishing platform

For moving the climbing unit, use either crane lifting gear with Compression Brace or Lifting Beam.

Pos.	Components per platform unit	Qty	Item no.
11	Platform Post SCS 232	2	118578

Preparation

1. Loosen the Bolts M20 x 45 on the Platform Beam (9).
2. Secure the pre-assembled finishing platform to the Platform Post (11) using Bolts M20 x 45.

Connecting the finishing platform

1. SCS 250: completely retract the Carriage (2.1) and turn Heavy Duty Spindle (8) until the formwork reaches an angle of 2° to the rear. SCS 190: turn the Heavy Duty Spindle (8) until the formwork reaches an angle of approx. 8° to the rear.
   → Load bearing point is over the centre of gravity.
2. If necessary, release Tension Belt (12) from the Following Anchor.
3. Remove Locking Pin (2.3) and insert into one of the top holes in the Crossbeam, see A5.3.
   → Released position.
4. Attach crane lifting gear at the top to the Strongback (5).

Vacate platform

1. Lift the climbing unit (working and concreting platform) with the crane over the pre-assembled finishing platform.
2. Fix Platform Post (11) to the Vertical Strut (3) using Bolts M20 x 130.

(Fig. A2.08)

Move climbing unit

1. Move extended climbing unit with the crane to the next casting segment and suspend from the Mounting Ring (16)*, see A5.1 - III. Move.
2. Mark out Crossbeam (1/2) with Locking Pins (2.3), see A5.2.
   → Secured position
3. Release crane lifting gear.

*alternative: Mounting Bolt.

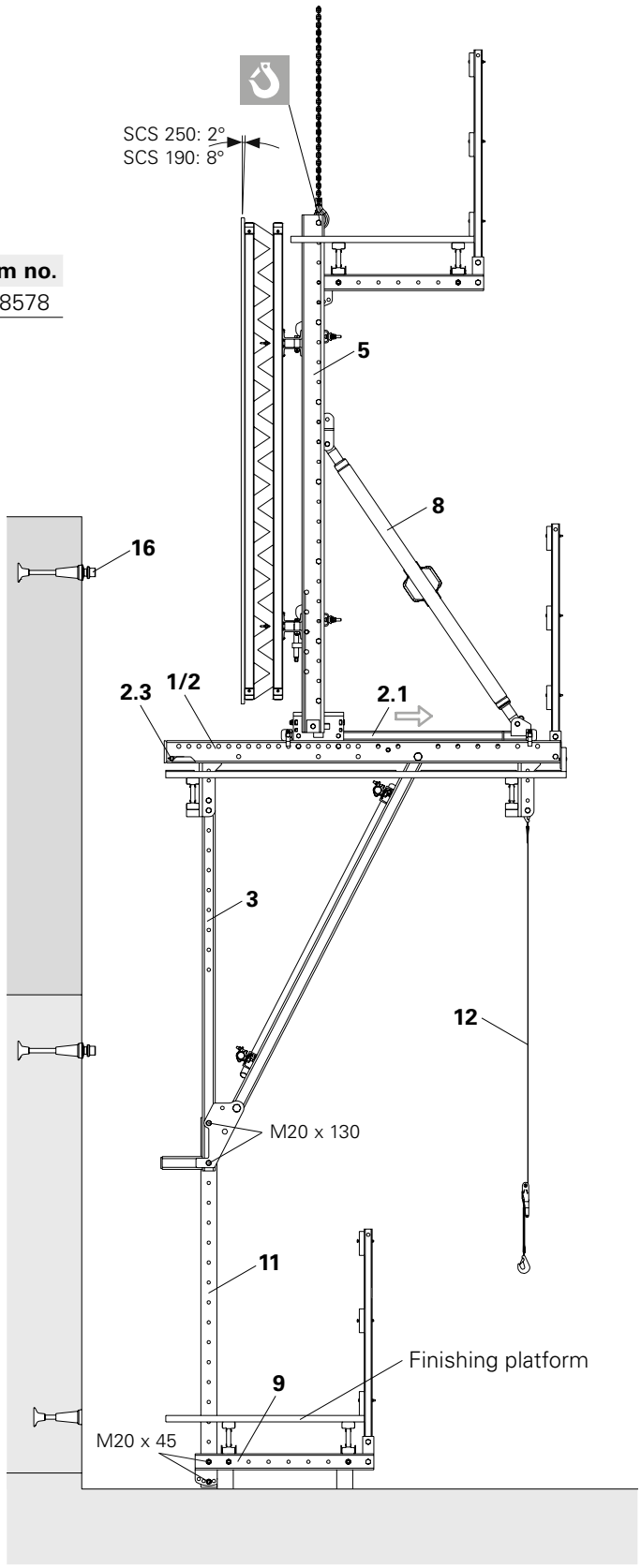


Fig. A2.08

A2.5 Tension Belt

Risk of tipping for the climbing unit with:
– high wall formwork.
– strong winds.
– forward-inclined formwork.
Therefore install Tension Belt.

Pos.	Components per platform unit	Qty	Item no.
12	Tension Belt	2	051250
	Hex. Bolt ISO 4014 M20 x 120	2	104477
	Nut ISO 7042 M20	2	781053
12.1	Tension Belt Connector Wall M36	2	110469
12.2	Anchor M30: Bolt ISO 4017 M30 x 70	2	029420
12.3	Anchor M36: Bolt ISO 4017 M36 x 70	2	029430

Fix Tension Belt on the Crossbeam
1. Insert Hex. Bolt ISO 4014 M20 x 120 in the bottom hole of the rear Platform Beam Support of the Crossbeam (1/2) and secure using Nut ISO 7042 M20.
2. Attach hook at the longer end of the Tension Belt (12) to the Bolt M20.

(Fig. A2.09)

Fixing the Tension Belt to the Following Anchor
1. Secure Tension Belt Connector Wall M36 (12.1) to the Following Anchor (15C).
   – Anchor M30: Bolt ISO 4017 M30 x 70 (12.2).
   – Anchor M36: Bolt ISO 4017 M36 x 70 (12.3).
2. Insert Tension Belt (12) on the inner side of the bracket and attach hook to the Tension Belt Connector Wall M36 (12.1).
3. Adapt length of the Tension Belt and tighten using a ratchet lever (12.4).

(Fig. A2.09)

Releasing the Tension Belt from the Following Anchor
1. Release Tension Belt with the ratchet lever (12.4). Remove Tension Belt from the Tension Belt Connector Wall M36 (12.1).
2. Remove Following Anchor (15C) and close anchor hole, see A2.9.

(not shown)

When not in use, wrap the Tension Belt around the guardrail of the finishing platform and secure.

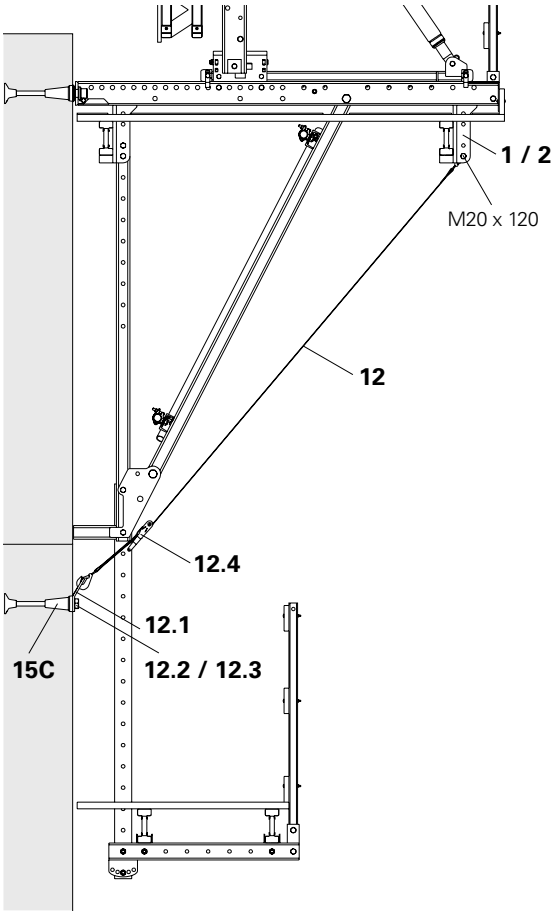


Fig. A2.09

Tools
Ratchet Lever SW 19 (Item no. 027180)

A2.6 Fixing the Leading Anchor

Standard Advancing Bolt

Use Advancing Bolt with constant anchor positions.

Is there sufficient spacing between the anchor point and the adjoining formwork girder, see B1.3.
If not, use Anchor Positioning Stud or offset the formwork.

- Fix Threaded Anchor Plate (15.3/15.9) to the reinforcement using wire.
  → Contact surface of the climbing cone is flush with the formwork panel.
- Spray the climbing cone with a release agent before installation.
  → Facilitates removal.

Mount Advancing Screw M30

Pos.	Components per anchor point - M30	Qty	Item no.
15.1	Climbing Cone-2 M30/DW 20	1	030920
15.2	Tie Rod Special Length DW 20	1	030700
15.3	Threaded Anchor Plate DW 20	1	030860
15.4	Advancing Screw M30	1	029450
15.5	Anchor Positioning Plate M30	1	029380
	Hex. Wood Screw DIN 571 6 x 20	4	029440

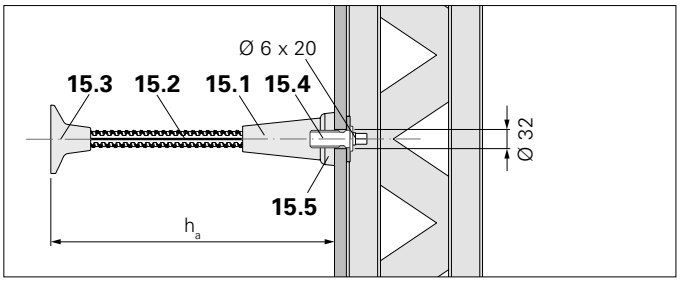


Fig. A2.10a

Preparation
1. Measure out the position of the Leading Anchor and mark on the surface of the formlining.
2. Drill hole Ø 32 mm in the formlining.

Assembly
1. Screw Anchor Positioning Stud M30 (15.5) onto the rear side of the formlining using 4 Hex. Wood Screws Ø 6 x 20.
2. From the rear, insert Advancing Screw M30 (15.4) through the hole.
3. Turn the Leading Anchor (Pos.15.1, 15.2 + 15.3) from the front side on the Advancing Screw (15.4) and tighten by hand.

(Fig. A2.10a)

Tool
Ratchet Wrench ½" with Socket SW 19-½" L.

Before concreting:
Check all individual components of the Leading Anchor, its assembly and the position of the anchor.

Mount Advancing Screw M36

Pos.	Components per anchor point - M36	Qty	Item no.
15.7	Climbing Cone-2 M36/DW 26	1	030940
15.8	Tie Rod Special Length DW 36	1	030340
15.9	Threaded Anchor Plate DW 26	1	030870
15.10	Bolt ISO 4017 M36 x 70	1	029430
15.11	Anchor Positioning Plate M36	1	029390
	Hex. Wood Screw DIN 571 6 x 20	4	029440

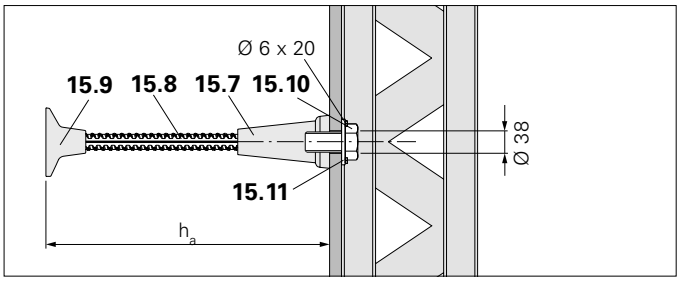


Fig. A2.10b

Preparation
1. Measure out the position of the Leading Anchor and mark on the surface of the formlining.
2. Drill hole Ø 38 mm in the formlining.

Assembly
1. Screw Anchor Positioning Stud M36 (15.11) onto the rear side of the formlining using 4 Hex. Wood Screws Ø 6 x 20.
2. From the rear, insert Bolt ISO 4017 M36 x 70 (15.10) through the hole.
3. Turn the Leading Anchor (Pos.15.7, 15.8 + 15.9) from the front side on the Bolt M36 (15.10) and tighten by hand.

(Fig. A2.10b)

Tool
Ratchet Wrench 1" with Socket SW 55-1".

Before concreting:
Check all individual components of the Leading Anchor, their assembly and the position of the anchor.

Alternative Anchor Positioning Stud

Use if:
- the anchor position is not constant.
- the girder is in the anchor position.
- panel formwork is used.

- Fix Threaded Anchor Plate (15.3 / 15.9) to the reinforcement using wire.
  → Contact surface of the climbing cone is flush with the formwork panel.
- Spray the climbing cone with a release agent before installation.
  → Facilitates removal.

Mount the Anchor Positioning Stud M30

Pos.	Components per anchor point - M30	Qty	Item no.
15.1	Climbing Cone-2 M30 / DW 20	1	030920
15.2	Tie Rod Special Length DW 20	1	030700
15.3	Threaded Anchor Plate DW 20	1	030860
15.6	Advancing Screw M30	1	026450
	Wire Nail 3 x 80	6	710312

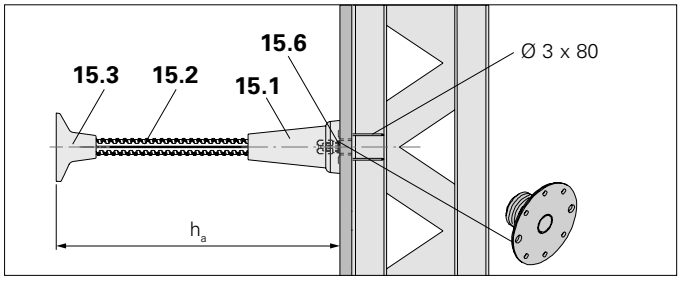


Fig. A2.11a

Preparation
Measure out the position of the Leading Anchor and mark on the surface of the formlining.

Assembly
1. Fix the Anchor Positioning Stud (15.6) to the front side of the formlining using 6 wire nails 3 x 80 mm.
2. Turn the Leading Anchor (Pos.15.1, 15.2 + 15.3) from the front side on the thread of theAnchor Positioning Stud (15.6) and tighten by hand.

(Fig. A2.11a)

Before concreting:
Check all individual components of the Leading Anchor, their assembly and the position of the anchor.

Mount the Anchor Positioning Stud M36

Pos.	Components per anchor point - M36	Qty	Item no.
15.7	Climbing Cone-2 M36/DW 26	1	030940
15.8	Tie Rod Special Length DW 26	1	030340
15.9	Threaded Anchor Plate DW 26	1	030870
15.12	Anchor Positioning Stud M36	1	026460
	Wire Nail 3 x 80	6	710312

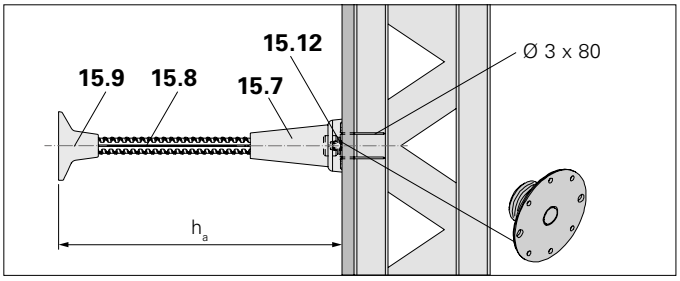


Fig. A2.11b

Preparation
Measure out the position of the Leading Anchor and mark on the surface of the formlining.

Assembly
1. Fix the Anchor Positioning Stud (15.12) to the front side of the formlining using 6x wire nails 3 x 80 mm.
2. Turn the Leading Anchor (Pos.15.7, 15.8 + 15.9) from the front side on the thread of the Anchor Positioning Stud (15.12) and tighten by hand.

(Fig. A2.11b)

Before concreting:
Check all individual components of the Leading Anchor, their assembly and the position of the anchor.

A2.7 Releasing the Leading Anchor

Preparation
Remove all connections, e.g. couplings, to the formwork elements of the adjacent climbing units.

In the following, the size M36 is shown. The same applies for the M30.

Standard
Release Advancing Screw

1. Release all Advancing Screws (15.4) from the rear of the formlining and remove.
2. Release the formwork using the Heavy Duty Spindle, see A4.2.
3. Remove formwork with Adjusting Unit (see A4.4) or with Carriage (see A4.5).

(Fig. A2.12)

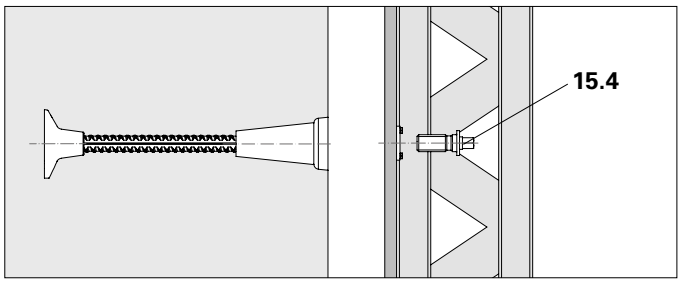


Fig. A2.12

Tool
M30: Ratchet Wrench ½" with Socket SW 19-½" L.
M36: Ratchet Wrench 1" with Socket SW 55-1".

Alternative
Release Anchor Positioning Stud

1. Straighten wire nails.
2. Turn Heavy Duty Spindle.
   → Formwork is opened and Nails Ø 3 x 80 are pulled through the formwork surface. (Fig. A2.13a)
3. Remove formwork with Adjusting Unit (see A4.4) or with Carriage (see A4.5).
4. Straighten Wire Nails Ø 3 x 80 with a hammer.
   → Injuries can be avoided.
5. Release Anchor Positioning Stud (15.6) with Allen Key SW 14 and remove.

(Fig. A2.13b)

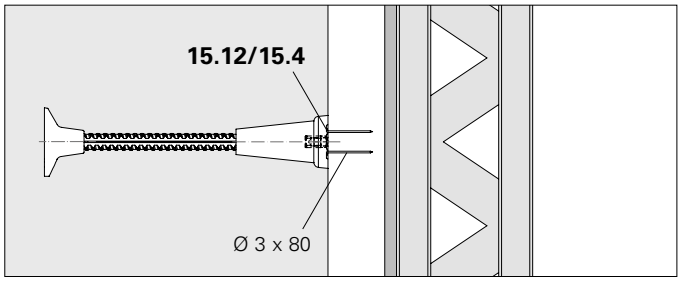


Fig. A2.13a

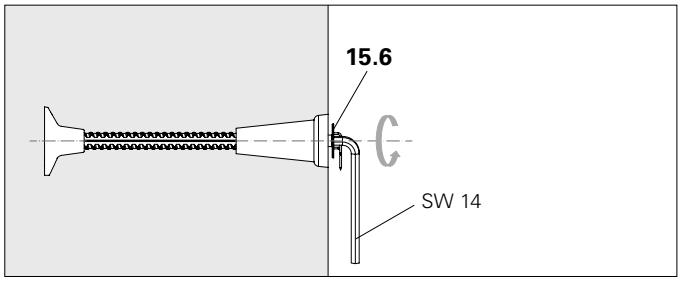


Fig. A2.13b

Tool
Allen Key SW 14*.

*For older Anchor Positioning Stud type, use Allen Key SW 12.

A2.8 Mounting Ring or Mounting Bolt

The Mounting Ring or Mounting Bolt is screwed into the Climbing Cone of the Leading Anchor.
→ Bracket Anchor.
Function: suspending the platform or climbing units.
Types, dimensions and application of the fixing according to the following table.

Application	Fixing	Size	
		M30	M36
Standard	Mounting Ring	x	x
Alternative	Mounting Bolt	–	x

– Determine the load-bearing capacity in accordance with the separate SCS dimensioning information.
– One anchor point per bracket is required.

Bracket Anchor M30

Pos.	Components per anchor point	Qty	Item no.
15.1	Climbing Cone-2 M30/DW 20	1	030920
16.1	Mounting Ring SCS M30	1	118582

Bracket Anchor M36

Pos.	Components per anchor point	Qty	Item no.
15.7	Climbing Cone-2 M36/DW 26	1	030940
16.2	Mounting Ring SCS M36	1	118772
16.3	Mounting Bolt SCS M36	1	118769

Mounting Ring M30

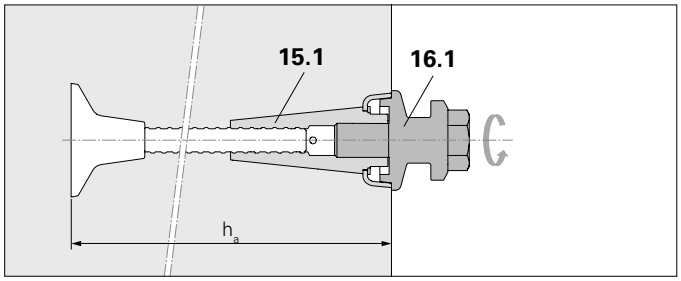


Fig. A2.14

Tool
Ratchet Wrench 1″ with Socket SW 46-1″.

Installation:
Screw in Mounting Ring or Mounting Bolt into the thread of the Climbing Cone-2 until completely tight.
→ Bracket Anchor.

Removal:
Release the Mounting Ring or Mounting Bolt and remove.

Mounting Ring M36

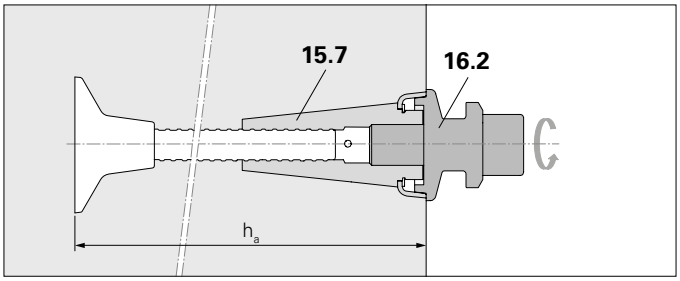


Fig. A2.15a

Tool
Ratchet Wrench 1″ with Screwdriver Bit SW 27-1″.

Alternative

Mounting Bolt M36

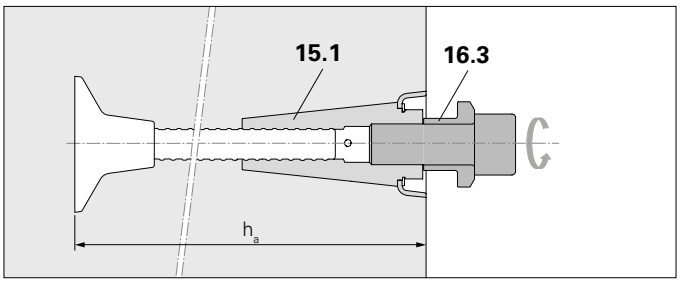


Fig. A2.15b

Tool
Ratchet Wrench 1″ with Screwdriver Bit SW 27-1″.

A2.9 Closing the Anchor Hole

For architectural concrete or waterproof concrete, seal the anchor hole with PERI Concreting Cone KK, see PERI Tie Technology.

Pos.	Components per anchor point	Qty	Item no.
29.1	KK Concreting Cone M30-80/52	1	031653
29.2	KK Concreting Cone M36-90/52	1	031654
	PERI Sealing Compound-2	1	108136

Follow the Instructions for Use for concreting cones and Safety Data Sheet for sealing compounds.

Assembly

1. Release Climbing Cone (15.1/15.7).
2. Unscrew the Climbing Cone by hand and remove. (Fig. A2.16a)
3. Spread front conical part of the KK Concreting Cone (29.1/29.2) with prepared sealing compound.
4. Insert KK Concreting Cone in the anchor hole.
   → Anchor hole is closed.
   (Fig. A2.16b)

Tool for Climbing Cone M30/DW 20:
Ratchet Wrench 1″ with Socket SW 46-1″.
M36/DW26:
Ratchet Wrench 1″ with Socket SW 55-1″.

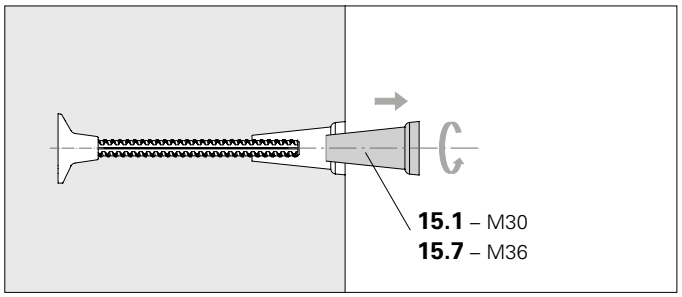


Fig. A2.16a

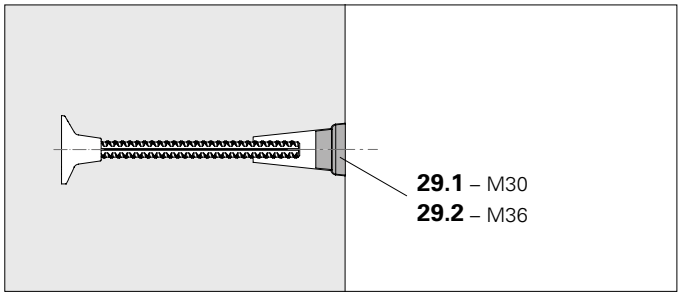


Fig. A2.16b

A2.10 Mounting the Access Ladder

There are two different versions of ladder that are connected to the hatch.
– Ladder 180/6 bolted.
– End Ladder 180/2 complete. suspended.

The number of components varies according to the concreting height:
2.00 m - 3.00 m.
3.00 m - 3.90 m.

Install Ladder 180/6
(Fig. A2.17)

		Concreting height h_B [m]	2,00–3,00	3,00–3,90
		Spacing between the planking h_{NLB} [m]	3,29	3,92
Pos.	**Item no.**	**Components per anchor point**	**Qty**	
31	126431	Hatch RCS 55 x 60-2. foldable	1	1
38	051410	Ladder 180/6	2	2
39	103718	Ladder Hook	2	–
40	109105	Ladder Base 30	1	1
41	051450	Ladder Safety Cage 150	–	1
42	104132	Ladder Safety Cage 75	1	–
43	024540	TSS-Torx 6 x 40	3	3

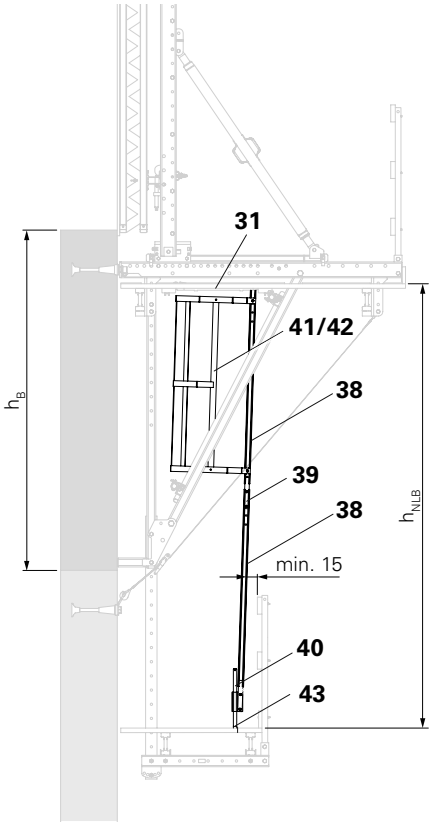


Fig. A2.17

Install End Ladder 180/2 complete
(Fig. A2.18)

		Concreting height h_B [m]	2,00–3,00	3,00–3,90
		Spacing between the planking h_{NLB} [m]	3,29	3,92
Pos.	**Item no.**	**Components per anchor point**	**Qty**	
31	126431	Hatch RCS 55 x 60-2, foldable	1	1
37	103724	End Ladder 180/2 complete	1	1
38	051410	Ladder 180/6	2	2
39	103718	Ladder Hook	2	2
40	109105	Ladder Base 30	1	1
41	051450	Ladder Safety Cage 150	–	1
42	104132	Ladder Safety Cage 75	1	–
43	024540	TSS-Torx 6 x 40	3	3

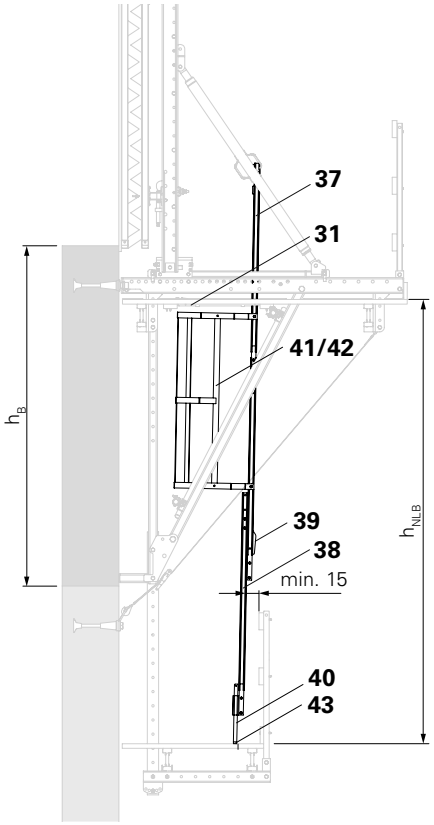


Fig. A2.18

– The distance of the ladder rungs to the handrail boards of the finishing platform must be min. 15 cm. Therefore, install the ladder at an angle.
– Assembly of the hatch (31) in the working platform, see A1.6.

As an alternative to Hatch RCS 55 x 60-2 (31), Hatch 55 x 60, foldable (Item no. 110608) can also be installed.

Ladder combinations
- Top: End ladder 180/2 (37), and below: Ladder 180/6 (38).
- Top and below: 2x Ladder 180/6 (38).

Pre-assembly of ladder

1. Loosen Bolts and Nuts M12 x 40 of the top ladder (37/38) and remove.
2. Connect both ladders with Bolts and Nuts M12 x 40. (Fig. A2.19)
3. If the bottom ladder is suspended:
   - Loosen Bolts and Nuts M12 x 25 on the Ladder Hook and remove.
   - Fix Ladder Hook (39) to Ladder 180/6 (38) at the top using Bolts and Nuts M12 x 25. (Fig. A2.20)
   - Attach the two Ladder Hooks of the to-be mounted Ladder 180/6 (38) on the rungs of the bottom ladder (37/38) and pull downwards. (Fig. A2.21)

Are the rungs of both ladders positioned at the same height? (Fig. A2.21)

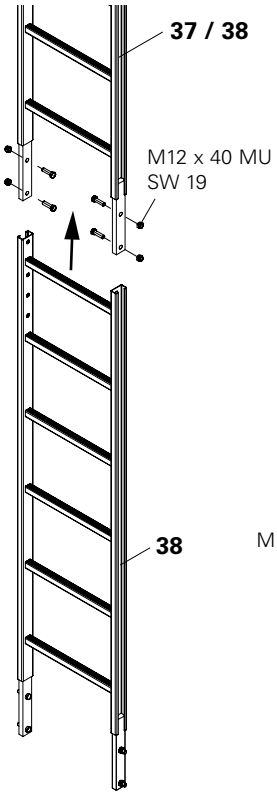


Fig. A2.19

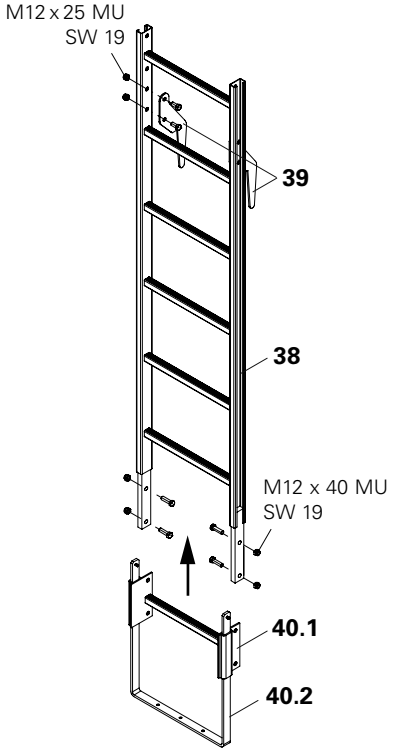


Fig. A2.20

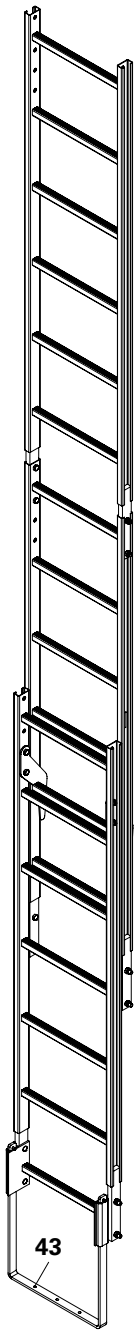


Fig. A2.21

Ladder Base

Mounting the ladder base:
1. Fix the holder (40.1) of the Ladder Base to the bottom Ladder 180/6 (38) using Bolts and Nuts M12 x 40.
2. Pull out base rung (40.2) of the Ladder Base (40) to the required length.

Fixing the ladder base

Fix base rung (40.2) of the Ladder Base (40) to the planking of the finishing platform using 3x Torx 6 x 40 (43).

Ladder versions for access
– Ladder 180/6 bolted.
– End Ladder 180/2 suspended.

Ladder 180/6 bolted.

1. Open Hatch Cover (31.1).
2. Lift pre-assembled ladder (38 + 38) with the crane into the Hatch.
3. Fix ladder to the Hatch on both sides from the top using 2x Bolts and Nuts M12 x 40.

(Fig. A2.22a)

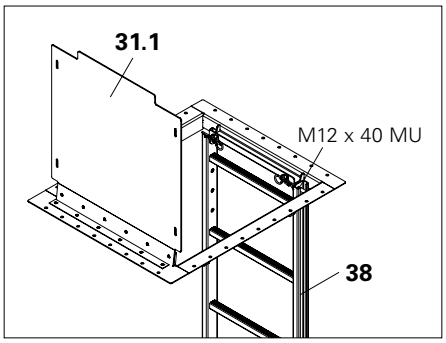


Fig. A2.22a

End Ladder 180/2 suspended.

1. Open Hatch Cover (31.1).
2. Lift pre-assembled ladders (37 + 38) with the crane into the Hatch and lower so that the top rung of the ladder lies in the U-profile of the Hatch.
3. Insert cotter pin (31.2) into the holder on the hatch - on both sides.
   → Ladder is secured against tipping.

(Fig. A2.22b)

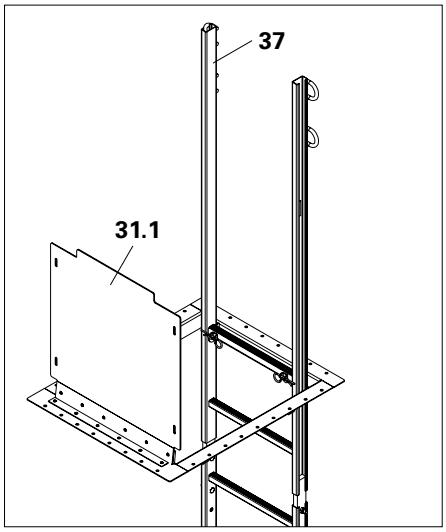


Fig. A2.22b

Mounting the Ladder Safety Cage

Mounting the Ladder Base:

1. Bring the Ladder Safety Cage (41/42) into position on the ladder using a rope from below and hold.
2. Fasten Safety Cage 2x above: slightly loosen Bolts M12 x 25 of the Clamping Plate (38.1).
   → Clamping Plate turns in the direction of insertion position. (Fig. A2.23a)
   Position Clamping Plate on the ladder longitudinal members, turn and tighten bolts. (Fig. A2.23b)
   → Clamping position.
3. Fasten Safety Cage 2x below - as above, see Point 2.

(Fig. A2.23 - shown without Hatch)

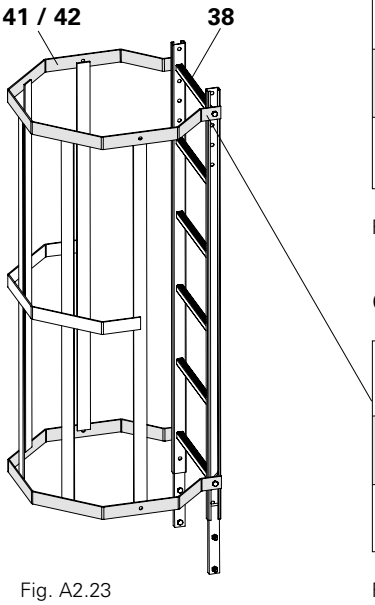


Fig. A2.23

Insertion position

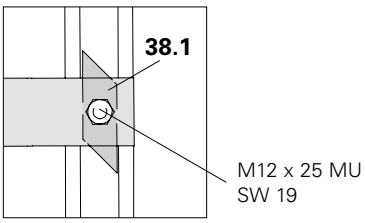


Fig. A2.23a

Clamping position

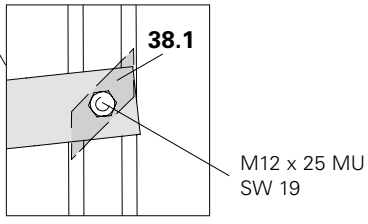


Fig. A2.23b

A3.1 Fixing the Strongback to the Formwork

Preparation

Formwork assembly

Follow the Instructions for Assembly and Use for VARIO GT 24 Girder Wall formwork and the project-related formwork plans.

Standard configurations

Bracket

a = 459 mm, c_2 = 350 mm
→ h_F = 661 mm

Starter Brace Frame

a = 459 mm, Δh = 100 mm
→ h_F = 460 mm

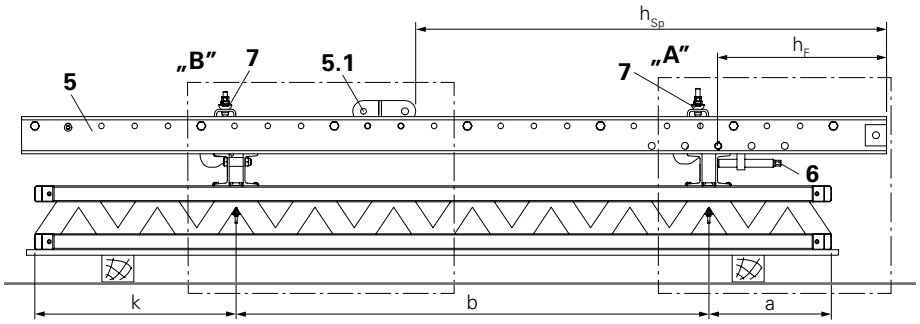


Fig. A3.01

c_2 see Fig. B2.01
Δh see Fig. A2.01

Pos.	Components per formwork	Qty	Item no.
5	Strongback SCS 325	2	118584
5.1	Spindle Connector SCS Ø 26-21	2	118580
5.2	Spacer M20-82	2	110022
6	Height Adjusting Unit CB, SCS	2	051030
7	Waler Fixation U100 - U120	4	110059

Assembly

1. Place Strongback (5) on the steel waler of the formwork and align roughly at height h_F. (Fig. A3.01)
2. Install Height Adjusting Unit (6) using Bolts Ø 25. Ensure that there is sufficient adjusting range available for required formwork adjustment.
3. Turn Spindle (SW 19) of the Height Adjusting Unit (6) against the U-profile of the Strongback and adjust to height h_F. (Fig. A3.01a)
4. Bring Spindle Connector (5.1) to height h_{Sp}. (Fig. A3.01 + A3.01b) For this, possibly offset one spacer (5.2) of the Strongback:
   – Release Bolt and Nut M20 of the spacer.
   – Remove spacer tube in the Strongback.
   – Fix Spindle Connector (5.1) using Fitting Pins Ø 21.
   – Insert spacer tube in the next free hole.
   – Insert Bolt and Nut M20 and tighten.
5. Align Strongback (5) to formwork element. Take bracket spacing c into consideration as well as edge distances d_1 und d_2. (Fig. A1.01 or A1.02)
6. Fix Strongback on the formwork walers with Waler Fixation (7). (Fig. A3.01a)
7. Check the spacing of the Strongback (corresponds to bracket spacing c) at the bottom end and correct if necessary. (Fig. A3.02)
8. Securely fix Waler Fixation (7) using wingnut. (Fig. A3.01a)

"A" - Height Adjusting Unit detail

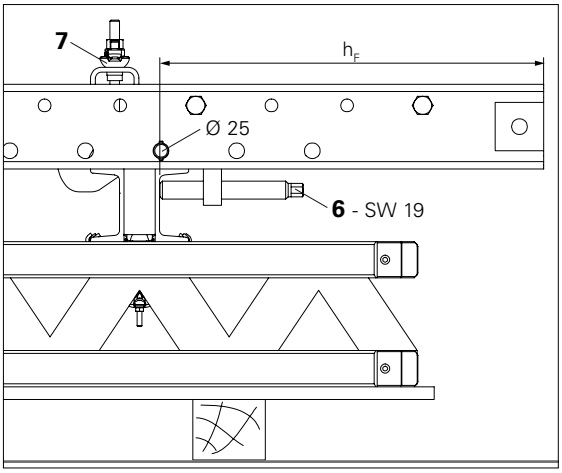


Fig. A3.01a

"B" - Spindle Connector detail

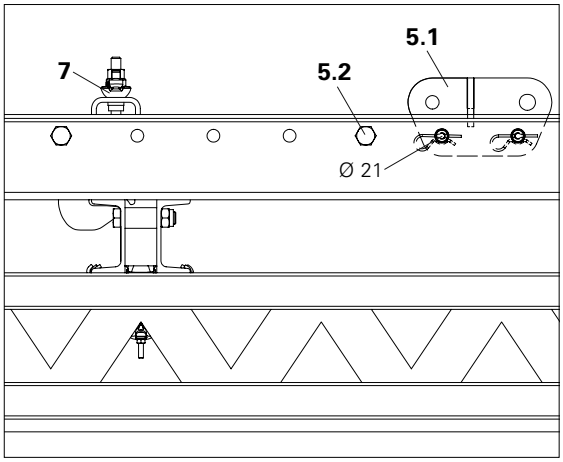


Fig. A3.01b

A3.2 Installing the Compression Brace

For moving the climbing unit, use either crane lifting gear with Compression Brace or Lifting Beam.

L = length
c = bracket spacing
L = c – 96 mm

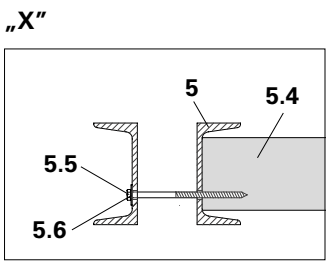


Abb. A3.02a

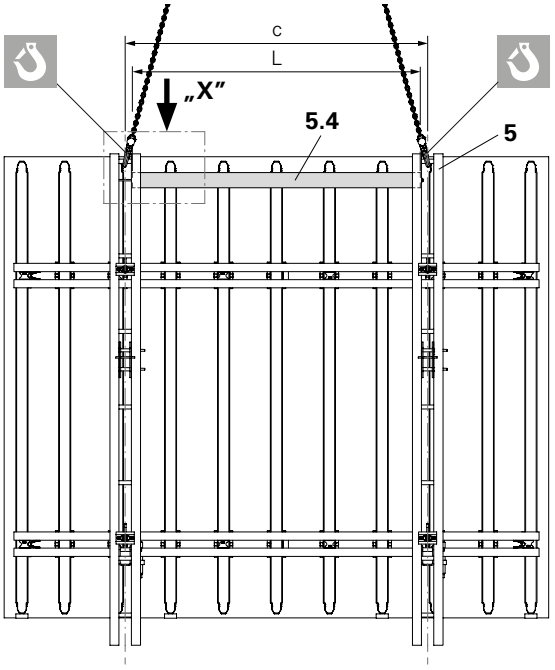


Fig. A3.02

Pos.	Components per formwork	Qty	Item no.
5.4	Timber 10 x 10 cm or according to the plan	1	–
5.5	Hex. Wood Screw DIN 571 8 x 160	2	024520
5.6	Washer ISO 7094 A8	2	113347

Assembly
Fix timber (5.4) between the two Strongbacks (5) using Hex. Timber Screws 8 x 160 (5.5) and Washer A8 (5.6).
(Fig. A3.02 + A3.02a)

A3.3 Installing the Concreting Platform

Assembly
1. Lift concreting platform over the formwork element using textile straps.
2. Fix Platform Beam (9) to the right U-profile of the Strongback (5) using Bolts M20 x 45.

(Fig. A3.03 + A3.03a)

Inclined formwork
In order to realize the most horizontal working platform possible with inclined formwork, incline the platform ± 15° or ± 30° towards the Strongback (5). For this, select the corresponding hole in the connection plate of the Platform Beam (9) for the bottom bolt.
(Fig. A3.04)
Depending on the inclination, change:
– Width of the platform,
– position of the girder and
– opening for the Strongback.

The finishing platform can also be fixed to the Platform Post (11) in an inclined position, see B5.

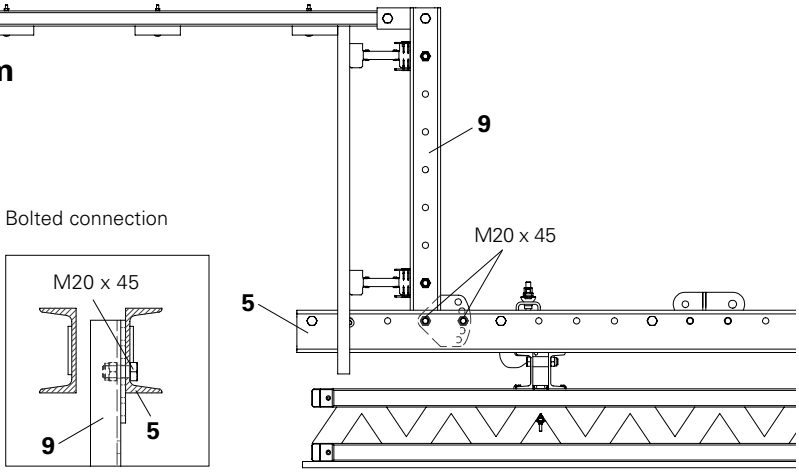
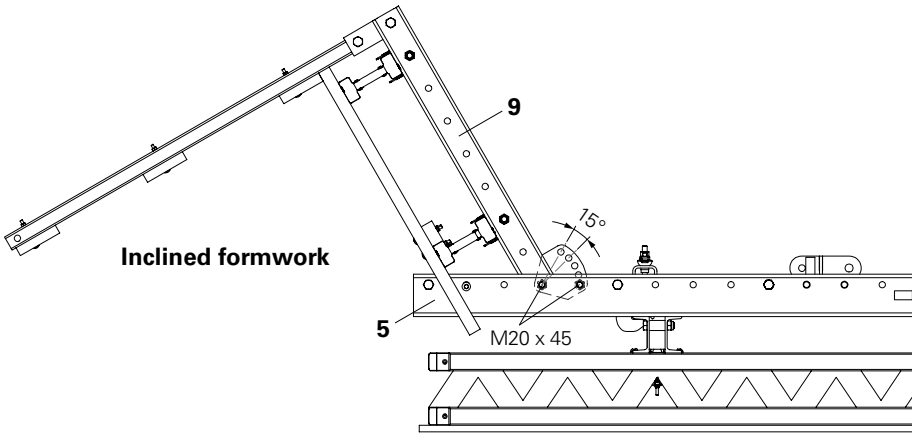


Fig. A3.03

Bolted connection

Fig. A3.03a



Inclined formwork

Fig. A3.04

A3.4 Fixing the formwork to the brackets

- **The working platform unit is suspended and secured against lifting by means of Locking Pins.**
- **For moving the formwork, use either crane lifting gear with Compression Brace or Lifting Beam.**

Preparation

1. If necessary, install Tension Belts on the brackets, see A2.5.
   → Tipping is prevented.
2. Remove Fitting Pins (1.2 + 1.3 + 1.4) from the Crossbeam Units and place to one side.

Assembly

1. SCS 250: retract Carriage (2.1) and fix in position using two Fitting Pins Ø 26 (1.2 + 1.4) respectively, see A4.5.
2. Move back the sliding unit (1.5) in the Adjusting Unit, see A4.4.
3. Adjust Heavy Duty Spindle (8) to length S, lean against the guardrails and secure against tipping.
4. Attach crane lifting gear to the top spacer in the Strongback (5).
5. Move formwork with the crane to the platform.
6. Guide Strongback (5) with the crane over the Adjusting Unit (1.1) so that the holes are congruent.
7. Connect Strongback and Adjusting Unit:
   – Insert Fitting Pins (1.3) through the holes in the sliding unit (1.5) and Strongback.
   – Secure Fitting Pins with cotter pins.
8. Set formwork vertically.
9. Position Heavy Duty Spindle (8) in the Spindle Connector (5.1).
10. Connect Heavy Duty Spindle (8) and Spindle Connector:
    – Insert Fitting Pins Ø 26 in holes of the Spindle Connector.
    – Secure Fitting Pins with cotter pins.
11. Release crane lifting gear.
12. Align formwork, see A4.1 to A4.5.

(Fig. A3.05)

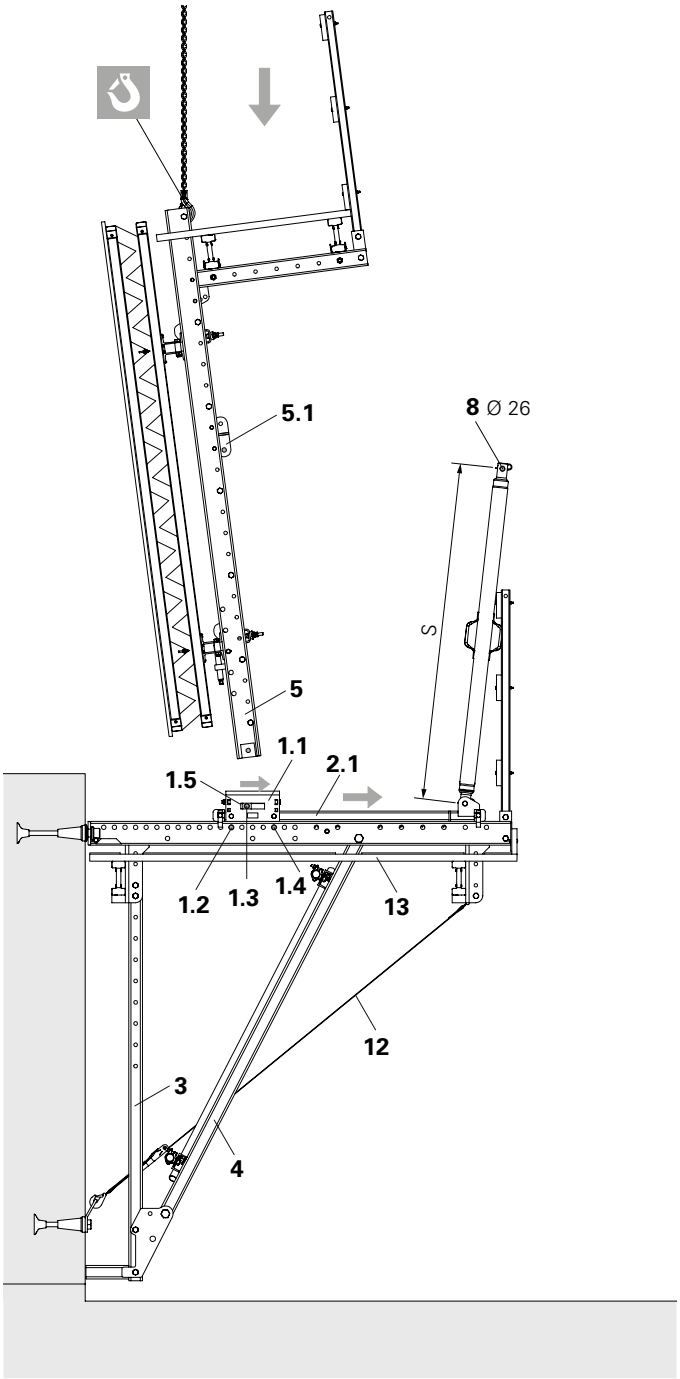


Fig. A3.05

A3.5 Exchanging the formwork

The platform unit is suspended and secured against lifting by means of Locking Pins.

Pos.	Components per platform unit	Qty	Item no.
5.2	Spacer M20-82	2	110022
5.3	Scaffold Tube Ø 48.3 - Special Length	2	026415
5.7	Scaffold Tube Ø 48.3 - 82 mm.	1	026415
12	Tension Belt	2	051250
22	Swivel Coupling DK 48/48	2	017010
30	Crane Splice 24	2	070760

Preparation

1. Install Tension Belt. see A2.5.
   → Tipping of the working platform is prevented.
2. Temporarily brace the Strongback (5).
   – Loosen bolt of Spacer (5.2) in the Strongback. (Fig. A3.06a)
   – Insert scaffold tube piece (5.7) above the spacer tube of the Spacer.
   – Re-install Spacer. (Fig. A3.06a) Carry out procedure on one Strongback above and with the other one below.
   → Lateral movement of the concreting platform is prevented.
   – Diagonally fix scaffold tube Ø 48.3 (5.3) to the scaffold tube pieces (5.7) using Swivel Couplings DK 48/48 (22).
   → Bracing. (Fig. A3.06b)

„B"

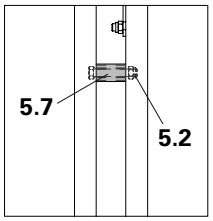


Fig. A3.06a

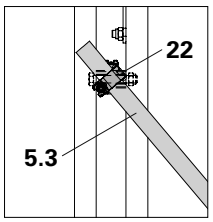


Fig. A3.06b

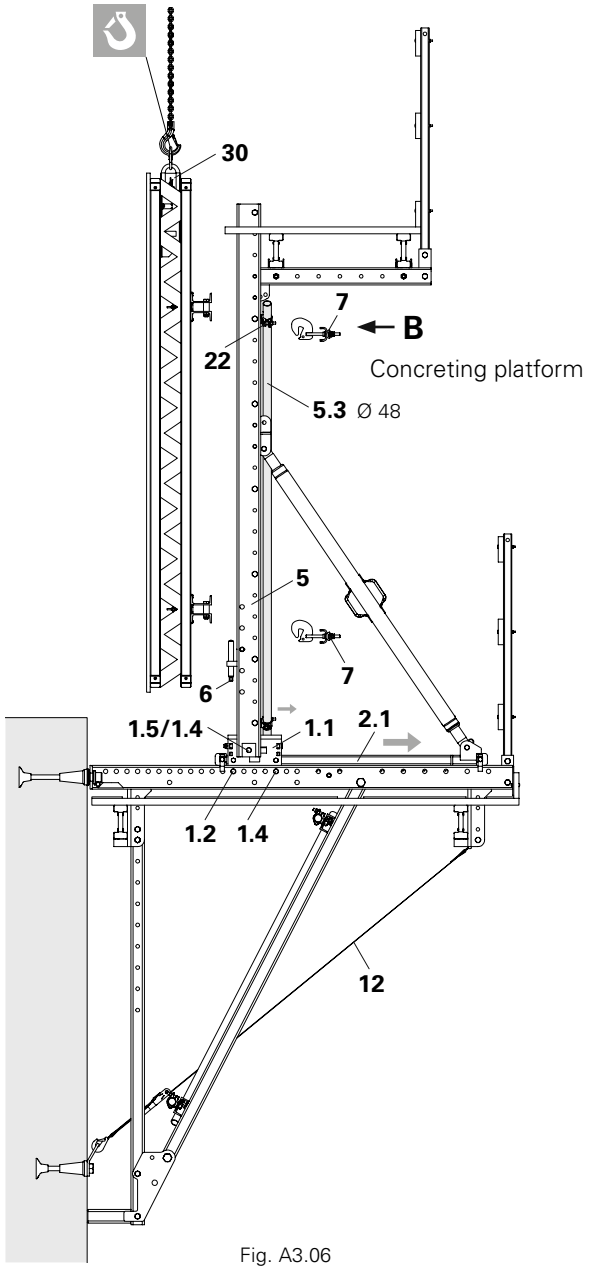


Fig. A3.06

Follow the Instructions of Use for the Crane Splice 24.

Assembly

1. **SCS 190:** incline Strongback to the rear (2x), see A4.1.
   SCS 250: retract Carriage (2.1) and secure with Fitting Pins Ø 26 (1.2 + 1.4) (2x), see A4.5. Move back the sliding unit (1.5) in the Adjusting Unit (1.1) (2x), see A4.4.
2. Fix Crane Splices (30) to the formwork.
3. Fix crane lifting gear and tension.
4. Open Waler Fixation (7) and remove (4x).
5. Carefully lift the formwork with the crane. If necessary, adapt Adjusting Unit (6) or offset (2x).
6. Lift in new formwork element with the crane.
7. Lower formwork waler onto the Adjusting Unit.
8. Insert Waler Fixation (7) and clamp formwork to prevent tipping (4x).
9. Align formwork, see A4.1 to A4.5.
10. Remove crane lifting gear.
11. Remove Crane Splice (30) from the formwork element.
12. Remove bracing.

– In order to avoid that the crane hook has been incorrectly attached, do not leave any load-bearing points on the formwork!
– The load-bearing point used to move the climbing unit is positioned on the Strongback. (Fig. A3.06)

A4 Formwork Alignment

A4.1 Adjusting the formwork inclination

Assembly

1. Place a spirit level on the rear side of the Strongback.
2. Turn (2x) the Heavy Duty Spindle (8).
   → Formwork inclination is adjusted. (Fig. A4.01)
3. If necessary, re-adjust (2x) the sliding unit (1.5) in the Adjusting Unit (1.1).

In case there is insufficient space for the sliding unit to move as required, e.g., with large inclinations, re-position the Adjusting Unit (1.1) by re-setting, see A4.4.

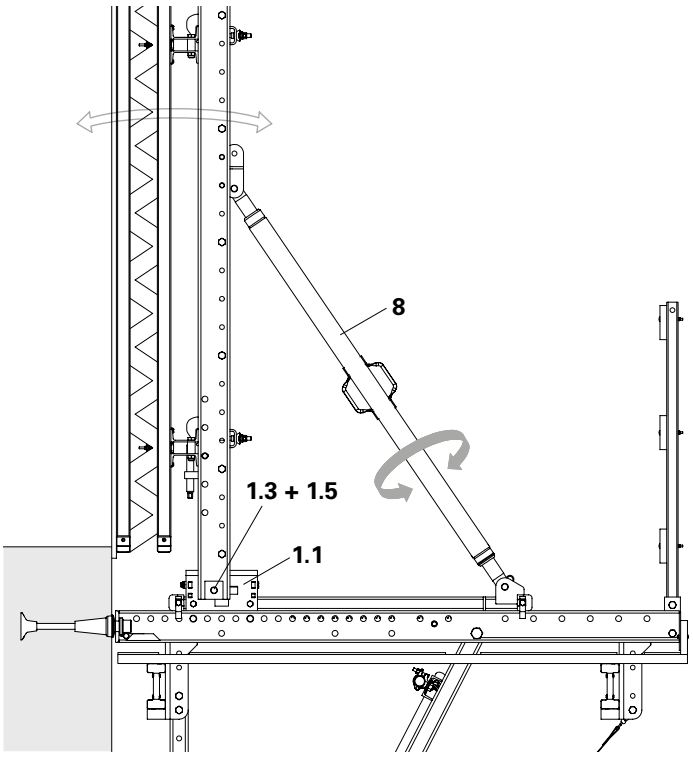


Fig. A4.01

A4.2 Vertically aligning the formwork

Assembly

1. Position a spirit level on the formwork waler.
2. Slightly open (4x) the Waler Fixation (7).
3. Turn (2x) Adjusting Bolt of the Adjusting Unit (6).
   → Formwork is height adjusted.
4. Close (4x) the Waler Fixation (7).

(Fig. A4.02)

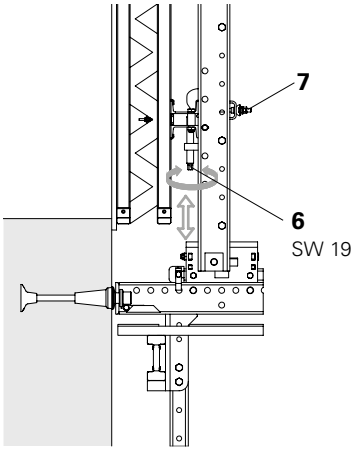


Fig. A4.02

A4.3 Horizontally aligning the formwork

Assembly

1. Slightly open (4x) the Waler Fixation (7).
2. Horizontally move the formwork.
3. Re-close (4x) the Waler fixation.
4. Check the position of the Anchor Positioning Stud or Anchor Positioning Plate.
   (Fig. A4.03)

Tool

Hammer or Tie Rod DW 15.

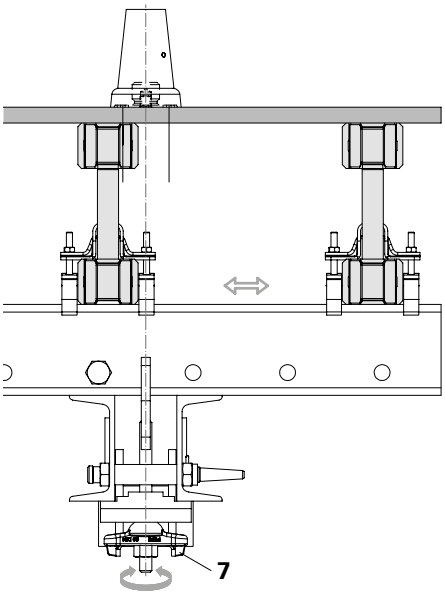


Fig. A4.03

A4.4 Operating the adjusting unit

Adjust the formwork using the Adjusting unit (1.1). In the process, the base of the formwork is carefully pushed against the previous concreting section or moved away.

Adjusting range:
±45 mm from the centre.

Closing the formwork
Turn (2x) the Adjusting Bolt SW 30 (1.6) of the Adjusting Unit in an anti-clockwise direction.
→ The sliding unit (1.5) with the Fitting Bolts Ø 26 (1.3) moves forward and thereby carefully pushes the formwork tightly against the previous concreting section.
(Fig. A4.04)

Opening the formwork
1. Turn (2x) the Heavy Duty Spindle (8). (Fig. A4.01)
2. Turn (2x) the Adjusting Bolt SW 30 (1.6) of the Adjusting Unit in a clockwise direction.
   → The sliding unit (1.5) with the Fitting Bolts Ø 26 (1.3) moves to the rear and thereby pushes the formwork away from the previous concreting section. Formwork moves away from the concrete. (Fig. A4.04)

Tool
Ratchet Wrench ½" with Socket SW 30 ½".

- In case there is insufficient space for the sliding unit to move as required, e.g., with large inclinations, re-position the Adjusting Unit (1.1).
  → Adjusting Unit is in another position.
- Hole spacing in Crossbeam: 62.5 mm.

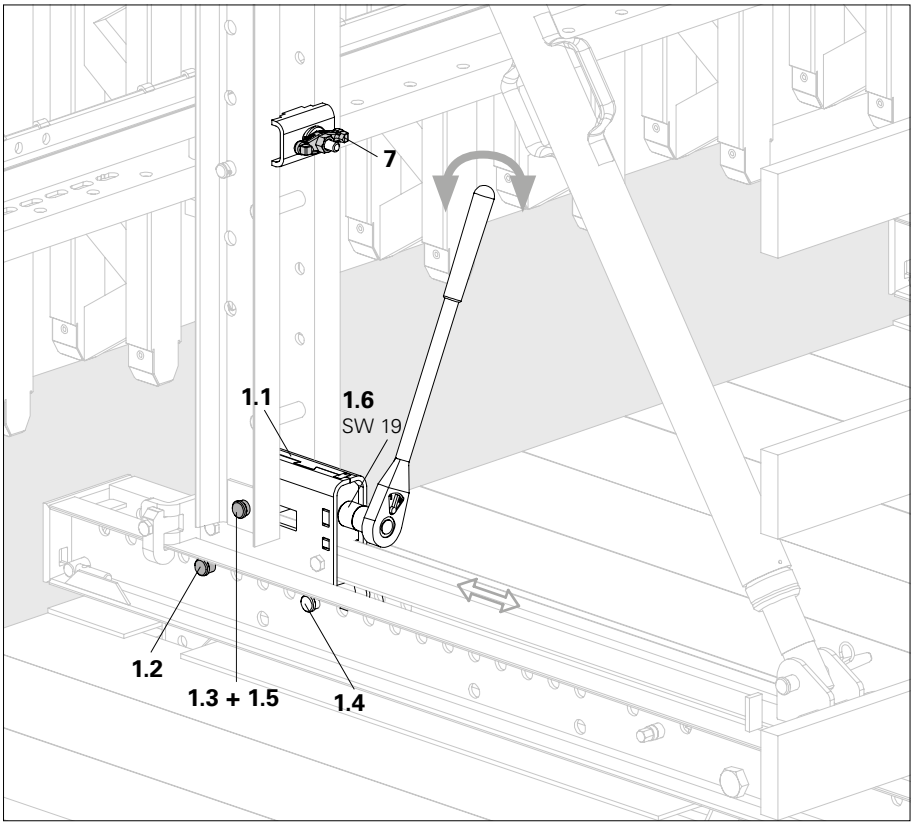


Fig. A4.04

Re-set Adjusting Unit.

SCS 190
1. Attach crane lifting gear at top to the walers and hold the formwork in position with the crane.
   → Formwork is secured against tipping.
2. Remove (2x) Fitting Pins (1.2 + 1.3):
   – Remove cotter pins from the Fitting Pins.
   – Remove Fitting Pins from the holes.
3. Move (2x) the Adjusting Unit.
4. Re-install (2x) the Fitting Bolts (1.2 + 1.3):
   – Insert Fitting Pins into holes of the Crossbeam Unit and Adjusting Unit.
   – Insert cotter pins in holes of the Fitting Pins.
   → Adjusting Unit is in a secured position.

SCS 250
Operating the Carriage, see A4.5.

A4.5 Operating the Carriage

Only the SCS 250 has a Carriage.
The Carriage SCS has two functions:
– Shuttering and striking.
– Working area in front of the formwork.

– Operate both Carriages of a platform simultaneously in order to avoid any jamming.
– The maximum retraction distance depends on the formwork assembly, e.g. VARIO GT 24: max. retraction distance x_r = 625 mm.

After concreting:
1. Turn the Heavy Duty Spindle.
   → Formwork is released from the concrete.
2. Remove Fitting Pins (1.2 + 1.4):
   – Remove cotter pins from the Fitting Pins.
   – Remove Fitting Pins from the holes.
3. Turn gear wheel drive (1.7).
   → Formwork moves.
4. Bring Carriage (2.1) in the end position.
5. Re-install Fitting Pins (1.2 + 1.4).
   – Insert Fitting Pins in the holes of the Crossbeam Unit and Adjusting Unit.
   – Secure Fitting Pins with cotter pins. (Fig. A4.05)
6. Press formwork against the previous concreting section with the Adjusting Unit (1.1), see A4.4 - Close the formwork

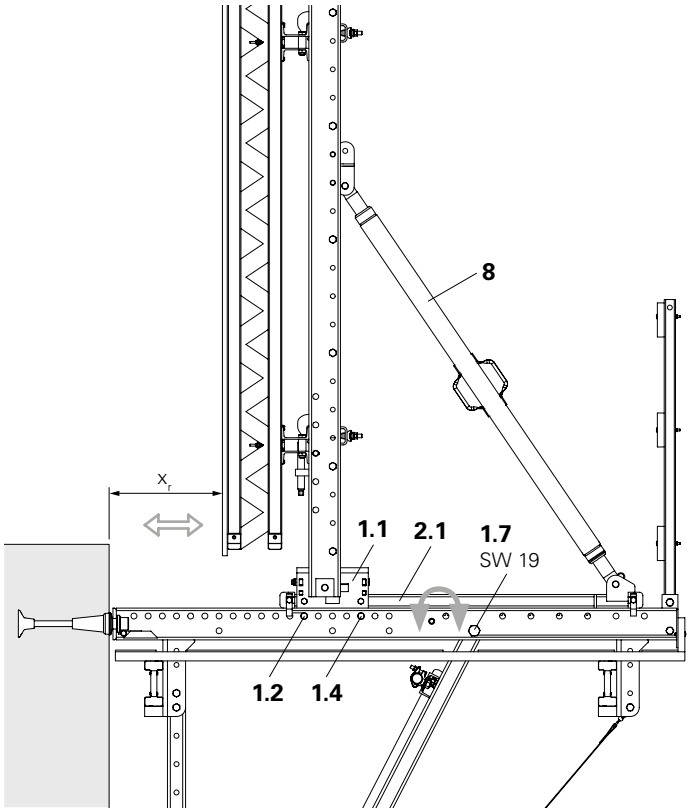


Fig. A4.05

Are cotter pins inserted into both Fitting Pins (1.2 + 1.4)?

Tool
Ratchet Wrench ½" with Socket SW 19-½" L.

A5.1 Moving procedure

- **Retract components only when the concrete has sufficiently hardened and the person in charge has given the go-ahead for striking to take place.**
- **Suspending the climbing units on the next concreting section is only allowed after the required concrete strength has been reached.**
- **For moving the climbing unit with widened crane lifting gear, install a Compression Brace between the Strongbacks, see A3.2.**
- **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.**
- **When moving the climbing units, always use a guide rope.**
- **Mount lateral side protection so that open edges are secured.**
- **Plan access ways and respective sequences. Secure emergency escape routes must always be available.**
- **Do not transport persons! Exceptions to this can be determined through the operational working and assembly instructions on the basis of a corresponding risk assessment.**
- **Do not transport any loose materials or other loads.**
- **As a result of the moving procedure, falling edges are formed between the platforms. These areas are to be cordoned off.**
- **In case of a malfunction, lower the platform to the next possible position, personnel are to leave the climbing unit in a safe and secure manner and an authorized person is to be notified immediately!**

For moving an asymmetrical climbing unit, we recommend using the Lifting Beam RCS 10 t.
For this, follow the Instructions for Use for the Lifting Beam RCS 10t.

The moving procedure consists of the following:

I. Preparation
II. Moving
III. Mounting
IV. Finishing Work

For a detailed description with photos for each individual step of the moving procedure, see the following pages.

Guiding the climbing units

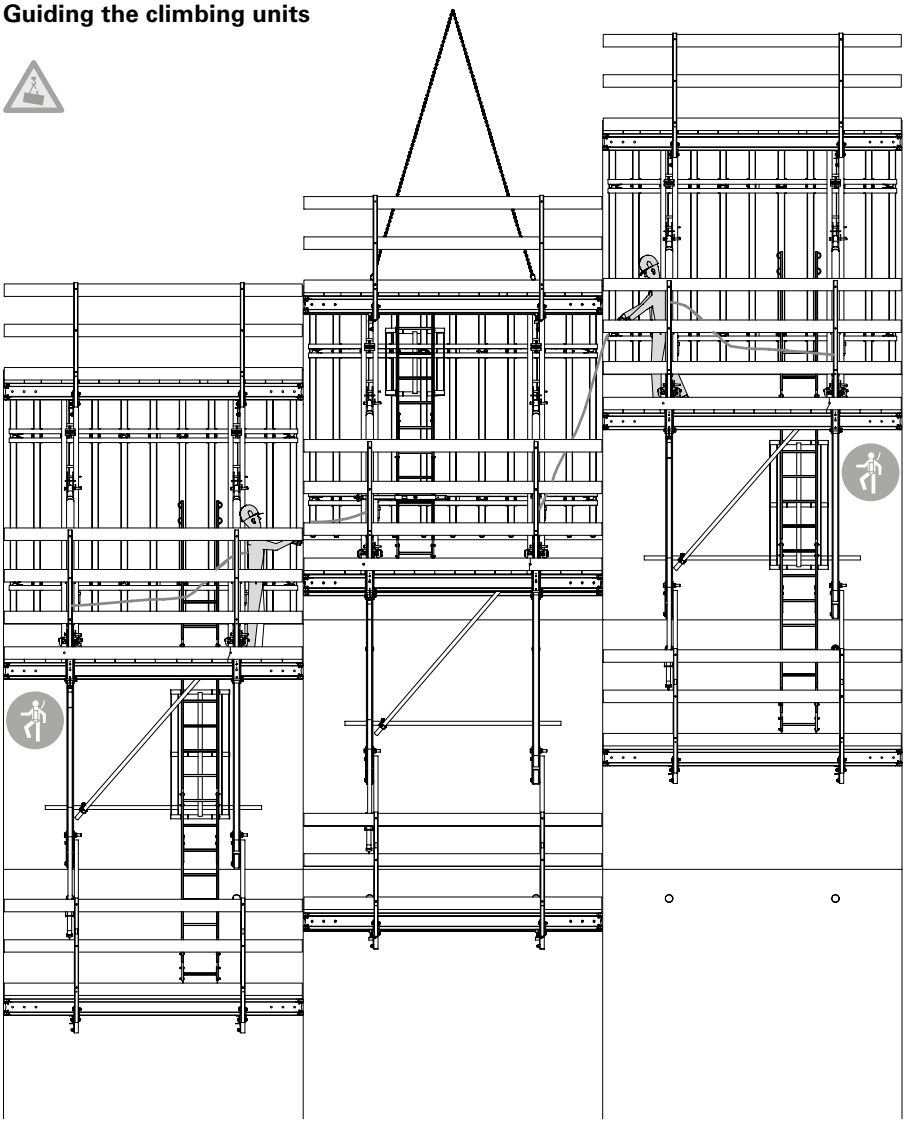


Fig. A5.01

A5 Crane-Assisted Climbing

I. Preparation

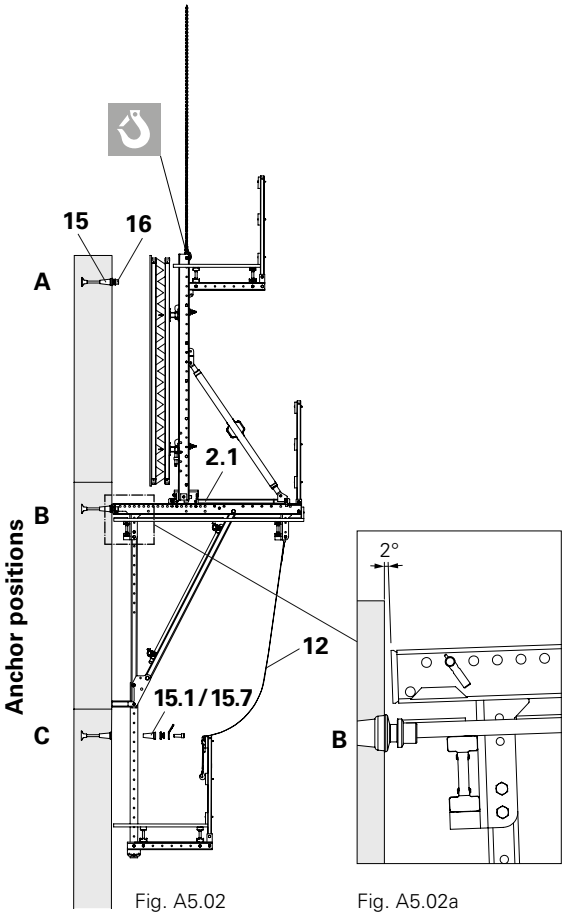


Fig. A5.02 Fig. A5.02a

1. Release Tension Belt (12) from the Following Anchor (15C), see A2.5.
2. Remove all the couplings or connections to formwork elements on the adjacent climbing units.
3. Anchor position A:
   Fix Mounting Ring* (16) to Leading Anchor (15), see A2.7.
4. The climbing unit should be suspended at an inclination of approx. 2° on the crane lifting gear, see Fig. A5.02a. To do so
   SCS 250: completely retract the Carriage and incline formwork approx. 2° to the rear, see A4.5 and A4.1.
   SCS 190: incline formwork approx. 8° to the rear, see A4.1. or, if necessary, determine inclination of the climbing unit by trial or error.
   Anchor position C:
   Remove Climbing Cone (15.1/15.7) and close anchor holes where required, see A2.9.
5. Remove all loose components from the climbing unit.

(Fig. A5.02)

*alternative: Mounting Bolts.

II. Moving

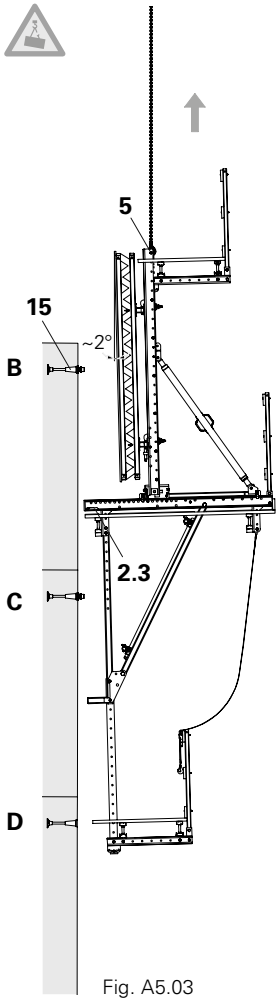


Fig. A5.03

During the moving procedure, site personnel are not allowed to remain on the platform!
Therefore, take Point 3 into consideration and leave the platform.

1. Fix crane lifting gear at top to the Strongbacks (5).
2. Bring Locking Pins (2.3) into the climbing position, see A5.3.
3. **Leave the platform.**
4. Lift climbing unit out of the Mounting Rings*. The pressure point should be approx. 5 - 10 cm away from the wall.
5. In case the bracket jams, correct the formwork inclination.
6. Anchor position from C to B:
   Move the climbing unit to the next climbing anchor (15).

(Fig. A5.03)

III. Mounting

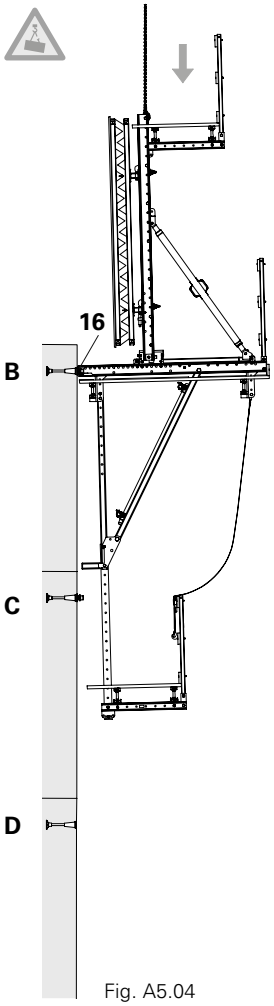


Fig. A5.04

Anchor position B:
1. Lower Crossbeam and mount in the Mounting Rings* (16).
2. Enter platform and immediately re-insert Locking Pins (2.3) in the securing position, see A5.2.
   → Platform unit is suspended and lifting off is prevented.

(Fig. A5.04)

Are both Crossbeam Heads suspended in the corresponding Mounting Rings*?

Troubleshooting
- If installation in the Mounting Ring is unsuccessful or the bracket jams, lift the platform and lower again.
- If the bracket spacing does not correspond to the spacing of the Mounting Rings, check the distance of the Climbing Anchor to the formwork.
- If the mounting procedure is not possible, correct the bracket spacing by modifying the platform.

IV. Finishing Work

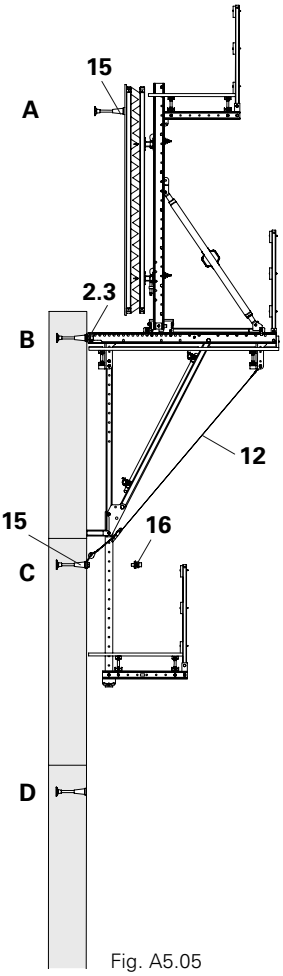


Fig. A5.05

1. Release crane lifting gear.
2. Anchor position C:
   – Remove Mounting Ring* (16) from the Following Anchor (15), see A2.8.
   – If necessary, attach Tension Belt (12) to the Following Anchor, see A2.5.
3. Anchor position A:
   Mount the Leading Anchor (15) on the formwork, see A2.6.

(Fig. A5.05)

A5.2 Secured Position - Locking Pins

During all work procedures on the working platform, e.g. concreting, each bracket must be secured against lifting by means of a locking pin (2.3) in the securing position under the Mounting Ring * (16).

Securing

1. Insert locking pin (2.3) under the Mounting Ring* (16) through the bottom hole of the crossbeam unit.
2. Secure locking pins by means of cotter pins (2.6). (Fig. A5.06a)
3. Place shaft (2.5) of the locking pin behind the stop plate (2.4).
   → Climbing unit is secured.

(Fig. A5.06)

The securing position is also the transport and storage position of the locking pin in the crossbeam unit.

*alternative: Mounting Bolt.

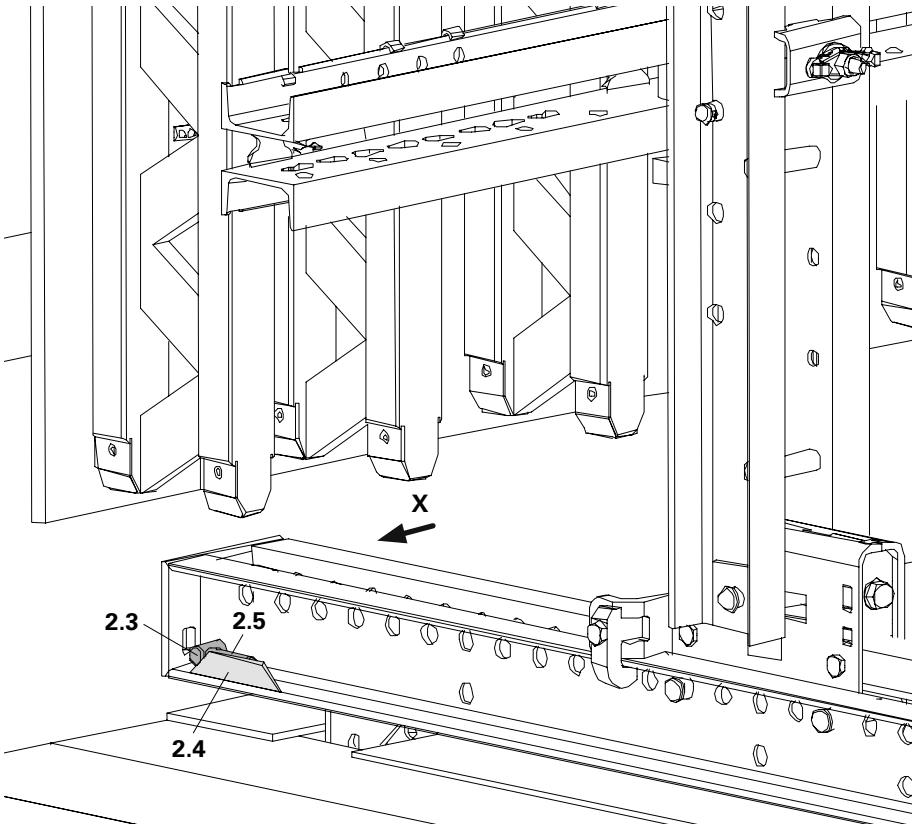


Fig. A5.06

"X"
View from the rear

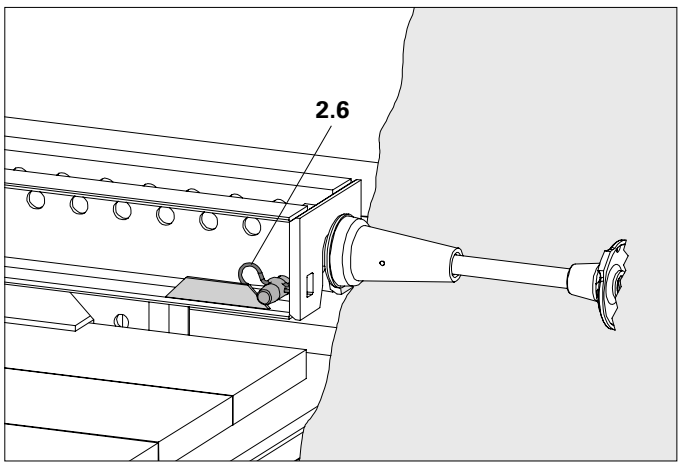


Fig. A5.06a

A5.3 Released Position - Locking Pins

Moving
During the climbing procedure, the locking pins (2.3) are stored in the climbing position.

During the mounting procedure, the locking pins (2.3) must not collide with the Mounting Ring* (16).

Release
1. Insert locking pin (2.3) in one of the top holes of the crossbeam.
2. Insert cotter pin (2.6) in the shaft (2.5) of the locking pin.
   → Climbing position

(Fig. A5.07 + A5.07a)

*alternative: Mounting Bolt.

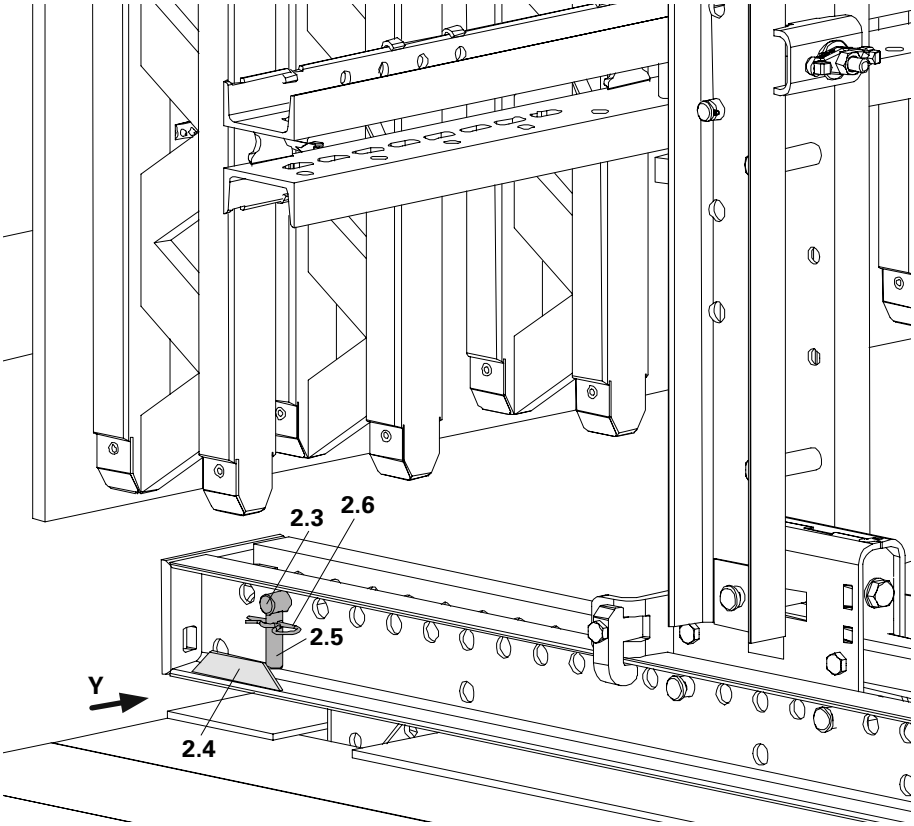


Fig. A5.07

"Y"
View from the front

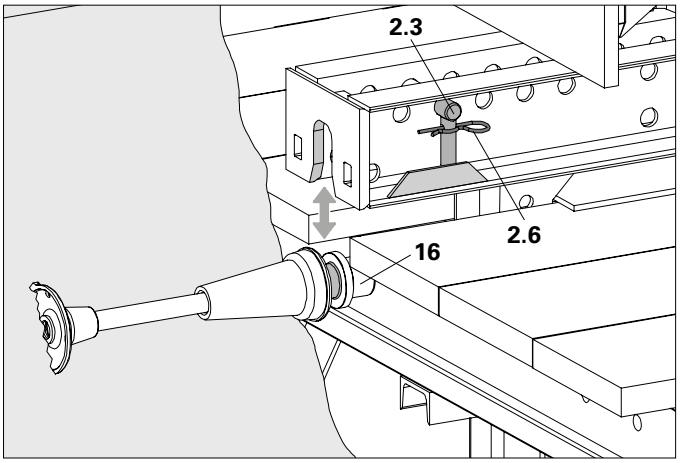


Fig. A5.07a

A6 Dismantling the Climbing Formwork

During the dismantling procedure, additional open slab edges are created. These areas must be cordoned off or secured using other suitable measures! These measures are described in the risk analysis provided by the contractor.

For assembly work carried out on non-secured slab edges and when removing the climbing anchors, personal protective equipment (PPE) is to be used.

Dismantling the formwork unit

1. Remove formwork.
2. Attach crane lifting gear to the Strongbacks (5).
3. Tension the crane lifting gear.
4. Remove top Fitting Pins Ø 26 from the Heavy Duty Spindle (8) and then lean the Spindle against the guardrails and secure against falling.
5. Remove Fitting Pins Ø 26 (1.3) from the Adjusting Unit (1.1).
6. Lift formwork with the crane and move to dismantling area.
7. Remove Heavy Duty Spindle.

(Fig. A6.01)

Removing the platform unit

1. Release Tension Belt (12).
2. Fix crane lifting gear to both Fitting Pins in the Crossbeam (1.2 + 1.4), see A2.3.
3. Bring Locking Pins (2.3) into the climbing position, see A5.3.
4. Personnel are to leave the working platform.
5. Lift platform unit out of the Mounting Rings and move to the dismantling area.
6. Place finishing platform on the ground and release Bolts M20.

(Fig. A6.02)

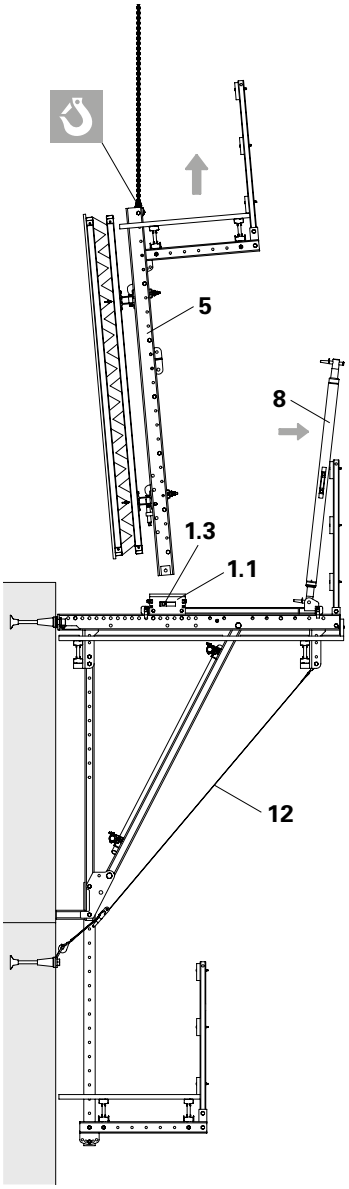


Fig. A6.01

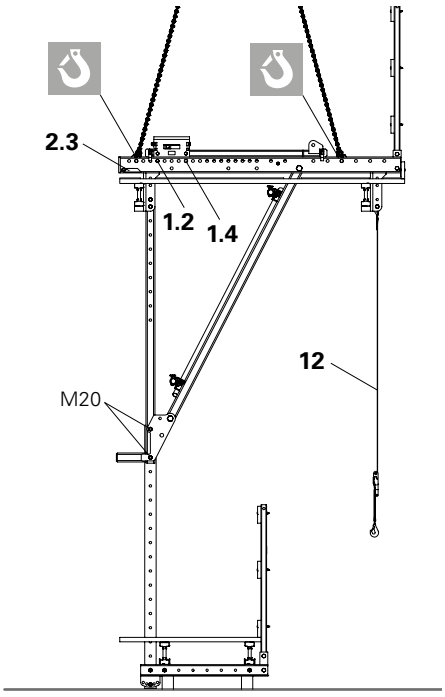


Fig. A6.02

A6 Dismantling the Climbing Formwork

Dismantling the guardrails

1. Position platform unit at an angle. (Fig. A6.03)
2. Release crane lifting gear.
3. Dismantle handrail boards and/or guardrail tubes.
4. Dismantle guardrail posts.

Dismantling the brackets

1. Insert Fitting Pins in holes Ø 26 of the Spindle Connection on the Carriage and secure with cotter pins. (Fig. A6.04)
2. Attach crane lifting gear.
3. Set up platform unit, place on supports, and hold platform unit in position with crane. (Fig. A6.04)
4. Remove scaffold tubes.
5. Dismantle Vertical Struts (3) and Diagonal Struts (4).
6. Horizontally position working platform. (Fig. A6.05)
7. Release crane lifting gear.
8. Remove planking.
9. Dismantle girders.

Anchorage in the last concreting phase

Remove the last row of anchors in accordance with the risk assessment of the contractor.

Dispose of non-recyclable material in accordance with the respective national regulations.

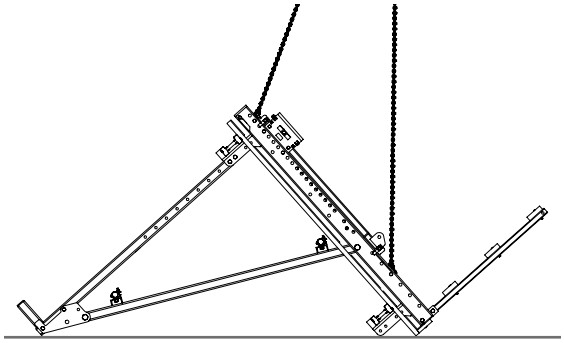


Fig. A6.03

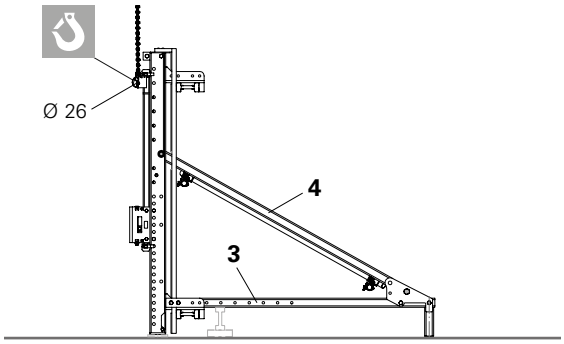


Fig. A6.04

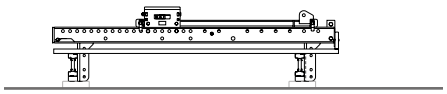


Fig. A6.05

B1.1 General Guidelines

- Assemble decking in accordance with the respective country-specific safety regulations.
- Avoid - or at least cover - the realisation of tripping hazards, unnecessary recesses and openings in the decking.
- Distance between decking and building ≤ 50 mm. Gaps in the decking are not permissible.Planks are to be fitted tightly together.
- During working operations, we recommend a maximum distance of 20 mm between neighbouring platforms. Cover larger gaps with suitable and securely fitted materials. Alternative: use safety netting (26).
- The dimensions given for the platforms are valid for vertical applications. For inclined applications or use on circular structures, adjust the decking accordingly.
- For circular structures, take additional measures in accordance with the given radius.
- Plan the corner platforms so that accessing one platform from another can be done safely.
- Access routes and climbing procedures must also ensure that safe escape routes are available at all times.

(Fig. B1.01)

B1.2 Markings

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

- Company name
- Construction site
- Name of the planner
- Marking in accordance with the plans
- Dimensions
- Weight of the unit with formwork
- Weight of the unit without formwork
- Maximum formwork height
- Permissible loads

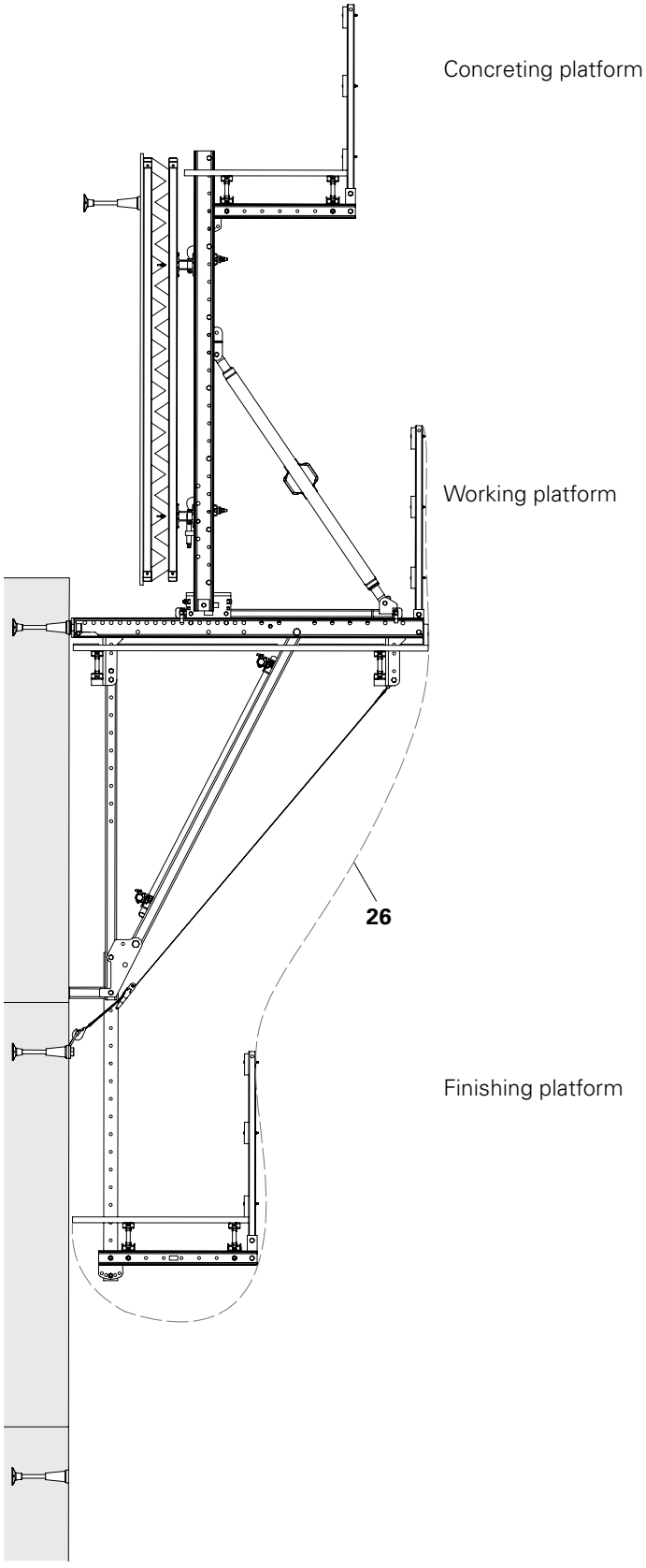


Fig. B1.01

B1.3 Planning of the Anchor Positioning Plate

Pos.	Components	Item no.
15.5	Anchor Positioning Plate M30	029380
15.11	Anchor Positioning Plate M36	029390

In order to ensure sufficient stability, we recommend fixing the Leading Anchor with the Anchor Positioning Plate (15.5 and 15.11). During planning, make sure there is adequate space (dimension x min) so that the Advancing Bolt can be mounted.

Climbing Anchor M30: x_{min} = 30 mm.
Climbing Anchor M36: x_{min} = 40 mm.

H = height measurement.

Position of the Anchor Positioning Plate. (Fig. B1.02)

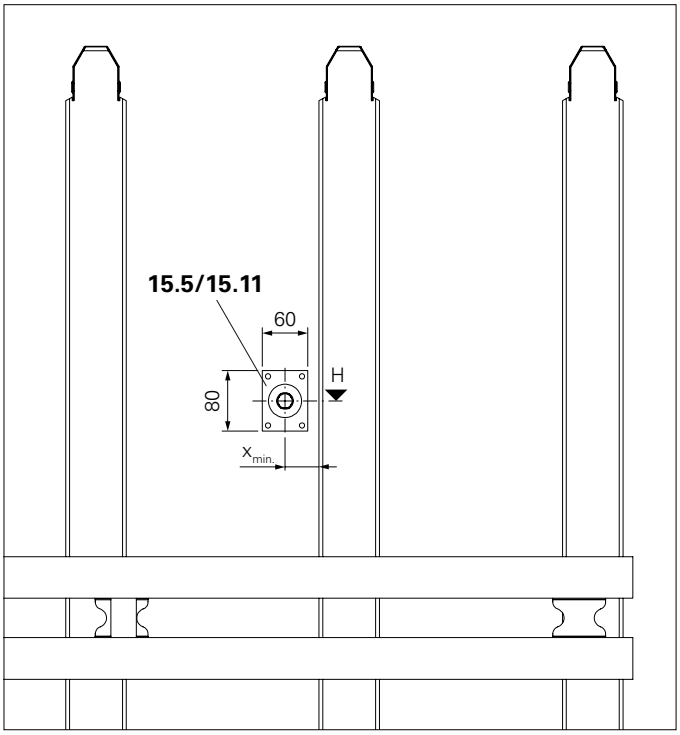


Fig. B1.02

B2.1 System Dimensions

Position of Spindle Connector SCS
The position of the Spindle Connector (5.1) h_{Sp} and the position of the steel waler of the formwork must be included in the static calculations. These dimensions are decisive for the bending load of the Strongback (5). (Fig. B2.01)

- The Spindle Connector must be positioned below the top steel waler.
- Design dimensions must be considered for the static calculations as these influence the load-bearing capacity.

Regular vertical application:

h_B Concreting height
= max. 4.00 m

h_0 Static bracket height
= 2.58 m / 2.40 m

c_2 Anchor spacing to concrete joints
= 35 cm

h_{nom} Anchoring depth of the climbing anchor

a Position of bottom formwork waler
= 46 cm

b Waler spacing
= 1.18 / 1.48 / 1.78 m (VARIO)

k Distance of top waler to concreting joint

h_F Top side of Height Adjusting Unit
= 661 mm

h_{Sp} Position of Spindle Connector SCS

h_{cp} Position of concreting platform

x_F Formwork depth

L_{TB} Length of Tension Belt

S Spindle length

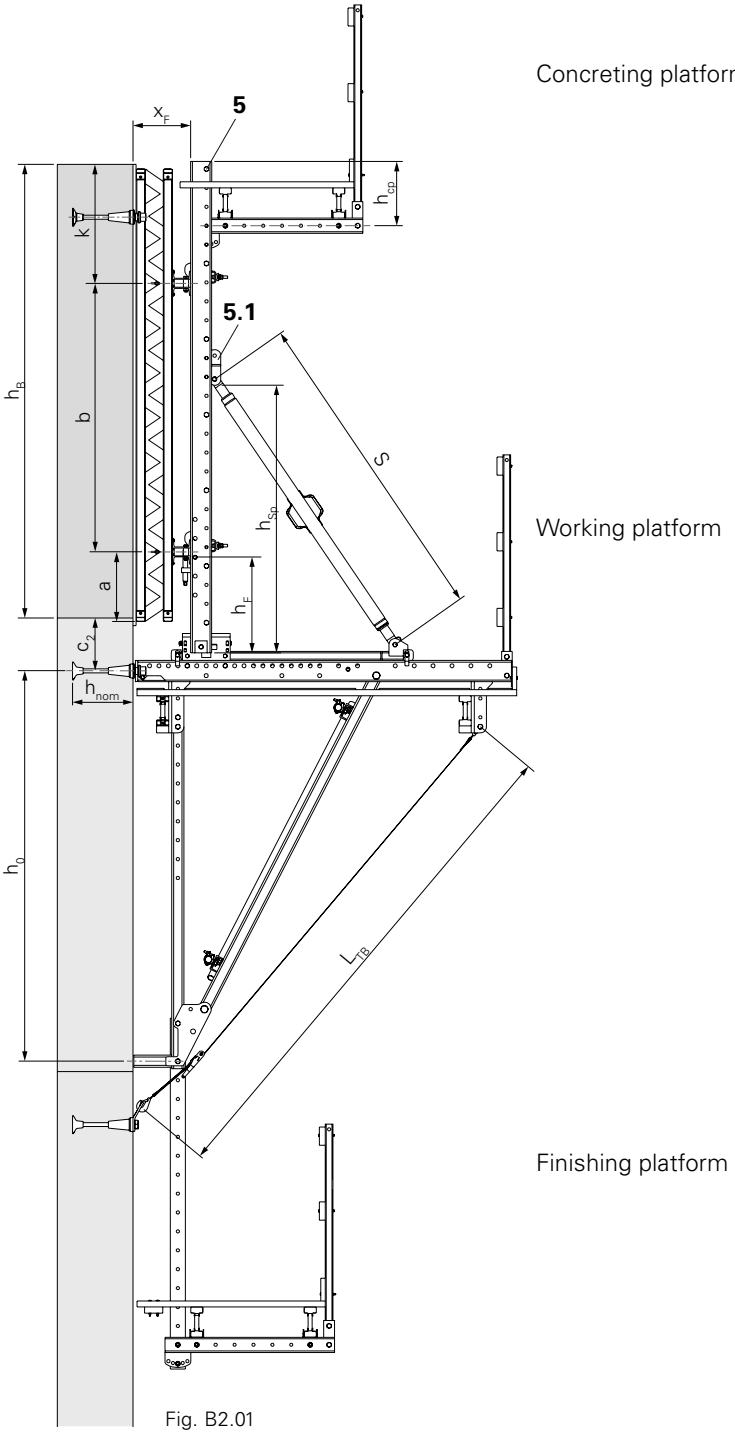


Fig. B2.01

B2.2 Requirements

Standard case
Single-sided vertical application
The permissible width of influence and related bearing reactions
- taken from the separate SCS dimensioning information,
- determine through a separate static calculation.

Special cases
- Starter heights
- Inclined starter
- Inclined climbing units
- Changes in inclination
- All other executions deviating from the standard case

The static proof for the actual width of influence and the related bearing reactions of the special cases are to be determined in separate static calculations.

B2.3 Influencing Factors

b_K Width of influence of the bracket
h_B Concreting height
h_0 Static bracket height
p_B Maximum fresh concrete pressure
q_κ Reduced wind flow pressure

Actual width of influence
Determine the actual width of influence by means of the strongback arrangement whilst taking into account the formwork cantilevers.

Permissible width of influence
The permissible width of influence for the concreting height h_B and the max. fresh concrete pressure p_B is provided in the charts. Take into consideration that deviating permissible widths of influence result from different waler arrangements.

Determining the fresh concrete pressure
Determine the maximum fresh concrete pressure taking into account decisive influencing factors:
– Installation method
– Rate of rise
– Consistency of the fresh concrete
– Concrete density
– Setting behaviour
– Concrete and ambient temperature

Determining the wind loads according to DIN EN 1991-4 and DIN EN 12812
The dynamic wind pressure q(z) is determined from the operating height z, wind load zone WZ and location, and reduced by a service life factor κ.

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

z Operating height above ground
κ Service duration (up to 24 months $\kappa = 0.7$)
q(z) Wind speed pressure depending on the operating height and the reference dynamic pressure according to the wind zone

B2.4 Load Combinations

– The given permissible loads and operating conditions are to be maintained for the complete phase of the respective load combination.
– For all load combinations, the safe transfer of the bearing forces into the structure must be proven.

Load Combinations 1
Working Conditions
Wind load:
$q = 0.50$ kN/m² ($V_W = 102$ km/h)

– Formwork retracted or in the concreting position.
– Working permitted on all platforms.
– Material storage on the working platform allowed.

Load Combinations 2
When concreting
Wind load:
$q = 0.25$ kN/m² ($V_W = 72$ km/h)

– Formwork in concreting position
– Working only allowed on the concreting platform.
– Materials can be left on the working platform.

Load Combinations 3
When out of service
Wind load as specified:
$q_\kappa \leq 1.3$ kN/m² ($V_W \leq 164$ km/h)

– Formwork in concreting position.
– Working not permitted.
– When secured against lifting, materials can be left on the working platform.

B2.5 Verification

Verification of the brackets
The brackets and Starter Brace Frames are verified by comparing the to-be-determined or actual width of influence from the formwork with the permissible width of influence. The load-bearing capacity of the anchorage is determined by means of interaction diagrams, and depends on the anchoring depth and concrete strength.
The platforms and side protection are not decisive in maintaining the permissible widths of influence.

Verification of the platforms
Verification of the decking and platform beams always takes place in accordance with DIN EN 12811-1. When complying with the standard dimensions and permissible widths of influence, no proof is required.
The length of the cantilevered area of the platform beams must not be larger than half the distance of the two brackets of one unit.
In those cases where cantilevers are longer, the main beams together with their fastenings are to be verified by the contractor and additionally secured against lifting.

Verification of the corner platforms
In the corner area, a transition zone around the corner of the structure is usually required. For this purpose, corner platforms are realised. On the working platform, a mitred projection up to an additional middle platform beam is allowed. No overhang is allowed for the formwork nor finishing platform. For larger overhangs, the width of influence of the corner bracket is to be increased accordingly or a separate statistical proof is to be carried out.

Verification of the guardrails
Verification of the side protection for the concreting and intermediate platforms is in accordance with country-specific standards. When complying with the standard dimensions and permissible widths of influence, no proof is required.

Verification of the bearing reactions
The design values of the bearing reactions for the permissible width of influence are to be taken from the separate SCS dimensioning information, and interpolated linearly for the fresh concrete pressure p_B and concreting height h_B. These values must be converted with the help of the given formulae for the actual width of influence. The reaction forces Z_o und Q_o on the climbing anchor are to be verified separately with the help of the interaction charts for each load case.

Bearing reactions of the Starter Brace Frame

$Z_{DW,d}$
Design tensile force of the inclined brace frame anchor

$D_{l,d} + D_{m,d}$
Vertical design bearing forces on front contact point of the Starter Brace Frame

$D_{r,d}$
Vertical design bearing force on rear contact point of the Starter Brace Frame (Fig. B2.02)

Bearing reactions of the brackets

$Z_{o,d}$
Design tensile force on the bracket anchoring.

$Q_{o,d}$
Vertical design shear force on the bracket anchoring

$D_{u,d}$
Design compression force to be supported on the base of the bracket.

$Z_{z,d}$
Design tensile force in the wind safety device.
(Fig. B2.03)

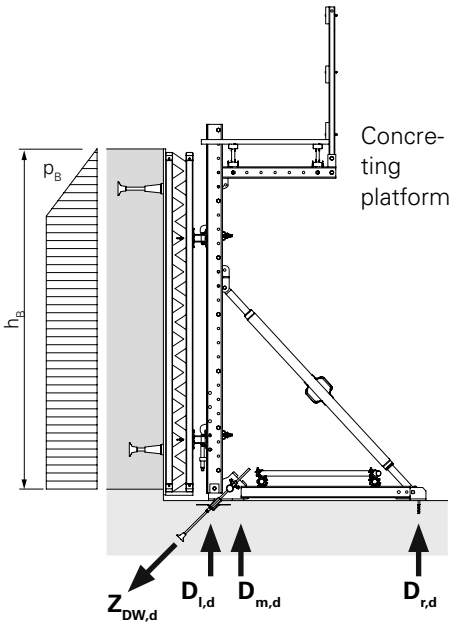


Fig. B2.02

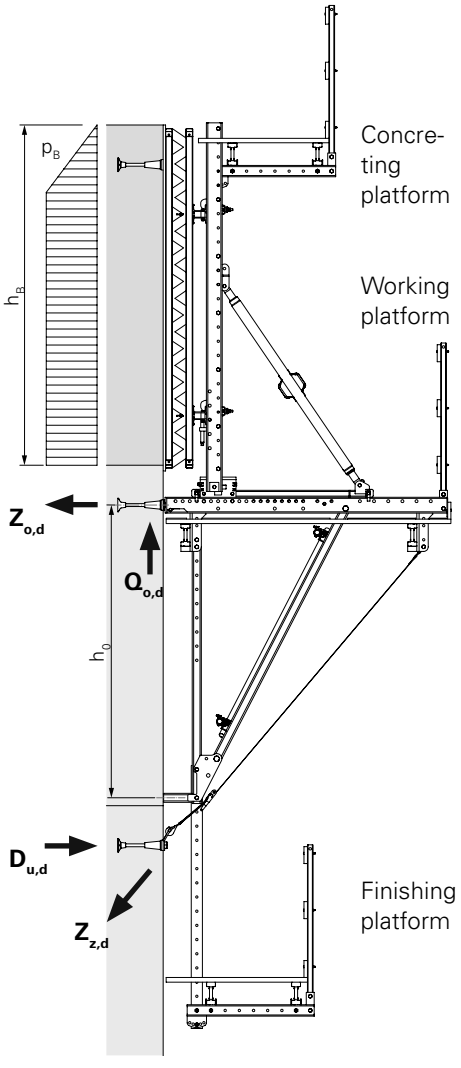


Fig. B2.03

B2.6 Dimensioning of the Anchor

Climbing Anchor

- Germany: for the verification of the load transfer into the concrete, take into consideration the separate SCS dimensioning information.
- For determining the required anchoring depth h_{nom} and concrete strength with specified minimum edge distances, take into consideration the separate SCS dimensioning information.
- If the minimum requirements regarding edge distances, reinforcement or concrete strength are not met, additional investigations for these conditions are to be implemented.

The following are to be verified by the project´s structural engineer:

- The safe transfer of the anchoring forces into the concrete.
- The safe transfer of all bearing forces into the structure.
- The required concrete strength at which point the platforms can be moved.
- Verification and planning of possible additional reinforcement.

Transfer of forces:

- The reaction force from shear force V is transferred via the pressure on the periphery of the Climbing Cone $\mathbf{V_T}$ and Cone $\mathbf{V_K}$ into the concrete.
- The horizontal tensile force H is transferred via the pressure on the Threaded Anchor Plate $\mathbf{N_A}$ into the concrete. Shear stresses occur in the concrete along a considered breakout cone.
- The permissible tensile and shear forces are limited through the load-bearing capacity of the tie rod, the concrete strength, the edge distances $\mathbf{c_2}$ of the anchoring as well as the anchoring depth $\mathbf{h_{nom}}$.

(Fig. B2.04)

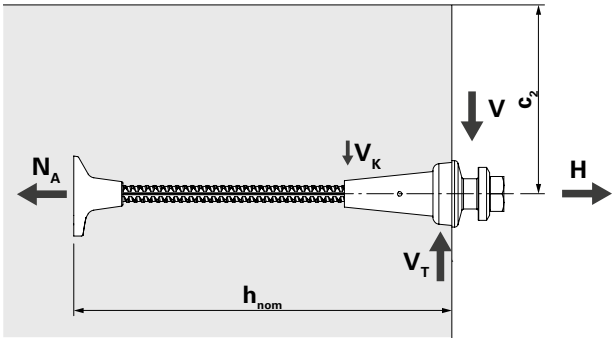


Fig. B2.04

B3 Starter Heights

B3.1 Standard Case

Starter height ≥ 3.00 m
Static bracket height 2.58 m.
(Fig. B3.01)

Pos.	Components per climbing unit	Qty	Item no.
3	Vertical Strut SCS 237	2	118710
4	Diagonal Strut SCS 257	2	118714
5.3	Scaffold tube - for bracing	3	026415

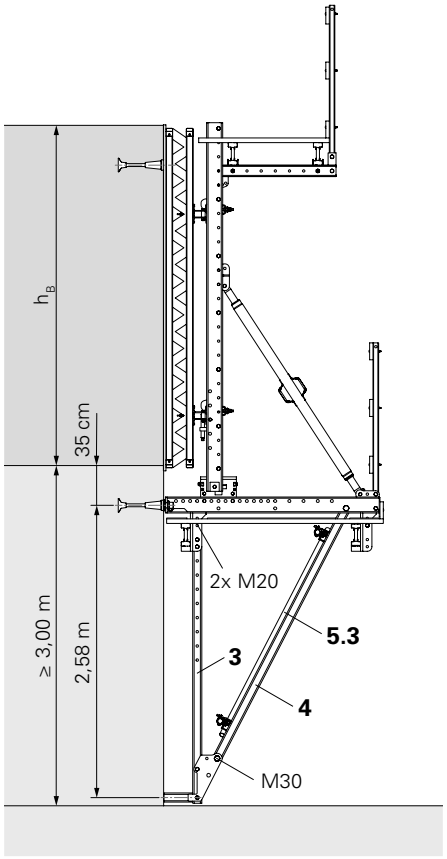


Fig. B3.01

B3.2 Special Cases

- A separate static calculation is required for each starter height.
- For very low starter heights, use additional components or site-specific solutions with timbers.
- The solutions for SCS 190 and SCS 250 are very similar.
- The example shown is SCS 190.

Starter height 2.80 - 3.00 m.
Static bracket height 2.40 m.
(Fig. B3.02)

Pos.	Components per climbing unit	Qty	Item no.
3	Vertical Strut SCS 237	2	118710
4	Diagonal Strut SCS 257	2	118714
5.3	Scaffold tube - for bracing	3	026415

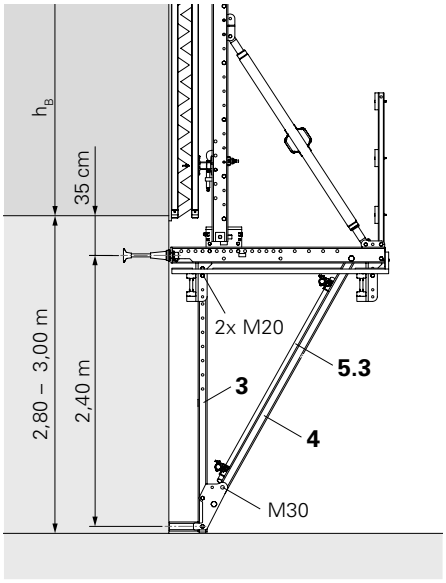


Fig. B3.02

B3 Starter Heights

Starter height 2.50 - 2.80 m
Static bracket height 2.00 m. (Fig. B3.03)

Pos.	Components per climbing unit	Qty	Item no.
4	Diagonal Strut SCS 257	2	118714
5.3	Scaffold tube - for bracing	3	026415
21	Bracing Shoe SCS M36/DW 20	2	123819
	Anchor M30: Bolt ISO 4017 M30 x 70	2	029420
	Anchor M36: Bolt ISO 4017 M36 x 70		029430
23	Bracing DW 20, consisting of:	2	–
	Tie Rod DW 20, Special Length	2	030700
	Hex. Nut DW 20 SW 36/60	2	030580
	Anchor Plate RCS DW 20	2	114082
	Wingnut DW 20	2	030990

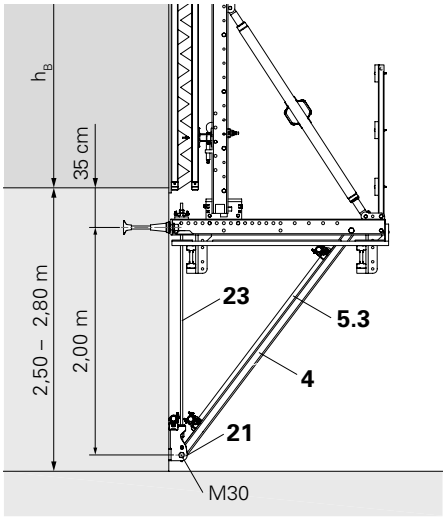


Fig. B3.03

Starter height 2.00 - 2.50 m
Static bracket height 1.50 - 2.00 m. (Fig. B3.04)

Pos.	Components per climbing unit	Qty	Item no.
5.3	Scaffold tube - for bracing	3	026415
8	Heavy Duty Spindle SCS 198-250	2	118585
8.1	Spindle Adapter SCS Ø 26/31	2	123828
8.2	Scaffold Tube Adapter RCS Ø 48	2	110084
21	Bracing Shoe SCS M36/DW 20	2	123819
	Anchor M30: Bolt ISO 4017 M30 x 70	2	029420
	Anchor M36: Bolt ISO 4017 M36 x 70	2	029430
22	Swivel Coupling DK 48/48	2	017010
23	Bracing DW 20, consisting of:	2	–
	Tie Rod DW 20, Special Length	2	030030
	Hex. Nut DW 20 SW 36/60	2	030580
	Anchor Plate RCS DW 20	2	114082
	Wingnut DW 20	2	030990

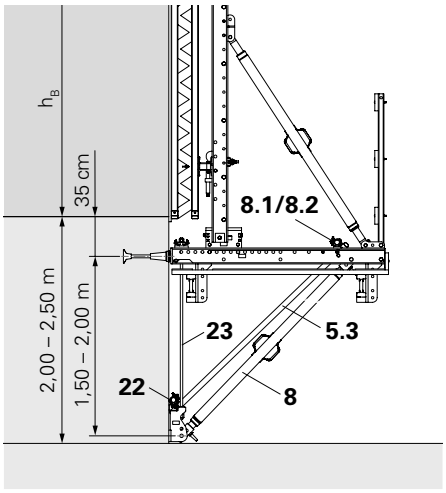


Fig. B3.04

Starter height 1.20 - 2.00 m
(Fig. B3.05)

Pos.	Components per climbing unit	Qty	Item no.
1	Crossbeam Unit SCS 190	3	118730
5.3	Scaffold tube - for bracing	3	026415
21	Bracing Shoe SCS M36/DW 20	2	123819
	Anchor M30: Bolt ISO 4017 M30 x 70	2	029420
	Anchor M36: Bolt ISO 4017 M36 x 70	2	029430
22	Swivel Coupling DK 48/48	2	017010
23	Bracing DW 20	2	–
	Tie Rod DW 20, Special Length	2	030030
	Hex. Nut DW 20 SW 36/60	2	030580
	Anchor Plate RCS DW 20	2	114082
	Wingnut DW 20	2	030990
24	Timber 160 x 160 mm	2	–

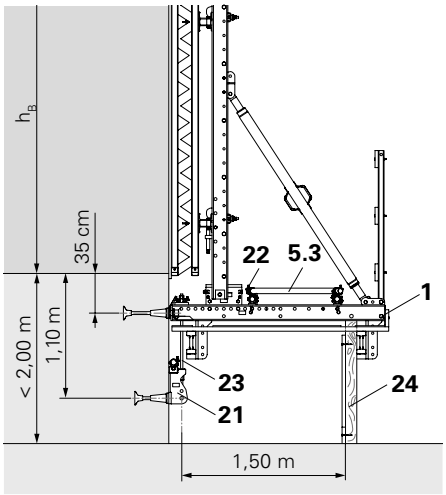


Fig. B3.05

For the Crossbeam Unit SCS 250, position the timber under the pressure point of the Carriage.

B3 Starter Heights

Starter height < 1.20 m
Crossbeam directly supported on the ground with timbers and tensioned downwards with horizontal SRU via vertically-positioned tie rods.
(Fig. B3.06)

Pos.	Components per Starter	Qty	Item no.
1	Crossbeam Unit SCS 190	2	118730
5.3	Scaffold tube - for bracing	3	026415
45	Counterplate DW 15	2	030140
20	Tie Rod DW 15 - vertical mounting	2	118714

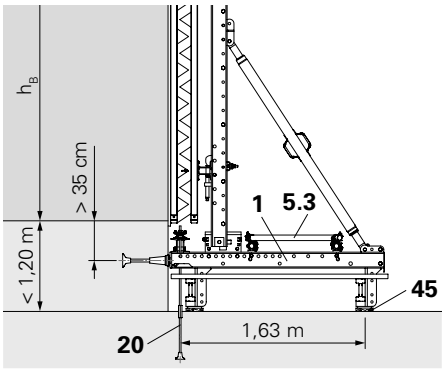


Fig. B3.06

With the Crossbeam Unit SCS 250, position the timber under the pressure point of the Carriage.

Starter height < 0.50 m

Risk of tipping!
Install Anchor Bolt (28) at the rear of the Starter Bar (19).

Standard case with Starter Bar (19) and scaffold tubes (22) anchored with diagonally-positioned tie rods (20).
(Fig. B3.07)

Pos.	Components per Starter	Qty	Item no.
5.3	Scaffold tube - for bracing	3	026415
19	Starter Bar SCS 187	2	118799
20	Tie Rod DW 15 - installed diagonally	2	–
28	Anchor Bolt PERI 14/20 x 130	2	124777

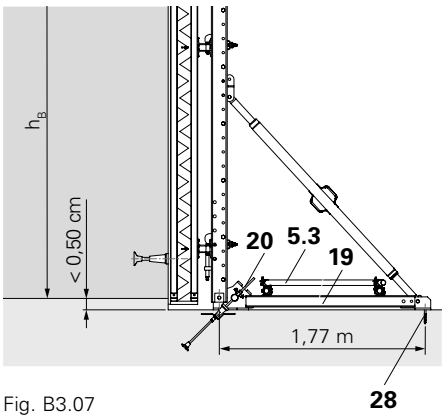


Fig. B3.07

B4.1 Inclinations - General

Basically, the permissible width of influence of the brackets with inclined Starters can be smaller when compared to the vertical application.

Risk of tipping!
Install Anchor Bolt (28) at the rear of the Starter Bar (19).

- Separate static calculation required.
- Concreting platform can be inclined in 2 steps of 15°.
- We recommend installing Tension Belts (12) for pretensioning. As a result, additional deformations caused by the play in the bolt connections is avoided.

Pos.	Components per Starter	Qty	Item no.
5	Strongback SCS 325	2	118584
12	Tension Belt	2	051250
19	Starter Bar SCS 187	2	118799
20	Tie Rod DW 15	2	–
28	Anchor Bolt PERI 14/20 x 130	2	124777

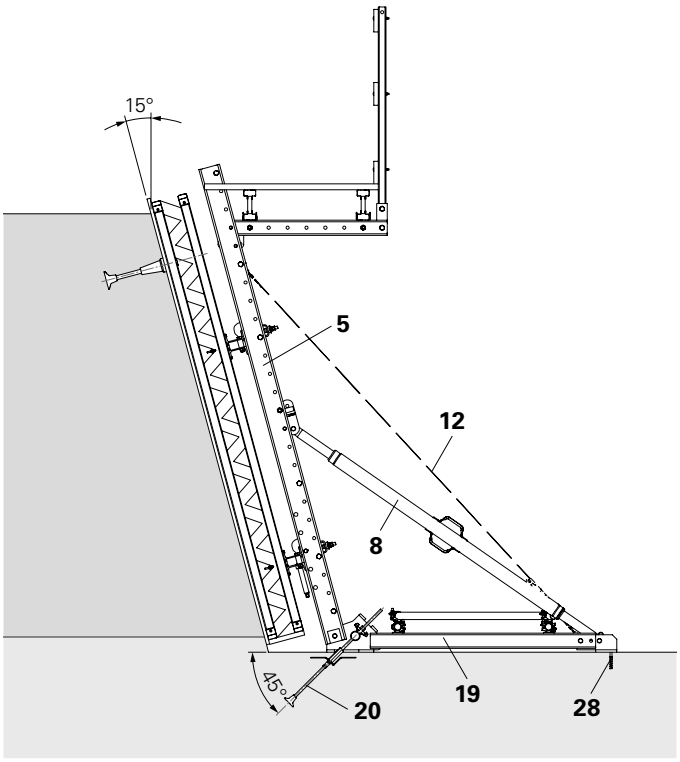


Fig. B4.01

B4.2 Forward inclinations of 15°

Pos.	Components - alternative	Qty	Item no.
8	Heavy Duty Spindle SCS 198-250	2	118585

Determine anchor position ≤ 45°.
(Fig. B4.01)

B4.3 Forward inclinations of 30°

Pos.	Components - alternative	Qty	Item no.
27	Heavy-Duty Spindle SLS 260-360	2	101779

Determine anchor position ≥ 45° ≤ 60°.
(Fig. B4.02)

- Re-determine the anchor spacing x_A for the anchorage of the Starter Brace Frame (20).
- When using standard formwork, the concreting height h_B must be reduced.

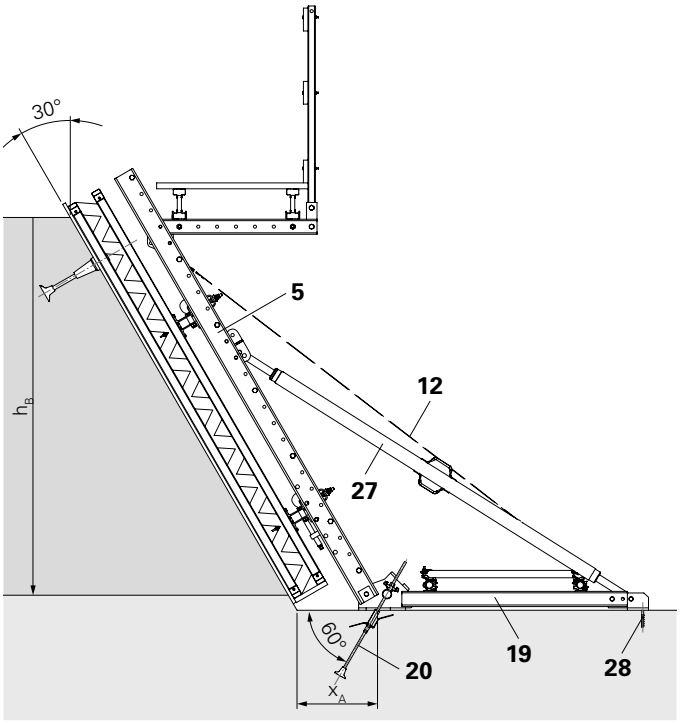


Fig. B4.02

B5.1 Inclinations – General

With inclined climbing units, the bracket´s permissible width of influence can basically be smaller when compared to the vertical climbing application due to the higher load.

Risk of tipping!
Do not remove the fitting pins from the adjusting unit or carriage.

- Separate static calculation required.
- Separate working platform, inclined to the horizontal with Platform Suspension DW 15 (18).
- Concreting platform can be inclined in 15° steps.
- We recommend installing Tension Belts (12) for pretensioning in order to avoid additional deformations resulting from the play in the bolt connections.

Pos.	Components per climbing unit	Qty	Item no.
12	Tension Belt	2	051250
15	Leading Anchor	2	118585
13	Finishing platform > standard	1	–
18	Platform suspension	2	see below

Pos.	Components per platform suspension	Qty	Item no.
	Tie Rod Special Length DW 15	1	030030
	Eye Nut RCS DW 15	1	115378
	Bolt ISO 4014 M30 x 80	1	024900
	Bolt ISO 4014 M30 x 120	1	104477
	Nut ISO 7042 M20	1	781053

B5.2 Rear inclinations of up to 30°

Anchor position (15) is predetermined through the assumed failure cone with an incline of 1:1.5 and an edge distance of 350 mm.

- Special lifting equipment is required for moving the climbing unit.
- The finishing platform should be wider in order to allow better access from the working platform to the finishing platform.
- Install Tension Belt (12) for increased system stability.

(Fig. B5.01 + B5.01a)

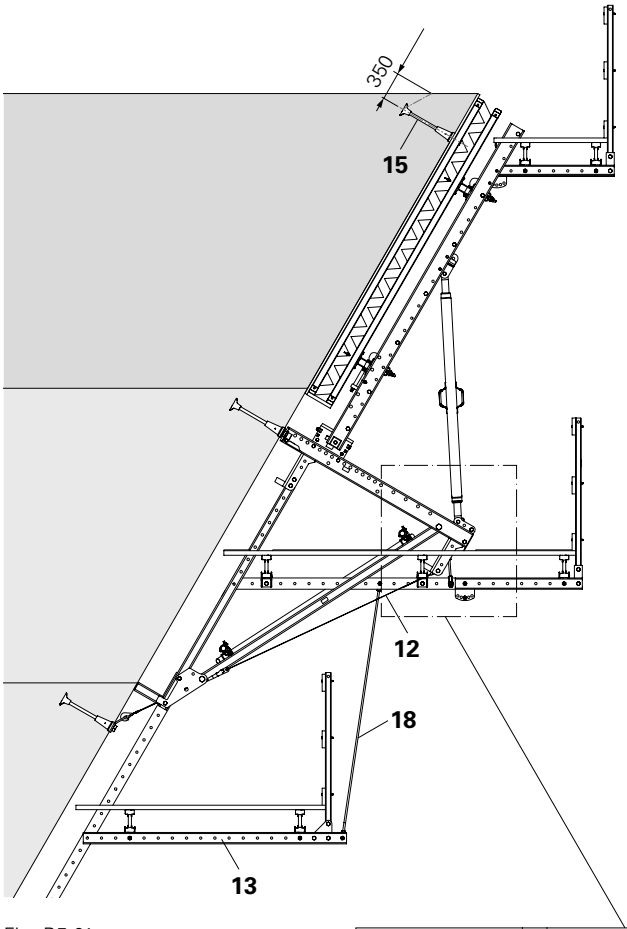


Fig. B5.01

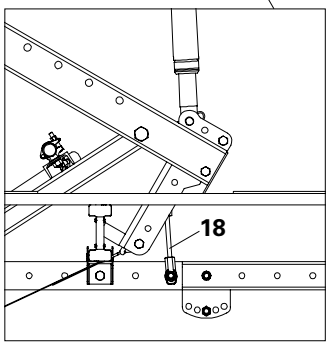


Fig. B5.01a

B5.3 Forward inclinations of up to 30°

– Special lifting equipment is required for moving the climbing unit, e.g. Lifting Beam.
– Install Tension Belt (12a) for increased system stability.
– Install Tension Belt (12b) between the Strongback (5) and Crossbeam and then tension so that the Heavy Duty Spindle (8) is free of play.

(Fig. B5.02 + Fig. B5.02a)

Pos.	Components per climbing unit	Qty	Item no.
17	Connection Plate SCS Ø 21–125	2	123664

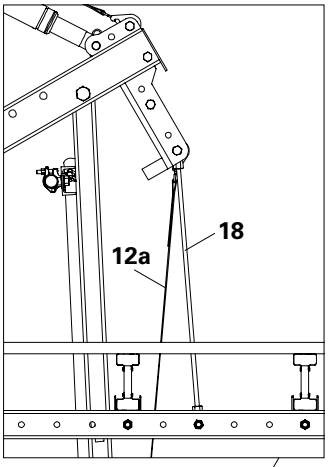


Fig. B5.02a

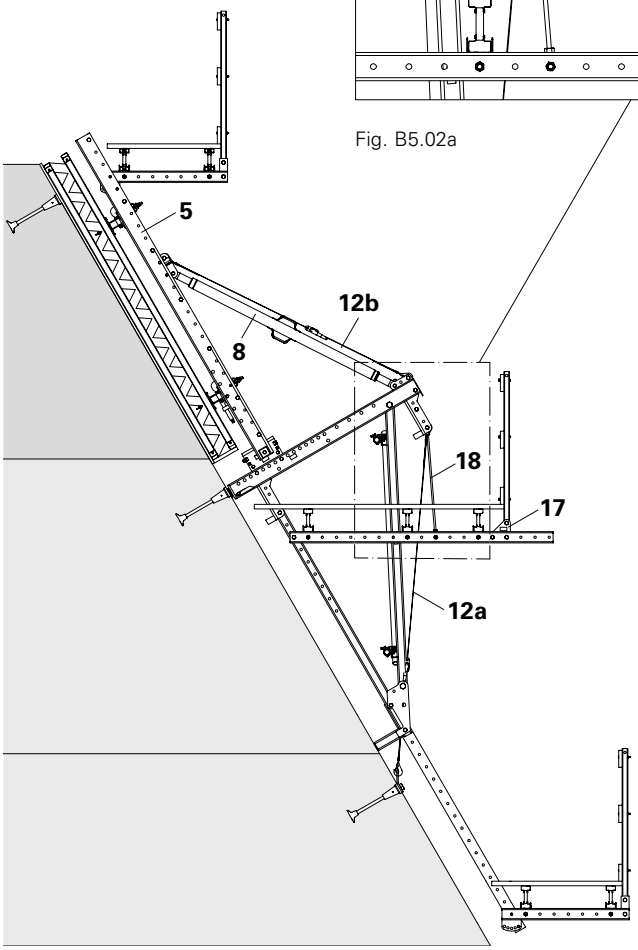


Fig. B5.02

B6.1 Inclinations - General

With inclined climbing units, the bracket´s permissible width of influence can basically be smaller when compared to the vertical climbing application due to the higher load.

- Separate static calculation required.
- Concreting platform can be inclined in 15° steps.

B6.2 Rear inclinations of up to 30°

Risk of tipping for SCS 190!
Do not remove the fitting pins from the adjusting unit.

Pos.	Components	Qty	Item no.
15	Leading Anchor	2	–

- Anchor position (15) is predetermined through the assumed failure cone with an incline of 1:1.5 and an edge distance of 350 mm.
- Special lifting equipment is required for moving the climbing unit.

(Fig. B6.01)

We recommend using the Crossbeam Unit SCS 250 with Carriage.
This means:
- safe access to the working platform is possible,
- the striking clearance is sufficient.

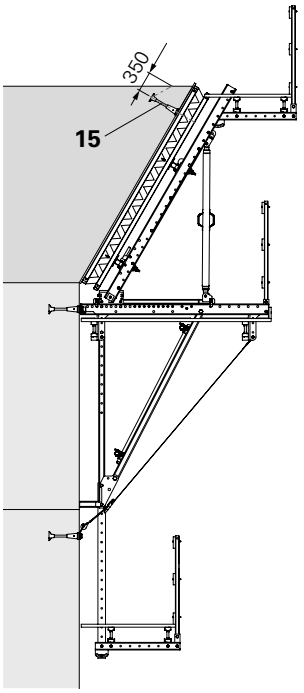


Fig. B6.01

B6.3 Changes in forward inclinations of up to 30°

Pos.	Components per climbing unit	Qty	Item no.
12	Tension Belt	2	051250
21	Bracing Shoe SCS M36/DW 20	2	123819
	Anchor M30: Bolt ISO 4017 M30 x 70	2	029420
	Anchor M36: Bolt ISO 4017 M36 x 70	(2)	029430
23	Bracing DW 20, consisting of:	2	–
	Tie Rod DW 20, Special Length	2	030030
	Hex. Nut DW 20 SW 36/60	2	030580
	Anchor Plate RCS DW 20	2	114082
	Wingnut DW 20	2	030990

- Special lifting equipment is required for moving the climbing unit, e.g. Lifting Beam.
- Install Tension Belt (12) for stabilising the system and additionally tension the Strongback (5) so that the Heavy Duty Spindle (8) is free of play.
- Anchor the vertical Tie Rod DW 20 (23) with Bracing Shoe SCS M36/DW 20 (21) for transferring the higher lift-off forces.

(Fig. B6.02)

We recommend using the Crossbeam Unit SCS 250 with Carriage in order to get enough pressure on the Heavy Duty Spindle.

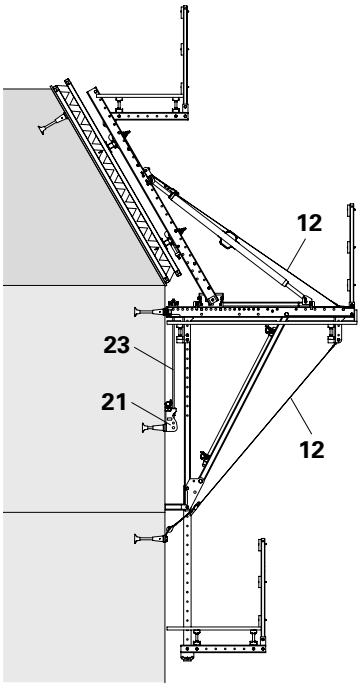


Fig. B6.02

B7 Corner Platforms

Secure access to the next platform on building corners by means of cantilevered platforms must be guaranteed. Ideally, the working platform in the corner is realised on a mitre which means
– it is safe, even when the formwork is retracted and
– the platform cantilever is reduced.

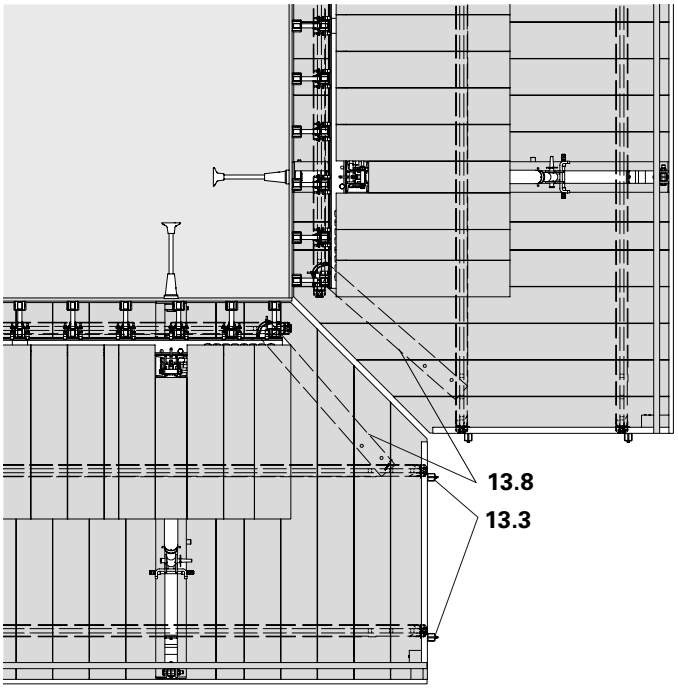


Abb. B7.01

Pos.	Additional components per corner platform	Qty	Item no.
13.1	Girders – Girder VT 20 – Lattice Girder GT 24 – Timber 80 x 160 m	2	according to length
13.3	End Guardrail Post CB	2	051610
13.6	Platform Beam Support RSC	2	116477

Risk of lift-off!
Secure girders or timber.
Wedge gaps between girders and crossbeams by means of timbers.

Assembly

1. Fix Platform Beam RCS (13.6) with Bolts M24 x 130 and Nuts M24 to the crossbeam.
   → Additional intermediate platform beams are to be supported.
   SCS 190: Fig. B7.02 + B7.02a
   SCS 250: Fig. B7.03 + B7.03a
2. In the mitre area of the free ends of the decking, screw on a timber piece (13.8) diagonally against the platform beam. (Fig. B7.01)
   → Decking is to be supported.
3. At the end of the platform, fix End Guardrail Posts (13.3) to the cantilevered platform beams or timbers. (Fig. B7.01)
4. Mount lateral guardrail protection, see A1.6.

SCS 190

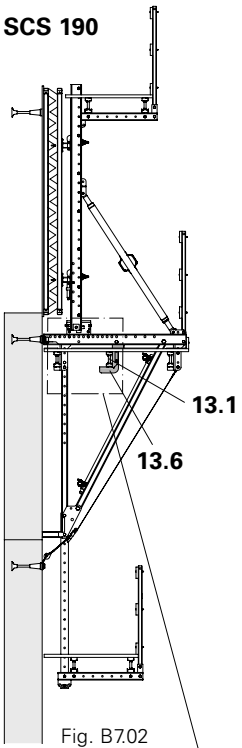


Fig. B7.02

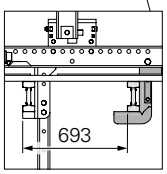


Fig. B7.02a

SCS 250

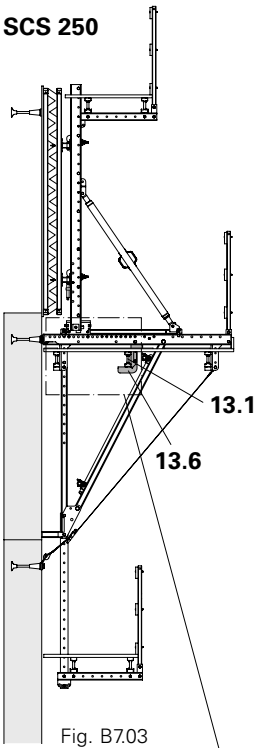


Fig. B7.03

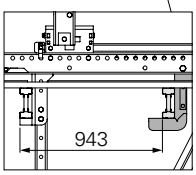


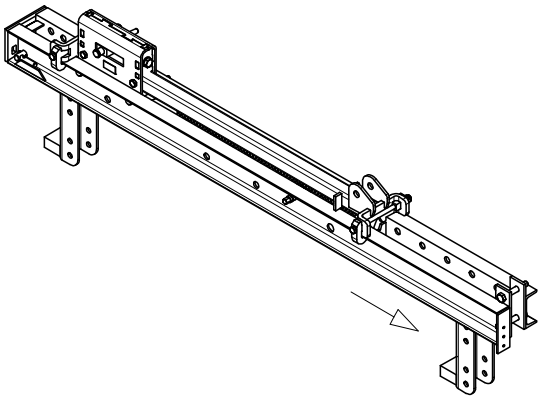
Fig. B7.03a

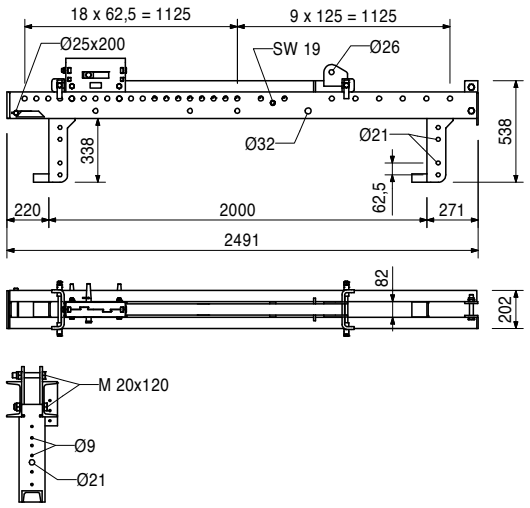
Art no.	Weight [kg]	
118737	140.000	**Crossbeam SCS 250**

Platform Beam for climbing brackets with Adjusting Unit SCS and Carriage SCS to work for retracting the formwork.

Notes

Wrench Size Carriage SW19, Adjusting Unit SW30.





Accessory (not included)

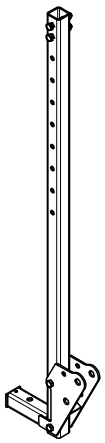
118710	Vertical Strut SCS 237
118714	Diagonal Strut SCS 257
118579	Guardrail Post SCS 150

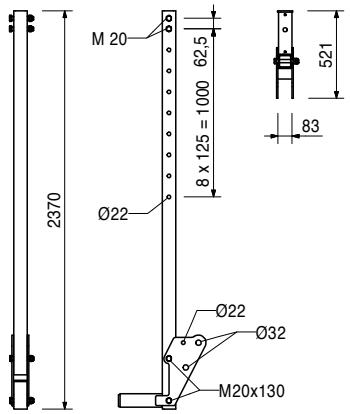
Included in delivery

118690 Carriage SCS 1 pc
118575 Adjusting Unit SCS 1 pc
104477 Screw ISO4014-M20x120-8.8-ga 2 pc
781053 Hex-Nut ISO7040-M20-8-ga 2 pc
123692 Lock Pin Ø25x200mm SCS coat 1 pc
022230 Cotter Pin 5/1 ga 1 pc

Art no.	Weight [kg]	
118710	45.800	**Vertical Strut SCS 237**

Vertical tension strut of the climbing bracket for support heights of 2.58 m and 2.40 m.



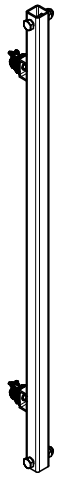


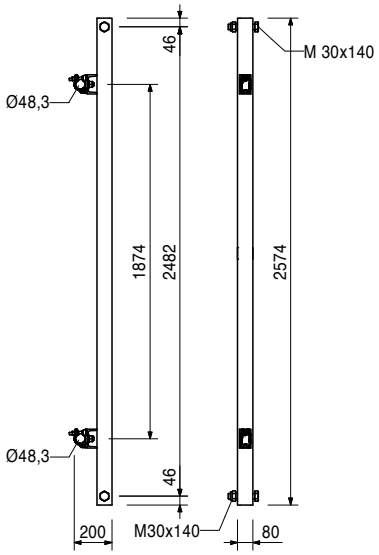
Included in delivery

711078 Screw ISO4014-M20x130-8.8-ga 4 pc
781053 Hex-Nut ISO7040-M20-8-ga 4 pc

Art no.	Weight [kg]	
118714	41.000	**Diagonal Strut SCS 257**

Diagonal compression strut of the climbing bracket.





Included in delivery

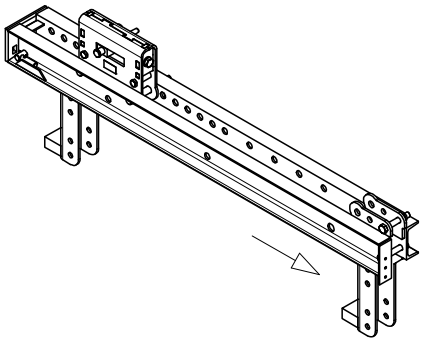
017040 Screw-On Coupler DK 48 ga 2 pc
125999 Screw M30x140mm-8.8 coat 2 pc
725119 Hex Nut ISO7040-M30-8-ga 2 pc

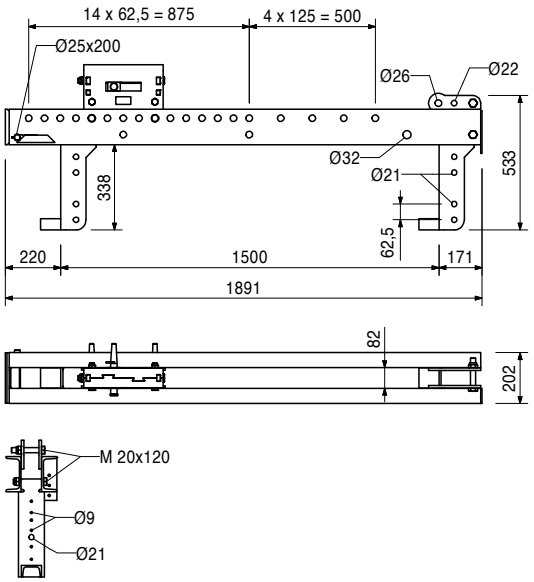
Art no.	Weight [kg]	
118730	96.700	**Crossbeam SCS 190**

Platform Beam for climbing brackets with Adjusting Unit SCS to prevent tipping of the formwork.

Notes

Wrench Size Adjusting Unit SW30.





Accessory (not included)

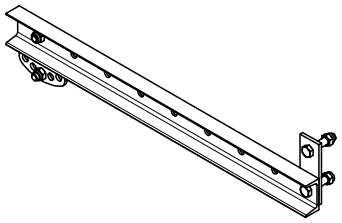
118710	Vertical Strut SCS 237
118714	Diagonal Strut SCS 257
118579	Guardrail Post SCS 150

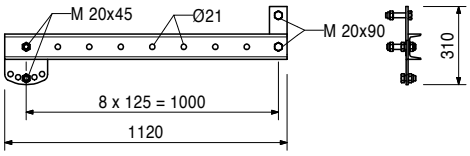
Included in delivery

118575 Adjusting Unit SCS 1 pc
104477 Screw ISO4014-M20x120-8.8-ga 2 pc
781053 Hex-Nut ISO7040-M20-8-ga 2 pc
123692 Lock Pin Ø25x200mm SCS coat 1 pc
022230 Cotter Pin 5/1 ga 1 pc

Art no.	Weight [kg]	
118583	15.100	**Platform Beam SCS 112**

Platform beam for the finishing and concreting platform for single-sided application. Inclination can be adjusted.





Accessory (not included)

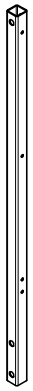
118579	Guardrail Post SCS 150

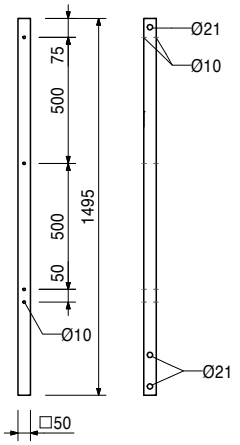
Included in delivery

113546 Screw ISO4017-M20x45-8.8-ga 2 pc
710226 Screw ISO4014-M20x90-8.8-ga 2 pc
781053 Hex-Nut ISO7040-M20-8-ga 4 pc

Art no.	Weight [kg]	
118579	6.280	**Guardrail Post SCS 150**

Guardrail post to connect handrail boards and toeboards.





Accessory (not included)

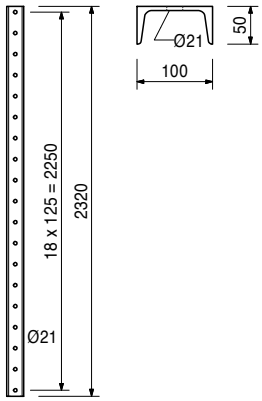
113762 Guardrail Conn. Plate ACS/SCS

051160 Handrail Connector CB

Art no.	Weight [kg]	
118578	23.900	**Platform Post SCS 232**

Rigidly suspension of the Finishing Platform SCS with Platform Beam SCS for single-sided application or use as Platform Beam for inclined working platforms.



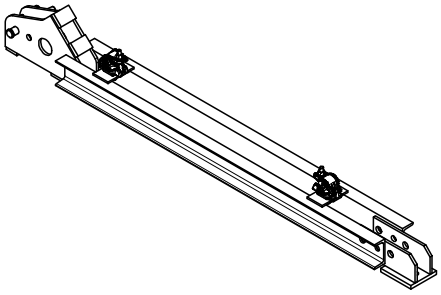


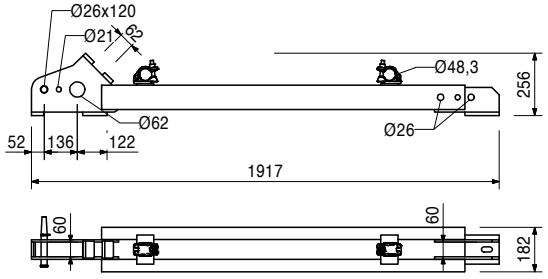
Accessory (not included)

123664 Connection Plate SCS Ø21-125mm

Art no.	Weight [kg]	
118799	51.700	**Starter Bar SCS**

Basic bar for the erection of a brace frame for the starter.





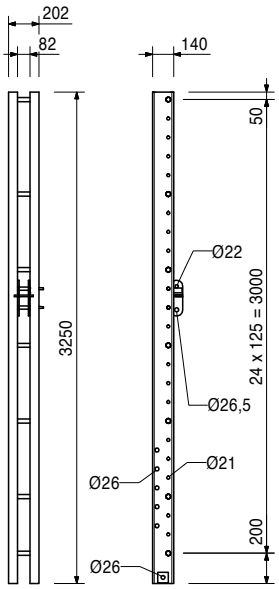
Included in delivery

017040 Screw-On Coupler DK 48 ga 2 pc
111567 Fitting Pin Ø26x120mm 1 pc
022230 Cotter Pin 5/1 ga 1 pc

Art no.	Weight [kg]	
118584	112.000	**Strongback SCS 325**

Strongback with Spindle Connector SCS to support the formwork.





Accessory (not included)

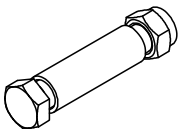
051030 Height Adjusting Unit CB/SCS
110059 Waler Fixation U100/U120

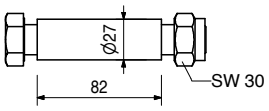
Included in delivery

118580 Spindle Connector SCS Ø26/21mm 1 pc

Art no.	Weight [kg]	
110022	0.491	**Spacer M20x82mm**

Spacer for Climbing Rails RCS.



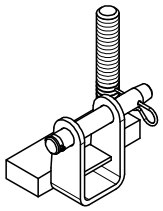


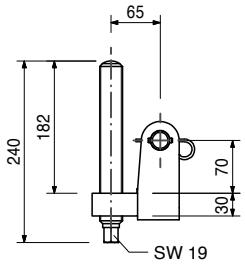
Included in delivery

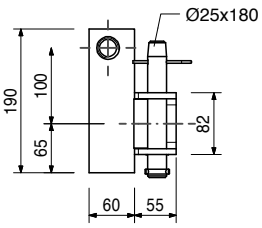
104477 Screw ISO4014-M20x120-8.8-ga 1 pc
130341 Hex-Nut ISO7042-M20-8-ga 1 pc

Art no.	Weight [kg]	
129689	6.960	**Height Adj. Unit-2 CB/SCS/RCS**

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





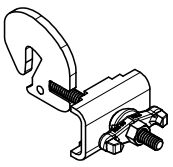


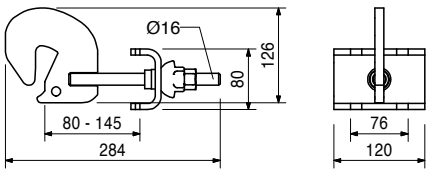
Included in delivery

715936 Pin with Clamping Sleeve 1 pc
018060 Cotter Pin 4/1 ga 1 pc

Art no.	Weight [kg]	
110059	2.840	**Waler Fixation U100/U120**

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



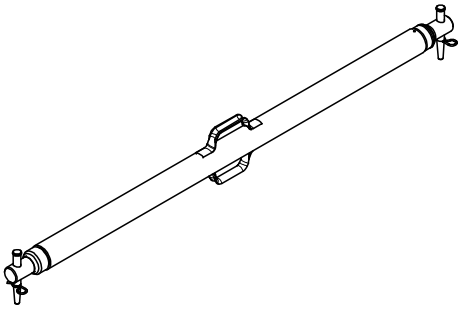


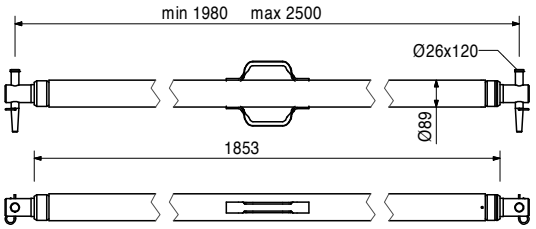
Included in delivery

110055 Cross Strap coat 1 pc
118260 Spherical Nut RD16 coat 1 pc

Art no.	Weight [kg]	
118585	46.300	**Heavy Duty Spindle SCS 198-250**

Adjustable diagonal strut to support the strongback.



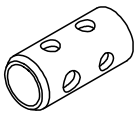


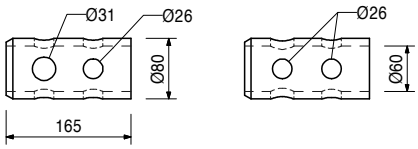
Included in delivery

111567 Fitting Pin Ø26x120mm 2 pc
022230 Cotter Pin 5/1 ga 2 pc

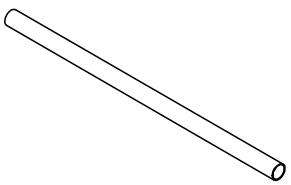
Art no.	Weight [kg]	
123828	2.430	**Spindle Adapter SCS Ø26/31**

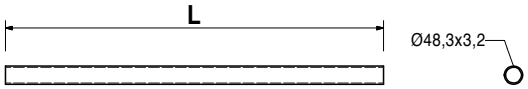
For connection of Heavy Duty Spindles SCS to Climbing Rails RCS, Crossbeam SCS or Bracing Shoe SCS M36/DW20.





Art no.	Weight [kg]		L [mm]
		Scaff. Tubes 48.3x3.2mm ga	
026415	3.550	**Scaff. Tube 48.3x3.2mm lfm ga**	1000
026411	3.550	**Scaff. Tube 48.3x3.2mm 1m ga**	1000
026412	7.100	**Scaff. Tube 48.3x3.2mm 2m ga**	2000
125976	8.900	**Scaff. Tube 48,3x3,2mm 2,5m ga**	2500
026413	10.650	**Scaff. Tube 48.3x3.2mm 3m ga**	3000
114287	12.500	**Scaff. Tube 48,3x3,2mm 3,5m ga**	3500
026414	14.200	**Scaff. Tube 48.3x3.2mm 4m ga**	4000
026419	17.750	**Scaff. Tube 48.3x3.2mm 5m ga**	5000
026418	21.600	**Scaff. Tube 48.3x3.2mm 6m ga**	6000
026417	0.000	**Cutting Costs Scaffold Tube**	1



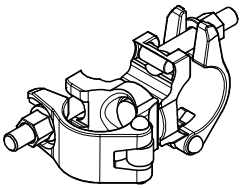


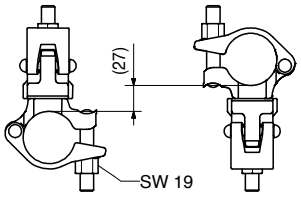
Art no.	Weight [kg]	
017010	1.400	**Swivel Coupler SW Ø48/48mm ga**

For Scaffold Tubes Ø 48 mm.

Notes

Coupling category: B.



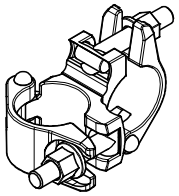


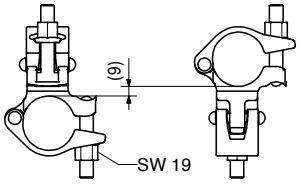
Art no.	Weight [kg]	
017020	1.120	**Standard Coupl. RA Ø48/48mm ga**

For Scaffold Tubes Ø 48 mm.

Notes

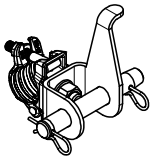
Coupling category: B.

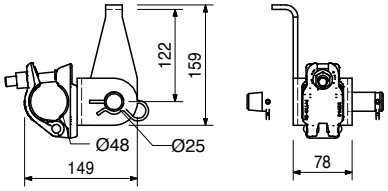




Art no.	Weight [kg]	
110084	2.510	**Scaff.Tube Holder RCS Ø48mm**

For connecting Scaffold Tubes Ø 48 mm to Climbing Rails RCS.



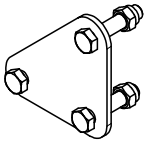


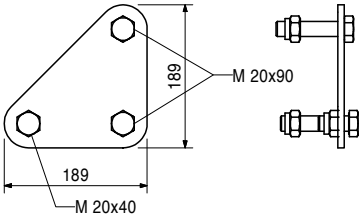
Included in delivery

017040 Screw-On Coupler DK 48 ga 1 pc
710894 Pin Ø25x180mm coat 1 pc
018060 Cotter Pin 4/1 ga 2 pc

Art no.	Weight [kg]	
123664	2.520	**Connection Plate SCS Ø21-125mm**

For connecting the Guardrail Post to the Platform Post when using as inclined Platform Beam.



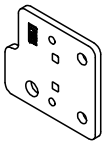


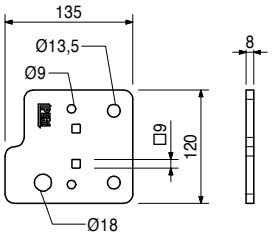
Included in delivery

706458 Screw ISO4017-M20x40-8.8-ga 1 pc
710226 Screw ISO4014-M20x90-8.8-ga 2 pc
781053 Hex-Nut ISO7040-M20-8-ga 3 pc

Art no.	Weight [kg]	
113762	0.884	**Guardrail Conn. Plate ACS/SCS**

For assembling Scaffold Tubes Ø 48 mm or Ø 60 mm as Guardrail by means of Bail Pin A64 on Guardrail Posts ACS, SCS and GT 24. Fixation by Hex. Bolt M8, M12, M16 or Wood Screw Ø 8 mm.





Accessory (not included)

110296 Clamp A64 DIN3570-M12-ga

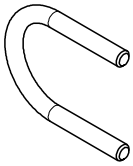
710330 Hex-Nut ISO4032-M12-8-ga

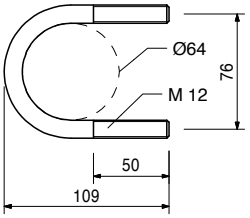
Art no.	Weight [kg]	
110296	0.220	**Clamp A64 DIN3570-M12-ga**

For assembling Scaffold Tubes on Guardrail Posts RCS.

Notes

Wrench size SW19.



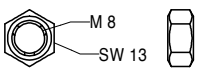


Accessory (not included)

710330 Hex-Nut ISO4032-M12-8-ga

Art no.	Weight [kg]	
710330	0.017	**Hex-Nut ISO4032-M12-8-ga**



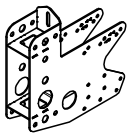


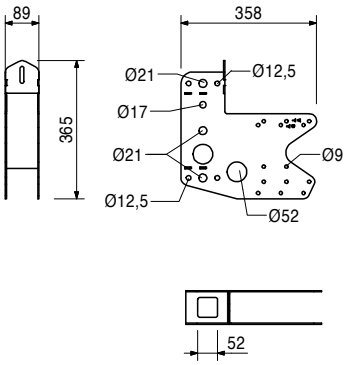
Art no.	Weight [kg]	
126088	4.390	**Guardrail Post Holder Multi**

For fixing of an end guardrail post on Girders GT 24, VT 20 or KH 80/160. Fixing of the guardrail posts by means of Screws M20.

Notes

Suitable for
Guardrail Post RCS 226 item no.: 109720
Guardrail Post RCS/SRU 184 item no.: 114328
Vertical scaffold tubes
Special post QR 50x50



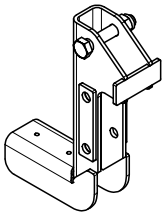


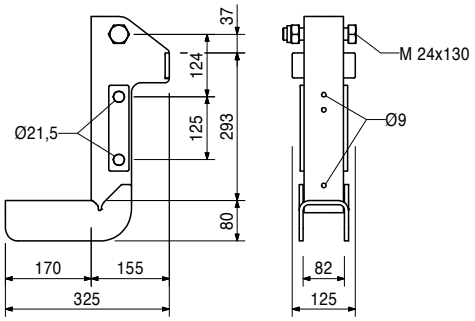
Accessory (not included)

710285	Screw ISO4014-M8x100-8.8-ga
024090	Self-cleaning Nut M8 coat
024470	Wood Screw 6x60 SK-TX30 HPI

Art no.	Weight [kg]	
116477	10.600	**Platform Beam Support RCS**

Support for additional Platform Beams 2 x GT 24 or VT 20 when used with Cross Beam RCS 220. With connector for Guardrail Post RCS.



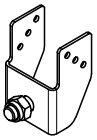


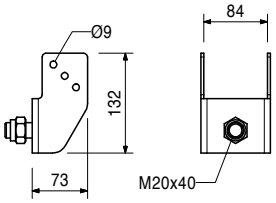
Included in delivery

109612 Screw ISO4014-M24x130-8.8-ga 1 pc
105032 Hex-Nut ISO7040-M24-8-ga 1 pc

Art no.	Weight [kg]	
110330	0.865	**Girder Connector M20**

For the fixation of 80 mm wide decking supports made of wood on Platform Beams with suitable boring of Ø 21 mm.





Accessory (not included)

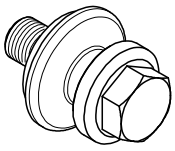
024470 Wood Screw 6x60 SK-TX30 HPI

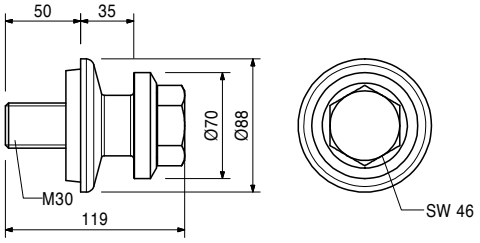
Included in delivery

706458 Screw ISO4017-M20x40-8.8-ga 1 pc
781053 Hex-Nut ISO7040-M20-8-ga 1 pc

Art no.	Weight [kg]	
118582	1.850	**Mounting Ring SCS M30**

For anchoring of the SCS Bracket at high vertical loads.





Accessory (not included)

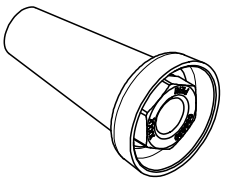
030920 Climbing Cone-2 M30 DW20

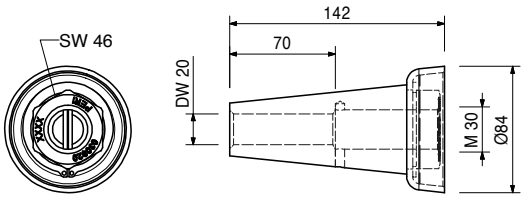
Art no.	Weight [kg]	
030920	1.650	**Climbing Cone-2 M30 DW20**

Anchor System M30. For anchoring climbing systems.

Notes

Separate Design Information on request.





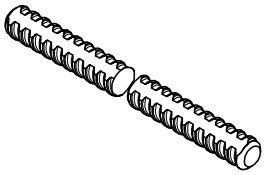
Accessory (not included)

030860 Threaded Anchor Plate DW20
030700 Tie Rod DW20 spec. Length
030745 Tie Rod B20 spec. Length

Art no.	Weight [kg]	
		Tie Rods DW20
030700	2.560	**Tie Rod DW20 spec. Length**
030800	0.000	**Cutting Costs DW20/B20**

Notes

Non-weldable! Observe Approval! Permissible tension force 150.0 kN.

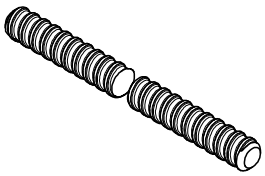




Art no.	Weight [kg]	
		Tie Rods B20
030745	2.600	**Tie Rod B20 spec. Length**
030800	0.000	**Cutting Costs DW20/B20**

Notes

Weldable! Take official Approval into consideration! Permissible tension force 150.0 kN.



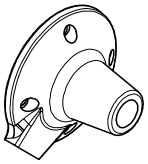


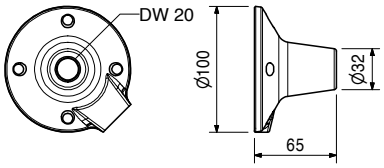
Art no.	Weight [kg]	
030860	0.792	**Threaded Anchor Plate DW20**

For use with Tie Rod DW20, B20 or Screw-On Cone-2 M24/DW20. For anchoring in concrete.

Notes

Lost anchor part.



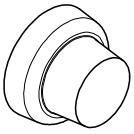


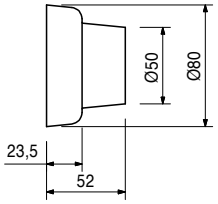
Art no.	Weight [kg]	
031653	0.364	**Concrete Cone KK M30 Ø80x52mm**

For closing anchor points with Climbing Cone-2 M30/DW20 or Screw Cone M30/DW26.

Notes

Delivery Unit 50 pieces.



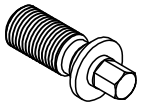


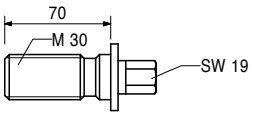
Accessory (not included)

131709 Sealing Adhesive-3 6-Cans-Set

Art no.	Weight [kg]	
029450	0.339	**Advancing Screw M30x70 ga**

For fixing the M30 Anchor System if the plywood formlining is drilled through.



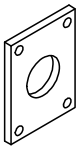


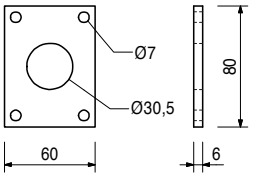
Accessory (not included)

029380 Anchor Posit. Plate M30 ga

Art no.	Weight [kg]	
029380	0.184	**Anchor Posit. Plate M30 ga**

For fixing the M30 Anchor System if the plywood formlining is drilled through.





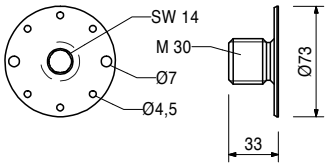
Accessory (not included)

029440 Hex-Wood Screw DIN571-6x20-ga

Art no.	Weight [kg]	
026450	0.214	**Anchor Posit. Stud M30 ga**

For fixing the M30 Anchor System if the plywood formlining is not drilled through.





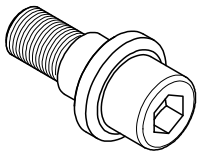
Accessory (not included)

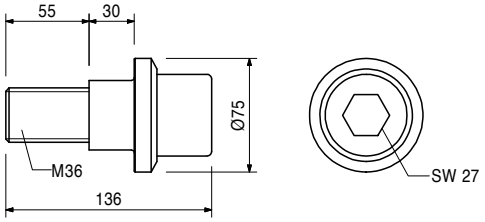
027212 Hexag. Recess Wrench SW14 long

710312 Wire Nail 3.0x80mm

Art no.	Weight [kg]	
118769	1.880	**Mounting Bolt SCS M36**

For anchoring of the SCS Bracket at high tension forces.



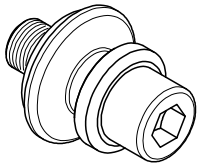


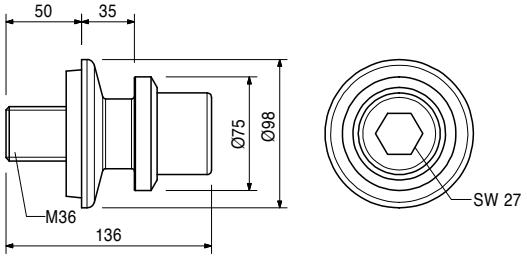
Accessory (not included)

030940 Climbing Cone-2 M36 DW26

Art no.	Weight [kg]	
118772	2.550	**Mounting Ring SCS M36**

For anchoring of the SCS Bracket at high tension forces and vertical loads.





Accessory (not included)

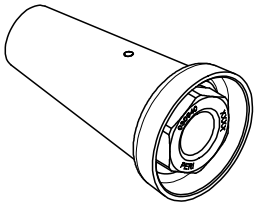
030940 Climbing Cone-2 M36 DW26

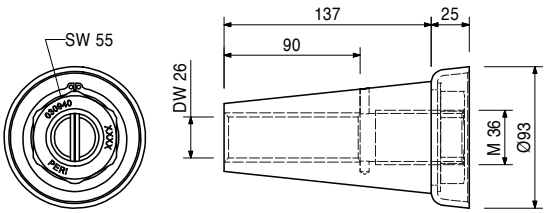
Art no.	Weight [kg]	
030940	2.980	**Climbing Cone-2 M36 DW26**

Tie System M36. For anchoring of climbing systems.

Notes

Separate Design Information on request.





Accessory (not included)

030870 Threaded Anchor Plate DW26

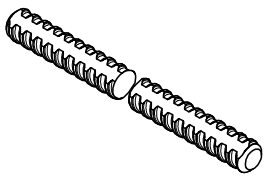
030340 Tie Rod DW26 spec. Length

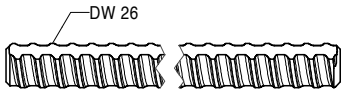
029430 Screw ISO4017-M36x70-8.8-ga

Art no.	Weight [kg]	
		Tie Rods DW26
030340	4.480	**Tie Rod DW26 spec. Length**
030500	0.000	**Cutting Costs DW26**

Notes

Non-weldable! Take official approval into consideration! Permissible tension force 250.0 kN.



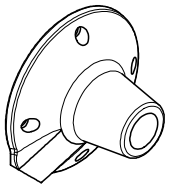


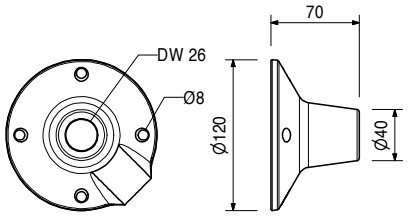
Art no.	Weight [kg]	
030870	1.260	**Threaded Anchor Plate DW26**

For use with Tie Rod DW26 or Screw-On Cone M36/DW26. For anchoring in concrete.

Notes

Lost anchor part.



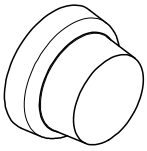


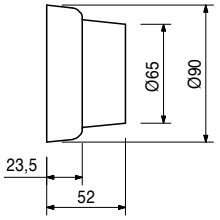
Art no.	Weight [kg]	
031654	0.512	**Concrete Cone KK M36 Ø90x52mm**

For closing anchor points with Climbing Cone-2 M36/DW26.

Notes

Delivery unit 50 pieces.





Accessory (not included)

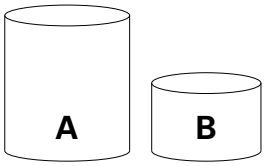
131709 Sealing Adhesive-3 6-Cans-Set

Art no.	Weight [kg]	
131709	9.980	**Sealing Adhesive-3 6-Cans-Set**

For bonding PERI Concrete Cones.

Notes

See Safety Data sheet!
Consisting of: 6 x Component A, 6 x Component B
Component A = Net quantity / Can 459 ml / 752 g
Component B = Net quantity / Can 356 ml / 583 g

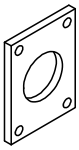


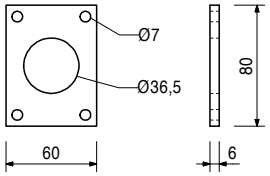
Included in delivery

131710 Sealing Adhesive-3 Can CO-A 6 pc
131711 Sealing Adhesive-3 Can CO-B 6 pc

Art no.	Weight [kg]	
029390	0.170	**Anchor Posit. Plate M36 ga**

For fixing the M36 anchor system if the plywood formlining is drilled through.



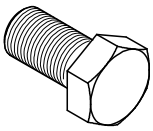


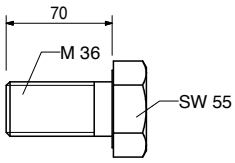
Accessory (not included)

029440 Hex-Wood Screw DIN571-6x20-ga

Art no.	Weight [kg]		L [mm]
029430	0.930	**Screw ISO4017-M36x70-8.8-ga**	70

Bolt for anchoring of climbing systems and as advancing bolt.

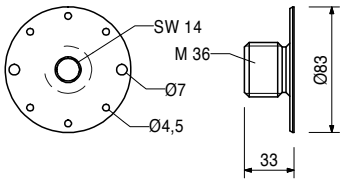




Art no.	Weight [kg]	
026460	0.308	**Anchor Posit. Stud M36 ga**

For fixing the M36 anchor system if the plywood formlining is not drilled through.





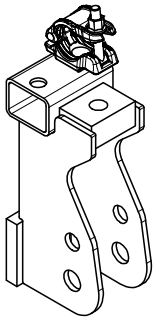
Accessory (not included)

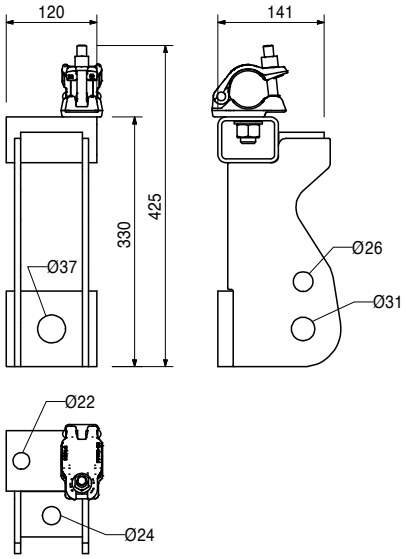
027212 Hexag. Recess Wrench SW14 long

710312 Wire Nail 3.0x80mm

Art no.	Weight [kg]	
123819	9.610	**Bracing Shoe SCS DW20 M36**

Used as compression point at starter sections with optional connections to Scaffold Tube Bracing Ø 48 mm, Vertical Tie Rod DW20 Suspension, Climbing Anchor M36, Diagonal Strut SCS or Heavy Duty Spindle SCS.





Accessory (not included)

029420 Screw ISO4017-M30x70-8.8-ga

029430 Screw ISO4017-M36x70-8.8-ga

Included in delivery

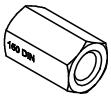
017040 Screw-On Coupler DK 48 ga 1 pc

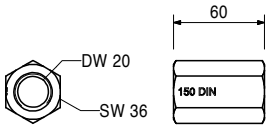
Art no.	Weight [kg]	
030580	0.371	**Hex-Nut DW20 SW36 60mm weldab**

For anchoring with Tie Rod DW20 or B20.

Notes

Weldable! Permissible load 150.0 kN.

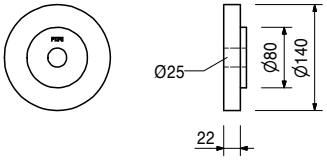




Art no.	Weight [kg]	
114082	2.860	**Counterplate RCS DW20**

Counterplate with centring for anchoring through the Climbing Rail RCS.





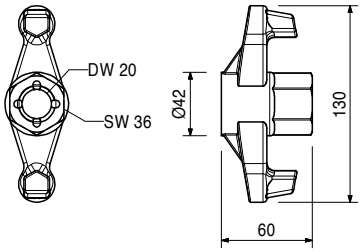
Art no.	Weight [kg]	
030990	0.786	**Wingnut DW20 ga**

For anchoring with Tie Rod DW20 or B20.

Notes

Permissible load 150.0 kN.



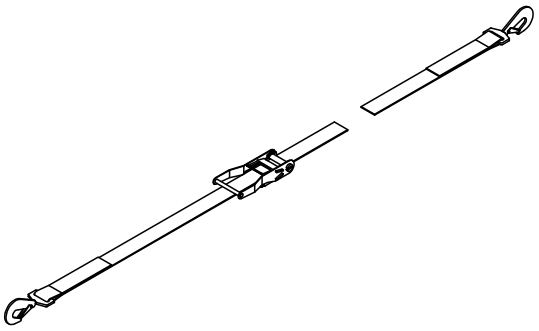


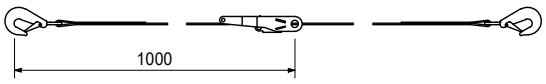
Art no.	Weight [kg]	
051250	2.790	**Tension Belt 570/25kN**

For preventing climbing systems tipping over due to the wind.

Notes

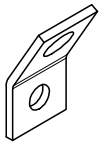
Follow relevant Instructions for Assembly and Use for the system.
Permissible tensile force 2.5 t.

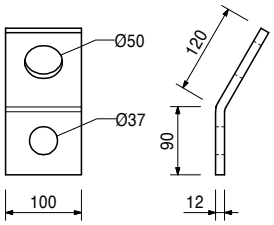




Art no.	Weight [kg]	
110469	1.660	**Belt Connector Wall M36**

To connect Tension Belt to the previous anchor M30 or M36.

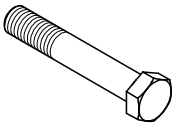


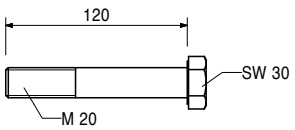


Accessory (not included)

029420 Screw ISO4017-M30x70-8.8-ga

Art no.	Weight [kg]		L [mm]
104477	0.300	**Screw ISO4014-M20x120-8.8-ga**	120

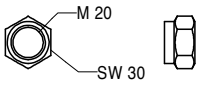




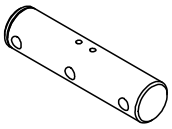
Art no.	Weight [kg]	
781053	0.065	**Hex-Nut ISO7040-M20-8-ga**

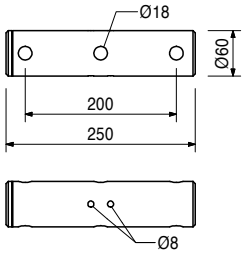
Self-locking.





Art no.	Weight [kg]	
131352	5.130	**Tie Yoke Ø60x250xØ18mm**





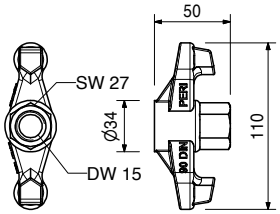
Art no.	Weight [kg]	
030100	0.439	**Wingnut DW15 ga**

For anchoring with Tie Rod DW15 or B15.

Notes

Permissible load 90.0 kN.



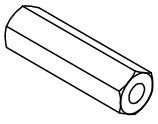


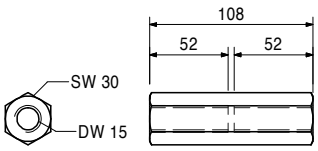
Art no.	Weight [kg]	
030090	0.402	**Hex-Nut DW15 SW30 108mm ga**

For coupling Tie Rod DW15 or B15.

Notes

Permissible load 90.0 kN.



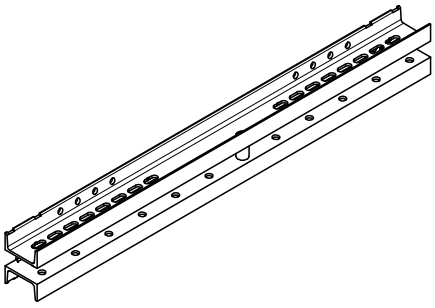


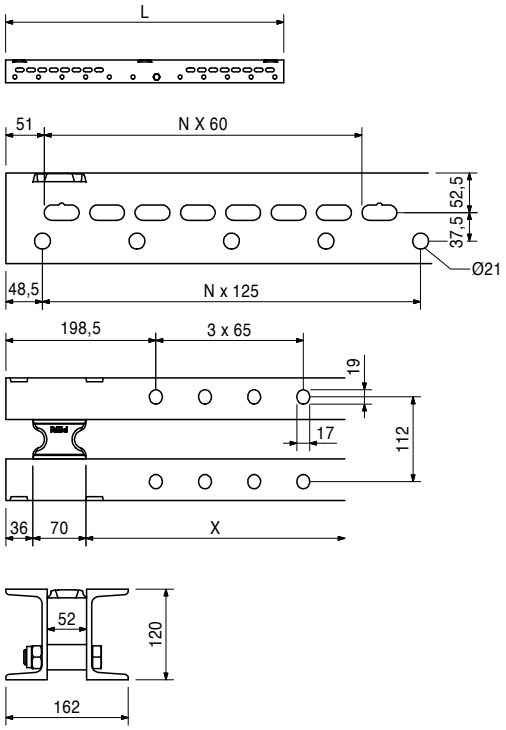
Art no.	Weight [kg]		L [mm]
		Steel Walers SRU U120	
103874	30.900	**Steel Waler SRU 122 U120**	1222
103877	38.100	**Steel Waler SRU 147 U120**	1472
103886	44.700	**Steel Waler SRU 172 U120**	1722
103889	52.000	**Steel Waler SRU 197 U120**	1972
103898	58.600	**Steel Waler SRU 222 U120**	2222
103892	65.600	**Steel Waler SRU 247 U120**	2472
103929	72.000	**Steel Waler SRU 272 U120**	2722
103903	81.000	**Steel Waler SRU 297 U120**	2972

Universal steel waler profiles with profile U120 used as waling for girder wall formwork and for diverse special applications.
With adjustable spacers.

Notes

Steel grade according to DIN EN 10025 or 10027: S235JR
SRU 120 Wy = 121.4 cm³, Iy = 728 cm⁴.
SRU 140 Wy = 172,8 cm³, Iy = 1210 cm⁴.



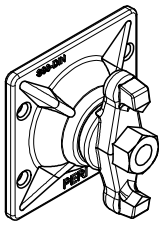


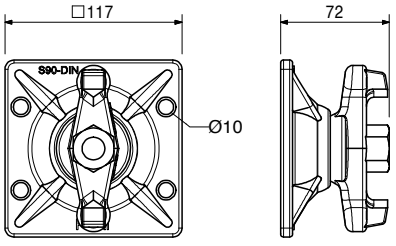
Art no.	Weight [kg]	
030370	1.660	**Wingnut Pivot Plate DW15 ga**

For anchoring with Tie Rod DW15 or B15.
With articulated, captive nut. Maximum inclination of anchor: +/- 8°.

Notes

Wrench size SW27.
Permissible load 90,0 kN.

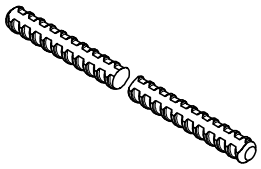


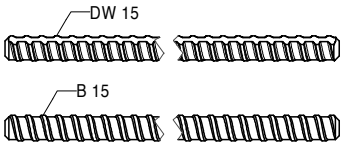


Art no.	Weight [kg]	
		Tie Rods DW15
030030	1.440	**Tie Rod DW15 spec. Length**
030005	0.720	**Tie Rod DW15 0.5m**
030050	0.000	**Cutting Cost DW15/B15**

Notes

Non-weldable! Observe Approval! Permissible tension force 90,0 kN.



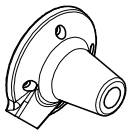


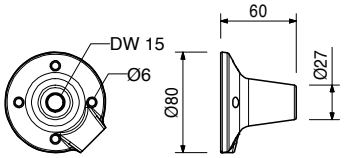
Art no.	Weight [kg]	
030840	0.515	**Threaded Anchor Plate DW15**

For use with Tie Rod DW15 or B15. For anchoring in concrete.

Notes

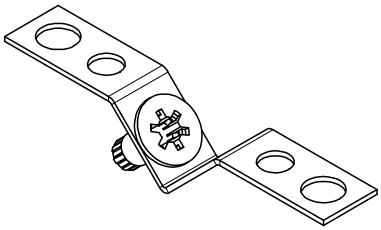
Lost anchor part.

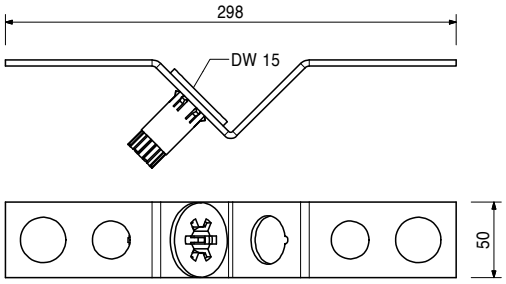




Art no.	Weight [kg]	
031580	0.440	**V-Tie Holder DW15**

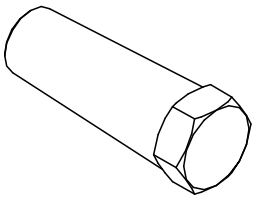
For easy installation of DW15 Tie Rods at 45° inclinations.

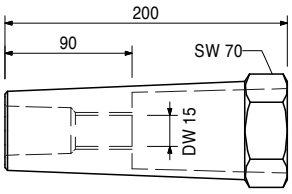




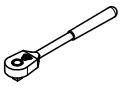
Art no.	Weight [kg]	
031631	0.345	**Lead. Anchor Coupler DW15 cpl**

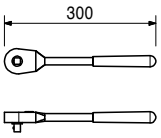
For easy installation of DW15 Tie Rods at 45° inclinations.



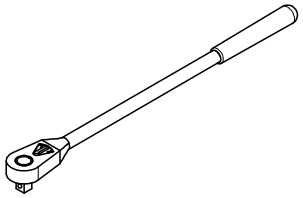


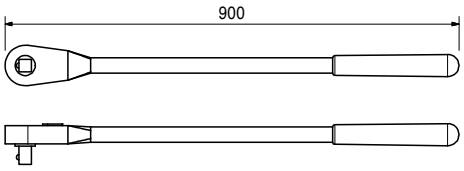
Art no.	Weight [kg]		L [mm]
072180	0.560	**Ratchet Wrench 1/2 „**	300





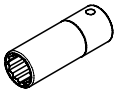
Art no.	Weight [kg]		L [mm]
029610	5.300	**Ratchet Wrench 1“**	900

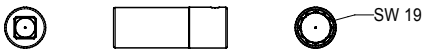




Art no.	Weight [kg]	
123751	0.216	**Socket SW19 1/2“**

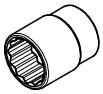
Fits to Hex. Bolts M12. To operate the Carriage SCS with Drive Shaft SW19.





Art no.	Weight [kg]	
104823	0.175	**Socket SW30 1/2“**

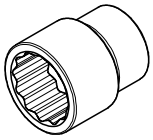
Fits to Hex. Bolts M20.
To operate the Adjusting Unit SCS.

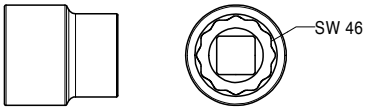




Art no.	Weight [kg]	
029630	0.580	**Socket SW46 1“**

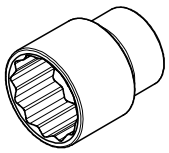
Fits to Hex.Screws M12 or Height Adjusting Unit SW46.

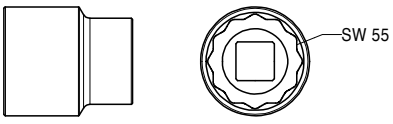




Art no.	Weight [kg]	
029640	1.000	**Socket SW55 1“**

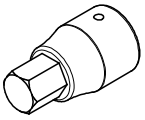
Fits to DW26 and Hex. Bolts M36.

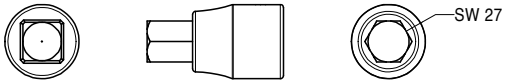




Art no.	Weight [kg]	
123750	0.776	**Hexagon. Socket SW27 1“**

Fits to Screw ISO4762-M36.

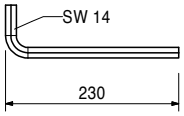




Art no.	Weight [kg]	
027212	0.445	**Hexag. Recess Wrench SW14 long**

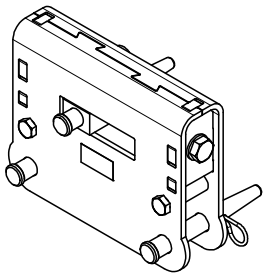
Fits PERI Positioning Discs and Allen Key Bolts M16.

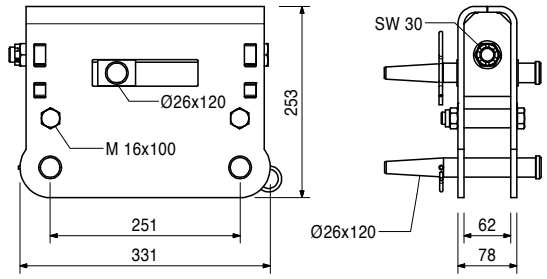




Art no.	Weight [kg]	
118575	16.800	**Adjusting Unit SCS**

Spare part for Crossbeam Unit SCS.



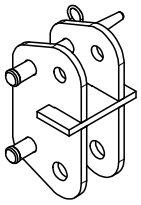


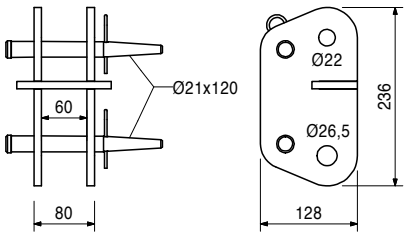
Included in delivery

710219 Screw ISO4014-M16x100-8-8-ga 2 pc
070890 Hex-Nut ISO7040-M16-8-ga 2 pc
111567 Fitting Pin Ø26x120mm 3 pc
022230 Cotter Pin 5/1 ga 3 pc

Art no.	Weight [kg]	
118580	5.500	**Spindle Connector SCS Ø26/21mm**

Spare part for Strongback SCS.



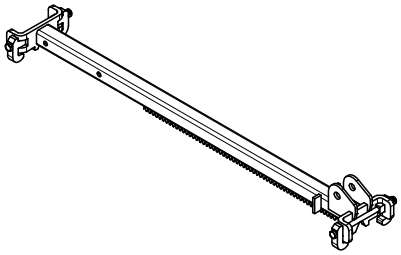


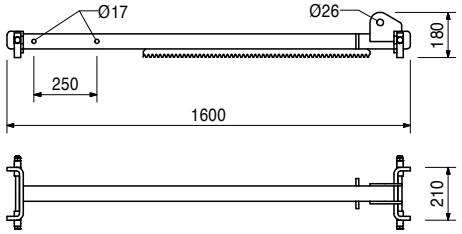
Included in delivery

104031 Fitting Pin Ø21x120mm 2 pc
018060 Cotter Pin 4/1 ga 2 pc

Art no.	Weight [kg]	
118690	23.500	**Carriage SCS**

Spare part for Crossbeam Unit SCS 250.



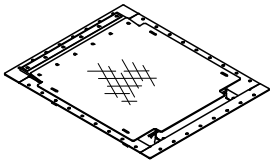


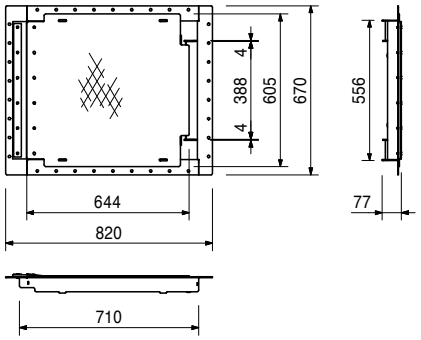
Included in delivery

103740 Screw ISO4016-M16x280-4.6ga-Nu 2 pc
070890 Hex-Nut ISO7040-M16-8-ga 2 pc

Art no.	Weight [kg]	
126431	12.300	**Hatch-2 RCS 55x60 foldable**

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





Accessory (not included)

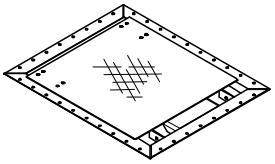
024540	Wood Screw 6x40 SK-TX30 HPI
710224	Screw ISO4017-M12x40-8.8-ga
710381	Hex-Nut ISO7040-M12-8-ga

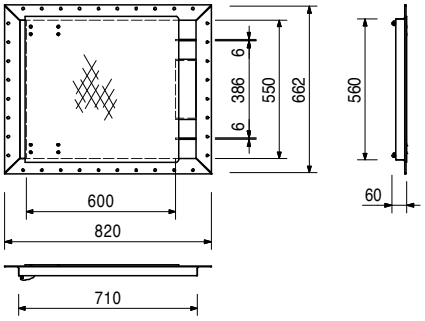
Included in delivery

126785 Hatch Hinge RCS 1 pc
108647 Rivet ISO15979-5.0x20-ST/ST 12 pc
022230 Cotter Pin 5/1 ga 2 pc

Art no.	Weight [kg]	
110608	15.600	**Hatch 55x60 foldable**

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





Accessory (not included)

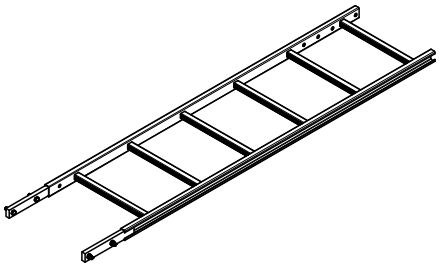
710224 Screw ISO4017-M12x40-8.8-ga
710381 Hex-Nut ISO7040-M12-8-ga

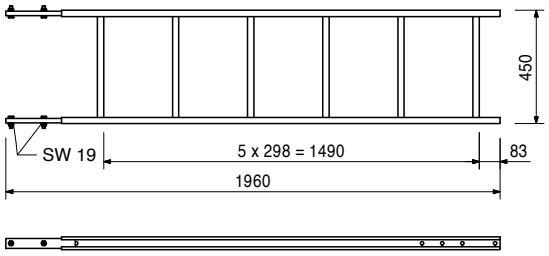
Included in delivery

110529 Hatch Artic. Plate le coat 1 pc
110535 Hatch Artic. Plate ri coat 1 pc
721412 Rivet ISO15979-4.8x12-ST/ST 8 pc

Art no.	Weight [kg]	
051410	11.700	**Ladder 180/6**

For accessing PERI Formwork Systems.



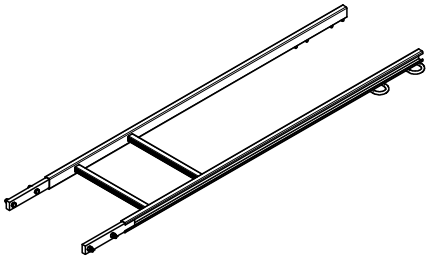


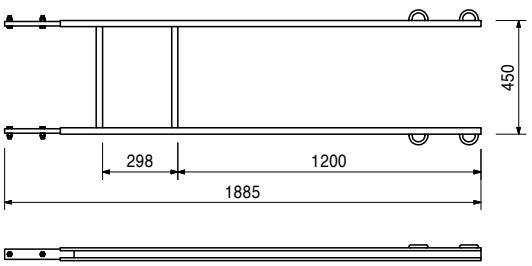
Included in delivery

710224 Screw ISO4017-M12x40-8.8-ga 4 pc
710381 Hex-Nut ISO7040-M12-8-ga 4 pc

Art no.	Weight [kg]	
103724	10.400	**End Ladder 180/2 cpl**

As access for PERI Formwork Systems.



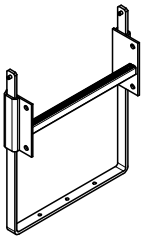


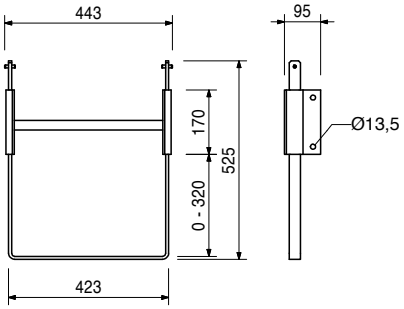
Included in delivery

710224 Screw ISO4017-M12x40-8.8-ga 4 pc
710381 Hex-Nut ISO7040-M12-8-ga 4 pc

Art no.	Weight [kg]	
109105	5.070	**Ladder Base 30 ga**

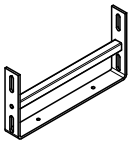
For horizontal fixing of ladders on the platform decking.

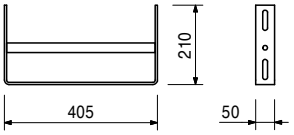




Art no.	Weight [kg]	
051460	2.180	**Ladder Base ga**

As bottom ladder connection and for securing ladders against sliding on the scaffold decks.

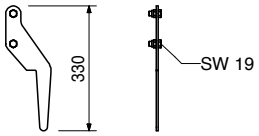




Art no.	Weight [kg]	
103718	0.684	**Ladder Hook**

For adjusting the bottom ladder. Always use in pairs.



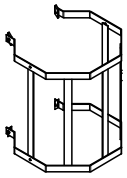


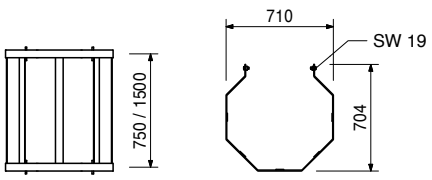
Included in delivery

710266 Screw ISO4017-M12x25-8.8-ga 2 pc
710381 Hex-Nut ISO7040-M12-8-ga 2 pc

Art no.	Weight [kg]	
		Ladder Safety Cages
104132	15.600	**Ladder Safety Cage 75**
051450	25.200	**Ladder Safety Cage 150**

Ladder cage for PERI Ladder Access.



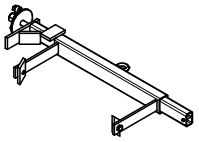


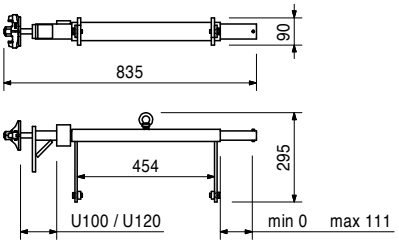
Included in delivery

710266 Screw ISO4017-M12x25-8.8-ga 4 pc
701763 Clamping Plate FL 25x10x90mm 4 pc

Art no.	Weight [kg]	
111165	8.100	**Ladder Connector VARIO adj.**

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





Included in delivery

710266 Screw ISO4017-M12x25-8.8-ga 2 pc
701763 Clamping Plate FL 25x10x90mm 2 pc

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