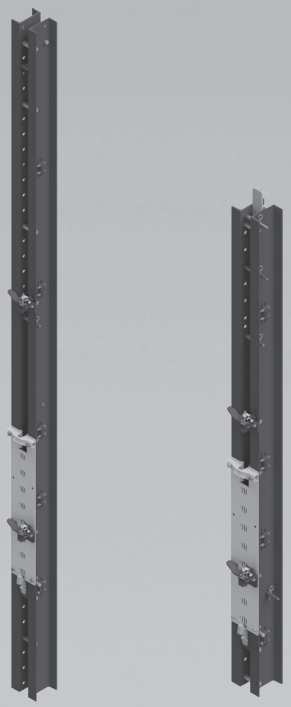
RCS MAX Driving Rail and Hydraulics

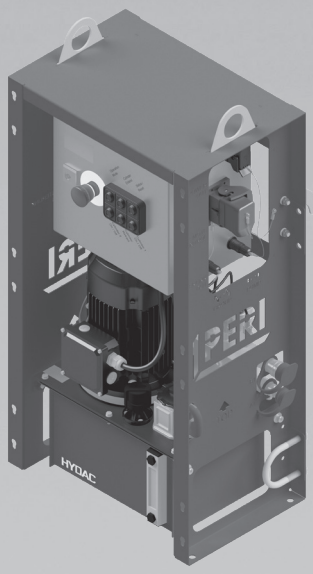
Assembly, Commissioning and Maintenance
Spare Parts and Circuit Diagrams

Assembly Instructions – Version 2.0

Climbing Cylinder RCS MAX 75
Article no. 136107



Driving Rail RCS C MAX
Article no. 136110
Driving Rail RCS CL MAX
Article no. 136111



Hydraulic Unit RCS MAX
2x 210 bar, 380-460 V
Article no. 135500

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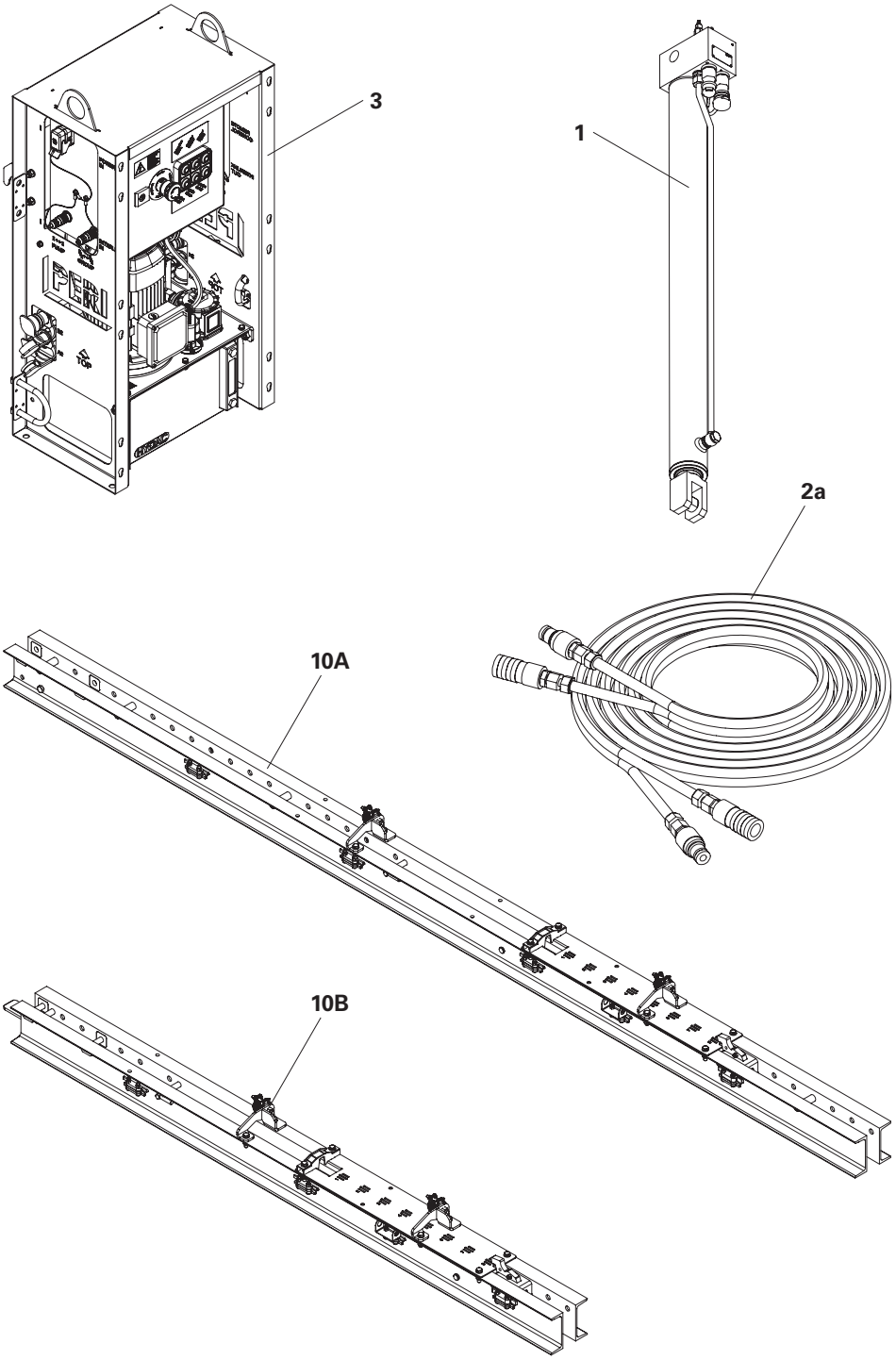
Main components



1 Climbing Cylinder RCS MAX 75
2a Hydraulic Twin Hose RCS 10 m
3 Hydraulic Unit RCS MAX 2x 210 bar, 380-460 V
10A Driving Rail RCS C MAX
10B Driving Rail RCS CL MAX

Key

Pictogram | Definition


Danger/Warning/Caution


Note


To be complied with


Load-bearing point


Visual inspection


Tip


Incorrect use


Safety helmet


Safety shoes


Safety gloves


Safety goggles


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


Observe additional documentation

Arrows

Arrow representing an action

Arrow representing a reaction of an action*

Arrow representing forces

* If not identical to the action arrow.

Safety instruction categories
The safety instructions alert site personnel to the risks involved and provide information on how to avoid these risks. Safety instructions can be found at the beginning of the section or before instructions for action and are highlighted as follows:


Danger
This sign indicates an extremely hazardous situation that could result in death or serious, irreversible injury if the safety instructions are not followed.


Warning
This sign indicates a hazardous situation that could result in death or serious irreversible injury if the safety instructions are not followed.


Caution
This sign indicates a hazardous situation that could result in minor or moderate injury if the safety instructions are not followed.


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

Format of the safety instructions


Signal word
Type and source of hazard!
Consequences of non-compliance.
⇒ Preventative measures.

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

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

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

To facilitate understanding, illustrations are sometimes incomplete. The safety equipment that is not shown in these detailed descriptions must nevertheless be available.

Terminology
Components are not always named in full so that they are easier to read.
All components deemed valid according to the program overview may be used. Exceptions are specified.

Target groups

Contractors
These Assembly Instructions are intended for contractors who
- assemble, modify and dismantle PERI Systems, or
- use them, e.g. for concreting, or
- allow them to be used for other operations, e.g. carpentry or electrical work.

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

Competent person
- is appointed by the contractor,
- must be on site for all system operations,
- prepares and updates the plan for assembly, modification and dismantling,
- prepares and updates the plan for use of the system by the user,
- supervises the assembly, modification and dismantling work (supervisor).

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

Competent personnel
PERI is responsible for training the operating personnel. With their signature on the handover certificate, the operator confirms that they are able to correctly operate the hydraulic system and the Driving Rail RCS MAX. See "Participation Protocol and Handover Certificate" on page 79.

Qualified personnel
PERI systems may only be assembled, modified or dismantled by personnel who are suitably qualified to do so. Qualified personnel must have completed a course of training** in the work to be performed, covering the following points at least:
- Explanation of the plan for the assembly, modification or dismantling of the system in an understandable form and language.
- Description of the measures for safely assembling, modifying or dismantling the system.
- Naming of the preventive measures to be taken to avoid the risk of persons and objects falling.
- Designation of the safety precautions in the event of changing weather conditions that could adversely affect the safety of the system, as well as the personnel concerned.
- Details regarding permissible loads.
- Description of all other risks and dangers associated with assembly, modification or dismantling operations.

- **Ensure that the respective current version of relevant national guidelines and regulations are complied with!**
- **If no country-specific regulations are available, PERI recommends that you proceed according to German guidelines and regulations.**
- **A competent person must be on site when any work is carried out on the climbing system, as well as during the climbing procedure.**

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

** Instructions are given by the contractor themselves or a competent person selected by them.

Regular assembly

General information
The climbing mechanism for the RCS MAX Rail Climbing System consists of:
- Climbing Cylinder RCS MAX 75,
- Driving Rail RCS C MAX or RCS CL MAX,
- Hydraulic Unit RCS MAX 2x 210 bar, 380-460 V,
- Climbing Shoe RCS,
- Climbing Rail RCS.

Functionality
The bracket unit provides the basis for the assembly of a Platform Unit RCS C/CL MAX. It consists of Driving Rails RCS C/CL MAX in the lower section and Climbing Rails RCS in the upper section.
The Climbing Rails RCS are fitted with spacer bushings in 500 mm increments. The increment is reduced to 250 mm using Bolt Sets RCS MAX.
In climbing mode, one Climbing Shoe RCS is active in the Climbing Rail RCS and one Climbing Shoe RCS is active in the Driving Rail RCS C/CL MAX.
By moving the Climbing Saw RCS C/CL MAX hydraulically within the driving rail, the complete platform unit is supported via the pawl of the lower climbing shoe and lifts the complete platform unit.
During the stroke, the Climbing Rail RCS with the 250 mm bushing increment slides through the climbing shoe and past its engagement pawl.
The Climbing Cylinder RCS MAX 75 retracts and the spacer bushings of the Climbing Rail RCS have a holding function, thus holding the weight of the platform unit. The climbing saw is now free of any load and slides past the engagement pawl of the lower climbing shoe.

Applications
With the help of the Climbing Hydraulics RCS MAX, climbing units can be moved vertically, without using a crane.

Standard supporting structures:
- Guided Self-Climbing Formwork RCS C MAX
- Lightweight Self-Climbing Formwork RCS CL MAX

For special applications, the design engineer must check whether additional or alternative measures are required for the climbing procedure. These measures are to be shown and described in the operational or assembly plans.

The constructional systems presented in these Assembly Instructions are shown in the form of examples with only one component size. They are valid for all component sizes contained in the standard configuration.

Introduction

These assembly instructions are not a substitute for the Assembly Instructions for the hydraulic unit, the climbing cylinders or the Instructions for Assembly and Use for the complete climbing system. The instructions for the installed components and systems also apply.

Intended use

The hydraulic system, consisting of Climbing Cylinder RCS MAX 75 in connection with Hydraulic Unit RCS MAX 2x 210 bar, 380-460 V, is used exclusively for lifting a climbing unit, consisting of formwork and supporting structure, into the next concreting section.

The hydraulic system cannot be used on its own. It has been designed for installation in a climbing system.

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

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

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

Only PERI original components may be used. The use of other products and spare parts as well as different constructional systems and modifications, represents a misapplication with a potential safety risk. PERI shall not be held liable in this case.

Changes to PERI components are not permitted and represent a misapplication with a potential safety risk. Safety instructions and permissible loads must be observed.

Components provided by the contractor must comply with the requirements stipulated in these assembly instructions and all applicable laws and standards.

Deviations from the standard configurations listed here are generally impermissible. Special applications must be described in the form of detailed planning and instructions for use based on a separate risk assessment. These special applications must be approved by PERI.

Anything other than the use that is specified in Paragraph 1 is considered contrary to the designated use!

For damage arising from non-intended use
- the operator bears sole responsibility,
- the manufacturer assumes no liability.

Foreseeable misuse
- Transportation of loads and persons.

Instructions for Use

Use in a way that is not intended according to the assembly instructions or deviations from the standard configuration or intended use constitute incorrect use with a safety risk, e.g. risk of falling.

Only PERI original components may be used. The use of other products and spare parts is not allowed and represents a misapplication with associated safety risks.

Changes to PERI components are not permitted.

Operation with damaged or incomplete load-carrying equipment is not permissible.

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

Technical data

Climbing Cylinder RCS MAX 75

Effective stroke length of	750 mm (maximum 900 mm)
Lifting force	Nominal lifting force available: 50 kN (11.2 kip) Theoretical nominal lifting force of 65 kN (14.6 kip) [1)]
Max. operating pressure	210 bar (21.0 MPa)

[1)] The nominal lifting force depends on the following points, which must be taken into account when planning the project.
- The system's own weight and centre of gravity.
- The length of the hydraulic hoses.
- The lubrication state of the climbing rail near the climbing shoes.

Hydraulic Unit RCS MAX 2x 210 bar, 380-460 V

Power supply	400 V/50 Hz (3 phases) Output 1.3 l/min per cylinder
Power supply	460 V/60 Hz (3 phases) Output 1.6 l/min per cylinder
Working area	dependent on the hydraulic oil used, see "Tab. 01" on page 19.
Sound emissions	60 dB (A) at a distance of 1.0 m

Additional technical documentation

- Instructions for Assembly and Use (e.g. for RCS C MAX or RCS CL MAX)
- Instructions for Use (e.g. for Climbing Beam RCS 9 t)
- User information for RFID LA-Tag Assembly Set
- PERI PI separate product information (e.g. for permissible tie loads)
- Assembly Instructions for the hydraulic unit and the climbing cylinder (from the manufacturer)
- Safety data sheet for hydraulic oil
- Safety data sheet for multi-purpose grease
- Hydraulic cylinder documentation
- Declarations of Conformity, Declarations of Incorporation

RFID transponder

Individual components are equipped with an RFID transponder. RFID transponders combine hardware with additional software to create a smart product.
Depending on the component and digital solution, you can:

- Call up technical documents.
- View maintenance plans.
- Track information on transport and logistics.

For more information, see "RFID LA-TAG Assembly Set User Information".

Cleaning and maintenance instructions

The Climbing Cylinder RCS MAX 75 is designed for long-term use on construction sites.

Maintenance intervals must be adhered to and correct storage ensured.

Some repair work may also be inevitable due to the tough working conditions.
Repairs that require the welding or forming of components must be carried out by PERI.

Use PERI original parts as spare parts.

The contractor must ensure that the personal protective equipment required for cleaning, maintenance and repair work such as
- Safety helmet,
- Safety shoes,
- Safety gloves,
- Safety goggles,

is available and used as intended.

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

Cleaning tools must be adapted to the respective surfaces of the components so that they are not damaged.

Do not clean the hydraulic unit and hydraulic cylinder with a high pressure cleaner.

Concrete adhesion on the Climbing Cylinder RCS MAX 75 and hydraulic unit must be removed immediately after the concreting process.

Close all unused tie holes with plugs; this eliminates any subsequent cleaning or repair work.
Tie holes accidentally blocked with concrete are cleared by means of a steel pin from the formlining side.

Never clean powder-coated components, e.g. elements and accessories, with steel brushes or hard metal scrapers; this preserves the powder coating.
Use spacers for reinforcements with large or flat supports; this largely avoids indentations in the formlining under load.

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

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

Do not clean components suspended on crane lifting gear.

Disposal

- Materials are to be sorted correctly and according to type.
- Dispose of the materials in accordance with the applicable national regulations and guidelines.
- Consult the relevant safety data sheet when disposing of hydraulic oil, auxiliary materials and consumables.

Cross-system

Safety instructions apply to all service life phases of the system.

General information
The contractor must ensure that the documents supplied by PERI are available at all times and understood by the site personnel.

These instructions can be used as a basis for preparing the risk assessment. The risk assessment is compiled by the contractor. These instructions are not a substitute for the risk assessment!

Observe and comply with the safety instructions and permissible loads.

For the application and inspection of PERI products, observe the current laws and regulations in force in the respective countries.

Materials and working areas are to be inspected before each use and assembly for:
- damage,
- stability and
- functional correctness.

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

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

When on slab formwork, scaffolds and work platforms:
- do not jump,
- do not run,
- do not drop anything from or onto it.

Components provided by the contractor must comply with the requirements stipulated in these instructions and all applicable laws and standards. Unless otherwise indicated, the following applies in particular:
- Timber components:
  Strength class C24 for solid wood according to DIN EN 338:2016-07.
- Scaffolding tubes:
  Galvanised steel tubes with minimum dimension Ø 48.3 x 3.2 mm according to DIN EN 12811-1:2004-03 4.2.1.2.
- Scaffolding tube couplings:
  according to DIN EN 74-1:2022-09 and DIN EN 74-2:2022-09.

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

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

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

Nails and wood screws must not protrude.
Only allow other connecting components to protrude to the extent that is necessary. If necessary, mark protruding components or fit them with protective material.

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

Before and after extraordinary events that may have damaging effects on the safety of the system, the contractor must immediately
- produce another risk assessment, the results of which must be used to implement suitable measures to ensure the stability of the system,
- arrange for an extraordinary inspection to be carried out by a competent person qualified to do so. The aim of this inspection is to detect and repair damage in good time in order to ensure safe use of the system.

Exceptional events could be:
- accidents, fire, explosions, collisions,
- long periods of non-use,
- natural events, e.g. heavy rainfall, heavy snowfall, significant icing, storms or earthquakes.

Suitable measures could be:
- removing nets/tarpaulin,
- clearing snow and ice,
- reducing live loads,
- securing loose materials.

Contamination
- Always keep working areas, contact surfaces and work platforms of the system free of dirt, objects, snow and ice.
- There is an increased risk of slipping, particularly after hydraulic oil leaks and in wet weather conditions.
- Close off the system in extreme weather conditions.

Assembly, modification and dismantling work
PERI systems may only be assembled, modified or dismantled under the supervision of a person qualified to do so and by technically suitable employees. The qualified personnel must have received appropriate training for the work to be carried out with regard to specific risks and dangers.

On the basis of the risk assessment and these instructions, the contractor must create installation instructions in order to guarantee safe assembly, modification and dismantling of the climbing unit.

The contractor must ensure that the personal protective equipment required for the assembly, modification or dismantling of the system, e.g.
- Safety helmet,
- Safety shoes,
- Safety gloves,
- Safety goggles,

is available and used as intended.

- For work at a higher level, use an approved ladder or platform system, or an assembly scaffold.
- Only use tested and approved lifting gear.
- Do not remain in the danger zone of moving parts.

If personal protective equipment against falling from a height (PPE) is required or specified in local regulations, the contractor must determine appropriate attachment points on the basis of the risk assessment.
The PPE to be used to prevent falling is determined by the contractor.

The contractor must
- provide safe working areas for site personnel, which are to be reached through the provision of safe access ways. cordon off and clearly mark danger zones.
- guarantee stability during all stages of construction, in particular during assembly, modification and dismantling operations.
- ensure and demonstrate that all loads that occur are safely transferred.

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

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

When systems are used in publicly accessible areas,
- measures to prevent unauthorised use, e.g. enclosure of access areas, must be taken.
- Measures are taken against injuries caused by bumping against protruding components, e.g. assembly of protective components.

System-specific

Warning
In cases of leakage, hydraulic oil can escape at high pressure!
The oil can penetrate the skin and cause severe irreversible injuries.
⇒ Do not use parts of your body to cover the leakage.
⇒ Stay away from the leakage point.

Safety instructions apply to all service life phases of the system.

Make sure that the guardrails and/or edge covers at building openings and projections are fully installed before accessing the climbing system.

Before entering the system, check for completeness of the platform deck and for danger spots and use PPE if necessary.

Deshutter the concreting sections only when the concrete has sufficiently hardened and the person in charge has given the go-ahead for deshuttering to take place.

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

Inspection of the anchoring and associated components must be carried out by the party responsible.

As a result of the relocation procedure, falling edges are formed between the platforms. Such affected areas are to be cordoned off.

Building materials or tools must not be transported as part of the relocation operation. Exceptions to this can be determined through the operational working and assembly instructions.

The transport of persons during the relocation process is strictly prohibited. This does not apply to the operating personnel required for relocation operations.

Working areas at great heights are to be secured by means of appropriate measures to prevent objects from falling down.

The enclosure of the platform or mounting of additional surfaces exposed to the wind changes the degree of stability and must be rechecked. If necessary, additional measures must be implemented.

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

Welding or abrasive cutting work is prohibited on the platforms due to the associated fire hazard.

Reliable lightning conduction must be ensured by the contractor.

Assembly work
The contractor must ensure that the user has an 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.

During the transportation procedure, only use the specified attachment points for components.

Avoid standing under suspended loads. If work under suspended loads cannot be avoided, come up with suitable safety measures and apply them. Avoid standing between a fixed object and an object that is drawing near.

Secure interim assembly states by means of temporary supports in order to prevent any items from toppling over.

The contractor must make a level assembly area with sufficient load-bearing capacity available.

Unexpected hazards can always arise when assembly work is carried out. Assess the degree of risk in each individual case and, if necessary, take measures to prevent or minimise the risk.

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

Site personnel are forbidden to remain in areas below where assembly work is being carried out, unless the danger zone has been provided with sufficient protection against falling, overturned, sliding or rolling objects and masses. Cordon off and clearly mark any danger zones and check that these are in place and complete every time work is commenced.

Do not walk on components and assembly units.
Find a secure standing position next to the components or assembly units. Use assembly scaffolds.

Always keep components and assembly units free of dirt, ice and snow.

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

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

Use walkways, stairs, stair towers or site lifts as access routes. Ladders are suitable for use as passageways in exceptional cases only.

Ladders must not be connected to each other for more than two levels and should be offset against one another.

Ladders must be secured on the outer side by means of appropriate anti-fall equipment such as ladder cages or safety nets.

Building edges at passages and openings in accessible areas must be secured.

In 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.
Determine and apply all appropriate measures.

Throughout the entire relocation procedure, ensure that site personnel can still use the emergency escape route.

In case the access hatches are blocked when retracting the formwork, ensure that site personnel can still use the emergency escape route.

Protection against falling components
Work activities may not be carried out simultaneously on areas positioned on top of each other if the lower working areas are not protected against falling objects.

Avoid installing working areas and access routes in danger zones.
If this is not possible due to work procedures, suitable protective measures must be available to provide protection against falling objects. This also applies to work that only takes a short period of time.
Safety nets (mesh size ≤ 2 cm) and platform planking are considered to be suitable means and are to be installed very close to the structure (distance ≤ 5 cm).

Secure tools and material to prevent them from falling down. Remove concrete residue and other dirt as soon as possible, at the latest before the next climbing cycle. The platforms are to be kept clean at all times.

Operational working areas at great heights are to be secured by means of appropriate structural measures to prevent objects from falling down.

Components that are likely to become unstable
Components
Secure components that are likely to become unstable with suitable means, e.g. using push-pull props, or leave them attached to the crane until the tipping hazard has been eliminated.

Loitering in the tipping range is prohibited. Draw attention to and clearly mark any danger zones.

If necessary, cordon off the danger zones with suitable means. Check that safety signs and barriers are in place before commencing work.

Climbing procedure
Take into consideration the permissible wind speed limit for the climbing procedure.

Personnel, building materials or tools must not be transported as part of the relocation operation. Exceptions to this can be determined through the operational working and assembly instructions on the basis of a corresponding risk analysis.

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

During the climbing procedure, clamping and crushing hazards are brought about by moving components.

The individuals carrying out the climbing procedure must be fully informed about all possible hazards.

All persons who are not required to carry out the climbing procedure must leave the danger zones.

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

As a result of the moving procedure, open edges are formed between the platforms as well as at building openings. When working in this area, personnel must be secured against falling, e.g. by temporary guardrails or wearing PPE.

Secure all resulting shearing edges by means of covers. Cordon off danger zones during the climbing procedure.

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 a person who is authorised to give instructions is to be notified immediately.

The climbing system cannot be anchored for the next concreting section until the required concrete strength has been achieved.

Maintenance and repairs
The components of the climbing system are to be inspected before every use to ensure that they are in flawless condition.
Only flawless materials may be used.
Have the climbing units checked monthly for signs of damage by competent persons who are authorised to give instructions.

Remove any loose concrete residue.

Immediately remove any dirt that impairs functionality.
Remove and replace damaged components.

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 area 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 must be checked.

Safety components:
- A visual inspection is to be carried out by authorised personnel before each climbing procedure.
- Before each climbing procedure or each assembly procedure, a functionality check is carried out by qualified personnel.
- If parts need to be replaced, only PERI original components may be used.
- Repairs are to be carried out by qualified PERI personnel only.
- In the case of overloading or recurrent damage, stop work operations on and under the platforms, determine the cause and rectify.

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

Other components:
- Repairs are carried out by authorised personnel and the person authorised to give instructions is to be informed.
- In the event of frequently recurring damage, determine the cause and remedy it.
- Route hydraulic and power cables so that they cannot be disconnected, sheared off or tripped over.

Hydraulic components
Visual inspections are to be carried out by authorised personnel at regular intervals.
Qualified personnel are to carry out a functionality check before every working cycle or before assembly takes place.
If any defects are discovered, repairs are only allowed to be carried out by qualified personnel.

Hydraulic hoses have an expiry date. Observe the manufacturer-specific information.

Do not suspend any objects from the hydraulic hoses.

Observe the manufacturer-specific information regarding inspection and maintenance of the hydraulic unit.

For correct use and disposal of the hydraulic oil, observe the manufacturer-specific instructions.

Thicken spilled hydraulic oil immediately with oil binder and mop it up.

Wear safety goggles and suitable protective gloves when working on the hydraulic system.

PERI recommends using an oil pan to collect hydraulic oil from the hydraulic unit.

Note
Always switch off the power to the hydraulic unit and prevent it from being switched on again as soon as the moving procedure involving the climbing system has been completed. For this, secure the main switch of the hydraulic unit by means of a padlock.
This safety measure also applies to the following:
- Assembly.
- Maintenance.
- Repairs.
- Inspections.
- Disassembly.

Approval for use is the responsibility of the operating personnel.

Electrical components

Danger
High electric voltage at the hydraulic unit!
Death or serious injury can result from an electric shock.
⇒ Connection only by qualified personnel.
⇒ Only qualified personnel may carry out work and repairs on the electrical components of the systems.
⇒ Only approved, undamaged and tested connecting cables should be used.

Only operate the hydraulic unit using the current and voltage specified on the type plate.

Do not suspend any objects from the electrical lines.

Component overview

Pos. no.	Component name	Article no.
1	Climbing Cylinder RCS MAX 75	136107
2a	Hydraulic Twin Hose RCS 10 m	110069
2b	Hydraulic Twin Hose RCS 20 m	110070
2c	Hydraulic Hose 2SN-DN08-FF 1.0 m	129035
2d	Hydraulic Hose 2SN-DN08-FF 2.0 m	129036
2e	Hydraulic Hose 2SN-DN08-FF 5.0 m	129419
2f	Hydraulic Hose 2SN-DN08-FF 10.0 m	129420
2g	Hydraulic Hose 2SN-DN08-FF 15.0 m	129421
2h	Hydraulic Hose 2SN-DN08-FF 20.0 m	129422
3	Hydraulic Unit RCS MAX 2x 210 bar, 380-460 V	135500
4	Power Cable RCS MAX CEE-32A 2 m	135499
5	Climbing Shoe RCS	109468
6	Wall Shoe RCS	109503
7	Power Conn. Cable RCS MAX 10 m	135498
	Power Conn. Cable RCS MAX 20 m	135501
8	Connector Power Cable RCS MAX	135502
9	Climbing Rails RCS	–
10	Driving Rail RCS C MAX	136110
	Driving Rail RCS CL MAX	136111
11	Data Conn. Cable RCS MAX 10 m	135503
	Data Conn. Cable RCS MAX 20 m	135504
12	Connector Data Cable RCS MAX	135505
13	Remote Control RCS MAX 15 m	135506
14	Display RCS MAX	135507
16	Bolt ISO 4017 M12 x 60-8.8	126001
17	Washer ISO 7089-12-200HV-ga	780702
18	Nut ISO 4034 M12-8	723805
19	Data Conn. RCS MAX wireless	136531
20	Remote Control RCS MAX wireless	136530
21	Pallet RP Hydraulic Unit RCS MAX	136165
22	Power Cable RCS MAX 2 m	136532
23	Incline Connector RCS CL MAX	136108
84	Bolt Set RCS MAX	136109
93	Visual Aid Climbing Shoe RCS	135962
117	Multi-purpose grease	–

Hydraulic oil

- Observe national guidelines and regulations, e.g. DGUV regulation 113-020:2017-10 in Germany.
- Top up the hydraulic oil when the climbing device is in a retracted position.
- Observe the hydraulic oil viscosity/ temperature diagram.
- Refer to the details for the appropriate operating temperature and viscosity of the hydraulic unit in the manufacturer's assembly instructions.
- Do not mix different hydraulic oils.
- Make a note of the oil type used for filling (e.g. on oil card).
- If the oil type is changed, the units, climbing devices and hoses need to have an oil change.

Areas of application for PERI hydraulic oils in combination with the Hydraulic Unit RCS MAX 2x 210 bar, 380-460 V			
Designation	**Temperature range Hydraulic oil**	**Cold start temperature**	**Temperature range Hydraulic unit**
Hydraulic oil ISO 11158 HM10	-20 °C ... +25 °C	-20 °C	-20 °C ... +50 °C
Hydraulic oil ISO 11158 HVI22	-14 °C ... +50 °C	≤ -5 °C	
Hydraulic oil ISO 11158 HVI32	-9 °C ... +62 °C	≤ +2 °C	
Hydraulic oil ISO 11158 HVI46	±0 °C ... +70 °C	≤ +10 °C	

Tab. 01

Note

- The area of application of the hydraulic unit must be within the temperature range of the hydraulic oil and hydraulic unit.
- If other hydraulic oils are to be used, contact PERI.

Hydraulic hoses

Observe national guidelines and regulations, e.g. DGUV regulation 113-020:2017-10 in Germany:

- Maintenance and checking of hoses.
- Notes on laying hose lines.
- Notes on storage.
- Period of use.

Minimum bending radius (internal measurement) as per DIN EN 853:2016-09:

- Hose DN08: 115 mm
- Hose DN10: 130 mm
- Hose DN12: 180 mm

Hydraulic unit

Observe the manufacturer's assembly instructions for the maintenance and repair of the hydraulic unit.

A1 Climbing Cylinder RCS MAX 75

Climbing Cylinder RCS MAX 75

Components

1 Climbing Cylinder RCS MAX 75
1.1 Quick-action climbing saw
1.2 Hydraulic quick coupler (bushing)
1.3 Hydraulic quick coupler (clip)
1.4 Type plate
1.5 RFID LA tag
1.6a Lowering brake valve
1.6b Lowering brake valve
1.7 Climbing cylinder mounting hole
1.8 Protective caps

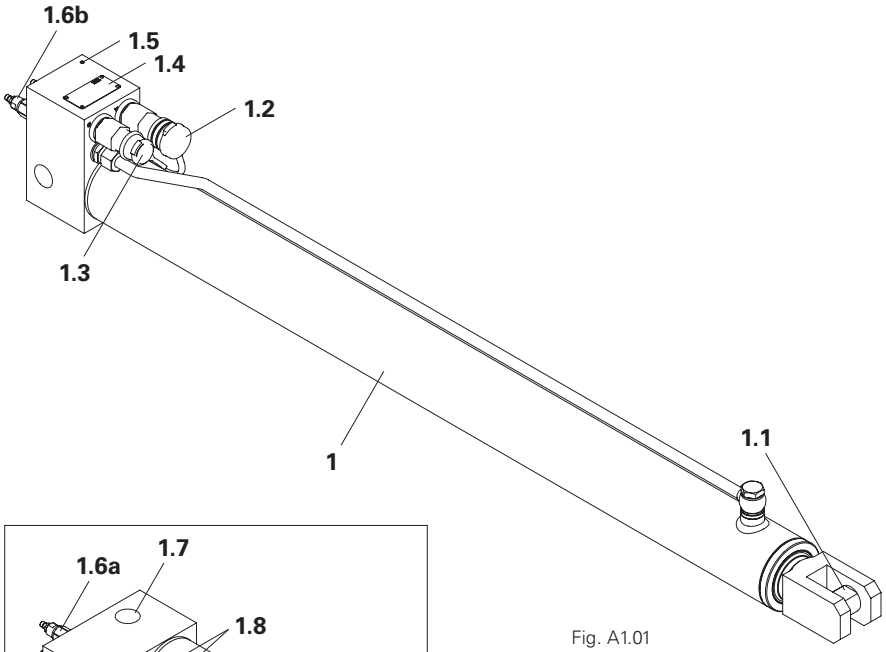


Fig. A1.01

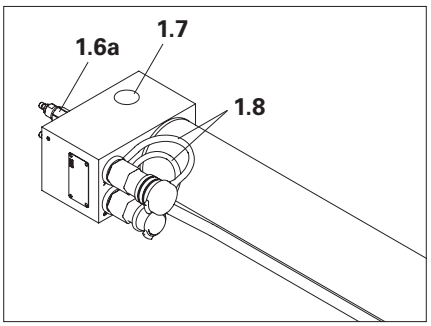


Fig. A1.01a

Driving Rail RCS C MAX

Components

10 Driving Rail RCS C MAX
10.1 Cylinder fixation
10.2 Diagonal connector
10.4 Bolt Ø 25 x 200 SCS
10.5 Cotter Pin 5/1 ga
10.6 Climbing saw
10.7 Vertical load pawl

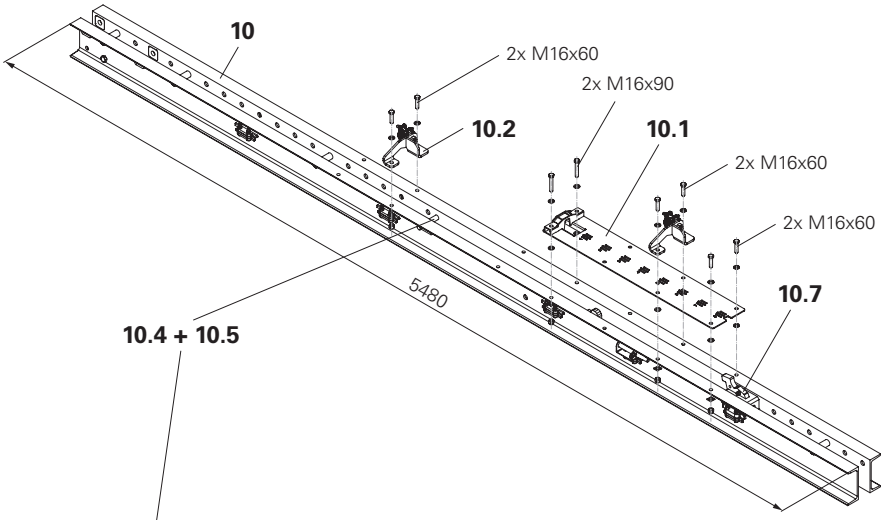


Fig. A2.01

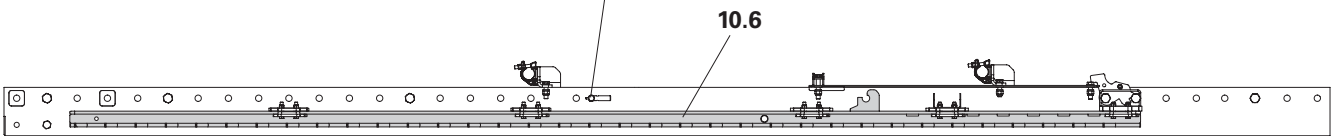


Fig. A2.01a

Driving Rail RCS CL MAX

Components

10 Driving Rail RCS CL MAX
10.1 Cylinder fixation
10.2 Diagonal connector
10.4 Bolt Ø 25 x 200 SCS
10.5 Cotter Pin 5/1 ga
10.6 Climbing saw
10.7 Vertical load pawl

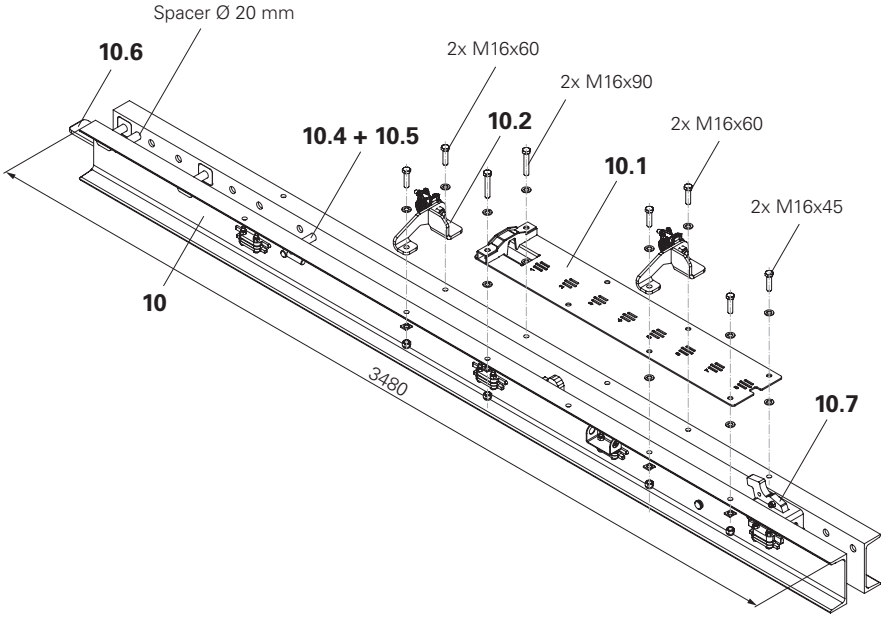


Fig. A2.02

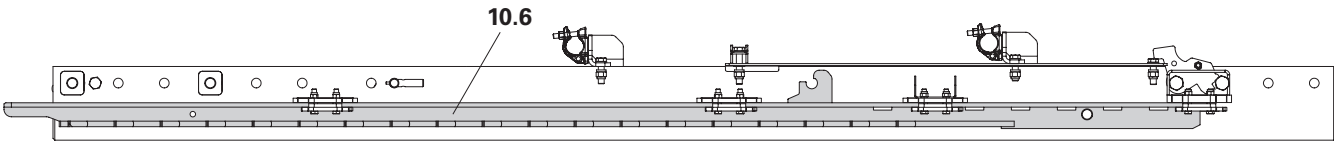


Fig. A2.02a

Vertical load pawl in the driving rail

The vertical load pawl is used in working and storm conditions to introduce the vertical forces into the anchoring of the older concreting section, whereby the anchorage has a higher load-bearing capacity due to the higher concrete strength and no interaction with high tension forces occurs.

– To deactivate, lift the vertical load pawl, swivel it out and lower it so that the nose rests on the installed bolt and prevents it from engaging.
– To activate, lift the vertical load pawl, swivel it in and lower it so that the nose is positioned in front of the installed bolt.
(Fig. A2.03)

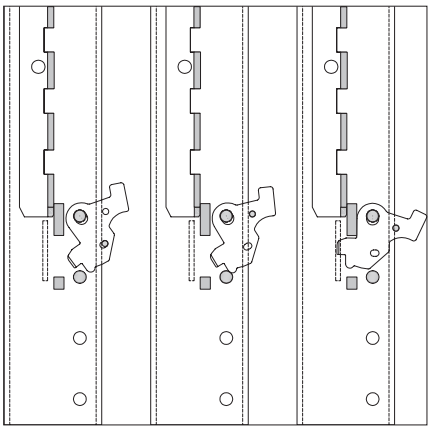


Fig. A2.03

If the vertical load pawl is not used (the climbing unit is mounted on the climbing shoe A in the working position by means of a spacer in the climbing rail), it can be secured against accidental engagement using bolts ISO 4017 M12 x 40-8.8.
To ensure that the screw is always on the driving rail, it can be "parked" in an upper hole located on the vertical load pawl. It is there for all working states, except in the previously described case.

Normally, the vertical load pawl is activated at the last stroke.

– Extend Climbing Cylinder RCS MAX 75. The activated vertical load pawl (**10.7**) is swung outwards from the climbing saw (**10.6**) when the driving rail (**10**) is raised and engages in the recesses of the climbing saw (**10.6**), as soon as they are at the height of the vertical load pawl (**10.7**).
– Extend the Climbing Cylinder RCS MAX 75 until the climbing unit is at the appropriate height. If necessary, move over some recesses in the climbing saw (**10.6**).

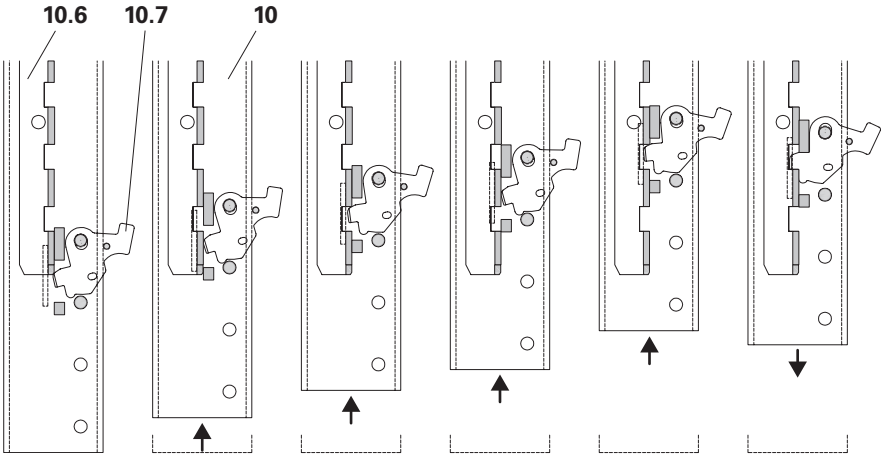


Fig. A2.04

– When the vertical load pawl (**10.7**) engages in the correct recess, retract the Climbing Cylinder RCS MAX 75 and lower the climbing unit onto the tooth of the climbing saw (**10.6**).
→ New load situation:
The load rests by means of the vertical load pawl (**10.7**) across the climbing saw (**10.6**) on the Climbing Shoe RCS, which is engaged in the climbing saw.
→ The vertical load pawl (**10.7**) is activated.
(Fig. A2.04)

A3 Connections RCS MAX

Hydraulic twin hoses

2a Hydraulic Twin Hose RCS 10 m (article no. 110069)
2b Hydraulic Twin Hose RCS 20 m (article no. 110070)

Accessories

2.1 Hydraulic quick-coupler (bushing) article no. 110822/128993
2.2 Hydraulic quick-coupler (clip) article no. 110823/128992
2.3 Retaining ring (bushing)

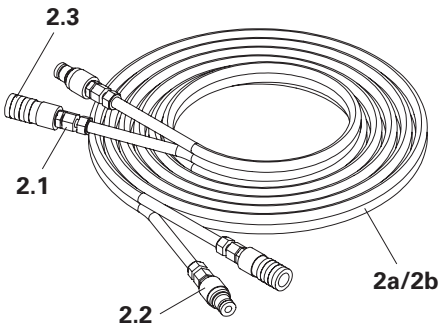


Fig. A3.01

Hydraulic single hoses

2c Hydraulic Hose 2SN-DN08-FF 1.0 m (article no. 129035)
2d Hydraulic Hose 2SN-DN08-FF 2.0 m (article no. 129036)
2e Hydraulic Hose 2SN-DN08-FF 5.0 m (article no. 129419)
2f Hydraulic Hose 2SN-DN08-FF 10.0 m (article no. 129420)
2g Hydraulic Hose 2SN-DN08-FF 15.0 m (article no. 129421)
2h Hydraulic Hose 2SN-DN08-FF 20.0 m (article no. 129422)

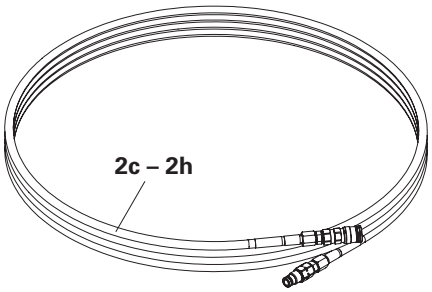


Fig. A3.02

Data connection

11 Data Conn. Cable RCS MAX 10 m / 20 m
12 Connector Data Cable RCS MAX
19 Data Connection RCS MAX wireless

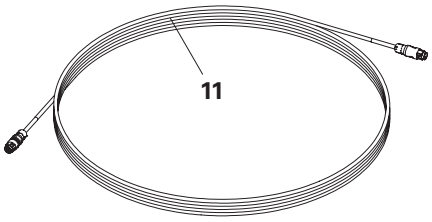


Fig. A3.03

Fig. A3.04

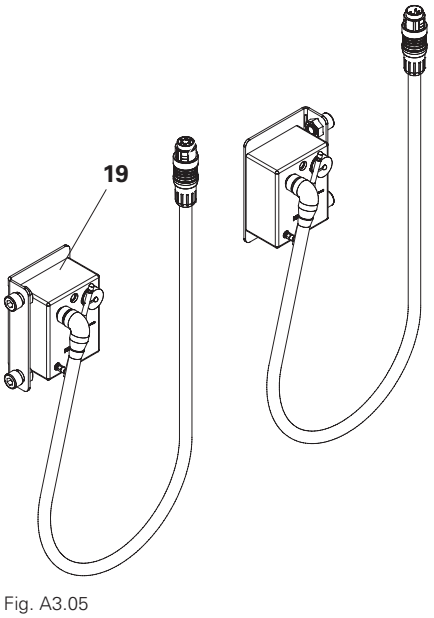


Fig. A3.05

A3 Connections RCS MAX

PERI

Power cables

4 Power Cable RCS MAX CEE-32A 2 m
4.1 Phase inverter
7 Power Conn. Cable RCS MAX 10 m / 20 m
8 Connector Power Cable RCS MAX
22 Power Cable RCS MAX 2 m

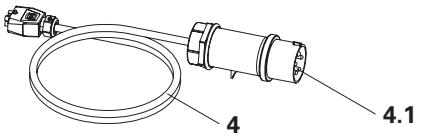


Fig. A3.06

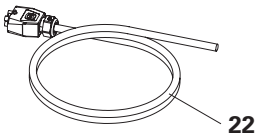


Fig. A3.09

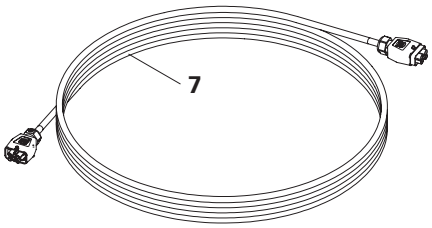


Fig. A3.07

Fig. A3.08

Accessories

13 Remote Control RCS MAX 15 m
13.1 "Cylinder Extend" key
13.2 "Cylinder Retract" key
13.3 Emergency Stop button
14 Display RCS MAX
14.1 USB port
20 Remote Control RCS MAX wireless
20.1 Receiver Remote Control RCS MAX wireless

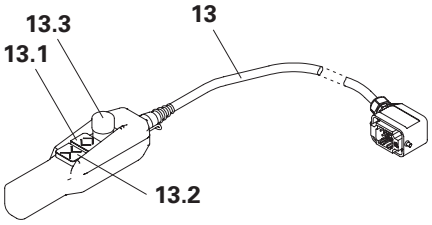


Fig. A3.10

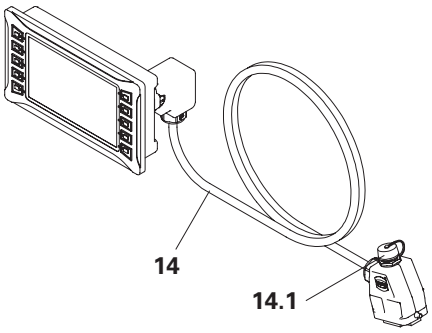


Fig. A3.11

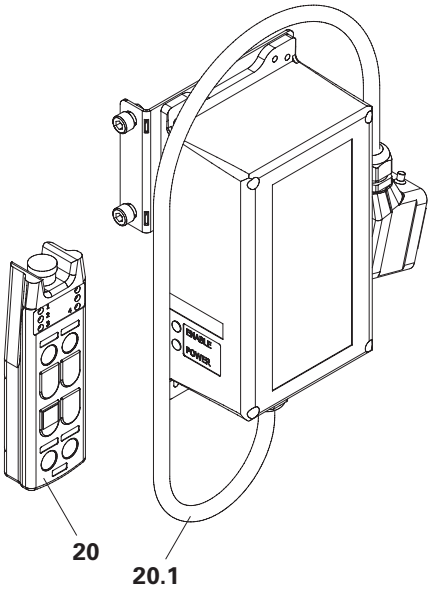


Fig. A3.12

A4 Hydraulic Pump RCS MAX

Main components

3 Hydraulic Unit RCS MAX 2x 210bar, 380-460 V, article no. 135500
3.1 Attachment points
3.2 Suspension hook
3.3 Securing bracket
3.4 Oil level and temperature display
3.23 Keypad
3.24 Type plate
3.25 Oil filling opening / ventilation filter
3.26 Oil return filter
3.28 Seal for Hydraulic Tank RCS MAX

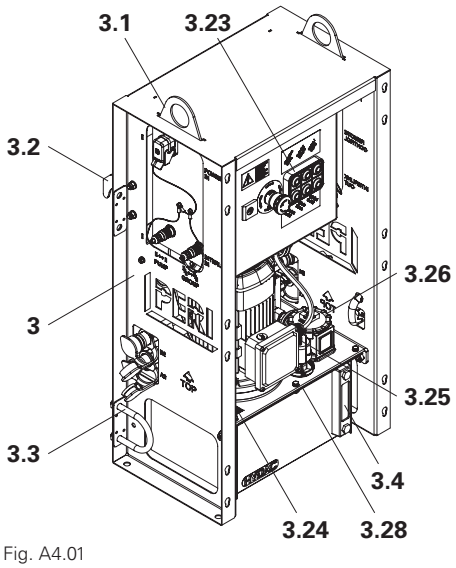


Fig. A4.01

Connections – left side

3.5 Power In [1)]
3.6 Interlink In "Pump" [1)]
3.7 Interlink In "Group" [2)]
3.8 Hydraulic connection A2
3.9 Hydraulic connection B2

Connections – right side

3.10 Power Out [1)]
3.11 Interlink Out "Pump" [1)]
3.12 Interlink Out "Group" [2)]
3.13 Hydraulic connection A1
3.14 Hydraulic connection B1
3.15 Remote control/display connection
3.27 RFID LA tag

[1)] To connect individual units to a group.
[2)] For connecting groups.

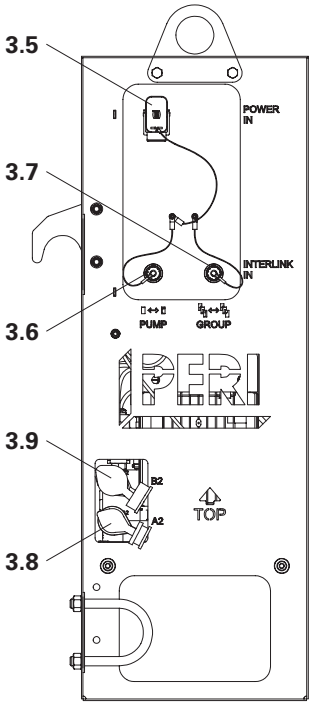


Fig. A4.02

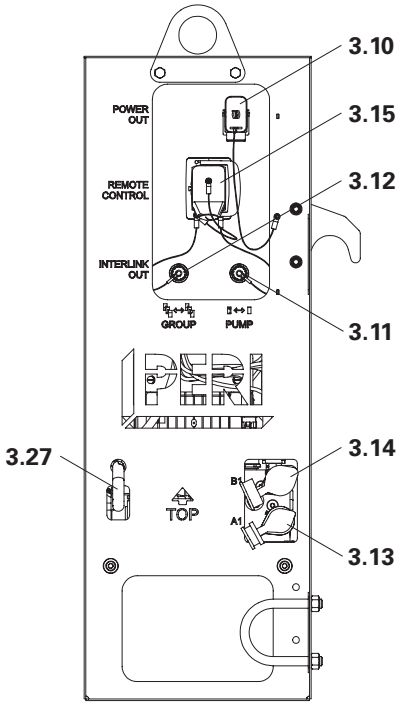


Fig. A4.03

Control panel

3.16 Emergency stop button
3.17 "Operation Mode" key
3.18 "Cylinder Extend" key
3.19 "Status / Reset" key
3.20 "Cylinder 2 On / Off" key
3.21 "Cylinder Retract" key
3.22 "Cylinder 1 On / Off" key

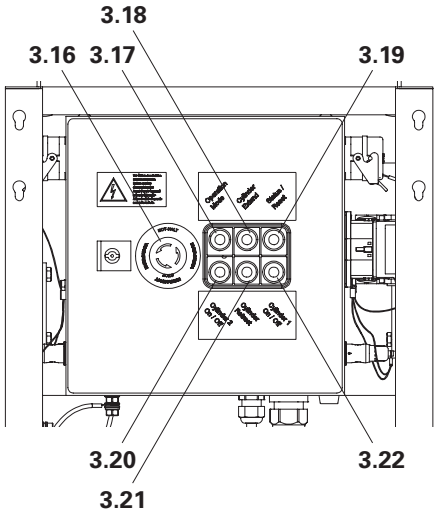


Fig. A4.04

A5 Climbing Shoe RCS

Components

5 Climbing Shoe RCS
5.1 Climbing pawl
5.2 Guiding skid
5.3 Safety pins
5.4 Pawl lock
5.5 Hinged clamp
5.6 Spring lock
5.7 Locating pin for climbing device
93 Visual Aid Climbing Shoe RCS
93.1 Adaptor
93.2 Bolt ISO 4014 M8 x 45-8.8
93.3 Nut ISO 7040 M8-8

* For installation of Visual Aid Climbing Shoe RCS, see Section "Operating climbing shoes" on page 55.

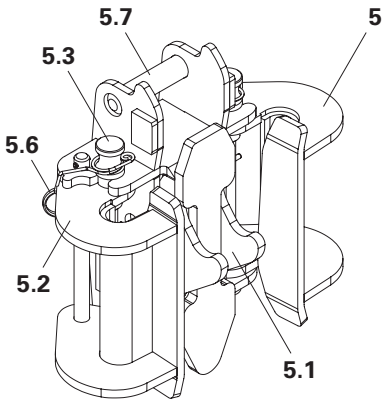


Fig. A5.01

Visual Aid Climbing Shoe RCS

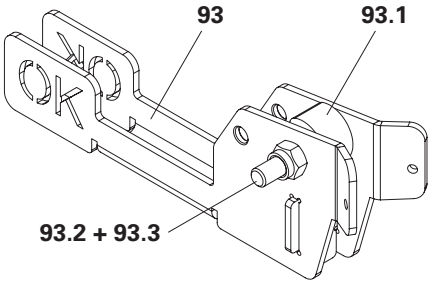


Fig. A5.01a

Climbing shoe closed

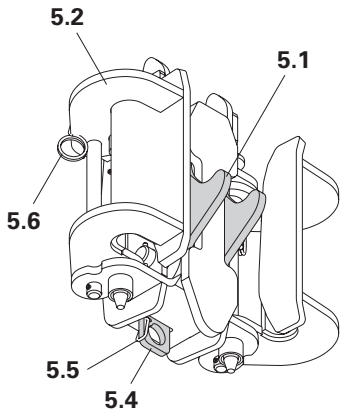


Fig. A5.01b

Climbing shoe open

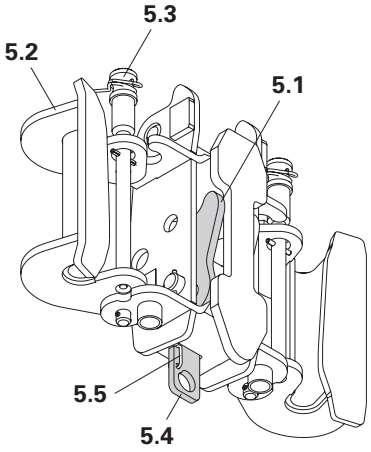


Fig. A5.01c

Standard structure RCS C MAX

- Two Climbing Rails RCS extended via Climbing Rail Joints RCS with Driving Rails RCS C MAX,
- anchored and guided in Climbing Shoes RCS, fixed to the previous concreting sections,
- self-climbing in steps by means of Climbing Cylinder RCS MAX 75,
- driven by networked Hydraulic Units RCS MAX 2x210 bar, 380-460 V,
- Bracket supporting structures to support the work platform level 0 and the intermediate platform level -1 as well as a suspended finishing platform level -2,
- with adjustable spindles between Crossbeam RCS 220 and Intermediate Platform Girder RCS 241 to adjust the inclination of the Climbing Rail RCS,
- with Wall Formwork VARIO GT 24, TRIO or MAXIMO that must be anchored, supported on a Carriage RCS, retractable up to 90 cm,
- Concreting platform level +1 and optional intermediate platform on the formwork or on the strongback,
- Ladder accesses with hatches for access to all levels.
- Lateral and rear safety protection, with enclosure if necessary.

The load-bearing system is a bracket-like truss construction and is designed to support wall formwork in accordance with DIN EN 12812:2008-12.
The platforms consist of plank decking or multi-layer plywood sheets on platform beams and are designed as working scaffolds in accordance with DIN EN 12811-1:2004-03.
The self-climbing formwork is created by connecting the wall formwork and scaffold unit, which is implemented as a self-climbing unit with hydraulic driving rails.

Standard structure RCS CL MAX

- Two Climbing Rails RCS extended using incline connectors with Driving Rails RCS CL MAX,
- anchored and guided in Climbing Shoes RCS, fixed to the previous concreting sections,
- self-climbing in steps by means of Climbing Cylinder RCS MAX 75,
- driven by networked Hydraulic Units RCS MAX 2x210 bar, 380-460 V,
- bracket support structures to support work platform level 0 and suspended finishing platform level -1,
- with VARIO GT 24, TRIO or MAXIMO wall formwork to be anchored, supported on a Carriage RCS, retractable up to 90 cm.
- Concreting platform level +1 and optional intermediate platform on the formwork or on the strongback.
- Ladder accesses with hatches for access to all levels.
- Lateral and rear safety protection, with enclosure if necessary.

The load-bearing system is a bracket-like truss construction and is designed to support wall formwork in accordance with DIN EN 12812:2008-12.
The platforms consist of plank decking or multi-layer plywood sheets on platform beams and are designed as working scaffolds in accordance with DIN EN 12811-1:2004-03.
The self-climbing formwork is created by connecting the wall formwork and scaffold unit, which is implemented as a self-climbing unit with hydraulic driving rails.

A7 Climbing device in use

Use in the RCS C MAX Rail Climbing System

Components

1 Climbing Cylinder RCS MAX 75
5 Climbing Shoe RCS
6 Wall Shoe RCS
9 Climbing Rail RCS
9.1 Spacer
10 Driving Rail RCS C MAX

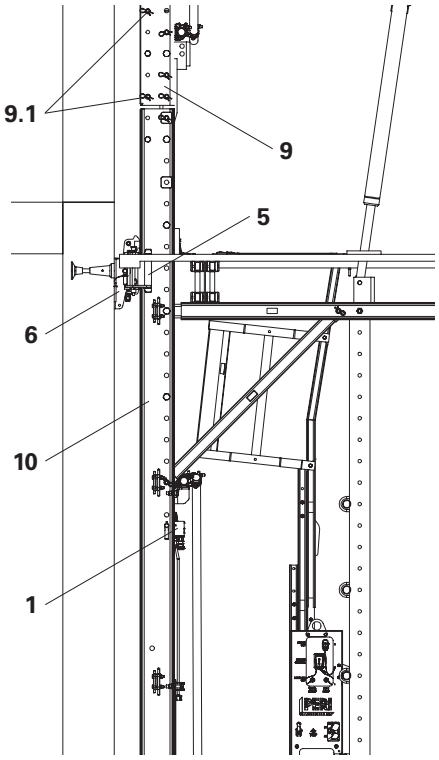


Fig. A7.01

Use in the RCS CL MAX Rail Climbing System

Components

1 Climbing Cylinder RCS MAX 75
5 Climbing Shoe RCS
6 Wall Shoe RCS
9 Climbing Rail RCS
9.1 Spacer
10 Driving Rail RCS CL MAX

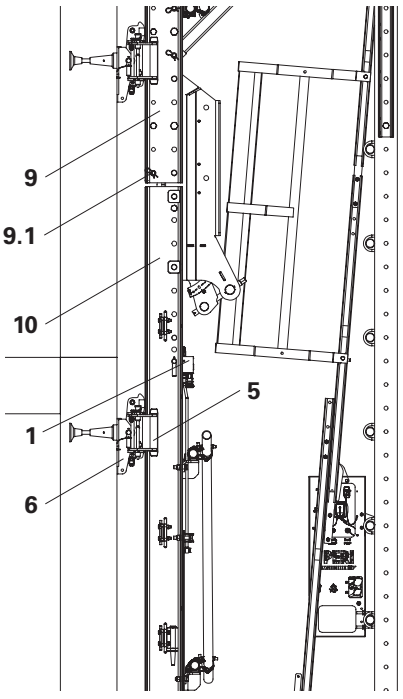


Fig. A7.02

B1 Initial commissioning

- Data connections may only be established in a de-energised state.
- Data connections between climbing groups can be established with Data Conn. Cables RCS MAX wireless instead of with Data Conn. Cables RCS MAX.
- The Remote Control RCS MAX wireless can be used as a remote control instead of the Remote Control RCS MAX 15 m.

Measures prior to initial commissioning

- Check the completeness of the technical documentation, e.g. hydraulic connection diagram, electronics connection diagram, data cable connection diagram, manufacturer's assembly instructions.
- Site personnel must familiarise themselves with the system using the available documentation.
- Clean the bushings and clips of all quick-couplers prior to coupling and check for damage.
- For more commissioning details, see the manufacturer's assembly instructions.

Pre-assembly

Fit the Climbing Cylinder RCS MAX 75 into the driving rail.

Standard assembly

1. Fit or set up the unit, see Section "F1 Hydraulics connection diagram" on page 74.
2. Check the oil level of the unit, and fill if necessary.
3. Attach the data connection cable.
4. Attach the power connection cable.
5. Connect the remote control.
6. Attach the power cable.
7. Seal unused connections with mating plugs and cover caps.
8. Check all fixings and connections.
9. Energise the system and check the rotary field on the keypad, see Section "Electrical connection" on page 31.
10. Connect the hydraulic hoses.
11. Ventilate system and check for leakage, see Section "Venting the system" on page 64 and the manufacturer's assembly instructions.
12. Carry out any additional steps in the manufacturer's assembly instructions.
13. Put the system into operation.

Power Cable RCS MAX 2 m

Danger

Significant electrical voltage during operation!

Death or serious injury can result from an electric shock.

⇒ Only qualified electricians may carry out work and repairs on the electrical components of the system.

- If it is not possible to use the Power Cable RCS MAX CEE-32A 2 m, a country-specific connector can be fitted onto the Power Cable RCS MAX 2 m (**22**).
- Refer to the manufacturer's assembly instructions for the terminal allocation diagram.

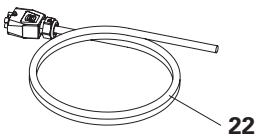


Fig. B1.01

Measures taken during commissioning

- If necessary, follow the additional steps in the assembly instructions for the hydraulic unit or the climbing cylinder.
- Never re-tighten leaky screw connections under high pressure, only after a pressure release.

Measures

1. Check the rotary field, see Section "Operating the hydraulic unit" on page 42.
2. Check the level of the hydraulic oil and top up, if necessary.
3. Check the temperature of the hydraulic oil and bring up to operating temperature, if necessary.
4. Listen out for any unusual pump noises after starting up.
5. If you hear any unusual pump noises, switch off and determine the cause.
6. Check the functionality of the hydraulic cylinders.
7. Check components and connections for signs of external leakage.

Electrical connection

Danger

High electric voltage at the hydraulic unit!

Death or serious injury can result from an electric shock.

⇒ Only qualified electricians may carry out work and repairs on the electrical components of the system.

⇒ Only approved, undamaged and tested connecting cables should be used.

- Ensure that the cable length is adequate.
- Cables must be connected without tension. Take climbing differences between uncoupled platforms of at least 0.90 m into account!
- Observe the manufacturer's assembly instructions.

Accessories

- Power Cable RCS MAX CEE-32A 2 m, article no.: 135499.
- Power Cable RCS MAX 2 m, article no.: 136532.

C1 Assembly of hydraulic unit

Assembly on scaffolding tubes

The hydraulic units are attached to the scaffolding tubes using the suspension hooks.

Components

3 Hydraulic Unit RCS MAX
3.2 Suspension hook
3.3 Securing bracket

Assembly

1. Lift up the Hydraulic Unit RCS MAX (**3**) with short scaffolding tube using the attachment points (**3.1**).
2. Set the Hydraulic Unit RCS MAX (**3**) down on the upper scaffolding tube with suspension hook (**3.2**) and attach.
3. Secure the Hydraulic Unit RCS MAX (**3**) on the lower scaffolding tube with securing bracket (**3.3**).

(Fig. C1.01)

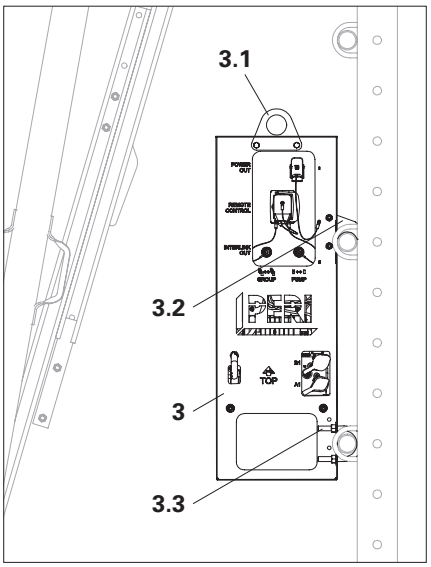


Fig. C1.01

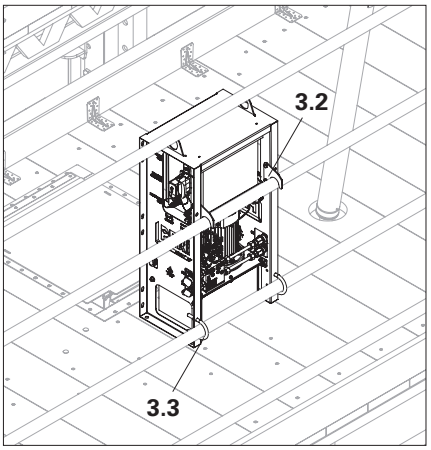


Fig. C1.01a

Assembly on handrail boards

Alternatively, the hydraulic unit can be fastened onto the guardrails. Ensure that the load-bearing capacity of the handrail boards is sufficient.

Components

3 Hydraulic Unit RCS MAX
16 Bolt ISO 4017 M12 x 60-8.8
17 Washer ISO 7089-12-200HV-ga
18 Nut ISO 4034 M12-8

Assembly

1. Bore holes in the designated positions in the handrail boards.
2. Lift Hydraulic Unit RCS MAX (**3**) into the assembly position.
3. Fasten Hydraulic Unit RCS MAX (**3**) onto the upper handrail board with 4x Bolt ISO 4017 M12 x 60-8 (**16**), Washer ISO 7089-12-200HV-ga (**17**) and nut ISO 4034 M12-8 (**18**).
4. Fasten Hydraulic Unit RCS MAX (**3**) onto the lower handrail board with 2x Bolt ISO 4017 M12 x 60-8 (**16**), Washer ISO 7089-12-200HV-ga (**17**) and nut ISO 4034 M12-8 (**18**).

(Fig. C1.02)

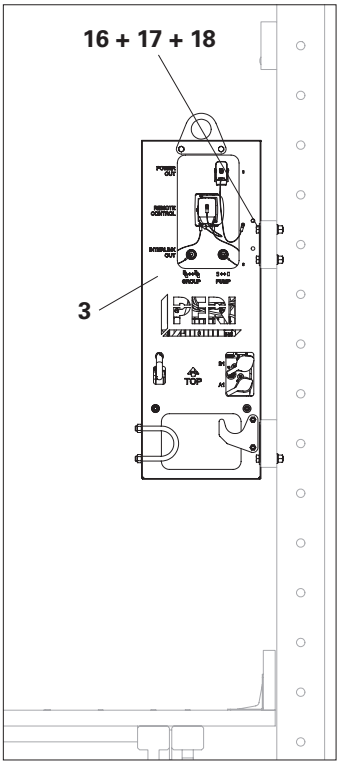


Fig. C1.02

C1 Assembly of hydraulic unit

Standard case

Two cylinders per climbing unit are in use. (Fig. C1.03)

Route the hydraulic hoses and cables

- Connect the hydraulic hoses in such a way that they are not pulled upwards by the platform during climbing.
- Arrange the cables to prevent them from becoming a hindrance or being damaged.
- Observe the minimum bending radius of the hoses, see Section "Hydraulic hoses" on page 19.

Position of the hydraulic unit

The hydraulic unit is generally attached to the ladder cage (scaffolding tubes or handrail boards) of the work platform.

Lay hydraulic hoses and lines in such a way that

- loops and knots are prevented,
- no loops overhang the edge of the platform,
- they do not get caught on the climbing platforms,
- they do not kink or cannot be pulled out of the connections,
- they are free of torsion and tension.

Climbing group

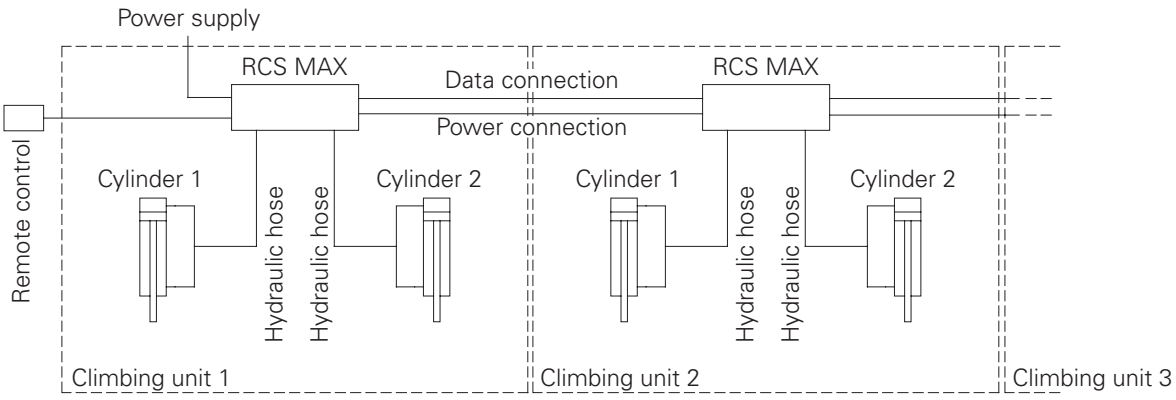


Fig. C1.03

Special consoles with 3 climbing rails

- Three cylinders per climbing unit are in use. (Fig. C1.04)
- As a result of load redistribution, error messages may occur at the pumps or at the end position when the pressure sensor registers that the maximum pressure has been reached. If this happens, acknowledge the error after checking for collisions.

Route the hydraulic hoses and cables

- Connect the hydraulic hoses in such a way that they are not pulled upwards by the platform during climbing.
- Arrange the cables to prevent them from becoming a hindrance or being damaged.
- Observe the minimum bending radius of the hoses, see Section "Hydraulic hoses" on page 19.
- At the free connections A and B of the hydraulic unit, connect a short-circuit connection (short piece of tubing).

Position of the hydraulic units

The hydraulic units are generally attached to the ladder cage (scaffolding tubes or handrail boards) of the work platform.

Lay hydraulic hoses and lines in such a way that

- loops and knots are prevented,
- no loops overhang the edge of the platform,
- they do not get caught on the climbing platforms,
- they do not kink or cannot be pulled out of the connections,
- they are free of torsion and tension.

Climbing group

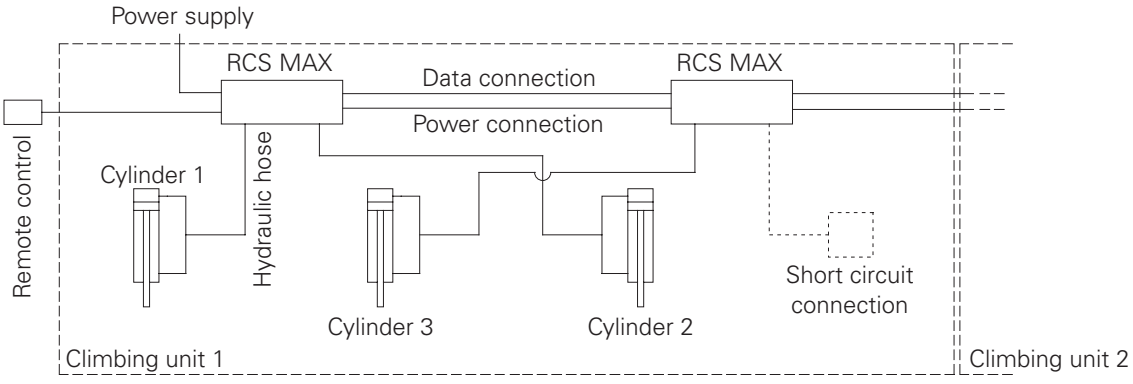


Fig. C1.04

Connecting hydraulic hoses

- The quick-coupler connections on the unit are clearly marked.
- Refer to the manufacturer's assembly instructions for the connection to the unit.
- Refer to the hydraulic connection diagram in the assembly plans.
- If issues arise during connection, see Section "C7 Remedial measures for malfunctions" on page 62.
- Observe the minimum bending radius of the hoses, see Section "Hydraulic hoses" on page 19.

Quick-couplers consist of:

2.1 Hydraulic quick-coupler (bushing) article no. 110822/128993
2.2 Hydraulic quick-coupler (clip) article no. 110823/128992
2.3 Retaining ring (bushing)

Assembly

1. Clean clip (**2.2**) and bushing (**2.1**) before coupling.
2. Push the clip (**2.2**) as far as possible into the bushing until the retaining ring (**2.3**) engages.
3. Turn retaining ring with a quarter-turn (right or left) to secure it.
   → Accidental disconnection is thus prevented.
4. Arrange the hoses so they do not pose a safety risk, and secure their position, e.g. with cable ties.

(Fig. C1.06)

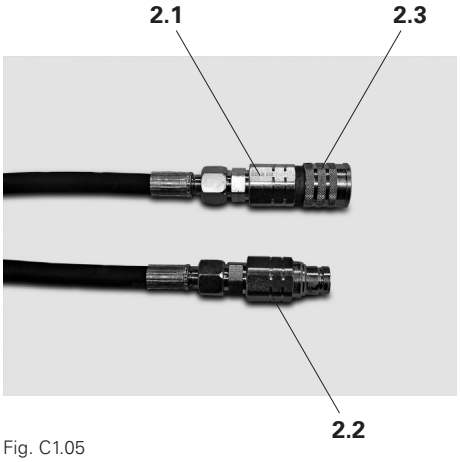


Fig. C1.05

RCS C MAX

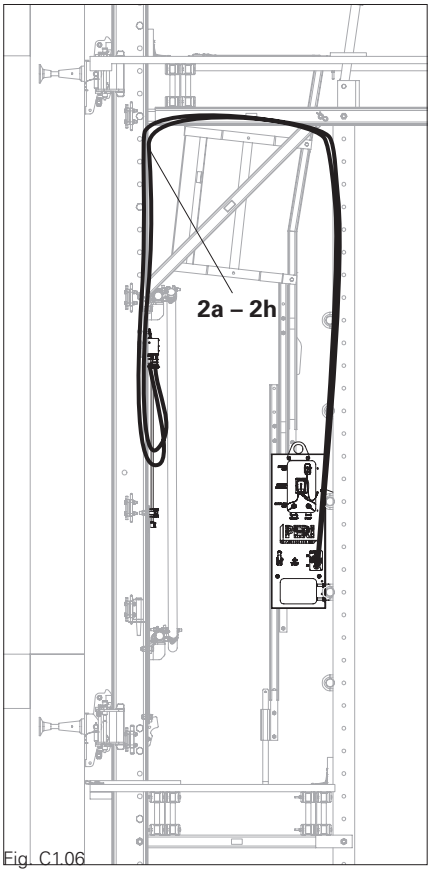


Fig. C1.06

Fig. C1.06a

RCS CL MAX

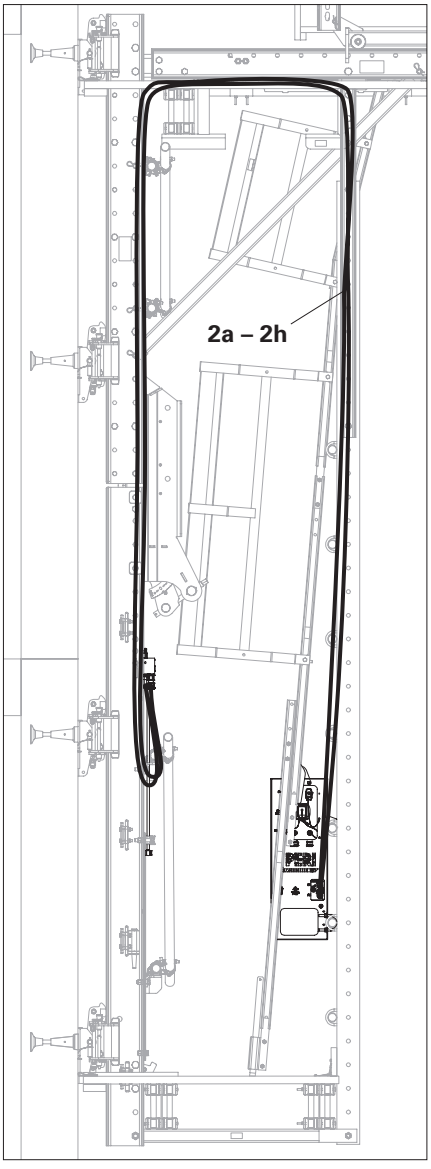


Fig. C1.06b

C2 Installation of Climbing Cylinder RCS MAX 75

RCS C MAX and RCS CL MAX Rail Climbing System

Observe Instructions for Assembly and Use for RCS C MAX Rail Climbing System or Instructions for Assembly and Use for RCS CL MAX Rail Climbing System.

- A flat assembly surface is required for installation.
- Secure intermediate posts with temporary supports to prevent tipping over.
- Refer to the assembly plans for the cylinder position.

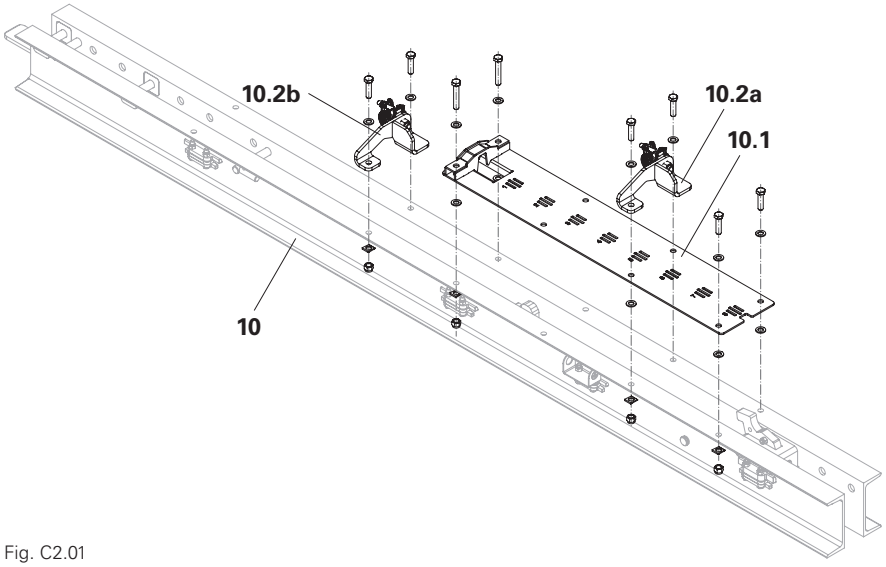


Fig. C2.01

Dismantling cylinder fixation and diagonal connection

1. Dismantle cylinder fixation (**10.1**) with diagonal connection (**10.2a**) and upper diagonal connection (**10.2b**) of the Driving Rail RCS C MAX (**10**).
2. Set aside the screws, nuts and washers.

(Fig. C2.01)

Mounting the climbing cylinder

1. Insert Climbing Cylinder RCS MAX 75 (**1**) with rod side at approx. 55° angle into the climbing connection (**10.3**) of the climbing saw (**10.6**).
   → Hose connections point out of the driving rail.
2. Fold down the Climbing Cylinder RCS MAX 75 (**1**).
3. Mount the Climbing Cylinder RCS MAX 75 (**1**) with bolt Ø 25 x 200 SCS (**10.4**) and Cotter Pin 5/1 ga (**10.5**).

(Fig. C2.02)

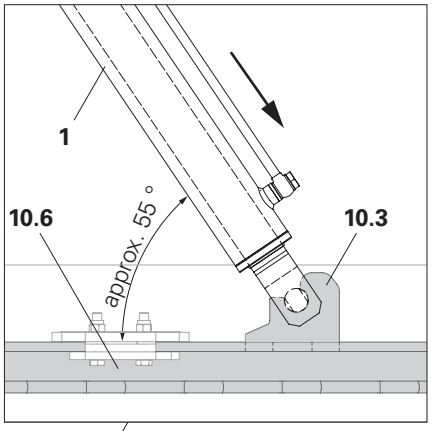


Fig. C2.02a

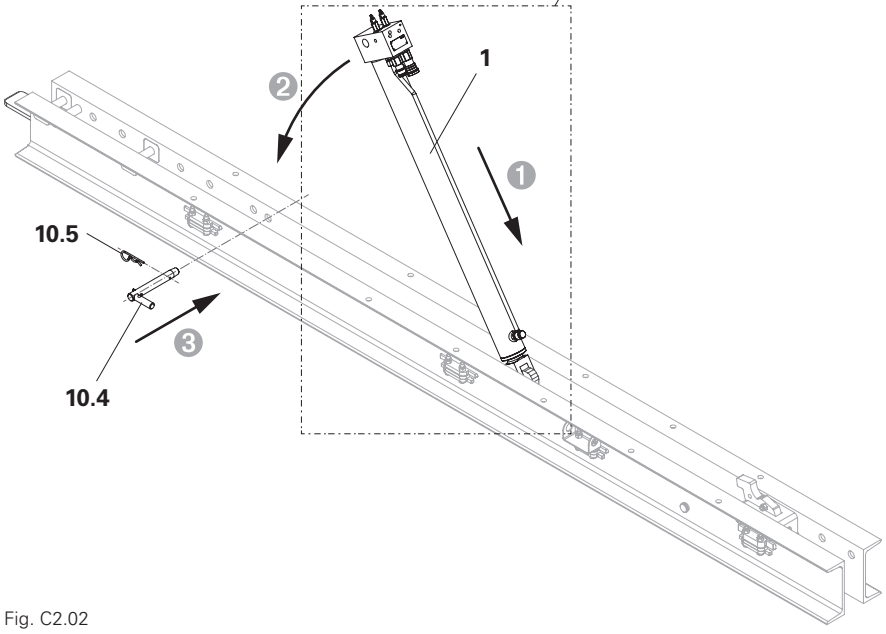


Fig. C2.02

C2 Installation of Climbing Cylinder RCS MAX 75

Refer to the installation plans for the installation positions of the diagonal connections.

Assembling the cylinder fixation and diagonal connection

1. Reassemble cylinder fixation (**10.1**) and diagonal connections (**10.2a + 10.2b**) with the prescribed Bolt ISO 4014 M16 x 45-8.8 (**10.11**), Bolt ISO 4014 M16 x 60-8.8 (**10.10**), Bolt ISO 4014 M16 x 90-8.8 (**10.9**), Nuts ISO 7040 M16-8 (**10.14**), Washers ISO 7089 200 HV, A 16 (**10.12**) and wedge washers DIN 434 18 (**10.13**).
   → Climbing Cylinder RCS MAX 75 (**1**) is now installed.

(Fig. C2.03 + Fig. C2.03a)

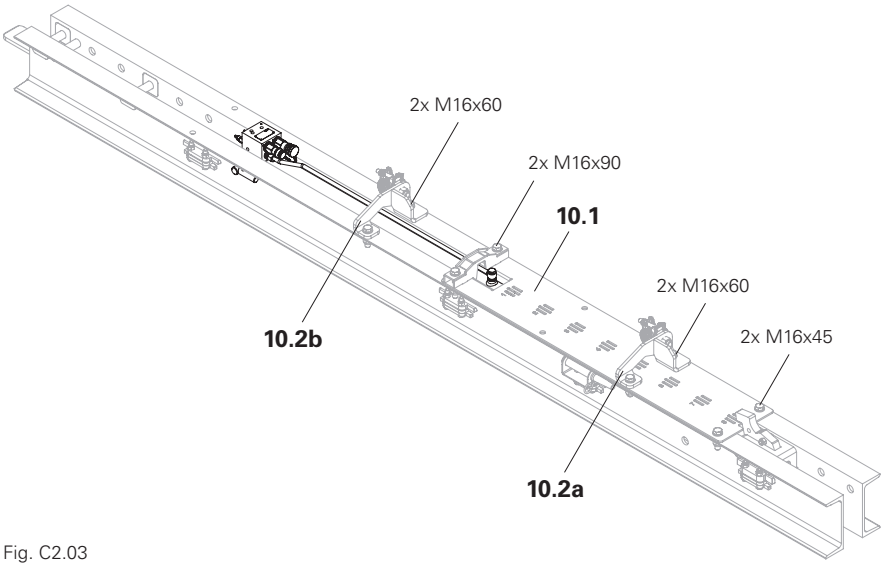


Fig. C2.03

Bolt position 1

$L_{1\ (RCS\ C\ MAX)}$ = 240.3 cm

$L_{1\ (RCS\ CL\ MAX)}$ = 90.3 cm

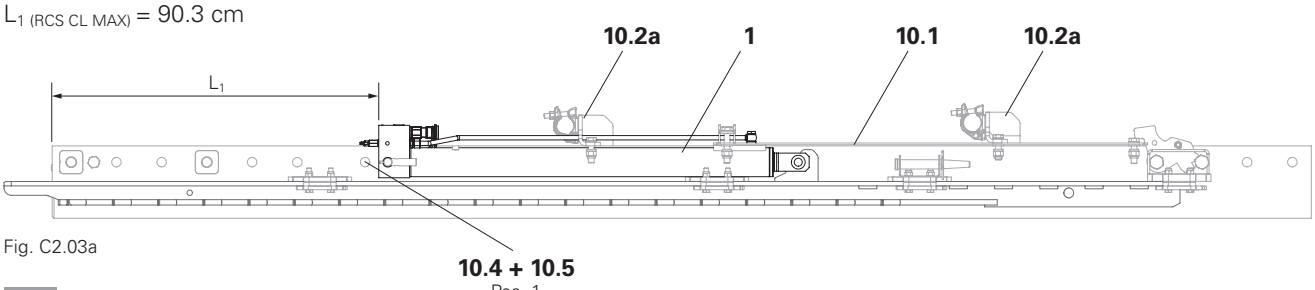


Fig. C2.03a

- Remove the Fitting Pin Ø26x120 mm (**10.8**) and Cotter Pin 5/1 ga (**10.5**) in the climbing saw before installing the Climbing Cylinder RCS MAX 75 (**1**) and move the saw into position.
- Insert Fitting Pin Ø26x120 mm (**10.8**) on the driving rail into the parking position.

(Fig. C2.03 + Fig. C2.03b)

Bolt position 2

$L_{2\ (RCS\ C\ MAX)}$ = 234 cm

$L_{2\ (RCS\ CL\ MAX)}$ = 84 cm

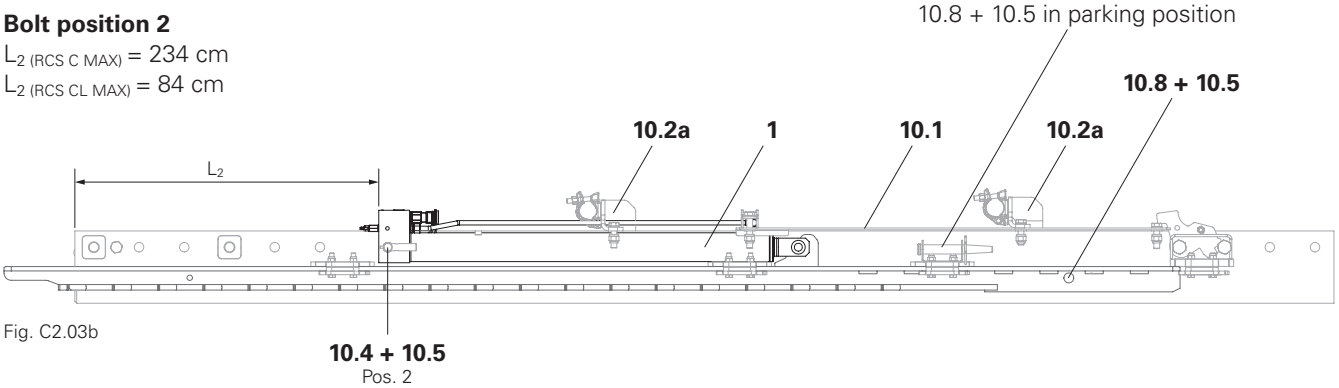


Fig. C2.03b

Climbing rule for RCS C MAX

Example: Section height = 3.60 m
- Row: 3698 mm < 3700 mm < 3760 mm.
- Select Climbing Rail RCS 348 as the climbing rail.
- Position the Climbing Cylinder RCS MAX 75 in position P1 (bottom hole).

Section height		Cylinder position	Climbing rail
from [mm]	up to [mm]		
2700 mm	2760 mm	P1	Climbing Rail RCS 248
2760 mm	2823 mm	P2	
2823 mm	2885 mm	P1	
2885 mm	2948 mm	P2	
2948 mm	3010 mm	P1	
3010 mm	3073 mm	P2	
3073 mm	3135 mm	P1	
3135 mm	3198 mm	P2	
3198 mm	3260 mm	P1	Climbing Rail RCS 298
3260 mm	3323 mm	P2	
3323 mm	3385 mm	P1	
3385 mm	3448 mm	P2	
3448 mm	3510 mm	P1	
3510 mm	3573 mm	P2	
3573 mm	3635 mm	P1	
3635 mm	3698 mm	P2	
3698 mm	3760 mm	P1	Climbing Rail RCS 348
3760 mm	3823 mm	P2	
3823 mm	3885 mm	P1	
3885 mm	3948 mm	P2	
3948 mm	4010 mm	P1	
4010 mm	4073 mm	P2	
4073 mm	4135 mm	P1	
4135 mm	4198 mm	P2	
4198 mm	4260 mm	P1	Climbing Rail RCS 398
4260 mm	4323 mm	P2	
4323 mm	4385 mm	P1	
4385 mm	4448 mm	P2	
4448 mm	4500 mm	P1	

Tab. C2.01

Climbing rule for RCS CL MAX

Example: Section height = 3.60 m
- Row: 3571 mm < 3600 mm < 3634 mm.
- Select Climbing Rail RCS 248 as the climbing rail.
- Position the Climbing Cylinder RCS MAX 75 in position P1 (bottom hole).
- Tie spacing: 1625 mm.

Section height		Cylinder position	Tie spacing	Climbing rail	
from [mm]	up to [mm]				
2700 mm	2759 mm	P1	1375 mm		Climbing Rail RCS 198
2760 mm	2774 mm	P2	1355 mm		
2775 mm	2820 mm	P2	1385 mm		
2821 mm	2884 mm	P1	1375 mm		
2885 mm	2899 mm	P2	1355 mm		
2900 mm	2945 mm	P2	1385 mm		
2946 mm	3009 mm	P1	1375 mm		
3010 mm	3024 mm	P2	1355 mm	Climbing Rail RCS 248	
3025 mm	3070 mm	P2	1385 mm		
3071 mm	3134 mm	P1	1375 mm		
3135 mm	3149 mm	P2	1355 mm		
3150 mm	3195 mm	P2	1385 mm		
3196 mm	3199 mm	P1	1375 mm		
3200 mm	3259 mm	P1	1625 mm		
3260 mm	3274 mm	P2	1605 mm		
3275 mm	3320 mm	P2	1635 mm		
3321 mm	3384 mm	P1	1625 mm		
3385 mm	3399 mm	P2	1605 mm		
3400 mm	3445 mm	P2	1635 mm		
3446 mm	3509 mm	P1	1625 mm		
3510 mm	3524 mm	P2	1605 mm		
3525 mm	3570 mm	P2	1635 mm		
3571 mm	3634 mm	P1	1625 mm		
3635 mm	3649 mm	P2	1605 mm		
3650 mm	3695 mm	P2	1635 mm		
3696 mm	3699 mm	P1	1625 mm		
3700 mm	3759 mm	P1	1875 mm		
3760 mm	3774 mm	P2	1855 mm		
3775 mm	3820 mm	P2	1885 mm		
3821 mm	3884 mm	P1	1875 mm		
3885 mm	3899 mm	P2	1855 mm		
3900 mm	3945 mm	P2	1885 mm		
3946 mm	4009 mm	P1	1875 mm		
4010 mm	4024 mm	P2	1855 mm		
4025 mm	4070 mm	P2	1885 mm		
4071 mm	4134 mm	P1	1875 mm		
4135 mm	4149 mm	P2	1855 mm		
4150 mm	4195 mm	P2	1885 mm		
4196 mm	4199 mm	P1	1875 mm		
4200 mm	4259 mm	P1	2125 mm		
4260 mm	4274 mm	P2	2105 mm		
4275 mm	4320 mm	P2	2135 mm		
4321 mm	4384 mm	P1	2125 mm		
4385 mm	4399 mm	P2	2105 mm		
4400 mm	4445 mm	P2	2135 mm		
4446 mm	4500 mm	P1	2125 mm		

Tab. C2.02

C3 Preparation prior to climbing

Warning

The moving process may create building edges between the platforms!
A fall can result in serious injury or even death.
⇒ Guardrails must be installed prior to climbing.
⇒ Cordon off areas of risk in advance.
⇒ Use personal protective equipment to prevent falling from a height.

Warning

Body parts may become trapped between climbing rail/driving rail and climbing shoes, between climbing device and driving rail, between climbing saw and driving rail or between building parts (openings, projections) and the climbing system!
This can result in serious injuries.
⇒ Do not hold the climbing shoe and climbing rails when the climbing unit is being moved.
⇒ Keep away from shearing edges (wall openings, projections etc.).

- Only use serviced and tested material.
- If necessary, refer to and carry out the hydraulic system checks in the manufacturer's assembly instructions.
- Check hydraulic hoses and replace if necessary.
- Carefully rinse and bleed hydraulic cylinders and hoses before use, see Section "C7 Remedial measures for malfunctions" on page 62.
- Check fluid level in the oil container and top up, if necessary.
- Unravel any loops and twists in the hydraulic hoses and cables.
- Check whether hydraulic hoses could become trapped.
- Check the data and power connection.
- Close unused connections with mating plugs.
- Turn on the power to the system.
- Check the rotary field and adjust if necessary.
- Check the temperature of the oil and bring it to the specified temperature by flushing, if necessary. (For a cold start, see the manufacturer's instructions for use.)
- Listen out for any pump noises after starting up.
- Check components and connections for leaks.
- Lubricate Climbing Rails RCS.
- Check whether the platforms in the area of the climbing rails collide with the quick-couplers or hydraulic hoses during climbing.
- Grease the sliding surfaces of the climbing saw in the Driving Rail RCS MAX.

Carry out the climbing procedure from the planned position.

Lubricating the climbing and drive rail

To minimise frictional forces on the climbing shoe, lubricate the Climbing Rail RCS (**9**) and Driving Rail RCS MAX (**10**) before the first climb.

- Use pressure and heat-resistant multi-purpose grease, e.g. Ixelon LT 200 EP.
- Follow the instructions in the safety data sheet before use.

Components

117	Multi-purpose grease

Lubricating the Climbing Rail RCS

1. Lubricate the entire length of the Climbing Rail RCS (**9**) with multi-purpose grease (**117**) on the inside of the sliding area of the guiding skids.

(Fig. C3.01 + Fig. C3.03)

Lubricating the Driving Rail RCS MAX

1. Lubricate the entire length of the Driving Rail RCS MAX (**10**) with multi-purpose grease (**117**) on the inside of the sliding area of the guiding skids.
2. Lubricate the entire length of the Driving Rail RCS MAX (**10**) with multi-purpose grease (**117**) on the outside of the sliding area of the upper guiding skids.

(Fig. C3.02 + Fig. C3.03)

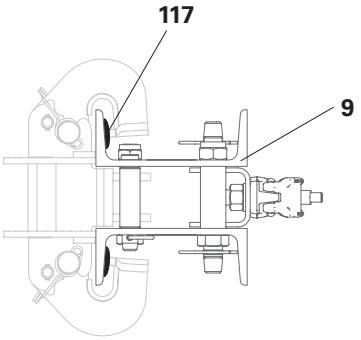


Fig. C3.01

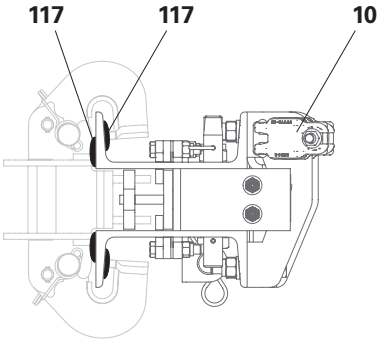


Fig. C3.02

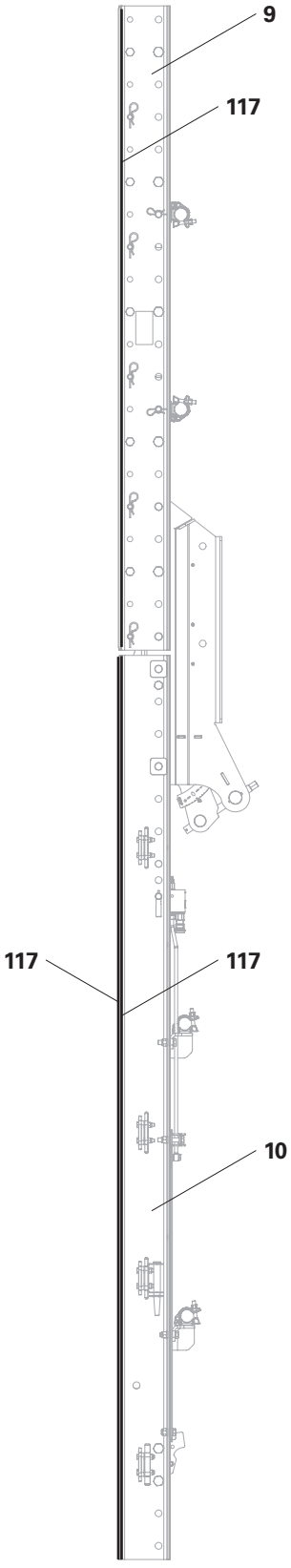


Fig. C3.03

Operating the hydraulic unit

- Observe the manufacturer's assembly instructions.
- Connect the power connections, data connections and remote controls.

Connecting to the power supply

1. Check that all hoses and cables are connected and securely arranged (e.g. pump/group, remote control).
2. Check that all climbing groups are collated correctly.
3. Connect the Power Cable RCS MAX CEE 32A 2 m (**4**) or Power Cable RCS MAX 2 m (**22**) to POWER IN (**3.5**).
4. Connect the Power Cable RCS MAX CEE 32A 2 m (**4**) or Power Cable RCS MAX 2 m (**22**) to the power supply.
   – Ensure that the supply cable is long enough.
   – If necessary, attach strain relief.
   – Take climbing differences between uncoupled platforms of at least 0.90 m into account!
5. Check the rotary field on the keypad (**3.23**): If all the keys on the keypad are flashing red/white, the rotary field is not set correctly. If necessary, change the rotary field using a phase inverter on Power Cable RCS MAX CEE-32A 2 m (**4**), see Section "C7 Remedial measures for malfunctions" on page 62.
6. Carry out any additional steps in the hydraulic unit's assembly instructions.
   → The units are prepared.

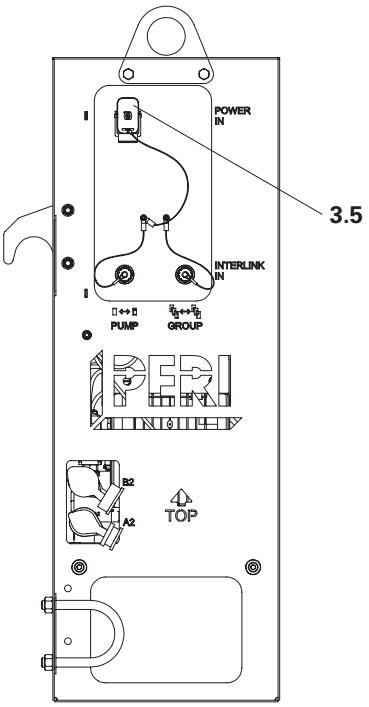


Fig. C4.01

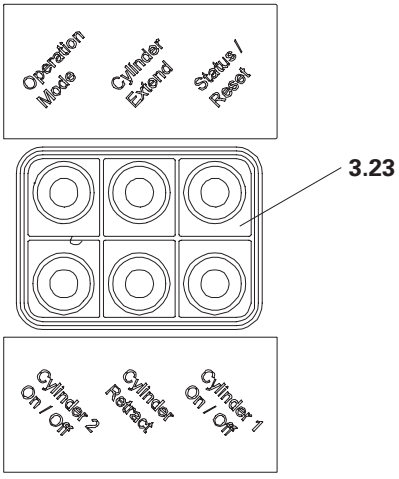


Fig. C4.02

- A detailed description of the climbing procedure can be found in the Instructions for Assembly and Use for the climbing system.
- Observe the assembly instructions for the hydraulic unit.

Observe the project-specific climbing procedure diagram and hydraulic connection diagram.

Setting the hydraulic unit so it is ready for operation

1. Check that all units are in the correct operating mode.
2. Press the "Status/Reset" key (**3.19**) on all hydraulic units until the key is no longer illuminated red; to do this, switch off and acknowledge any errors that may occur.
   → The units are ready for operation.

(Fig. C4.03)

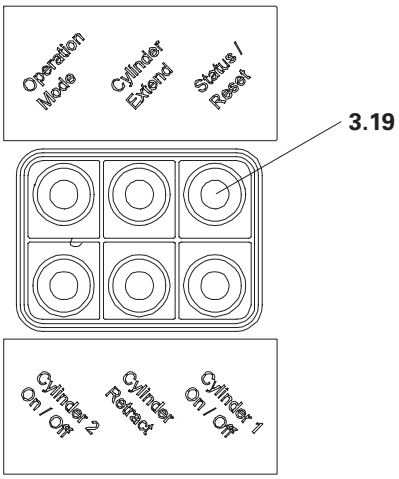


Fig. C4.03

Switching off the hydraulic unit

- As soon as the "Cylinder Extend" and "Cylinder Retract" keys are no longer pressed, the hydraulic unit goes into standby mode and the hydraulic unit switches off after 30 seconds.
- When the power supply is interrupted, the hydraulic unit switches off completely.

Climbing with Driving Rail RCS C MAX

- For operation of the climbing shoes, see Section "Operating climbing shoes" on page 55 and the Instructions for Assembly and Use for the climbing system.
- Are all claws engaged in the spacers? Deactivate the other climbing shoes, if necessary, see Section "C5 Operating climbing shoes" on page 55.
- Always extend and retract the Climbing Cylinders RCS MAX 75 until your limit stop is reached. Synchronisation deviations are thus corrected.
- If multiple remote controls are connected, they must all be activated simultaneously, otherwise the climbing system will not move.

Extending the climbing device

1. Press the "Cylinder Extend" key (**13.1**) on the remote control.
   → The climbing device extends.

(Fig. C4.04)

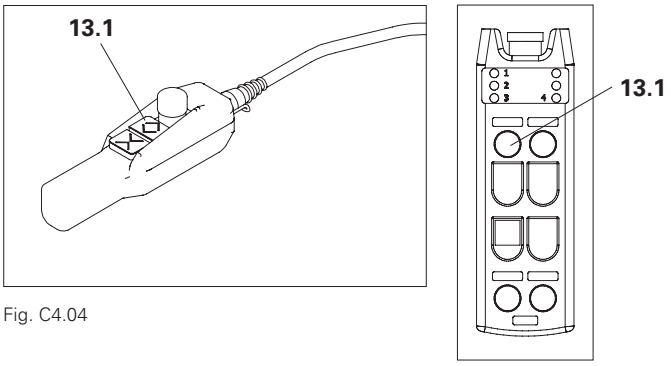


Fig. C4.04

Retracting the climbing device

- Before retracting, check that all climbing pawls in the climbing shoes are engaged below the spacers.
- If multiple remote controls are connected, they must all be activated simultaneously, otherwise the climbing cylinders will still be extended.

1. Press the "Cylinder Retract" key (**13.2**) on the remote control.
   → The climbing device retracts.

(Fig. C4.05)

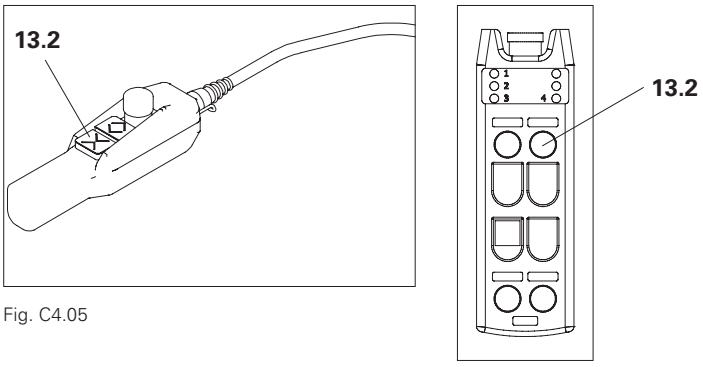


Fig. C4.05

Preparation

- Deshutter.
- Prepare hydraulics.
- If necessary, reposition the climbing cylinder.
- If necessary, remove the existing guardrails.

Climbing

1. Activate the climbing shoe (**5**) at position **B** and **C**.
2. Extend the Climbing Cylinder RCS MAX 75 completely.
   → The climbing saw (**10.6**) hangs on the climbing shoe (**5**) at position **C** and lifts the climbing unit.
3. Deactivate the vertical load pawl (**10.7**).
4. Retract the Climbing Cylinder RCS MAX 75 completely.
   → The climbing unit hangs on the climbing shoe (**5**) at position **B** with the spacer (**9.1a**) of the climbing rail (**9**).
5. Remove the climbing shoe (**5**), wall shoe (**6**) and Climbing Cone-2 M30/DW 20 (**76**) at position **D**. Seal the tie holes, if necessary.

(Fig. C4.06)

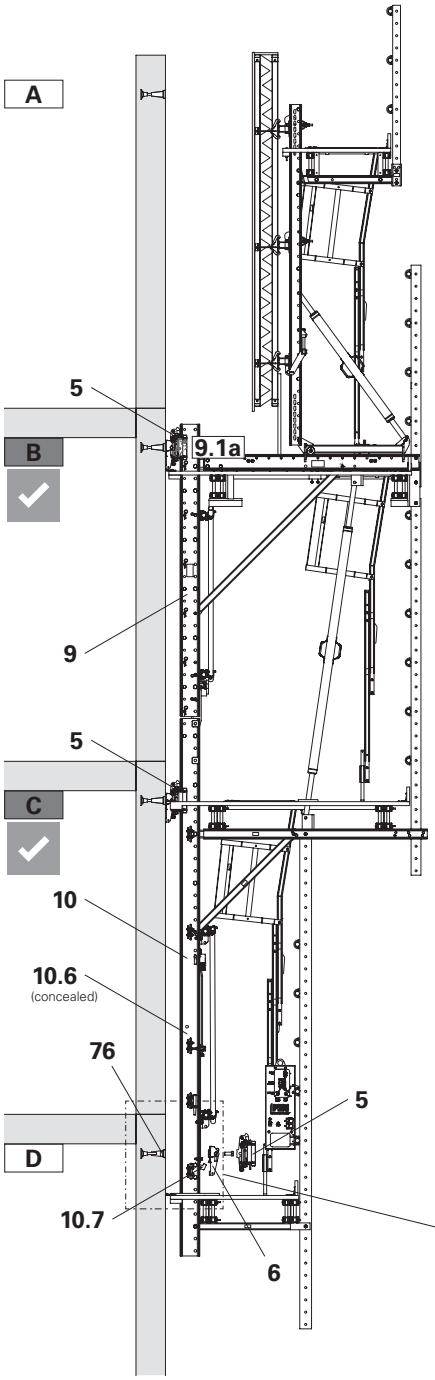


Fig. C4.06

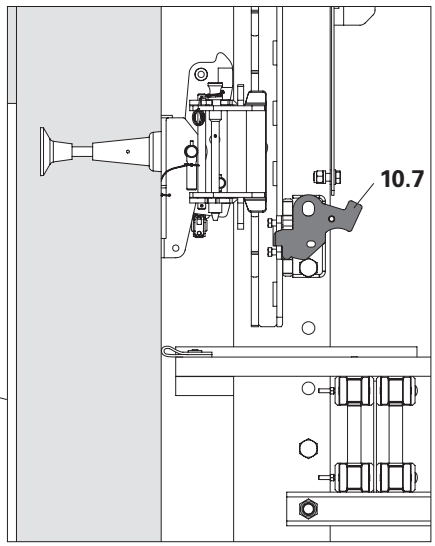


Fig. C4.06a

6. Repeat steps 2 and 4 until shortly before reaching position **A**.
7. Attach the climbing unit to the climbing shoe (**5**) at position **B** with the spacer (**10.23**).
8. Fit the wall shoe (**6**) and climbing shoe (**5**) at position **A** and deactivate them.
9. Adjust the climbing rail (**9**) using the adjustable spindle (**111**) so that the climbing unit can be threaded into the climbing shoe at position **A**.

(Fig. C4.07)

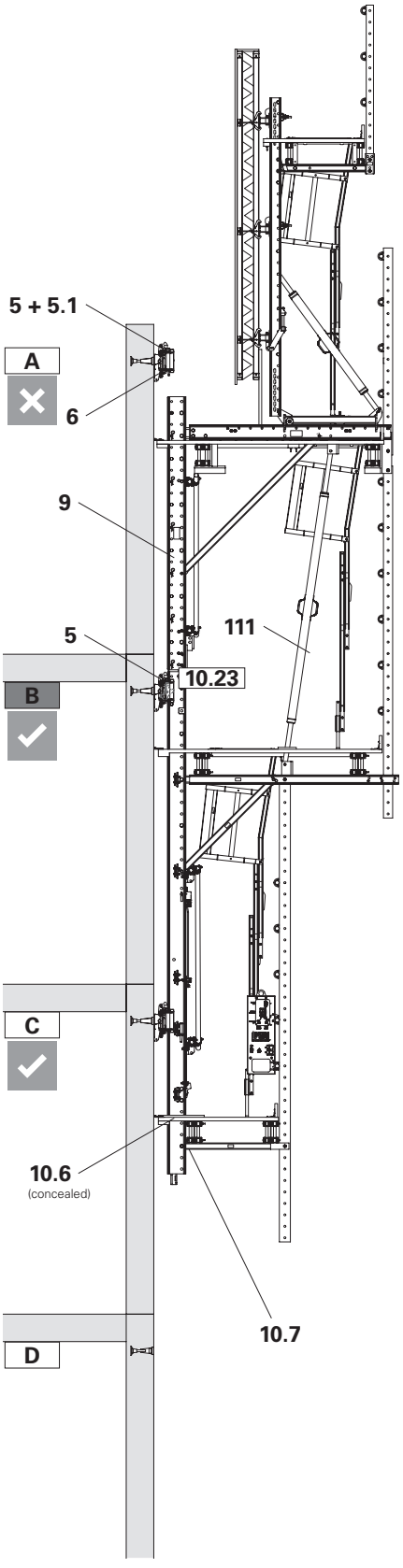


Fig. C4.07

10. Activate vertical load pawl (**10.7**).
11. Extend the Climbing Cylinder RCS MAX 75 until the vertical load pawl (**10.7**) swivels into the recess of the climbing saw (**10.6**).
    → The first spacer (**9.1a**) of the climbing rail (**9**) moves past the climbing pawl (**5.1**) in the climbing shoe (**5**) at position **A**.
12. Retract the Climbing Cylinder RCS MAX 75 until the vertical load pawl (**10.7**) swivels into the recess of the climbing saw (**10.6**).
    → The system is free of hydraulic loads.
    → The load is resting on Climbing Shoe RCS (**5**) at position **C** by way of a climbing saw (**10.6**) using the vertical load pawl (**10.7**).
13. If necessary, fit the guardrails.

(Fig. C4.08)

Alternative option

Mount the climbing unit on the climbing shoe (**5**) at position **A** with the spacer (**9.1a**) of the climbing rail (**9**).
Concrete strength must be taken into account!

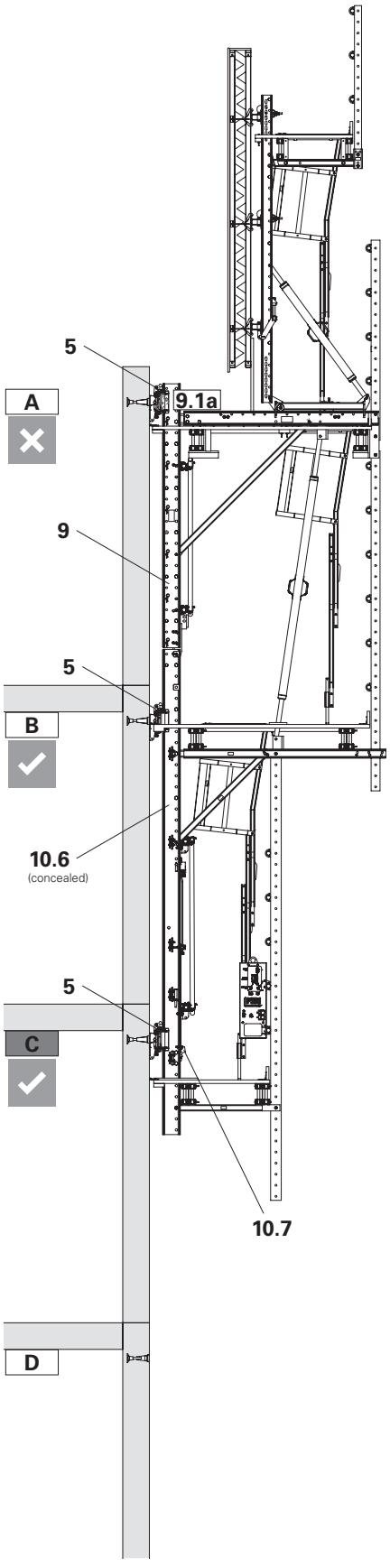


Fig. C4.08

Climbing with Driving Rail RCS CL MAX

- For operation of the climbing shoes, see Section "Operating climbing shoes" on page 55 and the Instructions for Assembly and Use for the climbing system.
- Are all claws engaged in the spacers? Deactivate the other climbing shoes, if necessary, see Section "C5 Operating climbing shoes" on page 55.
- Always extend and retract the Climbing Cylinders RCS MAX 75 until your limit stop is reached. Synchronisation deviations are thus corrected.
- If multiple remote controls are connected, they must all be activated simultaneously, otherwise the climbing system will not move.

Extending the climbing device

1. Press the "Cylinder Extend" key (**13.1**) on the remote control.
   → The climbing device extends.

(Fig. C4.09)

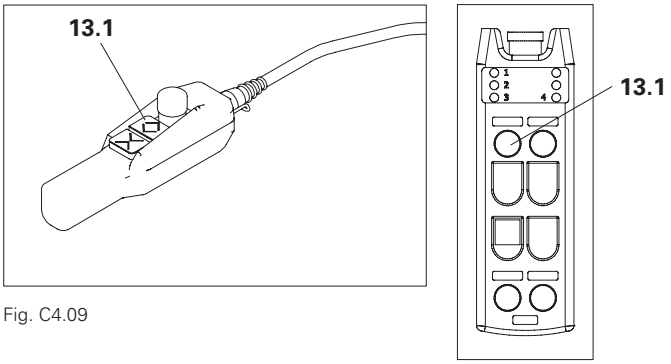


Fig. C4.09

Retracting the climbing device

- Before retracting, check that all climbing pawls in the climbing shoes are engaged below the spacers.
- If multiple remote controls are connected, they must all be activated simultaneously, otherwise the climbing cylinders will still be extended.

1. Press the "Cylinder Retract" key (**13.2**) on the remote control.
   → The climbing device retracts.

(Fig. C4.10)

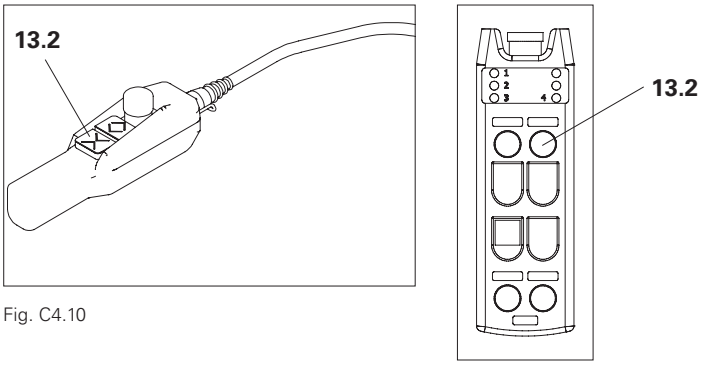


Fig. C4.10

Preparation

- Deshutter.
- Prepare hydraulics.
- If necessary, reposition the climbing cylinder.
- If necessary, remove the existing guardrails.

Climbing

1. Remove the climbing shoe (**5**), wall shoe (**6**) and Climbing Cone-2 M30/ DW 20 (**76**) at position **F**. Seal the tie holes, if necessary.
2. Activate the climbing shoe (**5**) at position **C** and **E**.
3. Extend the Climbing Cylinder RCS MAX 75 completely.
   → The climbing saw (**10.6**) hangs on the climbing shoe (**5**) at position **E** and lifts the climbing unit.
4. Deactivate the vertical load pawl (**10.7**).
5. Retract the Climbing Cylinder RCS MAX 75 completely.
   → The climbing unit hangs on the climbing shoe (**5**) at position **C** with the spacer (**9.1a**) of the climbing rail (**9**).

(Fig. C4.11)

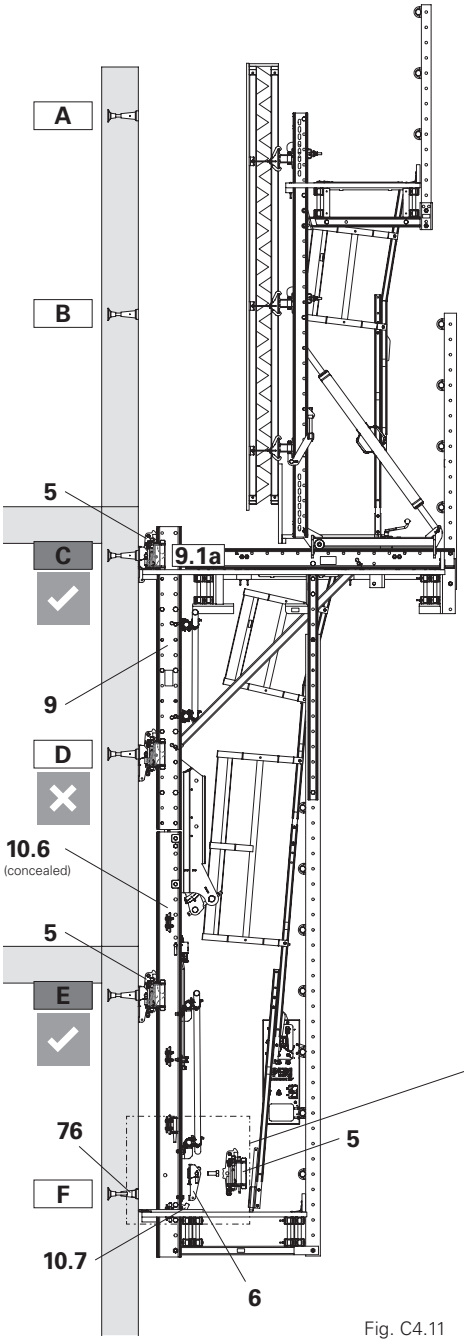


Fig. C4.11

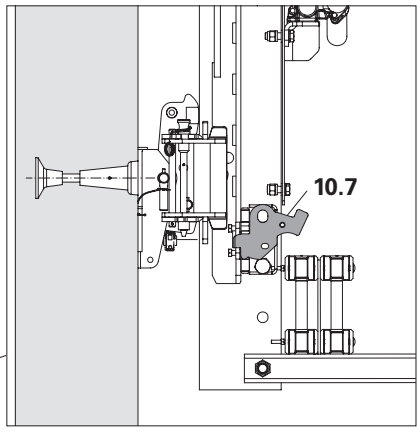


Fig. C4.11a

6. Repeat steps 3 and 5 until the climbing saw (**10.6**) can be hooked into the climbing pawl (**5.1**) of the climbing shoe (**5**) at position **D**.
7. Fit the wall shoe (**6**) and climbing shoe (**5**) at position **B**.
8. Activate the climbing shoe (**5**) at position **B** and **D**.
   Deactivate the climbing shoe (**5**) at position **E**.
9. Adjust the climbing rail (**9**) using the incline connector (**23**).
   To do this, the climbing unit must be suspended on the climbing shoe (**5**) at position **D** with the drive rail (**10**).
10. Continue climbing the climbing unit and thread into the climbing shoe (**5**) at position **B**.
    → The first spacer (**9.1a**) of the Climbing Rail RCS switches the climbing pawl (**5.1**) in the climbing shoe (**5**) to position **B**.
11. Retract the Climbing Cylinder RCS MAX 75 completely.
    → The climbing unit hangs on the climbing shoe (**5**) at position **B** with the spacer (**9.1a**) of the climbing rail.
12. Remove the climbing shoe (**5**), wall shoe (**6**) and Climbing Cone-2 M30/DW 20 (**76**) at position **E**.
    Seal the tie holes, if necessary.

(Fig. C4.12)

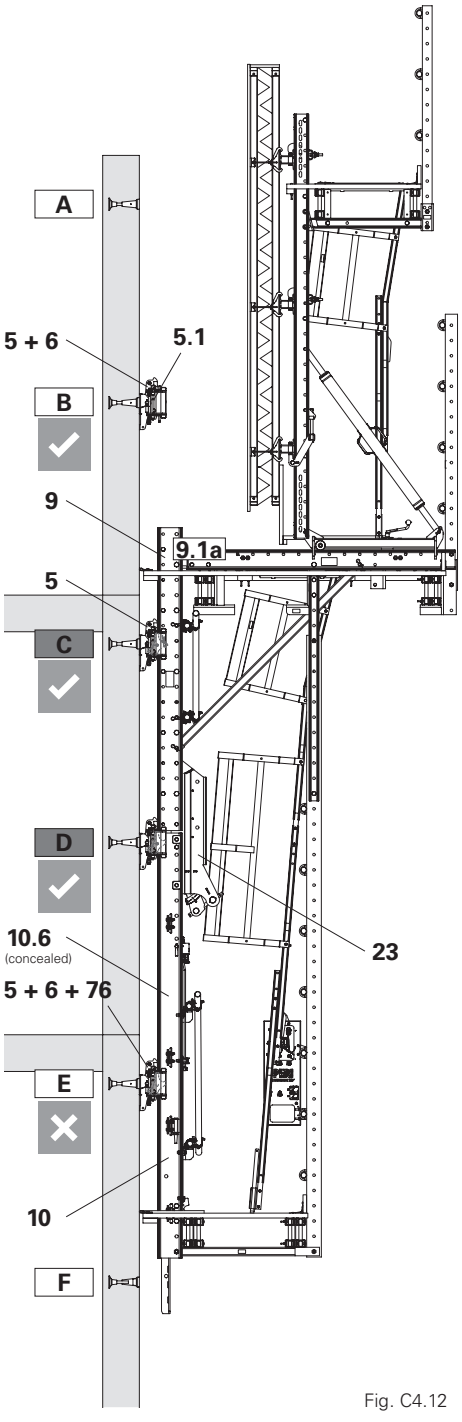


Fig. C4.12

13. Repeat steps 3 and 5 until the climbing saw (**10.6**) can be hooked into the climbing pawl (**5.1**) of the climbing shoe (**5**) at position **C**.
14. Fit the wall shoe (**6**) and climbing shoe (**5**) at position **A**.
15. Deactivate the climbing shoe (**5**) at position **A** and **D**.
16. Adjust the climbing rail (**9**) using the incline connector (**23**).
    To do this, the climbing unit must be suspended on the climbing shoe (**5**) at position **C** with the drive rail (**10**).
17. Continue climbing the climbing unit and thread into the climbing shoe (**5**) at position **A**.
18. Climb the climbing unit to its final position.
    → The first spacer (**9.1a**) of the climbing rail (**9**) moves past the climbing pawl (**5.1**) in the climbing shoe (**5**) at position **A**.
19. Retract the Climbing Cylinder RCS MAX 75 completely.
    → The climbing unit hangs on the climbing shoe (**5**) at position **B** with the spacer (**9.1g**) of the climbing rail.

(not shown)

20. Activate vertical load pawl (**10.7**).
21. Extend the Climbing Cylinder RCS MAX 75 until the vertical load pawl (**10.7**) swivels into the recess of the climbing saw (**10.6**).
22. Retract the Climbing Cylinder RCS MAX 75 until the vertical load pawl (**10.7**) swivels into the recess of the climbing saw (**10.6**).
    → The system is free of hydraulic loads.
    → The load is resting on Climbing Shoe RCS (**5**) at position **C** by way of a climbing saw (**10.6**) using the vertical load pawl (**10.7**).
23. If necessary, fit the guardrails.

(Fig. C4.13)

Alternative option

Bearing of the climbing unit with the spacer (**9.1**) of the climbing rail (**9**) on the climbing shoe (**5**) at position **A** or **B**. Concrete strength must be taken into account!

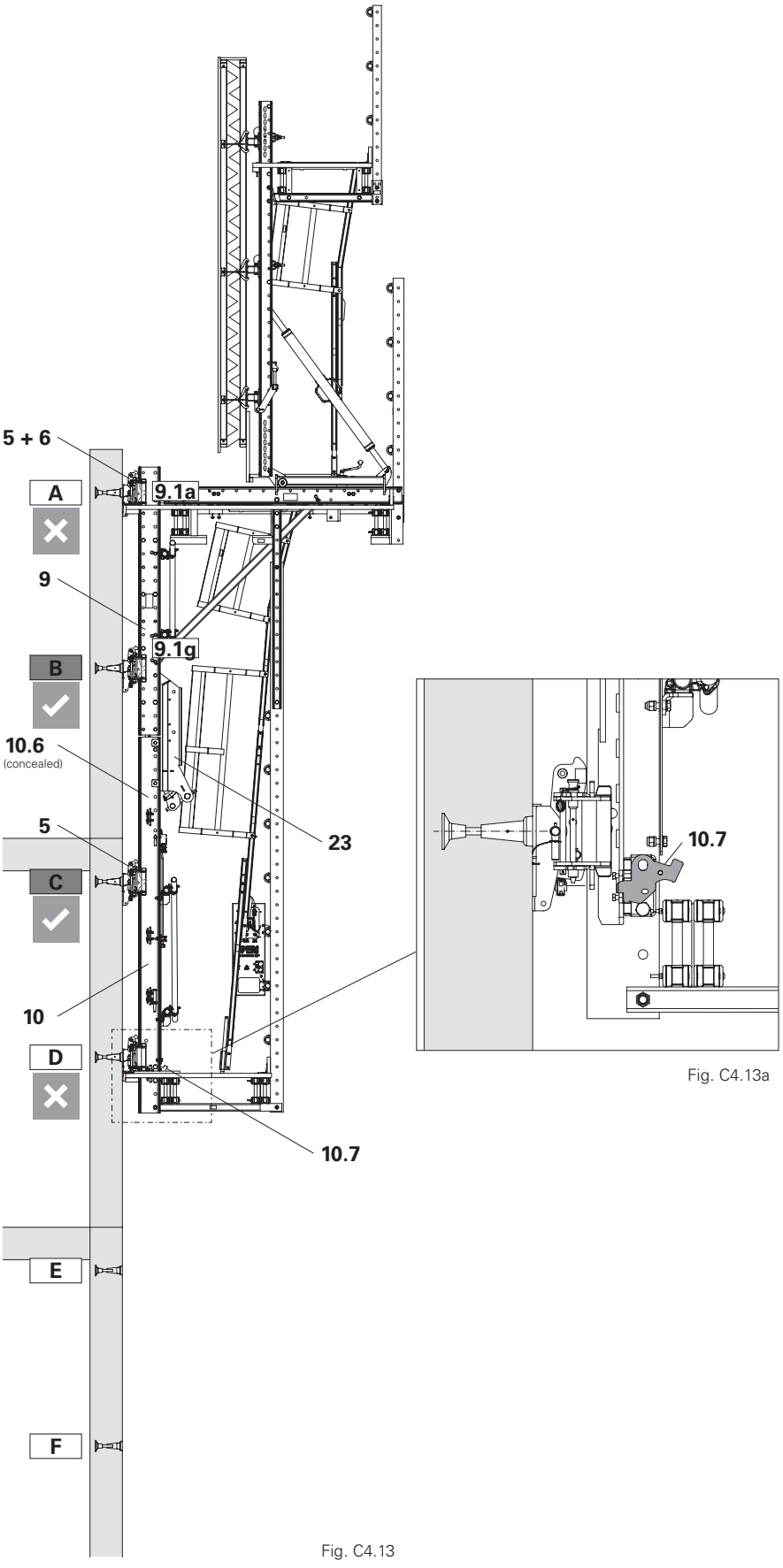


Fig. C4.13a

Fig. C4.13

Threading into the Climbing Shoe RCS

Warning

The moving process may create building edges between the platforms!
A fall can result in serious injury or even death.

⇒ Guardrails must be installed prior to climbing.
⇒ Cordon off areas of risk in advance.
⇒ Use personal protective equipment to prevent falling from a height.

When engaging the pawl of the climbing shoe in the climbing saw or climbing rail, make sure that there is sufficient shifting path to ensure safe engagement. (Fig. C4.14)
By selecting the vertical cylinder position (position 1 or 2 of the upper cylinder pin), a sufficient shifting path is guaranteed. See table "Tab. C2.01" on page 38.
In the case of changing storey heights or special applications, plan the climbing sequence in detail for each stroke individually and check the shifting paths (project-specific planning).
The pawl should have at least 15 mm clearance to the notch in the saw when turning in any condition and at any climbing step.

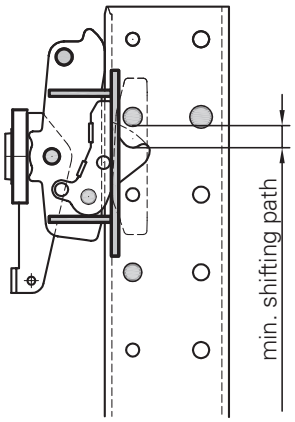


Fig. C4.14

Observe Instructions for Assembly and Use for the RCS CL MAX Rail Climbing System.

Climbing platforms individually

1. Stop approx. 2 cm in front of the climbing shoes (**5**).
2. Press the "Operation Mode" key (**3.17**) until the key flashes orange.
   → Single-mode operation is activated. (Fig. C4.15)
3. Aligning the climbing rail:
   – With RCS C MAX:
   The adjustable spindle (**111**) can be used to move the Climbing Rail RCS to facilitate threading into the Climbing Shoe RCS (**5**).
   (Fig. C4.16a + Fig. C4.16b)
   – With RCS CL MAX:
   With the Incline Connector RCS CL MAX (**23**) on the tension spindle (**23.1**), the Climbing Rail RCS can be moved to make threading into the Climbing Shoe RCS easier. (Fig. C4.17)
4. Thread the Climbing Rails RCS into the climbing shoes in pairs by:
   – pressing the "Cylinder Extend" key on the keypad.
   or
   – pressing the "Cylinder Extend" key on the connected remote control.
5. Press the "Operation Mode" key (**3.17**) until the key lights up green.
   → Interlink-mode operation is activated. (Fig. C4.15)

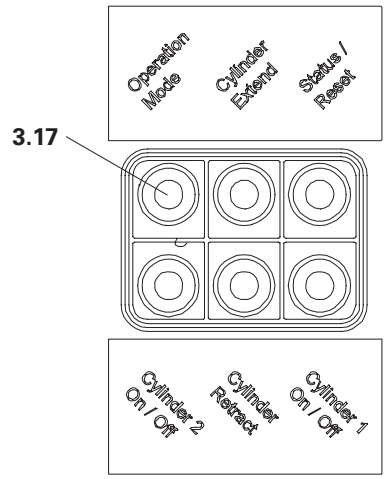


Fig. C4.15

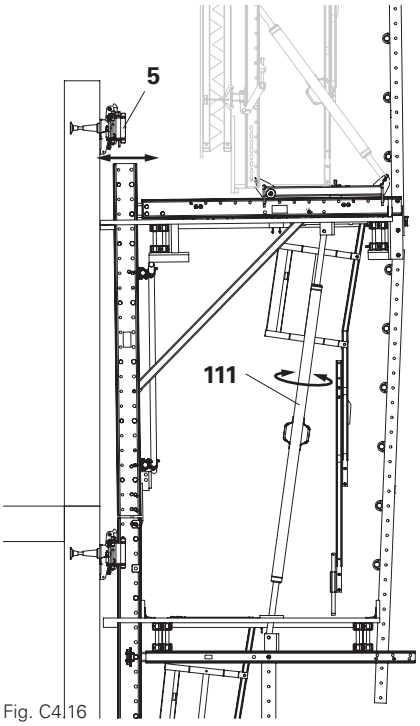


Fig. C4.16

Fig. C4.16a

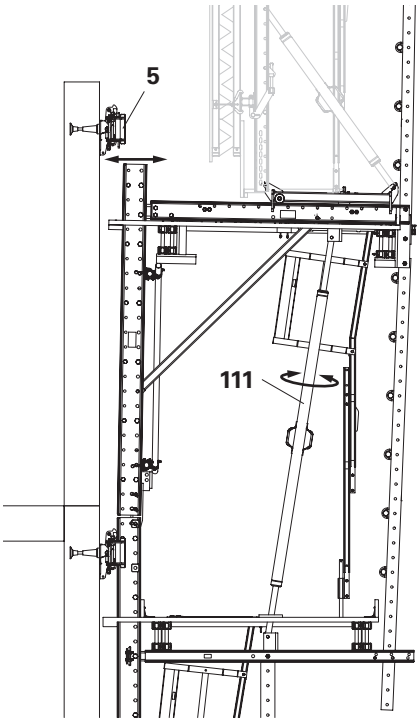


Fig. C4.16b

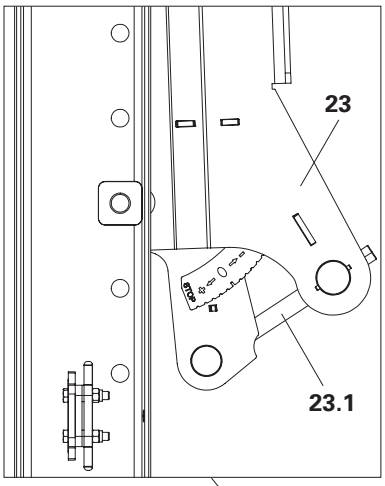


Fig. C4.17a

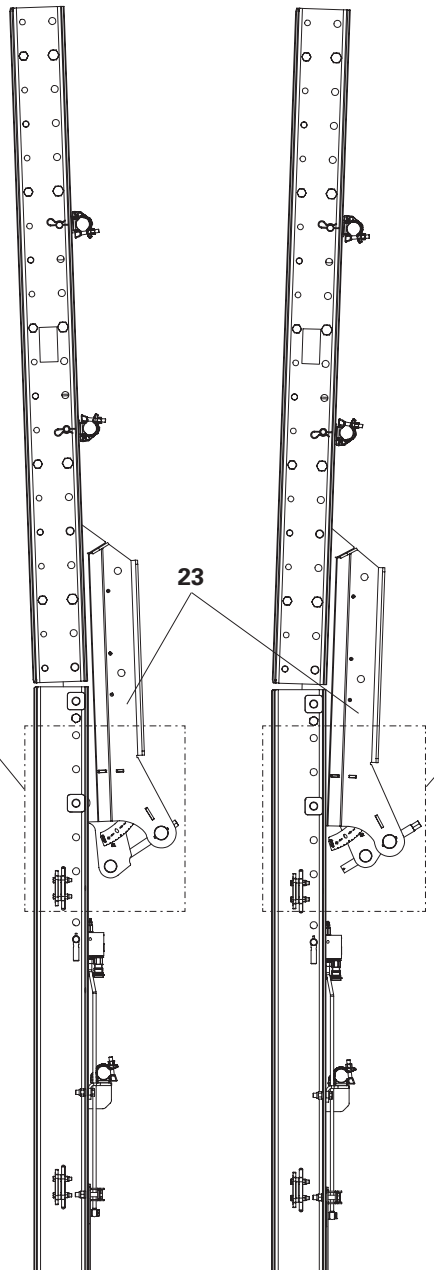


Fig. C4.17

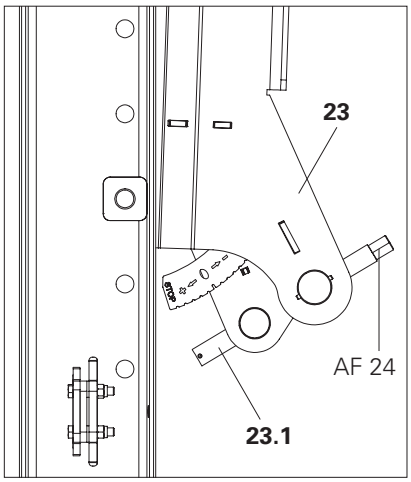


Fig. C4.17b

Extend and retract the climbing devices until your limit stop is reached. Synchronisation deviations are thus corrected.

Are all climbing rails aligned with the climbing shoes?
Are all pawls engaged beneath the spacers?
Are all climbing shoes serving as vertical bearings activated?

The tension spindle (**23.1**) can be released with the combi ratchet spanner AF24
(Article no. 021790).

Opening and closing the climbing shoe

Danger

- Climbing system can collapse!
  A collapse can result in serious injury or even death.
  ⇒ Do not open the climbing shoe under load or during the climbing procedure!
- Body parts can become trapped between climbing rails and climbing shoes!
  This can result in serious injuries.
  ⇒ Do not reach into the danger zone of the climbing shoe and climbing rail when the climbing unit is moving.

The safety pins (**5.3**) hold the guiding skids (**5.2**) in a closed position. (Fig. C5.01)

Components

5 Climbing Shoe RCS
5.2 Guiding skids
5.3 Safety pins
5.6 Spring lock

Opening the climbing shoe

1. Release the locking spring (**5.6**). For this, pull out the ring under the guiding skid (**5.2**). (Fig. C5.01)
2. Lift safety pin (**5.3**).
3. Fold up guiding skids (**5.2**). (Fig. C5.02)
4. Re-insert safety pins (**5.3**) in the opened position; place the locking spring (**5.6**) only loosely on the guiding skid. (Fig. C5.03)
5. Proceed in the same way with the other guiding skid. (not shown)

Open guiding skids make it easier to thread the climbing rail when climbing and allow the climbing rail to be inserted during initial assembly.

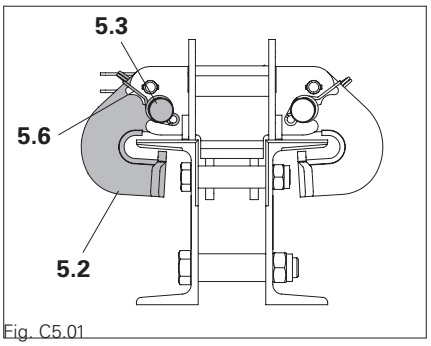


Fig. C5.01

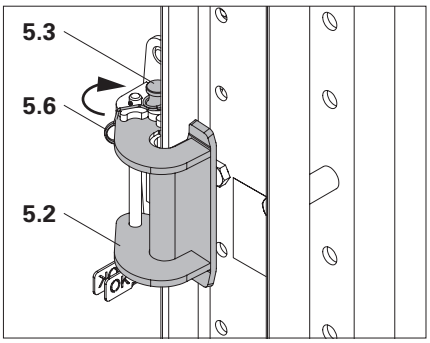


Fig. C5.01a

Fig. C5.01b

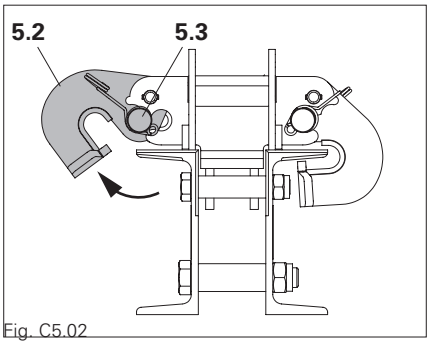


Fig. C5.02

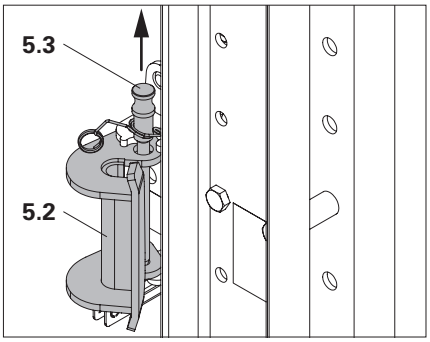


Fig. C5.02a

Fig. C5.02b

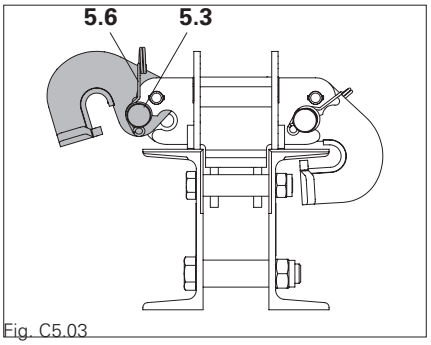


Fig. C5.03

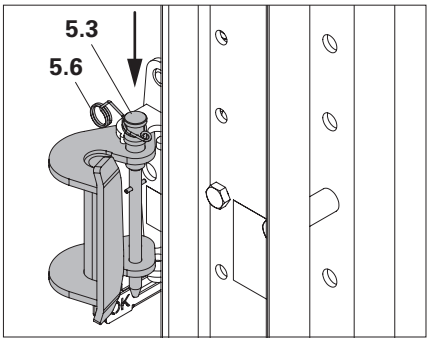


Fig. C5.03a

Fig. C5.03b

Closing the climbing shoe

1. Lift safety pin (**5.3**). (Fig. C5.04)
2. Fold guiding skid (**5.2**) forwards. (Fig. C5.05)
3. Fully re-insert the safety pin (**5.3**) in the closed position.
4. Fix the locking spring in place (**5.6**). For this, the ring is snapped into place under the guiding skid (**5.2**). (Fig. C5.06)
5. Proceed in the same way with the other guiding skid. (not shown)

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

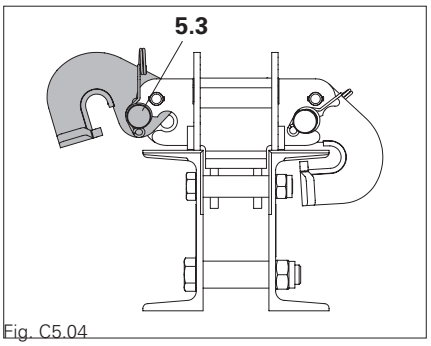


Fig. C5.04

Fig. C5.04a

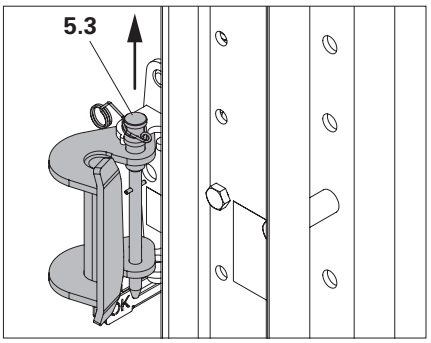


Fig. C5.04b

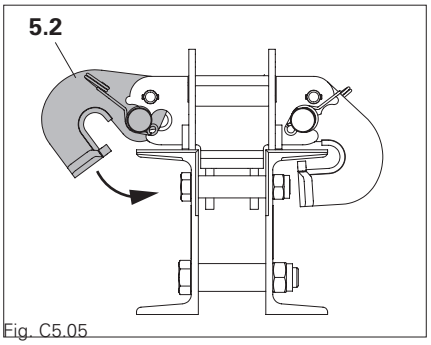


Fig. C5.05

Fig. C5.05a

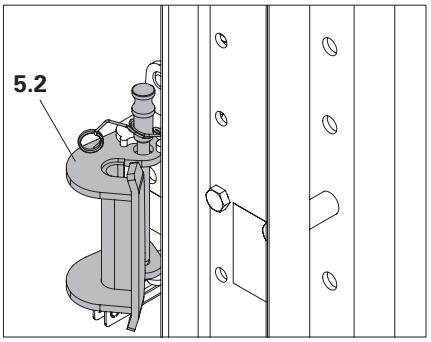


Fig. C5.05b

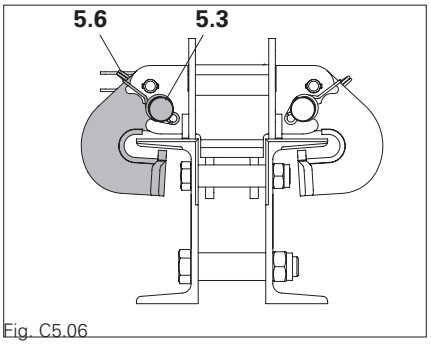


Fig. C5.06

Fig. C5.06a

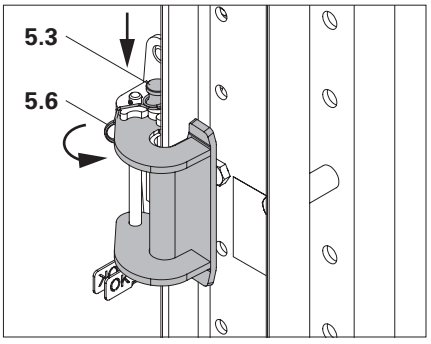


Fig. C5.06b

Activating and deactivating the climbing pawl

Warning

Hands can become trapped between climbing rails and climbing shoes!
This can result in serious injuries.

⇒ Only activate or deactivate the climbing pawl when the climbing unit has stopped moving.

⇒ Do not reach into the climbing rail during the climbing procedure.

Components

5	Climbing Shoe RCS
5.1	Climbing pawl
93	Visual Aid Climbing Shoe RCS

Deactivating the climbing pawl

1. Ensure that the climbing unit is stationary.
2. Swing the Visual Aid Climbing Shoe RCS (**93**) on the Climbing Shoe RCS (**5**) downwards.
   → The climbing pawl (**5.1**) is deactivated and therefore non-operational.

(Fig. C5.07)

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

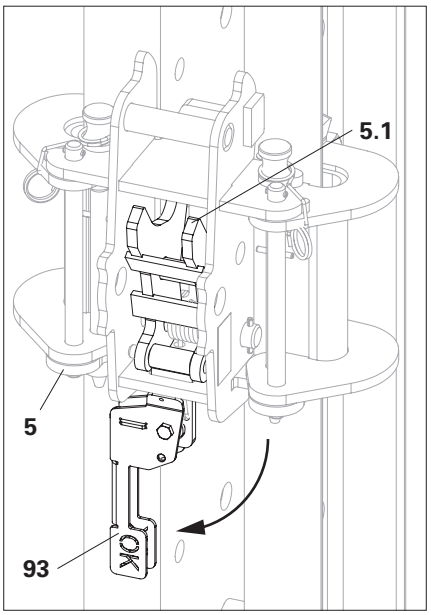


Fig. C5.07a

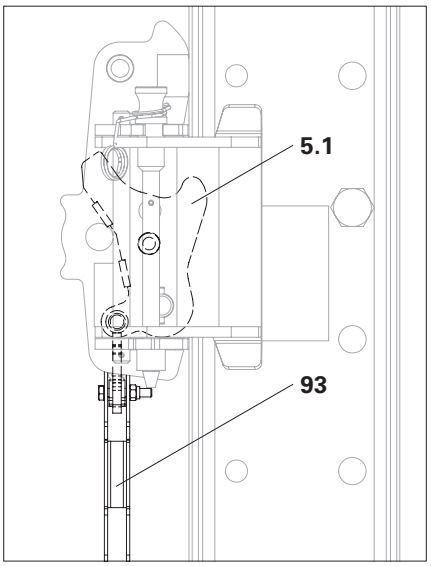


Fig. C5.07b

Activating the climbing pawl

1. Ensure that the climbing unit is stationary.
2. Swing the Visual Aid Climbing Shoe RCS (**93**) on the Climbing Shoe RCS (**5**) upwards.
   → The climbing pawl (**5.1**) is activated and therefore operational.

(Fig. C5.08)

- Can the climbing pawl (**5.1**) move freely?
- Is the Visual Aid Climbing Shoe RCS (**93**) suspended horizontally?
- Is the pawl spring functional and not broken?

- This position serves the purpose of transferring vertical forces from the climbing rail and driving rail during working operations and climbing.

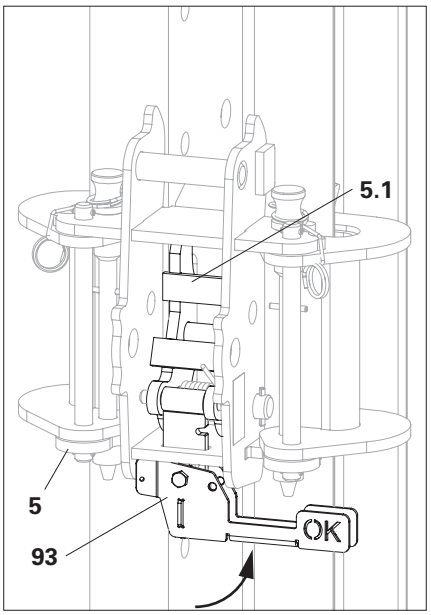


Fig. C5.08a

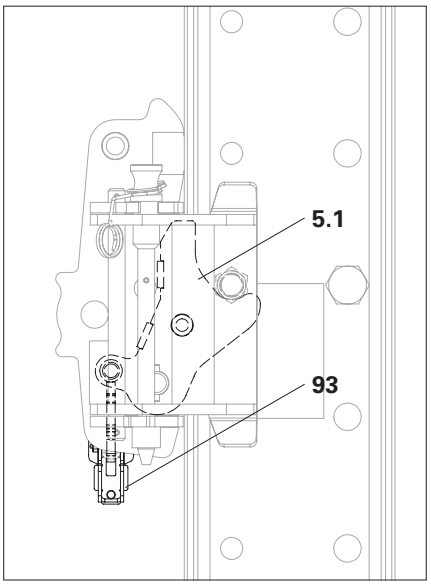


Fig. C5.08b

Mounting the Visual Aid Climbing Shoe RCS

The Visual Aid Climbing Shoe RCS (**93**) can be mounted on the Climbing Shoe RCS (**5**) to display the status of the climbing pawl.

Components

5 Climbing Shoe RCS
5.4 Pawl lock
93 Visual Aid Climbing Shoe RCS
93.1 Adaptor
93.2 Bolt ISO 4014 M8 x 45-8.8
93.3 Nut ISO 7040 M8-8

Assembly

1. Dismantle the adaptor (**93.1**), bolt ISO 4014 M8 x 45-8.8 (**93.2**) and nut ISO 7040 M8-8 (**93.3**) of the Visual Aid Climbing Shoe RCS (**93**). (Fig. C5.09)
2. Slide the adaptor (**93.1**) into the opening of the pawl lock (**5.4**) of the Climbing Shoe RCS (**5**). (Fig. C5.10)
3. Slide Visual Aid Climbing Shoe RCS (**93**) onto the pawl lock (**5.4**) and adaptor (**93.1**).
   – The hole in the Visual Aid Climbing Shoe RCS (**93**) and the adaptor (**93.1**) must be flush.
   (Fig. C5.11)

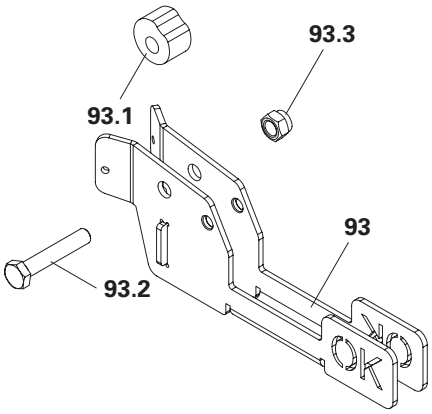


Fig. C5.09

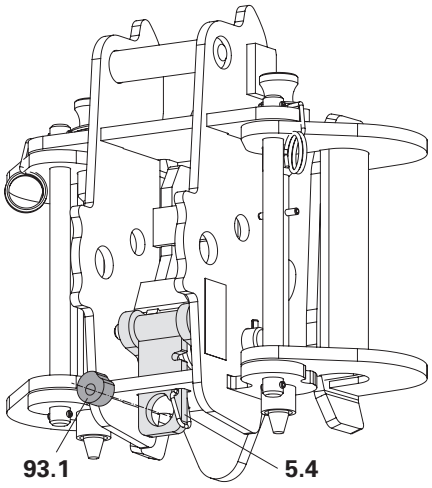


Fig. C5.10

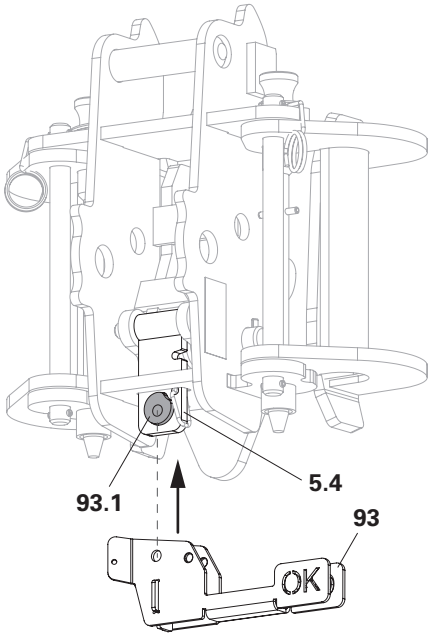


Fig. C5.11

4. Insert bolt ISO 4014 M8 x 45-8.8 (**93.2**) through the holes of the Visual Aid Climbing Shoe RCS (**93**) and the adaptor (**93.1**) and fasten with nut ISO 7040 M8-8 (**93.3**). (Fig. C5.12)
   – Do not tighten nut ISO 7040 M8-8 (**93.3**), otherwise the Visual Aid Climbing Shoe RCS (**93**) will not work.
   → Assembly is completed (Fig. C5.13)

Functional check:
When the climbing pawl (**5.1**) is pushed into the climbing shoe, the pawl lock (**5.4**) moves out of the shoe and the Visual Aid Climbing Shoe RCS (**93**) turns downwards automatically.
When the climbing pawl is released, the pawl lock is automatically pulled into the climbing shoe and the climbing shoe display returns to horizontal position.

If the climbing shoe display does not reset automatically, the nut M8-8 has been tightened too much or the spring in the climbing shoe is defective.

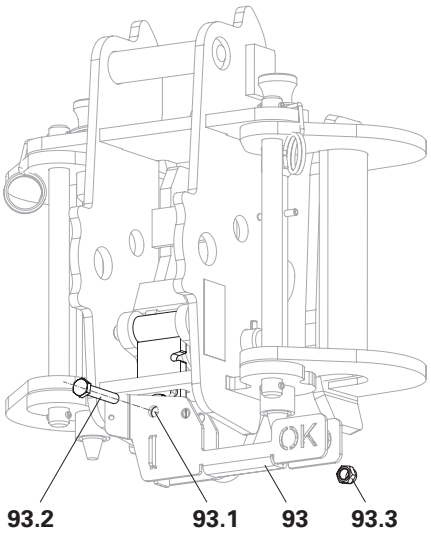


Fig. C5.12

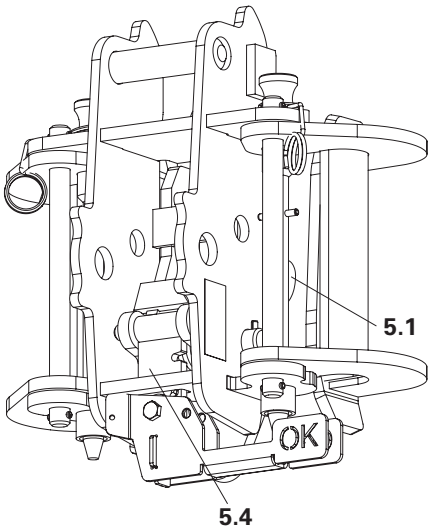


Fig. C5.13

The Climbing Shoe RCS can be activated and deactivated with the Visual Aid Climbing Shoe RCS.
- To deactivate the Climbing Shoe RCS, swivel the Visual Aid Climbing Shoe RCS downwards. (Fig. C5.14)
- To activate it, swivel the Visual Aid Climbing Shoe RCS upwards again (Fig. C5.15)

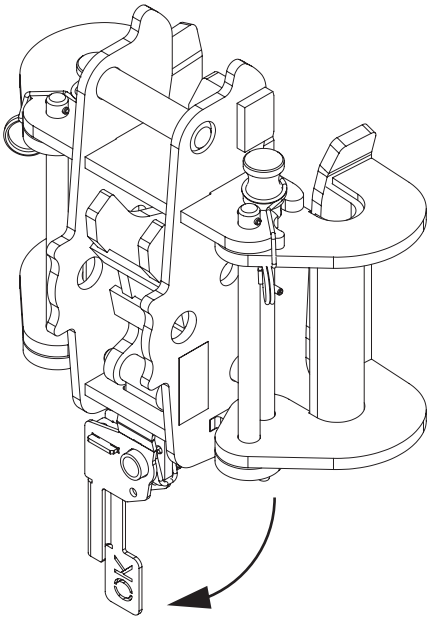


Fig. C5.14

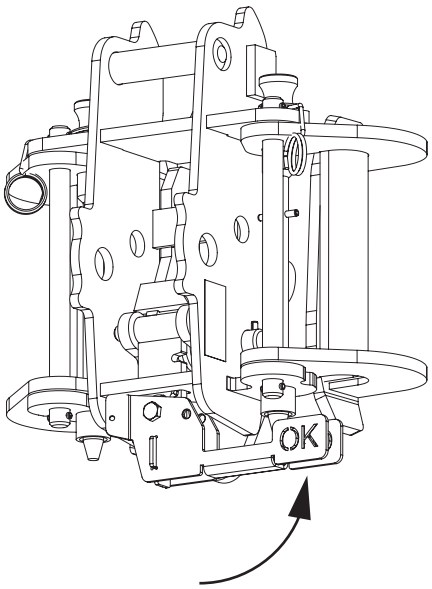


Fig. C5.15

Disconnecting the hydraulic hoses

Before uncoupling

1. Switch the hydraulic unit to which the hose is connected to "Single Mode".
2. Retract cylinder completely by pressing "Cylinder Retract".
3. Keep the "Cylinder Retract" key pressed for approx. 10 seconds.
4. Then press the "Cylinder Extend" key
   → Pressure is released and the hoses can be easily disconnected.

Alternatively, see Section "Releasing pressure in hydraulic hoses" on page 67.

Disconnecting

1. Turn the retaining ring (**2.3**) on the bushing (**2.1**) until the check mark is reached.
   → Coupling is unlocked.

(Fig. C6.02)

2. Pull the retaining ring (**2.3**) back in the direction of the hose.
   → Coupling is unlocked.

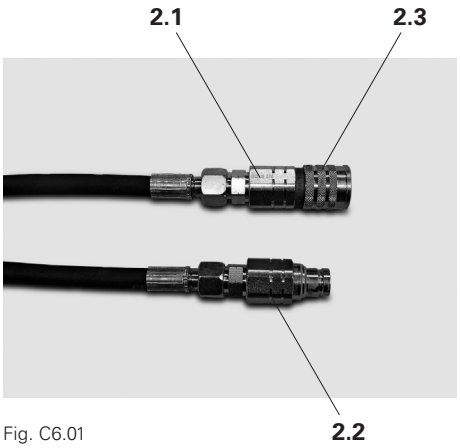


Fig. C6.01

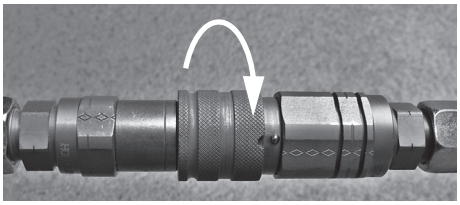


Fig. C6.02

2a Hydraulic Twin Hose RCS 10 m (article no. 110069) (SK050.723A)
2.1 Hydraulic quick-coupler (bushing) (article no. 110822/128993)
2.3 Retaining ring (bushing)

C7 Remedial measures for malfunctions

Overview

Malfunction	Cause	Remedial measure
Cylinder sinks.	Air in the hydraulic system.	Bleed the system.
	Pressure-retaining valve is defective.	Replace Climbing Cylinder RCS MAX 75. Repairs carried out by PERI.
	Seals defective.	
	Piston bottom valve defective /does not switch/ is dirty.	
	Dirt in the Climbing Cylinder RCS MAX 75.	
Uneven cylinder extension and retraction.	Air in the hydraulic system.	Bleed the system. The cylinder can be flushed/ vented by retracting the Climbing Cylinder RCS MAX 75 and the internally installed piston bottom valves for a longer period of time.
	Dirt in the hydraulic system.	Replace hydraulic oil and, if necessary, the oil filter, see manufacturer's assembly instructions.
	Leakage between unit and cylinder.	Retract all cylinders and lower the climbing unit onto the climbing pawls. Identify leakage point and seal it.
	Insufficient hydraulic oil in the system.	Top up the oil. Bleed the system. Replace defective hoses.
	Too much friction.	Reduce friction by lubricating the climbing rail. Check the tie position.
	Too much weight on the climbing unit.	Reduce the weight.
Climbing rail cannot be inserted into the shoe or climbing is not straight.	Lateral offset due to synchronisation deviation.	Extend cylinder to the same height in single-mode operation. Find the cause of the deviation and correct it.
Climbed too far.		Retract all cylinders and lower the climbing unit onto the climbing pawls. Contact PERI.
Hydraulic oil is leaking.	Hydraulic hose is broken or leaks.	Stop the climbing procedure and replace the hydraulic hose. Check all hydraulic hoses.
	Connections not tightened properly.	Disconnect the hydraulic unit from the mains. Re-tighten the connections.
Unit overflows.	Too much hydraulic oil in the tank.	Pump out the hydraulic oil.
	Seal on the return flow filter is defective.	Replace the return flow filter, see manufacturer's assembly instructions.

C7 Remedial measures for malfunctions

Malfunction	Cause	Remedial measure
Cylinder does not extend.	Transport fixing bolt of the saw is still inserted.	Put the bolt in the parking position.
	Blockage on the driving rail.	Retract all cylinders and lower the climbing unit onto the climbing pawls. Remove blockage.
	Insufficient hydraulic oil in the system.	Check system for leaks and seal it. Top up the oil. Bleed the system.
	Leakage between unit and cylinder.	Retract all cylinders and lower the climbing unit onto the climbing pawls. Identify leakage point and seal it. Replace defective hoses.
	Hoses not connected correctly.	Check hose connections and connect, if necessary.
	Too much friction.	Reduce friction by lubricating the climbing rail. Check the tie position.
	Too much weight on the climbing unit.	Reduce the weight.
Pawl in the shoe does not engage.	Climbing pawl blocked.	Remove blockage.
	Climbing pawl deactivated.	Activate the climbing pawl. Possibly deactivated by display
	Pawl moves sluggishly or is dirty.	Clean the moving parts. Check functionality.
	Spring in the climbing shoe is broken.	Release the climbing pawl by hand. Replace climbing shoe. Repairs carried out by PERI.
Cylinder does not retract.	Vertical load pawl active and engaged in climbing saw, although not needed in current climbing state.	Raise the affected platform/climbing cylinder slightly, deactivate the vertical load pawl, then continue to extend or retract the climbing cylinders.
Hydraulic coupling cannot be inserted.	Pressure in the hydraulic system.	Switch off system. Carefully release the coupling on the hose to release the pressure, e.g. release coupling by turning halfway and re-tighten. Collect any oil drips. Screw the coupling on again.
Status lights up red. Status flashes red. All keys flash red/white. Operation mode lights up orange. Operation mode flashes orange. Further problems.	Problems with the hydraulic unit.	Observe the manufacturer's assembly instructions.

Venting the system

The system must be completely vented after initial commissioning on site, after hydraulic hoses have been replaced, or after maintenance work has been carried out. The oil level in the hydraulic unit must be checked throughout this process and topped up as required.

The flushing time for each 20 m single hose length is 1 minute (DN 08).

Venting

1. Lower the climbing system onto the climbing pawl of a climbing shoe on both sides.
2. Retract the Climbing Cylinder RCS MAX 75 completely.
3. Retract continuously for at least 1 – 2 minutes and flush/ventilate the climbing cylinder including the hose via the now switched piston bottom valve.
4. Check the oil level in the unit and, if necessary, add "filtered" hydraulic oil according to the specified project application.
5. Platform is now ready for use.

The flushing time required for each 20 m single hose length is approx. 1 minute (DN 08).

Venting during hose replacement

1. If necessary, lower the climbing system on both sides with a spacer from the RCS rails onto the pawl of a climbing shoe.
2. Retract the Climbing Cylinder RCS MAX 75 completely.
3. Detach old hose.
4. Connect new hose on the unit side.
5. Connect the hose to the climbing cylinder and route it, see Section "Connecting hydraulic hoses" on page 35.
6. Retract continuously for at least 1 – 2 minutes and flush/ventilate the climbing cylinder including the hose via the now switched piston bottom valve.
7. Check the oil level in the unit and, if necessary, add "filtered" hydraulic oil according to the specified project application.

Extend and retract the cylinder several times in order to check for leakage and synchronisation. In the process, extend and retract the cylinder at maximum pressure for a longer time in the end positions.

Manual end position compensation
If the synchronisation deviation is too great when under load, then carry out manual end position compensation with the aid of single-mode operation.

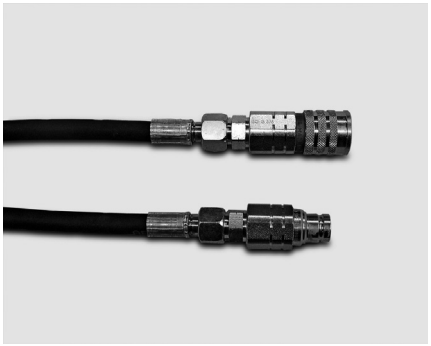


Fig. C7.01

Extending the cylinders to the same height

Unequal ballasting on the climbing units can result in a lateral offset. In rare cases, this could negatively affect the "inserting" of the RCS rails in the next climbing shoe. This deviation can be corrected even if the pistons have not been completely extended.

1. Press the "Operation Mode" key (**3.17**) until the key flashes orange.
   → Single-mode operation is activated.
2. Select the climbing device using the "Cylinder 2 On/Off" button (**3.20**) and "Cylinder 1 On/Off" (**3.22**) button.
   → The selected cylinder lights up orange.
2. Extend the climbing device to the same height by:
   – pressing the "Cylinder Extend" key on the keypad,
   or
   – pressing the "Cylinder Extend" key on the directly connected remote control.
4. Press the "Operation Mode" key (**3.17**) until the key lights up green.
   → Interlink-mode operation is activated.

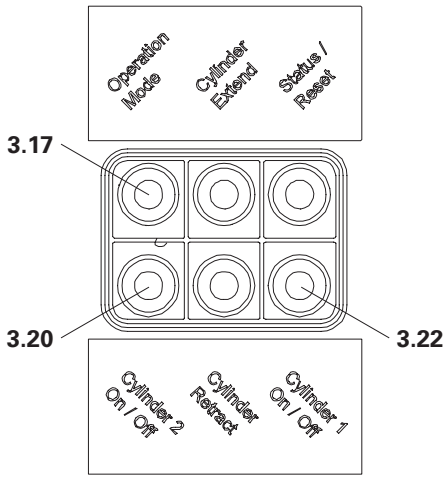


Fig. C7.02

Release the climbing pawl by hand

Warning

Body parts can become trapped between climbing rails and climbing shoes!
This can result in serious injuries.
⇒ Do not hold the climbing shoe and climbing rails when the climbing unit is being moved.

- In the event of a broken leg spring (**5.8**) in the climbing shoe (**5**), manually release the climbing pawl (**5.1**) with the aid of the pawl lock (**5.4**). The climbing procedure can then be completed.
- After completing the climbing procedure, replace the defective climbing shoe or have repair work carried out by PERI.

Procedure

1. Completely extend the pistons of all hydraulic cylinders.
   → The spacer (**9.1**) continues past the climbing pawl (**5.1**).
2. Push the pawl lock (**5.4**) upwards by hand.
   → The climbing pawl is activated. (Fig. C7.03)
3. Retract the hydraulic cylinder until the spacer (**9.1**) is positioned on the pawl (**5.1**).

Are all pawls (**5.1**) engaged?

Alternative

The Climbing Shoe RCS can be activated and deactivated with the Visual Aid Climbing Shoe RCS, see Section "C5 Operating climbing shoes" on page 55.

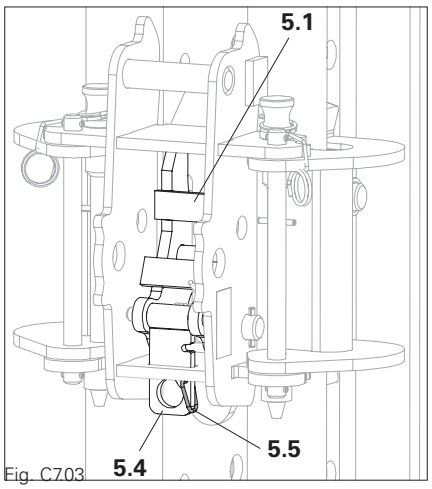


Fig. C7.03

Fig. C7.03a

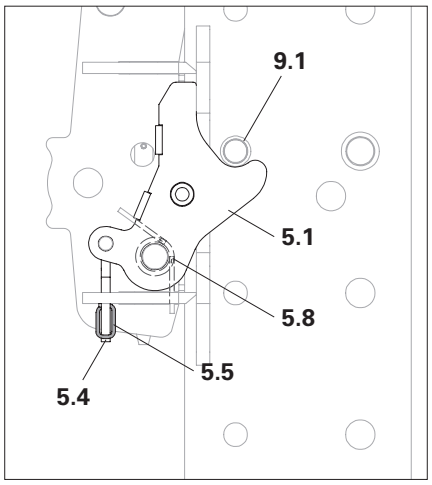


Fig. C7.03b

Releasing pressure in hydraulic hoses

Warning

Hydraulic hoses are under high pressure.
Loosening pressurised hydraulic hoses can lead to serious irreversible injuries.

⇒ Ensure that the hydraulic unit is switched off and that there is no operating pressure.
⇒ Ensure that the climbing device is not under load.

When the temperature changes, pressure can build up in the hydraulic hoses, preventing the quick couplings from being operable and the hoses from being connected.

Solution:

1. Loosen the quick-coupler with open-end wrenches (AF22/24 + AF24/27) approx. half a turn until 2-3 drops of oil come out
2. Collect any oil with a cloth
   → Pressure is released
3. Hand-tighten the quick-coupler again with open-end wrenches (AF22/24 + AF24/27)
4. Wipe up leaked oil with a cloth
5. During operation, check the system for leaks and re-tighten leaking couplings

(Fig. C7.04)

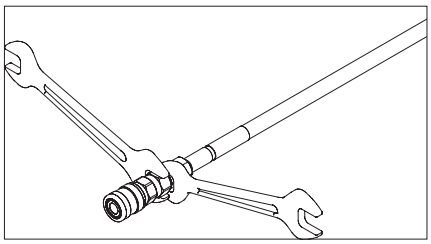


Fig. C7.04

Changing the phase

If the keypad flashes alternately red/white, the rotary field is the wrong way round.

Changing

1. Turn the phase inverter in the Power Cable RCS MAX CEE-32A 2 m (**4**) through 180°.
   → The rotary field is changed.

(Fig. C7.05)

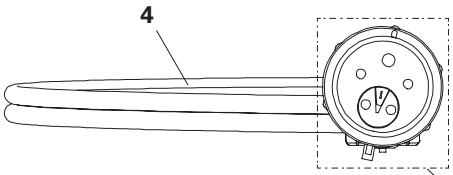


Fig. C7.05

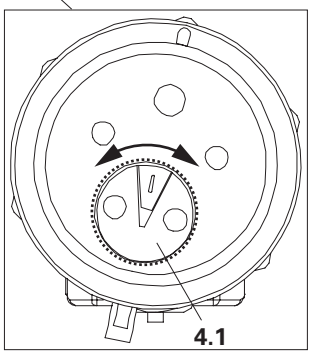


Fig. C7.05a

D1 Storage and transportation measures

Safety instructions

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

Use only suitable and approved load-carrying equipment.

Do not drop the components.

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

During the relocation procedure
- only ever attach components and assemblies in a positive-locking manner.
- ensure that components or assemblies are picked up and set down in such a way that unintentional falling over, falling apart, sliding, falling down or rolling is avoided.
- no one is allowed to remain under the suspended load.
- remove or secure loose parts.

Pre-assembled assemblies should always be guided with ropes when moving them by crane.

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

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

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

General information

Store PERI products and components
- in such a way that damage is impossible.
- dry, cleaned and with corrosion prevention at temperatures from - 20 °C to + 60 °C.
- store electrical and electronic components in a dry and dust-free location.
- store products and components in a location that is protected from the effects of the weather, sunlight, oils and aggressive substances of any kind.

Observe the manufacturer's instructions for the following components:
- Assembly instructions for the hydraulic unit and the climbing device.
- Safety data sheet for the hydraulic oil.

Moving on the construction site
- Keep bushing and clip of all quick-couplers clean and fit with protective caps during transportation (one set with 4 pieces, article no. 125632) or couple them together.
- Transport the hydraulic hoses and cables rolled up – do not drag along the ground. (do not go below the minimum bending radius.)
- Transport the hydraulic cylinder only with the piston rod in a retracted position.
- When transporting the hydraulic unit manually, pick it up with a scaffolding tube.
- For transportation by crane, attach the hydraulic unit to the attachment points with 2-sling lifting gear.
- For more details see the manufacturer's assembly instructions.

D1 Storage and transportation measures

Temporary storage on the construction site (duration < 6 months)

- Clean bushings and clips of all quick-couplers and fit with protective caps when storing, or connect together.
- Store the hydraulic hoses and cables rolled up and weather-proofed. (do not go below the minimum bending radius.)
- Store the hydraulic cylinder only with the piston rod in a retracted position.
- When storing, place the hydraulic cylinder in its designated transport box, see Section "D2 Packaging" on page 70.
- Do not store the hydraulic unit in a horizontal position as the oil can escape.
- Store hydraulic units in appropriate containers, e. g. pallets, see Section "D2 Packaging" on page 70.
- For more details see the manufacturer's assembly instructions.

Transport from and to the construction site

- Clean dirt off the climbing devices and hydraulic units, and dry them.
- Clean the bushings and clips of all quick-couplers and fit with protective caps, or connect together.
- Transport the hydraulic hoses and cables rolled up. (do not go below the minimum bending radius.)
- Fill the hydraulic cylinder and hoses with oil.
- Transport the hydraulic cylinder only with the piston rod in a retracted position.
- Place the hydraulic cylinders and units in the designated means of transport and secure them. See Section "Packaging" on page 70.
- Do not transport the hydraulic unit in a horizontal position.
- When moving transport crates with the crane, use only suitable lifting slings that are wrapped around the underside.
- For more details see the manufacturer's assembly instructions.

Longer storage periods

- Do not drain the hydraulic oil during downtime.
- Protect connections against corrosion using a suitable preserving agent. Close all openings so they are airtight.
- For more details see the manufacturer's assembly instructions.
- Store hydraulic hoses and cables rolled up, weather-proofed and in the dark. (do not go below the minimum bending radius.)

Note

- Transport crates
  - used for transport and storage purposes,
  - post pallet can be lifted and moved using the 4-sling lifting gear and crane.
- For transport instructions for the Climbing Cylinder RCS MAX 75, refer to the manufacturer's assembly instructions.

- Items on the post pallet must be fixed during transport.
- Clean dirt off the climbing devices and hydraulic units, and dry them.
- Clean the bushings and clips of all quick-couplers and close with protective caps, or connect together.
- If necessary, fit a cover onto the transport crates.
- Store the hydraulic hoses and cables rolled up and weather-proofed. (do not go below the minimum bending radius.)
- Do not store hydraulic units horizontally, as oil can escape through the vent valve.

Climbing Cylinder RCS MAX 75 Article no. 136107	41.4 kg
Hydraulic Unit RCS MAX Article no. 135500	47.0 kg
Hydraulic Twin Hose RCS Length 10 m Article no. 110069	9.0 kg
Length 20 m Article no. 110070	16.0 kg

All weight details do not include the oil.

POST PALLET USP 104
(article no.: 100678)

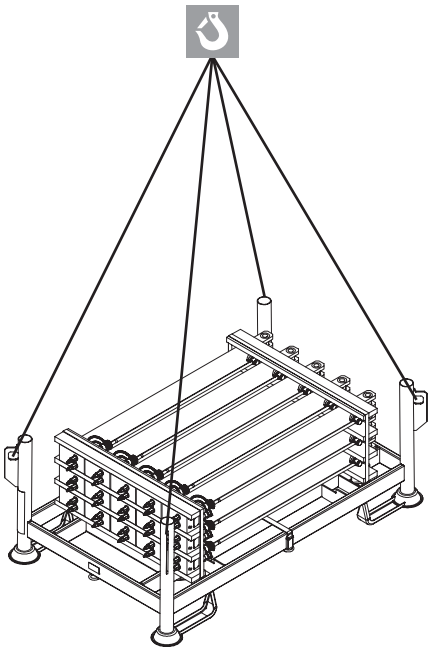


Fig. D2.01

Dimensions of Hydraulic Unit RCS MAX

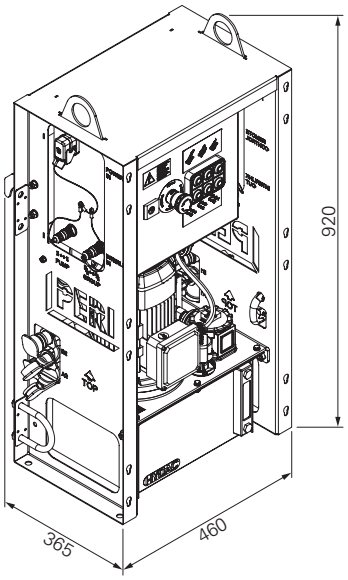


Fig. D2.02

Pallet RP Hydraulic Unit RCS MAX

- When putting two Hydraulic Units RCS MAX into storage, always position them diagonally.
- Storage areas and transport routes must be non-slip, level, free of obstacles and must have a sufficient load-bearing capacity.
- Additional safety measures may be necessary during transportation.
- Place Hydraulic Units RCS MAX in the pallet with the keypad pointing outwards.

Max. load-bearing capacity = 4 units

Crane sling angle ≤ 30 °
→ Four-sling lifting gear L ≥ 1.5 m (Fig. D2.03)

Stacking heights
- Individual pallet:
  - Transport using a truck, pallet lifting trolley, forklift truck or crane
- Stacking height of max. 2 pallets:
  - Storage on the construction site with a base that is inclined by no more than 3 % and working wind load.
  - Storage in rental warehouse/building yard with a base that is inclined by no more than 2 % and working wind load.
  - Transportation by truck or forklift truck.
- Stacking height of max. 4 pallets:
  - Storage in the hall on level base.
  - No wind permitted.

Fig. D2.03

Filling

1. Open and fold in the metal clip (**21.1**).
2. Attach the Hydraulic Units RCS MAX to the crane and move them onto the earmarked positions on the pallet.
3. Close the metal clip (**21.1**) and secure with a cotter pin.

(Fig. D2.04 – Fig. D2.06)

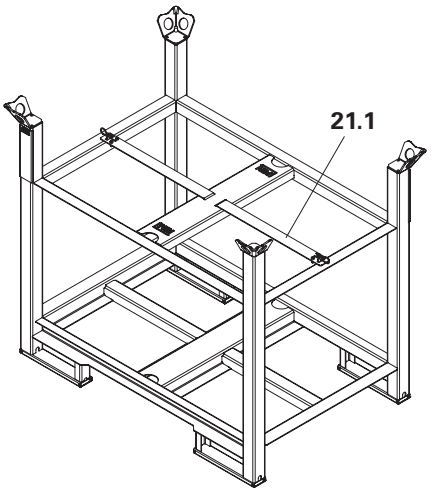


Fig. D2.04

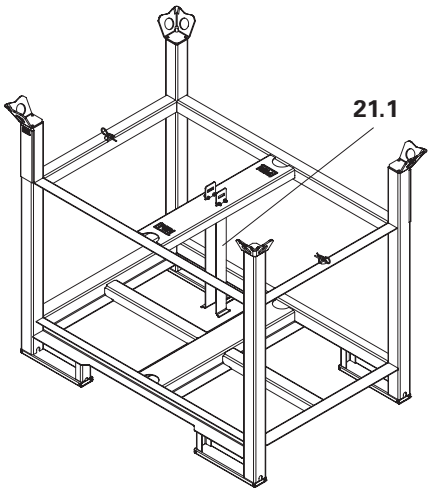


Fig. D2.05

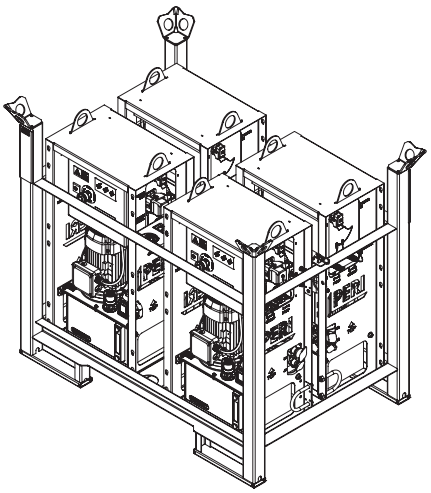


Fig. D2.06

Maintenance and repairs

- Damage and any resulting downtime can be avoided by carrying out scheduled maintenance work.
- Refer to the maintenance table of the manufacturer for the hydraulic unit maintenance intervals.

PERI recommends shortened maintenance intervals:

- for equipment showing signs of heavy wear.
- with high thermal and mechanical loads.
- when subject to heavy soiling.

Maintenance and repairs	Recommended maintenance intervals
■ Replace oil filter, air filter and hydraulic oil.	Before use on next construction site, at least 1x per year.
■ Replace hydraulic hoses.	If damaged, before use on next construction site. Maximum service life 6 years.
■ Check oil temperature and oil level.	Before use on next construction site.
■ Clean machine housing and cylinder. ■ Lubricate moving parts on the cylinder.	If necessary, after each concreting process.
■ Check system for leaks. ■ Check working and control pressures. ■ Check system for noises and vibrations. ■ Check hoses for external damage.	After assembly. Daily to weekly.
■ Lubricate Climbing Rail RCS.	If necessary, weekly to monthly.
■ Check device mounting.	Weekly to monthly.
■ Check housing (dirt, damage, protective covers) ■ Check performance.	Monthly to quarterly.
■ Check tubes and hoses. ■ Check protective covers.	Before first use, every six months to one year.
■ Maintenance work on the hydraulic unit.	See manufacturer's assembly instructions.

F1 Hydraulics connection diagram

- A maximum of 8 climbing units can be included in one climbing group.
- A maximum of 8 climbing groups can be interlinked.
  → 64 climbing units.
- Each climbing group requires a power connection and at least one remote control.
- You have the option of connecting multiple remote controls and one Display RCS MAX to one climbing group.

Key

- Hydraulic hoses
- Power connections
- Data connections
- System limit
- PUMP connection
- GROUP connection

Single climbing unit

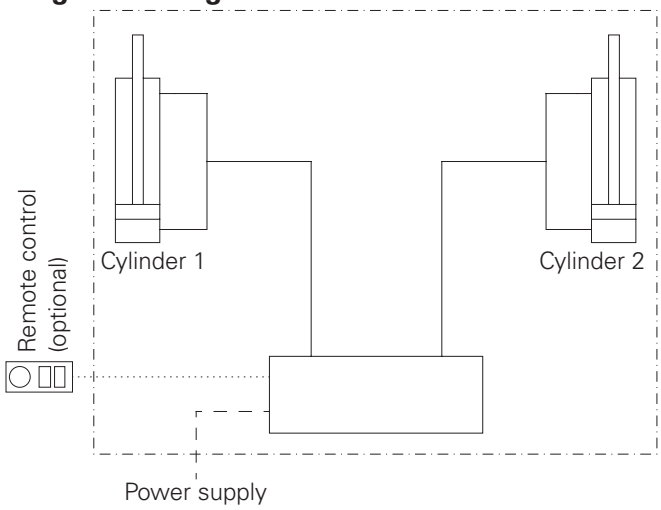


Fig. F1.01

Climbing group

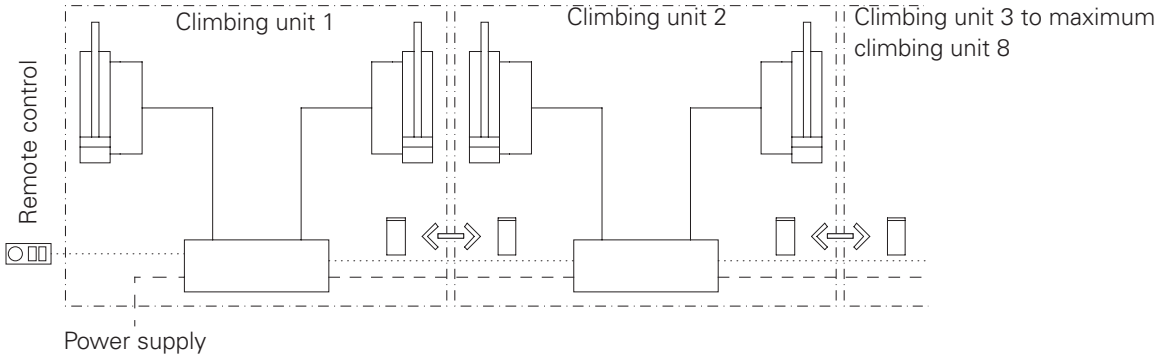


Fig. F1.02

F1 Hydraulics connection diagram

Connection of multiple climbing groups

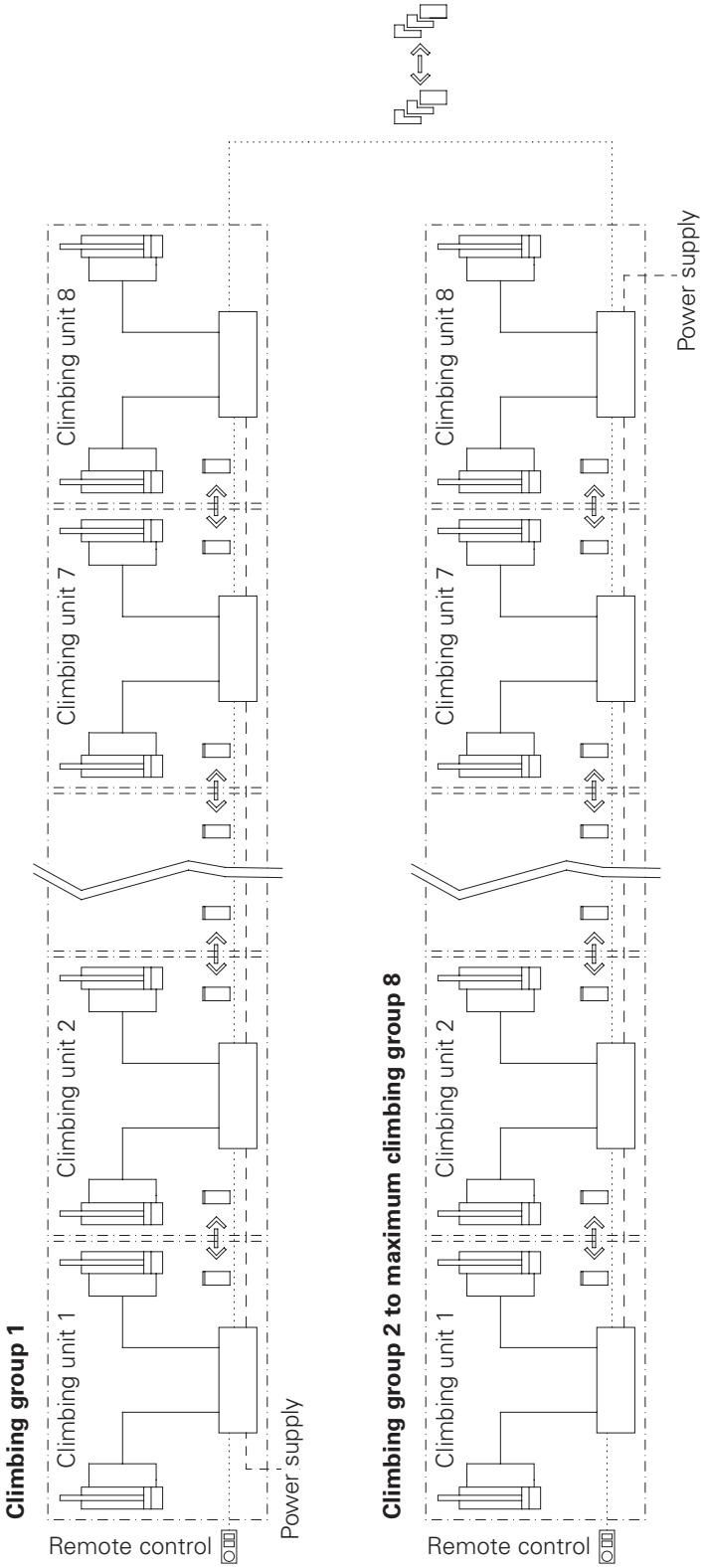


Fig. F1.03

F2 Climbing device circuit diagram

Climbing Cylinder RCS MAX 75
Article no. 136107

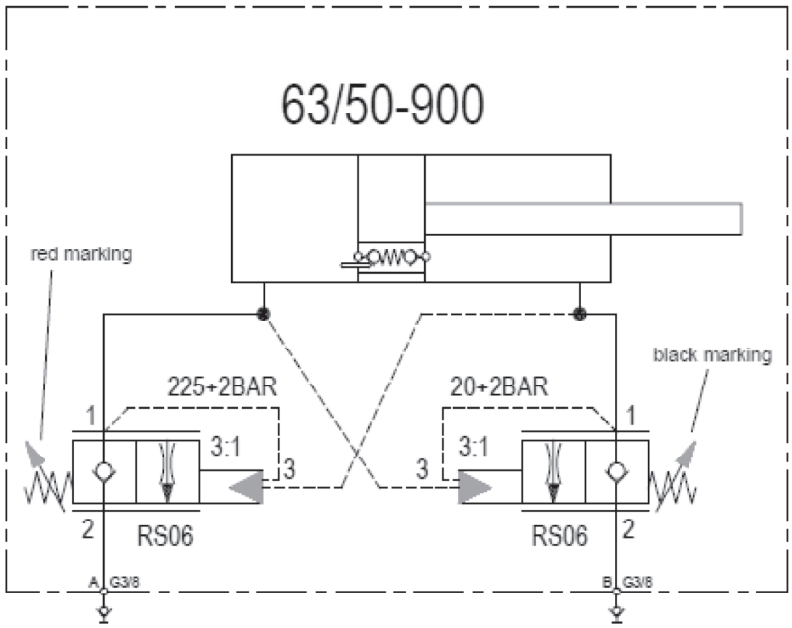


Fig. F2.01

Maintenance schedule

Maintenance location	Serial number of the hydraulic unit	Maintenance work carried out Oil type and quantity	Date	Name/Signature

Participation Protocol and Handover Certificate
RCS MAX Driving Rail and Hydraulics

Name: _____

Position: _____

Training: _____

- I have participated in the above training course.
- I have received and understood the assembly instructions for the RCS MAX Driving Rail and Hydraulics.
- I know the safety regulations and will adhere to them in practice.
- If I have any questions or in case of uncertainty, I will contact:

Date/Signature:

Germany
PERI SE
Postfach 1264

D - 89259 Weissenhorn

Phone: +49 7309 950 - 0
Fax: +49 7309 950 - 6210

Declaration of Incorporation

EG-Einbauerklärung

im Sinn der EG-Maschinenrichtlinie 2006/42/EG, Anhang II, Teil 1, Abschnitt B vom 17.05.2006.

Hersteller:	PERI SE Rudolf-Diesel-Straße 19 89264 Weißenhorn Deutschland

Die speziellen Technischen Unterlagen gemäß EG-Maschinenrichtlinie 2006/42/EG, Anhang VII, Teil B wurden erstellt! Auf begründetes Verlangen werden die speziellen Technischen Unterlagen an die zuständigen staatlichen Stellen übermittelt! Die Übermittlung kann elektronisch oder auf Papier erfolgen! Alle Schutzrechte verbleiben bei o.g. Hersteller.

Die Inbetriebnahme unseres Produktes bleibt so lange untersagt, bis festgestellt wurde, dass die Ausführung der Anlage/ Maschine, in welcher der Einbau erfolgen soll oder von dem es ein Teil sein wird, mit den entsprechenden Rechtsvorschriften übereinstimmt.

Bevollmächtigter für die Zusammenstellung der technischen Unterlagen:	PERI SE, GROUP QUALITY Anschrift siehe Hersteller

Hiermit erklären wir, dass die Bauart und die Ausführung

Unvollständigen Maschine	RCS MAX Klettermechanik
für das System	PERI RCS MAX Selbstklettersystem
gemäß der Zeichnung	MO-20-11147
und der Funktion	Der Kletterzylinder RCS MAX 75 wird in die Antriebsschiene RCS MAX C oder CL eingebaut und bewegt darin die Klettersäge. Die Klettersäge hängt sich mit ihren Rasten beim Ausfahren des Kletterzylinders an der Klinke des unteren Kletterschuhes RCS ein. Die Kletterschuhe sind über Wand- oder Deckenschuhe am Bauwerk verankert. Der Kletterzylinder RCS MAX 75 ist mit der Klettersäge gekoppelt, die mit der Klinke im unteren Kletterschuh zusammenarbeitet. Bei weiterem Ausfahren des Kletterzylinders RCS MAX 75 wird die Klettereinheit nach oben geschoben. Vor dem Ende des Hubs rastet die Klinke eines zweiten oberen Kletterschuhs in einen Kletterbolzen der oberen Kletterschiene RCS ein, welche im Abstand von 250mm vorhanden sind. Beim Einfahren des Zylinders übernimmt die Klinke des oberen Kletterschuhs die Last und die Klettersäge wird am unteren Kletterschuh vorbeigezogen. Beim erneuten Ausfahren des Kletterzylinders steht die nächste Raste der Klettersäge bereit, welche an der Klinke des unteren Kletterschuhs rastet.

folgenden geltenden Normen und Richtlinien entspricht.

EG-Richtlinie 2006/42/EG	Richtlinie 2006/42/EG des Europäischen Parlaments und des Rates vom 17. Mai 2006 über Maschinen

Es wird erklärt, dass die folgenden grundlegenden Anforderungen der Maschinenrichtlinie 2006/42/EG erfüllt sind: 1.1.3, 1.3., 1.3.1, 1.3.2, 1.3.7, 1.3.9, 1.5.1, 1.5.15, 1.6.1, 1.6.3, 1.6.5

Angewandte harmonisierte Normen, insbesondere:

DIN EN ISO 12100: 2011-03	Sicherheit von Maschinen; Allgemeine Gestaltungsleitsätze – Risikobeurteilung und Risikominderung
DIN EN 60204-1: 2019-06	Sicherheit von Maschinen; Elektr. Ausrüstung von Maschinen Teil 1: Allgemeine Anforderungen
DIN EN ISO 13854: 2020-01	Sicherheit von Maschinen; Mindestabstände zur Vermeidung des Quetschens von Körperteilen
DIN EN ISO 13857: 2020-04	Sicherheit von Maschinen; Sicherheitsabstände gegen das Erreichen von Gefährdungsbereichen mit den oberen und unteren Gliedmaßen
DIN EN 614-1: 2009-06	Sicherheit von Maschinen – Ergonomische Gestaltungsgrundsätze – Teil 1: Begriffe und allgemeine Leitsätze
DIN EN ISO 4413: 2011-04	Fluidtechnik – Allgemeine Regeln und sicherheitstechnische Anforderungen an Hydraulikanlagen und deren Bauteile

Weißenhorn, den 10.01.2024

Dieter Deifel, Leiter R&D Civil Engineering

EC-Declaration of incorporation

according with the EC Machinery Directive 2006/42/EC, Annex II, Part 1, Section B of 17.05.2006.

Manufacturer:

PERI SE
Rudolf-Diesel-Straße 19
89264 Weißenhorn
Deutschland

The special technical documents according to EC Machinery Directive 2006/42/EC, Annex VII, Part B have been prepared! Upon justified request, the special technical documents will be forwarded to the responsible state authorities! The transmission can be made electronically or on paper! All property rights remain with the above-mentioned manufacturer.

The commissioning of our product remains prohibited until it has been determined that the design of the system/machine in which it is to be installed or of which it will be a part complies with the relevant legal regulations.

Person established in the Community authorized to compile the relevant technical documentation: PERI SE, GROUP QUALITY
Address, see manufacturer

We hereby declare that the design and construction of the

partly completed machinery	RCS MAX Climbing Mechanism
for the system	PERI RCS MAX Self-climbing System
according drawing	MO-20-11147
and function	The RCS MAX 75 climbing cylinder is installed in the RCS MAX C or CL Drive Rail and moves the climbing saw within it. When the climbing cylinder is extended, the climbing saw hooks onto the latch of the lower RCS climbing shoe with its catches. The climbing shoes are anchored to the structure via wall or slab shoes. The RCS MAX 75 Climbing Cylinder is coupled to the climbing saw, which works together with the pawl in the lower climbing shoe. When the RCS MAX 75 climbing cylinder is extended further, the climbing unit is pushed upwards. Before the end of the stroke, the pawl of a second upper climbing shoe engages in a climbing bolt of the upper RCS climbing rail, which are spaced 250 mm apart. When the cylinder retracts, the pawl of the upper climbing shoe takes over the load and the climbing saw is pulled along the lower climbing shoe. When the climbing cylinder is extended again, the next catch of the climbing saw is ready to engage with the latch of the lower climbing shoe.

complies with the following applicable standards and directives.

EC-Directive 2006/42/EC	Directive 2006/42/EC of the European Parliament and of the Council, dated 17th of May 2006 on machinery

It is declared that the following essential requirements of the Machinery Directive 2006/42/EC have been fulfilled: 1.1.3, 1.3., 1.3.1, 1.3.2, 1.3.7, 1.3.9, 1.5.1, 1.5.15, 1.6.1, 1.6.3, 1.6.5

Applied harmonised standards, in particular:

DIN EN ISO 12100: 2011-03	Safety of machinery - General principles for design - Risk assessment and risk reduction
DIN EN 60204-1: 2019-06	Safety of machinery - Electrical equipment of machines - Part 1: General requirements
DIN EN ISO 13854: 2020-01	Safety of machinery – Minimum gaps to avoid crushing of parts of the human body
DIN EN ISO 13857: 2020-04	Safety of machinery –Safety distances to prevent hazard zones being reached by upper and lower limbs
DIN EN 614-1: 2009-06	Safety of machinery –Ergonomic design principles – Part 1: Terminology and general principles
DIN EN ISO 4413: 2011-04	Hydraulic fluid power – General rules and safety requirements for systems and their components

Weissenhorn, 2024-01-10

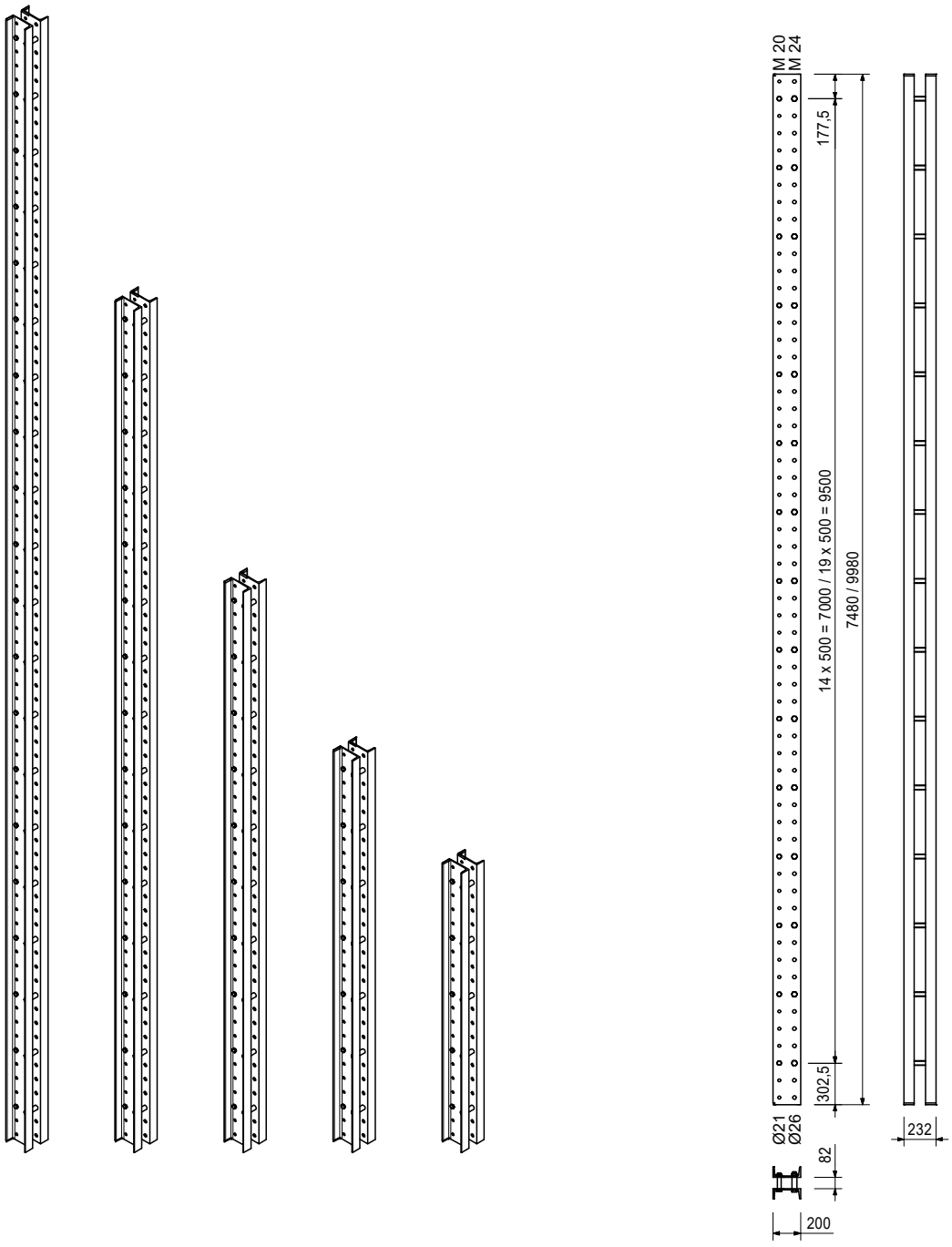
Dieter Deifel, Head of R&D Civil Engineering

Art no.	Weight [kg]		L [mm]
		Climbing Rails RCS	
114166	78.200	**Climbing Rail RCS 148**	1480
135990	105.000	**Climbing Rail RCS 198**	1980
109469	130.000	**Climbing Rail RCS 248**	2480
112102	156.000	**Climbing Rail RCS 298**	2980
109470	182.000	**Climbing Rail RCS 348**	3480
112141	209.000	**Climbing Rail RCS 398**	3980
109471	262.000	**Climbing Rail RCS 498**	4980
109472	393.000	**Climbing Rail RCS 748**	7480
109610	524.000	**Climbing Rail RCS 998**	9980

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

Notes

Wy = 357.6 cm³, Iy = 3576 cm⁴.

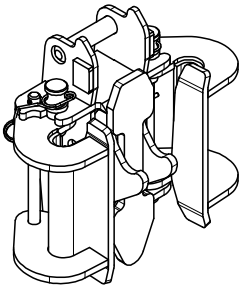


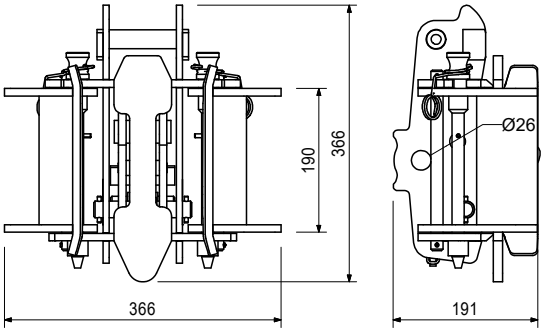
Accessory (not included)

136109	0.472	**Pin Set RCS MAX**

Art no.	Weight [kg]	
109468	19.800	**Climbing Shoe RCS**

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





Accessory (not included)

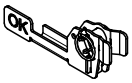
135962	0.379	**Visual Aid Climbing Shoe RCS**

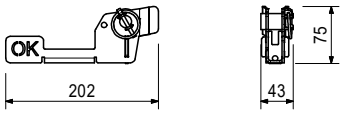
Consists of

116067 Climbing Shoe Lock RCS 2 pc
109902 Locking Pin Ø30x290mm coat 2 pc
711063 Sleeve ISO8752-05.0x035-coat 4 pc
109508 Bolt Ø16x239mm coat 2 pc
750329 Sleeve ISO8752-05.0x020-coat 4 pc
109903 Spring Lock 1 pc

Art no.	Weight [kg]	
135962	0.379	**Visual Aid Climbing Shoe RCS**

Used to indicate the switching position of the Climbing Pawl in the Climbing Shoe RCS.





Accessory (not included)

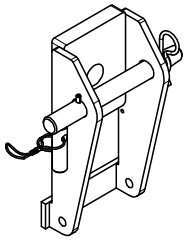
109468	19.800	**Climbing Shoe RCS**

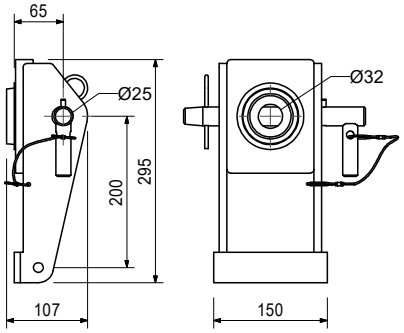
Consists of

126908 Screw ISO4014-M08x045-8.8-ga 1 pc
711071 Hex-Nut ISO7040-M08-8-ga 1 pc

Art no.	Weight [kg]	
109503	7.380	**Wall Shoe RCS**

Anchor System M30. For anchoring Climbing Shoe RCS to the wall.





Accessory (not included)

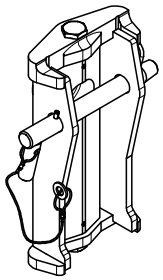
029420	0.590	**Screw ISO4017-M30x070-8.8-ga**

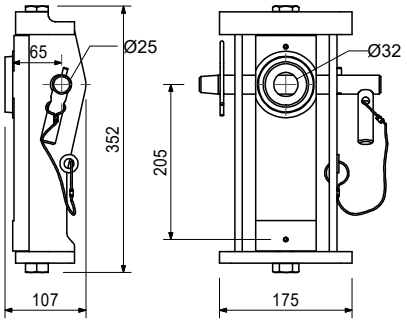
Consists of

715585 Lock.PinØ25x240mm SKS 150 coat 1 pc
022230 Cotter Pin 5/1 ga 1 pc

Art no.	Weight [kg]	
110667	13.700	**Wall Shoe RCS privoted**

Anchor System M30. For anchoring Climbing Shoe RCS to circular walls. Swivel range ± 15°.





Accessory (not included)

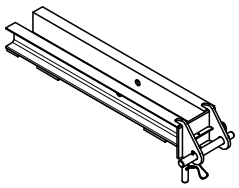
113007	0.700	**Screw ISO4762-M30x070-8.8-ga**

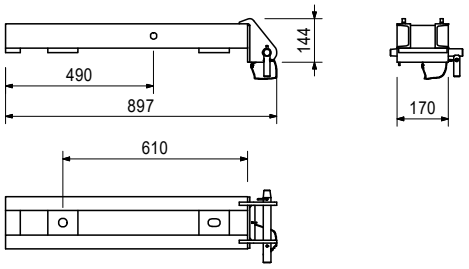
Consists of

715585 Lock.PinØ25x240mm SKS 150 coat 1 pc
022230 Cotter Pin 5/1 ga 1 pc

Art no.	Weight [kg]	
109567	20.200	**Slab Shoe RCS**

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



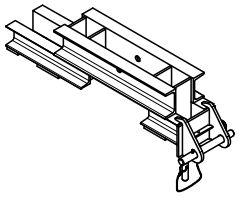


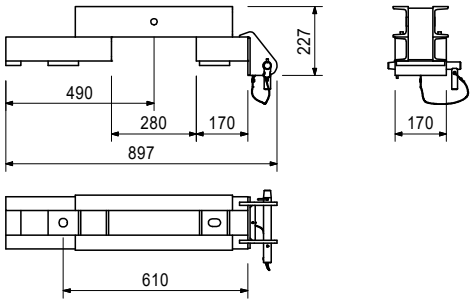
Consists of

715585 Lock.PinØ25x240mm SKS 150 coat 1 pc
022230 Cotter Pin 5/1 ga 1 pc

Art no.	Weight [kg]	
110375	30.800	**Climbing Shoe RCS Corner**

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



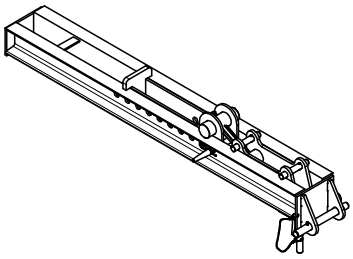


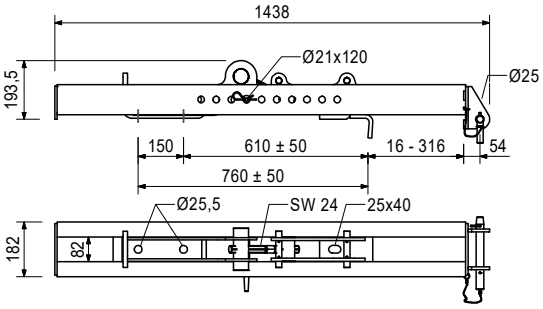
Consists of

715585 Lock.PinØ25x240mm SKS 150 coat 1 pc
022230 Cotter Pin 5/1 ga 1 pc

Art no.	Weight [kg]	
115570	54.400	**Slab Shoe RCS 30 adjustable**

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



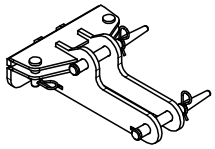


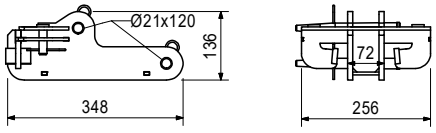
Consists of

715585 Lock.PinØ25x240mm SKS 150 coat 1 pc
104031 Fitting Pin Ø21x120mm 1 pc
022230 Cotter Pin 5/1 ga 2 pc

Art no.	Weight [kg]	
115918	9.380	**Slab Shoe Adaptor RCS/AV/SLS**

Mounted on the Slab Shoe RCS and serves for connecting Kicker AV or SLS Spindles and Bracing DW15.



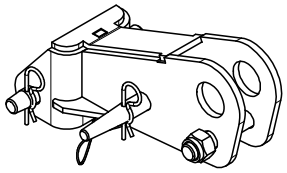


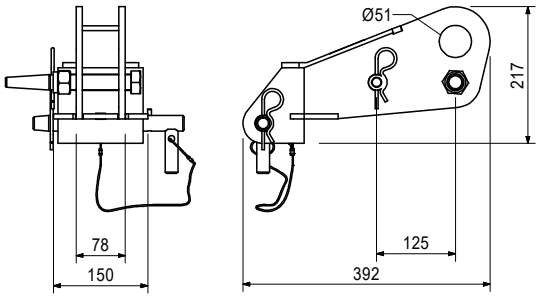
Consists of

104031 Fitting Pin Ø21x120mm 2 pc
027170 Pin Ø16x42mm ga 2 pc
018060 Cotter Pin 4/1 ga 4 pc

Art no.	Weight [kg]	
115850	11.200	**Slab Support Adaptor RCS**

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



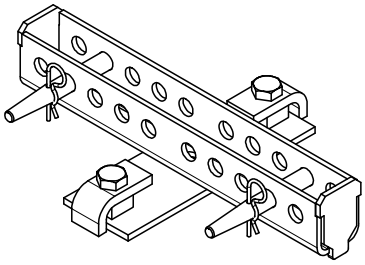


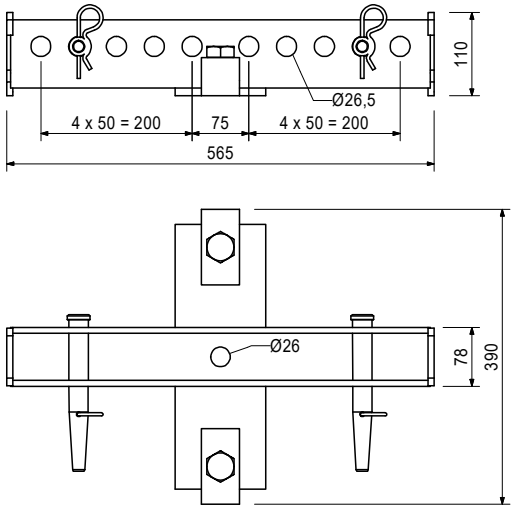
Consists of

715585 Lock.PinØ25x240mm SKS 150 coat 1 pc
111567 Fitting Pin Ø26x120mm 1 pc
022230 Cotter Pin 5/1 ga 2 pc

Art no.	Weight [kg]	
112359	15.000	**Slab Supp. Anchor Shoe RCS M24**

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





Accessory (not included)

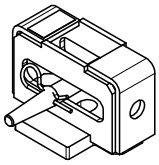
026430	0.334	**Screw ISO4014-M24x070-10.9**

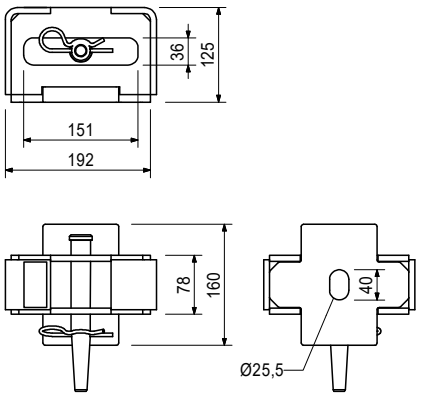
Consists of

026290 Screw ISO4017-M24x050-10.9 2 pc
111567 Fitting Pin Ø26x120mm 2 pc
022230 Cotter Pin 5/1 ga 2 pc

Art no.	Weight [kg]	
116538	6.900	**Slab Supp. Alignment Shoe RCS**

As compression point and for alignment of the slab support with horizontal Climbing Rail RCS. Fixation with the Anchor Bolt Ø14/20x130mm or the anchor system M24.





Accessory (not included)

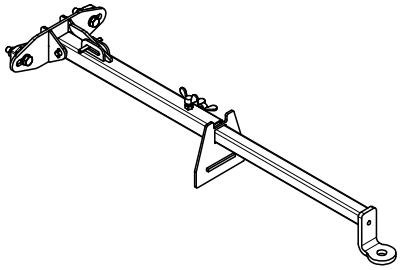
124777	0.210	**Anchor Bolt SW24 Ø14/20x130mm**

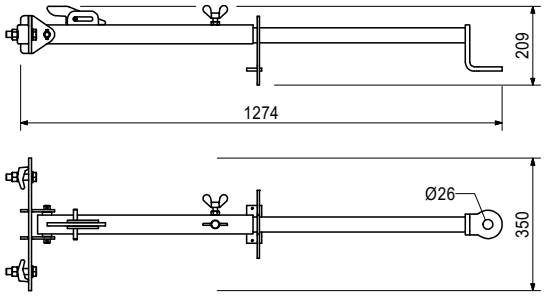
Consists of

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

Art no.	Weight [kg]	
114947	12.600	**Slab Anchor Template RCS 61**

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





Accessory (not included)

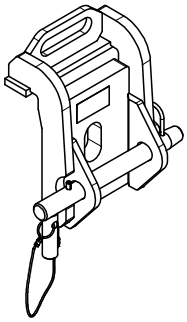
029270	0.331	**Advancing Screw M24 ga**

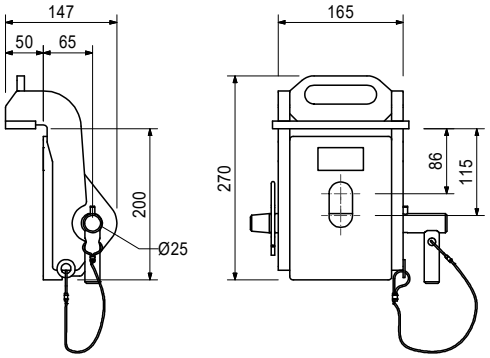
Consists of

112815 Clamping Plate M16 Nova Grip 1 pc
115112 Screw DIN316-M12x25-GT-ga 1 pc
710229 Hex-Nut ISO4032-M16-8-ga 1 pc
711074 Washer ISO7089-16-200HV-ga 1 pc
714093 Screw ISO4014-M16x070-8.8-ga 1 pc

Art no.	Weight [kg]	
113232	10.500	**Stopend Slab Shoe RCS M30**

Anchor System M30. For anchoring the Climbing Shoe RCS at the front end of the slab. With the Reduction Bush Ø30 – Ø25, Item no. 113822, also usable with Anchor System M24.





Accessory (not included)

029420	0.590	**Screw ISO4017-M30x070-8.8-ga**

Consists of

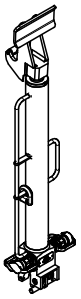
113247 Locking Pin Ø25x260mm comp 1 pc
022230 Cotter Pin 5/1 ga 1 pc

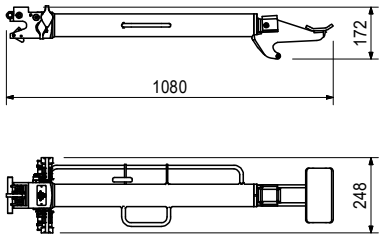
Art no.	Weight [kg]	
109765	27.000	**Climbing Device RCS 50**

For crane-independent climbing of RCS Climbing Units.

Notes

Follow Instructions for Use.
Operating pressure max. 190 bar.
Available nominal lifting force 45kN.





Accessory (not included)

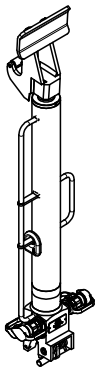
109766	109.000	**Hydr.Pump RCS 4x190/380-460V**

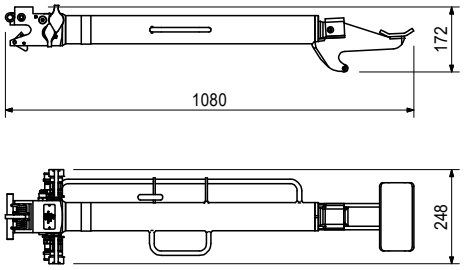
Art no.	Weight [kg]	
135413	27.000	**Climbing Device-2 RCS 50**

For crane-independent climbing of RCS Climbing Units.

Notes

Follow Instructions for Use.
Operating pressure max. 210 bar.
Available nominal lifting force 50kN.





Accessory (not included)

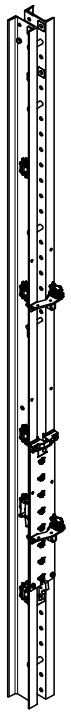
109766	109.000	**Hydr.Pump RCS 4x190/380-460V**
135500	47.000	**Hydr.P. RCS MAX 2x210/380-460V**

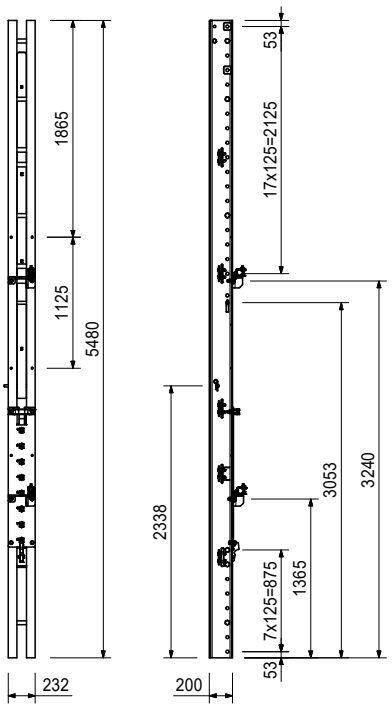
Art no.	Weight [kg]	
136110	395.000	**Driving Rail RCS C MAX**

For simultaneous climbing of Self-Climbing Formwork System RCS C MAX in conjunction with networked Hydraulic Pumps RCS MAX

Notes

After mounting the climbing cylinder, insert Pin Ø26x120mm into the parking position for securing the inner rail during transport. For the installation of the climbing cylinder, the cylinder fixing must be removed.
Follow Assembly Instructions!





Accessory (not included)

136107	41.400	**Climbing Cylinder RCS MAX 75**

Consists of

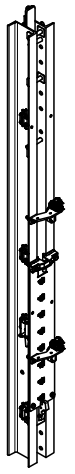
111567 Fitting Pin Ø26x120mm 1 pc
123692 Lock Pin Ø25x200mm SCS coat 1 pc
022230 Cotter Pin 5/1 ga 2 pc
110022 Spacer M20x82mm 1 pc
110023 Spacer M24x82mm 4 pc
109612 Screw ISO4014-M24x130-8.8-ga 1 pc
057138 Screw ISO4014-M24x160-8.8-ga 1 pc
130342 Hex-Nut ISO7042-M24-8-ga 2 pc
070890 Hex-Nut ISO7040-M16-8-ga 8 pc
710381 Hex-Nut ISO7040-M12-8-ga 21 pc
710224 Screw ISO4017-M12x040-8.8-ga 1 pc
710221 Screw ISO4014-M12x060-8.8-ga 20 pc
108546 Screw ISO4017-M16x060-8.8-ga 6 pc
721729 Screw ISO4014-M16x090-8.8-ga 2 pc
711074 Washer ISO7089-16-200HV-ga 8 pc
710880 Washer DIN434-18-ga 14 pc

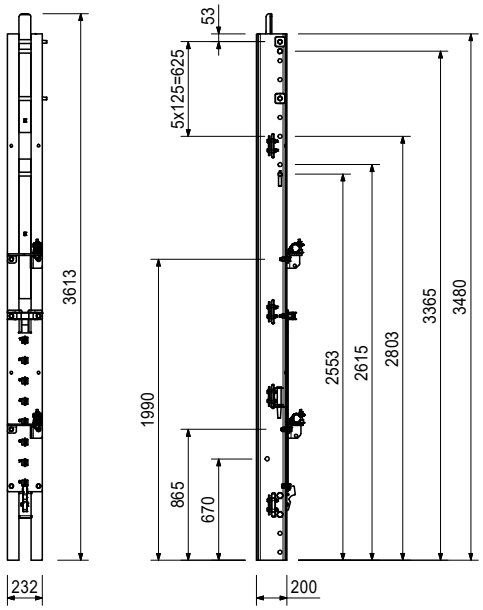
Art no.	Weight [kg]	
136111	268.000	**Driving Rail RCS CL MAX**

For simultaneous climbing of Self-Climbing Formwork System RCS CL MAX in conjunction with networked Hydraulic Pumps RCS MAX.

Notes

After mounting the climbing cylinder, insert Pin Ø26x120mm into the parking position for securing the inner rail during transport. For the installation of the climbing cylinder, the cylinder fixing must be removed.
Follow Assembly Instructions!





Accessory (not included)

136107	41.400	**Climbing Cylinder RCS MAX 75**

Consists of

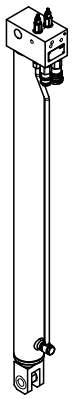
111567 Fitting Pin Ø26x120mm 3 pc
123692 Lock Pin Ø25x200mm SCS coat 1 pc
022230 Cotter Pin 5/1 ga 4 pc
110022 Spacer M20x82mm 1 pc
109612 Screw ISO4014-M24x130-8.8-ga 1 pc
057138 Screw ISO4014-M24x160-8.8-ga 1 pc
130342 Hex-Nut ISO7042-M24-8-ga 2 pc
070890 Hex-Nut ISO7040-M16-8-ga 8 pc
710381 Hex-Nut ISO7040-M12-8-ga 17 pc
710224 Screw ISO4017-M12x040-8.8-ga 1 pc
710221 Screw ISO4014-M12x060-8.8-ga 16 pc
721729 Screw ISO4014-M16x090-8.8-ga 2 pc
108546 Screw ISO4017-M16x060-8.8-ga 6 pc
711074 Washer ISO7089-16-200HV-ga 8 pc
710880 Washer DIN434-18-ga 14 pc

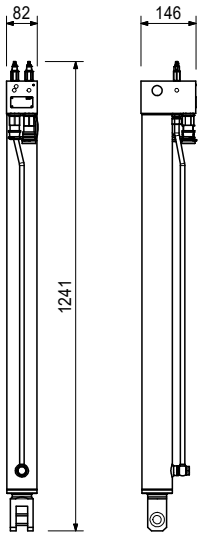
Art no.	Weight [kg]	
136107	41.400	**Climbing Cylinder RCS MAX 75**

Hydraulic Cylinder for Driving Rail RCS C MAX or Driving Rail RCS CL MAX.

Notes

Follow Assembly Instructions of the manufacturer!
After mounting the climbing cylinder, insert Pin Ø26x120mm into the parking position for securing the inner rail during transport.
Max. stroke length 90cm (effective 75cm).
Available nominal lifting force 50kN (theoretical nominal lifting force 65kN).
Max. operating pressure 210 bar.
Ready for operation with Hydraulic Unit RCS MAX 2x210 bar, 380-460V.



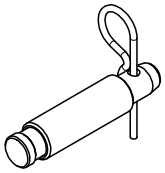


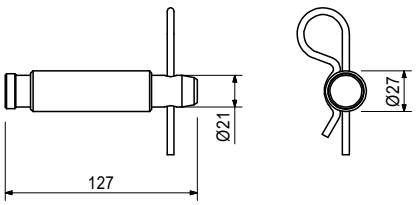
Accessory (not included)

136110	395.000	**Driving Rail RCS C MAX**
136111	268.000	**Driving Rail RCS CL MAX**
135500	47.000	**Hydr.P. RCS MAX 2x210/380-460V**

Art no.	Weight [kg]	
136109	0.472	**Pin Set RCS MAX**

For Creation of 250mm pin pattern in the Climbing Rail RCS.





Consists of

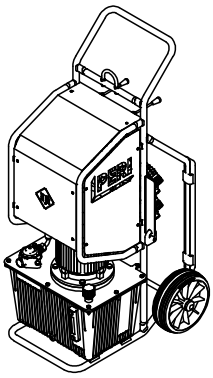
136289 Sleeve 26.9x2.6x80 coat 1 pc
022230 Cotter Pin 5/1 ga 1 pc

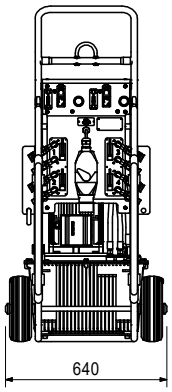
Art no.	Weight [kg]	
109766	109.000	**Hydr.Pump RCS 4x190/380-460V**

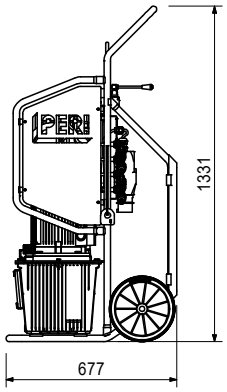
Hydraulic pump for actuating the Climbing Device RCS 50 or LPS 30.

Notes

Follow Instructions for Use.
Use only original PERI Hydraulic Oil.







Accessory (not included)

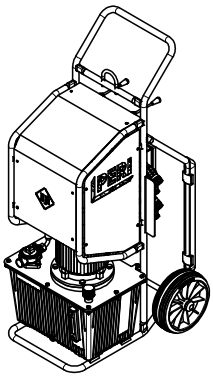
057376	18.300	**Hydr.Oil ISO11158 HVI46 20l**
131270	17.900	**Hydr.Oil ISO11158 HM10 20l**
131274	18.300	**Hydr.Oil ISO11158 HVI22 20l**
137373	18.300	**Hydr.Oil ISO11158 HVI32 20l**

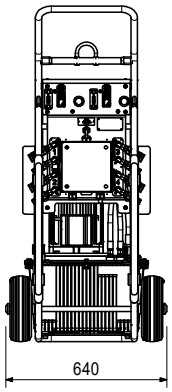
Art no.	Weight [kg]	
114243	109.000	**Hydr.Pump RCS 4x190/460V CSA**

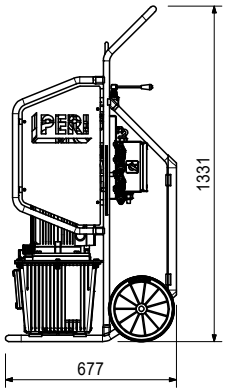
Hydraulic pump for actuating the Climbing Device RCS 50 or LPS 30 (Application area North America).

Notes

Follow Instructions for Use!
Only use original PERI Hydraulic Oil.



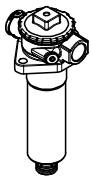


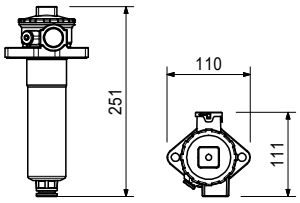


Accessory (not included)

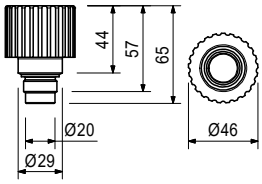
057376	18.300	**Hydr.Oil ISO11158 HVI46 20l**
131270	17.900	**Hydr.Oil ISO11158 HM10 20l**
131274	18.300	**Hydr.Oil ISO11158 HVI22 20l**
137373	18.300	**Hydr.Oil ISO11158 HVI32 20l**

Art no.	Weight [kg]	
130528	0.500	**Return Oil Filter Pump RCS**





Art no.	Weight [kg]	
130529	0.600	**Ventilation Filter Pump RCS**

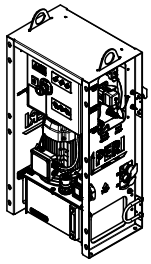


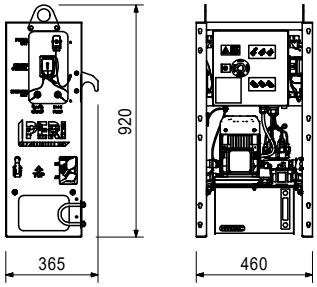
Art no.	Weight [kg]	
135500	47.000	**Hydr.P. RCS MAX 2x210/380-460V**

Hydraulic Pump for driving two Climbing Devices RCS MAX 75 or Climbing Device-2 RCS 50.
Connecting several units enables synchronous climbing of all climbing units.

Notes

Follow Assembly Instructions of the manufacturer!
See PERI Product Information.
Only use original PERI Hydraulic Oil.





Accessory (not included)

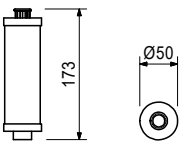
135606	0.100	**Return Filter RCS MAX**
135607	0.100	**Tank Breather Filter RCS MAX**
137281	14.000	**Hydr.Oil Filter Pump CE**
137282	1.000	**Hydr.Oil Filterelement 500**
137283	1.000	**Suction-/Pressure Hose 250**

Art no.	Weight [kg]	
135606	0.100	**Return Filter RCS MAX**

Spare part for Hydraulic Pump RCS MAX 2x210 bar.

Notes

Follow Assembly Instructions of the manufacturer!

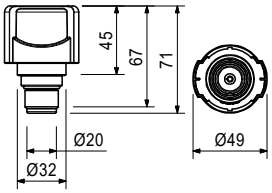


Art no.	Weight [kg]	
135607	0.100	**Tank Breather Filter RCS MAX**

Spare part for Hydraulic Pump RCS MAX 2x210 bar.

Notes

Follow Assembly Instructions of the manufacturer!

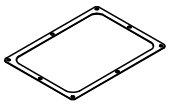


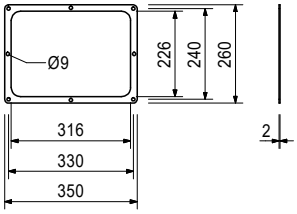
Art no.	Weight [kg]	
136597	0.050	**Gasket Hydr. Tank RCS MAX**

Spare part for Hydraulic Pump RCS MAX 2x210 bar.

Notes

Follow Assembly Instructions!





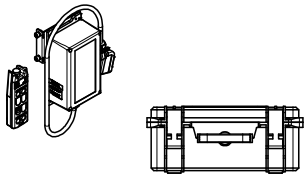
Art no.	Weight [kg]	
136530	5.080	**Remote Contr. RCS MAX wireless**

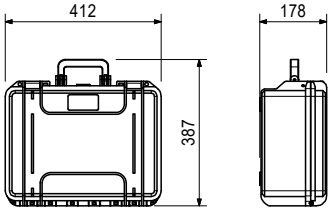
For a wireless operation of Hydraulic Pump RCS MAX 2x210 bar.

Notes

Follow Assembly Instructions of the manufacturer!

Scope of delivery:
1 pc. Remote Control RCS MAX wireless
1 pc. Receiver paired with Remote Control RCS MAX wireless
1 pc. Battery charger with base adapters
2 pc. Chargeable batteries
1 pc. case remote control RCS MAX
2 pc. Magnetic keys
1 pc. Protective casing with harmess



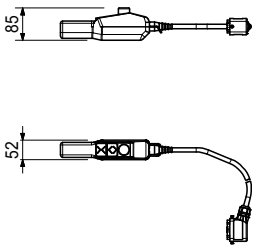


Art no.	Weight [kg]	
135506	2.500	**Remote Control RCS MAX**

Remote control for the simultaneous operation of a climbing unit.

Notes

Follow Assembly Instructions of the manufacturer!

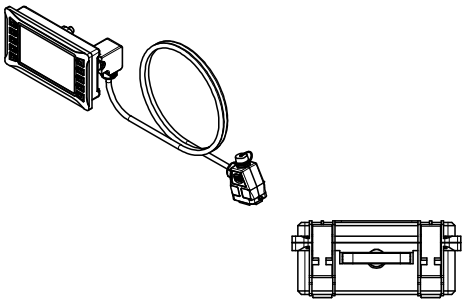


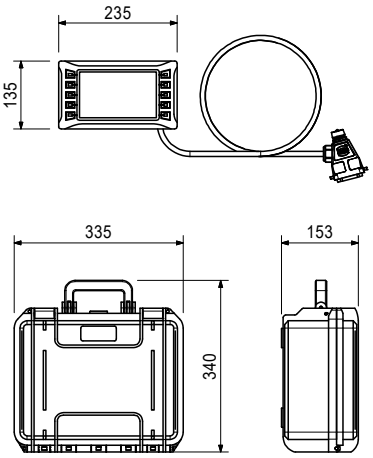
Art no.	Weight [kg]	
135507	3.360	**Display RCS MAX**

For displaying extended information and monitoring of interconnected Hydraulic power packs RCS MAX 2x210 bar.

Notes

Follow Assembly Instructions of the manufacturer!
Cable length: 1.5m.



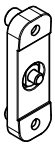


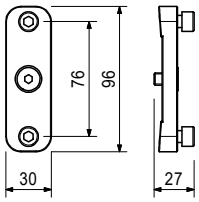
Consists of

136675 Case Display RCS MAX 1 pc

Art no.	Weight [kg]	
136043	0.058	**Display Holder RCS MAX**

For attachement of Display RCS MAX on the Power Unit RCS MAX 2x210 bar.





Consists of

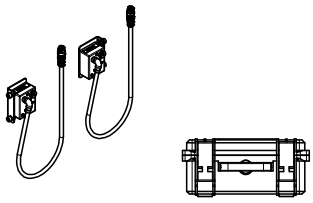
136045 Screw ISO10642-M08x016-8.8-ga 1 pc

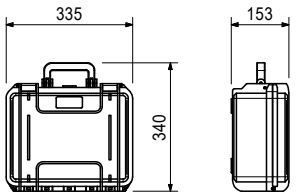
Art no.	Weight [kg]	
136531	2.330	**Data Conn. RCS MAX wireless**

For a wireless group connection between Hydraulic Pumps RCS MAX 2x210 bar.

Notes

Group IN and Group OUT modules are compatible paired.
Technical data see PERI Product Information.





Consists of

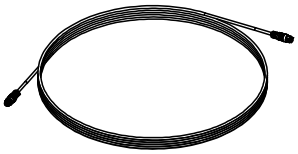
136673 Case Data Conn. RCS MAX 1 pc

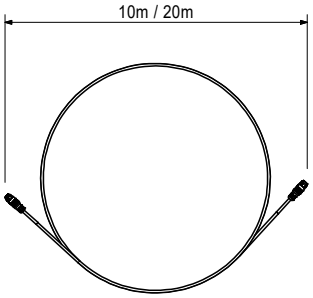
Art no.	Weight [kg]	
		Data Conn. Cables RCS MAX
135503	0.600	**Data Conn. Cable RCS MAX 10m**
135504	1.200	**Data Conn. Cable RCS MAX 20m**

For data connection between Hydraulic Pumps RCS MAX 2x210 bar.

Notes

Follow Assembly Instructions of the manufacturer!





Accessory (not included)

135505	0.100	**Connector Data Cable RCS MAX**

Art no.	Weight [kg]	
135505	0.100	**Connector Data Cable RCS MAX**

For connecting two Data Connection Cables RCS MAX.

Notes

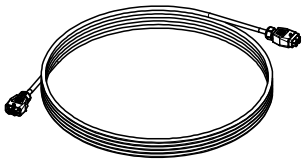
Follow Assembly Instructions of the manufacturer!
Length 18cm.

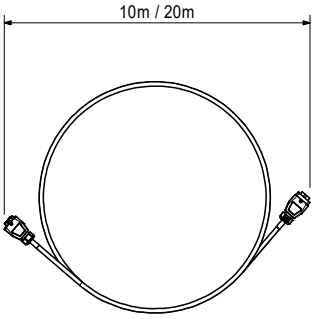
Art no.	Weight [kg]	
		Power Conn.Cables RCS MAX
135498	2.500	**Power Conn. Cable RCS MAX 10m**
135501	4.700	**Power Conn. Cable RCS MAX 20m**

For the power supply between max. 8 Hydraulic Pumps RCS MAX 2x210 bar.

Notes

Follow Assembly Instructions of the manufacturer!





Accessory (not included)

135502	0.200	**Conn. Power Cable RCS MAX**

Art no.	Weight [kg]	
135502	0.200	**Conn. Power Cable RCS MAX**

For connecting two Power Connection Cables RCS MAX.

Notes

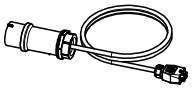
Follow Assembly Instructions of the manufacturer!
Lenght 18cm.

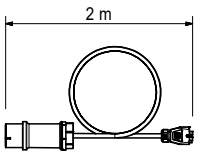
Art no.	Weight [kg]	
135499	0.800	**Power Cab. RCS MAX CEE-32A 2m**

For connecting max. 8 Hydraulic Pumps RCS MAX 2x210 bar to the power supply.

Notes

Follow Assembly Instructions of the manufacturer!
With CEE-Plug 400V, 32A. Manual phase inverter inside.



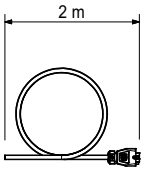


Art no.	Weight [kg]	
136532	0.400	**Power Cable RCS MAX 2m**

For making a country specific power cable.

Notes

Follow Assembly Instructions of the manufacturer!
To connect a country-specific connector to the cable. Only qualified electricians are permitted to work on and repair electrical components.

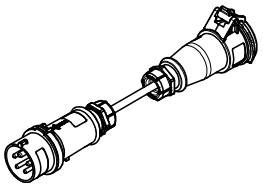


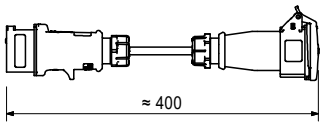
Art no.	Weight [kg]	
110280	0.500	**Adapter Cable RCS**

For the power supply to the Hydraulic Pump RCS.

Notes

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



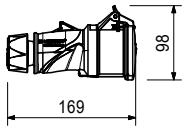


Art no.	Weight [kg]	
110279	0.291	**Plug Socket RCS black**

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

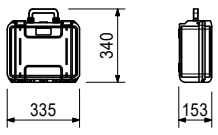
Notes

Follow Instructions for Use!



Art no.	Weight [kg]	
136673	1.700	**Case Data Conn. RCS MAX**

For packaging wireless RCS MAX group connections.

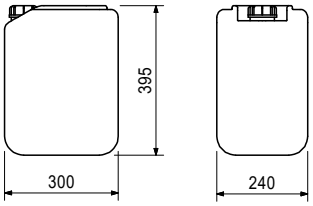


Art no.	Weight [kg]	
		Hydr.Fluids ISO11158 in canister
131270	17.900	**Hydr.Oil ISO11158 HM10 20l**
131274	18.300	**Hydr.Oil ISO11158 HVI22 20l**
137373	18.300	**Hydr.Oil ISO11158 HVI32 20l**
057376	18.300	**Hydr.Oil ISO11158 HVI46 20l**

High-quality synthetic hydraulic oils for PERI Hydraulic Power Units with different viscosity suitable for different temperature ranges.

Notes

Filter with filter pump before filling the aggregates.
Observe Safety Data Sheet and applicable National Safety Regulations regarding hydraulic oil, in particular for transport, storage and disposal! Observe the technical documentation for the hydraulic power unit! Product Data Sheet on request.

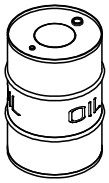


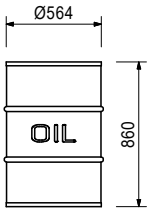
Art no.	Weight [kg]	
		Hydr.Fluids ISO11158 in drum
131273	200.000	**Hydr.Oil ISO11158 HM10 210l**
131275	200.000	**Hydr.Oil ISO11158 HVI22 210l**
137374	201.000	**Hydr.Oil ISO11158 HVI32 210l**
131277	201.000	**Hydr.Oil ISO11158 HVI46 210l**

High-quality synthetic hydraulic oils for PERI Hydraulic Power Units with different viscosity suitable for different temperature ranges.

Notes

Filter with filter pump before filling the aggregates.
Observe Safety Data Sheet and applicable National Safety Regulations regarding hydraulic oil, in particular for transport, storage and disposal! Observe the technical documentation for the hydraulic power unit! Product Data Sheet on request.



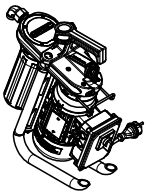


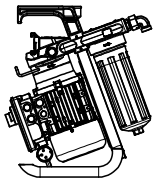
Art no.	Weight [kg]	
137281	14.000	**Hydr.Oil Filter Pump CE**

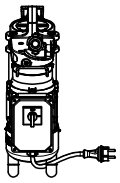
Filter pump for quick and clean transfer of hydraulic oil with simultaneous filtration.

Notes

Follow Instructions for Use!
Power connection 220V/50Hz, plug CEE 7/7







Accessory (not included)

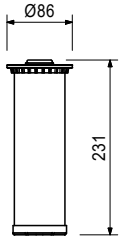
137282	1.000	**Hydr.Oil Filterelement 500**
137283	1.000	**Suction-/Pressure Hose 250**

Art no.	Weight [kg]	
137282	1.000	**Hydr.Oil Filterelement 500**

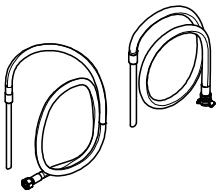
Wear part of the Hydr.Oil Filter Pump CE.

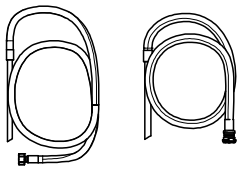
Notes

Follow Instruction for use!
Observe the maintenance instructions in the technical documentation for the oil filter pump!
Observe disposal instructions!



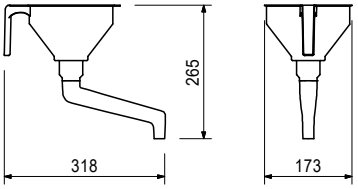
Art no.	Weight [kg]	
137283	1.000	**Suction-/Pressure Hose 250**





Art no.	Weight [kg]	
130685	0.225	**Universal Funnel**

For easy filling of hydraulic pumps with oil.

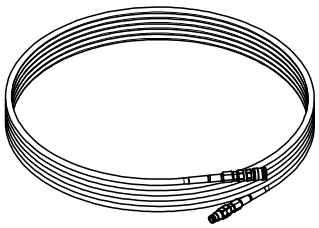


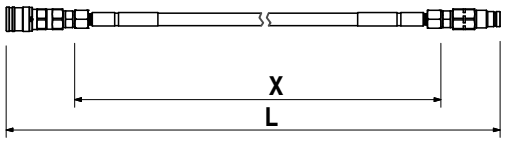
Art no.	Weight [kg]		L [mm]	X [mm]
		Hydr. Hoses 2SN-DN08-FF		
129035	0.996	**Hydr.Hose 853-2SN-DN08-FF 1m**	1169	1000
129036	1.430	**Hydr.Hose 853-2SN-DN08-FF 2m**	2169	2000
129419	2.690	**Hydr.Hose 853-2SN-DN08-FF 5m**	5170	5000
129420	4.900	**Hydr.Hose 853-2SN-DN08-FF 10m**	10170	10000
129421	7.120	**Hydr.Hose 853-2SN-DN08-FF 15m**	15170	15000
129422	9.330	**Hydr.Hose 853-2SN-DN08-FF 20m**	20170	20000

Hydraulic hoses with quick couplings and nominal diameter 8mm.

Notes

Follow applicable Safety Regulations for the installation and maintenance of hydraulic lines!



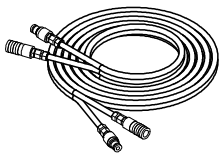


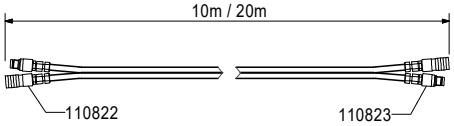
Consists of

128992 Pin ISO16028 DN10 R3/8IG 1 pc
128993 Sleeve ISO16028 DN10 R3/8IG 1 pc
051750 Male Stud Coupl. X-GE12PSR-ED 2 pc

Art no.	Weight [kg]	
		Hydraulic Twin Hoses RCS
110069	8.500	**Hydr.Twin Hose RCS 10m**
110070	15.300	**Hydr.Twin Hose RCS 20m**

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

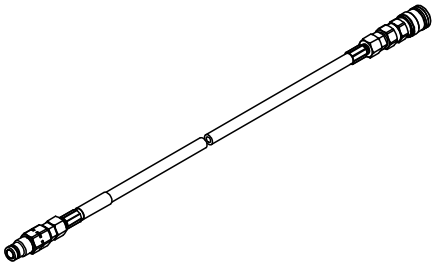


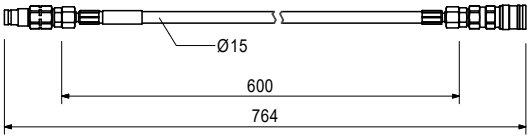


Consists of

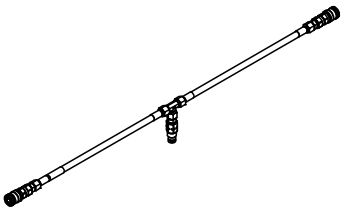
128992 Pin ISO16028 DN10 R3/8IG 2 pc
128993 Sleeve ISO16028 DN10 R3/8IG 2 pc
051750 Male Stud Coupl. X-GE12PSR-ED 4 pc

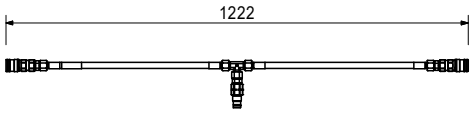
Art no.	Weight [kg]	
126646	0.651	**Bypass Hose RCS**





Art no.	Weight [kg]	
129423	1.370	**Hydr.T-Piece 2SN-DN08-FF**



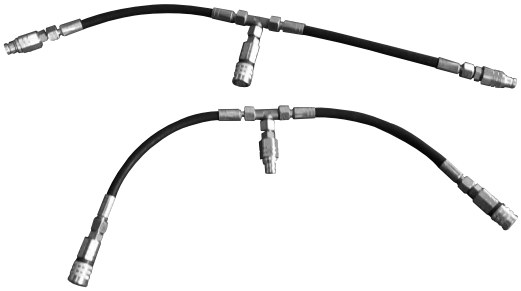


Consists of

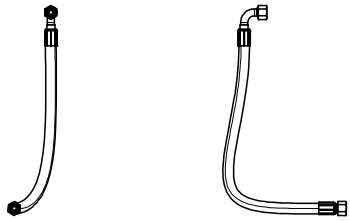
128992 Pin ISO16028 DN10 R3/8IG 1 pc
128993 Sleeve ISO16028 DN10 R3/8IG 2 pc
051750 Male Stud Coupl. X-GE12PSR-ED 3 pc

Art no.	Weight [kg]	
112421	3.000	**Hydr. Accum. Piece RCS**

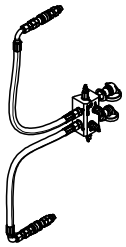
To double the volume of the oil at the Hydraulic Pump RCS. Also doubles the speed of the Hydraulic Winch RCS.

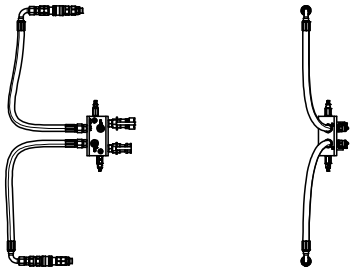


Art no.	Weight [kg]	
137400	0.350	**Hydr.Hose 2SN DN8 65 90°**



Art no.	Weight [kg]	
136533	3.400	**Conv. Set Climbing Device ACS**



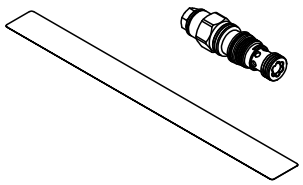


Art no.	Weight [kg]	
135411	1.000	**Con.Set Climb.Device-2 RCS 50**

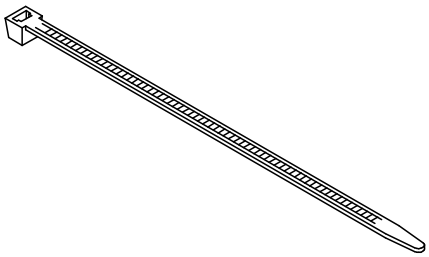
Conversion set for the modification of the Climbing Device RCS 50 in Climbing Device-2 RCS 50.

Notes

Observe conversion kit instructions at all times (see document DO-19-0265205).



Art no.	Weight [kg]	
137346	0.007	**Cable Binder 7.8x540mm**

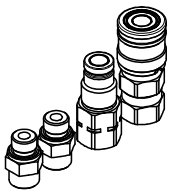


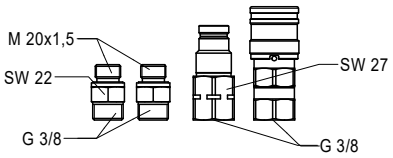
Art no.	Weight [kg]	
129424	0.440	**FF-Coupling Pair X-GE12PSR-ED+**

Spare parts set for PERI Hydraulic Components with quick couplings X-GE 12PSR-ED+.

Notes

For assembling on hydraulic hoses EN853-2SN-DN08.

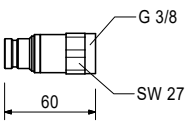




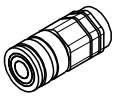
Consists of

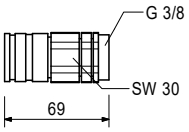
128992 Pin ISO16028 DN10 R3/8IG 1 pc
128993 Sleeve ISO16028 DN10 R3/8IG 1 pc
051750 Male Stud Coupl. X-GE12PSR-ED 2 pc

Art no.	Weight [kg]	
110823	0.171	**Quick Coupler Nipple RCS**



Art no.	Weight [kg]	
110822	0.297	**Quick Coupler Bushing RCS**



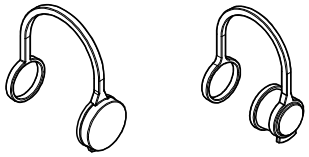


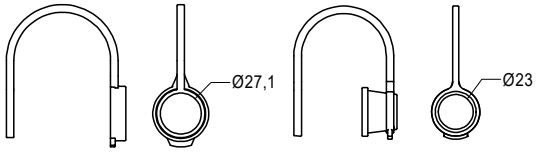
Art no.	Weight [kg]	
125632	0.050	**Prot. Covers Climb. Device RCS**

Spare part.
To protect unplugged quick couplings against dirt and damage.

Notes

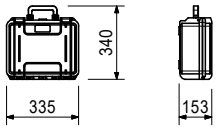
Use with hydraulic hoses with FF couplings possible.
1 set for 1 Climbing Device RCS 50 (2x bushing and 2x nipple each).





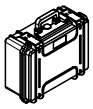
Art no.	Weight [kg]	
136675	1.700	**Case Display RCS MAX**

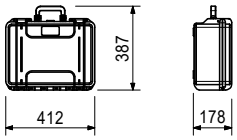
For packaging of RCS MAX display.



Art no.	Weight [kg]	
136674	2.300	**Case Remote Control RCS MAX**

For packaging of wireless RCS MAX remote control.





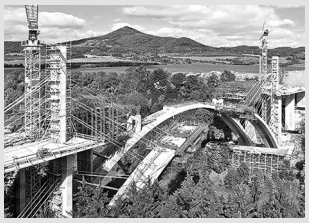
The optimal System for every Project and every Requirement

Wall Formwork

Column Formwork

Slab Formwork

Climbing Systems



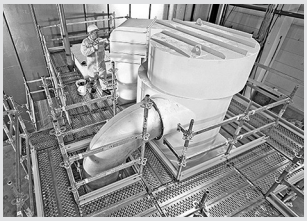
Bridge Formwork

Tunnel Formwork

Shoring Systems

Construction Scaffold

Facade Scaffold



Industrial Scaffold

Access

Protection Scaffold

Safety Systems

System-Independent Accessories

Services

PERI Danmark A/S
Forskalling & Stilladssystemer
Greve Main 26
2670 Greve
Tlf. +45 4345.3627
peri@peri.dk
www.peri.dk

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