

RCS-2 Climbing Device and Hydraulics

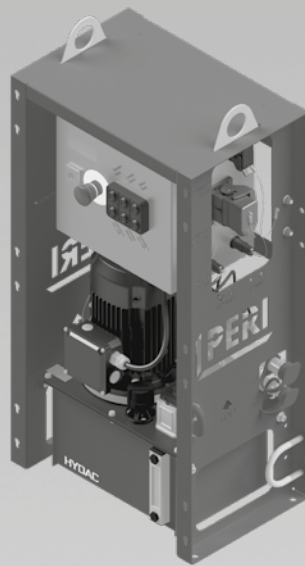
Assembly, Commissioning and Maintenance

Spare Parts and Circuit Diagrams

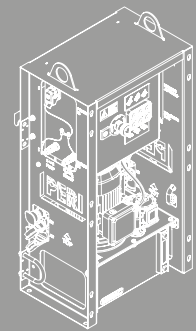
Assembly Instructions – Issue 08/2020



Climbing Device-2 RCS 50
Item no. 135413



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



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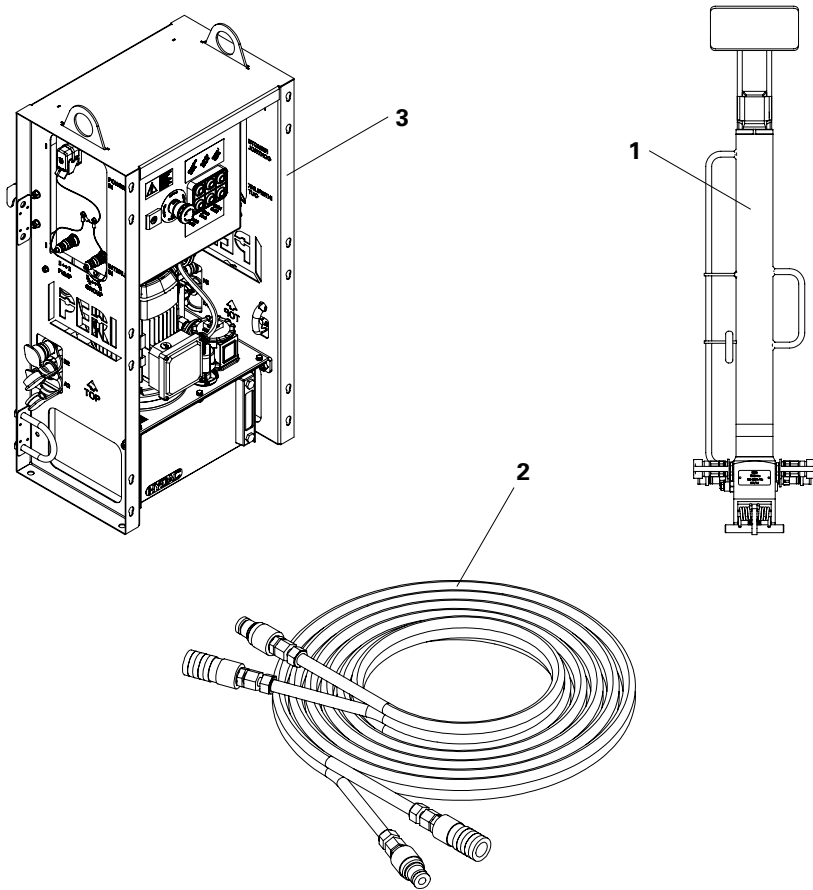
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Main components



- 1 Climbing Device-2 RCS 50
- 2 Hydraulic Twin Hose RCS 10 m
- 3 Hydraulic Unit RCS MAX 2 x 210 bar, 380-460V

Key

Pictogram | Definition



Danger/Warning/Caution



Note



To be complied with



Load-bearing point



Visual check



Tip



Incorrect use



Safety helmet



Safety shoes



Safety gloves



Safety goggles



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

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 are featured at the beginning of the section or ahead of the instructions, and are highlighted as follows:



Danger

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



Warning

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



Caution

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



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 for Assembly and Use are shown in the form of examples with only one component size. They are valid for all component sizes contained in the standard configuration.

To facilitate understanding, detailed illustrations are sometimes incomplete. The safety installations which have possibly not been shown in these detailed illustrations must nevertheless be available.

Target groups

Contractors

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

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

Competent person

(Construction Site Coordinator)

The Safety and Health Protection Coordinator*

- is appointed by the client,
- must identify potential hazards during the planning phase,
- determines measures that provide protection against risks,
- creates a safety and health 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 persons qualified to carry out inspections

Due to the specialist knowledge gained from professional training, work experience and recent professional activity, the competent person qualified to carry out inspections has a reliable understanding of safety-related issues and can 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.

Qualified personnel

Formwork 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 formwork in an understandable form and language.
- Description of the measures for assembling, modifying or dismantling the formwork.

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



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

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

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

Additional technical documentation

- Instructions for Assembly and Use (e.g. for RCS C or RCS CL)
- Instructions for Use (e.g. for Lifting Beam RCS 9t)
- PERI PI separate product information (e.g. for permissible anchor loads)
- Manufacturer's assembly instructions for the hydraulic unit
- Hydraulic oil safety data sheet
- Hydraulic cylinder documentation
- Declarations of Conformity, Declarations of Incorporation



These assembly instructions are not a replacement for the assembly instructions for the hydraulic unit, hydraulic cylinder or complete climbing systems. The instructions for the installed components and systems also apply.

Intended use

The hydraulic system, consisting of the Climbing Device-2 RCS 50 in combination with the Hydraulic Unit RCS MAX 2 x 210bar, 380-460V, is used exclusively for lifting one climbing unit, consisting of formwork and shoring structure, to 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 operating instructions based on a separate risk assessment. These special applications must be approved by PERI.

Anything other than the use that is specified in Point 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.

Instructions for Use

Use in a way not intended, deviating from the standard configuration or the intended use set forth in the assembly instructions, represents a misapplication with a potential safety risk.

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

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.

Regular assembly

General

The climbing mechanism for the RCS-2 Automatic Climbing System consists of:

- Climbing Device-2 RCS 50
- Hydraulic Unit RCS MAX 2x 210bar, 380-460V
- Climbing Shoe RCS
- Climbing Rail RCS, with Climbing Rail Extension RCS if required

Functionality

The Climbing Device-2 RCS 50 is positioned on the Climbing Shoe RCS. The Climbing Shoe RCS is anchored to the building by means of a wall or slab shoe. The climbing device works together with the pawl in the climbing shoe. The claw on the piston engages with the climbing bolts (spacers in the Climbing Rail RCS) and pushes both of them, together with the falsework structure, upwards. At the end of the stroke, the pawl in the climbing shoe engages with another climbing bolt. Once the cylinder is retracted, the pawl carries the load and the claw circumvents the next climbing bolt. After this, the claw engages with this climbing bolt.

Applications

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

Standard falsework structures:

- Guided Climbing Formwork RCS C
- Light Climbing Formwork RCS CL

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.

Technical data

Climbing Device-2 RCS 50

Stroke length	maximum 575 mm (effective 500 mm)
Lifting force	Nominal lifting capacity 50 kN (11.2 kip) (maximum 65 kN (14.6 kip)) (Nominal lifting capacity = 65 kN less (friction + pressure loss))
Max. operating pressure	210 bar (21.0 MPa)

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

Power supply	400 V/50 Hz (3 phases) Output 1.3 l/min per cylinder
Power supply	480 V/60 Hz (3 phases) Output 1.6 l/min per cylinder
Sound emissions	60 dB (A) at a distance of 1.0 m

Cleaning and maintenance instructions

The Climbing Device-2 RCS 50 has been designed for long-term use on construction sites.

In order to ensure cost-effective, technical and safe use over a long period, it is important to take a value-preserving approach.

Repairs that require the welding or forming of components must be carried out by PERI.

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

Use PERI original parts as spare parts.

Concrete adhesion on the Climbing Device-2 RCS 50 and hydraulic unit must be removed immediately after the concreting process.

Maintenance intervals must be adhered to and correct storage ensured.

Disposal



Materials must be sorted correctly and according to type.

Dispose of materials in accordance with the local waste and disposal regulations and directives, and in an environmentally friendly manner using suitable collection systems.

Observe the safety data sheets of the auxiliary and operating materials.

Safety instructions

General

Deviations from the standard configuration and/or intended use present a potential safety risk.

When using our products, all country-specific laws, standards and other safety regulations shall be observed.

In the case of unfavourable weather conditions, suitable precautions and measures are to be implemented in order to guarantee working safety and stability.

The contractor (user) must ensure stability during all stages of construction. They must ensure and provide evidence that all loads that occur are transferred safely.

The contractor (user) must provide safe working areas for site personnel, which are to be reached via safe access routes. Areas of risk must be cordoned off and clearly marked. Hatches and openings to accessible working areas must be kept closed during working operations.

To facilitate understanding, detailed illustrations are sometimes incomplete. The safety installations which have possibly not been shown in these detailed illustrations must nevertheless be available.

Storage and transportation

Do not drop the components.

Store and transport components in such a way that no unintentional change in their position is possible. Detach lifting gear from the lowered units only if an unintentional change in their position is no longer possible.

During movement procedures ensure that components are picked up and set down in such a way that unintentional falling over, falling apart, sliding or rolling is prevented.

Use suitable load-carrying equipment to move the components and always use the designated load-bearing points on the components.

During the lifting and moving procedure, ensure that all loose parts are removed or secured.

When moving components, always use a guide rope.

Move components on clean, flat and sufficiently load-bearing surfaces only.

PERI products must be stored in such a way that they are protected against the effects of the weather and aggressive materials if safety is then likely to be affected.

Transport routes must be non-slip, level, free of obstacles and must have a sufficient load-bearing capacity.

Product-specific



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

Appropriate personal protective equipment must be worn (PPE) for activities, e. g.:

- Safety helmet
- Safety shoes
- Safety gloves

Reliable lightning conduction and fire protection must be ensured.

Working areas must be adequately lit during all service life phases.

Operation

The contractor must ensure that assembly, modifications and dismantling, as well as the use and handling of the product, are managed and supervised by qualified and authorised personnel.

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

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

Access routes and working areas

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

Working areas must remain free of any tripping hazards.

Always keep working platforms clean.

Avoid installing working areas and access routes in areas of risk.

Cordon off areas where there is a risk of falling, such as building openings.

Secure the hydraulic unit in an upright position on horizontal scaffold tubes or handrail boards, or set it down on load-bearing ground and secure. The pump must stand perpendicular to the level ground.

Assembly

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 at least minimise the risk.

If guardrails cannot be used due to technical reasons or have to be removed, site personnel should be safeguarded by other means (e.g. through rope protection).

Site personnel are not permitted to loiter beneath areas where assembly work is being carried out, unless the area of risk has been provided with sufficient protection against falling, overturned, sliding or rolling objects and masses. Areas of risk must be cordoned off.

Crushing risk!

Do not touch if the load is moving!

Protection from falling objects

Secure tools and material to prevent them from falling down. Remove concrete residue and other dirt.

Avoid installing working areas and access routes in areas of risk. If this is not possible due to work procedures, suitable equipment (e.g. protection roofs and toe boards) must be available to provide protection against falling objects. This also applies to work that only takes a short period of time.

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

Operational faults

- Set down the platform in the next possible position and secure.
- Leave the climbing unit via the safest route.
- Notify an authorised person immediately.

Maintenance and repairs

- Only materials in perfect condition are to be used.
- Climbing system components are to be checked for signs of damage by qualified personnel on a regular basis. Dirt which affects functionality is to be removed immediately.
- Damaged components should be inspected, removed and replaced.
- In the case of recurrent damages, the cause must be determined and rectified.

PERI climbing hydraulics must not be used if the type plate is missing, incomplete or illegible.

Climbing procedure

Only anchor climbing units to the next

concreting section once the required concrete strength has been reached.

The moving process may create building edges between the platforms. If work is carried out in this area, site personnel must be safeguarded against falling (e.g. using rope protection). Cordon off areas of risk.

Prior to the climbing procedure, platforms must be cordoned off to prevent inadvertent access.

During the moving procedure, neither persons nor construction materials or tools are allowed to be transported, with the exception of operating personnel.

The operator must establish observation posts prior to the climbing procedure.

Monitor the engagement of the climbing devices, the pawl of the climbing shoes and the insertion into the climbing shoes.

When climbing with climbing hydraulics, details regarding the arrangement of the hydraulic hoses, data cables and power cables must be taken into consideration.

Components and tools

Pos. no.	Component name	Item no.
1	Climbing Device-2 RCS 50	135413
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 210bar, 380-460V	135500
4	Power Cable RCS MAX CEE-32A 2 m	135499
5	Climbing Shoe RCS	109486
6	Wall Shoe RCS	109503
7a	Power Connection Cable RCS MAX 10 m	135498
7b	Power Connection Cable RCS MAX 20m	135501
8	Connector Power Cable RCS MAX	135502
9	Climbing Rails RCS	-
10	Climbing Rail Extension RCS	-
11a	Data Connection Cable RCS MAX 10 m	135503
11b	Data Connection 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
15	Conversion Set Climbing Device-2 RCS 50	135411
16	Bolt ISO 4017 M12 x 60-8.8	126001
17	Washer ISO 7089 200 HV, A12	780702
18	Nut ISO 4034 M12-8	723805
19	Data Connection RCS MAX wireless	136531
20	Remote Control RCS MAX wireless	136530
21	Pallett RP Hydraulic Pump RCS MAX	136165
22	Power Cable RCS MAX 2m	136532



- This checklist does not replace the explanations in the Assembly Instructions but is used instead as a climbing checklist prior to climbing.
- The work steps described have been shortened.

Work steps prior to climbing

- Check the power and data connection cables.
- Seal open ports for data connections, power connections and remote controls.
- Prepare the access points and platforms for the climbing operation.
- Attach Extension RCS (10) to Climbing Rails RCS-CL.
- Attach Climbing Device-2 RCS 50 to the climbing shoe.
- Connect hydraulic hoses.
- Switch on the hydraulic system.
- Check the functionality of the hydraulic system.
- Carry out the manufacturer's assembly instructions.

Components

- 1** Climbing Device-2 RCS 50
- 1.1** Piston with claw and roller
- 1.2** Cylinder base
- 1.3** Return flow from the rod side A with the hydraulic quick-coupler (clip) left + right
- 1.4** Inflow to the piston base B with the hydraulic quick-coupler (bushing) left + right
- 1.5** Reposition device
- 1.6** Locking lever
- 1.7** Measuring connection
- 1.8** Lowering brake valve
- 1.9** Protection caps
- 1.10** Type plate
- 1.11** Label

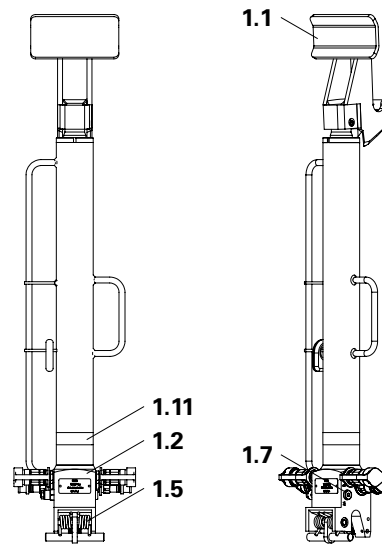


Fig. A1.01



Due to the clear arrangement of the quick-coupler clip (return) and bushing (inflow) on the climbing device and hydraulic unit, it is impossible to connect the inflow and return lines incorrectly. When moving, fit quick-couplers with protection caps (**1.9**) to protect against dirt and damage.

(One set with 4 pieces, Item no. 125632)



To prevent the quick-couplers from colliding with the platforms or other parts of the climbing unit when climbing, it is possible to arrange the couplings vertically using angle pieces.

→ Contact PERI

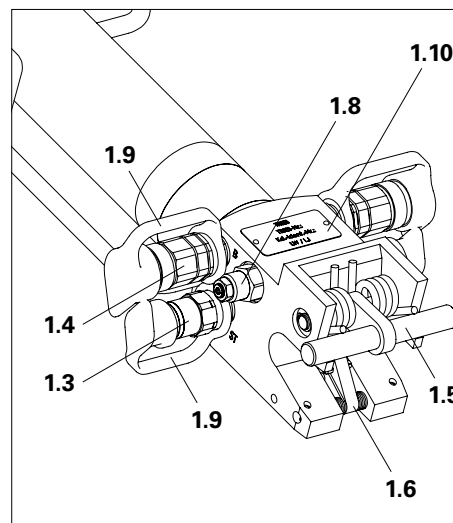


Fig. A1.01a

Only operate the system with the Climbing Device-2 RCS 50 (Item. no. 135413).

The Climbing Device RCS 50 (Item no. 109765) can be converted into the Climbing Device-2 RCS 50 (art. no. 135413).

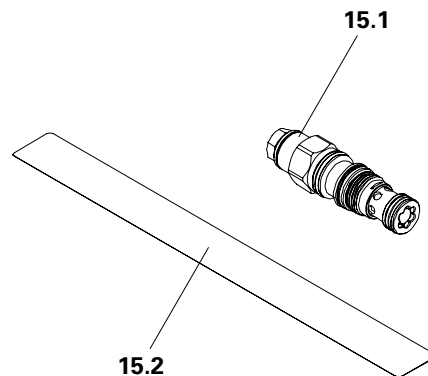


Fig. A2.01



Danger

When the Climbing Device RCS 50 (Item no. 109765) is not modified, the lowering brake valve can open and the platform can drop uncontrollably! This can result in serious injuries or even death.

- ⇒ Only operate Climbing Device RCS 50 at a maximum operating pressure of 190 bar (Hydraulic Unit RCS 4 x 190 bar, 380 – 460 V (Item no. 109766)).
- ⇒ Do not operate Climbing Device RCS 50 at an operating pressure of 210 bar.
- ⇒ To operate Climbing Device RCS 50 at up to 210 bar it must be modified using the conversion set for Climbing Device-2 RCS 50.



- To operate the Climbing Devices RCS 50 (Item no. 109765) at an operating pressure of up to 210 bar, it must be modified.
- Observe the separate modification instructions.

Components

-
- Climbing Device RCS 50
 - 15** Conversion Set Climbing Device-2 RCS 50
 - 15.1** Lowering brake valve
 - 15.2** Label
-

Hydraulic Twin Hoses

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

Accessories

- 2.1** Hydraulic Quick-coupler (bushing) Item no. 110822/128993
- 2.2** Hydraulic Quick-coupler (clip) Item no. 110823/128992
- 2.3** Retaining ring (bushing)

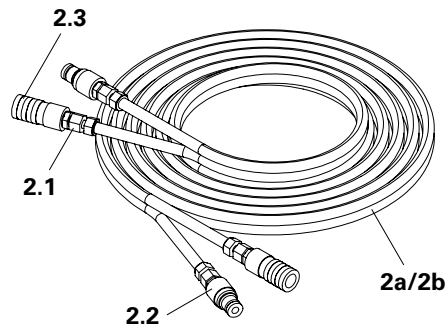


Fig. A3.01

Hydraulic Single Hoses

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

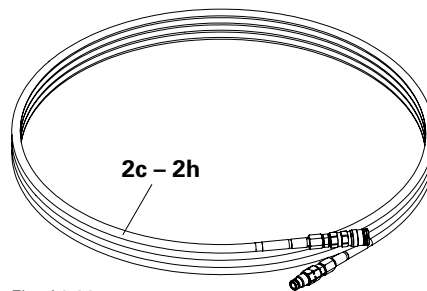


Fig. A3.02

Data connection

- 11a** Data Connection Cable RCS MAX 10 m
- 11b** Data Connection Cable RCS MAX 20 m
- 12** Connector Data Cable RCS MAX
- 19** Wireless Data Connection RCS MAX

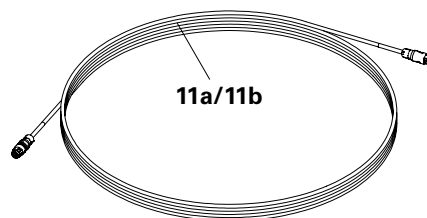


Fig. A3.03



Fig. A3.04

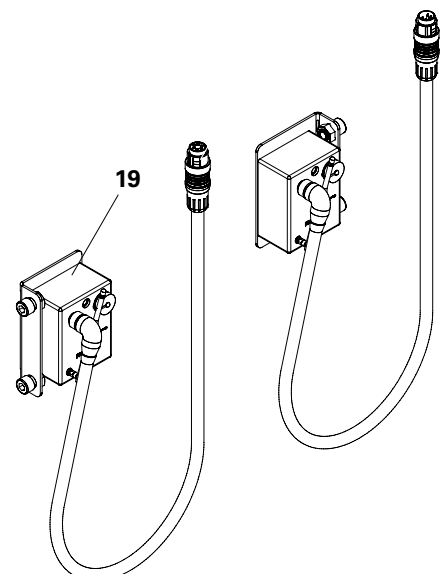


Fig. A3.05

Power cables

- 4** Power Cable RCS MAX CEE-32A
2 m
- 4.1** Manual Phase Inverter
- 7a** Power Connection Cable RCS
MAX 10 m
- 7b** Power Connection Cable RCS
MAX 20 m
- 8** Connector Power Cable RCS MAX
- 22** Power Cable RCS MAX 2m

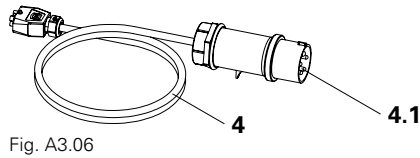


Fig. A3.06

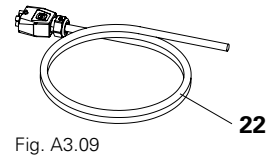


Fig. A3.09

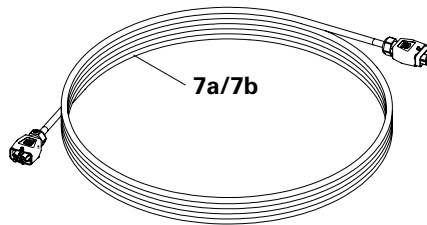


Fig. A3.07



Fig. A3.08

Accessories

- 13** Remote Control RCS MAX 15 m
- 13.1** "Cylinder Extend" button
- 13.2** "Cylinder Retract" button
- 13.3** Emergency Stop button
- 14** Display RCS MAX
- 14.1** USB port
- 20** Remote Control RCS MAX wire-
less
- 20.1** Receiver Remote Con-
trol RCS MAX wireless

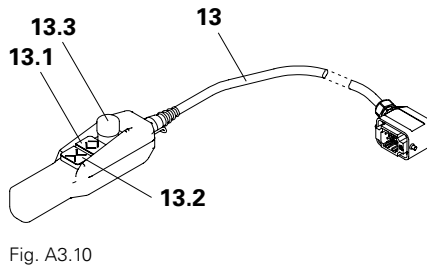


Fig. A3.10

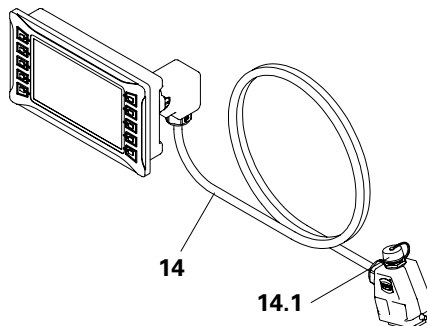


Fig. A3.11

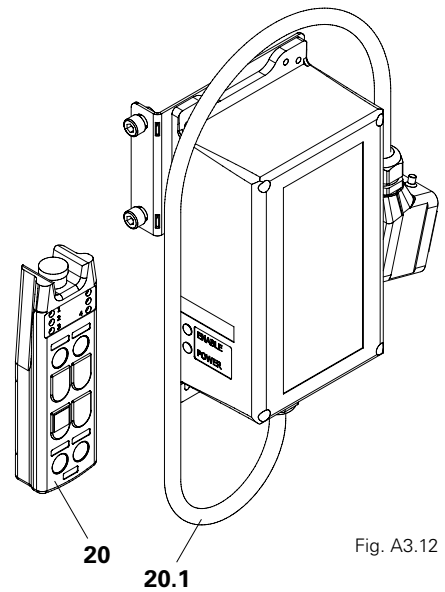
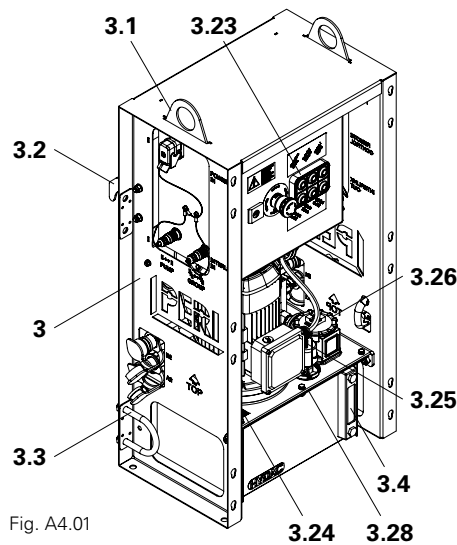


Fig. A3.12

Main components

- 3** Hydraulic Unit RCS MAX
2x 210 bar, 380-460V for 2 x
Climbing Device-2 RCS 50, Item
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 hole/air filter
- 3.26** Oil return flow filter
- 3.28** Gasket Hydraulic Tank RCS MAX



Connections - left side

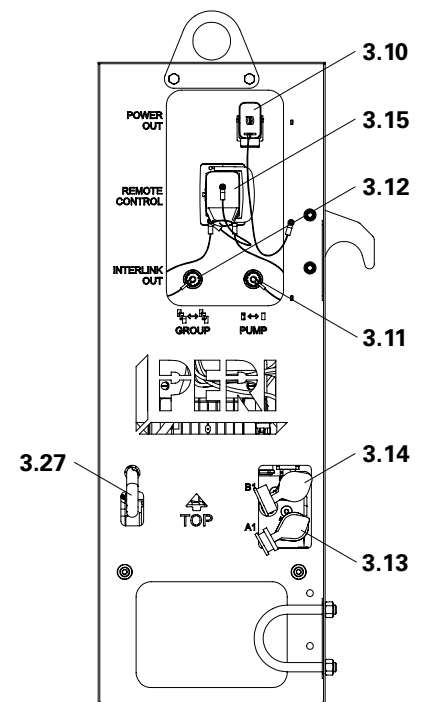
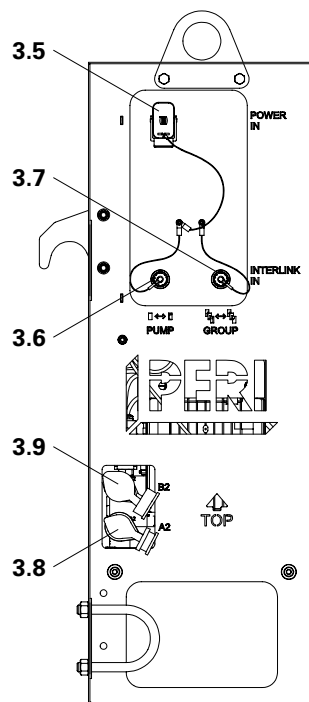
- 3.5** Power in ¹⁾
- 3.6** Interlink in "Pump" ¹⁾
- 3.7** Interlink in "Group" ²⁾
- 3.8** Hydraulic Connection A2
- 3.9** Hydraulic Connection B2

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 chip

¹⁾ To connect an individual pump to a group.

²⁾ To connect groups.



Control panel

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

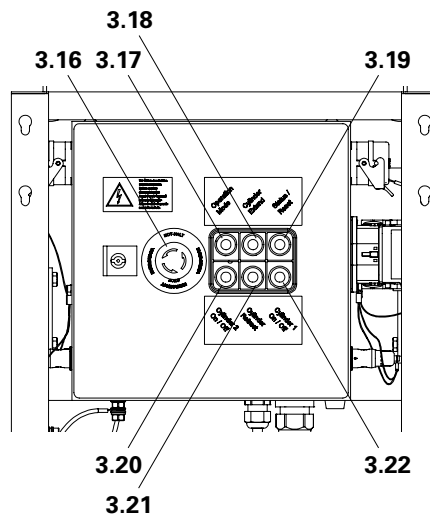


Fig. A4.04

Components

-
- 5** Climbing Shoe RCS
 - 5.1** Climbing pawl
 - 5.2** Folding runner
 - 5.3** Safety pins
 - 5.4** Pawl lock
 - 5.5** Hinged clamp
 - 5.6** Spring lock
 - 5.7** Locating pin for climbing device
-

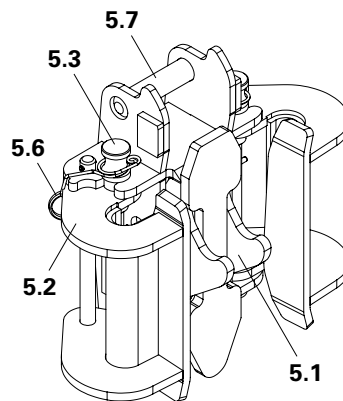


Fig. A5.01

Climbing shoe closed

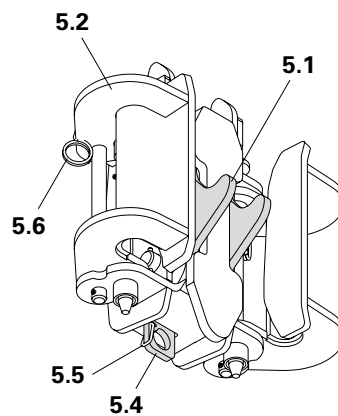


Fig. A5.01a

Climbing shoe open

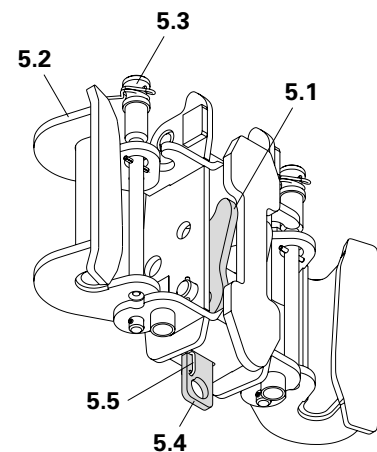


Fig. A5.01b

For use in the Self-climbing System RCS C with Wall Shoe RCS

Components

- 1** Climbing Device-2 RCS 50
- 5** Climbing Shoe RCS
- 6** Wall Shoe RCS
- 9** Climbing Rail RCS
- 9.1** Climbing bolt
(spacer in the climbing rail)

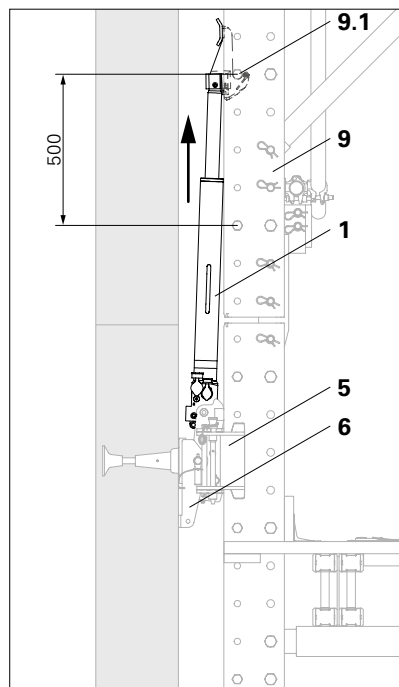


Fig. A6.01

Moving on the construction site

- Keep bushing and clip of all quick-couplers clean and fit with protection caps during transportation (one set with 4 pieces, Item 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 scaffold 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.

Temporary storage on the construction site

(duration < 6 months)

- Clean bushings and clips of all quick-couplers and fit with protection caps when storing, or connect together.
- 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 "B2 Packaging".
- 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 B2 "Packaging".
- 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 protection 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 cylinder and pump in the designated means of transport, see "B2 Packaging", and secure them.
- 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.)



- Transport crates
 - are only used for transport and storage purposes,
 - do not use as load-carrying equipment!
- See the manufacturer's assembly instructions for information regarding transport of the unit.



- Clean dirt off the climbing devices and hydraulic units, and dry them.
- Clean the bushings and clips of all quick-couplers and close with protection caps, or connect together.
- Place the hydraulic cylinder in the designated transport crates.
- 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 the hydraulic unit in a horizontal position, as the oil can escape through the ventilation valve.

Climbing Device-2 RCS 50 Item no. 135413	27.0 kg
Hydraulic Unit RCS MAX Item no. 135500	47.0 kg
Hydraulic Twin Hose RCS Length 10 m Item no. 110069	9.0 kg
Length 20 m Item no. 110070	16.0 kg

All weight details do not include the oil.

Transport Case for Climbing Device-2 RCS 50



Fig. B2.01

Dimensions of Hydraulic Unit RCS MAX

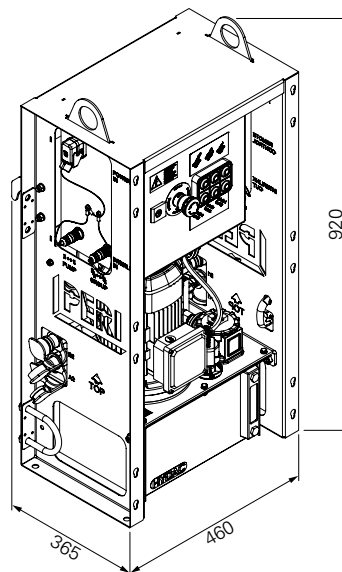


Fig. B2.02

Pallett RP Hydraulic Pump 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 $\leq 30^\circ$

→ Four-sling lifting gear $L \geq 1.5$ m
(Fig. B2.05a)

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.

Filling

1. Open and fold in the metal clip.
 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 and secure with a cotter pin.
- (Fig. B2.04 + B2.05)

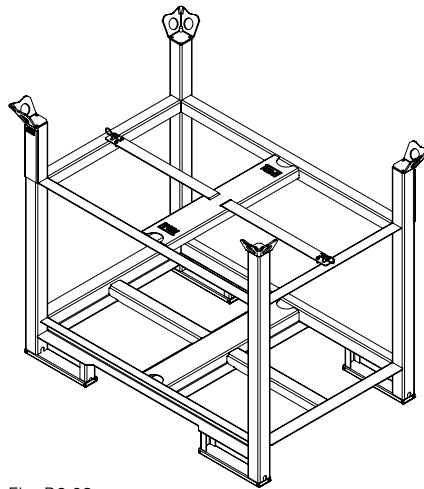


Fig. B2.03

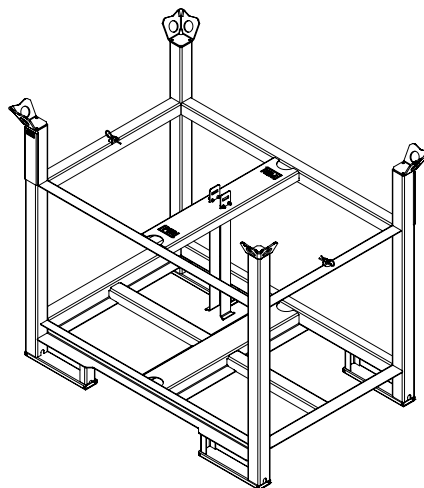


Fig. B2.04

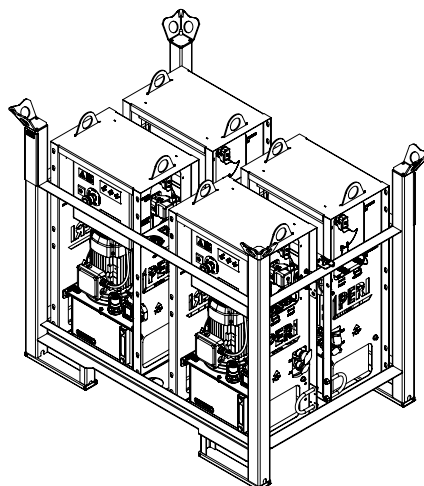


Fig. B2.05

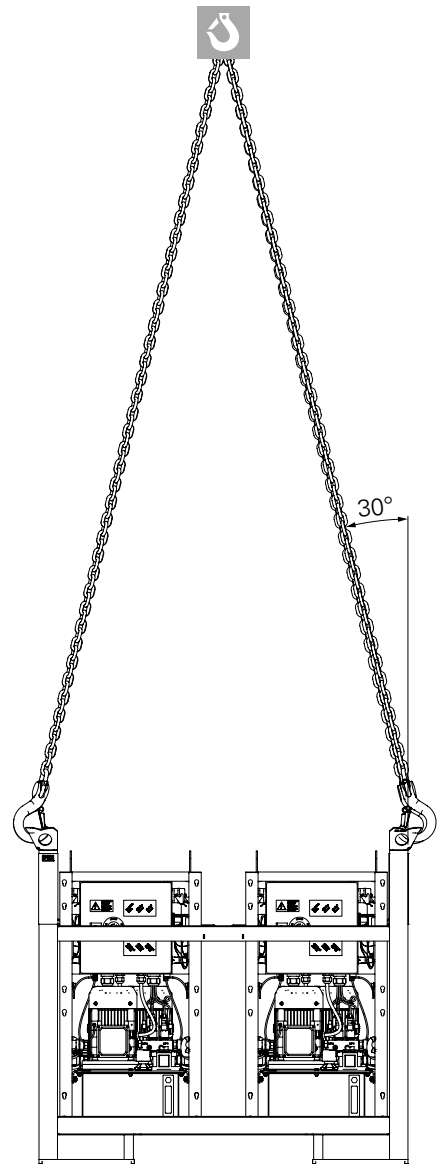


Fig. B2.05a



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

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 to familiarise themselves with the equipment 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.

Standard assembly

1. Assemble or set up the pump, see Section E1 "Connection diagram".
2. Connect the hydraulic hoses.
3. Check the oil level of the pump, and fill if necessary.
4. Attach the data connection cable.
5. Attach the power connection cable.
6. Connect remote control.
7. Attach the connection cable.
8. Seal unused connections with mating plugs and cover caps.
9. Check all fastenings and connections.
10. Power on the system and check the rotary field on the keypad, see section D4 "Climbing procedure".
11. Set the hydraulic cylinder down on the platform for venting.
12. Ventilate system and check for leakage, see Section D7 "Remedial measures for malfunctions" and the manufacturer's installation instructions.
13. Carry out any additional steps in the manufacturer's assembly instructions.
14. Install hydraulic cylinder.
15. Put the system into operation.

Power Cable RCS MAX 2m



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 2m, a country-specific connector can be fitted onto the Power Cable RCS MAX 2m (22).
- Refer to the manufacturer's assembly instructions for the terminal allocation diagram.

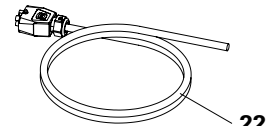


Fig. C1.01

Measures taken during commissioning



- Carry out any additional steps in the assembly instructions of the manufacturer.
- Never re-tighten leaky screw connections under high pressure, only after a pressure release.

Measures

1. Check the rotary field, see Section D4 "Climbing procedure".
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 up to 0.6 m into account!
- Observe the manufacturer's assembly instructions.

Accessories

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

Hydraulic oil



- Observe DGUV [German Statutory Accident Insurance] regulation 113-020.
- 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 pumps, climbing devices and hoses need to have an oil change.

Areas of application for PERI hydraulic oils in combination with Hydraulic Unit RCS MAX 2 x 210bar, 380-460V

Name	Temperature range	Cold start required under
Hydraulic oil ISO 11158 HM10	-20 °C ... +25 °C	–
Hydraulic oil ISO 11158 HVI22	-14 °C ... +50 °C	-5 °C
Hydraulic oil ISO 11158 HVI46	±0 °C ... +70 °C	+10 °C

In general, use PERI hydraulic oils within viscosity range 16 to 400 mm²/s. A cold start is required from 200 mm²/s.

Hydraulic hoses



- Observe DGUV [German Statutory Accident Insurance] regulation 113-020.
- 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:

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

Hydraulic unit



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

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
<ul style="list-style-type: none"> ■ Replace oil filter, air filter and hydraulic oil. 	Before use on next construction site, minimum 1x yearly.
<ul style="list-style-type: none"> ■ Replace hydraulic hoses. 	If case of damage, before use on next construction site. Maximum service life 6 years.
<ul style="list-style-type: none"> ■ Check oil temperature and oil level. 	Before use on next construction site.
<ul style="list-style-type: none"> ■ Clean machine housing and cylinder. ■ Lubricate moving parts on the cylinder. 	If necessary, after each concreting process.
<ul style="list-style-type: none"> ■ 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.
<ul style="list-style-type: none"> ■ Lubricate Climbing Rail RCS. 	If necessary, weekly to monthly.
<ul style="list-style-type: none"> ■ Check device mounting. 	Weekly to monthly.
<ul style="list-style-type: none"> ■ Check housing (dirt, damage, protective covers) ■ Check performance. 	Monthly to quarterly.
<ul style="list-style-type: none"> ■ Check tubes and hoses. ■ Check protective covers. 	Before first use, every six months to one year.
<ul style="list-style-type: none"> ■ Maintenance work on the hydraulic unit. 	See manufacturer's assembly instructions.

D1 Assembly of the hydraulic unit

Assembly on scaffold tubes



The hydraulic units are attached to the scaffold 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 scaffold tube with suspension hook (**3.2**) and attach.
 3. Secure the Hydraulic Unit RCS MAX (**3**) on the lower scaffold tube with securing bracket (**3.3**).
- (Fig. D1.01 + D1.01a)

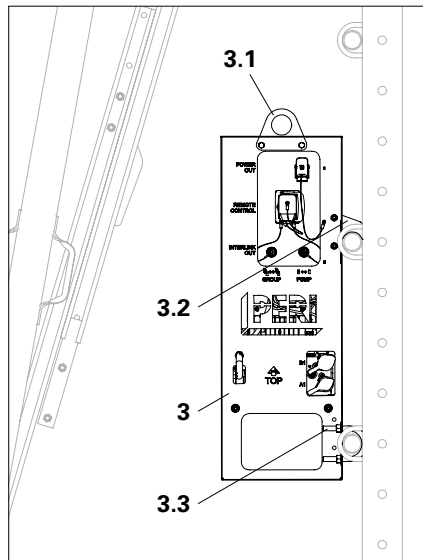


Fig. D1.01

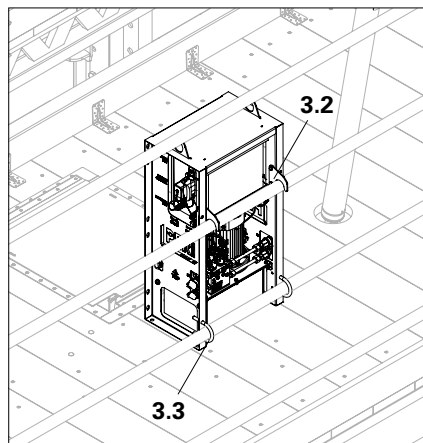


Fig. D1.01a

Assembly on handrail boards



Alternatively, the hydraulic unit can be fastened onto the guardrails.

Components

- 3** Hydraulic Unit RCS MAX
- 16** Bolt ISO 4017 M12 x 60-8.8
- 17** Washer ISO 7089 200 HV, A12
- 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 mounting 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 200 HV, A12 (**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 200 HV, A12 (**17**) and Nut ISO 4034 M12-8 (**18**).
- (Fig. D1.02)

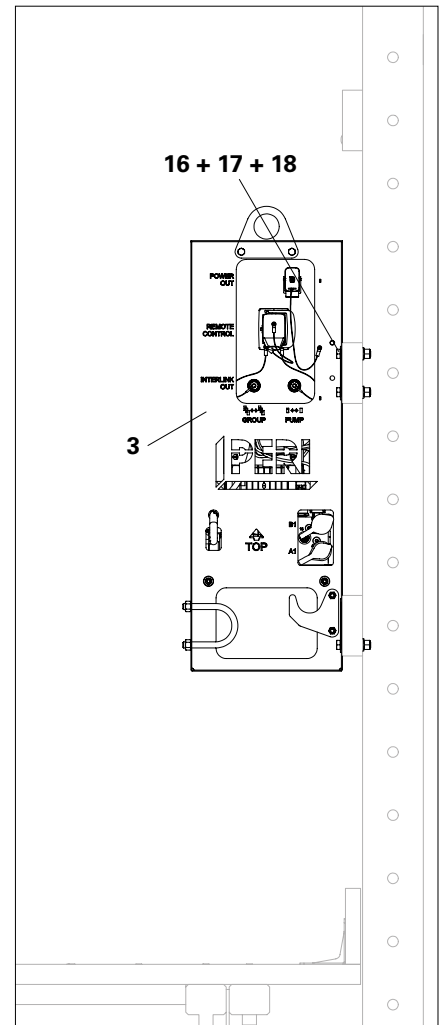


Fig. D1.02

Standard case



Two cylinders per climbing unit are in use.

Route the hydraulic hoses and cables

- Depending on the position of the pump, connect the hydraulic hoses to the left or right of the Climbing Device-2 RCS 50.
- 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 C2 "Hydraulic hoses".

Position of the hydraulic unit

The hydraulic unit is generally attached to the ladder cage (scaffold tubes or handrail boards) of the working 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.



To prevent the quick-couplers from colliding with the platforms or other parts of the climbing unit when climbing, it is possible to equip the climbing devices with angle pieces.

→ Contact PERI

Climbing group

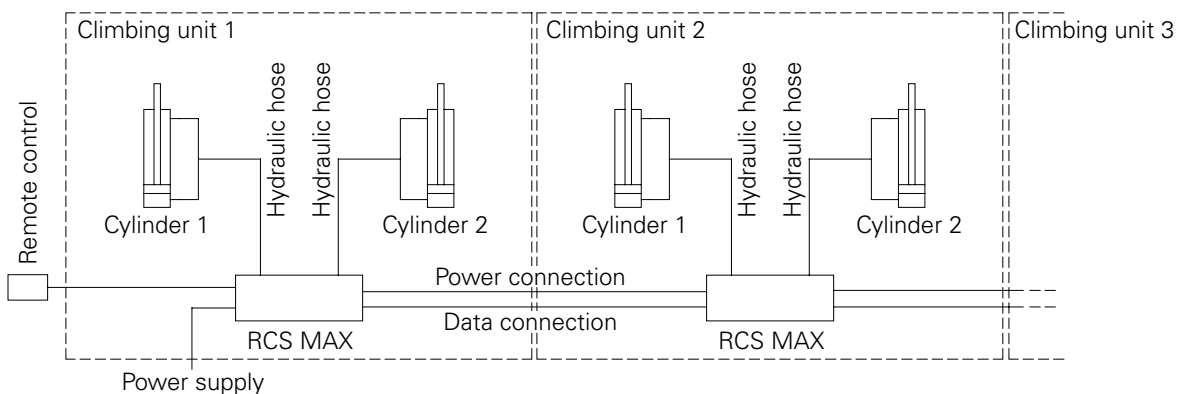


Fig.D2.01

Special consoles with 3 climbing rails



- Three cylinders per climbing unit are in use.
- 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

- Depending on the position of the pumps, connect the hydraulic hoses to the left or right of the Climbing Device-2 RCS 50.
- 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 C2 "Hydraulic hoses".
- 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 (scaffold tubes or handrail boards) of the working 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 are free of torsion and tension.



To prevent the quick-couplers from colliding with the platforms or other parts of the climbing unit when climbing, it is possible to equip the climbing devices with angle pieces.

→ Contact PERI

Climbing group

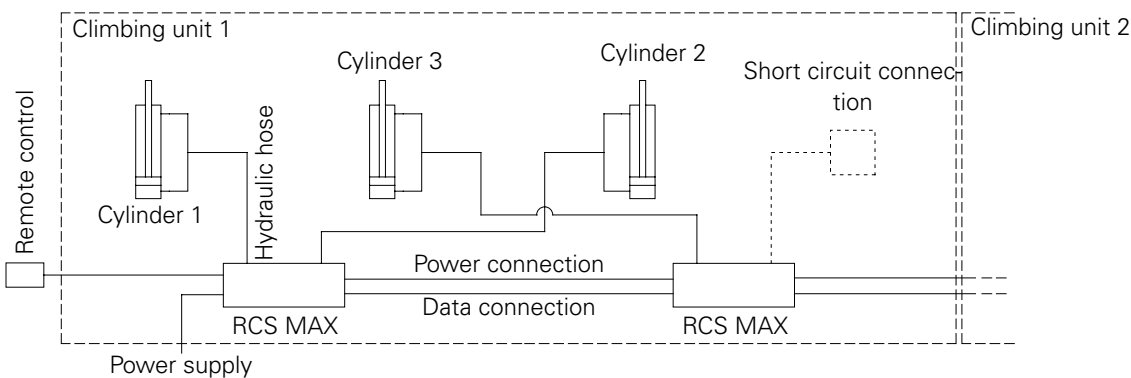


Fig.D2.02

Connecting hydraulic hoses



- The quick-coupler connections on the pump are clearly marked.
- Refer to the manufacturer's assembly instructions for the connection to the pump.
- Refer to the hydraulic connection diagram in the assembly plans.
- If problems occur during connection, see Section D7 "Remedial measures for malfunctions".

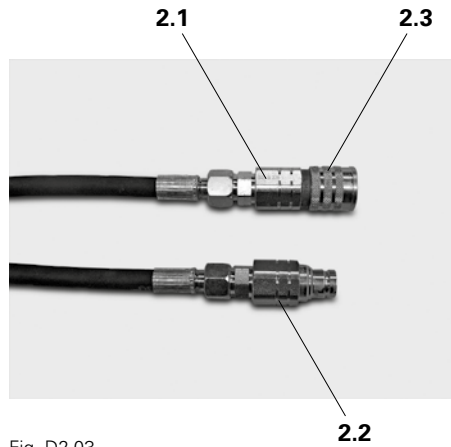


Fig. D2.03

Quick-couplers consist of:

- 2.1** Hydraulic Quick-coupler (bushing)
Item no. 110822/128993
- 2.2** Hydraulic Quick-coupler (clip) Item
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.

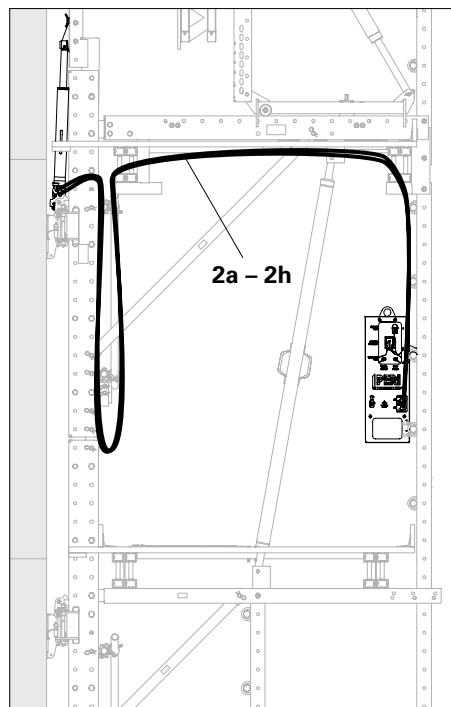


Fig.D2.04

Rail Climbing System RCS C



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



Are the hydraulic hoses connected and secured correctly?

Installing the climbing device

1. Position the Climbing Device-2 RCS 50 (**1**) on the bolts of the Climbing Shoes (**5**) and engage.
 - The Climbing Device is pressed against the climbing rail through spring force.
2. Guide the claw (**1.1**) into the climbing rail (**9**).

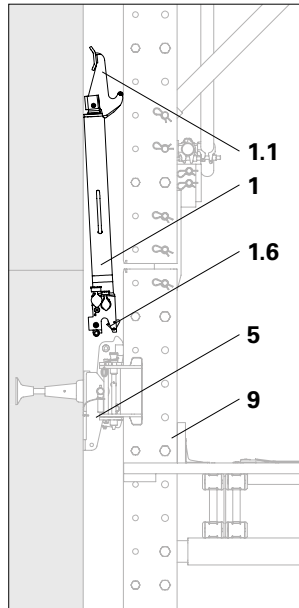


Fig.D2.05



- Is the locking lever (**1.6**) fully engaged on the cylinder base?
- Are the claws (**1.1**) fully engaged under the climbing bolts (**9.1**)?
- Are the hydraulic hoses arranged in such a way that they do not get tangled or change their position during the climbing procedure?

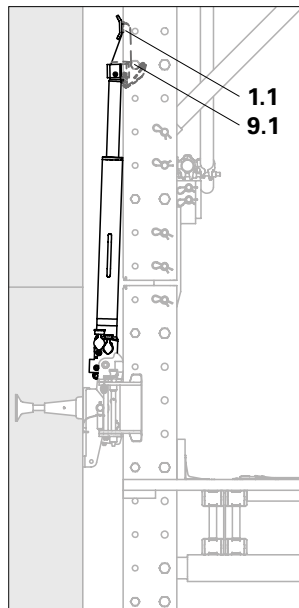


Fig.D2.06

Rail Climbing System RCS CL



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



Are the hydraulic hoses connected and secured correctly?

Installing the climbing device

1. Position the Climbing Device-2 RCS 50 (**1**) on the bolts of the Climbing Shoes (**5**) and engage.
→ The Climbing Device is pressed against the climbing rail through spring force.
2. Guide the claw (**1.1**) into the climbing rail extension (**10**).

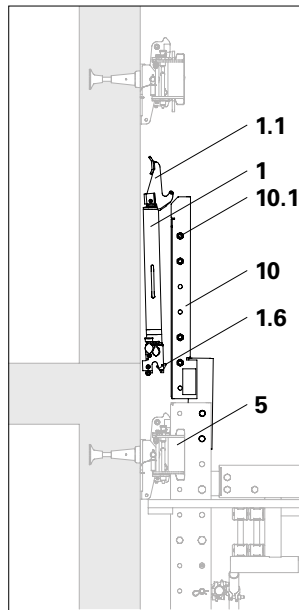


Fig. D2.07



- Is the locking lever (**1.6**) fully engaged on the cylinder base?
- Are the claws (**1.1**) fully engaged under the climbing bolts (**10.1**)?
- Are the hydraulic hoses arranged in such a way that they do not get tangled or change their position during the climbing procedure?



Warning

The moving process may create building edges between the platforms!

A fall can result in serious injury or even death.

- ⇒ Guardrails should 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 rails and climbing shoes, between the climbing device and climbing rails or between building sections (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 ventilate the hydraulic cylinder and hoses before use, see Section D7 "Remedial measures for malfunctions".
- 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 operating instructions)
- 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.



Carry out the climbing procedure from the planned position.

Operating the hydraulic unit



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

Connecting to 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 2m (4) or Power Cable RCS MAX 2m (22) to POWER IN (3.5).
4. Connect the Power Cable RCS MAX CEE 32A 2m (4) or Power Cable RCS MAX 2m (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 up to 0.6 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 rotary field using manual phase inverter on the Power Cable RCS MAX CEE-32A 2 m (4), see Section D7 "Remedial Action for Malfunctions".
6. Carry out any additional steps in the manufacturer's assembly instructions.
 - The pumps are prepared.

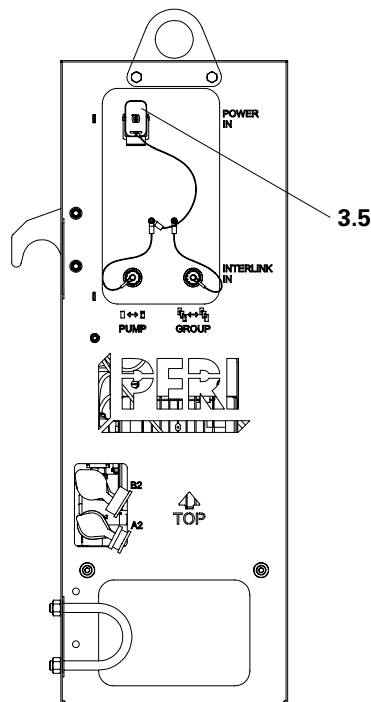


Fig. D4.01

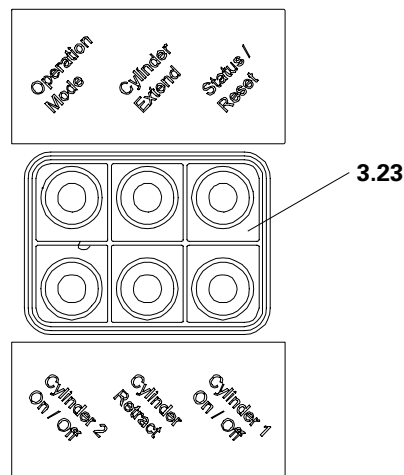


Fig. D4.02



- 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.

Set the hydraulic unit so it is ready for operation

1. Check that all pumps are in the correct operating mode.
2. Press the "Status/Reset" (3.19) button on all hydraulic units until all buttons go green, and correct and acknowledge any errors that occur.
→ The pumps are ready for operation.
(Fig. D4.03)

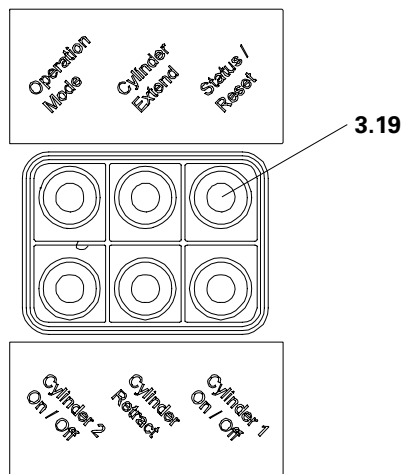


Fig. D4.03



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

Extend climbing device

1. Press the "Cylinder Extend" button (13.1) on the remote control.
→ The climbing device extends.
(Fig. D4.04)



If multiple remote controls are connected, they must all be activated simultaneously, otherwise the climbing system will not move.

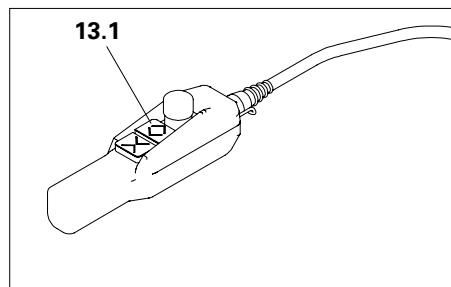
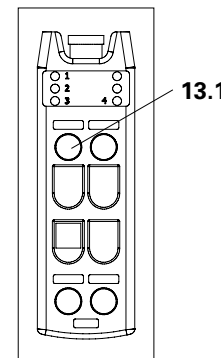


Fig. D4.04





For operation of the climbing shoes, see Section D5 “Operating the climbing shoe” and the Instructions for Assembly and Use for the climbing system.

Climbing

- If it is not active, activate the Climbing Shoe (5) on which the climbing device is placed, see Section D5 “Operating the climbing shoe.”
- Extend the pistons of all hydraulic cylinders to the first climbing bolt (9.1). Load is carried by the claw on the piston (1.1).

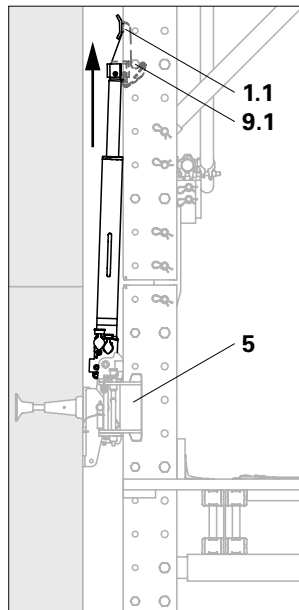


Fig. D4.05



Are all claws engaged on the climbing bolts? If necessary, deactivate the other climbing shoes, see Section D5 “Operating the climbing shoe.”



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



Before retracting, check that all climbing pawls in the climbing shoes are engaged below the spacers.

Retracting the climbing device

1. Press the “Cylinder Retract” button (13.2) on the remote control.
→ The climbing device retracts.

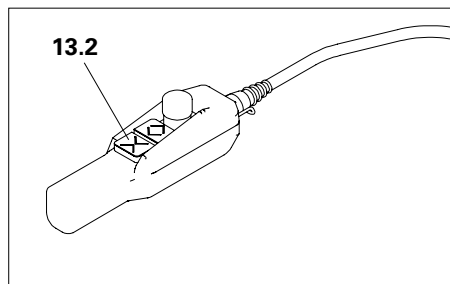
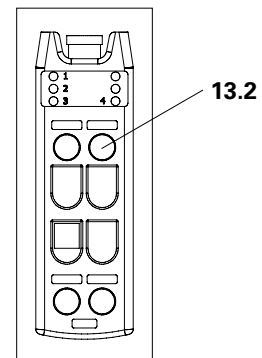


Fig. D4.06



If multiple remote controls are connected, they must all be activated simultaneously, otherwise the climbing system will not move.



- Retract the pistons of all hydraulic cylinders (1).
- Claw (1.1) circumvents the climbing bolts (9.1), hydraulic cylinder tips backwards.
- Retract piston until claw on the piston engages under the climbing bolts.



Are all claws engaged on the climbing bolts?



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

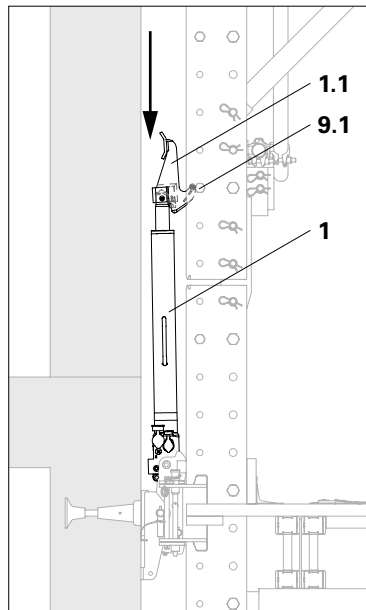


Fig. D4.07

Switching off the hydraulic unit



- As soon as the "Cylinder Extend" and "Cylinder Retract" buttons 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.

Inserting into the climbing shoe at RCS C



Observe Section D5 and the Instructions for Assembly and Use for Rail Climbing System RCS C.

Before the last stroke:

Standard case:

Vertical bearing at the height of the intermediate platform

- Top climbing shoe (5A) is deactivated.
- In order to allow for easier insertion into the top climbing shoe, open both folding runners.
- Middle climbing shoe (5B) is activated.

Alternatively:

Vertical bearing at the height of the working platform

- Top climbing shoe (5A) is activated.
- Both folding runners are closed.
- Middle climbing shoe (5B), on which the climbing device is placed, is deactivated during the last stroke.

Adjusting the climbing system

- In order to allow for easier insertion, the framework can be adjusted.
- By turning the Framework Spindle (19), the inclination of the top climbing rail (9A) is adjusted relative to the bottom climbing rail (9B).
- In the event of a lateral offset, extend the cylinders to the same height.

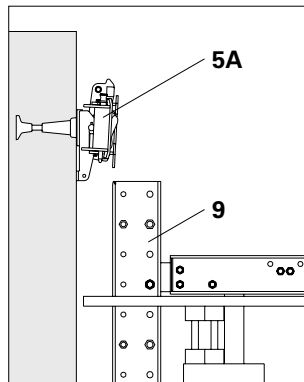


Fig. D4.08

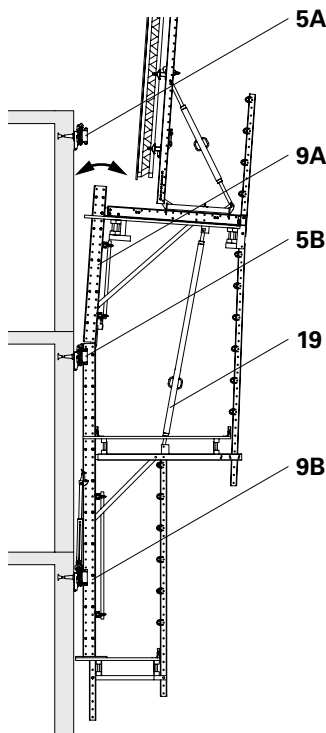


Fig. D4.09



Warning

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

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

Climbing platforms individually

1. Stop approx. 2 cm in front of the climbing shoes (**5A**).
2. Press the "Operation Mode" button (**3.17**) until the button flashes orange.
→ Single-mode operation is activated.
3. Insert the platform individually into the climbing shoes by:
 - pressing the "Cylinder Extend" button on the keypad.
 - or
 - pressing the "Cylinder Extend" button on the connected remote control.
4. Press the "Operation Mode" button (**3.17**) until the button lights up green.
→ Interlink-mode operation is activated.

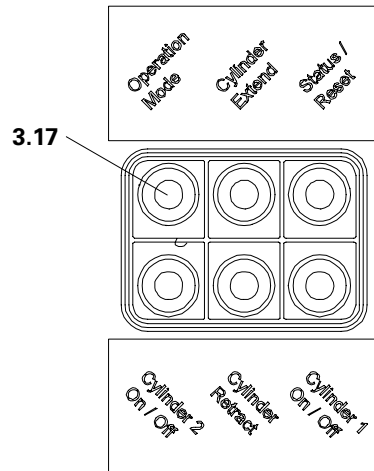


Fig. D4.10

Inserting into the climbing shoe at RCS CL



Observe Section D5 and the Instructions for Assembly and Use for Rail Climbing System RCS CL.

Standard case:

- Before reaching the next climbing shoe (5A/5B), retract the climbing rail extension.
- In the event of a lateral offset, extend the cylinders to the same height.



Warning

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

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

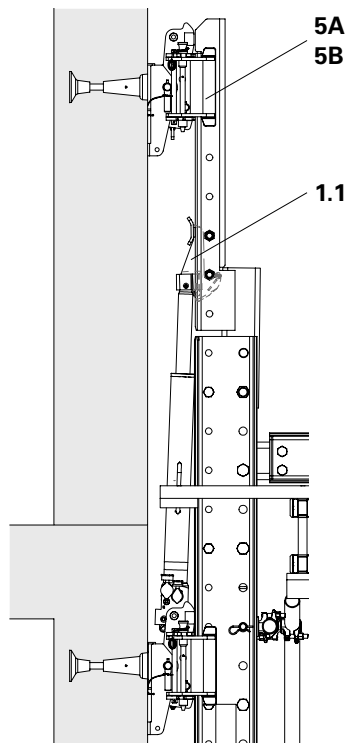


Fig. D4.11

Climbing platforms individually

1. Stop approx. 2 cm in front of the climbing shoes (5).
2. Press the "Operation Mode" button (3.17) until the button flashes orange.
→ Single-mode operation is activated.
3. Insert the climbing rail extensions individually into the climbing shoes:
 - pressing the "Cylinder Extend" button on the keypad.
 - or
 - pressing the "Cylinder Extend" button on the connected remote control.
4. Press the "Operation Mode" button (3.17) until the button lights up green.
→ Interlink-mode operation is activated.

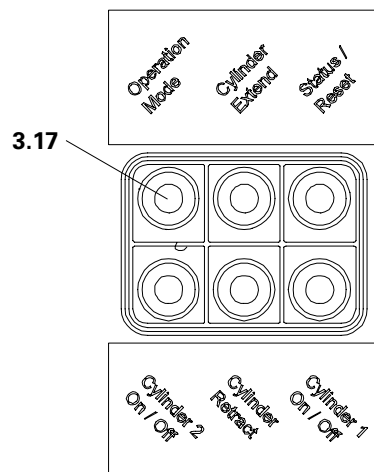


Fig. D4.12

Final stroke



Observe Section D5 and the Instructions for Assembly and Use for the rail climbing system.

During the final stroke of a climbing procedure, the vertical load is transferred to another climbing shoe. Therefore, the climbing shoe that is intended to serve as the vertical bearing must be activated:

- Prior to the final stroke, activate the climbing shoes that are intended to be used as the vertical bearing.
- Interrupt the final stroke after load change.
- Deactivate the pawls of the other climbing shoes, if climbing bolt (9.1) is engaged above the climbing shoe that is earmarked for use.
- Set climbing unit down on the climbing pawls (5.1) of the activated climbing shoes. (Fig. D4.13)
- After the final stroke, completely retract all cylinders.

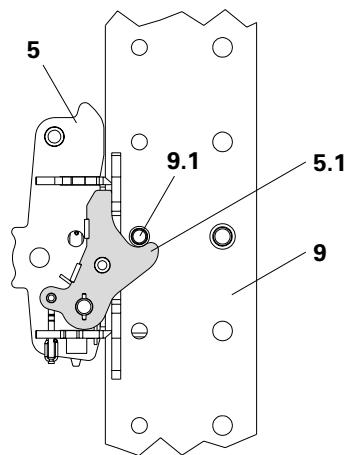


Fig. D4.13



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



Are all climbing rails (9) aligned with the climbing shoes (5)?

Are all pawls (5.1) completely engaged under the climbing bolts (9.1)?

Are all climbing shoes serving as vertical bearings activated?

After climbing

- Open access points (make building edges safe, if necessary).
- Uncouple hydraulic hoses.
- Remove Climbing Device-2 RCS 50.
- Dismantle Climbing Rail Extension RCS. (For RCS-CL)

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.



Observe the Instructions for Assembly and Use for the climbing rail system.



Opening the climbing shoe

- makes it easier to insert the climbing rail (9) during climbing,
- allows the use of climbing rails during initial assembly.

Opening the climbing shoe

1. Release the spring lock (5.6).
2. Lift safety pin (5.3).
3. Fold back the folding runner (5.2) of the climbing shoe.
4. Re-insert safety pin in the opened position.
5. Proceed in the same manner with the other folding runner.

Closing the climbing shoe

1. Lift safety pin (5.3).
2. Fold the folding runner (5.2) of the climbing shoe forwards.
3. Re-insert the safety pin in the closed position.
4. Fix the spring lock in place (5.6).
5. Proceed in the same manner with the other folding runner.

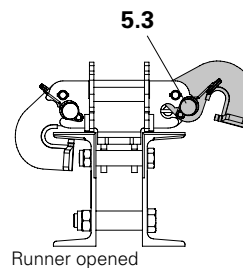
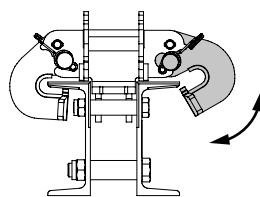
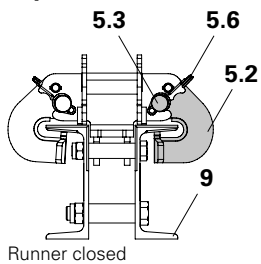


Are both locking pins on the climbing shoe pushed down completely and are the spring locks fixed in place?

Removing the climbing shoe

Pull the open climbing shoe between the climbing rail (9) and the wall upwards and then to the side, see Instructions for Assembly and Use for Rail Climbing System RCS C or RCS CL.

Top view



3D view

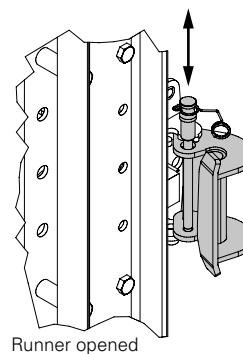
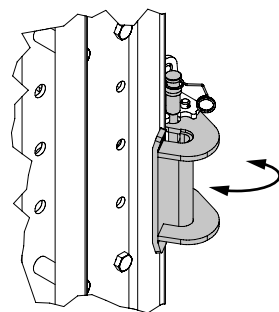
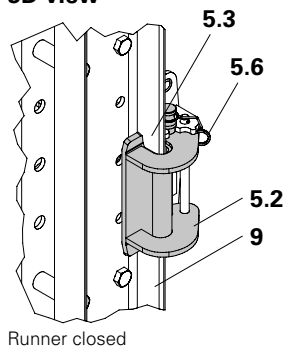


Fig. D5.01

Activating the climbing shoe



This position serves to transfer vertical forces from the climbing rail during working operations as well as during climbing.

1. Pull the pawl lock (5.4) on the Climbing Shoe RCS (5).
2. Fold down the hinged clamp (5.5).
3. Let go of the pawl lock.

The climbing pawl swivels out of the climbing shoe through spring force if no climbing bolt (9.1) impedes the climbing pawl (5.1).

→ The climbing pawl is activated and operational.

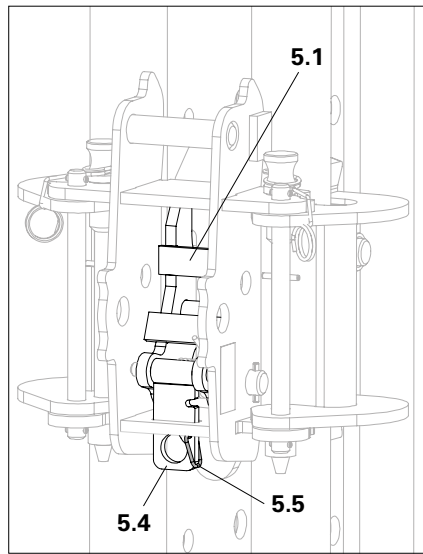


Fig. D5.02



- Does the climbing pawl (5.1) automatically fold out of the climbing shoe?
- Is the hinged clamp (5.5) in a clear position?

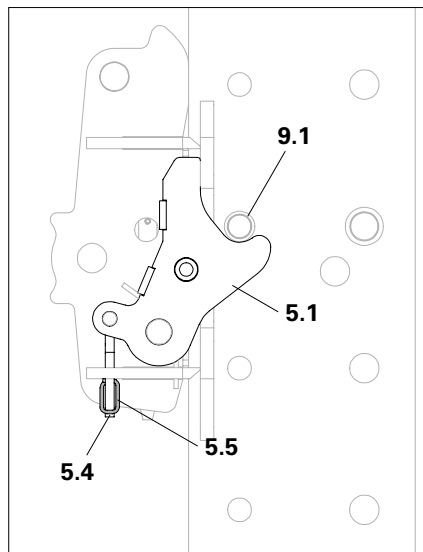


Fig. D5.02a

Deactivating 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 hold the climbing shoe and climbing rails when the climbing unit is being moved.

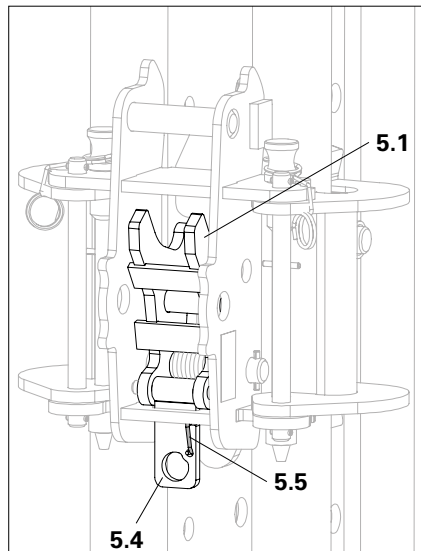


Fig. D5.03

Deactivating

1. Pull the pawl lock (5.4) on the Climbing Shoe RCS (5). The climbing pawl (5.1) is pulled into the shoe.
2. Fold up the hinged clamp (5.5) on the pawl lock (5.4) and then let go of the pawl lock.
The hinged clamp (5.5) is then wedged and blocks the climbing pawl.
→ The climbing pawl is locked and non-operational.



Is the hinged clamp (5.5) in a clear position?

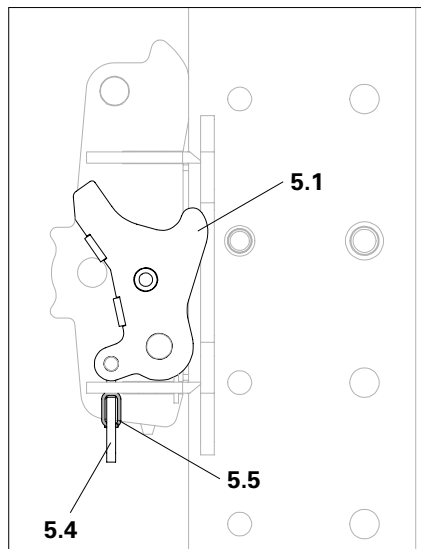


Fig. D5.03a

Disconnecting the hydraulic hoses

Disconnecting

1. Turn the retaining ring (2.3) on the socket (2.1) until the check mark is reached.
→ Coupling is unlocked.
2. Pull the retaining ring (2.3) back in the direction of the hose.
→ Coupling is unlocked.

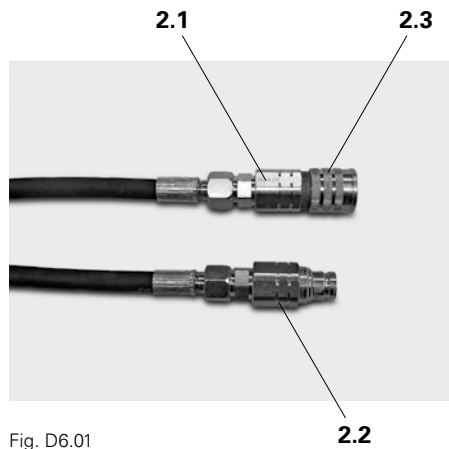


Fig. D6.01

2a Hydraulic Twin Hose RCS 10 m
Item no. 110069 (SK050.723A)

2.1 Hydraulic Quick-coupler (bushing)
Item no. 110822/128993

2.3 Retaining ring (bushing)

Dismantling the climbing device



Completely retract the cylinder before dismantling.

Dismantling

1. Remove the hydraulic hoses.
2. Operate the locking lever (1.6) on the cylinder base and laterally incline the climbing device so that the locking lever can no longer engage.
3. Lift the climbing device out of the climbing shoe.
4. Transport the climbing device upwards and re-tighten the hoses.

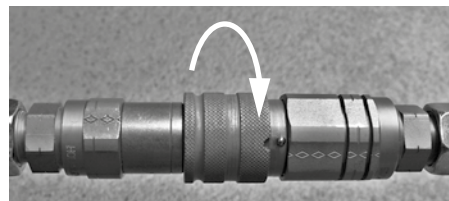


Fig. D6.02

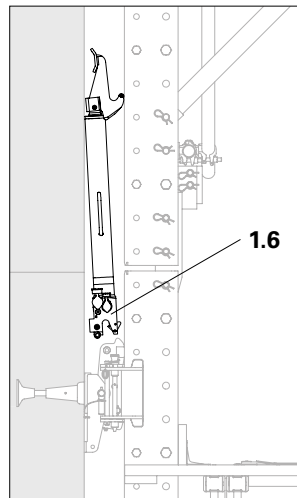


Fig. D6.03

D7 Remedial measures for malfunctions

Overview

Malfunction	Cause	Remedial measure
Cylinder sinks.	Air in the hydraulic system.	Vent the system.
	Pressure-retaining valve is defective.	Replace climbing device. Repairs carried out by PERI.
	Seals defective.	Replace climbing device. Repairs carried out by PERI.
	Dirt in the hydraulic cylinder.	Replace climbing device. Repairs carried out by PERI.
Uneven cylinder extension and retraction.	Air in the hydraulic system.	Vent the system.
	Dirt in the hydraulic system.	Replace hydraulic oil and, if necessary, the oil filter, see manufacturer's assembly instructions.
	Leakage between pump 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. Vent the system. Replace defective hoses.
	Too much friction.	Reduce friction by lubricating the climbing rail. Check the anchoring 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.
Pump 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.

Tab. D701

D7 Remedial measures for malfunctions

Malfunction	Cause	Remedial measure
Cylinder does not extend.	Climbing unit blocked.	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. Vent the system.
	Leakage between pump 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 anchoring 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.
	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 fall back into the climbing rail or does not engage.	Locking lever in the cylinder base not engaged correctly.	Correctly place the cylinder base on the bolts of the climbing shoe.
	Spring in the cylinder base is broken.	Release the climbing device by hand. Replace climbing device. Repairs carried out by PERI.
Hydraulic coupling cannot be inserted.	Pressure locked in the hose.	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 buttons 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.

Tab. D7.02

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. Flush hoses using short-circuit connections. (Fig. D7.02)
2. Connect the cylinder in horizontal position and extend fully.
3. Uncouple the cylinder and flush hoses once again using short-circuit connections.
4. Connect the cylinder in horizontal position and extend fully.
5. Uncouple the cylinder and flush hoses once again using short-circuit connections.
6. Connect the cylinder and extend and retract several times.



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

Venting during hose replacement

1. Detach old hose.
2. Connect new hose on the pump side.
3. Flush hoses using short-circuit connections.
4. Connect the cylinder in horizontal position and extend fully.
5. Uncouple the cylinder and flush hoses once again using short-circuit connections.
6. Connect the cylinder in horizontal position and extend fully.
7. Uncouple the cylinder and flush hoses once again using short-circuit connections.
8. Connect the cylinder and extend and retract several times.



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 a manual end position compensation with the aid of a short-circuit connection.

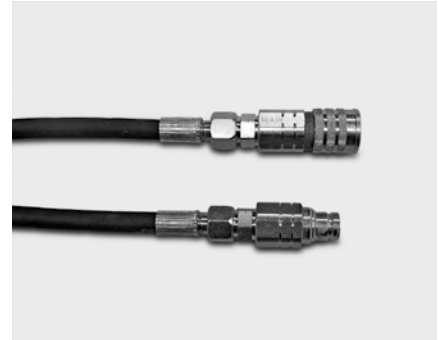


Fig. D7.01



Fig. D7.02

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" button (3.17) until the button 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" button on the keypad.
 - or
 - pressing the "Cylinder Extend" button on the connected remote control.
4. Press the "Operation Mode" button (3.17) until the button lights up green.
→ Interlink-mode operation is activated.

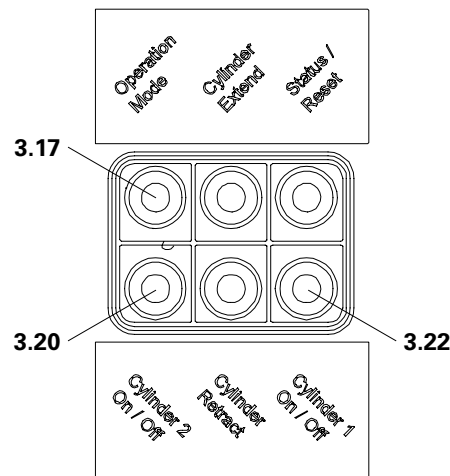


Fig. D7.03

Release the climbing pawl by hand



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.
 - Climbing bolts (9.1) continue past the climbing pawl (5.1).
2. Push the pawl lock (5.4) upwards by hand.
 - The climbing pawl is activated. (Fig. D7.04 + D7.04a)
3. Retract the hydraulic cylinder until the climbing bolt (9.1) is positioned on the pawl (5.1).

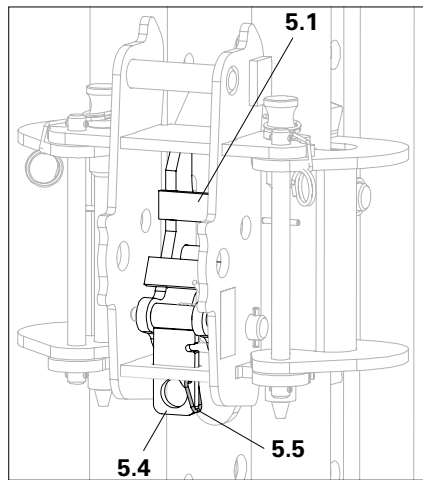


Fig. D7.04

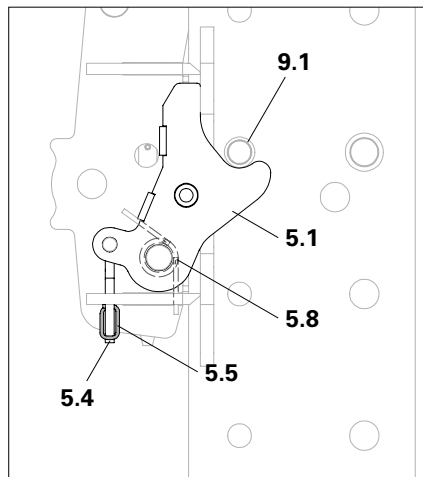


Fig. D7.04a



Are all pawls (5.1) engaged?

Dismantling the climbing device in the event of a broken spring



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 broken leg springs (5.8) in the cylinder base, tip back the climbing device (1) by hand into the climbing rail (9). The climbing procedure can then be completed.
- After completing the climbing procedure, replace the climbing device or have repair work carried out by PERI.

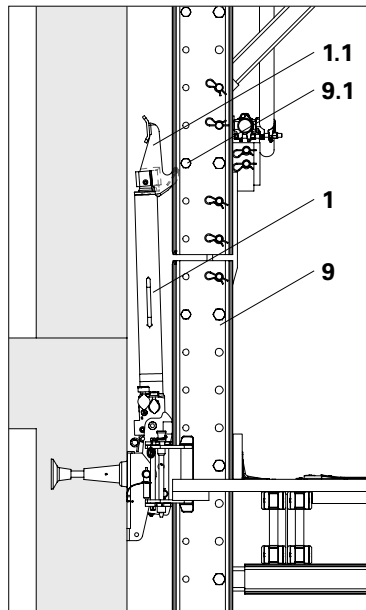


Fig. D7.05

Procedure

1. Retract piston until the claw (1.1) is guided around the climbing bolts (9.1).
2. Pull the climbing device to the climbing rail and position the claw (1.1) by hand between the profiles of the climbing rail. (Fig. D7.05)
3. Extend the climbing device and guide it until the claws (1.1) engage with the climbing bolts (9.1).



Are all claws engaged on the climbing bolts?



Also use this procedure in the event of forward or laterally inclined climbing rails.

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. D7.06 + D7.06a)

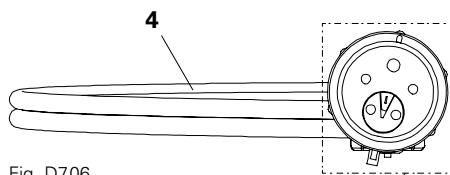


Fig. D7.06

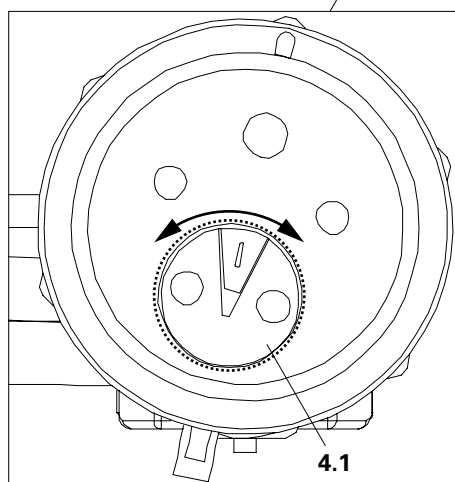


Fig. D7.06a

E1 Hydraulic 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
- PUMP**
- ↔ □ GROUP connection
- GROUP**

Single climbing unit

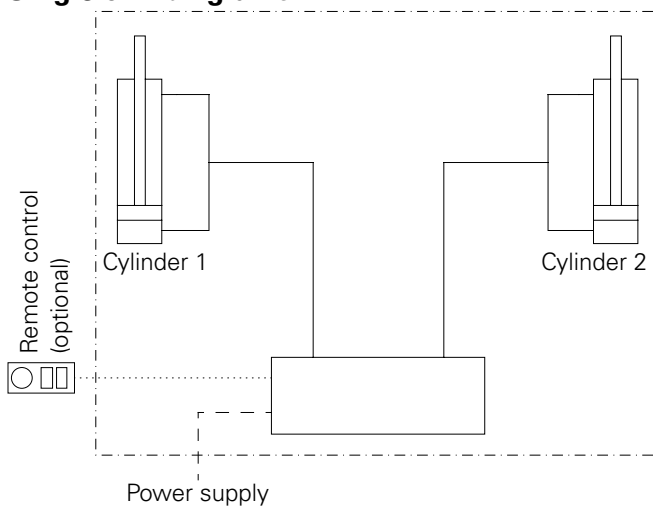


Fig. E1.01

Climbing group

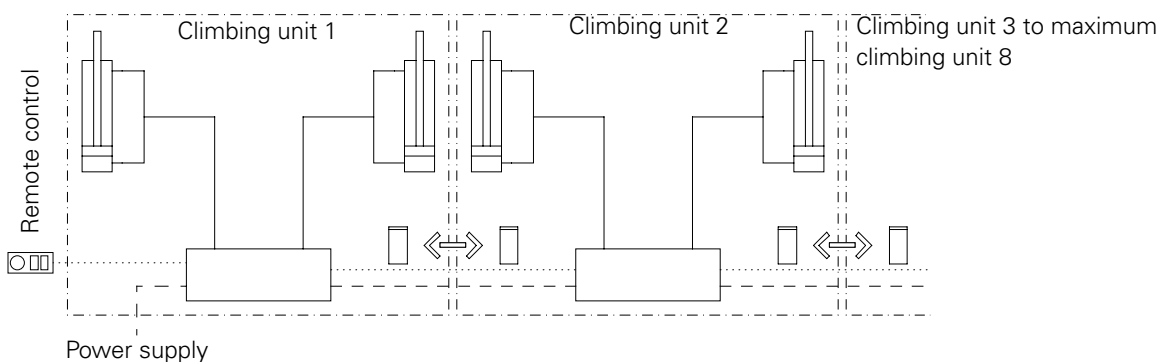


Fig. E1.02

E1 Hydraulic connection diagram

Connection of multiple climbing groups

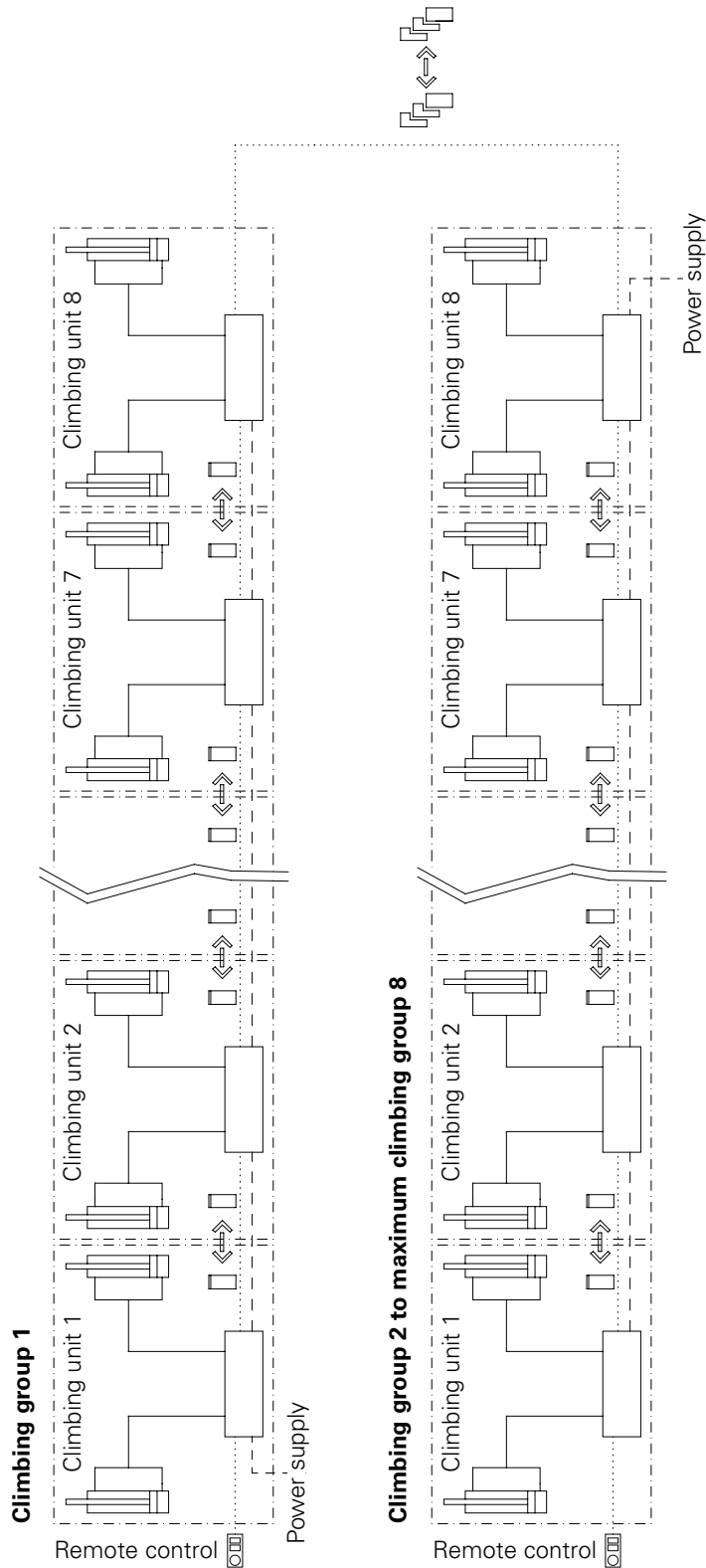


Fig. E1.03

E2 Climbing device circuit diagram

Climbing Device-2 RCS 50

Item no.: 135413

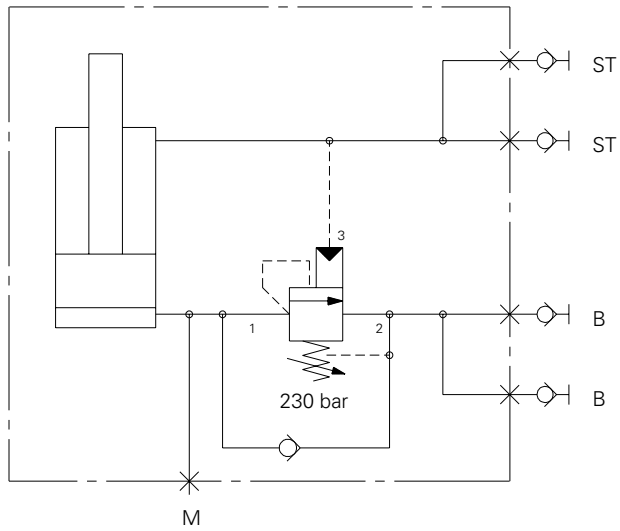


Fig. E2.01

F1 Maintenance chart



Maintenance location	Comment	Date	Name/Signature

Einbauerklärung

im Sinne der EG-Maschinenrichtlinie 2006/42/EG, Anh. II 1. B
für unvollständige Maschinen
Original



Hersteller

PERI GmbH
Rudolf-Diesel-Strasse 19
89264 Weissenhorn

In der Gemeinschaft ansässige Person, die bevollmächtigt ist, die relevanten technischen Unterlagen zusammenzustellen

PERI GmbH
Rudolf-Diesel-Strasse 19
DE - 89264 Weissenhorn

Beschreibung und Identifizierung der unvollständigen Maschine

Produkt / Erzeugnis	Klettermechanik-2 RCS
Typ	Klettertechnik
Maschinennummer	MO-20-00445#0
Projektnummer	PRJ-2020-01-22-0001
Handelsbezeichnung	Klettermechanik-2 RCS
Funktion	Das Kletterwerk-2 RCS 50 steht auf dem Kletterschuh RCS. Der Kletterschuh RCS ist über einen Wand- oder Deckenschuh am Bauwerk verankert. Das Kletterwerk arbeitet mit der Klinke im Kletterschuh zusammen. Die Klaue am Kolben rastet in die Kletterbolzen (Distanzierungen in der Kletterschiene RCS) ein und schiebt beide zusammen mit der Traggerüstkonstruktion nach oben. Bei Hubende rastet die Klinke im Kletterschuh in einen anderen Kletterbolzen ein. Beim Einfahren des Zylinders übernimmt die Klinke die Last und die Klaue umfährt den nächsten Kletterbolzen. Danach rastet die Klaue in diesen Kletterbolzen ein.

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

Ferner wird erklärt, dass die speziellen technischen Unterlagen gemäß Anhang VII Teil B erstellt wurden.

Es wird ausdrücklich erklärt, dass die unvollständige Maschine allen einschlägigen Bestimmungen der folgenden EG-Richtlinien bzw. Verordnungen entspricht:

2014/68/EU	Richtlinie 2014/68/EU des Europäischen Parlaments und des Rates vom 15. Mai 2014 zur Harmonisierung der Rechtsvorschriften der Mitgliedstaaten über die Bereitstellung von Druckgeräten auf dem Markt Veröffentlicht in L 189/164 vom 27.06.2014
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Fundstelle der angewandten harmonisierten Normen entsprechend Artikel 7 Absatz 2:

EN ISO 12100:2010-11	Sicherheit von Maschinen - Allgemeine Gestaltungsleitsätze - Risikobewertung und Risikominderung (ISO 12100:2010)
EN 60204-1:2006-06	Sicherheit von Maschinen - Elektrische Ausrüstung von Maschinen - Teil 1: Allgemeine Anforderungen
EN 614-1:2006+A1:2009	Sicherheit von Maschinen - Ergonomische Gestaltungsgrundsätze - Teil 1: Begriffe und allgemeine Leitsätze
EN ISO 13857:2008	Sicherheit von Maschinen - Sicherheitsabstände gegen das Erreichen von Gefährdungsbereichen mit den oberen und unteren Gliedmaßen (ISO 13857:2008)

Seite 1/2

Einbauerklärung

im Sinne der EG-Maschinenrichtlinie 2006/42/EG, Anh. II 1. B
für unvollständige Maschinen

Original



Fundstelle der angewandten harmonisierten Normen entsprechend Artikel 7 Absatz 2:

EN 349:1993+A1:2008	Sicherheit von Maschinen - Mindestabstände zur Vermeidung des Quetschens von Körperteilen
EN ISO 4413:2010	Fluidtechnik — Allgemeine Regeln und sicherheitstechnische Anforderungen an Hydraulikanlagen und deren Bauteile (ISO 4413:2010)

Der Hersteller bzw. der Bevollmächtigte verpflichten sich, einzelstaatlichen Stellen auf begründetes Verlangen die speziellen Unterlagen zu der unvollständigen Maschine zu übermitteln. Diese Übermittlung erfolgt
In Papierform

Die gewerblichen Schutzrechte bleiben hiervon unberührt!

Wichtiger Hinweis! Die unvollständige Maschine darf erst dann in Betrieb genommen werden, wenn gegebenenfalls festgestellt wurde, dass die Maschine, in die die unvollständige Maschine eingebaut werden soll, den Bestimmungen dieser Richtlinie entspricht.

Weissenhorn, 24.01.2020

Ort, Datum



Unterschrift
Dipl.-Ing. Rainer Bolz
Head of R&D Formwork

Seite 2/2

This document is a translation into English from the German original.

Declaration of Incorporation

In accordance with the EC-Machinery Directive 2006/42/EG,
Annex II 1. B for partly completed machinery
Original



Manufacturer

PERI GmbH
Rudolf-Diesel-Strasse 19
89264 Weissenhorn

Person established within the Community authorized to compile the relevant technical documentation.

PERI GmbH
Rudolf-Diesel-Strasse 19
DE - 89264 Weissenhorn

Description and identification of the partly completed machinery

Product	Climbing Mechanism-2 RCS
Type	Climbing Technology
Machine number	MO-20-00445#0
Project number	PRJ-2020-01-22-0001
Trade Name	Klettermechanik-2 RCS
Function	The Climbing Device-2 RCS 50 is positioned on the Climbing Shoe RCS. The Climbing Shoe RCS is anchored to the building by means of a wall or slab shoe. The climbing device works together with the climbing pawl in the climbing shoe. The claw on the piston engages the climbing bolts (spacers in the Climbing Rail RCS) and pushes both of them, together with the supporting structure, upwards. At the end of the stroke, the pawl in the climbing shoe engages in another climbing bolt. Once the cylinder is retracted, the pawl carries the load and the claw circumvents the next climbing bolt. After this the claw engages this climbing bolt.

It is declared, that the following essential requirements of the Machinery Directive 2006/42/EG are 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

It is also declared, that the specific technical documentation has been drawn up in accordance with Annex VII, Part B.

It is expressly declared, that the partly completed machinery complies with all relevant provisions of the following EC Directive or Directives.

2014/68/EU	Directive 2014/68/EU of the European Parliament and of the Council of 15 May 2014 on the harmonization of the laws of the Member States relating to the availability of pressure equipment on the market Published in L 189/164 of 27.06.2014
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Reference to the harmonized standards used, as referred to in Article 7 (2):

EN ISO 12100:2010-11	Safety of machines – General design principles – Risk assessment and mitigation (ISO 12100:2010)
EN 60204-1:2006-06	Safety of machines – Electrical equipment of machines – Part 1: general requirements
EN 614-1:2006+A1:2009	Safety of machines – Ergonomic design principles – Part 1: terminology and general principles
EN ISO 13857:2008	Safety of machines – Safety distances to prevent hazardous areas being reached by the upper and lower limbs (ISO 13857:2008)

Page 1/2

Declaration of Incorporation

In accordance with the EC-Machinery Directive 2006/42/EG,
Annex II 1. B for partly completed machinery

Original



Reference to the harmonized standards used, as referred to in Article 7 (2)

EN 349:1993+A1:2008	Safety of machines – Minimum gaps to avoid crushing of parts of the human body
EN ISO 4413:2010	Fluid technology - General rules and safety requirements for hydraulic systems and their components (ISO 4413:2010)

The manufacturer or his authorized representative shall be obliged to communicate to the national authorities, on a reasoned request, the specific documentation concerning the partly completed machinery. This information shall be supplied in digital form or, on request, in paper form.

The industrial property rights remain unaffected by this!

Important note! The partly completed machinery must not be put into service until it has been established, where appropriate, that the machinery into which the partly completed machinery is to be incorporated complies with the provisions of this Directive.

Weissenhorn, 24.01.2020

Place, Date

Signature
Dipl.-Ing. Rainer Bolz
Head of R&D Formwork

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RCS-2 Climbing Device and Hydraulics



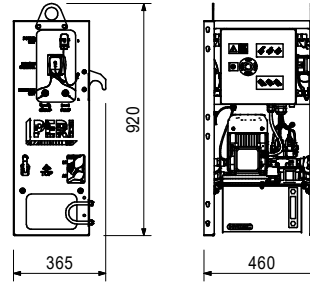
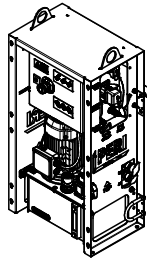
Item no.	Weight kg
135500	47.000

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

Hydraulic unit for driving 2x Climbing Device-2 RCS 50.

Note

Observe the manufacturer's assembly instructions! For Technical Data see PERI Product Information. Only use original PERI Hydraulic Oil.



Accessories

135606	0.100
135607	0.100

Return Flow Filter RCS MAX

Air Filter RCS MAX

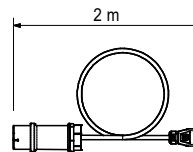
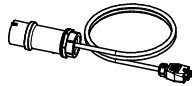
135499	0.800
--------	-------

Power Cable RCS MAX CEE-32A 2 m

For connection of max. 8 Hydraulic Units RCS Max 2x 210 bar to the power supply.

Note

Observe the manufacturer's assembly instructions! With CEE plug 400 V, 32 A. Manual phase inverter inside.



136532	0.400
--------	-------

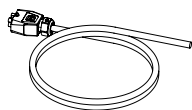
Power Cable RCS MAX 2m

For connection of max. 8 Hydraulic Units RCS Max 2x 210 bar to the power supply.

Note

Observe the manufacturer's assembly instructions! To connect a country-specific connector to the cable.

Only qualified electricians are permitted to work on and repair electrical components.



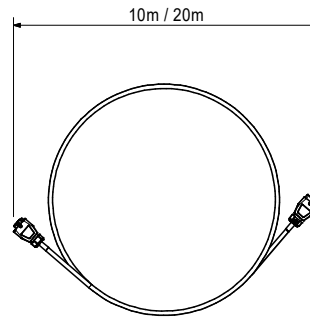
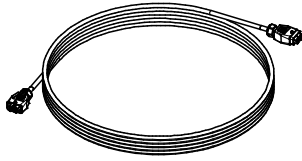
RCS-2 Climbing Device and Hydraulics

Item no. Weight kg

135498	2.500	Power Connection Cable RCS MAX
135501	4.700	Power Connection Cable RCS MAX 10 m Power Connection Cable RCS MAX 20 m

For power supply between max. 8 Hydraulic Units RCS Max 2x 210 bar.

Note
Observe the manufacturer's assembly instructions!



135502	0.200	Accessories Connector Power Cable RCS MAX
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135502	0.200	Connector Power Cable RCS MAX For connection of two Power Connection Cables RCS Max.
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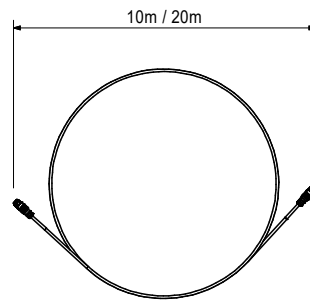
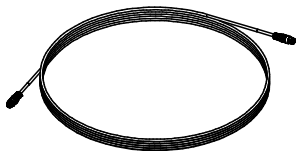
Note
Observe the manufacturer's assembly instructions!



135503	0.600	Data Connection Cable RCS MAX
135504	1.200	Data Connection Cable RCS MAX 10 m Data Connection Cable RCS MAX 20 m

For data connection between Hydraulic Units RCS Max 2x 210 bar.

Note
Observe the manufacturer's assembly instructions!

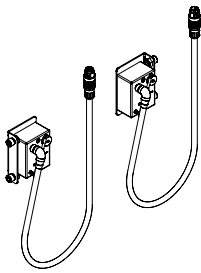


135505	0.100	Accessories Connector Data Cable RCS MAX
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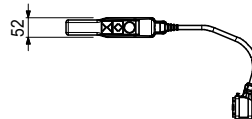
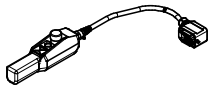
Item no.	Weight kg		
135505	0.100	Connector Data Cable RCS MAX For connection of two Data Connection Cables RCS Max.	Note Observe the manufacturer's assembly instructions!



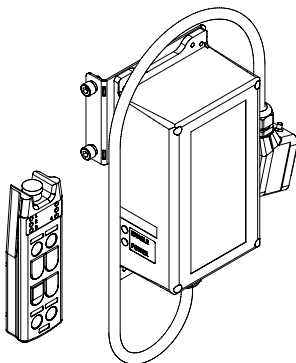
136531	0.600	Data Connection RCS MAX wireless For wireless data connection between Hydraulic Units RCS Max 2x 210 bar groups of two.	Note Group IN and Group OUT modules are paired with one another. For Technical Data see PERI Product Information.
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135506	2.500	Remote Control RCS MAX 15 m Remote control for simultaneous operation of one climbing group.	Note Observe the manufacturer's assembly instructions!
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136530	2.600	Remote Control RCS MAX wireless Wireless remote control for simultaneous operation of one climbing group.	Note The remote control and receiver are paired with one another. For Technical Data see PERI Product Information. Observe the manufacturer's assembly instructions!
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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 pcs. chargeable batteries
- 2 pcs. magnetic keys
- 1 pc. protective casing with harness

RCS-2 Climbing Device and Hydraulics

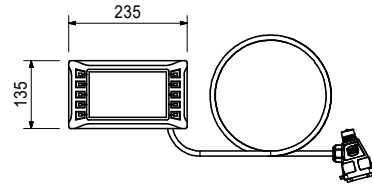
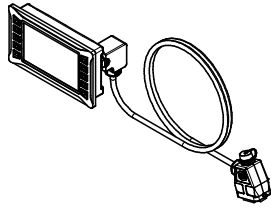
Item no.	Weight kg
135507	1.600

Display RCS MAX

For monitoring of information via
RCS Max Hydraulic Unit 2 x 210 bar.

Note

Observe the manufacturer's assembly instructions!
Cable length: 1.5 m



Accessories

163043	0.100
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Display Holder RCS MAX

136043	0.100
--------	-------

Display Holder RCS MAX

Spare part for Display RCS MAX for attachment to
the Hydraulic Unit RCS MAX 2 x 210 bar.

Complete with

1 pc. 136045 Bolt ISO 10642 M8 x 16-8.8, galv.



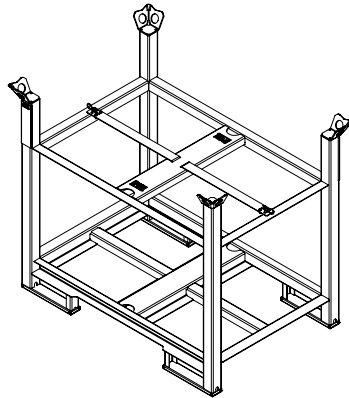
136165	58.900
--------	--------

Pallett RP Hydraulic Pump RCS MAX

For transporting and storing up to 4x
Hydraulic Unit RCS MAX 2 x 210 bar.

Note

Pay attention to the stacking height.
Follow the assembly instructions!



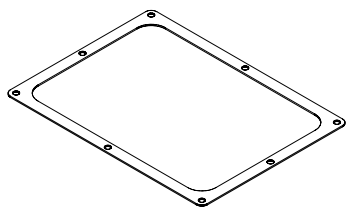
136597	0.100
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Gasket Hydraulic Tank RCS MAX

Spare part for Hydraulic Unit RCS Max 2 x 210 bar.

Note

Observe the manufacturer's assembly instructions!



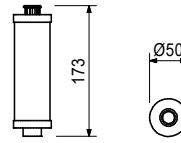
Item no.	Weight kg
135606	0.100

Return Flow Filter RCS MAX

Spare part for Hydraulic Unit RCS Max 2 x 210 bar.

Note

Observe the manufacturer's assembly instructions!



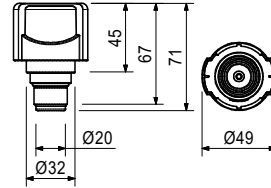
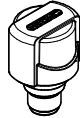
135607	0.100
--------	-------

Air Filter RCS MAX

Spare part for Hydraulic Unit RCS Max 2 x 210 bar.

Note

Observe the manufacturer's assembly instructions!



135413	27.000
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Climbing Device-2 RCS 50

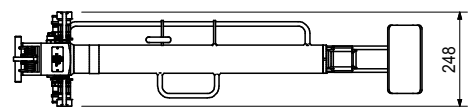
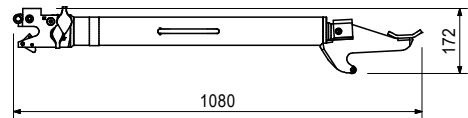
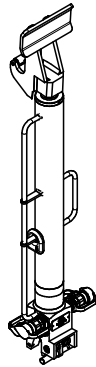
For climbing RCS climbing units without using a crane.

Note

Observe the manufacturer's assembly instructions!

Technical data

Effective lifting capacity 50 kN. Ready to operate with Hydraulic Unit RCS MAX 2 x 210 bar and Hydraulic Unit RCS 4-fold, 380-460V.



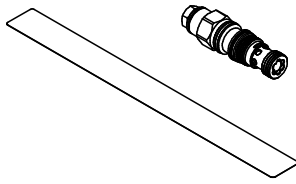
RCS-2 Climbing Device and Hydraulics



Item no.	Weight kg
135411	1.000

Conversion Set Climbing Device-2 RCS 50
 Conversion set for conversion of Climbing Device RCS 50 to a Climbing Device-2 RCS 50.

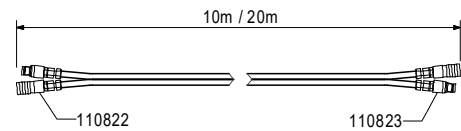
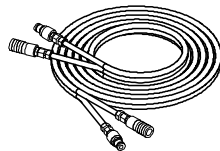
Note
 Always observe the conversion set instructions (see Document DO-19-0265205).



110069	8.500
110070	15.300

Hydraulic Twin Hose RCS
Hydraulic Twin Hose RCS 10 m
Hydraulic Twin Hose RCS 20 m
 Two fixed connection hydraulic hoses to connect hydraulic units with hydraulic cylinders.

Complete with
 2 x 128992 Plug ISO16028 DN10 R3/8IG
 2 x 128993 Socket ISO16028 DN10 R3/8IG
 4 x 051750 Screw fitting X-GE 12PSR-ED



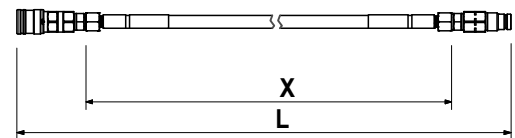
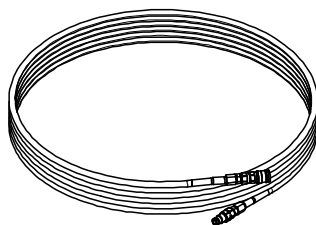
129035	0.996
129036	1.430

Hydraulic Hoses 2SN-DN08-FF
Hydraulic Hose 2SN-DN08-FF 1.0 m
Hydraulic Hose 2SN-DN08-FF 2.0 m
 To connect hydraulic cylinders to the hydraulic unit.

L	X
1,169	1,000
2,169	2,000

Complete with
 1 x 128992 Plug ISO16028 DN10 R3/8IG
 1 x 128993 Socket ISO16028 DN10 R3/8IG
 2 x 051750 Screw fitting X-GE 12PSR-ED

Note
 Observe the valid safety regulations for the installation and maintenance of hydraulic lines!



RCS-2 Climbing Device and Hydraulics



Item no. Weight kg

129419	2.690
129420	4.900
129421	7.120
129422	9.330

Hydraulic Hoses 2SN-DN08-FF

- Hydraulic Hose 2SN-DN08-FF 5.0 m
- Hydraulic Hose 2SN-DN08-FF 10.0 m
- Hydraulic Hose 2SN-DN08-FF 15.0 m
- Hydraulic Hose 2SN-DN08-FF 20.0 m

To connect hydraulic units with hydraulic climbing devices.

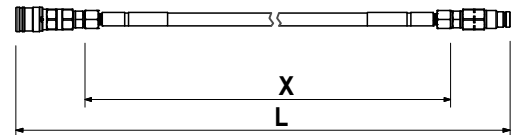
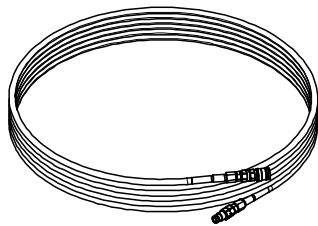
L	X
5170	5000
10170	10000
15170	15000
20170	20000

Complete with

- 1 x 128992 Plug ISO16028 DN10 R3/8IG
- 1 x 128993 Socket ISO16028 DN10 R3/8IG
- 2 x 051750 Screw fitting X-GE 12PSR-ED

Note

Observe the valid safety regulations for the installation and maintenance of hydraulic lines!



131270	17.900
131274	18.300
057376	18.300

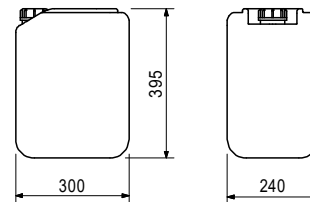
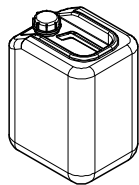
Hydraulic oil in canister

- Hydraulic oil ISO 11158 HM10, 20L
- Hydraulic oil ISO 11158 HVI22, 20L
- Hydraulic oil ISO 11158 HVI46, 20L

High-quality synthetic hydraulic oils for PERI hydraulic units with different viscosities suitable for certain temperature ranges.

Technical data

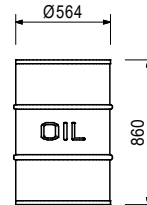
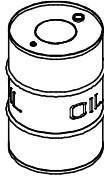
Observe the safety data sheet and applicable national safety regulations relating to hydraulic oil, in particular for transport, storage and disposal! Observe the technical documentation for the hydraulic unit! Product data sheet on request.



Item no. Weight kg

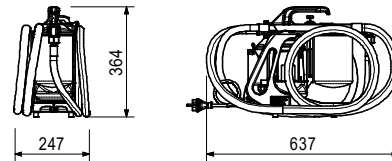
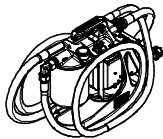
131273	200.000	Hydraulic oil in drum Hydraulic oil ISO 11158 HM10, 210 I
131275	200.000	Hydraulic oil ISO 11158 HVI22, 210 I
131277	201.000	Hydraulic oil ISO 11158 HVI46, 210 I High-quality synthetic hydraulic oils for PERI hydraulic units with different viscosities suitable for certain temperature ranges.

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



131313	12.500	Filter pump CE Filter pump for fast and clean decanting of hydraulic oil with simultaneous filtration.
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Note
Observe Instructions for Use!
Filter pump CUL for USA/CAN - request acc. to country!
Technical data
Power connection 220V/50Hz, Plug CEE 7/7

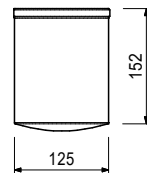
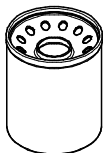


Accessories

131314	1.000	Hydraulic oil filter element 5 µm
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131314	1.000	Hydraulic oil filter element 5 µm Replacement filter element for hydr. oil filter pump.
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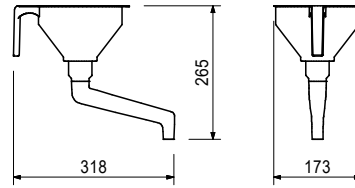
Note
Observe Instructions for Use!
Observe the maintenance instructions in the technical document for the oil filter pump!
Observe disposal instructions!



Item no.	Weight kg
130685	0.225

Universal funnel

For easy filling of hydraulic units with oil.

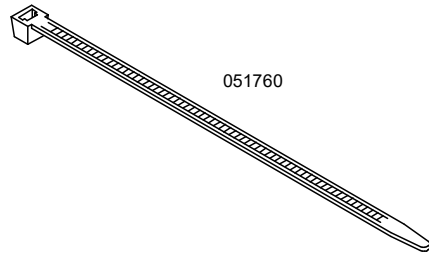


051760	0.004
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Cable ties NT-240H

Note

Delivery unit = 1 piece



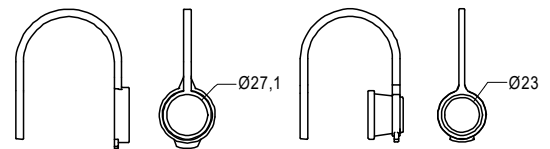
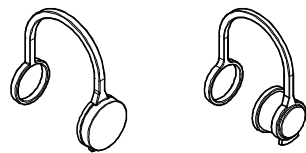
125632	0.050
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Protection caps for Climbing Device RCS

To protect unplugged Quick-couplers X-GE12PSR-ED+ from dirt and damage.

Technical data

Set for 2x sockets and 2x nipples.



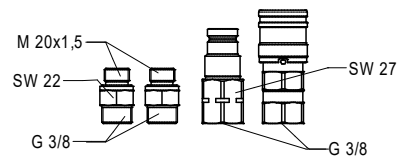
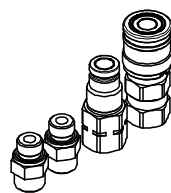
129424	0.440
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FF Coupling Pair X-GE12PSR-ED+

Spare parts set for PERI hydraulic components with quick-release couplings X-GE12PSR-ED+.

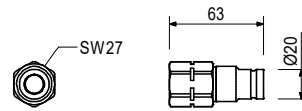
Complete with

- 1 x 128992 Plug ISO16028 DN10 R3/8IG
- 1 x 128993 Socket ISO16028 DN10 R3/8IG
- 2 x 051750 Screw fitting X-GE 12PSR-ED



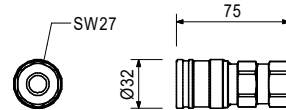
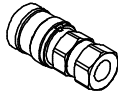
Item no. Weight kg

128992 0.140 **Plug ISO16028 DN10 R3/8IG**



128993 0.280

Socket ISO16028 DN10 R3/8IG

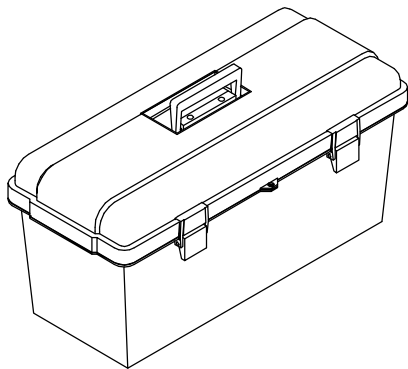


Item no.	Weight kg
115581	10.280

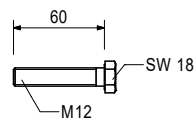
Hydraulics service case

Consisting of:

- 1 x 115590 Tool Box 580 x 260 x 285 mm
- 6 x 115583 Manometer Type 570 VA-Geh.
- 6 x 115584 Measuring Hose MKT 6-02 DN02
- 12 x 115582 Measuring Coupling SMK 20-G 1/4-PC
- 2 x 115591 Double Open-ended Wrench AF 10 x 13
- 1 x 115592 Double Open-ended Wrench AF 13 x 17
- 1 x 115588 Double Open-ended Wrench AF 19 x 24
- 1 x 051778 Double Open-ended Wrench AF 24 x 27
- 1 x 115589 Double Open-ended Wrench AF 27 x 32
- 1 x 057278 Hex. Allen Key, 8-part
- 1 x 115585 Hex. Allen Key AF 12
- 1 x 057279 Hex. Allen Key AF 14
- 1 x 057282 Water Pump Pliers
- 1 x 115147 Fitting Set PS angle
- 2 x 115396 Fitting Set PS short RCS
- 1 x 072180 Ratchet Wrench 1/2"
- 20 x 123881 Pipe Plug ROV12SX
- 20 x 123880 Plugs VKAN 12S VIT
- 100 x 051760 Cable Tie NT-240H
- 2 x 126425 Spacer Ø 120
- 1 x 126440 Socket AF 17 - 1/2"
- 1 x 135172 Double Open-ended Wrench AF 19 x 22
- 1 x 135173 Imbus SHR Screw Insert AF 05
- 1 x 135174 Imbus SHR Screw Insert AF 06
- 1 x 135175 Imbus SHR Screw Insert AF 08
- 1 x 135176 Imbus SHR Screw Insert AF 10
- 1 x 135177 SHR Screw Piece 6. TI. Slot/PH
- 2 x 711035 PERI Label 128 x 65 mm
- 1 x 126434 Service Case Contents List



126001	0.060	Bolt ISO 4017 M12 x 60-8.8, galv.
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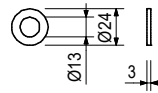


Item no.	Weight kg
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780702	0.006
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Washer ISO 7089 200 HV, A12, galv.

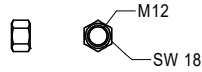
Corresponds to old standard DIN 125 Form A



Item no.	Weight kg
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723805	0.017
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Hex Nut ISO 4034 M12-5



**The optimal System
for every Project and
every Requirement**



Wall Formwork



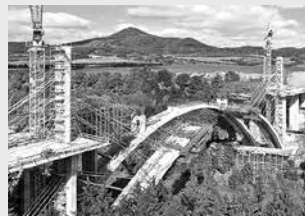
Column Formwork



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



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