MAXIMO MXSE | TRIO 330/270

Hydraulic Shaft Corner

Assembly Instructions – Version 1.1



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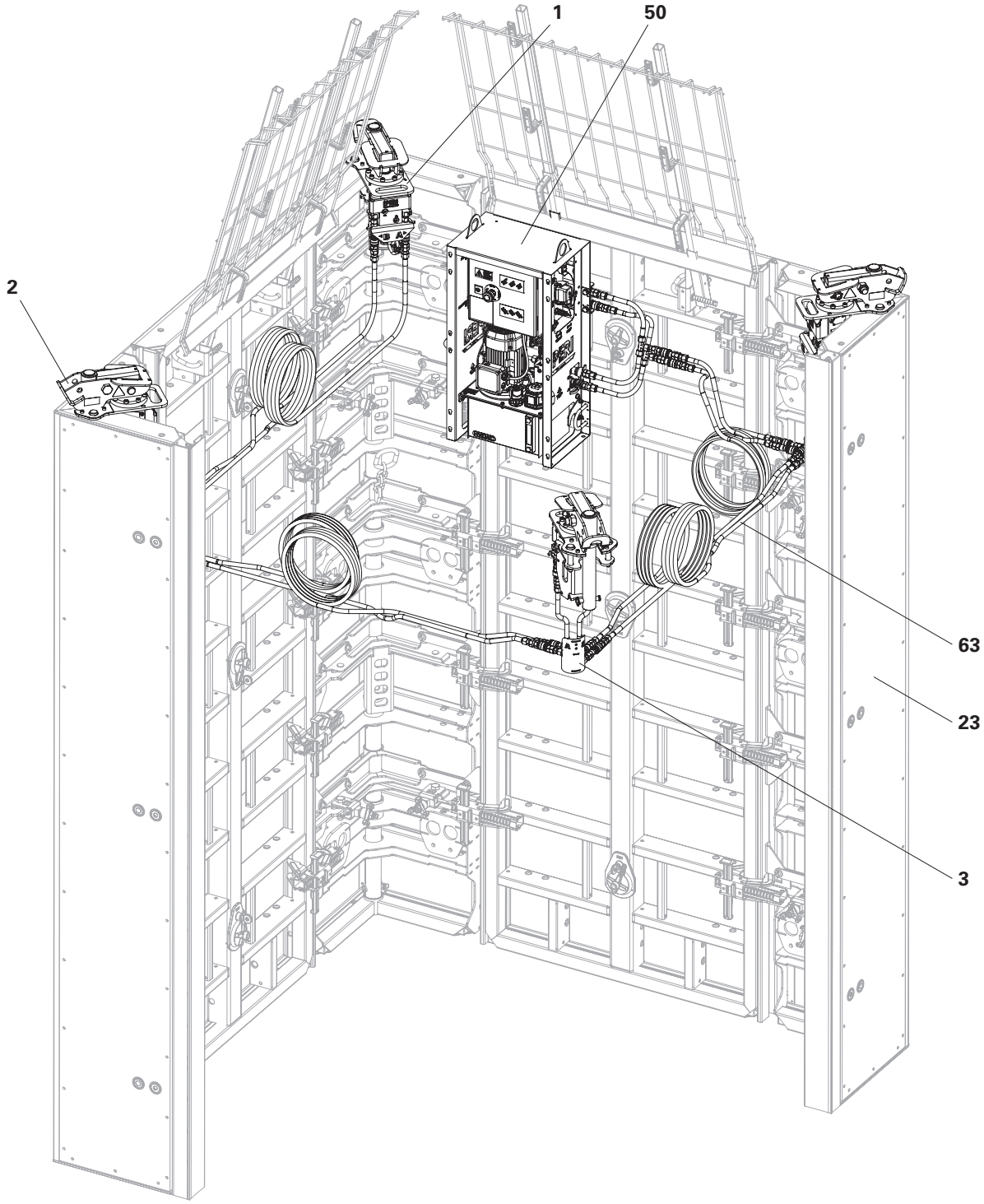
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Program overview
MAXIMO MX Hydraulic Shaft Corner 86

Main components



1 Hydraulic Module Shaft Corner
2 Shaft corner striking adapter
3 Hydr. T-coupling
23 Shaft Corner MXSE 330
50 Hydraulic Pump RCS MAX 2 x 210
63 Hydraulic Hose 2SN-DN08-FF

Key

Pictogram | Definition

 Danger/Warning/Caution

 Note

 To be complied with

 Load-bearing point

 Visual inspection

 Tip

 Incorrect use

 Safety helmet

 Safety shoes

 Safety gloves

 Safety goggles

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

 Literature reference

Arrows

→ Arrow representing an action

⇨ Arrow representing a reaction of an action*

→ Arrow representing forces

* If not identical to the action arrow.

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

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

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

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

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

Format of the safety instructions

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

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

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

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

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 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.

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

Product description

PERI products have been designed to be used exclusively in industrial and commercial sectors by suitably trained personnel only.

As a combination of an existing shaft corner and hydraulic retrofit kit, the hydraulic shaft corner enables hydraulic shuttering and deshuttering of MAXIMO and TRIO Shaft Formwork.

The system consists of two core components, the hydraulic module and the striking adapter.
Both components are mounted on the shaft corner with bolts and connected to the mechanics of the shaft corner.

The ring-shaped hydraulic line connects the hydraulic modules with the hydraulic unit and allows for a load-optimised, uncontrolled oil supply. Integrated safety functions prevent the shaft corners from moving uncontrollably and prevent overloading of the system components.

Features

- Integrated crane eyes for moving the internal formwork with a crane.
- Can be used with all common PERI ydraulic units.
- Low construction height above shaft corner level.
- Can be used with all MAXIMO MXSE and TRIO 330/270 shaft corners.

Technical details

- Hydraulic Module Shaft Corner
  Width: 21.8 cm
  Height: 38.8 cm
  Depth: 36.1 cm
  Weight: 24.5 kg
- Shaft corner striking adapter
  Width: 16.0 cm
  Height: 41.5 cm
  Depth: 35.6 cm
  Weight: 11.0 kg
- Stroke length:
  Mech. tension rod: 110 mm
  Cylinder: 140 mm
- Lifting force:
  55 kN
- Operating pressure:
  190 bar
- Operating pressure of hydraulic unit:
  max. 240 bar
- Shaft formwork extension height:
  max. 6.00 m
- Temperature range:
  -15 °C to + 85 °C

Intended use

Used as a hydraulic drive unit for the striking mechanism of MAXIMO or TRIO Shaft Corners.

Foreseeable misuse

- Use with incompatible formwork systems.
- Use with incompatible hydraulic units (operating pressure max. 240 bar).
- Use of the shaft corner striking adapter purely as a load lifting device.
- Ignoring or exceeding the permissible load-bearing capacity and load limits.
- Use of hose lines for suspending objects.
- Deviating from the assembly sequence set out in the Instructions for Assembly and Use.

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, e.g. risk of falling, hydraulic injection due to hydraulic components breaking.

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 system components is not permissible.

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

- The description of the assembly and operation of the assemblies and components in these Assembly Instructions is intended as an example.
- Project-specific planning is required for the shaft formwork and the associated hydraulic installation.

Target groups

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

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 personnel
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
PERI products 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 PERI product in an understandable form and language.
- Description of the measures necessary to safely assemble, modify or dismantle the PERI product.
- Designation of the preventive measures to be taken to avoid the risk of persons and objects falling.
- Designation of the safety precautions in the event of changing weather conditions that could adversely affect the safety of the PERI product, as well as the personnel 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.**

* 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.

Cleaning and maintenance instructions

In order to maintain the value and operational readiness of the formwork materials over the long term, clean the panels after each use.

Some repair work may also be inevitable due to the tough working conditions.



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

is available and used as intended.

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

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

Spray the formwork on both sides with concrete release agent before each use; this facilitates easier and faster cleaning of the formwork. Spray the concrete release agent very thinly and evenly!

Spray the rear side of the formwork with water immediately after concreting; this avoids any time-consuming and costly cleaning operations.

When used continuously, spray the formlining elements with concrete release agent immediately after deshuttering; then clean by means of a scraper, brush or rubber lip scraper. Important: do not clean formlining made of plywood with high-pressure equipment. This could result in the formlining being damaged.

Fix recesses and built-in parts with double-headed nails; as a result, the nails can easily be removed later, and damage to the formlining is largely avoided.
Close all unused tie holes with plugs; this eliminates any subsequent cleaning or repair work.
Tie holes accidentally blocked with concrete are cleared by means of a steel pin from the formlining side.

When placing bundles of reinforcement bars or other heavy objects on horizontally stored formwork elements, suitable support, e.g. squared timbers, is to be used: this prevents impressions and damage to the formlining to a large extent.

Internal concrete vibrators should be fitted with rubber caps if possible; as a result, any damage to the formlining is reduced if the vibrator is accidentally inserted between the reinforcement and formlining.

Never clean powder-coated components, e.g. elements and accessories, with a steel brush or hard metal scraper; this ensures that the powder coating remains intact. Use spacers for reinforcement with large-sized supports or extensive areas of support; this largely avoids impressions being formed in the formlining when under load.

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

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

Do not clean components suspended on crane lifting gear.

Notes on maintaining the hydraulic components , see Section “Maintenance table” on page 82.

Additional technical documentation

- Instructions for Assembly and Use:
  - MAXIMO MX 15 Panel Formwork 270 | 330
  - MAXIMO MX 18 Panel Formwork 270 | 330
  - TRIO Panel Formwork
- Assembly Instructions:
  - RCS Climbing Device and Hydraulics
  - RCS MAX Drive Rail and Hydraulics
  - ACS 100 Climbing Device and Hydraulics
  - VTC system components for the tunnel formwork carriage
  - Standard operating manual for ACS Core 400
- Manufacturer documentation:
  - Hydraulic unit
  - Hydraulic module
  - Hydraulic oil
- DGUV regulation 113-200
  Hydraulic hose lines and hydraulic liquids

Cross-system



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

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

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

Observe and comply with the safety instructions and permissible loads.

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

Check material and workstations before each use and assembly for:
- damage,
- stability and
- functional correctness.

Separate out damaged parts immediately, label them and do not use them again.

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

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

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

Unless otherwise indicated, the following applies in particular:
- Timber components:
  Strength class C24 for solid wood according to DIN EN 338:2016-07.
- Scaffolding tubes:
  Galvanised steel tubes with minimum dimension Ø 48.3 x 3.2 mm according to DIN EN 12811-1:2004-03 4.2.1.2.
- Scaffolding tube couplings:
  according to DIN EN 74-1:2005-12.

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

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

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

Nails and wood screws must not protrude. Only allow other connecting components to protrude to the extent that is necessary.
If necessary, mark protruding components or provide them with protection.
Secure all bolts with cotter pins and all screws with nuts

Before and after exceptional occurrences that may have an adverse effect on the safety of the scaffolding system, the contractor must immediately
- produce another risk assessment and make use of its results to take suitable steps to guarantee the stability of the scaffolding system,
- arrange for an extraordinary inspection to be carried out by a competent person qualified to do so. The aim of this inspection is to identify and rectify any damage in good time in order to guarantee safe use of the scaffolding system.

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

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

Assembly, modification and dismantling work
PERI systems may only be assembled, modified or dismantled under the supervision of a person qualified to do so and by technically suitable employees. The qualified personnel must have received appropriate training for the work to be carried out with regard to specific risks and dangers. The contractor must ensure that the Assembly Instructions provided by PERI are available at all times for the users and that they are fully understood!

Adhere to the assembly sequence!
Do not stand under any suspended loads.

On the basis of the risk assessment and the Assembly Instructions, the contractor must create assembly instructions to guarantee safe assembly, modification and dismantling of the system.



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

is available and used as intended.

For work at a higher level, use an approved ladder or platform system, or an assembly scaffold.



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

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

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

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

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

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

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

- Working areas must remain free of any tripping hazards.
- Always keep components and assembly units free of dirt, ice and snow. In wet weather conditions in particular, there is an increased risk of slipping.
- Ensure that the guardrails and edge covers are fully installed.

System-specific



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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Always fit unused connections on hydraulic components and hydraulic hoses with a protective cap. This prevents soiling and possible leaks.

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

Do not suspend any objects from the hydraulic hoses.

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

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

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



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



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

Note
Always switch off the power to the hydraulic unit and prevent it from being switched on again as soon as the moving procedure involving the climbing system has been completed.
This safety measure also applies to the following:
- Assembly.
- Maintenance.
- Repairs.
- Inspections.
- Dismantling.

Approval for use is the responsibility of the operating personnel.

Electrical components

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

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

Do not suspend any objects from the electrical lines.

Storage and transportation

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

Do not drop the components.

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

During the relocation procedure
- ensure that components are picked up and set down in such a way that unintentional falling over, falling apart, sliding, falling down or rolling is avoided.
- no one is allowed to remain under the suspended load.

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

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

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



For hydraulic components, follow the instructions in the corresponding manufacturer's documentation.

Component overview

Pos. no.	Component name	Article no.
	System components	
1	Hydraulic Module Shaft Corner	138039
2	Stripping Adapter Shaft Corner	138040
3	Hydr. T-coupling	138041
4	Unit Suspension RCS MAX	138432
5	Bolt 16 mm x 90 mm	138425
6	Linch Pin DIN 11023-5x32	128991
21	Shaft Corner MXSE 120	117915
22	Shaft Corner MXSE 270	117914
23	Shaft Corner MXSE 330	117913
24	Formwork Element MX	
25	Alignment Coupler BFD	023500
27	Shaft Corner TRIO 330/270	129945
28	Formwork Element TRIO	
30	Shaft Corner MXSE 18 120	125288
31	Shaft Corner MXSE 18 270	125286
32	Shaft Corner MXSE 18 300	127957
33	Shaft Corner MXSE 18 330	125284
34	Shaft Corner MXSE 18 360	128012
	Hydraulics	
50	Hydraulic Pump RCS MAX 2 x 210	135500
51	Power Cable RCS MAX CEE-32A 2m	135499
52	Wireless Remote Control RCS MAX	136530
53	Hydraulic Pump RCS 4 x 190 bar, 380 – 460 V	109766
54	Adapter Cable RCS	110280
55	Hydraulic Pump ACS-C 4x160-18 CUL	128667
56	Remote Control Pump ACS-C	129099
57	Power Socket ACS-C 32A	130584
58	Power Cable ACS-C CEE-32A-2m	129096
59	Hydraulic Unit VARIOKIT 8-cycles	126852
60	Hydraulic Branch Striking Module	129039
61	Hydraulic Accumulate Piece RCS	112421
62	Hydr. T-Piece 2SN-DN08-FF	129423
63	Hydraulic Hose 2SN-DN08-FF	
64	Hydraulic Twin Hose RCS	
65	Quick coupler bushing	110822
66	Quick coupler nipple	110823
67	Hydr. hose EN853-2SN-DN08 1.0 m	129035

Pos. no.	Component name	Article no.
68	4-way multi-way control valve	128338
69	Threaded plug VSTI R 3/8-ED	057091
70	Male stud coupling X-GE 12PSR-ED	051750
71	Elbow stud X-EVW 12PS	051748
72	Drive Connector ACS	706464
73	Double nipple G3/8	128994
74	Sealing washer G3/8	128995
75	Attachment piece S12-G3/8	129013
76	Plug ISO 16028 DN10 R3/8IG	128992
77	**Sleeve ISO 16028 DN10 R3/8IG**	128993
78	Protection Covers for Climbing Device RCS	125632
79	Hydraulic Pump 2-fold 400V/50Hz	051739
83	Remote control for Hydraulic Unit 2-fold ACS	057362
84	Control block for 3rd Climbing Device 50 Hz	057358
85	Hydr. hose EN853-2SN-DN08 0.3 m	129587
	Tools and small parts	
100	Cable tie NT-240H	051760
101	Clip unit 319 PA	051758
102	Cyl. bolt . ISO 1207 M6x30-4.8, galv.	051759
103	Washer US	051775
104	Hook Tie DW15/340	108904
105	Cam Nut DW 15, coat.	030130
106	WOOD SCREW 6X40 SK-TX30 HPI	024540
107	Top Tie Holder-2 AH, galv.	023630
108	Ratchet MX 15	130798
109	Ratchet MX 18	130799
110	Stripping Lever TRIO	112588
111	Lifting Gear Combi MX	117321
112	Lifting Hook MAXIMO 1.5 t	115168
113	Squared timber 100 x 100 x 190	
114	Lever	112569
	Transport container	
	Crate Pallets 80 x 120	065068
	Hardware Boxes 80 x 120	025660
	White PP fabric bag 35 x 60 cm	727034

Tool list

Tool name
Ratchet wrench 1/2"
Extension for the ratchet wrench
Socket set 1/2″ up to AF 36
Ratchet MX 15
Ratchet MX 18
Stripping Lever TRIO
Hexagon socket 6 mm, 8 mm
Open-end wrench AF 22, 2 pieces
Open-end wrench AF 13, 19, 24, 27
Open-ended spanner with ring ratchet AF 24
Side cutter
Pry bar
Hammer

Tightening torques

All screw connections and plugs
of the hydraulic system are tightened
using 40 Nm.

A1 Shaft corner component overview

Hydraulic Module Shaft Corner

This is the hydraulic drive unit for MAXIMO and TRIO Shaft Corners. The Hydraulic Module Shaft Corner is fixed to the frame profile of the shaft corner with bolts. (Fig. A1.01)

Components

1 Hydraulic Module Shaft Corner
1.1 Wear plate
1.2 Connecting bolts for frame profile incl. hinged pin
1.3 Support housing
1.4 Quick coupler feed A
1.5 Quick coupler return B
1.6 Handle with hydraulic connection identification marking
1.7 Handle
1.8 Hydraulic cylinder
1.9 Piston rod
1.10 RFID chip
1.11 Rod seal and drain cone for concrete slurry
1.12 Measuring connections for feed A and return B
1.13 Chain link attachment for 120 elements
1.14 Type plate
1.15 Serial number



Fig. A1.01c

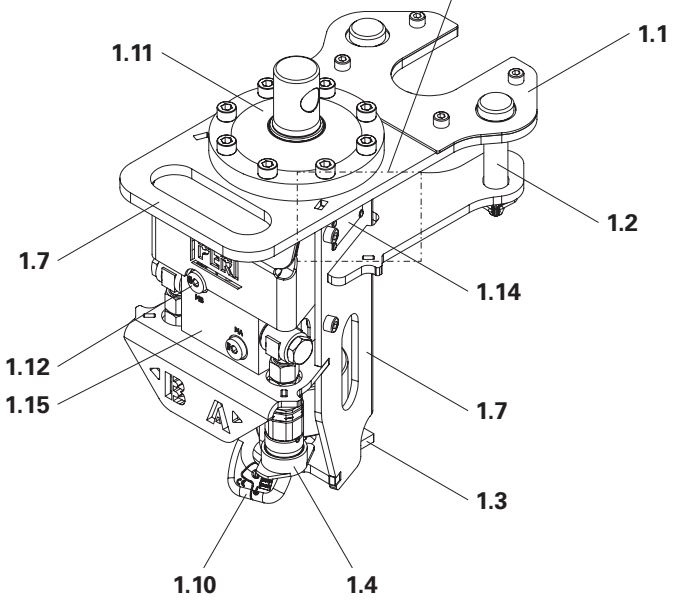


Fig. A1.01a

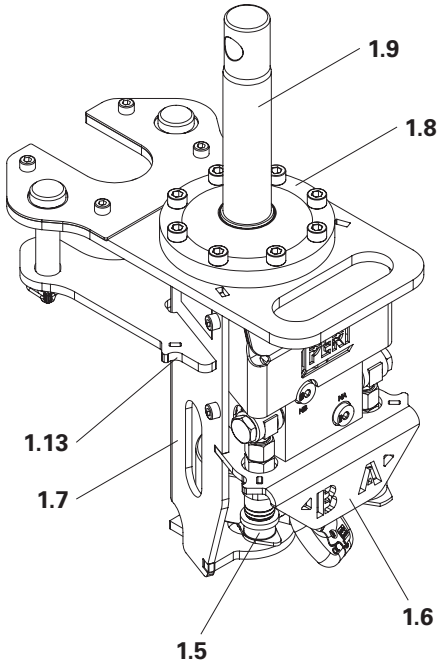


Fig. A1.01b

A1 Shaft corner component overview

Shaft corner striking adapter

The shaft corner striking adapter connects the hydraulic module shaft corner to the shaft corner.
The shaft corner striking adapter is fixed to the hydraulic module and to the tension strut of the shaft corner with bolts.
(Fig. A1.02)

Components

2 Shaft corner striking adapter
2.1 Crane eye
2.2 Kicker brace
2.3 Rocker with integrated protective cover
2.4 Connecting bolts for piston rod incl. hinged pin
2.5 Coupling tube
2.6 Warning label
2.7 Plug

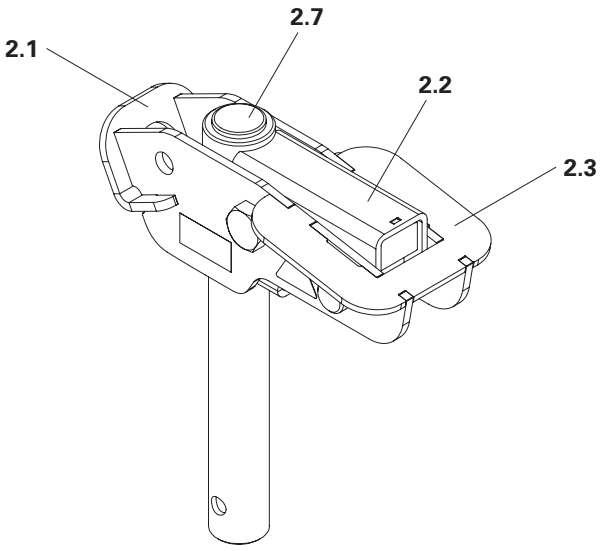


Fig. A1.02a

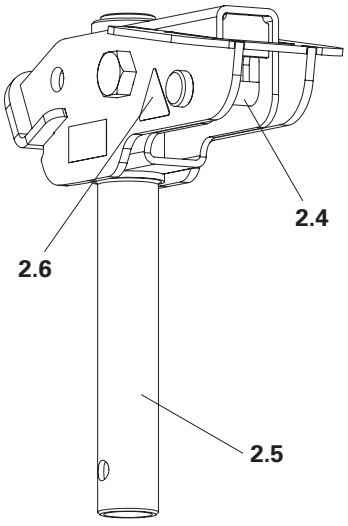


Fig. A1.02b

Unit Suspension RCS MAX

Component for attaching the RCS MAX Hydraulic Unit to MAXIMO or TRIO formwork elements.
A PP Post can be fitted to the kicker brace in order to install a guardrail. (Fig. A1.03)

Components

4 Unit Suspension RCS MAX
4.1 Bolt
4.2 Hinged pin
4.3 Post holder
4.4 Passage and fastening option for hose line
4.5 Fastening option for power cable
4.6 Fixing screws for hydraulic unit

Hydraulic Pump RCS MAX 2 x 210 on assembly side

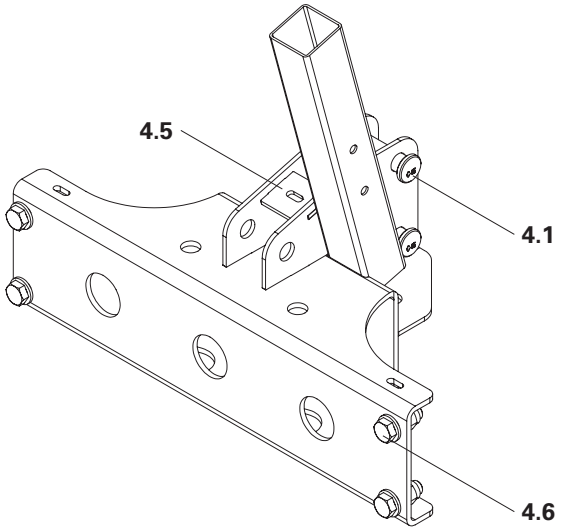


Fig. A1.03a

Formwork element on assembly side

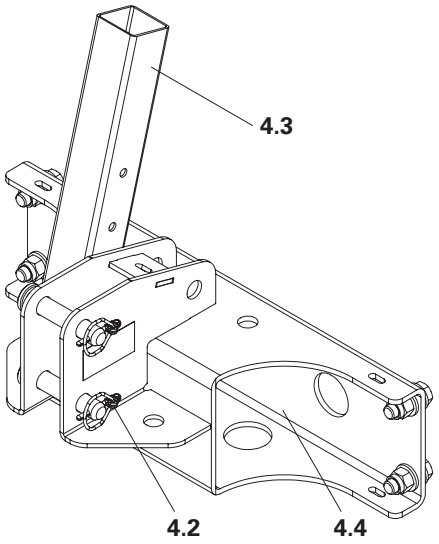


Fig. A1.03b

A1 Shaft corner component overview

Shaft Corner MXSE

The Shaft Corner MXSE allows for quick striking and repositioning of the internal shaft formwork. (Fig. A1.04)
The Shaft Corner MXSE is available in the following element heights:

MX 15
Element height [m]
1.20 2.70 3.30

MX 18
Element height [m]
1.20 2.70 3.00 3.30 3.60

Components

23 Shaft Corner MXSE 330
23.1 Tie point
23.2 Load-bearing point 2 t
23.3 Bolts and cotter pins
23.5 Positioning Waler-2 MXSE
23.7 Tension plate
23.8 Tension strut
23.9 Locking screw with nut (concealed)

Shaft Corner TRIO 270/330

The Shaft Corner TRIO allows for quick striking and repositioning of the internal shaft formwork.
(Fig. A1.05)

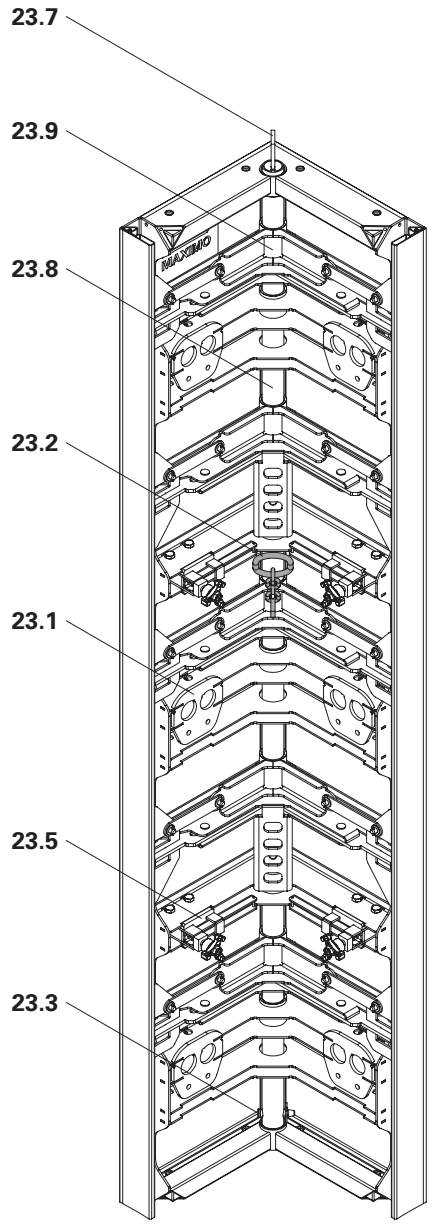


Fig. A1.04

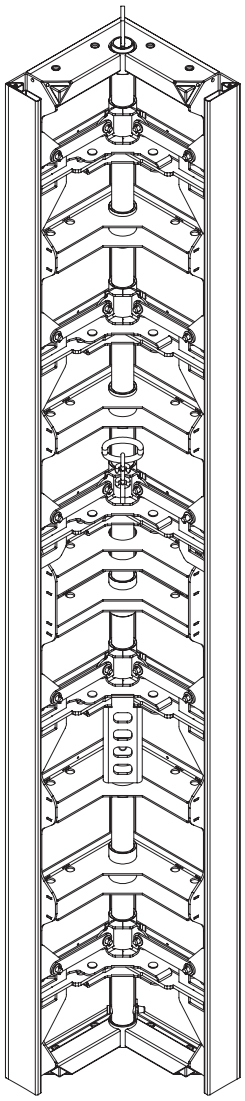


Fig. A1.05

Hydraulic T-coupling

Oil distribution element of the hydraulic ring line.
For easy installation, the hydraulic T-coupling is fitted with hydraulic quick couplings.
(Fig. A2.01)

Components

3 Hydr. T-coupling
3.1 Hydraulic cylinder feed A
3.2 Hydraulic cylinder return B
3.3 Ring line feed A1
3.4 Ring line return B1
3.5 Ring line feed A2
3.6 Ring line return B2
3.7 Hydraulic hose line installation direction
3.8 Hydraulic cylinder connections identification marking
3.9 Fastening option on shaft corner

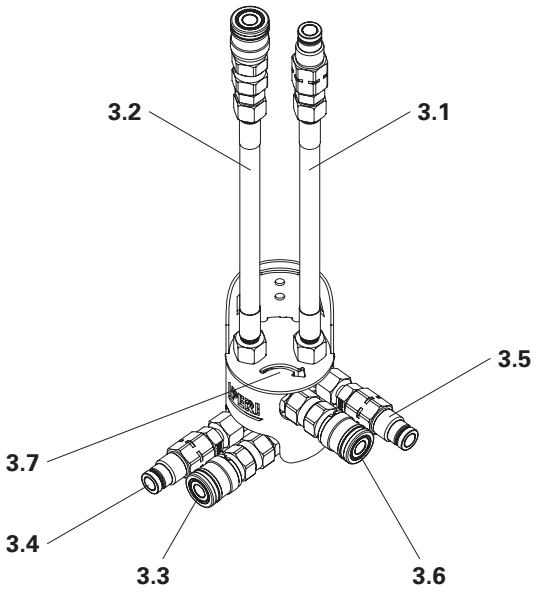


Fig. A2.01a

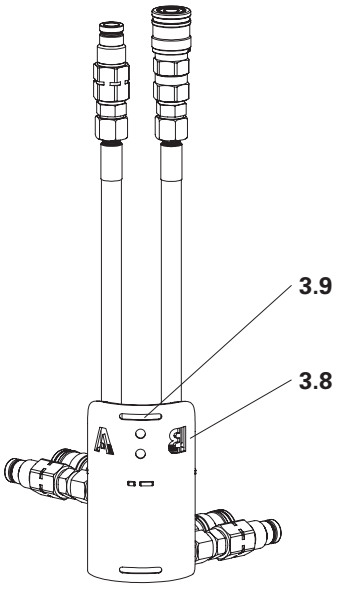


Fig. A2.01b

Hydraulic branch

Oil distribution element of the hydraulic ring line as an alternative to the hydraulic T-coupling.
For easy installation, the hydraulic branch is fitted with hydraulic quick couplings.
The ball valve interrupts the oil flow to the connected consumer.
(Fig. A2.02)

Components

60 Striking module hydraulic branch
60.1 Hydraulic cylinder feed A
60.2 Hydraulic cylinder return B
60.3 Ring line feed A1
60.4 Ring line return B1
60.5 Ring line feed A2
60.6 Ring line return B2
60.7 Hydraulic connection identification marking
60.8 Ball valve
60.9 Fastening hole

Ball valve opened

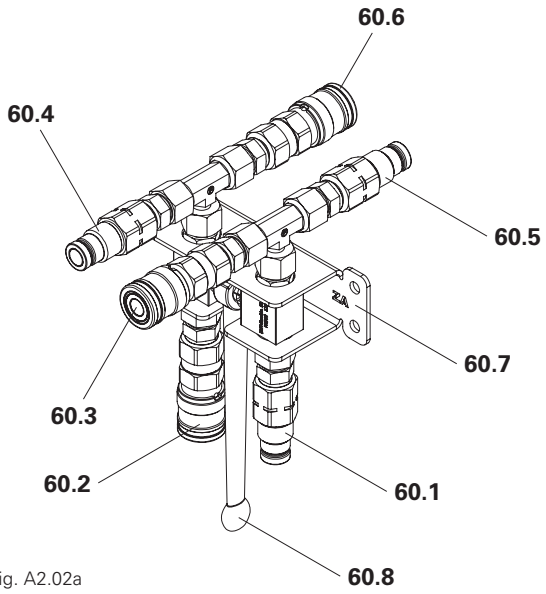


Fig. A2.02a

Ball valve closed

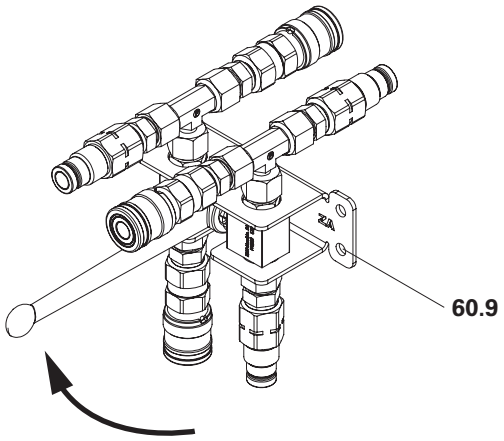


Fig. A2.02b

Hydraulic hose
Hydraulic twin hose

63 Hydraulic Hose 2SN-DN08-FF
64 Hydraulic Twin Hose RCS
65 Quick coupler connector
66 Quick coupler bushing

Hydraulic hose
The hydraulic hose connects the hydraulic unit to the consumer. A quick coupler bushing is mounted at one end of the hydraulic hose while a quick coupler connector is fitted at the other end.
(Fig. A2.03)

Hydraulic twin hose
The hydraulic twin hose is comprised of two individual hoses. At each end of the hydraulic twin hose, there is a quick coupler bushing and a quick coupler connector.
(Fig. A2.04)

The arrangement of the connector and bushing on the hydraulic unit and consumers means that the feed and return flow lines cannot be mixed up. There is a hose identification marking at each end of the hose (**63.1**). This consists of the hose length and the article number. (Fig. A2.03a)

General information about hydraulic hoses
Hydraulic hoses
- are to be positioned to allow oil to flow smoothly.
- must have no kinks or twists.
- should not be placed over sharp edges.
- are to be secured at regular intervals with cable ties.
- should not be fixed to any moving parts.
- are to be arranged in such a way they do not create any tripping hazards.

Do not place any objects on the hydraulic hoses.

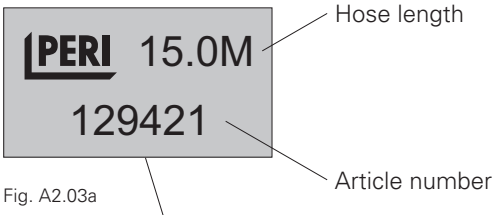


Fig. A2.03a

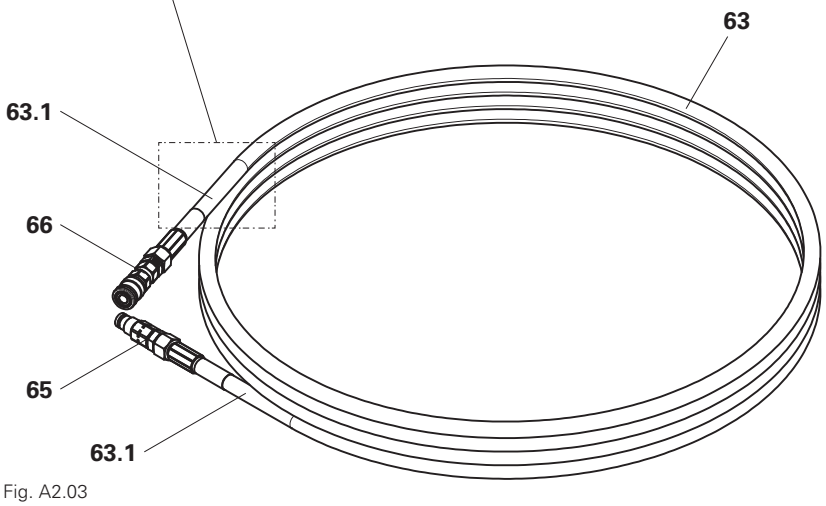


Fig. A2.03

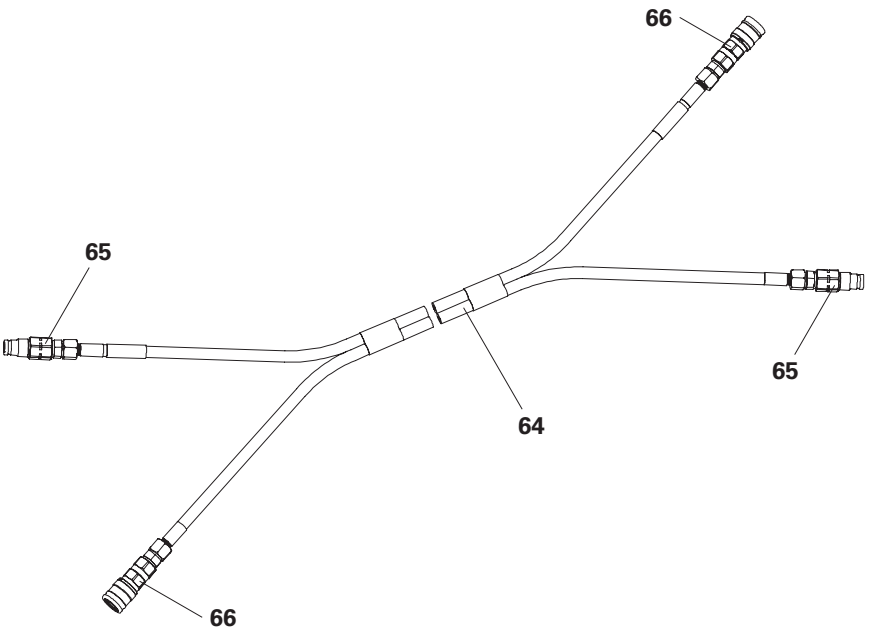


Fig. A2.04

Hydraulic quick coupler

Components

65 Quick coupler connector
66 Quick coupler bushing
66.1 Retaining ring
66.2 Notch
66.3 Sphere

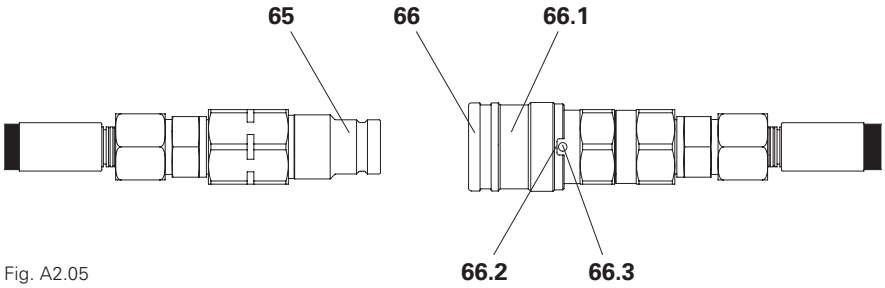


Fig. A2.05

The hydraulic quick coupler allows the hydraulic components to be connected without any tools. The hydraulic system must be free of pressure.
After uncoupling, the hydraulic quick coupler seals the hydraulic connection, meaning the hydraulic oil cannot escape.
(Fig. A2.05)

Connecting the quick coupler

! Depressurise the hydraulic system.

1. Protective caps may have to be removed.
2. Clean the bushing and connector, and check for any signs of damage.
3. Align notch (**66.2**) in the retaining ring of the bushing with the sphere (**66.3**).
4. Push the connector (**65**) as far as possible into the bushing (**66**) until the retaining ring engages.
   → The quick coupler is now connected.
5. Turn the retaining ring (**66.1**) by 90°.
   → The quick coupler is secured against any unintentional release.

(Fig. A2.06 + Fig. A2.07)

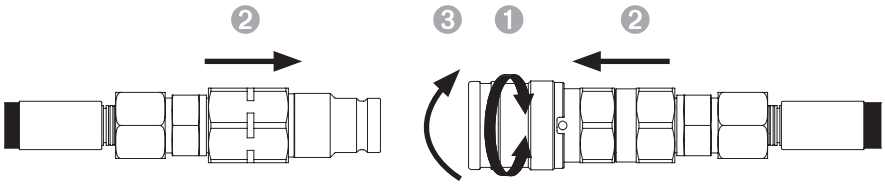
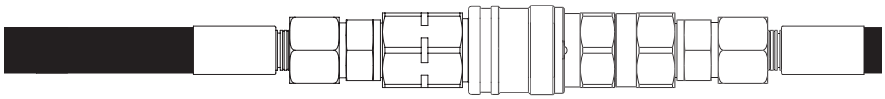


Fig. A2.06


Fig. A2.07

Disconnecting the quick coupler

! Depressurise the hydraulic system.

1. Align notch (**66.2**) in the retaining ring of the bushing with the sphere (**66.3**).
2. Press the quick coupler together, push back the retaining ring (**66.1**) and hold it there.
3. Pull the quick coupler apart.

(Fig. A2.08)

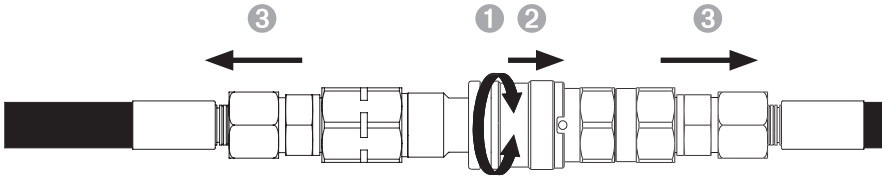


Fig. A2.08

B1 Pre-assembly of the shaft corner

Preparing for assembly

Measures before assembly

- Site personnel to familiarise themselves with the system using the available documentation.
- Prepare a level assembly surface with sufficient load-bearing capacity.
- Position squared timbers on the assembly area as an assembly aid.
- A crane or other lifting device with sufficient load-bearing capacity is required for the assembly process.

Horizontally pre-assemble the shaft formwork.

Reserve an adequate space for temporary storage of components and assemblies.

General information

These Assembly Instructions describe the assembly process using the Shaft Corner MXSE 330 for upright shaft formwork as an example.
The assembly process for the
– Shaft Corner MXSE 120
– Shaft Corner MXSE 270
– Shaft Corner TRIO 330/270
– Shaft Corner MXSE 18 120
– Shaft Corner MXSE 18 270
– Shaft Corner MXSE 18 300
– Shaft Corner MXSE 18 330
– Shaft Corner MXSE 18 360
is carried out in the same way.

- Bolts that are fitted vertically should be screwed in from top to bottom.
- For bolts that are fitted horizontally, no fitting direction is prescribed. PERI recommends that you always fit the bolts in the same direction.
- All bolts must be secured using the appropriate cotter pins.

Notes on illustrations
For a better overview, the explicit presentation of associated platform systems, temporary supporting structures/climbing units and further formwork accessories is omitted.

Safety instructions

Danger

Heavy moving components can fall down or overturn!
During assembly, there is a risk of hands and other body parts being crushed.
⇒ Do not stand under suspended loads.
⇒ Use guide ropes when moving components.
⇒ Maintain an appropriate safety distance.
⇒ Do not stand between moving elements.

Note

- Plan shaft formwork and the hydraulic installation to suit the project.
- Secure interim assembly states correctly by means of temporary supports in order to prevent any items from toppling over.

B1 Pre-assembly of the shaft corner

Preparing the shaft corner

Components

23 Shaft Corner MXSE 330

Removing the tension plate

1. Place the Shaft Corner MXSE 330 on the squared timbers.
2. Remove the securing screw and nut (**23.9**).
3. Pull the tension plate (**23.7**) out of the tension strut (**23.8**).
4. Keep the tension plate (**23.7**) and the securing screw with nut (**23.9**) for the dismantling process.

(Fig. B1.01 + Fig. B1.02)

Removing the securing pins

1. Remove the bolt and cotter pin (**23.3**) and fit them in the lowest hole of the tension strut (**23.8**).

(Fig. B1.03)

To simplify the assembly process, use an open-ended spanner with an AF 24 ring ratchet.

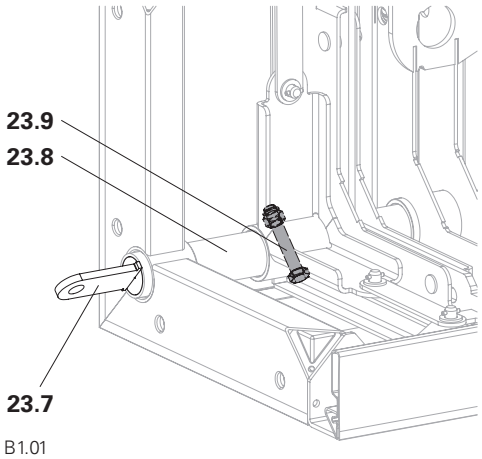


Fig. B1.01

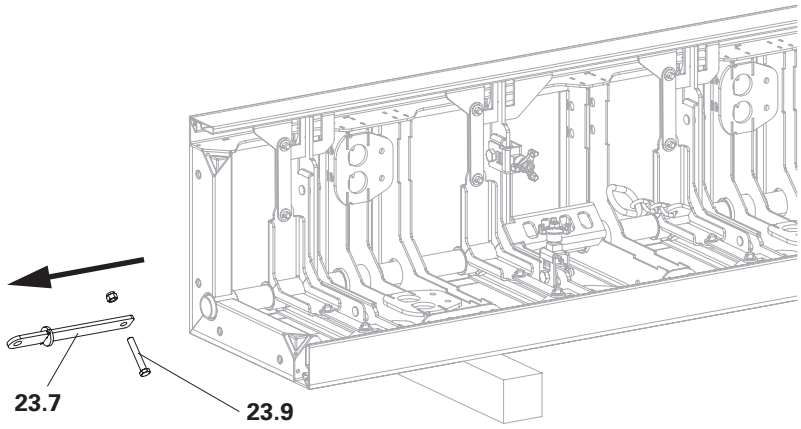


Fig. B1.02

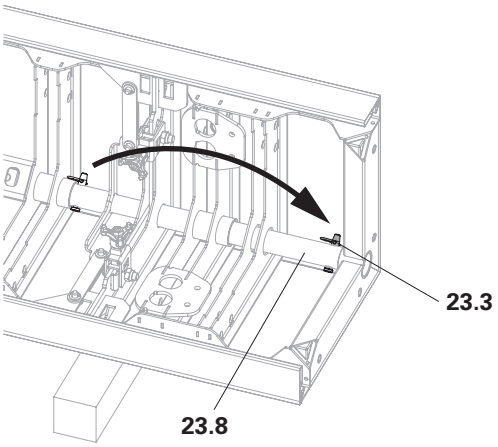


Fig. B1.03

Fitting the shaft corner striking adapter

Components

2 Shaft corner striking adapter
5 Bolt 16 mm x 90 mm
6 Hinged pin DIN 11023-5x32

Assembly

1. Insert the striking adapter (**2**) into the tension strut (**23.8**) until the holes in the striking adapter and the tension strut are congruent.
2. Connect the striking adapter and the tension strut with bolts (**5**) and secure with hinged pins (**6**).

(Fig. B2.01 + Fig. B2.02)

Alternatively

Due to the limited installation space, this version is only recommended if the striking adapter is to remain in the shaft corner.

1. Instead of bolts (**5**) and hinged pins (**6**), screw the striking adapter (**2**) with securing screw and nut (**23.9**) to the tension strut (**23.8**). (Fig. B2.03)

To simplify the assembly process, use an open-ended spanner with an AF 24 ring ratchet.

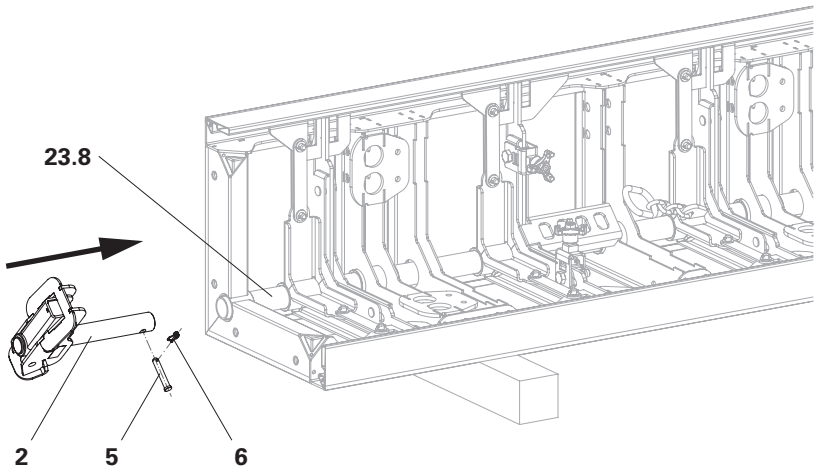


Fig. B2.01

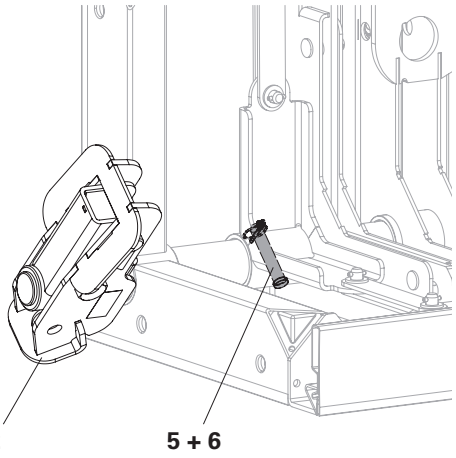


Fig. B2.02

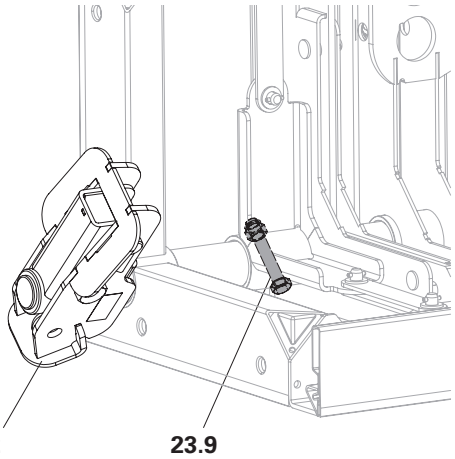


Fig. B2.03

Fitting the Hydraulic Module Shaft Corner

The Hydraulic Module Shaft Corner (**1**) is fixed between the shaft corner striking adapter (**2**) and Shaft Corner MXSE (**23**).

Components

1	Hydraulic Module Shaft Corner

Assembly

1. Remove the frame profile connecting bolt (**1.2**).
2. Remove the piston rod connecting bolt (**2.4**).
3. Push the Hydraulic Module Shaft Corner (**2**) onto the frame profile of the Shaft Corner MXSE (**23**).
4. Fasten the Hydraulic Module Shaft Corner (**2**) to the shaft corner with the frame profile connecting bolt (**1.2**) and secure it with a cotter pin.
5. Connect the hydraulic module and the striking adapter with the piston rod connecting bolt (**2.4**) and secure with a cotter pin.

(Fig. B2.04)

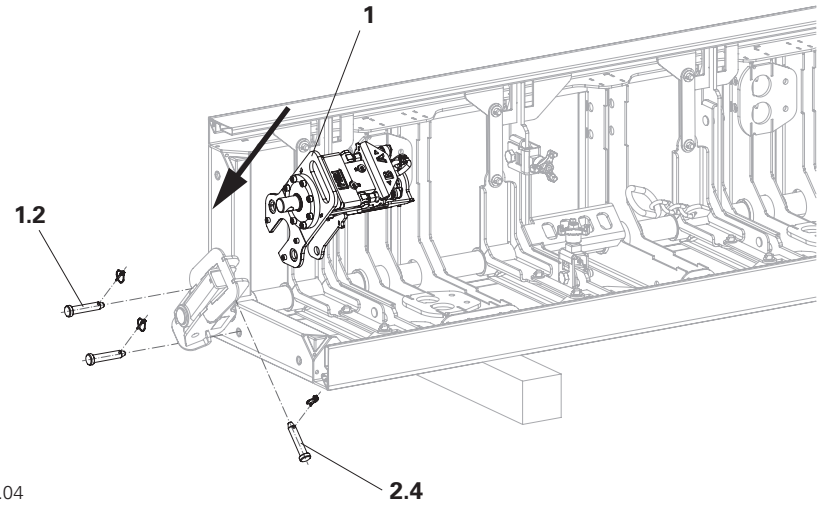


Fig. B2.04

Fig. B2.05 Shows the hydraulic module when it is installed.

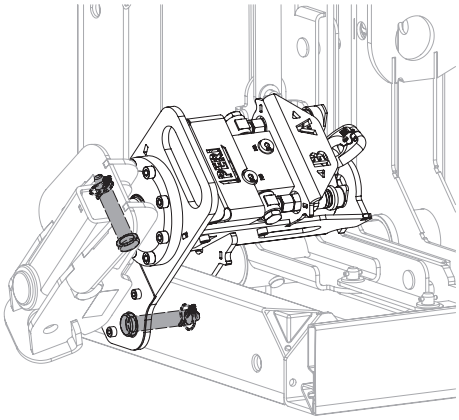


Fig. B2.05

Shaft Corner MXSE 120

Additional work on the
Shaft Corner MXSE 120 (**21**).

Components

100 Cable tie NT-240H

Assembly

1. Place tie point (**21.1**) into chain link attachment (**1.13**) of the Hydraulic Module Shaft Corner (**1**) and secure with cable ties (**100**). Make sure that the chain links are within the profile of lever adapter (**21.10**).
   → The chain cannot block the mechanics of the shaft corner.

(Fig. B2.06 + Fig. B2.07)

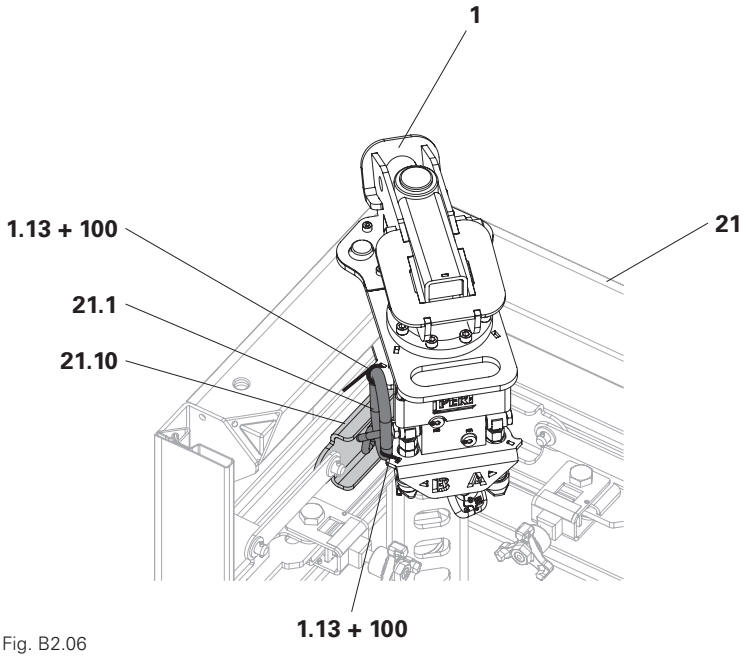


Fig. B2.06

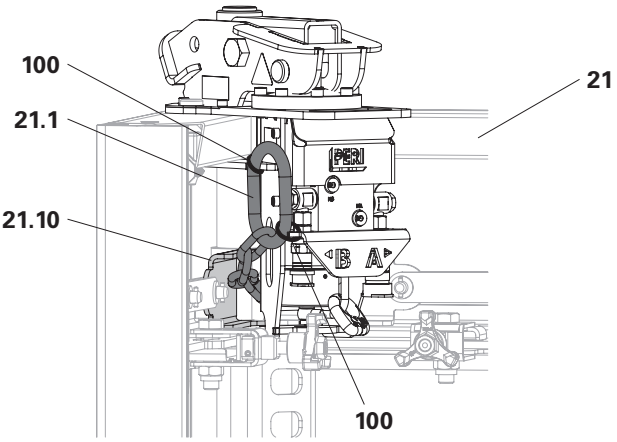


Fig. B2.07

Preparing the half shells

Components

23 Shaft Corner MXSE 330
24 Formwork Element MX
25 Alignment Coupler BFD

Assembly

1. Place the Formwork Element MX (**24a**) on squared timbers between the Shaft Corners MXSE 330 (**23a+b**).
2. Connect the Formwork Element MX (**24a**) and Shaft Corners MXSE 330 (**23a+b**) with Alignment Coupler BFD (**25**).

(Fig. B3.01)

3. Connect the Formwork Element MX (**24b**) and Shaft Corner MXSE 330 (**23a**) with Alignment Coupler BFD (**25**).

(Fig. B3.02)

4. Repeat steps 1 – 3 and prepare a second half shell.

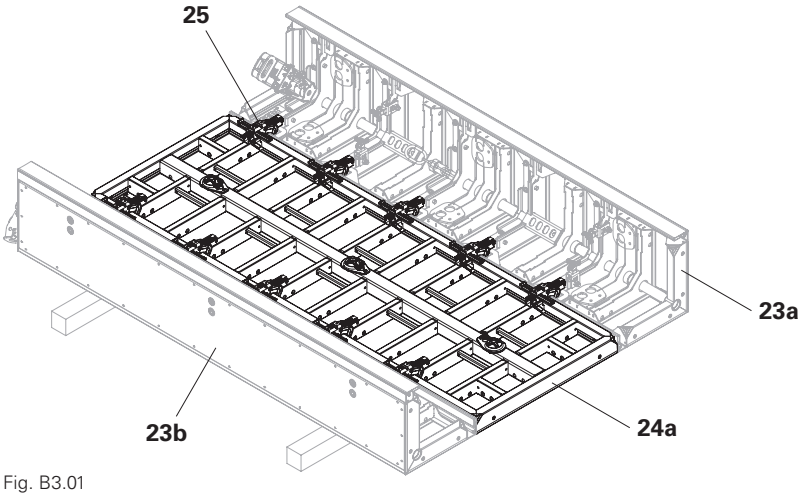


Fig. B3.01

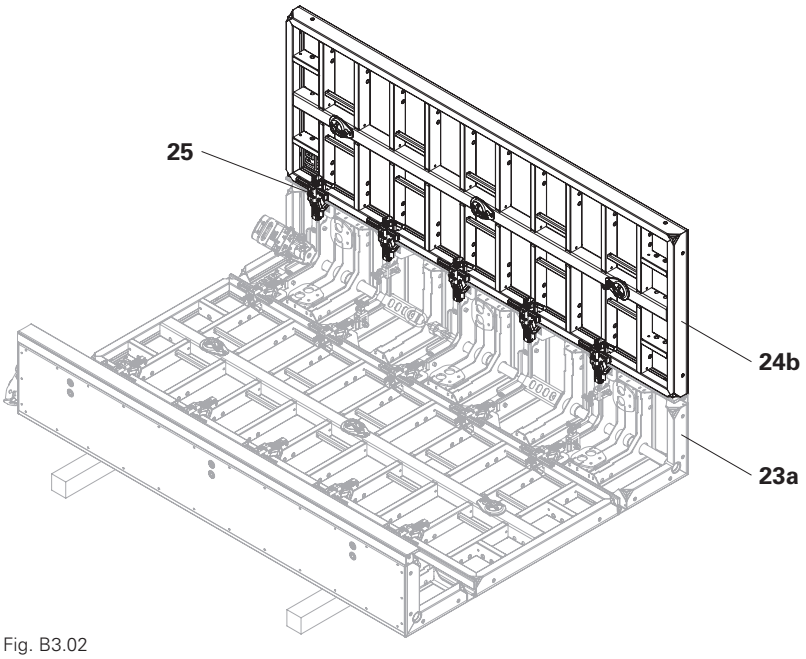


Fig. B3.02

Connecting the half shells

Components

25 Alignment Coupler BFD

Assembly

1. Erect the first half shell and temporarily support it, if necessary. (Fig. B3.03)
2. Erect the second half shell, turn it 180° and allow it to hang from the crane.
3. Connect the two half shells with Alignment Coupler BFD.
4. Once both half shells are securely connected, remove the crane lifting gear.

(Fig. B3.04)

Instructions for Assembly and Use:

- MAXIMO MX 15 Panel Formwork 270 | 330
- MAXIMO MX 18 Panel Formwork 270 | 330
- TRIO Panel Formwork

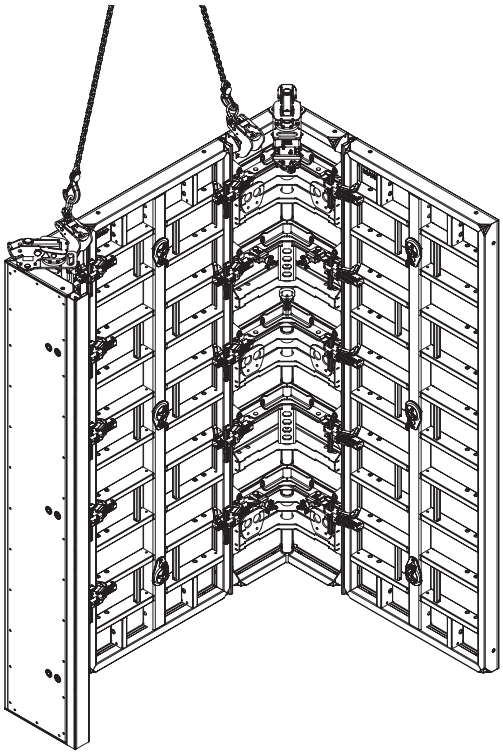


Fig. B3.03

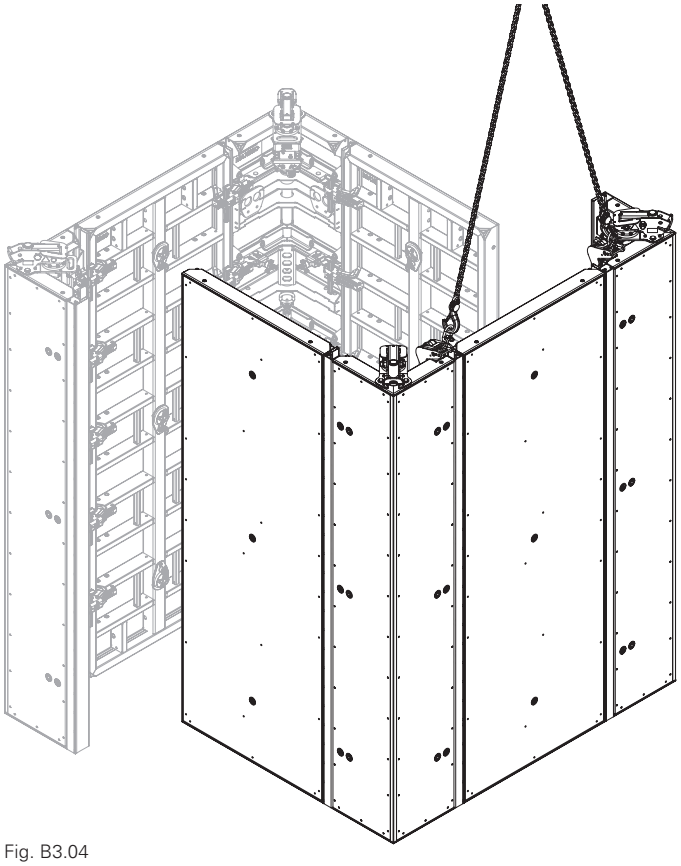


Fig. B3.04

General information

Caution

Risk of tripping across the entire working area due to the hydraulic hoses!

⇒ Guide the hydraulic hoses along the formwork elements and secure with cable ties.



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

Note

- For safe handling of the hydraulic oil, follow the instructions that are included in the safety data sheet of the hydraulic oil selected for use.
- Avoid any bodily contact with the hydraulic oil.
- Ensure that the hydraulic oil does not come into contact with the structure.
- For information on cleaning and correct disposal, see the safety data sheet of the hydraulic oil selected for use.

- The ring line runs clockwise, see the identification marking for the hydr. T-coupling 2SN-DN08-FF. Be mindful of the arrangement of the components!
- Corresponding hydraulic connections have the same letter, **A** or **B**.
- For simplicity, hydraulic hoses 2SN-DN08-FF are shown in illustrations and hydraulic diagrams. These can be replaced with Hydraulic Twin Hoses RCS.
- The length of the hydraulic hoses is
  – as short as possible.
  – as long as required.
  If the hydraulic hoses are too long, this creates unnecessary pressure losses.
- Always fit unused connections on hydraulic components and hydraulic hoses with a protective cap. This prevents soiling and possible leaks.

Notes on illustrations

- To make the illustration easier to understand, the front formwork is not shown. Components that are attached to the front formwork elements therefore appear to float freely.
- Work related to the formwork includes the front formwork.

Fitting the hydraulic T-coupling

Only fit vented hydraulic T-couplings. For venting, see Section "Bleeding the hydraulic T-coupling" on page 61.

Components

3	Hydr. T-coupling 2SN-DN08-FF

Assembly

1. Connect hydraulic connections (**3.1**) and (**3.2**) of the hydraulic T-coupling (**3**) to hydraulic connections (**1.4**) and (**1.5**) of the Hydraulic Module Shaft Corner (**1**). (Fig. B4.01)
2. If necessary, fix the hydr. T-coupling (**3**) to the shaft corner with a cable tie or tension belt so that collisions do not occur.

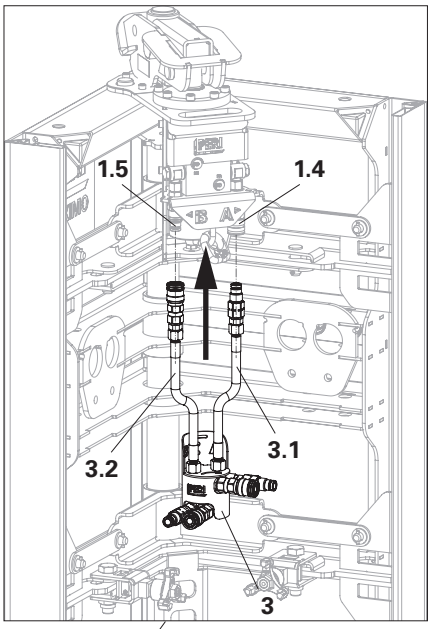


Fig. B4.01a

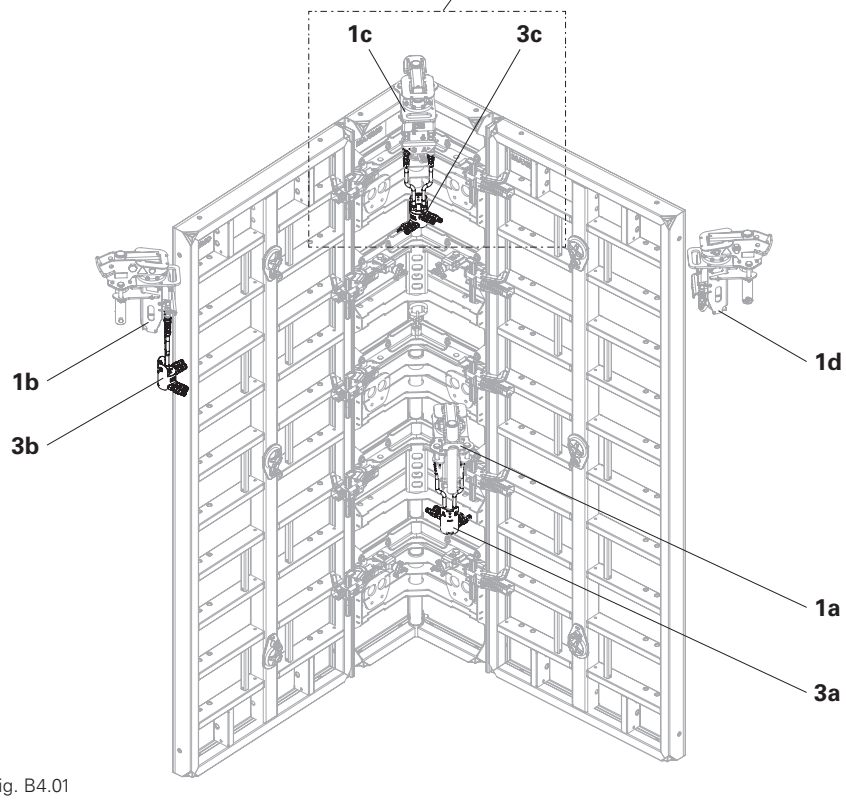


Fig. B4.01

Fitting the hydraulic branch

Alternatively, use the striking module hydraulic branch instead of the hydraulic T-coupling.
With the striking module hydraulic branch, the hydraulic modules can be controlled or disabled individually via the ball valves.

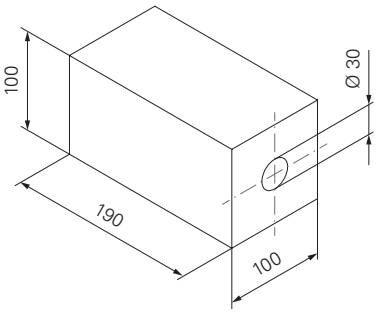


Fig. B4.02

Only ever fit vented hydraulic branches. For venting, see Section "Bleeding the hydraulic branch" on page 62.

Components

60	Striking module hydraulic branch
104	Hook Tie DW15/340
105	Cam nut DW 15
106	WOOD SCREW 6X40 SK-TX30 HPI
113	Squared timber 100 x 100 x 190

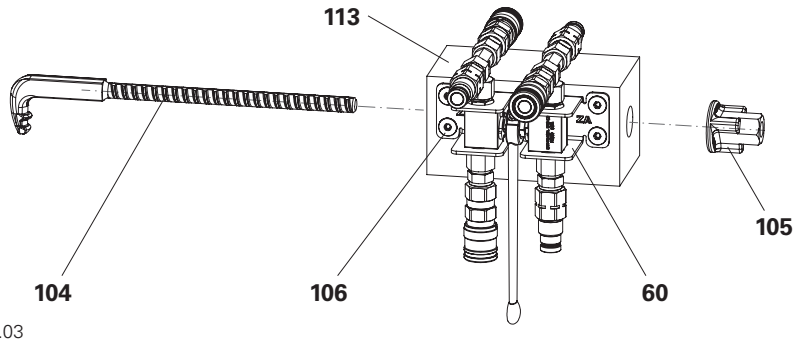


Fig. B4.03

Preparing the holder
Pay attention to the installation position of the components so that the hydraulic lines of the ring line do not cross!

1. Prepare squared timber 100 x 100 x 190 (**113**) for each hydraulic branch. (Fig. B4.02)
2. Fix the hydraulic branch to the squared timber with wood screws 6x40 (**106**).
3. Insert the hook tie (**104**) through the hole and fit the cam nut DW 15 (**105**). (Fig. B4.03)

Assembly

1. Attach the hook tie (**104**) to the frame profile and tighten the holder with the cam nut DW 15 (**105**). (Fig. B4.04)

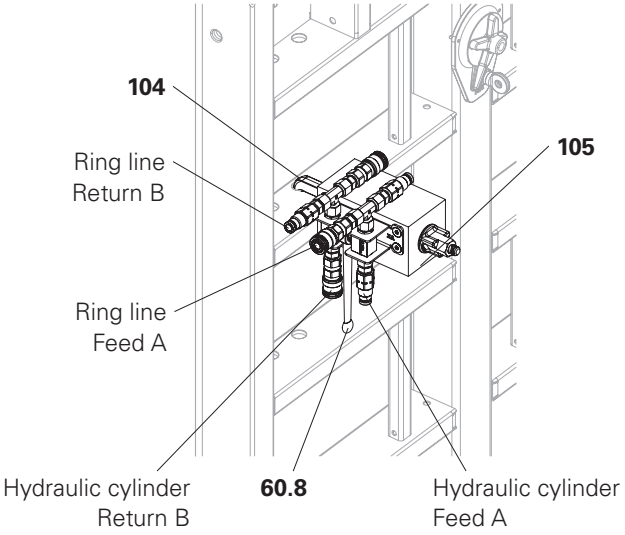


Fig. B4.04

To operate the hydraulic cylinders, the handle of the ball valve (**60.8**) must point downwards. (Fig. B4.04)

Fitting hydraulic hoses

- Always start fitting the hydraulic hoses at the hydraulic T-coupling (**3a**). This prevents errors from occurring when connecting the other components.
- Ensure that the hydraulic hoses are sufficiently long.
  The length of the hydraulic hoses (**63a**) depends on the hydraulic unit used and its position.
- Only fit vented hydraulic hoses. For venting, see Section "Bleeding the hydraulic hoses" on page 60.

Components

63	Hydraulic Hose 2SN-DN08-FF
100	Cable tie NT-240H

Assembly

1. Connect hydraulic T-coupling (**3a**) and hydraulic T-coupling (**3b**) with hydraulic hoses (**63b**).
2. If necessary, roll up the hydraulic hoses.
3. Fasten hydraulic hoses to perforated struts or risers of formwork elements with cable ties (**100**).
   Note the tie position of the shaft formwork!
4. Repeat steps 1 – 3 for hydraulic T-coupling (**3c**) and Hydraulic Module Shaft Corner (**1d**).

(Fig. B4.05)

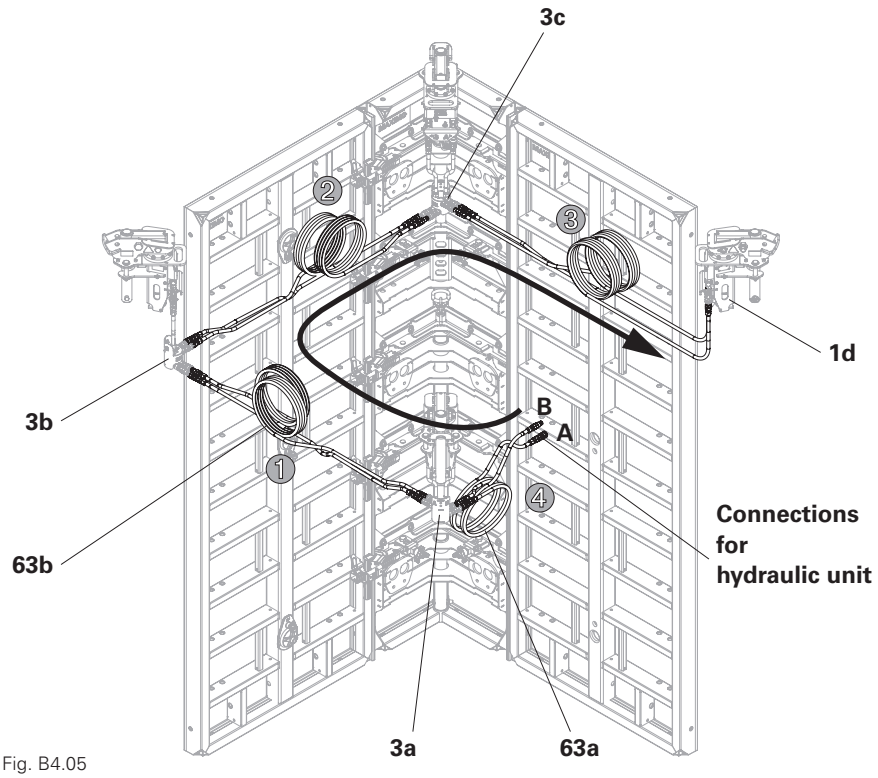


Fig. B4.05

5. Connect hydraulic hoses (**63a**) to hydraulic T-coupling (**3a**) in order to connect the hydraulic unit.
(Fig. B4.05)

Select the height position of the ring line depending on the accessibility of the ball valve. Figure B4.06 shows the hydraulic ring line with the striking module hydraulic branch on the top of the formwork.
If access to the ring line via the work platform (level 0) is necessary for climbing systems, fit the ring line at a lower position.

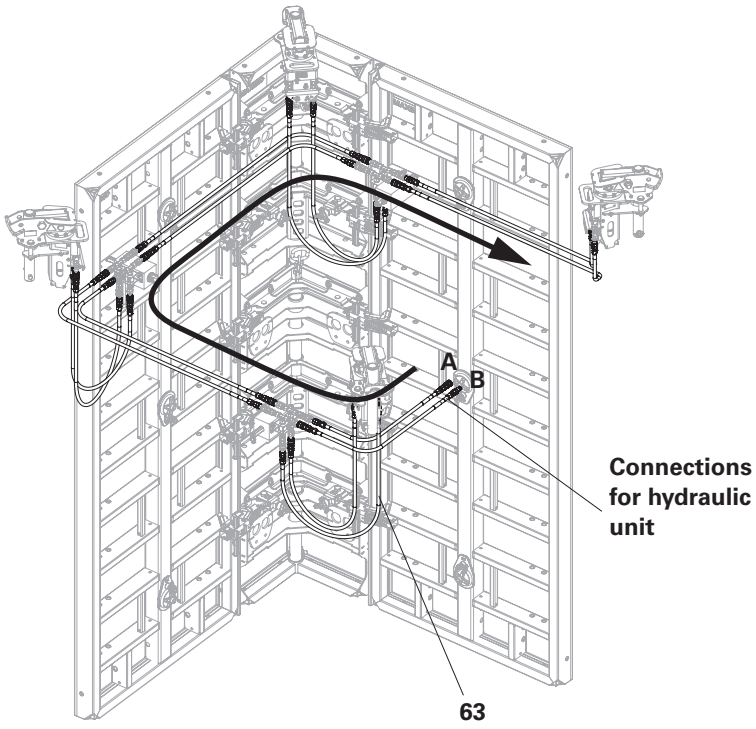


Fig. B4.06

Hydraulic system connection plan

Ring line version 1

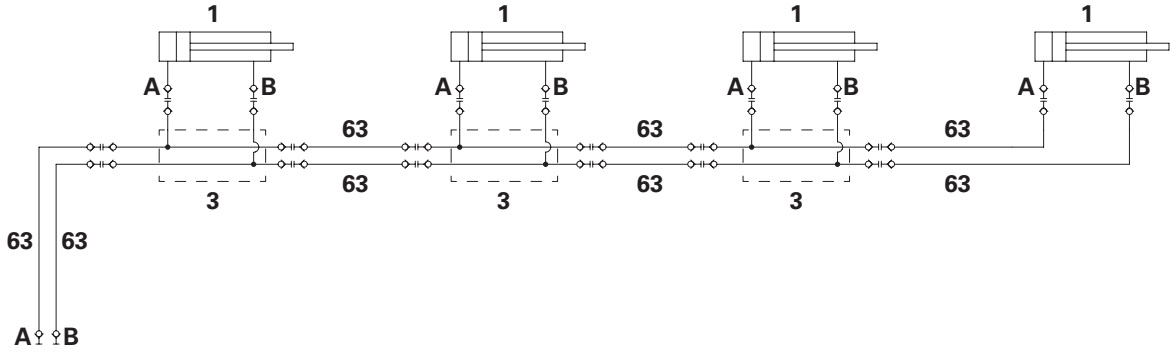


Fig. B4.07

List of components				
	Pos. no.	Article designation	Article number	Quantity
Ring line V1	**1**	Hydraulic Module Shaft Corner	138039	4
	3	Hydr. T-coupling 2SN-DN08-FF	138041	3
	63	Hydraulic Hose 2SN-DN08-FF		8

Tab. B4.01

Ring line version 2

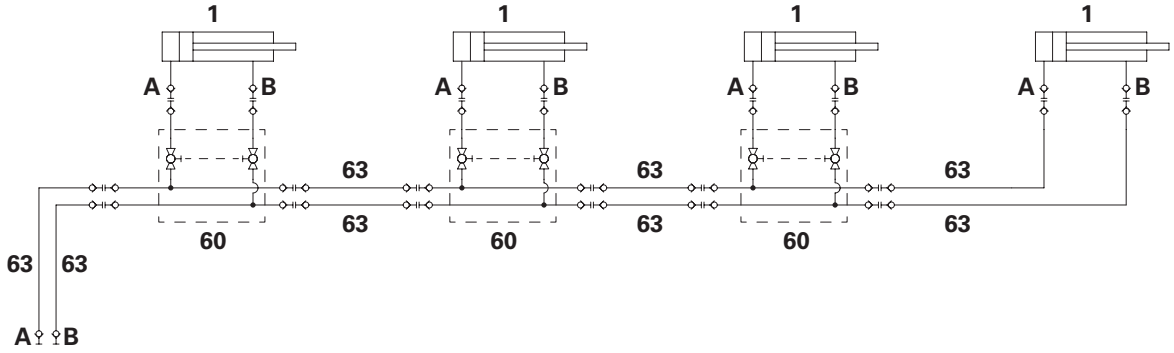


Fig. B4.08

List of components				
	Pos. no.	Article designation	Article number	Quantity
Ring line V2	**1**	Hydraulic Module Shaft Corner	138039	4
	60	Hydraulic Branch Striking Module	129039	3
	63	Hydraulic Hose 2SN-DN08-FF		8
	104	Hook Tie DW15/340	108904	3
	105	Cam Nut DW 15, coat.	030130	3
	106	WOOD SCREW 6X40 SK-TX30 HPI	024540	12
	113	Squared timber 100 x 100 x 190		3

Tab. B4.02

Hydraulic Pump RCS MAX 2 x 210

Assembly and commissioning of the hydraulic unit are not covered in these instructions.

Requirements:

- The hydraulic unit is set up.
- The power supply is connected.
- The wireless remote control is connected.
- The hydraulic unit is filled with hydraulic oil and vented.
- The user is familiar with the operation of the hydraulic unit.

Hydraulic unit manufacturer's documentation.

Main components

50 Hydraulic Pump RCS MAX 2x 210 bar, 380-460V
51 Power Cable RCS MAX CEE-32A 2m
52 Wireless Remote Control RCS MAX
52.1 Receiver
56 Remote Control Unit ACS-C

Control elements

- Emergency stop switch (**50.16**)
- Operation mode key (**50.17**)
- Extend cylinder key (**50.18**)
- Status/reset key (**50.19**)
- Cylinder 2 On/Off key (**50.20**)
- Retract cylinder key (**50.21**)
- Cylinder 1 On/Off key (**50.22**)

(Fig. B5.01a)

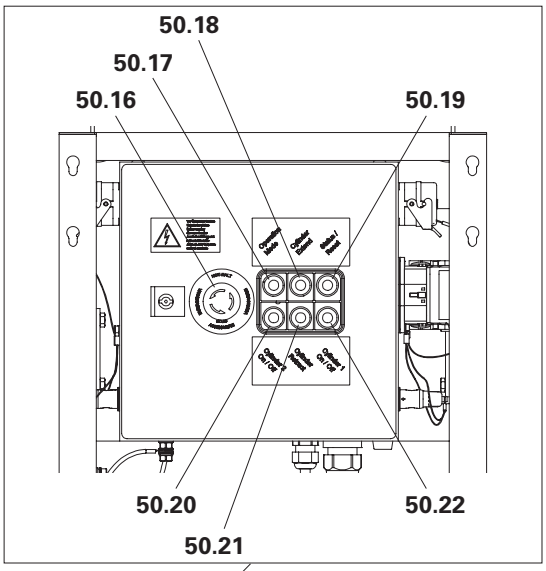


Fig. B5.01a

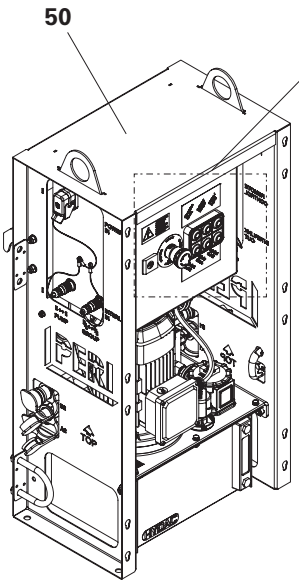


Fig. B5.01

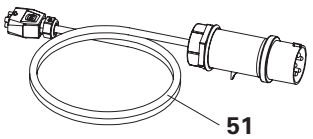


Fig. B5.02

Wireless remote control
- Start key (**52.2**)
- Extend cylinder key (**52.3**)
- Retract cylinder key (**52.4**)
- Emergency stop switch (**52.5**)

(Fig. B5.03a)

Remote control
- Emergency stop switch (**56.1**)
- Extend cylinder key (**56.2**)
- Retract cylinder key (**56.3**)

(Fig. B5.04)

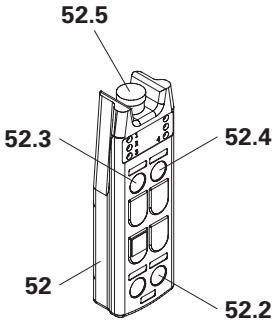


Fig. B5.03a

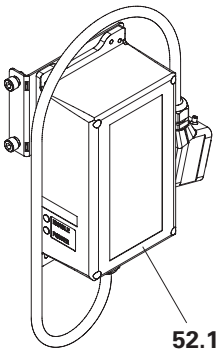


Fig. B5.03b

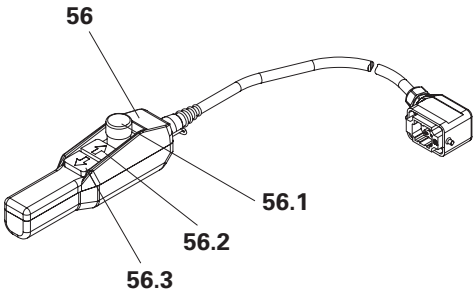


Fig. B5.04

Fitting the unit suspension

Components

4	Unit Suspension RCS MAX

Assembly

1. Unscrew the suspension hooks (**50.2**) and screw them back on at the new position. The suspension hooks point forwards. (Fig. B5.05)
2. Screw the Unit Suspension RCS MAX (**4**) to the rear side of the hydraulic unit using the enclosed mounting materials. (Fig. B5.06)

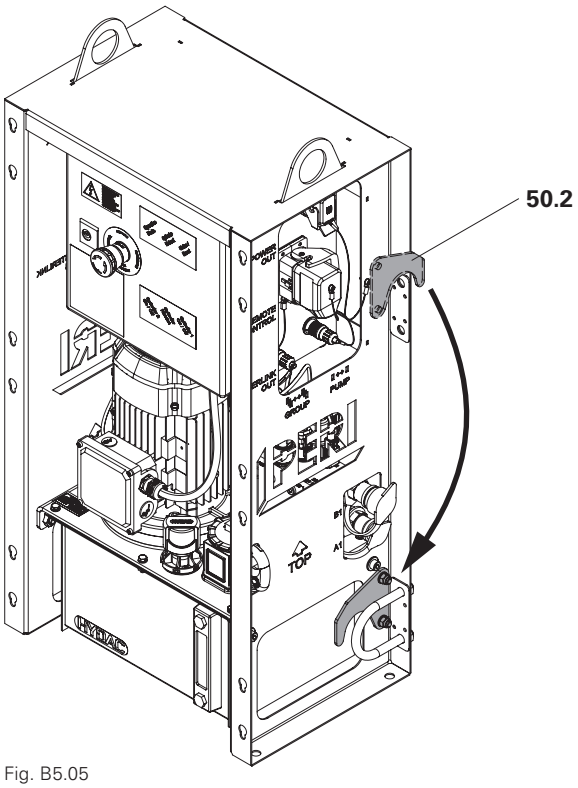


Fig. B5.05

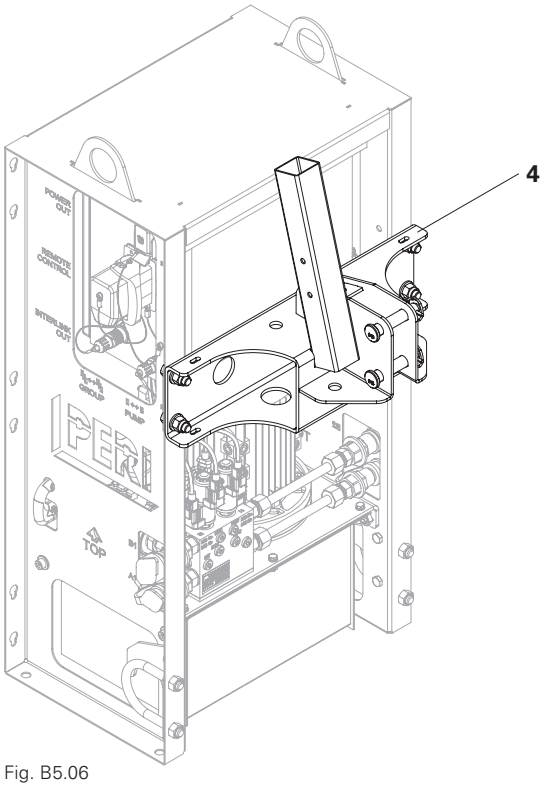


Fig. B5.06

Converting the hydraulics

Components

61 Hydraulic Accumulate Piece RCS
67 Hydr. hose EN853-2SN-DN08 1.0 m

Assembly

1. Connect one hydraulic hose (**67**) to hydraulic connection A2 (**50.8**) and one to hydraulic connection B2 (**50.9**).
2. Guide the two hydraulic hoses (**67**) through the hollow profile of the unit suspension (**4**) to the right-hand side of the hydraulic unit.
3. Connect hydraulic connection A1 (**50.13**), hydraulic connection B1 (**50.14**) and the hydraulic hoses (**67**) with Hydraulic Accumulate Piece RCS (**61**).

(Fig. B5.07)

Connections

1. Connect the hydraulic hoses of the ring line to the hydraulic connections **A** and **B**.

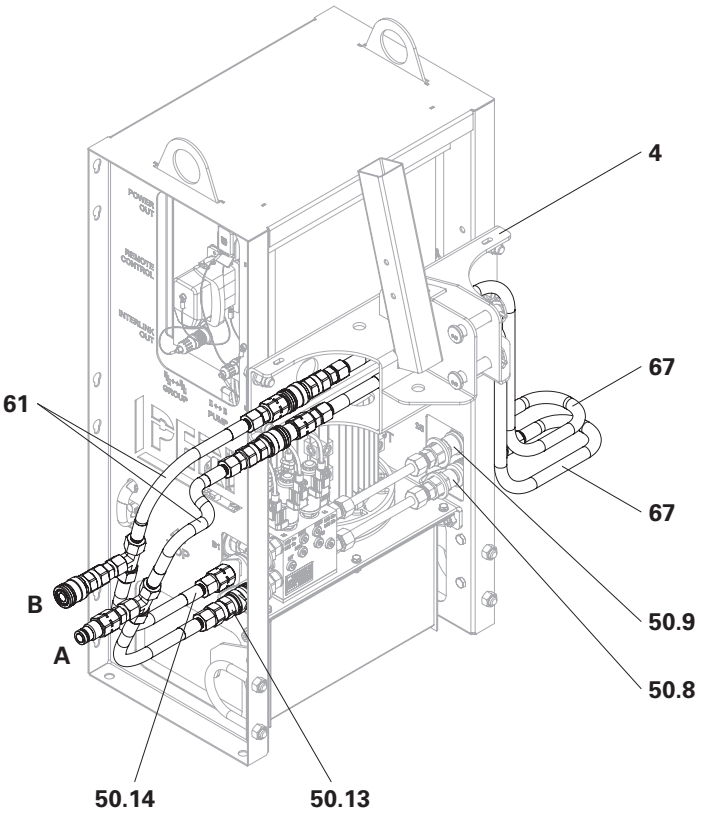


Fig. B5.07

Once the hydraulic unit has been converted, the additional components must be vented, see Section "Bleeding the offset connectors" on page 63.

Installing the hydraulic unit

Assembly

1. Hook the hydraulic unit onto the crane using the attachment points (**50.1**) and position it at the installation position of the internal formwork. (Fig. B5.08)
2. Fix the hydraulic unit to the perforated strut of the formwork element MX with bolts 16 x 70 (**4.1**) and secure the bolts with hinged pins (**4.2**). (Fig. B5.09)
3. Remove the crane lifting gear.

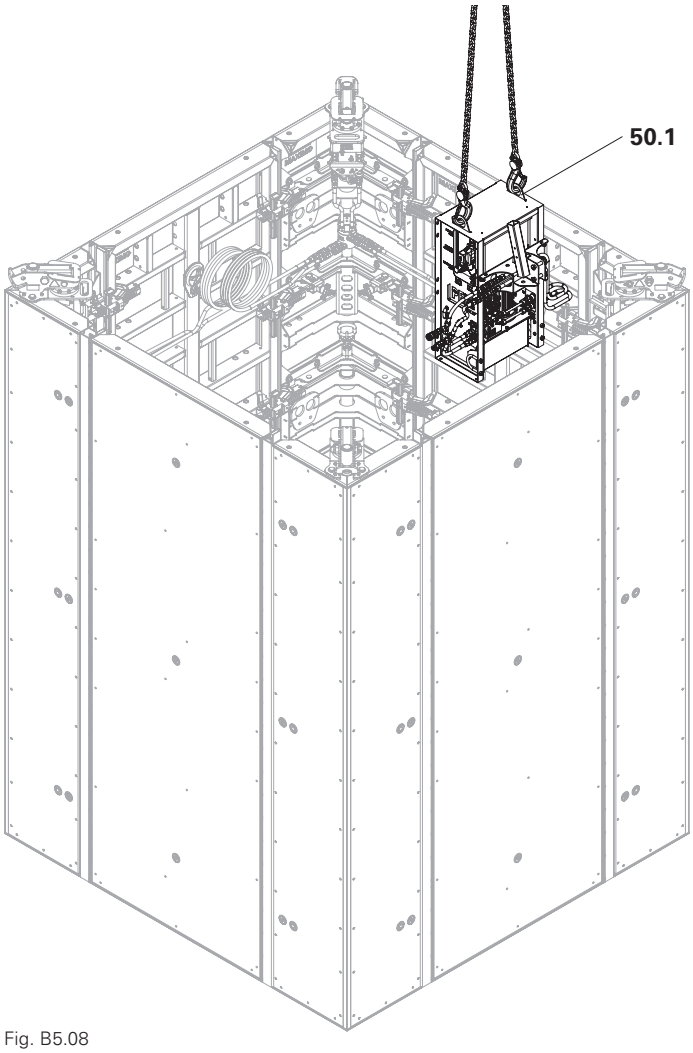


Fig. B5.08

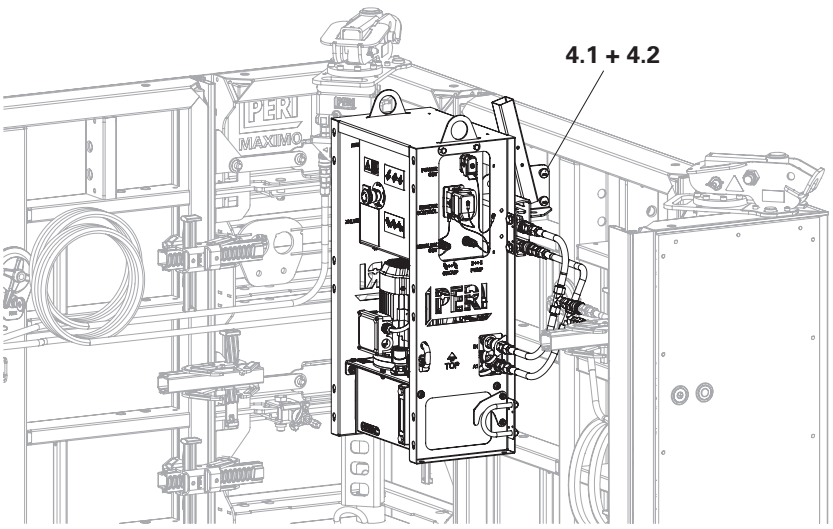


Fig. B5.09

Hydraulic system connection plan

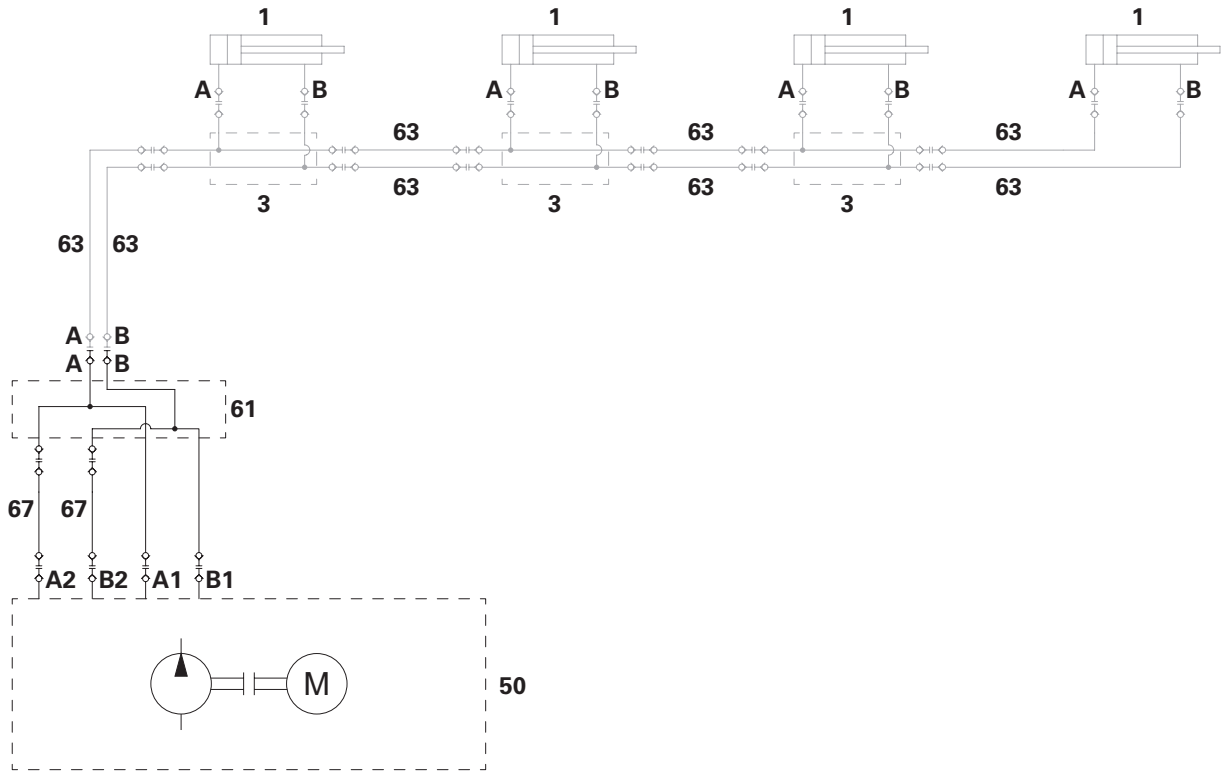


Fig. B5.10

List of components				
	Pos. no.	Article designation	Article number	Quantity
Ring line V1	**1**	Hydraulic Module Shaft Corner	138039	4
	3	Hydr. T-coupling	138041	3
	63	Hydraulic Hose 2SN-DN08-FF		8
Hydraulic unit	**50**	Hydraulic Pump RCS MAX 2 x 210	135500	1
	61	Hydraulic Accumulate Piece RCS	112421	1
	67	Hydr. hose EN853-2SN-DN08 1.0 m	129035	2

Tab. B5.01

Hydraulic Pump RCS 4 x 190

Assembly and commissioning of the hydraulic unit are not covered in these instructions.

Requirements:

- The hydraulic unit is set up.
- The power supply is connected.
- The hydraulic unit is filled with hydraulic oil and vented.
- The user is familiar with the operation of the hydraulic unit.

Hydraulic unit manufacturer's documentation.

Main components

53	Hydraulic Pump RCS 4 x 190 bar
54	Adapter Cable RCS

Control elements

- Control lever for cylinder 3+4 (**53.1**)
- CEE motor protection plug (**53.2**)
- Control lever for cylinder 1+2 (**53.3**)

(Fig. B6.01)

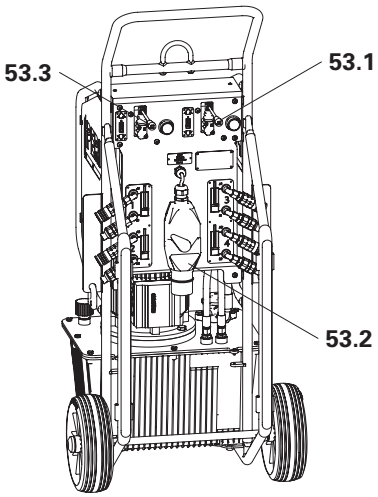


Fig. B6.01a

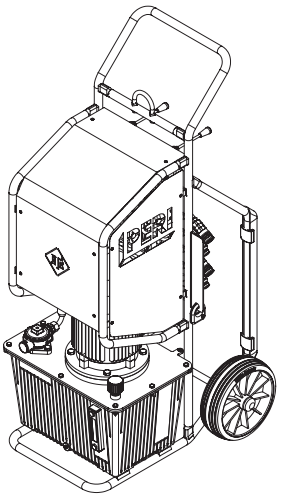


Fig. B6.01b

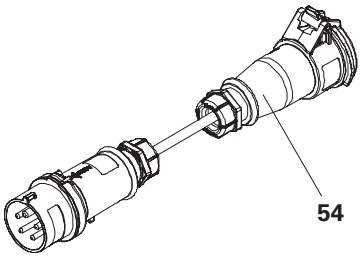


Fig. B6.02

Converting the hydraulics

Components

61	Hydraulic Accumulate Piece RCS

Assembly

1. Connect hydraulic connection A1 (**53.9**), hydraulic connection B1 (**53.10**), hydraulic connection A2 (**53.11**) and hydraulic connection B2 (**53.12**) with Hydraulic Accumulate Piece RCS (**61**).

(Fig. B6.03)

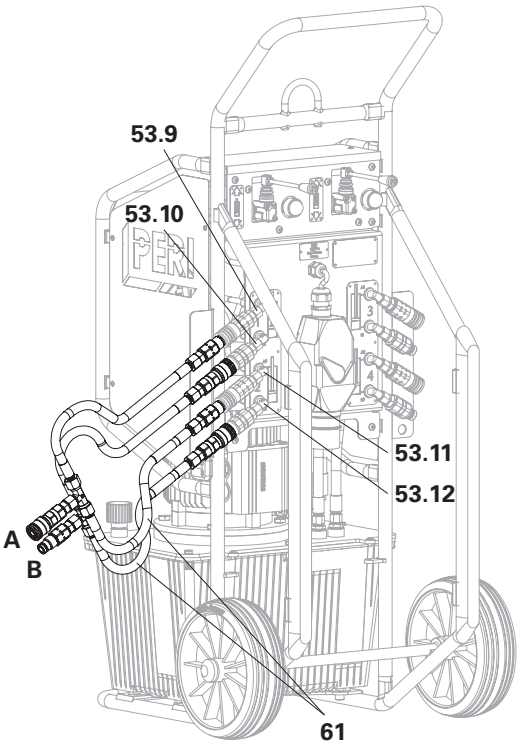


Fig. B6.03

Connections

1. Connect the hydraulic hoses of the ring line to the hydraulic connections **A** and **B**.

Once the hydraulic unit has been converted, the additional components must be vented, see Section "Bleeding the offset connectors" on page 63.

Hydraulic system connection plan

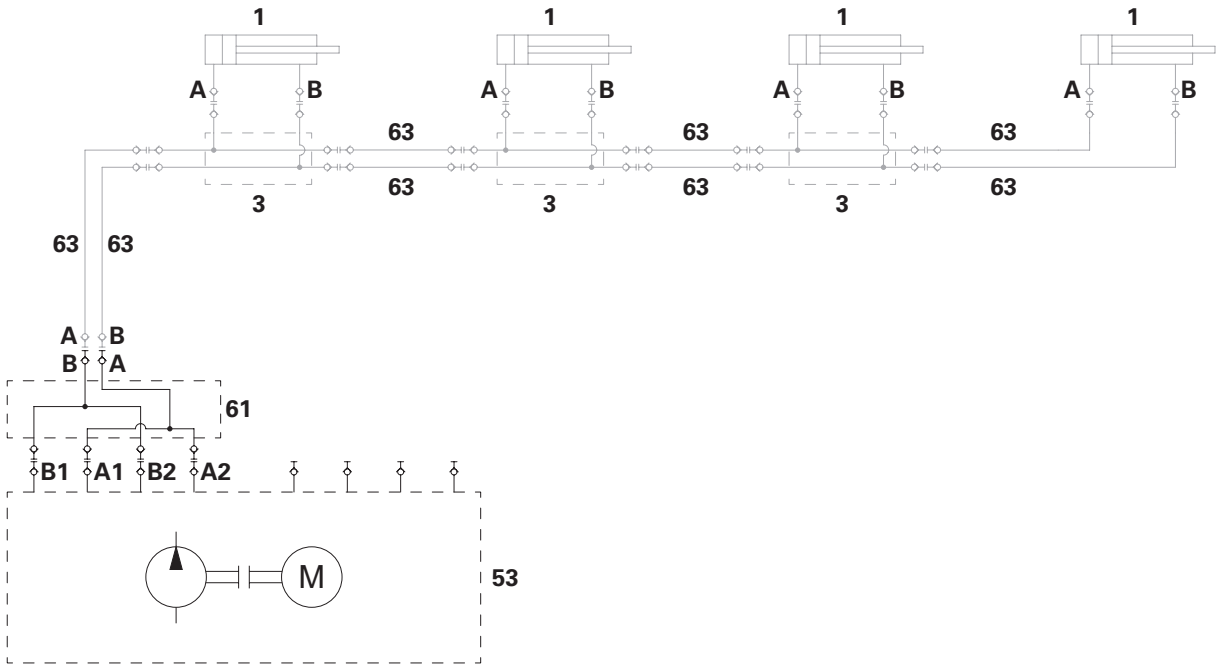


Fig. B6.04

List of components				
	Pos. no.	Article designation	Article number	Quantity
Ring line V1	**1**	Hydraulic Module Shaft Corner	138039	4
	3	Hydr. T-coupling	138041	3
	63	Hydraulic Hose 2SN-DN08-FF		8
hydraulic unit	**53**	Hydraulic Pump RCS 4 x 190 bar, 380 – 460 V	109766	1
	61	Hydraulic Accumulate Piece RCS	112421	1

Tab. B6.01

Hydraulic Unit ACS-C 4x160

Assembly and commissioning of the hydraulic unit are not covered in these instructions.

Requirements:

- The hydraulic unit is set up.
- The power supply is connected.
- The wireless remote control is connected.
- The hydraulic unit is filled with hydraulic oil and vented.
- The user is familiar with the operation of the hydraulic unit.

Hydraulic unit manufacturer's documentation.

Main components

55	Hydraulic Pump ACS-C 4x160-18 CUL
56	Remote Control Unit ACS-C
58	Power Cable ACS-C CEE-32A-2m

Connections

1. Connect the hydraulic hoses of the ring line to the hydraulic connections AUX ZA (**55.4**) and AUX ZB (**55.5**).
2. Set the operating mode selector switch (**55.3**) to AUX.

(Fig. B7.01)

Control elements

- Emergency stop switch (**55.1**)
- Pump selector switch: 0/1 (**55.2**)
- Operating mode selector switch: Single/Interlink/AUX (**55.3**)
  → Operating mode: **AUX**

(Fig. B7.01b)

Remote control

- Emergency stop switch (**56.1**)
- Extend cylinder key (**56.2**)
- Retract cylinder key (**56.3**)

(Fig. B7.02)

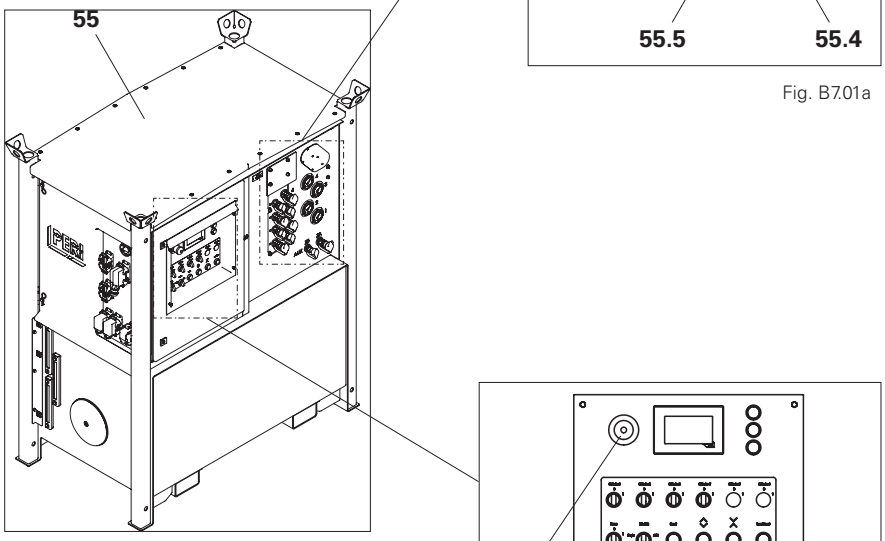


Fig. B7.01a

Fig. B7.01

Fig. B7.01b

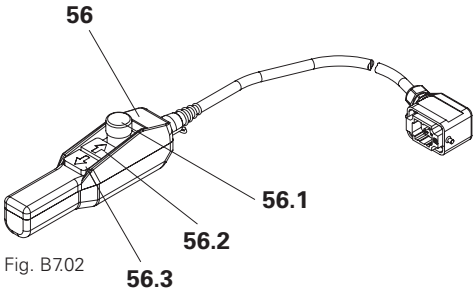


Fig. B7.02

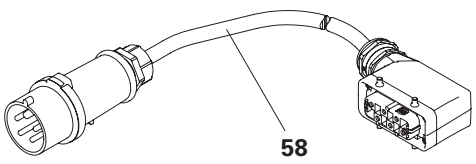


Fig. B7.03

Hydraulic system connection plan

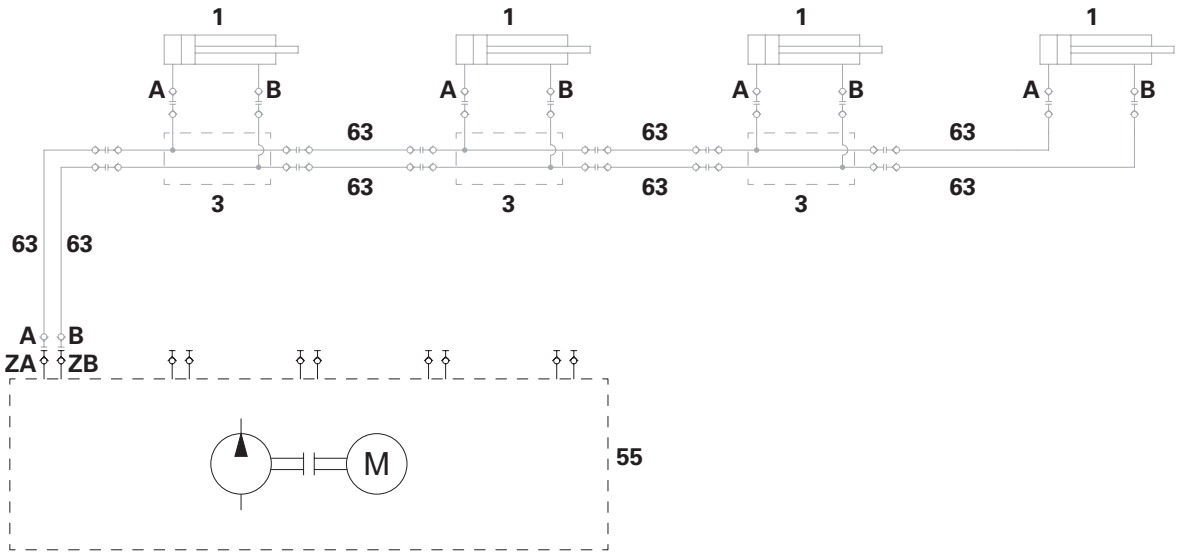


Fig. B7.04

List of components				
	Pos. no.	Article designation	Article number	Quantity
Ring line V1	**1**	Hydraulic Module Shaft Corner	138039	4
	3	Hydr. T-coupling	138041	3
	63	Hydraulic Hose 2SN-DN08-FF		8
hydraulic unit	**55**	Hydraulic Pump ACS-C 4x160-18 CUL	128667	1

Tab. B7.01

Hydraulic Unit VARIOKIT 8-cycles

Assembly and commissioning of the hydraulic unit are not covered in these instructions.

Requirements:

- The hydraulic unit is set up.
- The power supply is connected.
- The hydraulic unit is filled with hydraulic oil and vented.
- The user is familiar with the operation of the hydraulic unit.

Hydraulic unit manufacturer's documentation.

Main components

54 Adapter Cable RCS
59 Hydraulic Unit VARIOKIT 8-cycles
59.12 Bypass connection

Direct connections

1. Connect the hydraulic hoses of the ring line to a free hydraulic connection feed A (**59.4**) and hydraulic connection return B (**59.5**), e.g. connection 4.

(Fig. B8.01)

If all connections on the unit are in use, reconnect the hydraulic hoses for operation of the hydraulic modules.

Direct connection control elements

- Hand lever (**59.1**)
- CEE motor protection plug (**59.2**)

(Fig. B8.01)

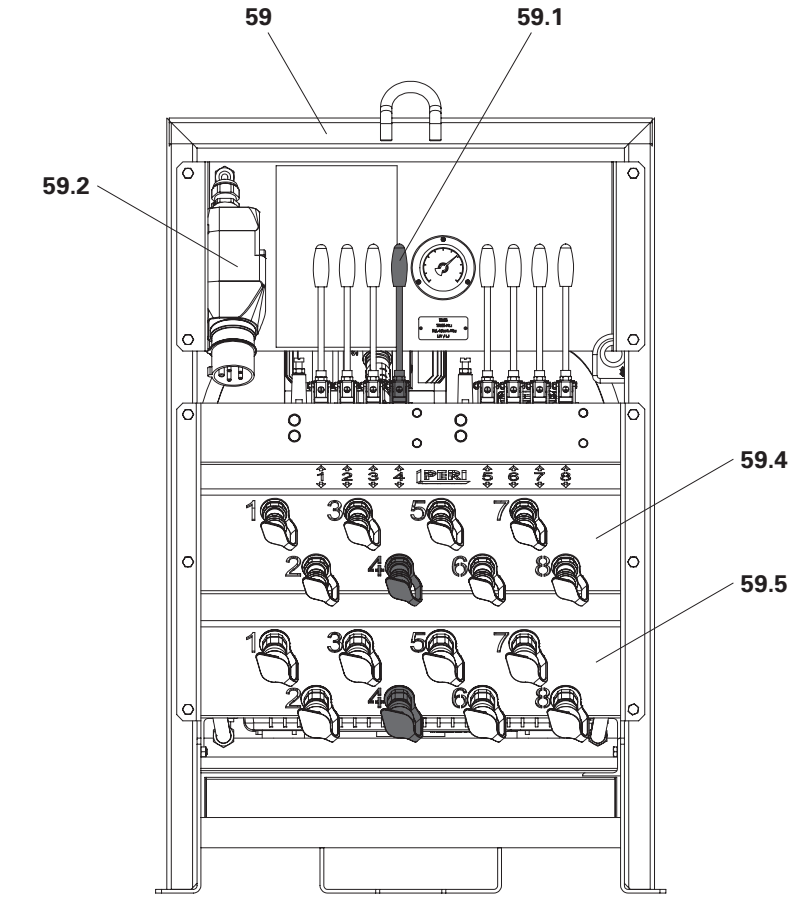


Fig. B8.01

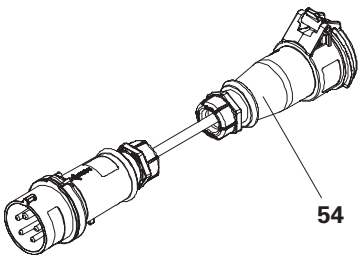


Fig. B8.02

Extending the hydraulic system

If all hydraulic connections are in use, fit an additional multi-way control valve. This is necessary if repositioning the hydraulic hoses for direct connection is not permitted.

Components

68	4-way multi-way control valve	1x
69	Threaded plug VSTI R 3/8-ED	7x
70	Male stud coupling X-GE 12PSR-ED	4x
71	Elbow stud X-EVW 12PS	2x
72	Drive Connector ACS	1x
73	Double nipple G3/8	1x
74	Sealing washer G3/8	2x
75	Attachment piece S12-G3/8	2x
76	Plug ISO 16028 DN10 R3/8IG	2x
77	Sleeve ISO 16028 DN10 R3/8IG	2x
85	Hydr. hose EN853-2SN-DN08 0.3 m	1x

Pre-assembly of the multi-way control valve

1. Close all unused connections of the multi-way control valve (**68**) with a screw plug (**69**).
2. Screw all components for connections **A**, **B**, **R** and **P** into the multi-way control valve (**68**).

(Fig. B8.03 + Fig. B8.04)

- The design with the 4-way multi-way control valve is merely an example. Other project-specific configurations are possible, e.g. with the 1-way multi-way control valve.
- Fig. B8.04 shows the 4-way multi-way control valve with corresponding hand lever (**68.1**) and pressure relief valve (**68.2**).

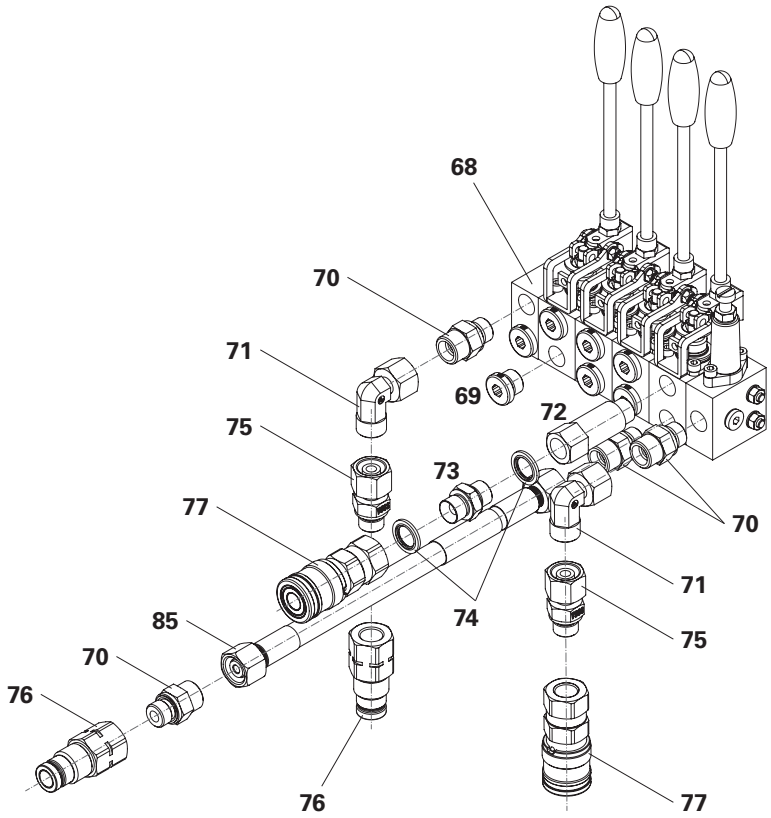


Fig. B8.03

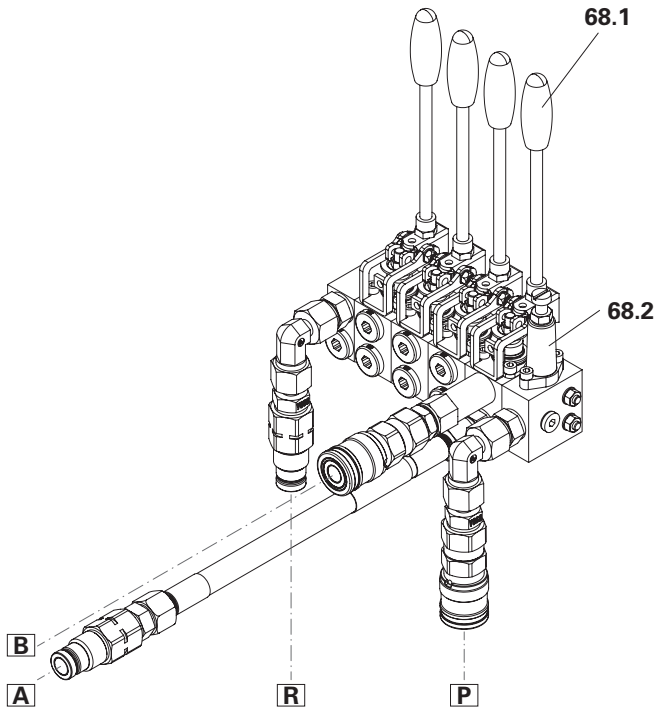


Fig. B8.04

Assembly of the multi-way control valve

Components

63	Hydraulic Hose 2SN-DN08-FF	2x

! Depressurise the hydraulic system.

1. Open the hydraulic unit.
2. Disconnect the bypass connection (**59.12**) on the hydraulic quick-coupler.

(Fig. B8.05)

3. Extend both hose ends **T** and **P** with a hydraulic hose (**63**).
   Select the length of the hydraulic hoses according to the mounting position of the 4-way multi-way control valve.
4. Route both hydraulic hoses **T** and **P** to the front and out of the hydraulic unit.
5. Connect the hydraulic hoses **T** and **P** to the hydraulic connections **R** and **P** of the multi-way control valve (**68**).

(Fig. B8.06)

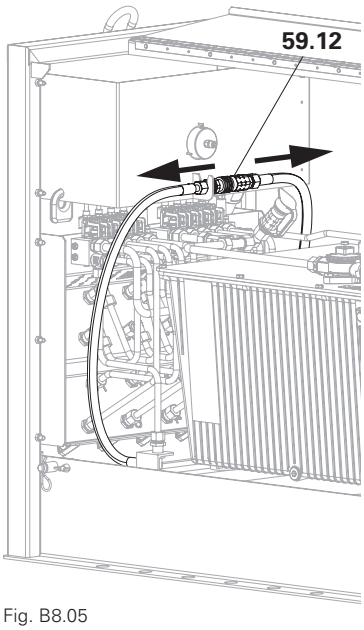


Fig. B8.05

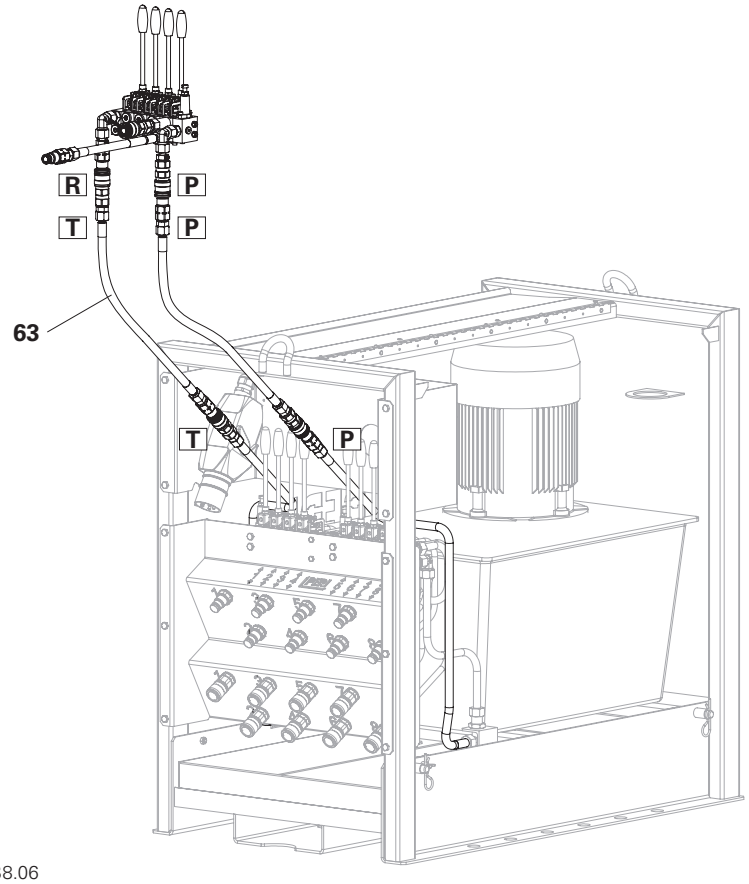


Fig. B8.06

Multi-way control valve connections

1. Connect the hydraulic hoses of the ring line to the hydraulic connections **A** and **B**.

(Fig. B8.07)

Multi-way control valve control elements

- Hand lever (**68.1**)

(Fig. B8.07)

Once the hydraulic unit has been converted, the additional components must be vented, see Section "Bleeding the offset connectors" on page 63.

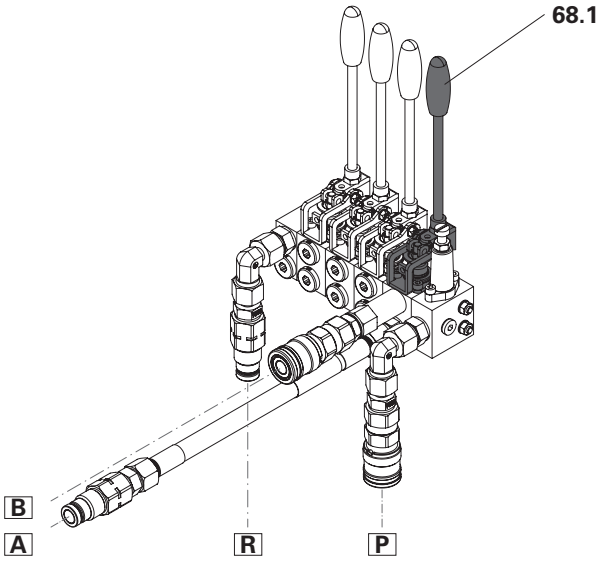


Fig. B8.07

Hydraulic system connection plan

Direct connection

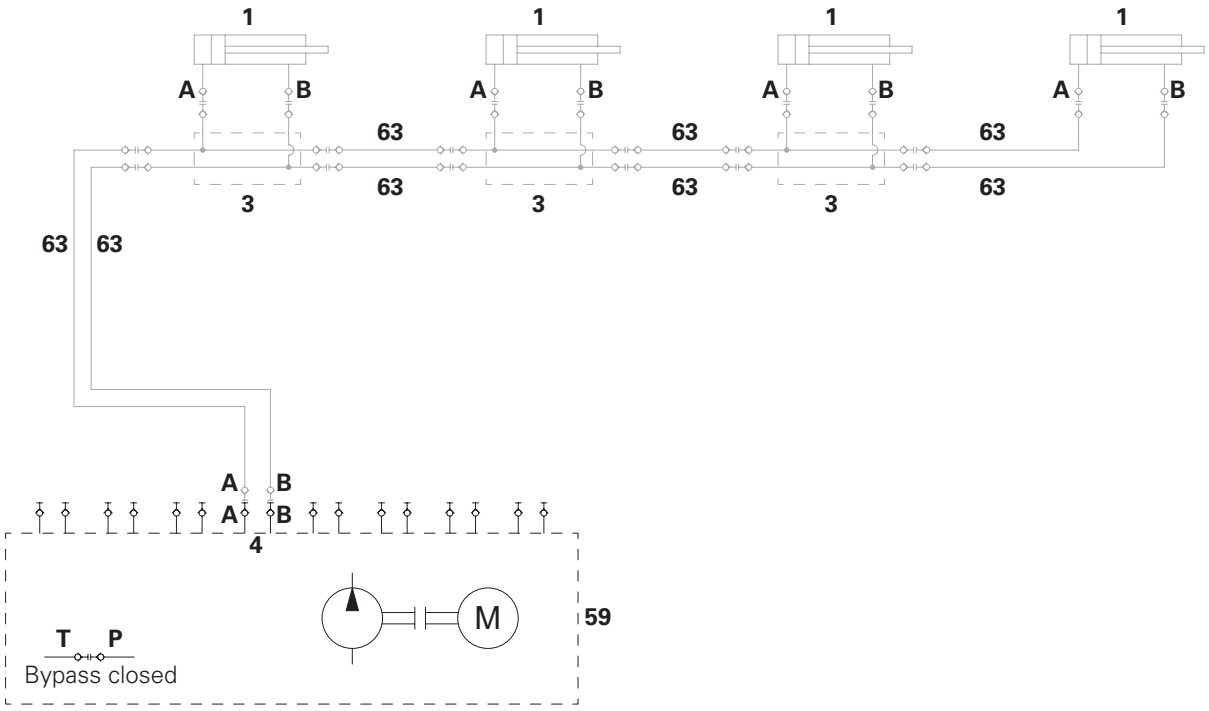


Fig. B8.08

List of components				
	Pos. no.	Article designation	Article number	Quantity
Ring line V1	**1**	Hydraulic Module Shaft Corner	138039	4
	3	Hydr. T-coupling	138041	3
	63	Hydraulic Hose 2SN-DN08-FF		8
hydraulic unit	**59**	Hydraulic Unit VARIOKIT 8-cycles	126852	1

Tab. B8.01

Connection with
4-way multi-way control valve

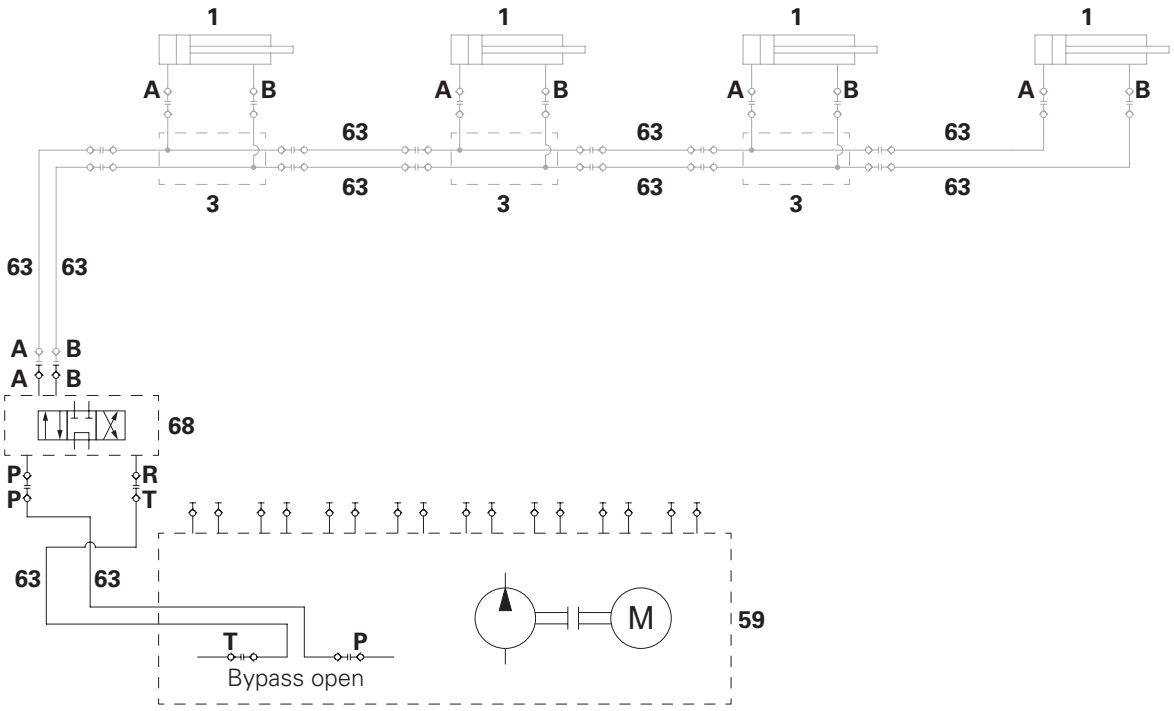


Fig. B8.09

List of components				
	Pos. no.	Article designation	Article number	Quantity
Ring line V1	**1**	Hydraulic Module Shaft Corner	138039	4
	3	Hydr. T-coupling	138041	3
	63	Hydraulic Hose 2SN-DN08-FF		8
hydraulic unit	**59**	Hydraulic Unit VARIOKIT 8-cycles	126852	1
	63	Hydraulic Hose 2SN-DN08-FF		2
	68	4-way multi-way control valve	128338	1
	69	Threaded plug VSTI R 3/8-ED	057091	7
	70	Male stud coupling X-GE 12PSR-ED	051750	4
	71	Elbow stud X-EVW 12PS	051748	2
	72	Drive Connector ACS	706464	1
	73	Double nipple G3/8	128994	1
	74	Sealing washer G3/8	128995	2
	75	Attachment piece S12-G3/8	129013	2
	76	Plug ISO 16028 DN10 R3/8IG	128992	2
	77	Sleeve ISO 16028 DN10 R3/8IG	128993	2
	85	Hydr. hose EN853-2SN-DN08 0.3 m	129587	1

Tab. B8.02

Hydraulic Pump 2-fold

Assembly and commissioning of the hydraulic unit are not covered in these instructions.

Requirements:

- The hydraulic unit is set up.
- The power supply is connected.
- The wireless remote control is connected.
- The hydraulic unit is filled with hydraulic oil and vented.
- The user is familiar with the operation of the hydraulic unit.

Hydraulic unit manufacturer's documentation.

Main components

79 Hydraulic Pump 2-fold 400V/50Hz
83 Remote control for Hydraulic Unit 2-fold ACS

Connections

- 79.1 Control block
- 79.2 Feed A1
- 79.3 Feed A2
- 79.4 Return B

(Fig. B9.01)

Control elements

- Extend hydraulic cylinder (**83.3**)
- Retract hydraulic cylinder (**83.4**)
- Switch on (**83.5**)
- Switch off and emergency stop (**83.6**)

(Fig. B9.02)

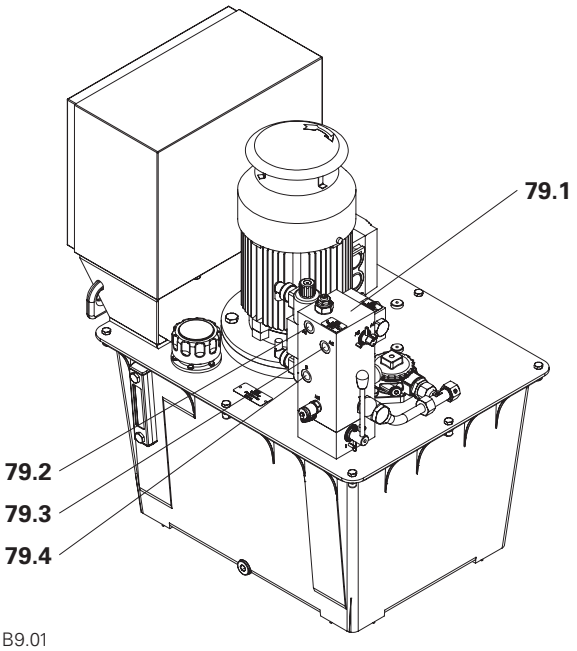


Fig. B9.01

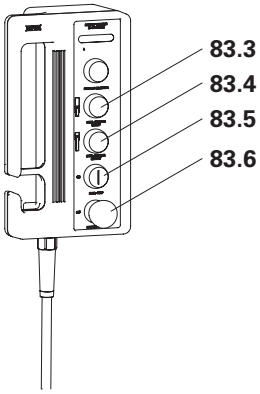


Fig. B9.02

Converting the hydraulics

Components

62	Hydr. T-Piece 2SN-DN08-FF	1x
73	Double nipple G3/8	3x
74	Sealing washer G3/8	6x
76	Plug ISO 16028 DN10 R3/8IG	2x
77	Sleeve ISO 16028 DN10 R3/8IG	1x

Pre-assembly of the control block

1. Screw all components for connections **A1**, **A2** and **B** into the control block (**79.1**).

(Fig. B9.03)

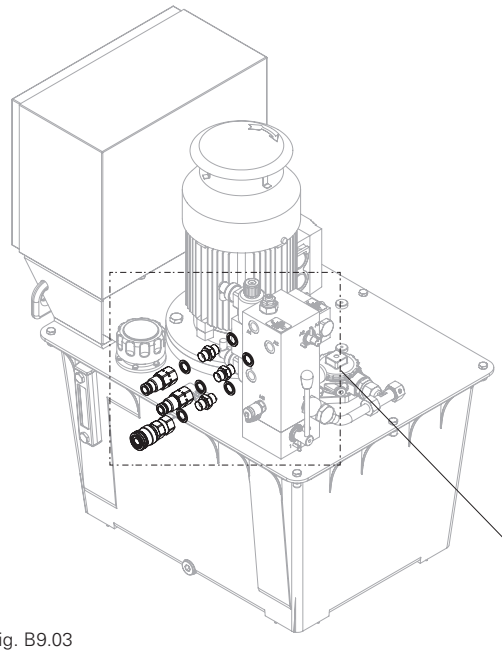


Fig. B9.03

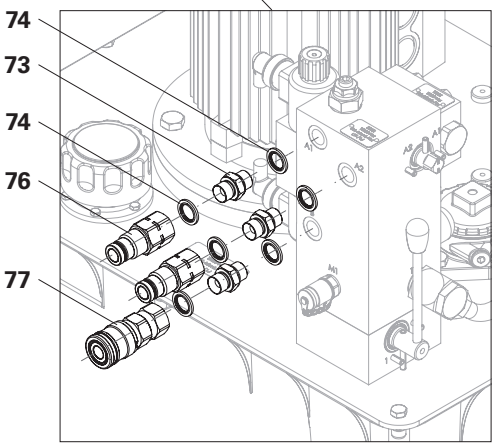


Fig. B9.03a

Assembly

1. Connect hydraulic connection A1 (**79.2**) and hydraulic connection A2 (**79.3**) with the hydr. T-piece (**62**).

(Fig. B9.04)

Connections

1. Connect the hydraulic hoses of the ring line to the hydraulic connections **A** and **B**.

(Fig. B9.04)

Once the hydraulic unit has been converted, the additional components must be vented, see Section "Bleeding the offset connectors" on page 63.

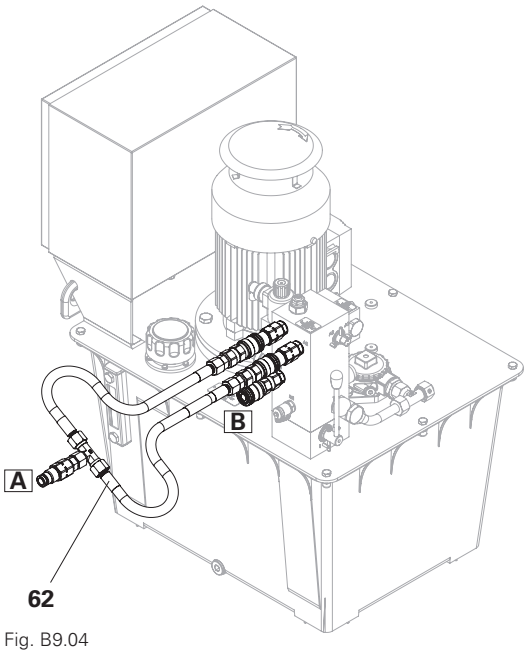


Fig. B9.04

Hydraulic system connection plan

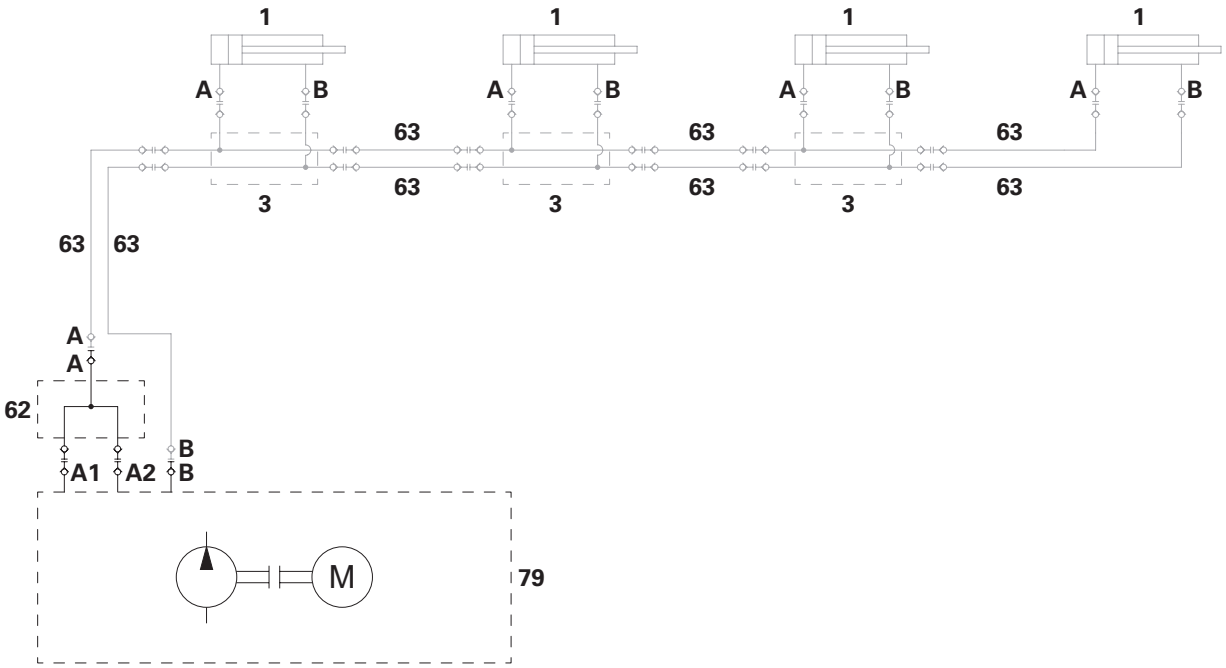


Fig. B9.05

List of components				
	Pos. no.	Article designation	Article number	Quantity
Ring line V1	**1**	Hydraulic Module Shaft Corner	138039	4
	3	Hydr. T-coupling	138041	3
	63	Hydraulic Hose 2SN-DN08-FF		8
hydraulic unit	**62**	Hydr. T-Piece 2SN-DN08-FF	129423	1
	73	Double nipple G3/8	128994	3
	74	Sealing washer G3/8	128995	6
	76	Plug ISO 16028 DN10 R3/8IG	128992	2
	77	Sleeve ISO 16028 DN10 R3/8IG	128993	1
	79	Hydraulic Pump 2-fold 400V/50Hz	051739	1

Tab. B9.01

General information



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

Note

- For safe handling of the hydraulic oil, follow the instructions that are included in the safety data sheet of the hydraulic oil selected for use.
- Avoid any bodily contact with the hydraulic oil.
- Ensure that the hydraulic oil does not come into contact with the structure.
- For information on cleaning and correct disposal, see the safety data sheet of the hydraulic oil selected for use.
- Do not mix hydraulic oils of different quality.

Recommended hydraulic oil

- At operating temperatures of +15 °C to +85 °C:
  PERI hydraulic oil HVLP46
  20 litres: Article no. 057376
  210 litres: Article no. 131277
- At operating temperatures of 0 °C to +65 °C:
  PERI hydraulic oil HVLP22
  20 litres: Article no. 131274
  210 litres: Article no. 131275
- At operating temperatures of -15 °C to +40 °C:
  PERI hydraulic oil HVLP10
  20 litres: Article no. 131270
  210 litres: Article no. 131273
- For operating temperatures of -20 °C to -30 °C:
  – Shell Tellus T32
  – AVIA Syntofluid PE-B 30

- The hydraulic oil used must be free of water and dirt.
- Avoid overfilling.
- The hydraulic cylinders must always be fully retracted when filling.
- The oil tank and filling filter must be free of water and dirt.
- Filling must be carried out using a filling filter (filling sieve, filling funnel with sieve insert or ultra-fine filter). Ideally, use the CE filter pump for filling.
- All information applies to
  – initial filling,
  – changing the hydraulic oil,
  – topping up the hydraulic oil.

- Refer to the maintenance card in the annex.

Checking the oil temperature and oil level

- The oil level can vary depending on the type, quantity and size of the consumer.
- The operating temperature increases with an increase in the outside temperature.
- Recommended operating temperature: 0 °C to 45 °C (average temperature of the hydraulic oil in the tank).
- With low temperatures, warm up hydraulic oil by flushing the system (at least 20 °C) in order to reach the required start viscosity.
- Oil level too low
  – the operating temperature increases,
  – air inclusions occur,
  – the hydraulic cylinder may extend jerkily.
- Keep the oil level indicator clean.
- Monitor the oil level at regular intervals.
- Determine and eliminate the cause of excessive oil consumption.
- Regularly check the temperature of the electric motor and hydraulic oil during operation.

Note

If the oil temperature exceeds 70 °C, switch off the hydraulic unit.
Identify and eliminate the cause of overheating (e.g. no pressureless flow, outside temperature too high).

The hydraulic system must be bled to ensure that the system functions correctly.
This is necessary:
- for every initial start-up.
- after replacing hoses or hydraulic cylinders.
- after maintenance tasks.
- in the event of synchronisation problems.

Danger
Risk of crushing through uncontrolled movement of the hydraulic cylinders!
⇒ Move all hand levers to the centre position.
⇒ Do not touch moving components.
⇒ Leave danger zones.

Warning
If the hydraulic cylinder is not completely bled, this can lead to uncontrolled and jerky movements!
As a result, people can become trapped and seriously injured.
⇒ Keep clear of moving parts when operating the hydraulic system.

Note
- When topping up the hydraulic oil, all hydraulic cylinders must be completely retracted otherwise the hydraulic unit may overflow.
- The oil level in the hydraulic unit must be regularly checked and topped up as required.

Bleeding the hydraulic hoses

Components

63	Hydraulic Hose 2SN-DN08-FF	1x

Bleeding

1. Connect the hydraulic hose to connection **A** and **B**of the hydraulic unit.
2. Switch on the hydraulic unit.
3. Extend the hydraulic cylinder and flush the hydraulic line for approx. one minute.
4. Retract the hydraulic cylinder and flush the hydraulic line for approx. one minute.

→ The sound of blubbering in the oil tank indicates the bleeding procedure is taking place.

5. Switch off the hydraulic unit.
6. Check the level in the oil tank and top up if necessary.
7. Repeat the procedure for all other hydraulic hoses.

(Fig. B10.01)

Couple all hydraulic hoses in series and bleed for approx. five minutes.

Hydraulic system connection plan

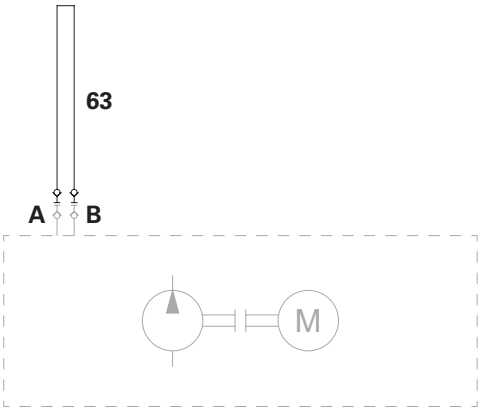


Fig. B10.01

Bleeding the hydraulic T-coupling

- Only use bled hydraulic hoses.
- Bleed the hydraulic T-couplings one by one.

Components

3	Hydr. T-coupling 2SN-DN08-FF	1x
63	Hydraulic Hose 2SN-DN08-FF	4x

Bleeding

1. Fit the connections (**3.3 + 3.4**) to connections **A** or **B** of the hydraulic unit.
2. Fit the connections (**3.1 + 3.2**) with a short hydraulic hose (**63**).
3. Switch on the hydraulic unit.
4. Extend the hydraulic cylinder and flush the hydraulic T-coupling for approx. one minute.
5. Retract the hydraulic cylinder and flush the hydraulic T-coupling for approx. one minute.

→ The sound of blubbering in the oil tank indicates the bleeding procedure is taking place.

6. Switch off the hydraulic unit.
7. Disconnect the hydraulic hoses (**63**).
8. Check the level in the oil tank and top up if necessary.
9. Repeat the procedure for all other hydraulic T-couplings.

(Fig. B10.02 + Fig. B10.03)

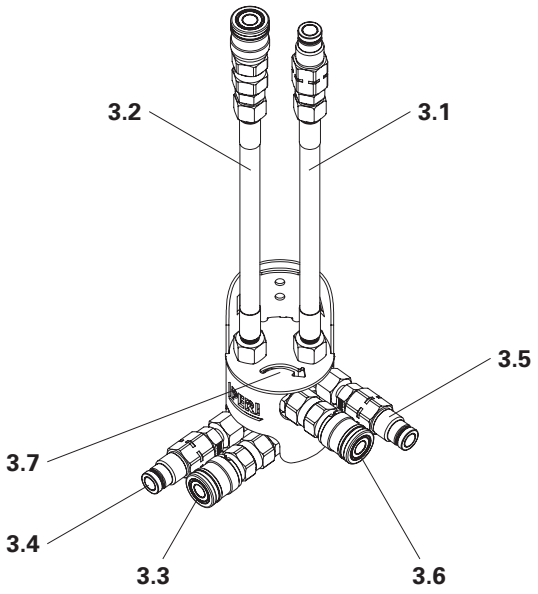


Fig. B10.02

Hydraulic system connection plan

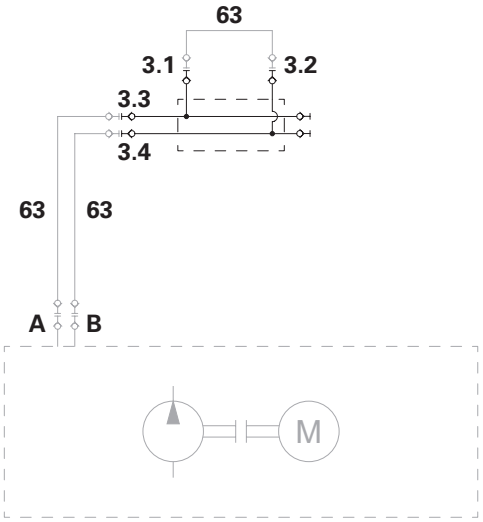


Fig. B10.03

Bleeding the hydraulic branch

- Only use bled hydraulic hoses.
- Bleed the hydraulic branches one by one.

Components

60	Striking module hydraulic branch	1x
63	Hydraulic Hose 2SN-DN08-FF	4x

Bleeding

1. Fit the connections (**60.3 + 60.4**) to connections **A** or **B** of the hydraulic unit.
2. Fit the connections (**60.1 + 60.2**) with a short hydraulic hose (**63**).
3. Fit the connections (**60.5 + 60.6**) with a short hydraulic hose (**63**).
4. Open the ball valve (**60.8**).
5. Switch on the hydraulic unit.
6. Extend the hydraulic cylinder and flush the hydraulic branch for approx. one minute.
7. Retract the hydraulic cylinder and flush the hydraulic branch for approx. one minute.

→ The sound of blubbering in the oil tank indicates the bleeding procedure is taking place.

8. Switch off the hydraulic unit.
9. Disconnect the hydraulic hoses (**63**).
10. Check the level in the oil tank and top up if necessary.
11. Repeat the procedure for all other hydraulic branches.

(Fig. B10.04 + Fig. B10.05)

Ball valve opened

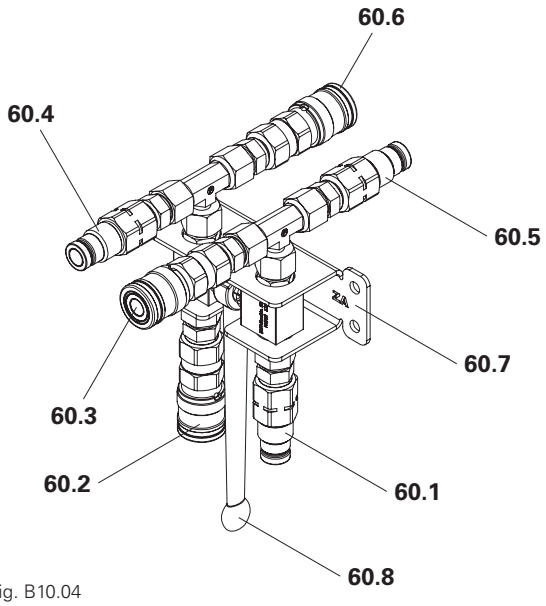


Fig. B10.04

Hydraulic system connection plan

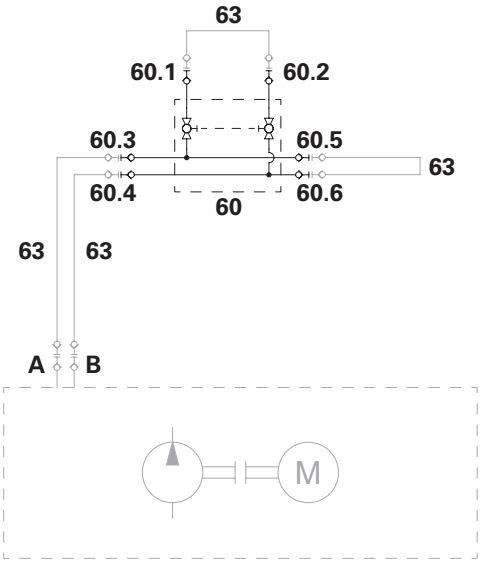


Fig. B10.05

Bleeding the offset connectors

Bleed the additional components fitted to the hydraulic unit, see "Converting the hydraulics" on page 41, "Converting the hydraulics" on page 44, "Converting the hydraulics" on page 55.

- Only use bled hydraulic hoses.

Components

63 Hydraulic Hose 2SN-DN08-FF	1x

Bleeding

1. Connect the hydraulic hose to connection **A** and **B**of the hydraulic unit.
2. Switch on the hydraulic unit.
3. Extend the hydraulic cylinder and flush the hydraulic line for approx. five minutes.
   → The sound of blubbering in the oil tank indicates the bleeding procedure is taking place.
4. Switch off the hydraulic unit.
5. Check the level in the oil tank and top up if necessary.
6. Repeat the procedure for all other hydraulic hoses.

(Fig. B10.06)

Hydraulic system connection plan

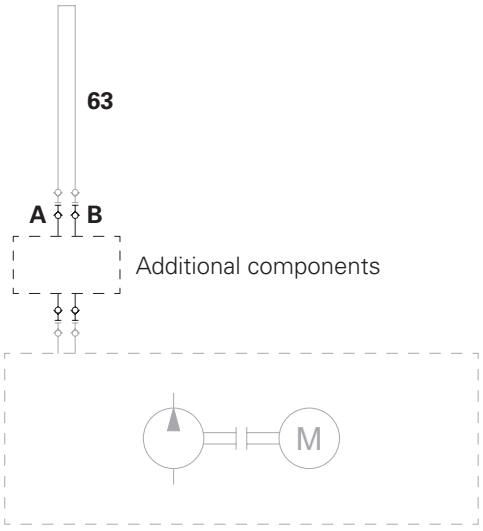


Fig. B10.06

Bleeding the hydraulic system

Once the individual components have been bled, put the entire system into operation. The hydraulic modules themselves are supplied already filled with oil and do not need to be bled.

Requirements

- The hydraulic unit is filled with hydraulic oil.
- All Hydraulic Module Shaft Corners have been installed.
- All hydraulic hoses have been correctly connected.

- Only use bled hydraulic hoses.

Components

63	Hydraulic Hose 2SN-DN08-FF	2x

Bleeding

1. Connect the ring line to the hydraulic module.
2. Check the level in the oil tank and top up if necessary.
3. Extend and retract the hydraulic cylinder 10x.
4. Switch off the hydraulic unit and secure it against reactivation.
5. Check components and connections for external leaks.
6. Fix flapping lines and hoses.

(Fig. B10.07 + Fig. B10.08)

- Check the oil level.
- Has the securing pin been removed and fitted in the lowest hole of the tension strut? See “Removing the securing pins” on page 25.

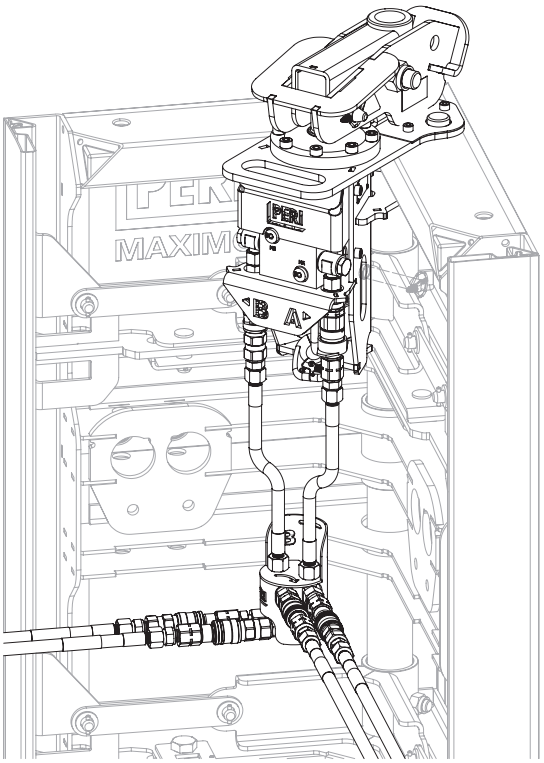


Fig. B10.07

Shaft corner in striking position

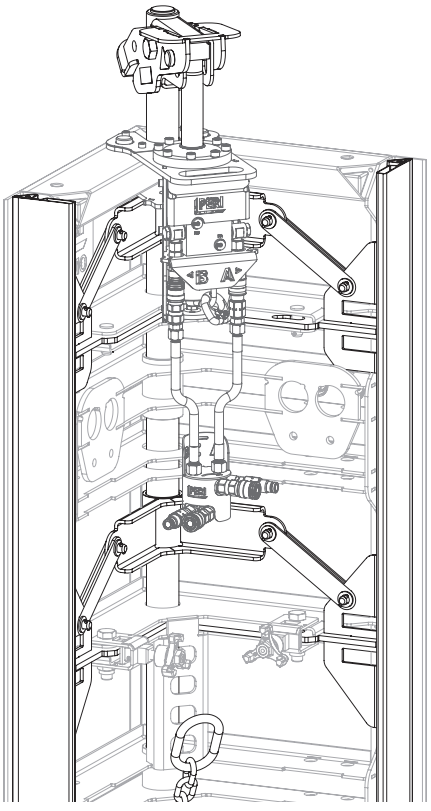


Fig. B10.08a

Shaft corner in concreting position

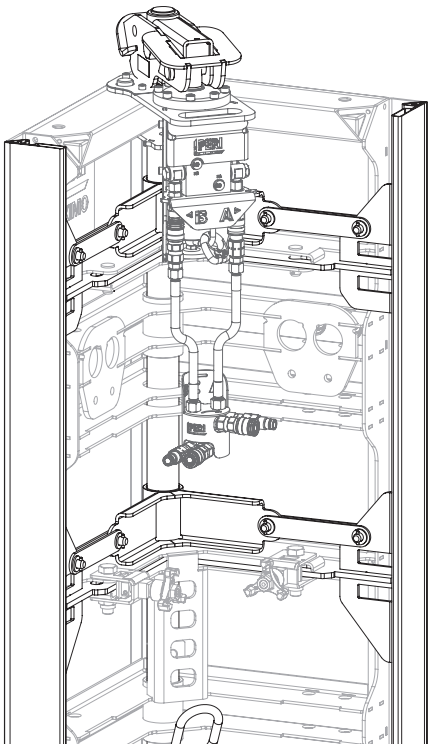


Fig. B10.08b

Commissioning in low temperatures

In temperatures below 0 °C, warm up the hydraulic oil by flushing the system. As a result, the hydraulic oil will reach the required viscosity.

Warming up the hydraulic oil
The hydraulic cylinders are retracted.
1. Retract the hydraulic cylinders and continue the process until a temperature of 20 °C is reached.
2. Check that all hydraulic cylinders are running uniformly.

- For temperatures below -20 °C, use hydraulic oil with a low pour point (e.g. Shell Tellus T32 or AVIA Syntofluid PE-B 30).
- Do not use the hydraulic unit in temperatures below -30 °C.

Commissioning after a long downtime period

- Thoroughly clean and rinse preserved equipment before commissioning. Any remaining preservation agents can block the valves.
- Drain condensation water from the hydraulic tank. For this, drain the hydraulic oil.
- After a long downtime period, check hydraulic oil for usability and change if necessary.

The same measures apply for re-commissioning as for initial commissioning.

At low temperatures of < 10 °C, warm up hydraulic oil by flushing the system in order to reach the required start viscosity.

Concluding work

Assembly
1. Switch off the hydraulic unit and secure it against reactivation.
2. Disconnect the ring line from the hydraulic unit.
   This step is not necessary for the Hydraulic Pump RCS MAX if it is installed in the internal formwork.

→ The internal formwork is ready for use.

Note
To secure the internal formwork area when upright shaft formwork is present, install a guardrail.
PERI recommends installing the PROKIT EP 110 Safety System.

Safety instructions

These Assembly Instructions describe the application using upright shaft formwork with internal dimensions of 2.40 x 2.40 x 3.30 m as an example. The shaft formwork is moved by crane. Alternatively, the shaft formwork can be integrated into a climbing system. This means that the shaft formwork does not need to be moved by crane.

Warning

Risk of crushing due to movement of the hydraulic cylinders, attachments and the mechanics of the shaft corner!

⇒ Do not touch moving components.
⇒ Keep clear of moving parts when operating the hydraulic system.
⇒ Leave danger zones.

Note

Do not use the handle on the hydraulic module as an attachment point. (Fig. C1.02)

The lifting speed of the hydraulic cylinders varies depending on the hydraulic unit used.

Flying in the internal formwork

- Section C describes how the internal formwork is used when the Hydraulic Pump RCS MAX is attached to the internal formwork.
- If a different hydraulic unit is used, the ring line must also be connected to the hydraulic unit.

Assembly

1. Hook the 4-sling lifting gear into the crane eyes (**2.1**) and set the internal formwork down at the concreting position.
2. Remove the crane lifting gear.

(Fig. C1.01)

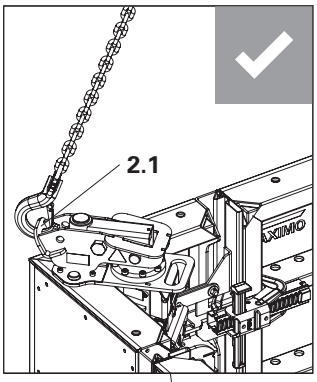


Fig. C1.01a

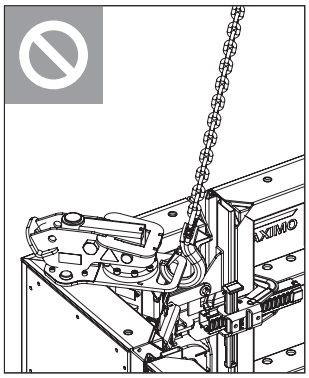


Fig. C1.02

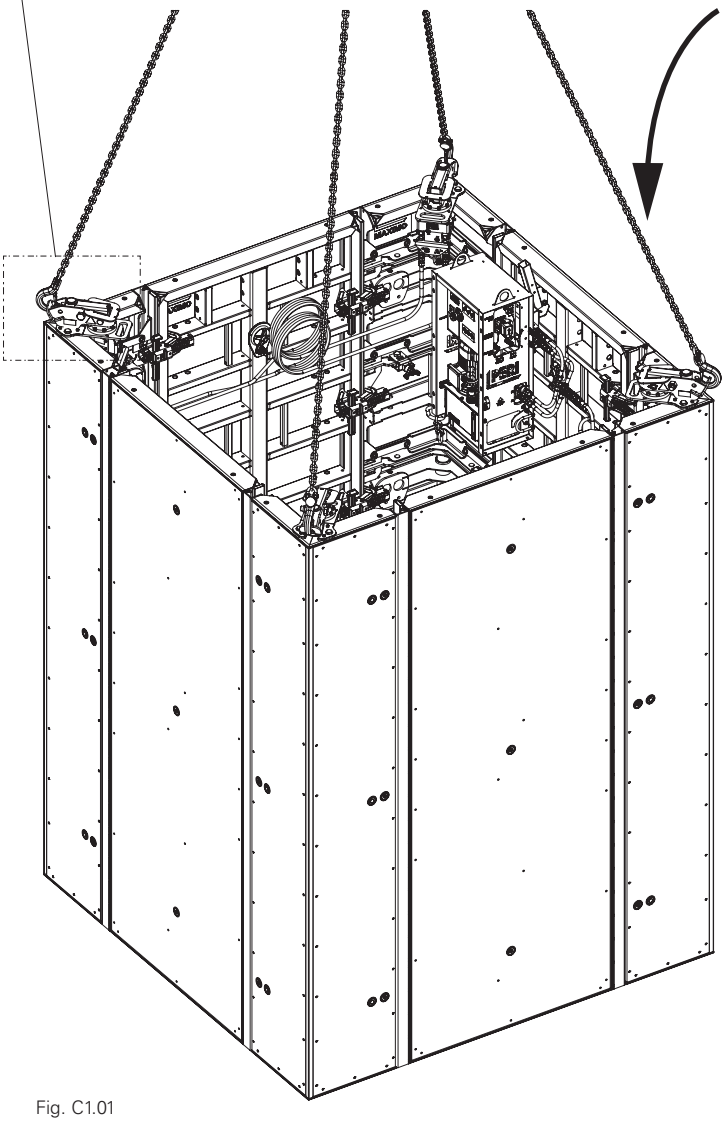


Fig. C1.01

Concreting position

Shuttering

1. Switch on the hydraulic unit and retract the hydraulic cylinder.
   → The shaft corners move into the concreting position.

(Fig. C1.03)

2. Switch off the hydraulic unit and secure it against reactivation.
3. Align and lock the shaft corners flush with the positioning waler (**23.5**). (Fig. C1.04)
4. Align the shaft formwork.

Use the Ratchet MX 15 for tightening and loosening. (Fig. C1.05)

Subsequent work steps

1. Carry out the reinforcement work.
2. Close the formwork and tie.
3. Concreting.

Cover the hydraulic modules and striking adapters on the upper side and protect them from the influence of concrete.

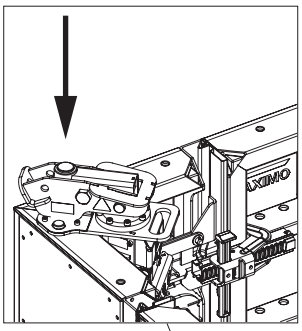


Fig. C1.03a

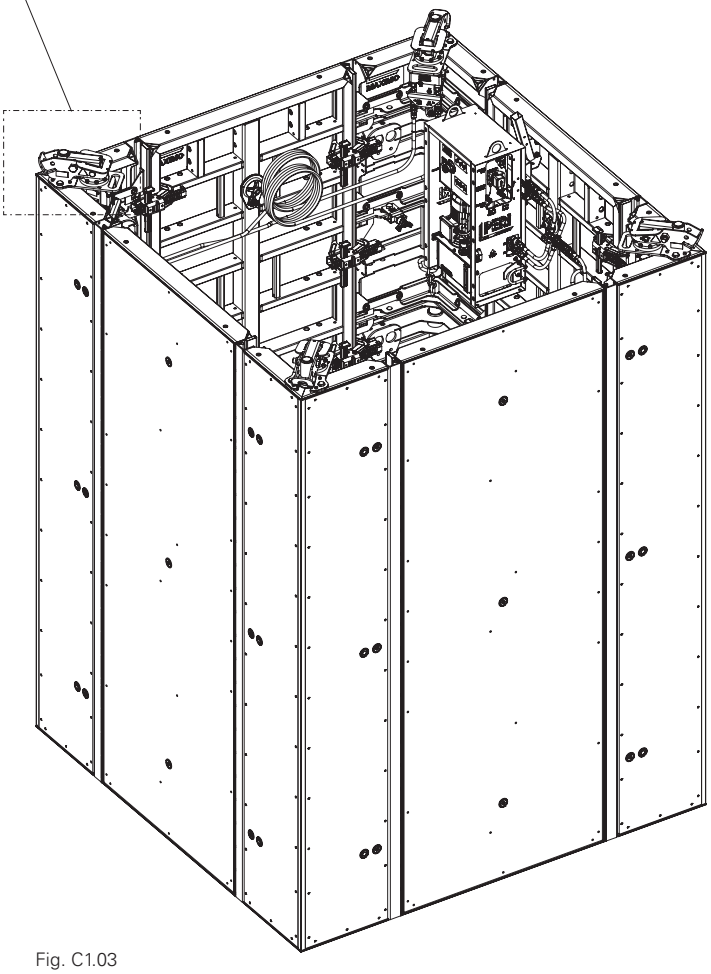


Fig. C1.03

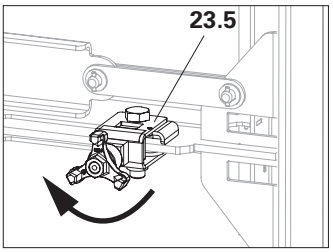


Fig. C1.04

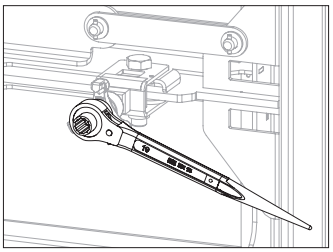


Fig. C1.05

Deshuttering position

Warning

The internal formwork is under considerable mechanical tension during deshuttering. Risk of injury due to jerky movement of the shaft corners!
⇒ Do not touch the components.
⇒ Leave danger zones.

Deshuttering

1. Remove the tie rods.
2. Release the positioning waler (**23.5**). (Fig. C2.02)
3. Switch on the hydraulic unit and extend the hydraulic cylinder.
   → The shaft corners move into the striking position.
4. Switch off the hydraulic unit and secure it against reactivation.

(Fig. C2.01)

Use the Ratchet MX 15 for tightening and loosening. (Fig. C2.03)

Adherent corner

1. In case of an adherent corner, move the internal formwork into the concreting position.
2. Brace the shaft corner against the concrete or the external formwork diagonally to the adherent corner.
3. Move the internal formwork into the striking position.
   → The adherent corner detaches from the concrete.
4. Remove the tensioning tool.

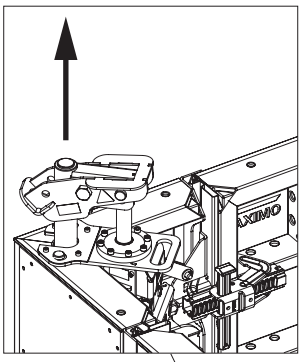


Fig. C2.01a

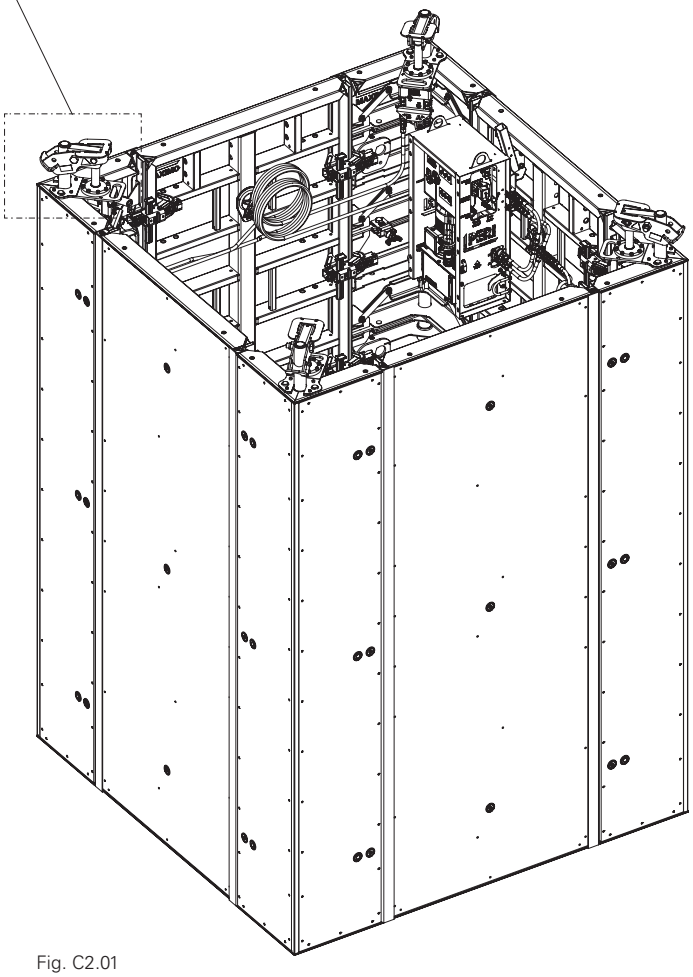


Fig. C2.01

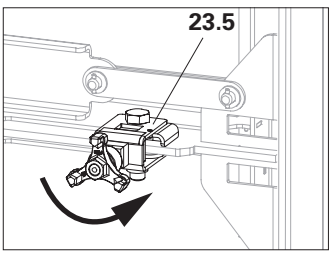


Fig. C2.02

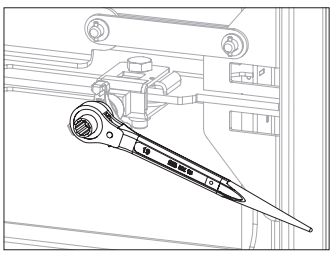


Fig. C2.03

Flying out the internal formwork

Warning

Risk of serious or even fatal injuries due to overloading of the attachment points when lifting out the internal formwork!

⇒ Do not tilt the internal formwork when lifting.
⇒ Do not stand under suspended loads.
⇒ Leave danger zones.

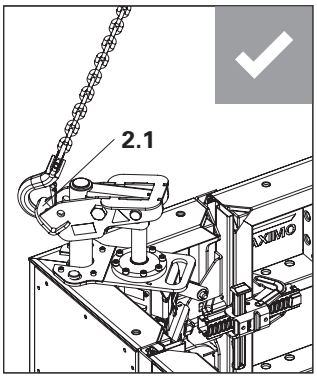


Fig. C2.04a

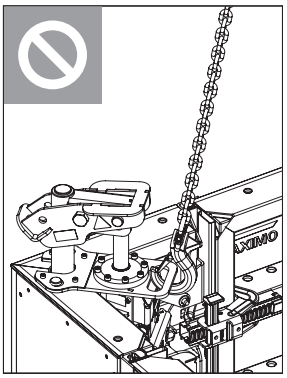


Fig. C2.05

Note

Do not use the handle on the hydraulic module as an attachment point.
(Fig. C2.05)

Assembly

1. Hook the 4-sling lifting gear into the crane eyes (**2.1**) and fly out the internal formwork.
2. Set the internal formwork down safely on the assembly area and remove the crane lifting gear.

(Fig. C2.04)

Subsequent work steps

1. Clean the formwork elements, check for damage and spray with concrete release agent for the next concreting section.

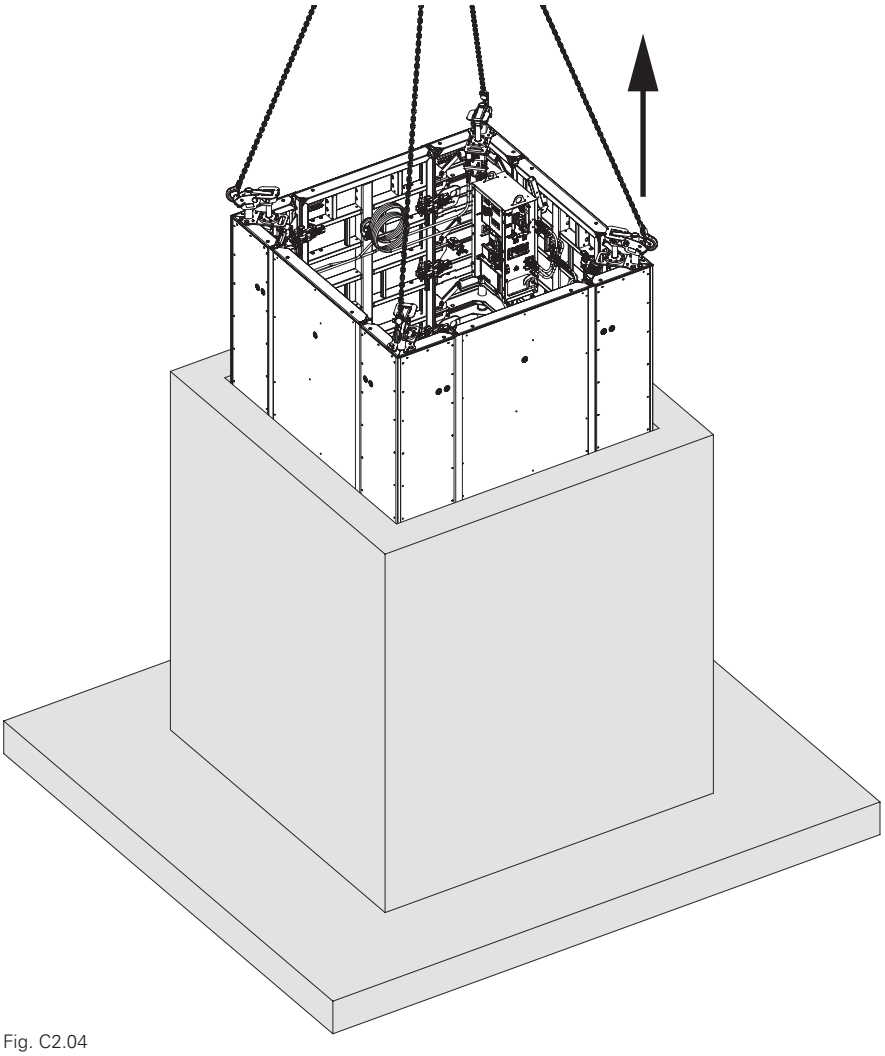


Fig. C2.04

Decoupling the hydraulic cylinder

In the event of a malfunction, hydraulic failure or power failure, the shaft corner can be used manually. To do this, decouple the hydraulic drive from the mechanics of the shaft corner.

Components

114 Lever

Assembly

1. Remove the piston rod connecting bolt (**2.4**).
2. Insert the connecting bolt into the parking position (**2.8**) of the rocker and secure it with a hinged pin.

(Fig. C3.01)

If the piston rod (**1.9**) is not fully retracted, carry out the following additional work steps. This is only necessary if the unit is to be switched on again immediately afterwards and replacement or repair cannot be carried out immediately.

3. Disconnect the hydraulic T-coupling (**3**) from the Hydraulic Module Shaft Corner (**1**).
4. Remove the frame profile connecting bolt (**1.2**).
5. Remove the Hydraulic Module Shaft Corner (**1**).
6. Insert the frame profile connecting bolt (**1.2**) into the Hydraulic Module Shaft Corner and secure it with a hinged pin.

(Fig. C3.02)

→ The mechanics of the shaft corner are decoupled from the hydraulic cylinder and can be moved with the lever (**114**).

7. Repeat steps 1 – 6 for all other shaft corners.

Subsequent work steps

See the Instructions for Assembly and Use of the relevant formwork system.

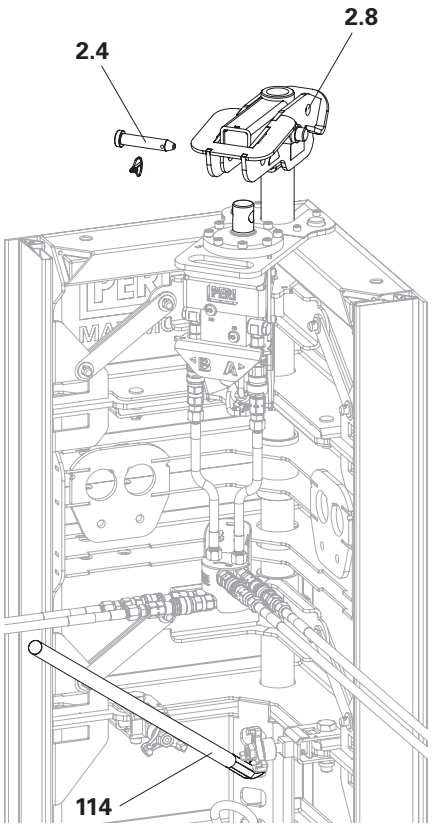


Fig. C3.01

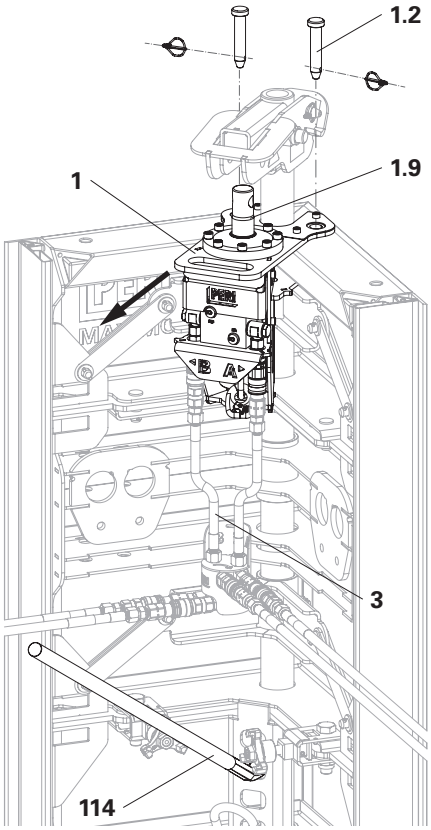


Fig. C3.02

D1 Dismantling the hydraulic system

General information



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

- For safe handling of the hydraulic oil, follow the instructions that are included in the safety data sheet of the hydraulic oil selected for use.
- Avoid any bodily contact with the hydraulic oil.
- Ensure that the hydraulic oil does not come into contact with the structure.
- For information on cleaning and correct disposal, see the safety data sheet of the hydraulic oil selected for use.

Removing the hydraulic hoses

Warning

Hydraulic systems are under very high pressure!
When disconnecting the hydraulic lines, hydraulic oil can leak uncontrollably.

- Risk of eye injury.
  - ⇒ Before disconnecting the hydraulic lines, switch off and depressurise the hydraulic system.
  - ⇒ Wear safety goggles.
- Risk of fouling.
  - ⇒ Wear personal protective equipment.
  - ⇒ Thicken spilled hydraulic oil immediately with oil binder and mop it up.

Dismantling

1. Retract the hydraulic cylinder completely.
2. Switch off the hydraulic unit.
3. Disconnect the hydraulic unit from the mains.
4. Disconnect the hydraulic hoses from the hydraulic unit.
5. Disconnect all of the hydraulic hoses of the ring line.
6. Disconnect the hydraulic T-couplings from the Hydraulic Module Shaft Corners.
7. Fit all quick-couplers with protective caps or couple them together.
8. If necessary, couple the bypass line together in the hydraulic unit.
9. Roll up all hydraulic hoses, tie them together and sort by length.
10. Place the hydraulic hoses in the transport container provided.

D1 Dismantling the hydraulic system

Removing the Hydraulic Pump RCS MAX

Dismantling

1. Disconnect the hydraulic unit from the mains.
2. Attach the hydraulic unit to the crane lifting gear.
3. Unbolt the hydraulic unit from the formwork element (**4.1 + 4.2**) and fly it out.

(Fig. D1.01)

4. Remove the hydraulic and mechanical attachments.
   Restore the hydraulic unit to its original condition.
5. Have empty hydraulic oil canisters at the ready.
6. Drain the hydraulic oil completely.
7. Stack the hydraulic unit in the transport crate provided and secure it to prevent it from sliding away.

- Store or dispose of the hydraulic oil in accordance with the applicable environmental regulations.

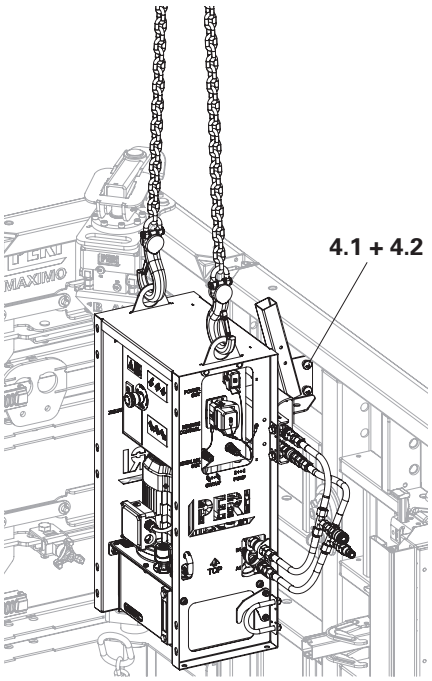


Fig. D1.01

Removing the hydraulic unit

Dismantling

1. Disconnect the hydraulic unit from the mains.
2. Remove the hydraulic and mechanical attachments, if necessary.
   Restore the hydraulic unit to its original condition.
3. Have empty hydraulic oil canisters at the ready.
4. Drain the hydraulic oil completely.
5. Attach the hydraulic unit to the crane lifting gear.
6. Stack the hydraulic unit in the transport crate provided and secure it to prevent it from sliding away.

- Store or dispose of the hydraulic oil in accordance with the applicable environmental regulations.

D2 Dismantling the shaft corners

Safety instructions

Danger

Heavy moving components can fall down or overturn!
During assembly, there is a risk of hands and other body parts being crushed.
⇒ Do not stand under suspended loads.
⇒ Use guide ropes when moving components.
⇒ Maintain an appropriate safety distance.
⇒ Do not stand between moving elements.

Note

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

- Place formwork elements and assemblies on squared timbers to avoid damage to the components.
- Have a sufficiently large disassembly area ready.

Instructions for Assembly and Use:
- MAXIMO MX 15
  Panel Formwork 270 | 330
- MAXIMO MX 18
  Panel Formwork 270 | 330
- TRIO Panel Formwork

Removing the internal formwork

Dismantling

1. Attach the first half shell to the crane, temporarily support the second half shell if necessary.
2. Remove the Alignment Couplers BFD and set down the first half shell.
3. Set down the second half shell.
4. Attach the Formwork Element MX to the crane.
5. Remove the Alignment Couplers BFD and detach the Formwork Element MX from the Shaft Corner MXSE.
6. Set down Formwork Element MX.
7. Repeat steps 4 – 6 for all other Formwork Elements MX and Shaft Corners MXSE.

(Fig. D2.01 + Fig. D2.02)

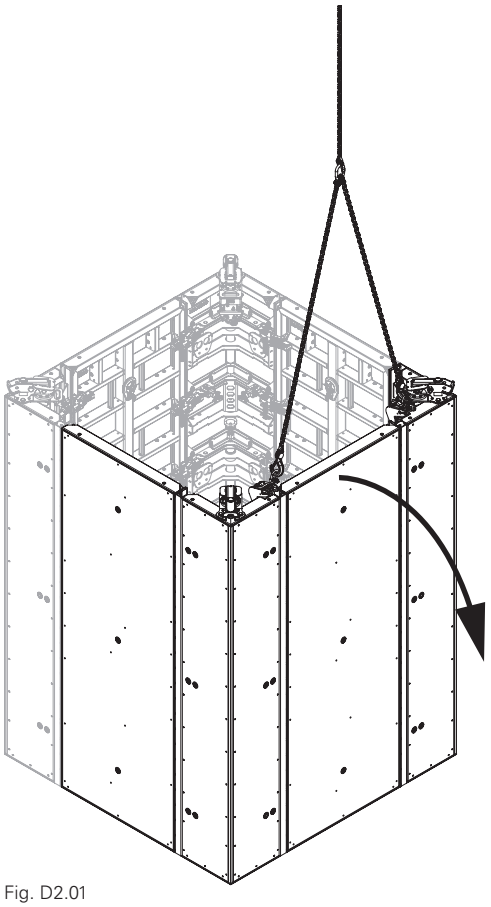


Fig. D2.01

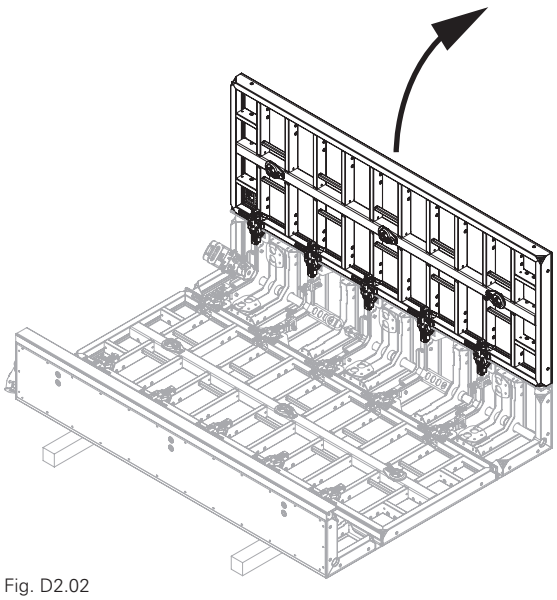


Fig. D2.02

Removing the system components

Dismantling

1. Remove the piston rod connecting bolt (**2.4**).
2. Remove the frame profile connecting bolt (**1.2**).
3. Disconnect the Hydraulic Module Shaft Corner (**1**) from Shaft Corner MXSE.
4. Insert all the bolts into their fitting positions and secure them with the appropriate hinged pins.
5. Fit all quick-couplers with protective caps.
6. Stack the Hydraulic Module Shaft Corner in the transport container.

(Fig. D2.03)

7. Remove the bolts (**5**).
8. Pull the shaft corner striking adapter (**2**) out of the tension strut.
9. Store the bolts and hinged pins in the fabric bag.
10. Stack the shaft corner striking adapter in the transport container.

(Fig. D2.04)

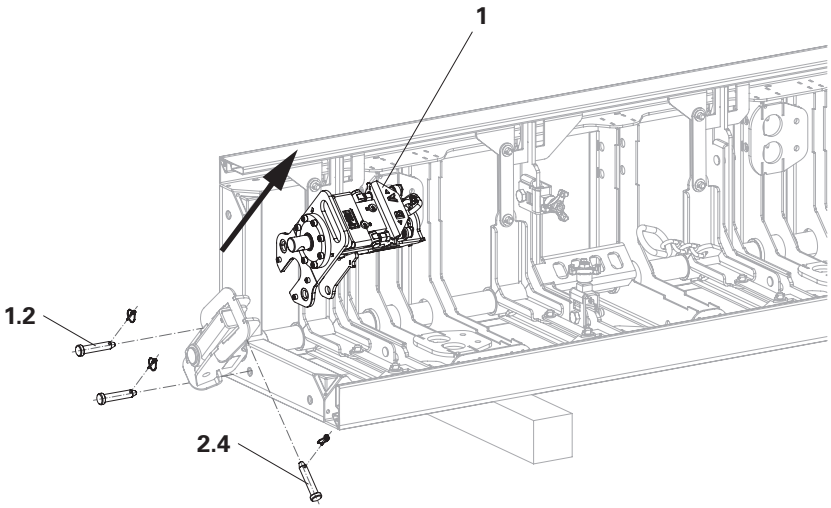


Fig. D2.03

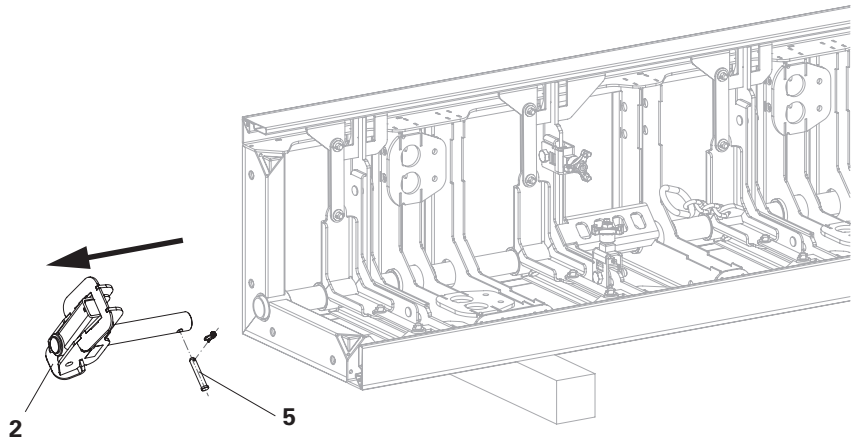


Fig. D2.04

Concluding work

Converting the Shaft Corner MXSE

1. Remove the bolt (**23.3**) from the lowest hole of the tension strut (**23.8**) and fit it in the transport position.
2. Insert the tension plate (**23.7**) into the tension strut (**23.8**) and secure with a locking screw and nut (**23.9**).

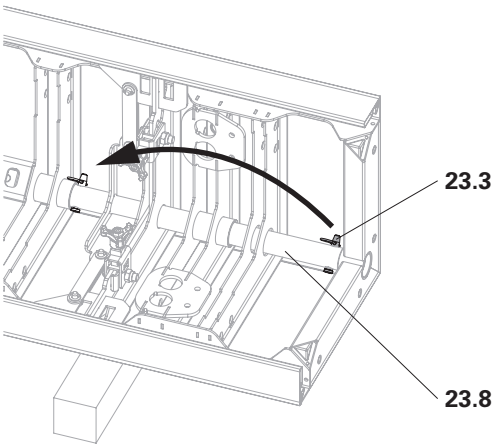


Fig. D2.05

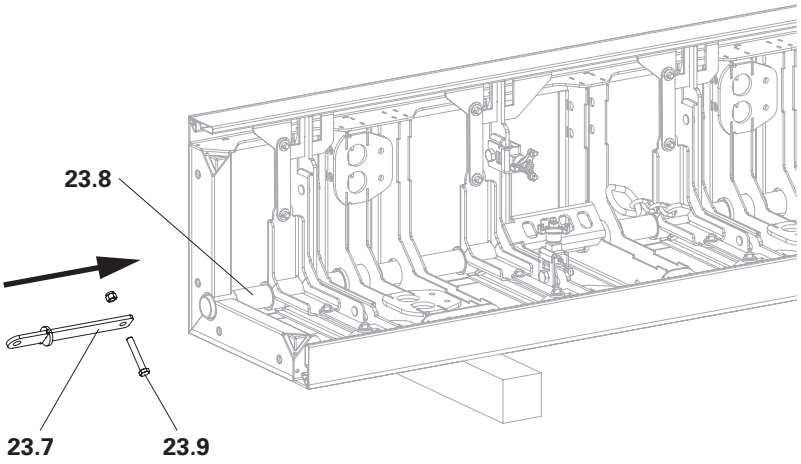


Fig. D2.06

General information

Store PERI products and components
- in such a way that damage is impossible.
- dry, cleaned and with corrosion prevention at temperatures from -20 °C to +60 °C.
- protected from the effects of the weather, sunlight, oils of any kind and aggressive substances.
- Use original PERI storage and transport systems, e.g. crate pallets, pallets, hardware boxes or stacking devices.

Further safety instructions, see Section "Storage and transportation" on page 13.

Packaging

Observe the following instructions in order to transport the system components safely.

Hydraulic Module Shaft Corner

Load carrier: Hardware Box 80 x 120
Number of components: max. 8
Number of layers: 1

Shaft corner striking adapter

Load carrier: Hardware Box 80 x 120
Number of components: max. 16
Number of layers: 2

Hydr. T-coupling

Load carrier: Hardware Box 80 x 120
Number of components: max. 24
Number of layers: 2

Unit Suspension RCS MAX

Load carrier: Hardware Box 80 x 120
Number of components: max. 10
Number of layers: 1

hydraulic unit

Load carrier: Transport crate

Hydraulic lines

Load carrier: Hardware Box 80 x 120
Crate Pallet 80 x 120

Small parts
PP fabric bag

D4 Service life and disposal

Service life

Hydraulic hoses have an expiry date.
Observe the manufacturer-specific information.
The specialist shall make the decision on the discard criteria.

Metal parts are not subject to an age-related service life.
The specialist shall make the decision on the discard criteria.

Intensive use and/or extreme conditions of use such as sharp edges, chemical influences, UV radiation, etc. will lead to a reduced service life.
The specialist shall make the decision on the discard criteria.

Disposal

The disposal of components and materials must be arranged by a person authorised to do so.



- Materials are to be sorted correctly and according to type.
- The materials are to be disposed of according to local regulations and guidelines.
- The safety data sheet of the hydraulic oil must be taken into consideration when disposing of the hydraulic oil.
- Operating materials, cleaning agents and solvents must not be allowed to enter the drainage system or the ground.

Table of faults

Fault	Cause	Remedial measure
Unusual motor noise coming from the hydraulic unit	Incorrect rotation direction of the motor	If the warning light for monitoring the rotating field is activated, turn the phase inverter in the CEE Motor Protection Plug by 180°.
	Insufficient hydraulic oil	Top up hydraulic oil.
	Dirt in the hydraulic system	Replace hydraulic oil and, if necessary, clean hydraulic tank and filter.
Hydraulic cylinder sinks	Air in the hydraulic system	Bleed the system.
	Pressure-retaining valve defective	Replace the hydraulic cylinder and have an inspection carried out by PERI.
	Seal defective	Replace the hydraulic cylinder and have an inspection carried out by PERI.
Hydraulic cylinders move unevenly	Air in the hydraulic system	Bleed the system.
	Dirt in the hydraulic system	Replace hydraulic oil and, if necessary, clean hydraulic tank and filter.
	Leakage between the hydraulic unit and hydraulic cylinder	Retract all hydraulic cylinders, identify the leakage point and seal; replace with new component if necessary.
	Hydraulic hose is broken or leaks	Stop work and replace the defective hydraulic hose. Check all hydraulic hoses.
Temperature of the hydraulic oil is too high	Dirt in the hydraulic system	Replace hydraulic oil and, if necessary, clean hydraulic tank and filter.
	Valve defective	Replace the hydraulic unit and have an inspection carried out by PERI.
	Hand lever or remote control operated for too long	Switch off hydraulic unit and allow to cool.
	Environmental temperature is too high	Adjust work procedures in hot climates and work with the hydraulic unit at night or in the mornings.
Hydraulic system is losing hydraulic oil	Hydraulic hose is broken or leaks	Stop work and replace the defective hydraulic hose. Check all hydraulic hoses.
	Leaky connection	Switch off hydraulic unit for pressure relief, tighten or replace screw fitting.
	Rod seal worn	Inspection by PERI.
	Tube seal worn	Inspection by PERI.
Hydraulic cylinder extended or retracted unintentionally	Hand lever is dirty and not in centre position	Remove soiling.
	Way valve soiled or actuating element defective	Replace defective component and have an inspection carried out by PERI.

Table of faults

Fault	Cause	Remedial measure
■ Hydraulic cylinder cannot handle the load ■ Hydraulic cylinder does not extend	Insufficient hydraulic oil in the tank	Determine the cause of the hydraulic oil loss and eliminate. Top up hydraulic oil.
	Incorrect rotation direction of the motor	If the warning light for monitoring the rotating field is activated, turn the phase inverter in the CEE Motor Protection Plug by 180°.
	Leakage in hydraulic system	Identify leakage point and seal; if necessary, replace with new parts.
	Pressure-retaining valve defective	Replace the hydraulic cylinder and have an inspection carried out by PERI.
Piston runs from fixed position	Piston seals worn	Inspection by PERI.

Maintenance table

Damage and any resulting downtime can be avoided by carrying out scheduled maintenance work.

PERI recommends shortened maintenance intervals:
- For equipment showing signs of heavy wear.
- With high thermal and mechanical loads.
- When subject to heavy soiling.

Hydraulic unit **Inspection/Maintenance/Repairs**	**Maintenance interval**
■ Clean machine housing.	■ Daily
■ Clean or replace oil filter. ■ Change hydraulic oil.	■ Before each use on the construction site ■ At least 1x year
■ Replace seals.	■ If leaking
■ Check oil temperature and oil level. ■ Check for signs of leakage. ■ Check working and control pressures. ■ Check whether any unusual noises or vibrations are present.	■ Daily to weekly
■ Check device mounting. ■ Check tubes and hoses. (connections, chafe marks, kinks) ■ Check protective covers. ■ Check display devices. ■ Check ventilation filter in the filling piece.	■ Weekly to monthly
■ Check machine housing for signs of damage. ■ Check performance.	■ Monthly to quarterly
Check the entire hydraulic unit for: ■ Deposits ■ Rust formation	■ Yearly

Hydraulic hoses **Inspection/Maintenance/Repairs**	**Maintenance interval**
■ Replace fittings.	■ If connection points are leaking
■ Replace hoses.	■ If the hose body is damaged ■ In case of leaking hose fitting compression ■ If older than 6 years
■ Check for signs of leakage.	■ Daily to weekly
■ Check tubes and hoses. (connections, chafe marks, kinks)	■ Weekly to monthly

Hydraulic cylinder **Inspection/Maintenance/Repairs**	**Maintenance interval**
■ Clean the hydraulic cylinder.	■ As required
■ Check for signs of leakage.	■ Visual inspection during use ■ Replace hydraulic cylinder in the event of leakage
■ Lubricate bearing points.	■ Weekly to monthly

EC Declaration of Incorporation

Name und Anschrift des Herstellers:

PERI SE
Rudolf-Diesel-Straße 19
89264 Weißenhorn

EG-Einbauerklärung

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

Hiermit erklären wir, dass die Bauart und die Ausführung der

Unvollständigen Maschine:	Hydraulikmodul Schachtecke
Serie:	Schalung & Ingenieurbau
Art-Nr.:	138039 (in Verbindung mit 138040 und PERI Hydraulikbaukasten)
Modell-Nr.:	A038.418E1506
Funktion:	Hydraulische Antriebseinheit für MAXIMO und TRIO Schachtecken

folgenden geltenden Normen und Richtlinien entspricht.

EG-Richtlinie 2006/42/EG **Maschinenrichtlinie**

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

Angewandte harmonisierte Normen, insbesondere:

DIN EN ISO 12100:2010-11	Sicherheit von Maschinen; Allgemeine Gestaltungsleitsätze – Risikobewertung und Risikominderung
DIN EN 60204-1:2006-06	Sicherheit von Maschinen; Elektrische Ausrüstung von Maschinen - Teil 1: Allgemeine Anforderungen
DIN EN 614-1:2006+A1:2009	Sicherheit von Maschinen; Ergonomische Gestaltungsgrundsätze - Teil 1: Begriffe und allgemeine Leitsätze
DIN EN ISO 13857:2008	Sicherheit von Maschinen; Sicherheitsabstände gegen das Erreichen von Gefährdungsbereichen mit den oberen und unteren Gliedmaßen
DIN EN 349:1993+A1:2008	Sicherheit von Maschinen; Mindestabstände zur Vermeidung des Quetschens von Körperteilen
DIN EN ISO 4413:2010	Fluidtechnik; Allgemeine Regeln und sicherheitstechnische Anforderungen an Hydraulikanlagen und deren Bauteile

Angewandte nationale Normen und technische Spezifikationen:

DGUV Regel 113-020:2017	Hydraulik-Schlauchleitungen und Hydraulik-Flüssigkeiten – Regeln für den sicheren Einsatz

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

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

Bevollmächtigter für die Zusammenstellung der technischen Unterlagen:

PERI SE, GROUP QUALITY
Anschrift siehe Hersteller

Weißenhorn, den 30.08.2022

i.V. Dipl.-Ing. (FH) Dieter Deifel,
Head of R&D Civil Engineering

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

Name and address of manufacturer:

PERI SE
Rudolf-Diesel-Straße 19
89264 Weißenhorn

EC-Declaration of incorporation

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

We hereby declare that the design and construction of the

Machine:	Hydraulic Module Shaft Corner
Series:	Formwork & Civil Engineering
Art-Nr.:	138039 (in combination with 138040 and PERI hydraulic construction kit)
Model-Nr.:	A038.418E1506
Function:	Hydraulic actuator unit for MAXIMO and TRIO shaft corners

complies with the following applicable standards and directives.

EC-Directive 2006/42/EC **Machinery Directive**

It is declared that the following essential requirements of the Machinery Directive 2006/42/EC have been fulfilled:

1.1.3, 1.3., 1.3.1, 1.3.2, 1.3.7, 1.3.9, 1.5.1, 1.5.15, 1.6.1, 1.6.3

Applied harmonised standards, in particular:

EN ISO 12100:2010-11	Safety of machinery – General principles for design – Risk assessment and risk reduction
EN 60204-1:2006-06	Safety of machinery – Electrical equipment of machines – Part 1: General requirements
EN 614-1:2006+A1:2009	Safety of machinery – Ergonomic design principles – Part 1: Terminology and general principles
EN ISO 13857:2008	Safety of machinery – Safety distances to prevent hazard zones being reached by upper and lower limbs
EN 349:1993+A1:2008	Safety of machinery – Minimum gaps to avoid crushing of parts of the human body
EN ISO 4413:2010	Hydraulic fluid power – General rules and safety requirements for systems and their components

Applied national standards and technical specifications:

DGUV Regulation 113-020:2017	Hydraulic hose lines and hydraulic fluids – Rules for safe use

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

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

Person established in the Community authorized to compile the relevant technical documentation

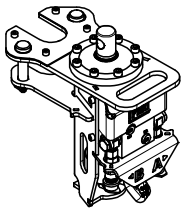
PERI SE, GROUP QUALITY
Address, see manufacturer

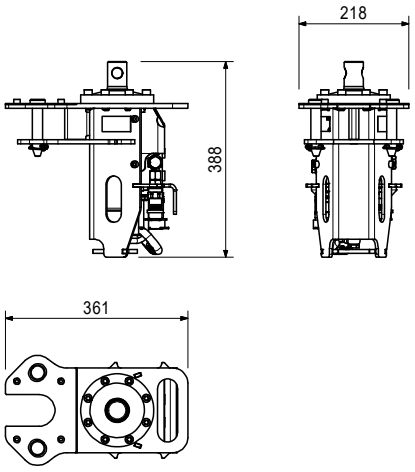
Weißenhorn, 30.08.2022

i.V. Dipl.-Ing. (FH) Dieter Deifel,
Head of R&D Civil Engineering

Art no.	Weight [kg]		B [mm]	L [mm]
138039	24.500	**Hydraulic Module Shaft Corner**	218	388

Hydraulic Drive Unit for MAXIMO and TRIO Shaft Corners.



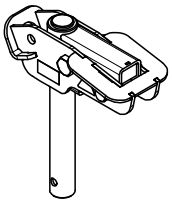


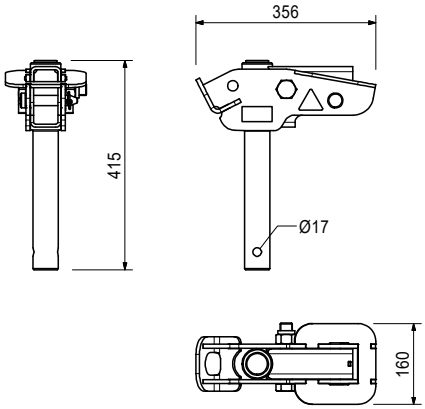
Consists of

2 pc 128957 Pin Ø 20 x 77
2 pc 128991 Linchpin DIN 11023-5x32, galv.

Art no.	Weight [kg]		B [mm]	L [mm]
138040	10.900	**Stripping Adapter Shaft Corner**	356	415

Connecting element between Drawtube Shaft Corner and Hyraulic Module Shaft Corner.

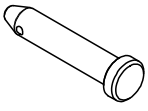


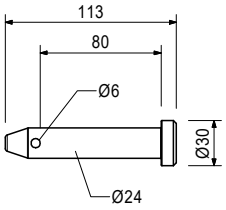


Consists of

1 pc 128957 Pin Ø 20 x 77
1 pc 128991 Linchpin DIN 11023-5x32, galv.

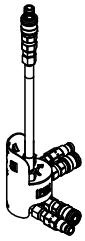
Art no.	Weight [kg]	
128957	0.288	**PIN 20X80 COAT**

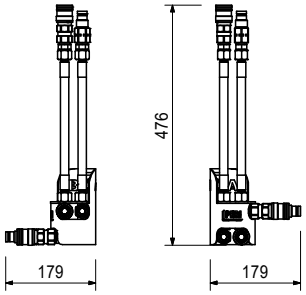




Art no.	Weight [kg]		B [mm]	L [mm]
138041	3.150	**Hydr. T-Coupling 2SN-DN08-FF**	179	476

Oil distribution element within hydraulic ring line for pressure supply of individual hydraulic cylinders.

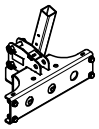


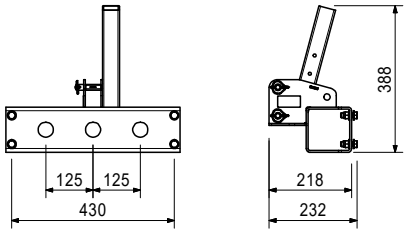




Art no.	Weight [kg]		B [mm]	L [mm]
138432	7.850	**Hydr. Unit Suspension RCS MAX**	430	388

Functional connection part for the RCS MAX Hydraulic Power Pack to MAXIMO or TRIO Formwork Elements.



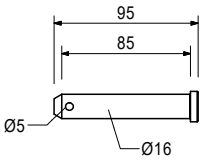


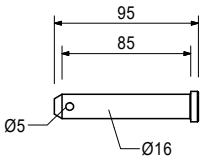
Consists of

2 pc 106031 Bolt Ø 16 x 70, coated
2 pc 128991 Linchpin DIN 11023-5x32, galv.
4 pc 710381 Nut ISO 7042 M12-8, galv.
4 pc 780156 Bolt ISO 4017 M12 x 35-8,8 galv.
4 pc 780702 Washer ISO 7089 200 HV, A 12, galv.

Art no.	Weight [kg]		L [mm]
138425	0.149	**Bolt 16 mm x 90 mm**	95

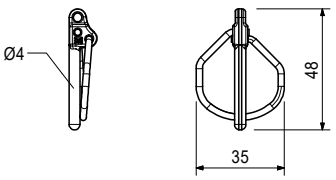
Quick Mounting Bolt to connect stripping adapter, shaft corner and draw tube shaft corner.



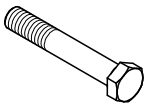


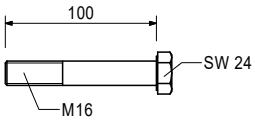
Art no.	Weight [kg]	
128991	0.012	**LINCH PIN DIN 11023-5X32-GALV**





Art no.	Weight [kg]		L [mm]
710219	0.184	**HEX BOLT ISO4014-M16X100-8.8VZ**	100





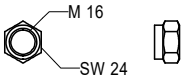
Art no.	Weight [kg]	
070890	0.030	**HEX NUT ISO7040-M16-8-GALV.**

Self-locking.

Notes

Wrench size SW 16.



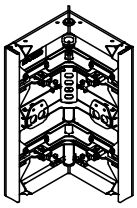


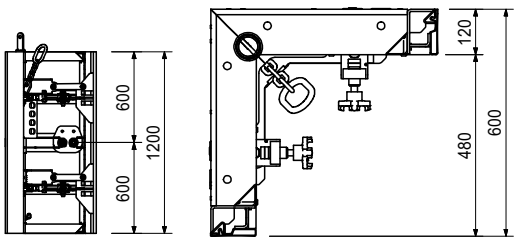
Art no.	Weight [kg]	
117915	145.000	**SHAFT CORNER MXSE15 120**

Panel for forming 90° inside corners along with striking and moving complete internal shaft formwork units.

Notes

Permissible load capacity of the load suspension point 2.0 t.





Consists of

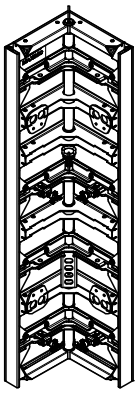
4 pc 126263 Position Latch MXSE

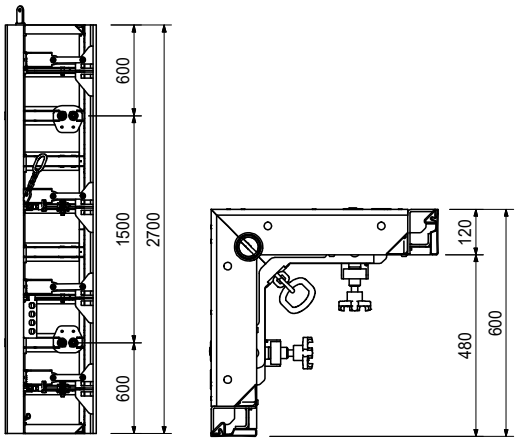
Art no.	Weight [kg]	
117914	296.000	**SHAFT CORNER MXSE15 270**

Panel for forming 90° inside corners along with striking and moving complete internal shaft formwork units.

Notes

Permissible load capacity of the load suspension point 2.0 t.





Consists of

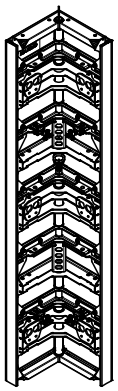
4 pc 126263 Position Latch MXSE

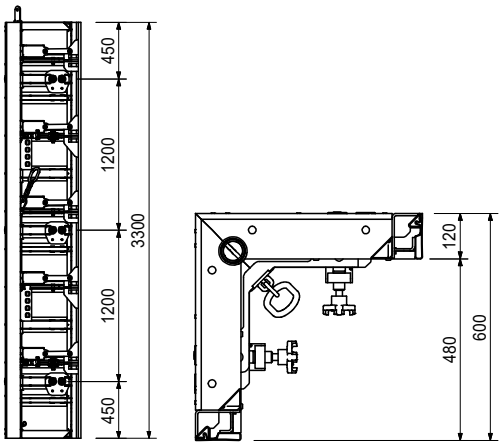
Art no.	Weight [kg]	
117913	393.000	**SHAFT CORNER MXSE15 330**

Panel for forming 90° inside corners along with striking and moving complete internal shaft formwork units.

Notes

Permissible load capacity of the load suspension point 2.0 t.





Consists of

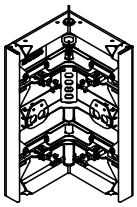
4 pc 126263 Position Latch MXSE

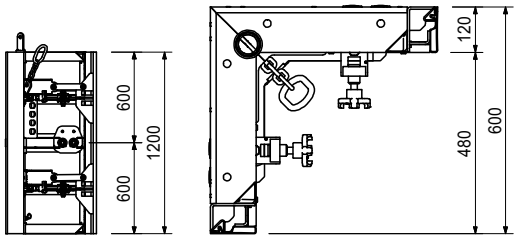
Art no.	Weight [kg]	
125288	145.000	**SHAFT CORNER MXSE18 120**

For 90° inside corners along with striking and moving complete internal shaft formwork units.

Notes

Permissible load capacity of the load suspension point 2.0 t.





Consists of

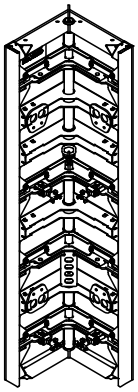
4 pc 126263 Position Latch MXSE

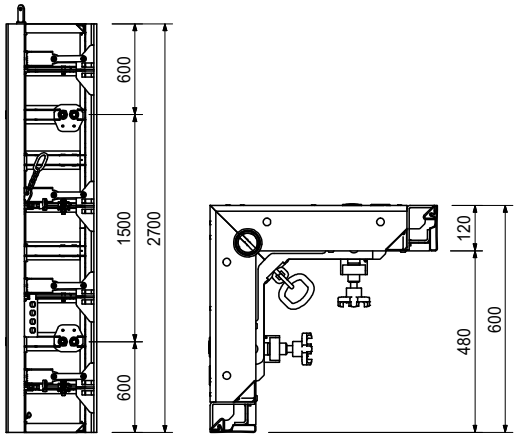
Art no.	Weight [kg]	
125286	296.000	**SHAFT CORNER MXSE18 270**

Panel for forming 90° inside corners along with striking and moving complete internal shaft formwork units.

Notes

Permissible load capacity of the load suspension point 2.0 t.





Consists of

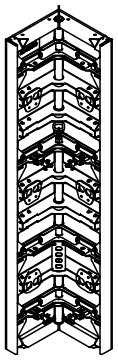
4 pc 126263 Position Latch MXSE

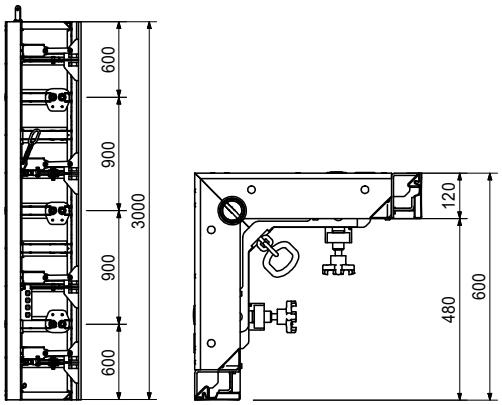
Art no.	Weight [kg]	
127957	323.000	**SHAFT CORNER MXSE18 300**

Panel for forming 90° inside corners along with striking and moving complete internal shaft formwork units.

Notes

Permissible load capacity of the load suspension point 2.0 t.





Consists of

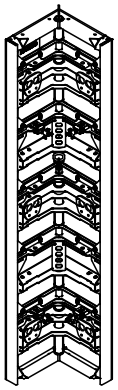
4 pc 126263 Position Latch MXSE

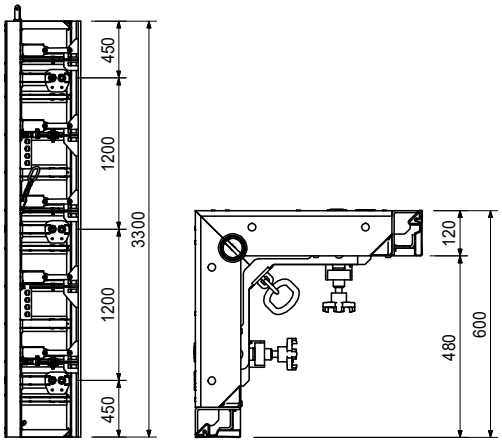
Art no.	Weight [kg]	
125284	393.000	**SHAFT CORNER MXSE18 330**

Panel for forming 90° inside corners along with striking and moving complete internal shaft formwork units.

Notes

Permissible load capacity of the load suspension point 2.0 t.





Consists of

4 pc 126263 Position Latch MXSE

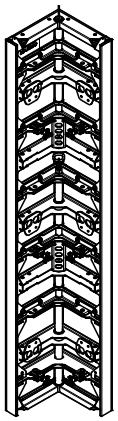
MAXIMO MX Hydraulic Shaft Corner

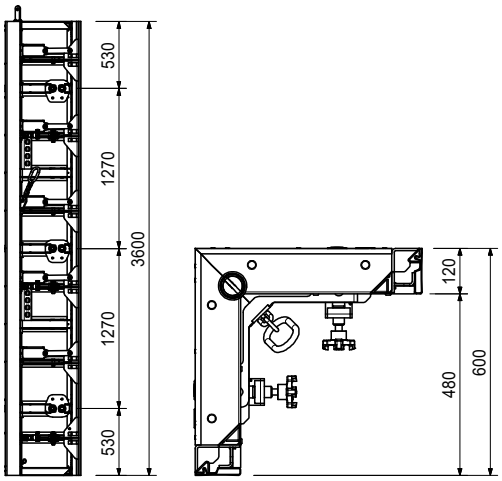
Art no.	Weight [kg]	
128012	404.000	**SHAFT CORNER MXSE18 360**

Panel for forming 90° inside corners along with striking and moving complete internal shaft formwork units.

Notes

Permissible load capacity of the load suspension point 2.0 t.



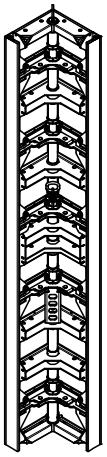


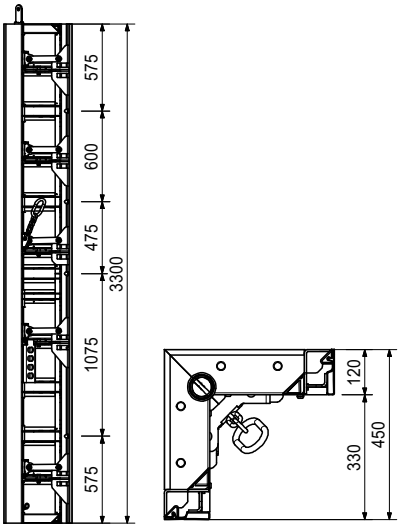
Consists of

4 pc 126263 Position Latch MXSE

Art no.	Weight [kg]	
129945	293.000	**STRIPPING CORNER TRIO 330/270**

Panel for forming 90° inside corner along with striking and moving complete internal shaft formwork units.



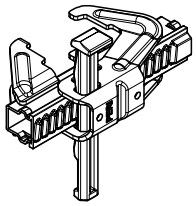


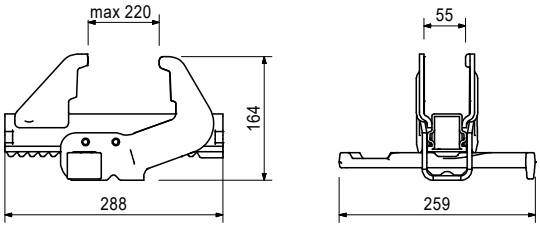
Art no.	Weight [kg]	
023500	4.580	**ALIGNMENT COUPLER BFD**

For all panel connections for MAXIMO, TRIO and RUNDFLEX. Fillers up to 10 cm.

Notes

Permissible tension force 20.0 kN.



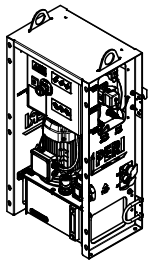


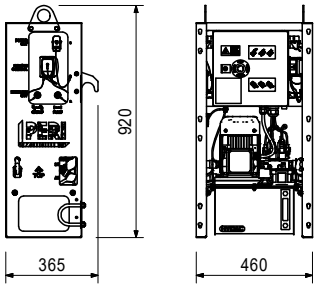
Art no.	Weight [kg]	
135500	47.000	**HYDRAULIC PUMP RCS MAX 2x210**

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

Notes

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





Accessory (not included)

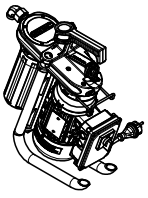
135606	0.100	**RETURN FILTER RCS MAX**
135607	0.100	**TANK BREATHER FILTER RCS MAX**
137281	14.000	**HYDRAULIC OIL PUMP CE**
137282	1.000	**HYDRAULIC OIL FILTERELEMENT 5M**
137283	1.000	**SUCTION-/PRESSURE HOSE 2,5M**

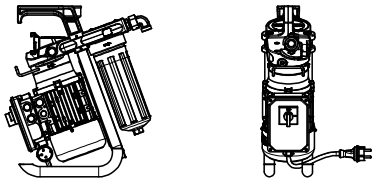
Art no.	Weight [kg]	
137281	14.000	**HYDRAULIC OIL PUMP CE**

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

Notes

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





Accessory (not included)

137282	1.000	**HYDRAULIC OIL FILTERELEMENT 5M**
137283	1.000	**SUCTION-/PRESSURE HOSE 2,5M**

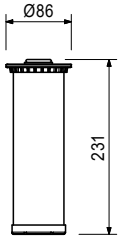
Art no.	Weight [kg]	
137282	1.000	**HYDRAULIC OIL FILTERELEMENT 5M**

Wear part of the hydr. oil filter pump.

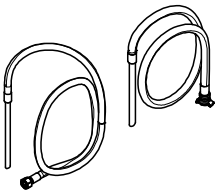
Notes

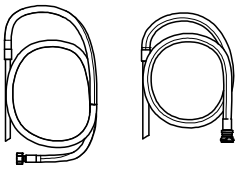
Follow Instruction for use!
Observe the maintenance instructions in the Observe the maintenance instructions in the technical documentation for the oil filter pump!
Observe disposal instructions!





Art no.	Weight [kg]	
137283	1.000	**SUCTION-/PRESSURE HOSE 2,5M**



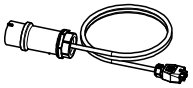


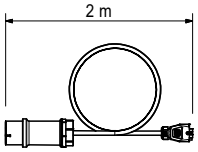
Art no.	Weight [kg]	
135499	0.800	**POWER CABLE RCS MAX CEE-32A 2M**

For connecting max. 8 Hydraulic Pumps RCS MAX 2 x 210 bar to the power supply.

Notes

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



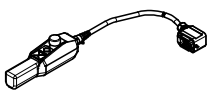


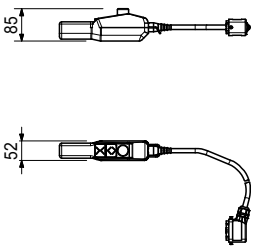
Art no.	Weight [kg]	
135506	2.500	**REMOTE CONTROL RCS MAX 15M**

Remote control for the simultaneous operation of a climbing unit.

Notes

Follow Assembly Instructions of the manufacturer!





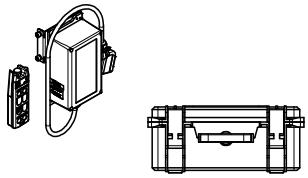
Art no.	Weight [kg]	
136530	5.080	**REMOTE CONTR. RCS MAX WIRELESS**

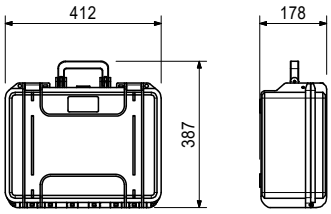
For a wireless operation of RCS MAX pumps.

Notes

Follow Assembly Instructions of the manufacturer!

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



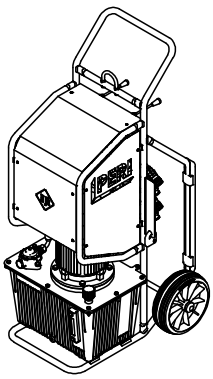


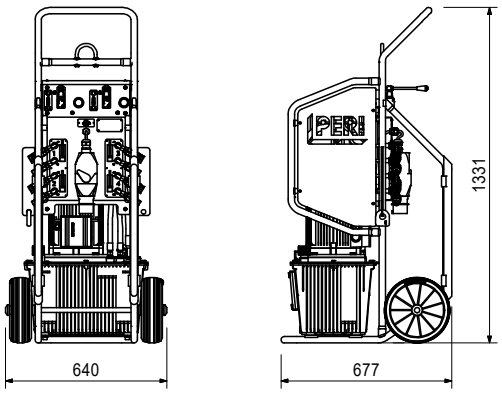
Art no.	Weight [kg]	
109766	109.000	**HYDRAULIC PUMP RCS 4-FOLD**

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

Notes

Follow Instructions for Use.
Use only original PERI Hydraulic Oil HV LP46.





Accessory (not included)

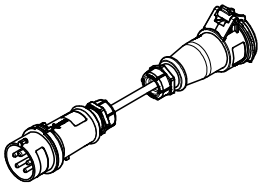
057376	18.300	**HYDR.FLUID ISO11158 HVI46, 20L**

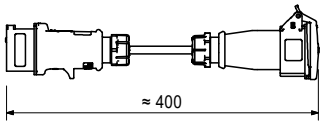
Art no.	Weight [kg]	
110280	0.500	**ADAPTER CABLE RCS**

For the power supply to the Hydraulic Pump RCS.

Notes

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





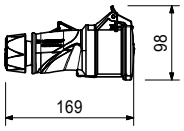
Art no.	Weight [kg]	
110279	0.291	**PLUG SOCKET RCS, BLACK**

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

Notes

Follow Instructions for Use!



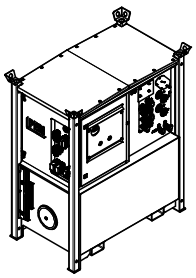


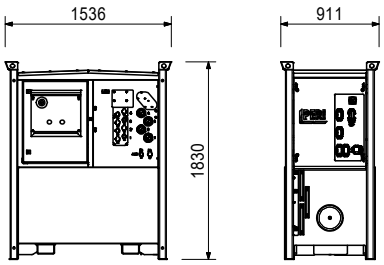
Art no.	Weight [kg]	
128667	610.000	**HYDR. PUMP ACS-C 4X160-18 CUL**

Hydraulic pump for powering of up to 4 or 6 Hoist Cylinders-2 ACS-C 400/S 10. With additional AUX connector.

Notes

Follow Instructions for Use!





Accessory (not included)

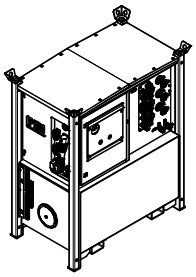
129834	1160.000	**HOIST CYL.-2 ACS-C 400-510**
131019	7.230	**HYDR.HOSE 2SN-DN12-FF 10.0M**
131021	13.700	**HYDR.HOSE 2SN-DN12-FF 20.0M**
130584	0.400	**POWER SOCKET ACS-C 32A**
129096	1.400	**POWER CABLE ACS-C CEE-32A-2M**
129098	1.000	**COUPLING INTERLINK CABLE ACS-C**
129099	3.600	**REMOTE CONTROL PUMP ACS-C**
129961	0.296	**PRESSURE FILTER PUMP ACS-C**
129962	0.270	**RETURN FILTER PUMP ACS-C**

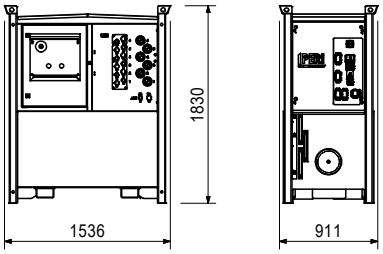
Art no.	Weight [kg]	
129095	650.000	**HYDR. PUMP ACS-C 6X160-28 CUL**

Hydraulic pump for powering of up to 4 or 6 Hoist Cylinders-2 ACS-C 400/S 10. With additional AUX connector.

Notes

Follow Instructions for Use!





Accessory (not included)

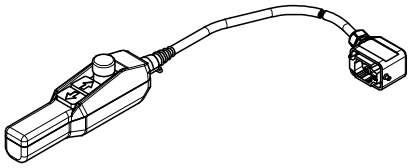
129096	1.400	**POWER CABLE ACS-C CEE-32A-2M**
129098	1.000	**COUPLING INTERLINK CABLE ACS-C**
129099	3.600	**REMOTE CONTROL PUMP ACS-C**
129834	1160.000	**HOIST CYL.-2 ACS-C 400-510**
129961	0.296	**PRESSURE FILTER PUMP ACS-C**
129962	0.270	**RETURN FILTER PUMP ACS-C**
130584	0.400	**POWER SOCKET ACS-C 32A**
131019	7.230	**HYDR.HOSE 2SN-DN12-FF 10.0M**
131021	13.700	**HYDR.HOSE 2SN-DN12-FF 20.0M**

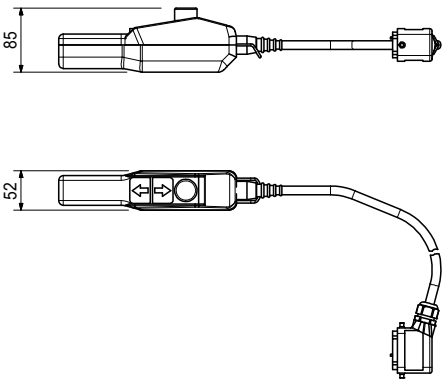
Art no.	Weight [kg]	
129099	3.600	**REMOTE CONTROL PUMP ACS-C**

Spare part for Hydraulic Pump ACS-C.

Notes

Observe the Maintenance Instructions in the technical documentation for the Hydraulic Pump!
Observe the Disposal Notes!



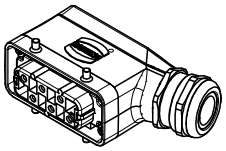


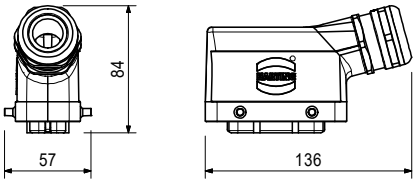
Art no.	Weight [kg]	
130584	0.400	**POWER SOCKET ACS-C 32A**

For the connection of the Hydraulic Pumps ACS-C CUL to the power supply.

Notes

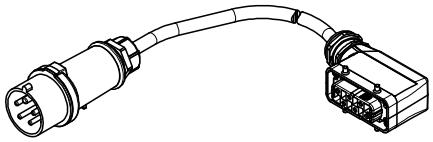
Electrical connection only by authorized qualified personnel!

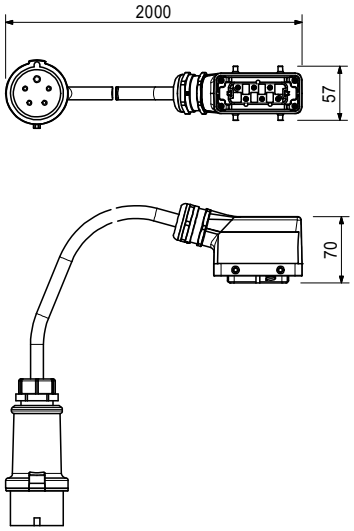




Art no.	Weight [kg]	
129096	1.400	**POWER CABLE ACS-C CEE-32A-2M**

For the connection of the Hydraulic Pumps ACS-C CUL to a CEE compliant power supply 400V/32A/50Hz.



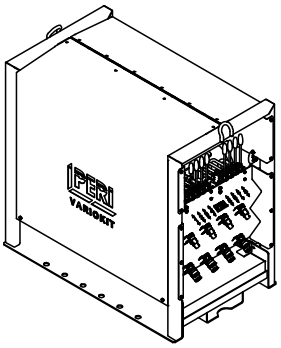


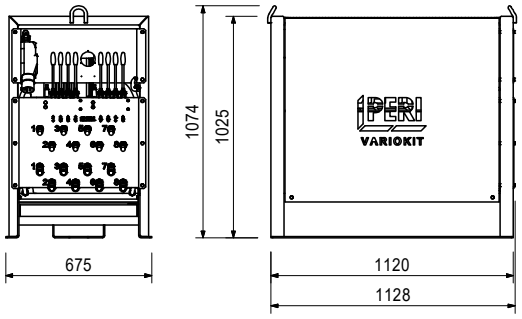
Art no.	Weight [kg]	
126852	245.000	**HYDR. UNIT VARIOKIT 8-CYCLES**

Hydraulic pump for shuttering and striking of up to 8 hydraulic cylinders (extendable up to 5 Way Valve Units, Quad, item-no. 128338).

Notes

Follow Instructions for Use!
Use only original PERI hydraulic oil HVLP 46.





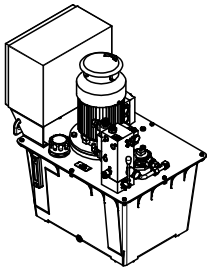
MAXIMO MX Hydraulic Shaft Corner

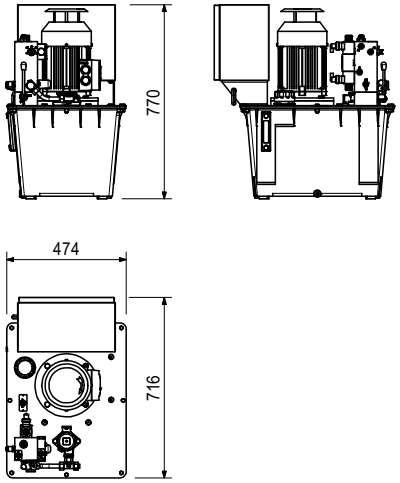
Art no.	Weight [kg]	
		Hydraulic Units 2-fold
057766	93.000	**HYDR.AGGR. ACS 2x240/460V CSA**
051739	93.000	**HYDRAUL.PUMP 2-FOLD 400V/50HZ**
057637	93.000	**HYDRAUL. PUMP 2-FOLD 50HZ/4CCM**
057638	93.000	**HYDRAUL. PUMP 2-FOLD 60HZ/4CCM**
051762	93.000	**HYDRAUL. PUMP 2-FOLD 460V/60HZ**

Hydraulic Pumps for the connection of 2 Hydraulic Climbing Mechanisms ACS 100. Different versions concerning power supply, operating pressure, delivery rate and certification.

Notes

Manuf. item-no. 964.007C-050
Manuf. item-no. 964.007C-060
Manuf. item-no. 964-007C-4,0-050
Manuf. item-no. 964-007C-4,0-060
Manuf. item-no. 964-007C-4,0-060-CSA
Follow Assembly Instruction!
Remote Conroler with 12 m cable included.





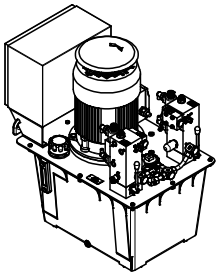
MAXIMO MX Hydraulic Shaft Corner

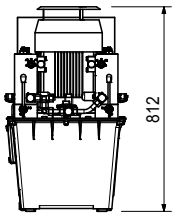
Art no.	Weight [kg]	
		Hydraulic Units 4-fold
057767	135.000	**HYDR.AGGR. ACS 4x240/460V CSA**
057639	135.000	**HYDRAUL. PUMP 4-FOLD 50HZ/4CCM**
057640	135.000	**HYDRAUL. PUMP 4-FOLD 60HZ/4CCM**
051740	135.000	**HYDRAUL. PUMP 4-FOLD 400V/50HZ**
051741	135.000	**HYDRAUL. PUMP 4-FOLD 460V/60HZ**

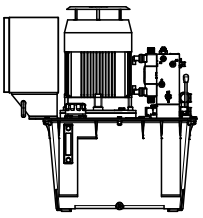
Hydraulic Pumps for the connection of 4 Hydraulic Climbing Mechanisms ACS 100. Different versions concerning power supply, operating pressure, delivery rate and certification.

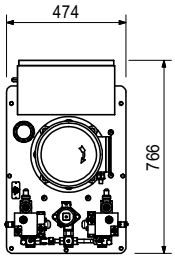
Notes

Manuf. item-no. 964.003C-050
Manuf. item-no. 964.003C-060
Manuf. item-no. 964-003C-4,0-050
Manuf. item-no. 964-003C-4,0-060
Manuf. item-no. 964-003C-4,0-060-CSA
Follow Assembly Instruction!
Remote Conroler with 12 m cable included.









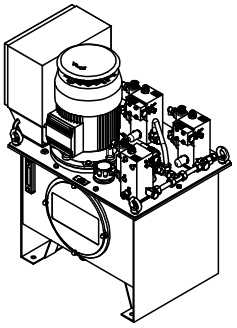
MAXIMO MX Hydraulic Shaft Corner

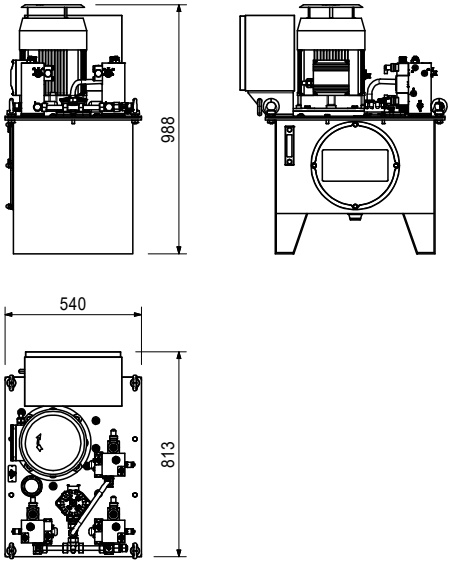
Art no.	Weight [kg]	
		Hydraulic Units 6-fold
057768	204.000	**HYDR.AGGR. ACS 6x240/460V CSA**
057641	204.000	**HYDRAUL. PUMP 6-FOLD 50HZ/4CCM**
057642	204.000	**HYDRAUL. PUMP 6-FOLD 60HZ/4CCM**
051742	204.000	**HYDRAUL. PUMP 6-FOLD 400V/50HZ**
051743	204.000	**HYDRAUL. PUMP 6-FOLD 460V/60HZ**

Hydraulic Pumps for the connection of 6 Hydraulic Climbing Mechanisms ACS 100. Different versions concerning power supply, operating pressure, delivery rate and certification.

Notes

Manuf. item-no. 964.009C-050
Manuf. item-no. 964.009C-060
Manuf. item-no. 964-009C-4,0-050
Manuf. item-no. 964-009C-4,0-060
Manuf. item-no. 964-009C-4,0-060-CSA
Remote Controler included.
Follow Assembly Instructions!



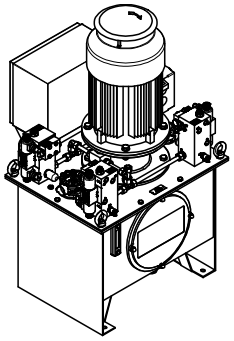


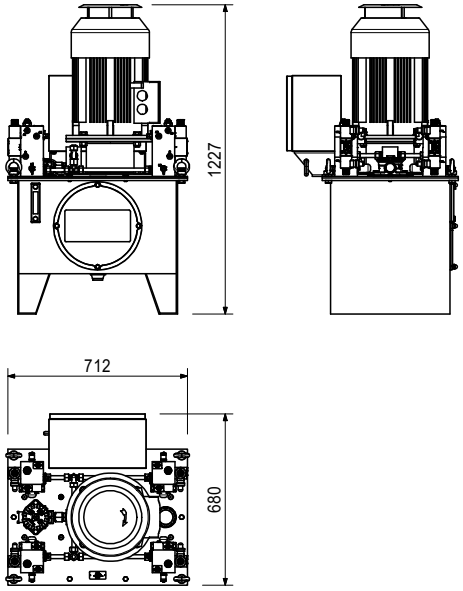
Art no.	Weight [kg]	
		Hydraulic Units 8-fold
057769	267.000	**HYDR.AGGR. ACS 8x240/460V CSA**
051746	267.000	**HYDRAUL. PUMP 8-FOLD 400V/50HZ**
051747	267.000	**HYDRAUL. PUMP 8-FOLD 460V/60HZ**
057518	267.000	**HYDRAUL.PUMP 8-FOLD 50HZ/4CCM**
057643	267.000	**HYDRAUL. PUMP 8-FOLD 60HZ/4CCM**

Hydraulic Pumps for the connection of 8 Hydraulic Climbing Mechanisms ACS 100. Different versions concerning power supply, operating pressure, delivery rate and certification.

Notes

Manuf. item-no. 964.010C-050
Manuf. item-no. 964.010C-060
Manuf. item-no. 964-010C-4,0-050
Manuf. item-no. 964-010C-4,0-060
Manuf. item-no. 964-010C-4,0-060-CSA
Remote Controler included.
Follow Assembly Instructions!

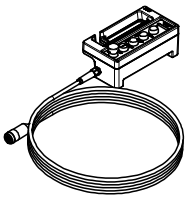




Art no.	Weight [kg]	
057362	5.000	**ELECTR.REMOTE CONTR.2x,HYDR.AG**

Notes

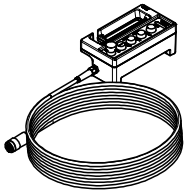
Manuf. item-no. K039.049
Cable length = 12 m.



Art no.	Weight [kg]	
057363	5.000	**ELECTR.REMOTE CONTR.4X,HYDR.AG**

Notes

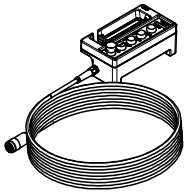
Manuf. item-no. K039.027
Cable length = 12 m.



Art no.	Weight [kg]	
057364	5.000	**ELECTR.REMOTE CONTR.6X,HYDR.AG**

Notes

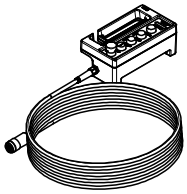
Manuf. item-no. K039.037
Cable length = 12 m.



Art no.	Weight [kg]	
057366	5.000	**ELECTR.REMOTE CONTR.8X,HYDR.AG**

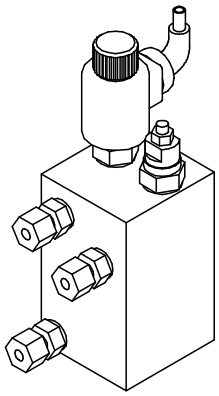
Notes

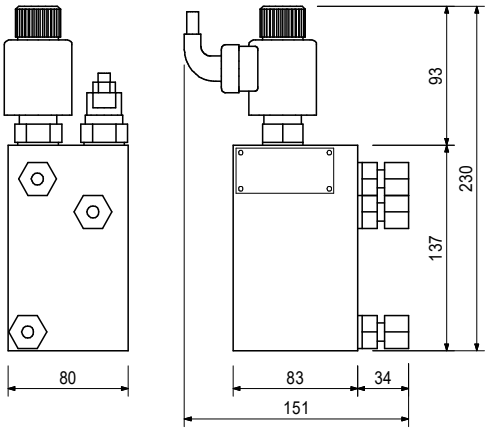
Manuf. item-no. K039.076
Cable length = 12 m.



Art no.	Weight [kg]	
		Control Blocks for 3rd Climbing Device
057358	10.000	**CONTROL BLOCK 3 50HZ**
057359	10.000	**CONTROL BLOCK 3 60HZ**

Complete with hose, cable and connections.
For installing on 4-fold, 6-fold and 8-fold Hydraulic Pumps, when only 3, 5 or 7 climbing mechanisms are connected to these.

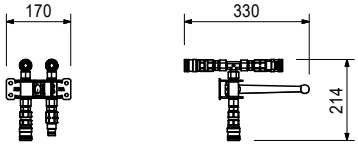




Art no.	Weight [kg]	
129039	2.780	**HYDR. BRANCH STRIKING MODULE**

Shut-off T-piece as a branch from the oil supply line to the Hydraulic Striking Modules VARIO arranged one above the other.



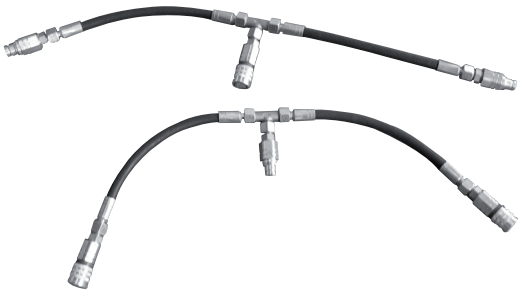


Consists of

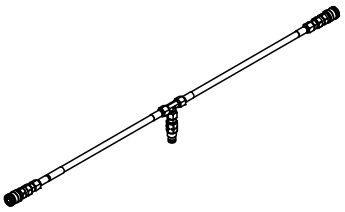
3 pc 128992 Pin ISO16028 DN10 R3/8IG
3 pc 128993 Sleeve ISO16028 DN10 R3/8IG

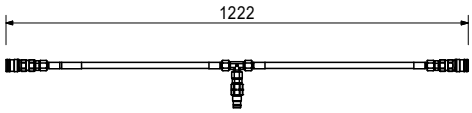
Art no.	Weight [kg]	
112421	3.000	**HYDRAULIC ACCUM. PIECE RCS**

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



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





Consists of

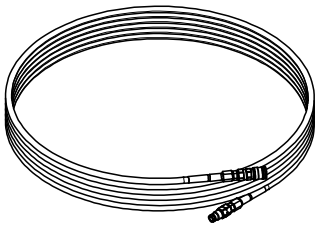
2 pc 128993 Sleeve ISO16028 DN10 R3/8IG
1 pc 128992 Pin ISO16028 DN10 R3/8IG
3 pc 051750 Male Stud Coupler X-GE12PSR-ED

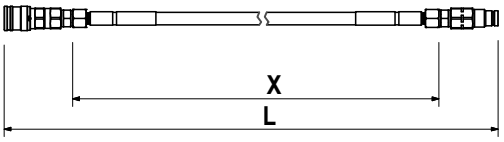
Art no.	Weight [kg]		L [mm]	X [mm]
		Hydraulic Hoses 2SN-DN08-FF		
129035	0.996	**HYDR. HOSE 2SN-DN08-FF 1,0M**	1169	1000
129036	1.430	**HYDR. HOSE 2SN-DN08-FF 2,0M**	2169	2000

Hydraulic hoses with quick couplings and nominal diameter 8mm.

Notes

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





Consists of

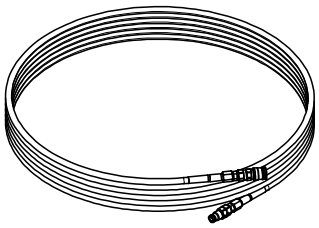
1 pc 128992 Pin ISO16028 DN10 R3/8IG
1 pc 128993 Sleeve ISO16028 DN10 R3/8IG
2 pc 051750 Male Stud Coupler X-GE12PSR-ED

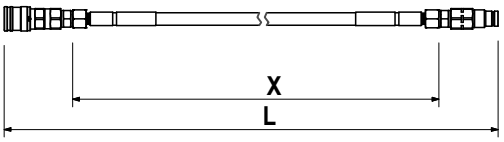
Art no.	Weight [kg]		L [mm]	X [mm]
		Hydraulic Hoses 2SN-DN08-FF		
129419	2.690	**HYDR. HOSE 2SN-DN08-FF 5.0M**	5170	5000
129420	4.900	**HYDR. HOSE 2SN-DN08-FF 10.0M**	10170	10000
129421	7.120	**HYDR. HOSE 2SN-DN08-FF 15.0M**	15170	15000
129422	9.330	**HYDR. HOSE 2SN-DN08-FF 20.0M**	20170	20000

Hydraulic hoses with quick couplings and nominal diameter 8mm.

Notes

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



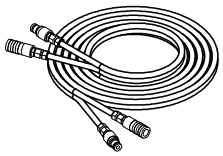


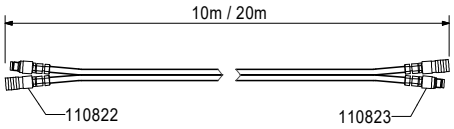
Consists of

1 pc|128992|Pin ISO16028 DN10 R3/8IG
1 pc|128993|Sleeve ISO16028 DN10 R3/8IG
2 pc|51750|Male Stud Coupler X-GE12PSR-ED

Art no.	Weight [kg]	
		Hydraulic Twin Hoses
110069	8.500	**HYDRAULIC TWIN HOSE RCS 10M**
110070	15.300	**HYDRAULIC TWIN HOSE RCS 20M**

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

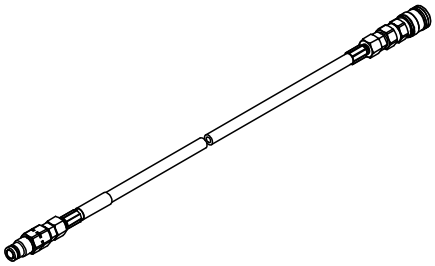


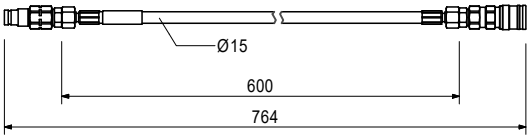


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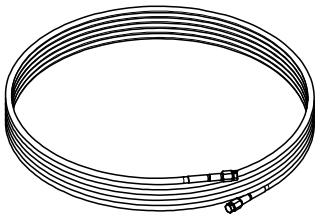
2 pc|128992|Pin ISO16028 DN10 R3/8IG
2 pc|128993|Sleeve ISO16028 DN10 R3/8IG
4 pc|51750|Male Stud Coupler X-GE12PSR-ED

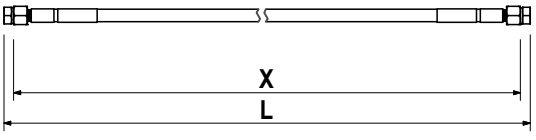
Art no.	Weight [kg]	
126646	0.651	**BYPASS HOSE RCS**





Art no.	Weight [kg]		L [mm]	X [mm]
		Hydraulic Hoses EN 853-2SN-DN08		
129587	0.260	**HYDR.HOSE EN853-2SN-DN08 0,3M**	326	300
129592	0.349	**HYDR.HOSE EN853-2SN-DN08 0,5M**	526	500
129593	0.656	**HYDR.HOSE EN853-2SN-DN08 1,0M**	1026	1000
129594	1.090	**HYDR.HOSE EN853-2SN-DN08 2,0M**	2026	2000
129595	2.350	**HYDR.HOSE EN853-2SN-DN08 5,0M**	5026	5000
129596	4.560	**HYDR.HOSE EN853-2SN-DN08 10,0M**	10026	10000
129597	6.780	**HYDR.HOSE EN853-2SN-DN08 15,0M**	15026	15000
129598	8.990	**HYDR.HOSE EN853-2SN-DN08 20,0M**	20026	20000





Consists of

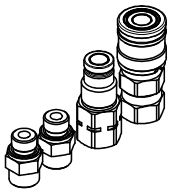
2 pc 123881 Tube Screw Plug ROV 12SX

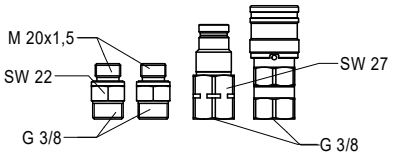
Art no.	Weight [kg]	
129424	0.440	**FF-COUPLING PAIR X-GE12PSR-ED+**

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

Notes

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

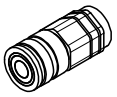


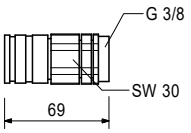


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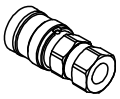
1 pc|128992|Pin ISO16028 DN10 R3/8IG
1 pc|128993|Sleeve ISO16028 DN10 R3/8IG
2 pc|51750|Male Stud Coupler X-GE12PSR-ED

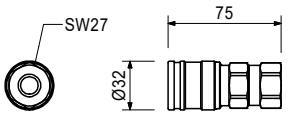
Art no.	Weight [kg]	
110822	0.297	**QUICK COUPLER BUSHING RCS**





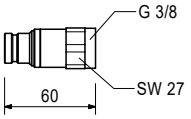
Art no.	Weight [kg]	
128993	0.280	**SLEEVE ISO16028 DN10 R3/8IG**



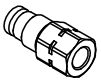


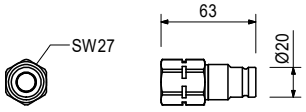
Art no.	Weight [kg]	
110823	0.171	**QUICK COUPLER NIPPLE RCS**





Art no.	Weight [kg]	
128992	0.140	**PIN ISO16028 DN10 R3/8IG**



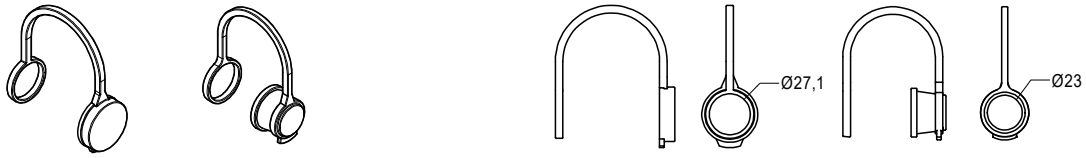


Art no.	Weight [kg]	
125632	0.050	**PROT. COVERS CLIMB. DEVICE RCS**

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

Notes

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



Art no.	Weight [kg]	
		Hydraulic Oils in Canister
131270	17.900	**HYDR.FLUID ISO11158 HM10, 20L**
131274	18.300	**HYDR.FLUID ISO11158 HVI22, 20L**
137373	18.300	**HYDR.FLUID ISO11158 HVI32, 20L**
057376	18.300	**HYDR.FLUID ISO11158 HVI46, 20L**

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

Notes

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



Art no.	Weight [kg]	
		Hydraulic Oils in Drum
131273	200.000	**HYDR.FLUID ISO11158 HM10, 210L**
131275	200.000	**HYDR.FLUID ISO11158 HVI22,210L**
137374	201.000	**HYDR.FLUID ISO11158 HVI32,210L**
131277	201.000	**HYDR.FLUID ISO11158 HVI46,210L**

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

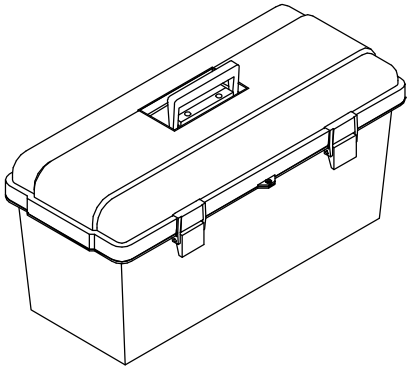
Notes

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



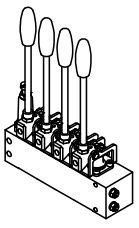
Art no.	Weight [kg]	
115581	10.280	**SERVICE BOX HYDRAULICS**

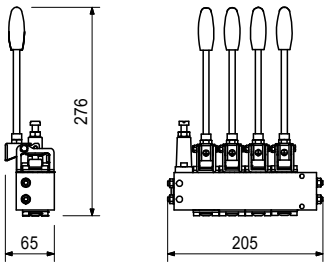
Consisting of:
1 pc. 115590 Tool Box 580 x 260 x 285 mm
6 pc. 115583 Pressure Gauge Typ 570 VA-Geh.
6 pc. 115584 Hose MKT 6-02 DN 02
12 pc. 115582 Measuring Coupl. SMK 20-G 1/4-PC
2 pc. 115591 Double Spanner SW 10 x 13
1 pc. 115592 Double Spanner SW 13 x 17
1 pc. 115588 Double Spanner SW 19 x 24
1 pc. 051778 Double Spanner SW 24 x 27
1 pc. 115589 Double Spanner SW 27 x 32
1 pc. 057278 Allen Key Set, 8 pcs.
1 pc. 115585 Allen Key SW 12
1 pc. 057279 Allen Key SW 14
1 pc. 057282 Pipe Wrench
1 pc. 115147 Angle Fitting Set PS
2 pc. 115396 Fitting Set PS
1 pc. 072180 Ratchet Wrench 1/2"
20 pc. 123881 Tube Screw Plug ROV12SX
20 pc. 123880 Threaded Plug VKAN 12S VIT
100 pc. 051760 Cable Binder NT-240H
2 pc. 126425 Distance Piece Ø 120
1 pc. 126440 Socket SW 17 - 1/2"
1 pc. 135172 Double Spanner SW 19 x 22
1 pc. 135173 Allen Key SHR-Bit SW 05
1 pc. 135174 Allen Key SHR-Bit SW 06
1 pc. 135175 Allen Key SHR-Bit SW 08
1 pc. 135176 Allen Key SHR-Bit SW 10
1 pc. 135177 SHR Screwdriver Bit 6 Tl. Slot/PH
2 pc. 711035 Adhesive Label 128 x 65 mm
1 pc. 126434 List of contents Hydraulic Service Case



Art no.	Weight [kg]	
128338	4.200	**WAY VALUE UNIT - QUAD**

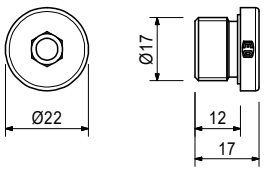
With more than 8 cylinders which can be controled with the connectors of the hydraulic unit a connection is used to connect further way valve units.





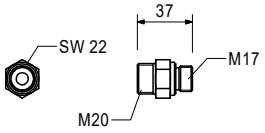
Art no.	Weight [kg]	
057091	0.027	**THREADED PLUG VSTI R 3/8-ED**





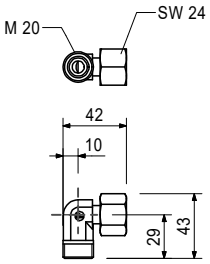
Art no.	Weight [kg]	
051750	0.060	**MALE STUD COUPL. X-GE12PSR-ED**





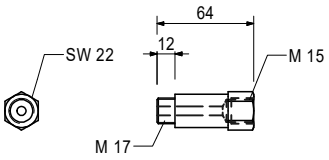
Art no.	Weight [kg]	
051748	0.140	**ELBOW STUD X-EVW 12PS**





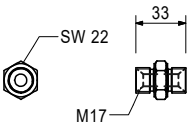
Art no.	Weight [kg]	
706464	0.144	**DRIVE CONNECTOR ACS**





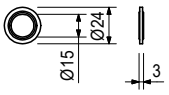
Art no.	Weight [kg]	
128994	0.045	**DOUBLE NIPPLE G3/8**



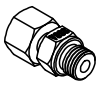


Art no.	Weight [kg]	
128995	0.004	**DICHTSCHEIBE G3/8**





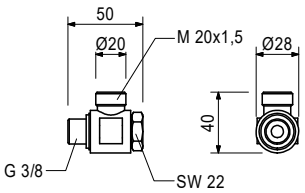
Art no.	Weight [kg]	
129013	0.010	**AUFSTECKSTUTZEN S12-G3/8**





Art no.	Weight [kg]	
125007	0.190	**SWIVEL FITTING WH12SRKDSOMD**

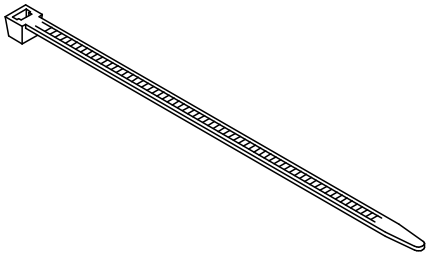




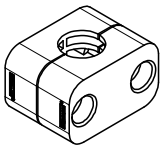
Art no.	Weight [kg]	
051760	0.004	**CABLE BINDER NT-240H**

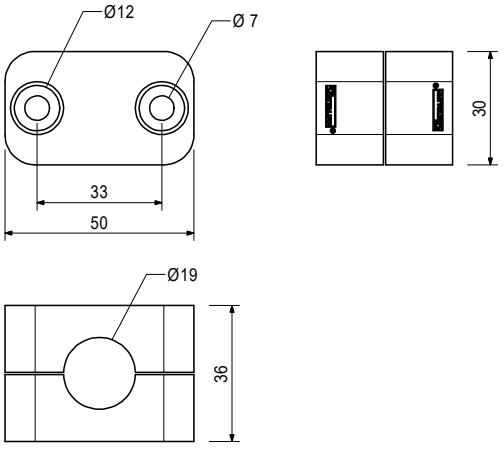
Notes

Delivery unit = 1 pc.

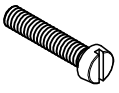


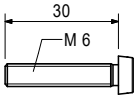
Art no.	Weight [kg]	
051758	0.100	**CLIP UNIT 319 PA**





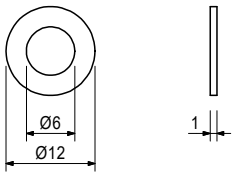
Art no.	Weight [kg]	
051759	0.050	**SH SCREW ISO1207-M06X030-4.8GA**



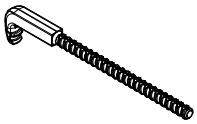


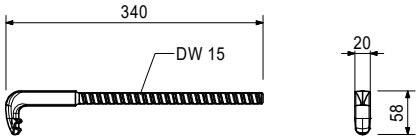
Art no.	Weight [kg]	
051775	0.010	**WASHER - US**





Art no.	Weight [kg]	
108904	0.684	**HOOK TIE DW15/340**





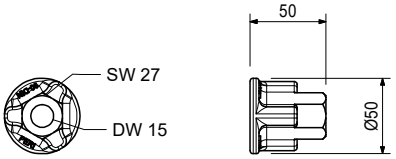
Art no.	Weight [kg]	
030130	0.318	**CAM NUT DW15, COAT**

For anchoring with Tie Rod DW 15 and B 15.

Notes

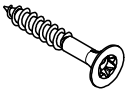
Permissible load 90 kN.

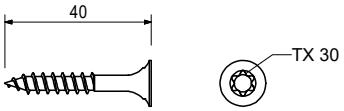




Art no.	Weight [kg]		L [mm]
024540	0.005	**WOOD SCREW 6x40 SK-TX30 HPI**	40

For Torx Bits TX 30. Self-drilling.



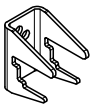


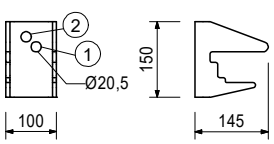
Art no.	Weight [kg]	
023630	2.080	**TRIO TIE HOLDER-2 AH, GALV.**

For grid-independent anchoring outside of the panel, especially for foundations and height extensions.

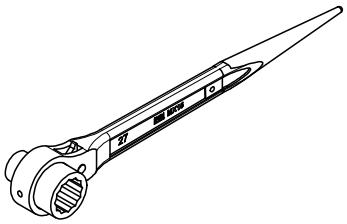
Notes

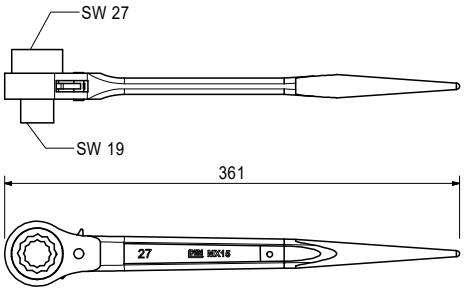
Permissible anchor pull:
Hole 1 = 30 kN
Hole 2 = 15 kN



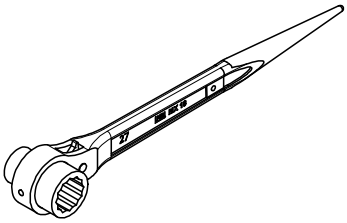


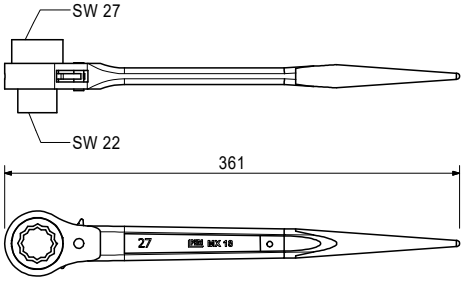
Art no.	Weight [kg]	
130798	0.800	**RATCHET MX 15**



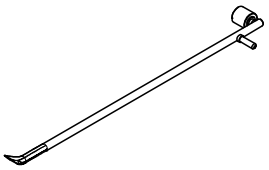


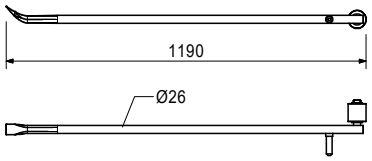
Art no.	Weight [kg]	
130799	0.800	**RATCHET MX 18**





Art no.	Weight [kg]	
112588	5.450	**STRIPPING LEVER TRIO**



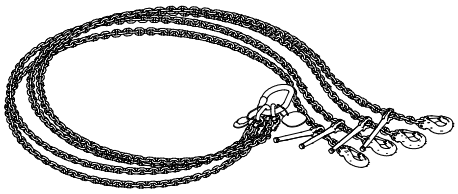


Art no.	Weight [kg]	
117321	31.000	**LIFTING GEAR COMBI MAXIMO**

For transporting stacks of MAXIMO and TRIO Panels. For attaching Lifting Hook MAXIMO 1.5 t and Stacking Device MAXIMO.

Notes

Follow Instructions for Use!



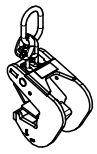
MAXIMO MX Hydraulic Shaft Corner

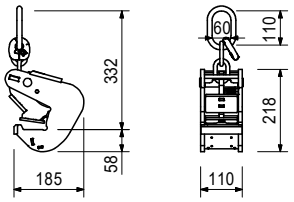
Art no.	Weight [kg]	
115168	6.950	**LIFTING HOOK MAXIMO 1,5 T**

For transporting MAXIMO and TRIO Panels.

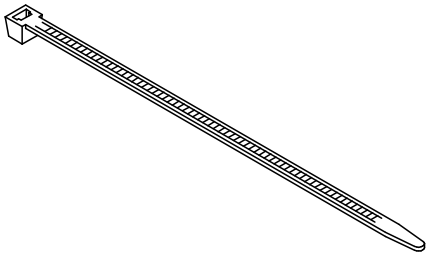
Notes

Follow Instructions for Use!
Permissible load-bearing capacity: Steel elements 1.5 t. Alu elements 750 kg.





Art no.	Weight [kg]	
137346	0.007	**CABLE BINDER 7,8X540**

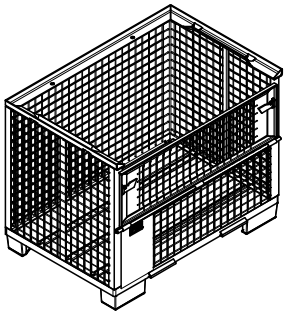


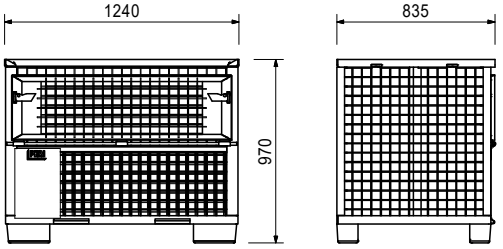
Art no.	Weight [kg]	
065068	88.300	**GRATE PALLET 80X120, GALV.**

For stacking and transportation of formwork and scaffold components.

Notes

Follow Instructions for Use!
Capacity approx. 0.75 m³.
Load-carrying capacity 1.5 t.





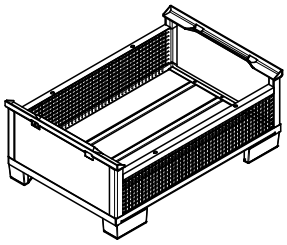
MAXIMO MX Hydraulic Shaft Corner

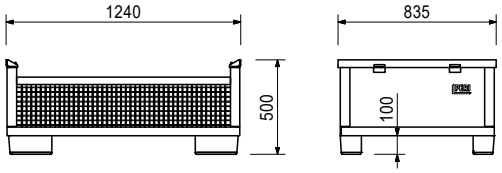
Art no.	Weight [kg]	
025660	66.500	**Hardware Box 80 x 120, galv.**

For stacking and transportation of formwork and scaffold components.

Notes

Follow Instructions for Use!
Capacity approx. 0.28 m³
Permissible load-bearing capacity 1.5 t.





Art no.	Weight [kg]	
727034	0.050	**PLASTIC BAG WHITE 35 X 60 CM**

The optimal system for all projects and every requirement



Wall formwork



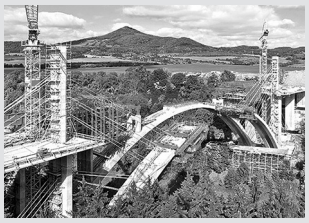
Column formwork



Slab formwork



Climbing systems



Bridge formwork



Tunnel formwork



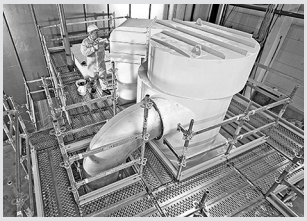
Shoring



Working scaffolds for construction



Working scaffolds for facades



Working scaffolds for industry



Means of access



Safety scaffolds



Safety systems



System-independent accessories



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