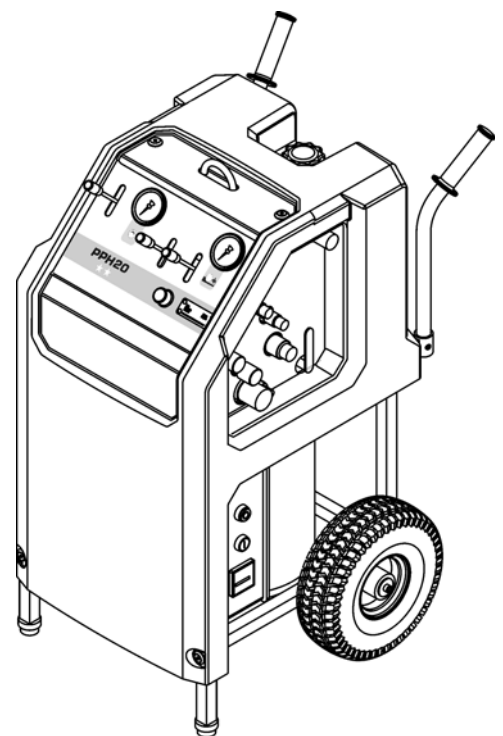


Operating Instructions ***Spare Parts List***

Drive Unit PPH20**

Index 000



Manufacturer's address:

**TYROLIT Hydrostress AG
Witzbergstrasse 18
CH-8330 Pfäffikon
Switzerland
Phone +41 (0) 44 / 952 18 18
Fax +41 (0) 44 / 952 18 00**

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0 Introduction

0.1 Congratulations!

You have decided to purchase a tried and tested TYROLIT Hydrostress AG system and have thus acquired a highly sophisticated and reliable state-of-the-art unit.

Thanks to the emphasis we place on quality assurance, your TYROLIT Hydrostress AG system is another top-of-the-range Swiss product:

- High performance
- Reliable operation
- High portability
- Easy handling
- Low maintenance costs

Only original TYROLIT Hydrostress AG spare parts can guarantee quality and interchangeability.

In the case of neglected or inappropriate maintenance, we will be unable to accept the warranty commitment as specified in our terms of delivery.

Any repair work must be carried out by trained personnel only.

If you need more details about how to keep your TYROLIT Hydrostress AG system in perfect condition, please contact our after-sales service for further information.

We hope that working with your TYROLIT Hydrostress AG system will be a problem-free and fault-free experience.

TYROLIT Hydrostress AG

Management

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TYROLIT Hydrostress AG
Witzbergstrasse 18
CH-8330 Pfäffikon
Switzerland
Phone +41 (0) 44 / 952 18 18
Fax +41 (0) 44 / 952 18 00

0.2 Validity of these Operating Instructions

This manual is only valid for the following system:

Drive Unit PPH20**

0.3 Standards

These Operating Instructions have been prepared in accordance with the CE Machinery Directive Appendix I and with the relevant standards in force at the time of printing.

0.4 Delimitation of the system

These Operating Instructions describe the use of the **Drive Unit PPH20****.

1 Product description

1.1 Application

The Drive Unit PPH20** has been designed as a component for the following concrete processing systems:

- Hydraulic wall saw systems
- Hydraulic diamond wire saw systems
- Hydraulic core drilling systems
- Hydraulic chainsaws

The applicable mandatory limitations on use and other parameters are contained in Chapter 1 "Technical data" 1.7, 1-4

1.2 Safety measures

Any use other than for the intended purpose (see Chapter 1.1, 1-1) constitutes abuse or misuse.

1.3 Operating instructions for connectable equipment

In order to ensure safety in the workplace and in danger areas, as well as the safe operation of connectable equipment, the relevant Operating Instructions must in all cases be followed.

1.4 Name plate

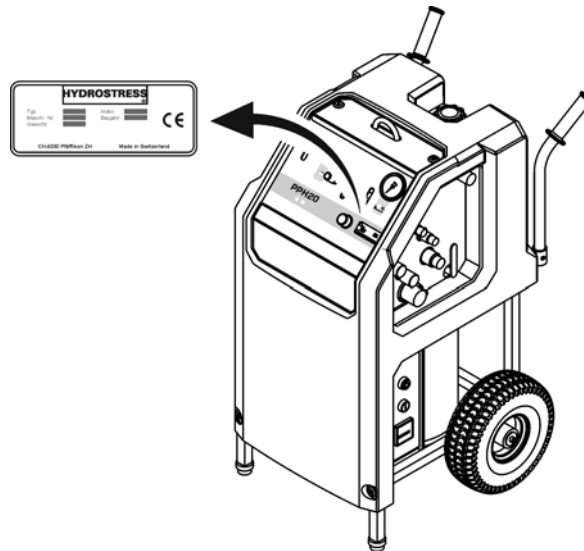






Fig. 1-1 Name plate

1.5 Information sign

Attached to the plastic hood is an information sign containing the following information:

- Hose connections
(For a description see "Chapter 5" 5.3.2.1,  5-2)
- Pressure stages
(For a description see "Chapter 5" 5.4.2,  5-6)
- Risk of frost
(For a description see "Chapter 6" 6.1.1,  6-2)
- Hydraulic oil
(For a description see "Chapter 6" 6.1.2.1,  6-2)

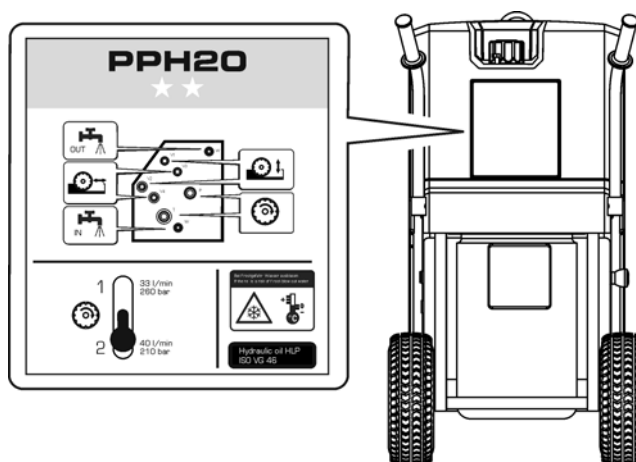


Fig. 1-2 Information sign

1.6 EC Declaration of Conformity

Description	Hydraulic drive unit
Type designation	Drive Unit PPH20**
Year of construction	2007

We declare under our own liability that this product complies with the following directives and standards:

1.6.0.1 Directive applied:

Machinery Directives 2006/42/EC
EC Low Voltage Directives 73/23/EC
EN 2002/96/EG Waste electrical and electronic equipment

1.6.0.2 Standards applied:

EN 12100-1 Safety of machinery – Basic concepts, general design
EN 12100-2 principles
EN 294 Safety of machinery – Safety distances to prevent upper limbs reaching danger areas
EN 349 Safety of machinery – Safety distances to avoid crushing of body parts
EN 982 Safety of machinery
Safety requirements of safety systems and their components - Hydraulics
EN 60204-1 Safety of machinery - Electrical equipment of machines

1.7 Technical data

1.7.1 Dimensions

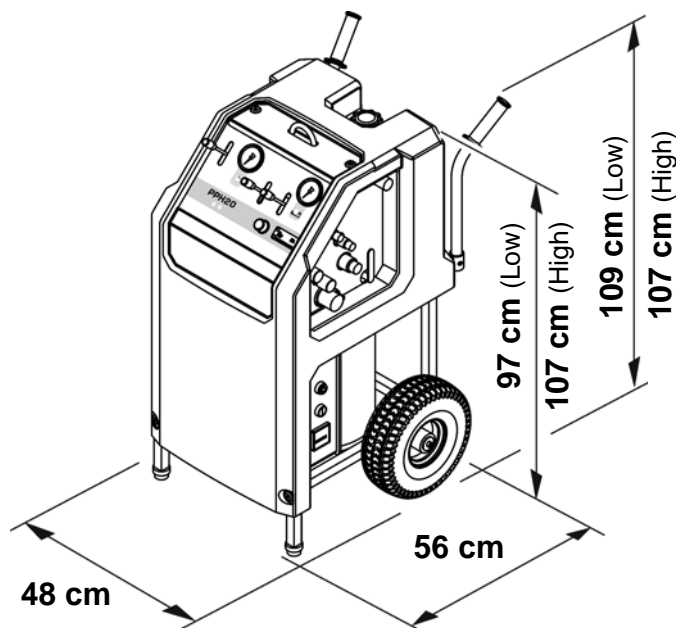


Fig. 1-3 Dimensions

1.7.2 Weight

Operating weight	145 kg	380-420V / 50Hz (Low)
	172 kg	380-420V / 50Hz (High)
	148 kg	440-480V / 60Hz (Low)
	153 kg	200-240V / 60Hz (Low)

1.7.3 Tyres

Wheel Ø 30 cm

Operating pressure 3 bar

1.8 Hydraulics

1.8.1 Main circuit

Main circuit 2 pumps

Flow rates can be set to 33 / 40 l/min., depending on the cutting tool speed required

Flow rates and pressures

Stage I	33 l/min	260 bar	
Stage II	40 l/min	190 bar	(Low)
Stage II	40 l/min	210 bar	(High)

Same power in all stages

1.8.2 Feed circuits

Feed circuits: 1 pump

Two hydraulic feed outputs which can be regulated independently of each other.

1.8.3 Oil tank

Oil tank volume: 6 litres

Filter quality: 20 µm

1.8.4 Return oil filter

Type: Tank-mounted filter

1.8.5 Oil cooling

Oil cooler: Water/oil heat exchanger

1.8.6 Couplings and hoses

Plug-in couplings	Type FD and FF, non-drip
Hoses	Length 8m (filled with hydraulic oil)

1.8.7 Oil quality

TYROLIT Hydrostress AG recommends:

Hydraulic oil: HLP / ISO VG 46

1.9 Electrical equipment



Information

Electrical data are only valid for the installed loads
3 P / PE 400 VAC / 50 Hz

1.9.1 Different voltages

For countries where different mains networks operate the following types are available:

Drive Unit PPH20**	380-420 V	50 Hz
Drive Unit PPH20**	440-480 V	60 Hz
Drive Unit PPH20**	200-240 V	60 Hz



Warning

A danger will arise if the Drive Unit PPH20 is operated with a different mains network voltage.**

The details on the name plate must correspond to the mains network values (voltage and frequency).

Damage may be caused to the unit if it is connected to a different voltage; there is also a risk of fire and personal injury.

1.9.2 Motor

Electric motor	air-cooled	
Power supply	3 P / PE 380 - 420 V / 50 Hz	
	440 - 480 V / 60 Hz	
Current consumption	380 - 420 V / 50 Hz	32 A
	440 - 480 V / 60 Hz	29 A
	200 - 240 V / 60 Hz	58 A
Output	20 kW	
Speed	at 50 Hz 2900 rpm	
	at 60 Hz 3480 rpm	

1.9.2.1 Motor protection

Thermal protection	Winding thermostat
Electrical protection	Thermal relay

1.9.2.2 Motor cooling

Air cooling

1.9.2.3 Protection class

IP 55

1.10 Water

Pressure min. 2 bar to max. 6 bar
Quantity min. 6 l/min at max 25°C

1.11 Noise exposure (noise level)

Depending on the working environment and the connected device, the Drive Unit PPH20** can produce high noise levels during operation.



Danger

Noise danger

When operating the PPH20** drive unit, the wearing of hearing protection is mandatory at all times.

If this instruction is not followed irreparable hearing damage may result.

1.11.0.1 Noise level measurement

Noise level measured at the ear of the operator 0.5 m from the Drive Unit PPH20**; noise power level according to ISO 3744; drive unit only; highest value taken from all operating states at full load; mean values from three series of measurements.

Noise level 83 dB (A) noise power level 92 dB (A)

1.12 Scope of supply

- Drive Unit PPH20**
- Operating Instructions / Spare parts list

2 Safety instructions

2.1 General

All persons who work on and with the Drive Unit PPH20** have a duty to read and understand the Operating Instructions.

2.1.1 Observance of the safety instructions

The Drive Unit PPH20** has been inspected before being shipped and is delivered in perfect condition. TYROLIT Hydrostress AG does not accept any liability for damage which is caused by failure to observe the instructions and information provided in the Operating Instructions. This applies in particular to:

- Damage caused by improper use and operator error.
- Damage caused by failure to observe safety-related information in the Operating Instructions or shown on the warning signs attached to the machine.
- Damage caused by defective or neglected maintenance work.

Independently performed conversions and alterations may affect safety and are not permitted.

2.2 General safety rules

2.2.1 Statutory provisions

The generally applicable national and local safety and accident prevention provisions and the supplementary operator regulations must be followed and complied with.

2.2.2 Inspection and maintenance obligation

The operator is under an obligation to use the Drive Unit PPH20** only when it is in a perfect and undamaged condition. The maintenance intervals shown in the Operating Instructions must be adhered to without fail. Malfunctions and mechanical damage must be rectified without delay.

2.2.3 Spare parts

Only TYROLIT Hydrostress AG original spare parts may be used. Otherwise, damage can be caused to the Drive Unit PPH20** or other property and may result in personal injury.

2.2.4 Power connections

The Drive Unit PPH20** must be connected and coupled in accordance with the Operating Instructions.

2.3 Safety principles

2.3.1 Delimitation of the safety concept

The Drive Unit PPH20** does not affect the safety concept of the connected systems, equipment and installations.

2.3.2 Safety elements

Protection from live electrical parts

All functional units containing parts which carry hazardous voltages are shock-protected by suitable covers.

2.3.3 Removal of protective devices

Protective devices may only be removed if the unit has been switched off, disconnected from the mains and is at standstill. Safety components, in particular, may only be removed and refitted by authorised personnel, see "Chapter 2" 2.4.1, 2-3.

Before switching the Drive Unit PPH20** back on again, the safety elements must be checked to ensure correct operation.

2.3.4 Safety measures (organisational)

2.3.4.1 Product monitoring obligation

Operating personnel must notify changes in operational behaviour or safety-related components to a responsible person or the manufacturer, immediately.

2.3.4.2 Location of the Operating Instructions

A copy of the Operating Instructions must be available to staff at all times at the place of use of the equipment.

2.4 Responsibility

2.4.1 Authorised personnel

Work on or with the TYROLIT Hydrostress AG machines or systems may only be performed by authorised personnel. Personnel are considered by TYROLIT Hydrostress AG to be authorised if they meet the necessary training and know-how requirements and they have been assigned a precise functional role.

The personnel qualifications for the corresponding work are contained in the introduction under "General" of the respective chapters.

2.4.2 Manufacturer

TYROLIT Hydrostress AG or a company expressly nominated by TYROLIT Hydrostress AG is deemed to be the manufacturer of the products supplied by TYROLIT Hydrostress AG. Within the context of an integrated quality and safety control system, the manufacturer is entitled to request from the operator information about the products.

2.4.3 Operator (owner)

The operator named by TYROLIT Hydrostress AG is the primary, legal entity responsible for the correct use of the product and for the training and assignment of the authorised personnel. The operator sets out the mandatory skills and level of training of the authorised personnel for his company.

2.4.4 Operator (user)

User is the term employed by TYROLIT Hydrostress AG to designate a person who independently performs the following work:

- Sets up TYROLIT Hydrostress AG machines or systems for tasks according to the intended purpose.
- Performs tasks independently and monitors these.
- Locates malfunctions and initiates or performs troubleshooting.
- Carries out servicing and simple maintenance.
- Monitors the correct functioning of the safety devices.

2.4.5 Service engineer

Service engineer is a term used by TYROLIT Hydrostress AG to designate a person who independently performs the following work:

- Installs TYROLIT Hydrostress AG machines and systems and controls their correct application.
- Makes adjustments to machines and systems for which special access rights are required.
- Performs repairs, complex service work and maintenance work.

2.4.6 Qualification and training

2.4.6.1 Operator (owner)

- A technically trained person in a management position.
- Has relevant experience in personnel management and danger assessment.
- Has read and understood the "Safety instructions" chapter.

2.4.6.2 Operator (user)

- Has trained as a concrete cutting expert or has professional experience.
- Has received an introduction (basic training) to the operation of the TYROLIT Hydrostress AG machines and systems from a service engineer.
- Has read and understood Chapter 2 "Safety instructions".

2.4.6.3 Service engineer

- Has specialist professional training (mechanical / electrotechnical).
- Has attended specialist courses at TYROLIT Hydrostress AG.
- Has read and understood the "Safety instructions" chapter.

2.5 Generally applicable warnings of residual dangers



Danger

Electric shock due to defective electronic equipment.

The electrotechnical equipment must be checked prior to each use and from time to time during prolonged use. Defective parts, such as e.g. cables and plugs, must be replaced immediately in the de-energized state by electrotechnically trained personnel.

Failure to comply with this regulation may lead to serious physical injury or death. Secondary damage such as fires may also occur.



Warning

Danger of allergic reactions if skin comes into contact with hydraulic oil.

Persons who have an allergic reaction to hydraulic oil must wear protective gloves and goggles when carrying out work where they come into contact with hydraulic oil. Any areas of the skin affected must be rinsed immediately with copious amounts of water.

Failure to observe this regulation may result in allergic reactions or injury to the eyes.

3 Design and function

3.1 Design

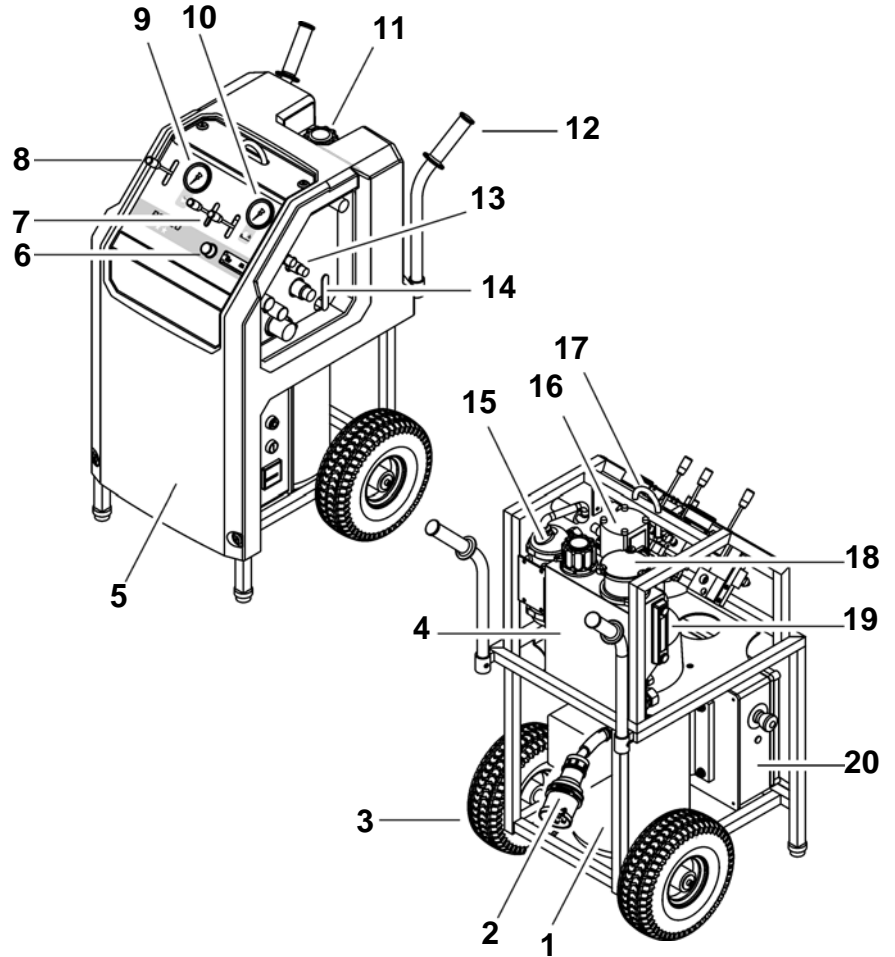


Fig. 3-1 Components

- | | |
|---|-----------------------------|
| 1 Electric motor | 11 Oil filler neck |
| 2 Electrical connection | 12 Transport handle |
| 3 Wheel | 13 Coupling connector piece |
| 4 Oil tank | 14 Water valve |
| 5 Hood | 15 Oil cooler |
| 6 Pressure control of feed motors | 16 Pump assembly |
| 7 Direction selector lever of feed motors | 17 Suspension shackle |
| 8 Pressure stage selector lever of main motor | 18 Oil filter |
| 9 Pressure gauge of main motor | 19 Oil level indicator |
| 10 Pressure gauge of feed motors | 20 Electrical box |

3.2 Function

3.2.1 Hydraulic circuit diagram

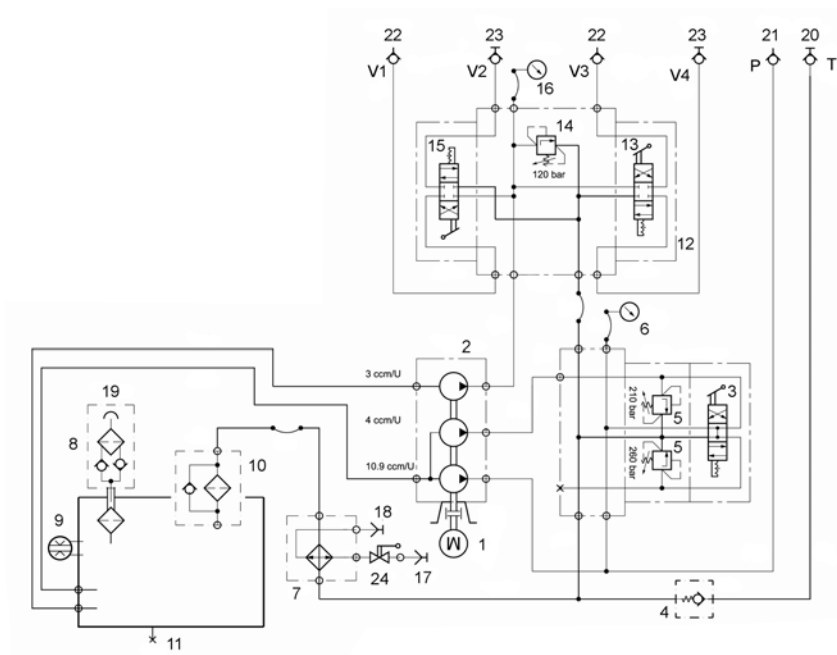


Fig. 3-2 Hydraulic circuit diagram

- | | |
|----------------------------|-----------------------------|
| 1 Electric motor | 14 Pressure control valve |
| 2 Pump assembly | 15 Distributing regulator |
| 3 Control valve | 16 Pressure gauge 0-250 bar |
| 4 Check valve | 17 Nipple |
| 5 Pressure relief valve | 18 Coupling |
| 6 Pressure gauge 0-400 bar | 19 Tank cover |
| 7 Oil-water cooler | 20 Coupling |
| 8 Aeration filter | 21 Nipple |
| 9 Oil level | 22 Nipple |
| 10 Return filter | 23 Coupling |
| 11 Screw plug | 24 Water valve |
| 12 Control valve | |
| 13 Distributing regulator | |

3.2.2 Wiring diagram

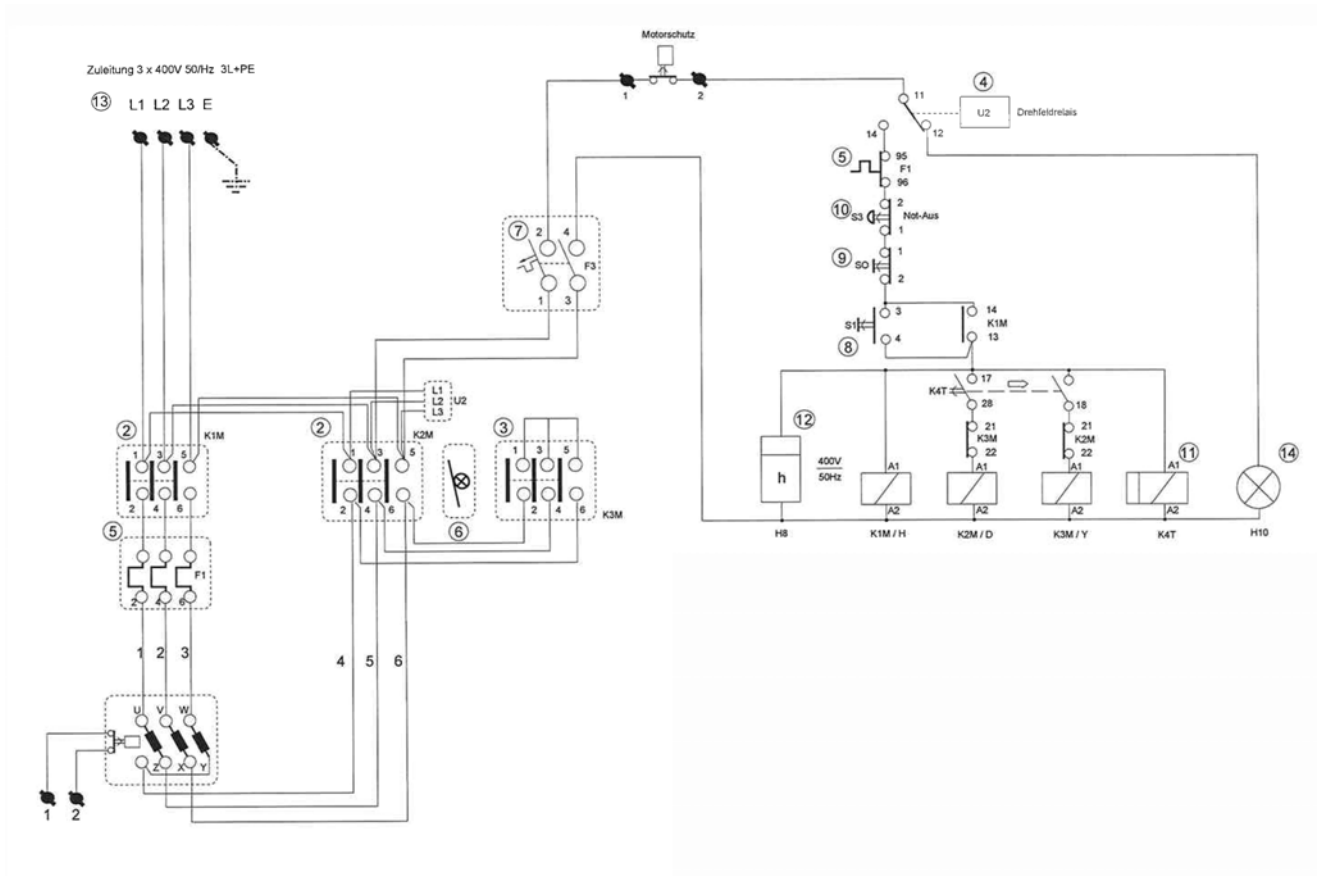


Fig. 3-3 Wiring diagram

- | | |
|------------------------|-------------------|
| 1 Elec. box | 9 Pushbutton |
| 2 Contactor | 10 EMERG. STOP |
| 3 Contactor | 11 Time relay |
| 4 Phase sequence relay | 12a Rotation lock |
| 5 Thermal relay | 12b Hour counter |
| 6 Interlock | 13 Plug CEE 32/5 |
| 7 Circuit breaker | 14 Pilot lamp |
| 8 Pushbutton | |

4 Controls and displays

4.1 Controls

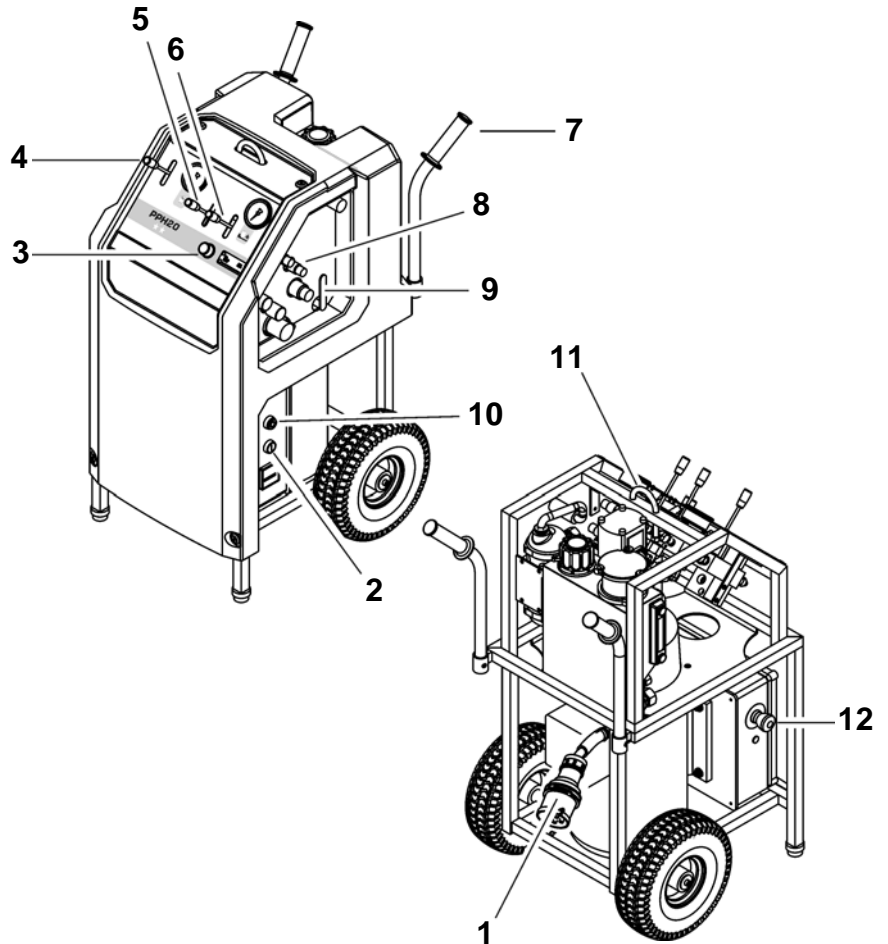


Fig. 4-1 Controls

- | | | | |
|---|---|----|-------------------------------|
| 1 | Current phase reversing plug | 8 | Water and hydraulic couplings |
| 2 | Start button | 9 | Water valve |
| 3 | Pressure regulation of feed motors | 10 | Off switch |
| 4 | Pressure stage selector lever of main motor | 11 | Suspension shackle |
| 5 | Direction selector lever of feed motor | 12 | EMERG. STOP |
| 6 | Direction selector lever of feed motor | | |
| 7 | Transport handle | | |

4.2 Electric controls

4.2.1 Current phase reversing plug / Forward/reverse switch

If the phase position of the power supply to the site is wrong, the phases can be turned.

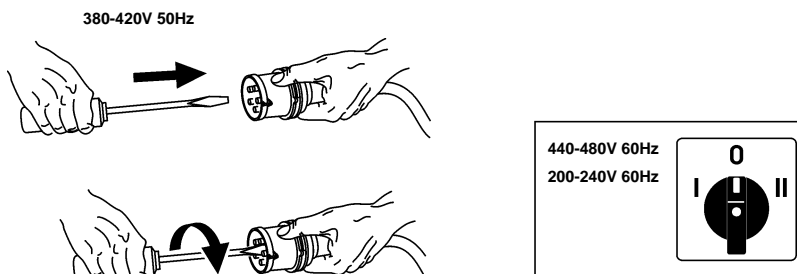


Fig. 4-2 Current phase reversing plug

4.2.2 EMERGENCY STOP

Pressing the EMERGENCY STOP button switches the system off and prevents the system being accidentally switched on again.

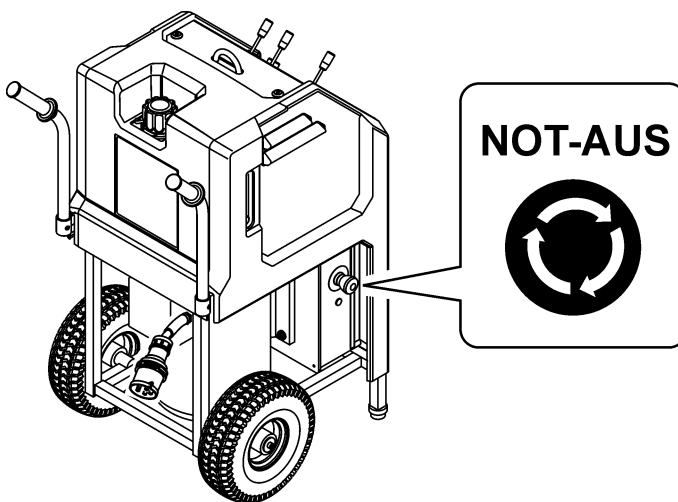


Fig. 4-3 EMERGENCY STOP

4.3 Displays

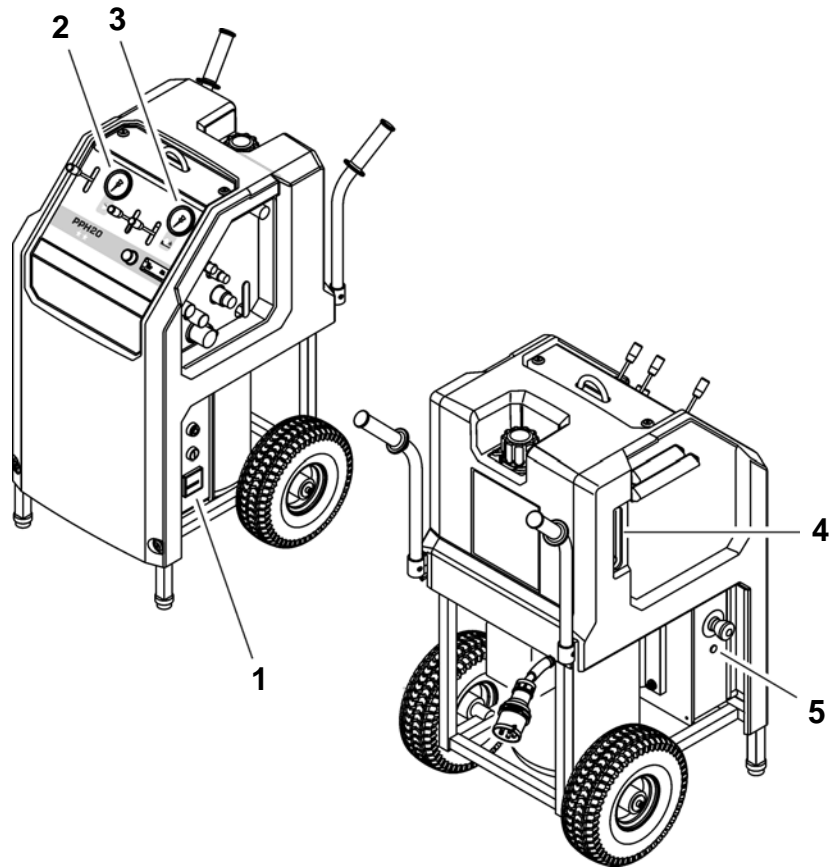


Fig. 4-4 Displays

- | | |
|---------------------------------|----------------------------|
| 1 Hour counter | 4 Oil level indicator |
| 2 Pressure gauge of main motor | 5 Current phase pilot lamp |
| 3 Pressure gauge of feed motors | |

4.3.1 Hour counter

The hour counter allows for precise observance of the service intervals.

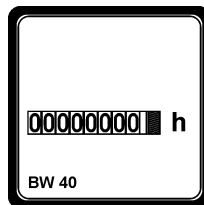


Fig. 4-5 Hour counter

4.3.2 Pressure gauge

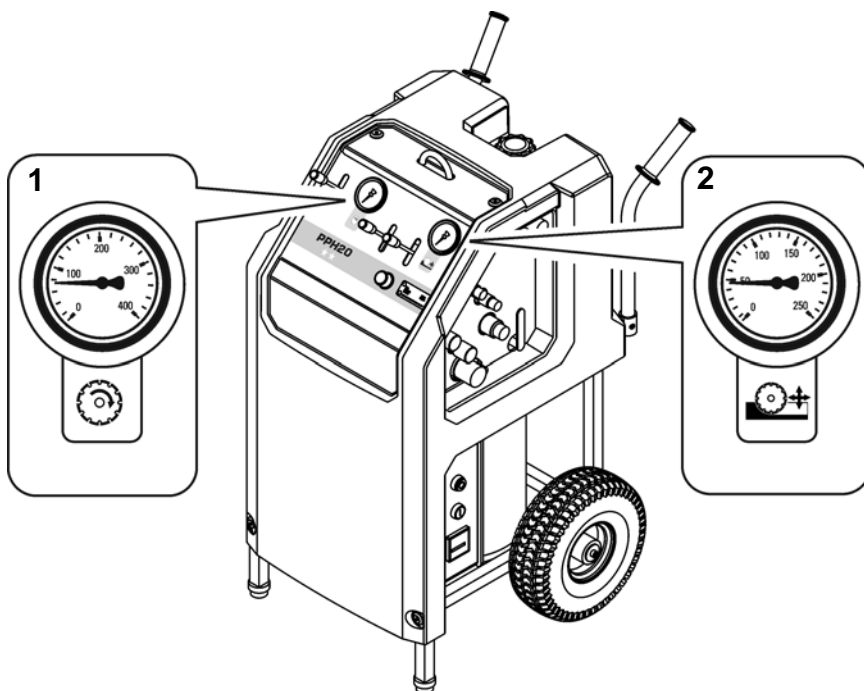


Fig. 4-6 Pressure gauge

- 1 Pressure gauge for main motor (0 bar to 400 bar)
- 2 Pressure gauge for feed motors (0 bar to 250 bar)

4.3.3 Oil level indicator

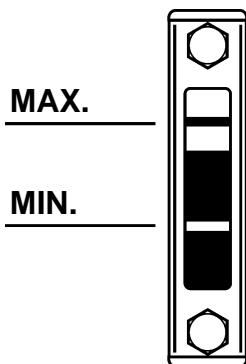


Fig. 4-7 Oil level indicator

Information



The quantity of oil between oil MIN and oil MAX is 1.5 litres.

Different types of hydraulic oil should not be mixed together, otherwise the oil will age prematurely.

Recommended hydraulic oil: HLP / ISO VG 46

5 Operation

5.1 Personnel qualifications

The Drive Unit PPH20** must not be operated by unauthorised personnel. Personnel are only authorised if they meet the following requirements.

- Have trained as a concrete cutting expert or have professional experience.
- Have received an introduction (basic training) to the operation of the Drive Unit PPH20** from a service engineer.
- Have read and understood chapter 2 "Safety instructions".

5.2 System requirements




Warning

A danger will arise if the Drive Unit PPH20 is operated with a different mains network voltage.**

The details on the name plate must correspond to the mains network values (voltage and frequency).

The system may be damaged by connecting it to a different voltage. There is also a danger of fire and injury.

5.2.1 Connectable equipment

All hydraulic units that are designed for the pressure and delivery volume of the Drive Unit PPH20**. (see "Chapter 1" 1.8,  1-5)



Information

The Drive Unit PPH20** is one of a series of drive products available from TYROLIT Hydrostress AG.

In order to allow expansion of your Drive Unit PPH20** with suitable devices to create an hydraulic saw or drilling system with optimum performance, please talk to TYROLIT Hydrostress AG.

5.3 Preparatory operations

5.3.1 Visual inspection

Before starting work always complete the following visual inspections:

- Is the power supply earthed and fitted with a residual current circuit breaker?
- Does the mains network have the correct fuse protection?

Design	Fuse protection	Cable cross section
380 - 420 V / 50Hz	32 A	5x6 mm ² (from 25 to 50 m 5x10 mm ²)
420 - 480 V / 60 Hz	32 A	5x6 mm ² (from 25 to 50 m 5x10 mm ²)
200 - 240 V / 60 Hz	63 A	5x10 mm ² (from 25 to 50 m 5x16 mm ²)

- Is the water line properly connected to the Drive Unit PPH20**?



Information
Ensure that the water supply is not interrupted while work is in progress.

- Is there sufficient oil in the Drive Unit PPH20**?
- Is there any damage to cables or plugs?
- Has the EMERGENCY STOP been reset?

5.3.2 Connecting the Drive Unit PPH20**

5.3.2.1 Connecting the hoses



Warning
<p>Danger from uncontrolled movements and uncontrolled escape of oil!</p> <p>Never connect or disconnect hoses while the drive unit is running!</p> <p>Failure to observe this regulation may result in cut wounds or injury to body parts as well as damage to property.</p>

5.3.2.2 Hose connections

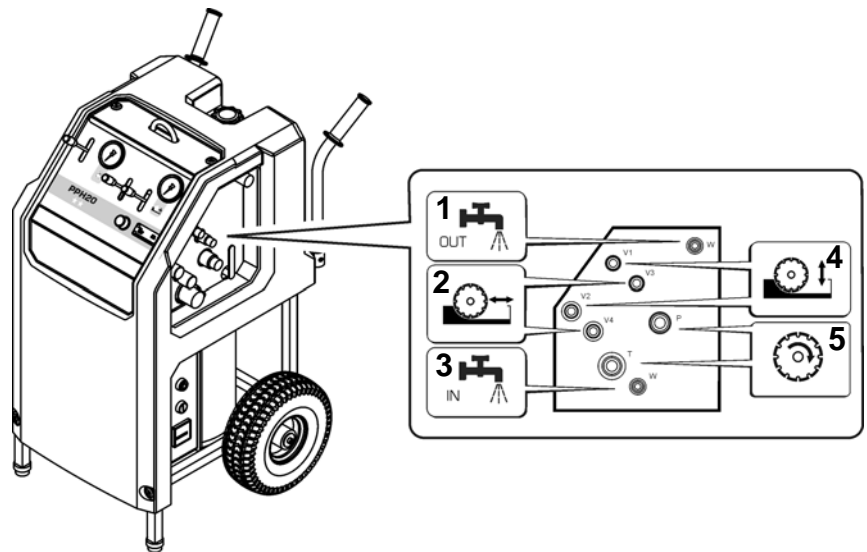


Fig. 5-1 Hose connections

- 1 Water connection OUT
- 2 Couplings of feed motor 1
- 3 Water connection IN
- 4 Couplings of feed motor 2
- 5 Main motor couplings

Proceed as follows:

- Visual inspection
 - Check:
 - Oil leaks from hoses and couplings
 - Couplings for damage and contamination
 - Hoses for damage
- Push the hose coupling on to its counterpart until you hear it "click"
- Twist the locking ring of the coupling

Information



If hoses cannot be connected or this cannot be done easily, they are under pressure. Release pressure in hoses via the pressure relief device. Release pressure in the Drive Unit PPH20**, see "Chapter 5" 5.3.2.3, 5-3.

Never use force to connect couplings!

5.3.2.3 Release pressure in the Drive Unit PPH20**

Proceed as follows:

- Push the feed lever to one of the limit positions

5.3.3 EMERGENCY STOP

In danger situations the EMERGENCY STOP button must be pressed immediately.

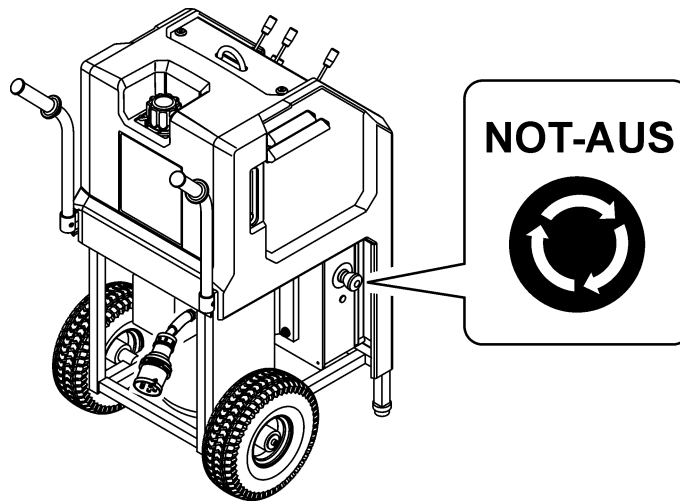


Fig. 5-2 EMERGENCY STOP



Information

Deactivating EMERG. STOP:
The EMERG. STOP is deactivated by turning it clockwise.

5.4 Working

5.4.1 Starting the Drive Unit PPH20**



Information

The Drive Unit PPH20** should only be switched on in a level and up-right position.

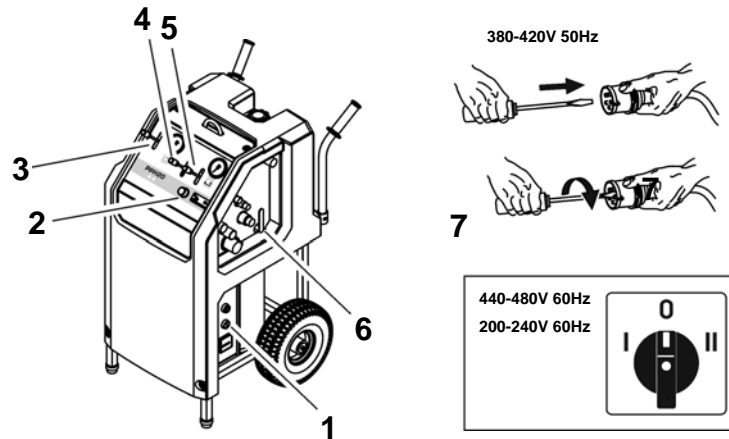


Fig. 5-3 Starting the Drive Unit PPH20**

- 1 Start button
- 2 Pressure control valve of feed
- 3 Pressure stage selector lever of main motor
- 4 Direction selector lever of feed 1
- 5 Direction selector lever of feed 2
- 6 Water valve
- 7 Current phase reversing plug / Forward/reverse switch

- Check that the EMERG. STOP on the Drive Unit PPH20** is deactivated.
- Push the pressure stage selector lever (3) to the 0 position
- Push the direction selector levers (4 / 5) to the 0 position
- Turn the rotary selector of the pressure control valve (2) to the 0 position
- Open the water valve (6)
 - Water emerges from the cutting tool
- Press the start button (1)
- The electric motor starts up; the Drive Unit PPH20** is ready for operation



Information

If the electric motor does not start but the phase pilot lamp lights up, the direction of rotation on the current phase reversing plug 7 must be turned.

5.4.2 Selecting the pressure stage of the main circuit

Once the Drive Unit PPH20** has been started properly, the pressure stage can be selected.

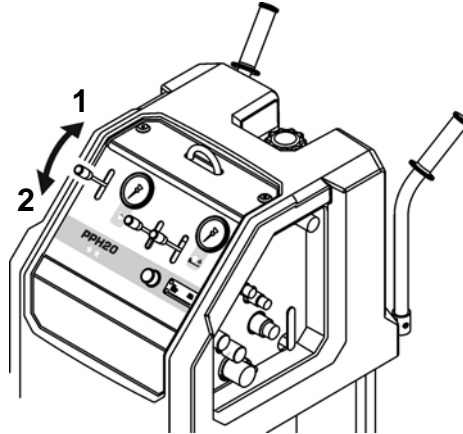


Fig. 5-4 Selecting the pressure stage

Pressure stage 1 33 l/min 260 bar
 Pressure stage 2 40 l/min 210 bar (High)
 Pressure stage 2 40 l/min 190 bar (Low)



Information

On the Drive Unit PPH20**, two fixed pressure stages can be selected for the main circuit. The pressure stages cannot be regulated.



Information

The pressure stages can be freely changed and selected during the work operation. When changing the pressure stage, the cutting tools should not be under load.
 To ensure the optimal tool speeds, the data for the relevant connected devices must be taken into consideration.

5.4.3 Feed movements

The feed movements can only be controlled individually by means of the two feed levers.

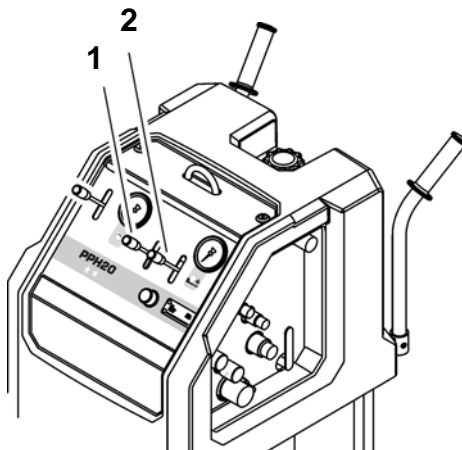


Fig. 5-5 Feed

- 1 Direction selector lever (travel feed)
- 2 Direction selector lever (swivel feed)

5.4.3.1 Feed power

The feed power can be adjusted by means of a rotating handle.

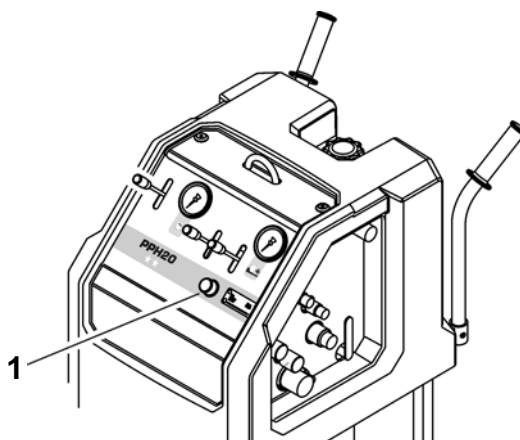


Fig. 5-6 Pressure control valve

- 1 Rotating handle for regulating the power

5.4.4 Shutting down the Drive Unit PPH20**

Proceed as follows:

- Push the pressure stage selector lever to the 0 position
- Push the direction selector levers of the feeds to the 0 position
- Turn the rotary handle of the pressure control valve to the 0 position
- Switching off the Drive Unit PPH20** by means of the Off button (EMERG. STOP)
- Close the water valve on the Drive Unit PPH20**

5.5 After the work

Proceed as follows:

- Unplug the mains plug (Drive Unit PPH20**)
- Uncouple the water supply on the Drive Unit PPH20**
- Open the water valve on the Drive Unit PPH20**
- Uncouple the hydraulic hoses
- Clean the Drive Unit PPH20** with water



Information

In order to avoid frost damage, if there is a danger of frost the entire water system must be emptied on finishing work or prior to extended breaks in the work.

6 Servicing

6.1 Servicing and maintenance table

		Before each start-up	Upon completion of work	Weekly	Annually	In the event of malfunction	In the event of damage
Hydraulic system	Hydraulic hose inspection (leakproof condition / cleanliness)	X	X			X	X
	Coupling inspection (leakproof condition / cleanliness)	X	X			X	X
	Check oil level, see "Chapter 4" 4.3.3, 4-4	X	X			X	
	Replace hydraulic oil, see "Chapter 6" 6.1.2, 6-2					X	
Water economy	Water line (leakproof condition / cleanliness)	X	X			X	X
	If there is a risk of frost, blow out the water, see "Chapter 6" 6.1.1, 6-2		X				
Mechanical	Retighten accessible screws and nuts			X		X	
Major service First service after 100 operating hours After every 200 operating hours, thereafter	May only be carried out by TYROLIT Hydrostress AG or an authorised representative						

6.1.1 Blowing out the water



Information	
In order to prevent damage from frost-cracks, if there is a risk of frost or prior to extended breaks in work the cooling water must be blown out of the system.	

6.1.2 Oil change

6.1.2.1 Oil quality

TYROLIT Hydrostress AG recommends:

Hydraulic oil: HLP / ISO VG 46

Other hydraulic oils can be used if they comply with the following specifications:

Pour point:	-42° C
Viscosity index	170
Viscosity class:	HLP VG 46 or ISO 3498 HV 46
Wear-protection according to DIN 51524 Part 3 (HV46)	



Information	
Different types of hydraulic oil should not be mixed together, otherwise the oil will age prematurely.	

6.1.2.2 Replacing hydraulic oil

In order to replace the hydraulic oil you will need:

- A collecting pan for the used hydraulic oil with a capacity of approx. 15 litres
- Open-ended spanner, size across flats 18 mm for the oil drain plug
- Approx. 6 litres of hydraulic oil

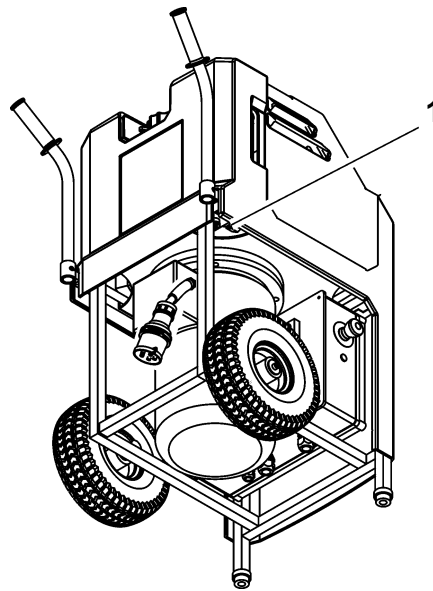


Fig. 6-1 Replacing hydraulic oil

1 Oil drain plug

Proceed as follows:

- Place the collecting pan below the oil drain plug (1)
- Open tank cover
- Remove oil drain plug (1)
- Drain hydraulic oil completely
- Screw in oil drain plug (1)
- Fill tank with new hydraulic oil
- Bleeding the system
- Close the tank cover
- Dispose of waste hydraulic oil in accordance with local regulations

Bleeding the system**Information**

Air must be bled from the system whenever the tank has been completely emptied and refilled.

Proceed as follows:

- Open tank cover
- Fill oil to maximum mark
- Do not refit the tank cover, yet
- Short-circuit the main circuit with hose
- Start the Drive Unit PPH20**, see "Chapter 5" 5.4.1, 5-5
- Select the pressure stage 2, see "Chapter 5" 5.4.2, 5-6
- Allow the Drive Unit PPH20** to run for a maximum of 5 seconds
- Switch off the Drive Unit PPH20**, see "Chapter 5" 5.4.4, 5-8
- Wait for 1 minute
- Repeat the start-up and shutdown process three times
- Check the oil level and top up the hydraulic oil as necessary
- Fit tank cover
- The system is now free of air.

7 Corrective maintenance

7.1 Troubleshooting

The following table will help you to narrow down and rectify the source of the fault.

Fault	Possible cause	Solution
Drive Unit PPH20** does not run, although the mains cable is connected	Current phase reversing plug in wrong position (phase pilot lamp lights up)	Change the direction of rotation with the current phase reversing plug see "Chapter 4" 4.2.1, 4-2
	Emergency stop has been activated	Release the Emergency Stop, see "Chapter 5" 5.3.3, 5-4
	No voltage at drive unit because:	
	Automatic circuit breaker in electric controller has tripped	- Reset automatic circuit breaker - Have the mains network checked
	Mains cable is defective	Replace the mains cable
	No voltage at the power supply (building site)	Check power supply
	Phase missing	Check power supply
Drive unit starts up, but then switches off again	Fuse of building site power supply trips	- Fuse protection too weak - Change power supply
	Incorrect voltage	The details on the name plate must correspond to the mains network values (voltage and frequency)
No power, although electric motor is running and valves are open	Defective pump	Have pump replaced by TYROLIT Hydrostress AG or an authorised representative
	Motor direction of rotation is wrong (phase pilot lamp does not light up)	Change the direction of rotation with the current phase reversing plug see "Chapter 4" 4.2.1, 4-2 For drive unit with monitoring Inform TYROLIT Hydrostress AG after-sales service
The hydraulic oil is cloudy, light in colour and the tank overflows	Defective oil cooler	Inform TYROLIT Hydrostress AG after-sales service Warning: Do not continue operating the unit, otherwise hydraulic elements could be damaged
Coupling leaks	- Defective seal - Defective coupling	- Replace seal - Replace coupling

Fault	Possible cause	Solution
The drive unit shuts down suddenly	Power supply interrupted because electric motor or thermal relay has overheated.	Check power supply see "Chapter 1" 1.9.1, 1-6 Check power supply see "Chapter 1" 1.9.1, 1-6 Use mains cable with correct cross section, see "Chapter 5" 5.3.1, 5-2 Allow the motor to cool down
	Reasons: - Undervoltage at the power supply	
	- Overvoltage at the power supply	
	- Cross section of power supply cable too small	
	- Electric motor overheating	Allow the motor to cool down
No pressure build-up in feed circuit	Defective pump	Inform TYROLIT Hydrostress AG after-sales service
	Motor direction of rotation is wrong (phase pilot lamp does not light up)	Change the direction of rotation with the current phase reversing plug see "Chapter 4" 4.2.1, 4-2 For drive unit with monitoring Inform TYROLIT Hydrostress AG after-sales service
No water emerging	Water line is blocked	Clean the water line
	Water valve on feed line is closed	Open water valve
	Insufficient water pressure	Check water circuit see "Chapter 1" 1.10, 1-7

If you are unable to remedy a fault, please call our service centre (see manufacturer's address on the reverse of the title page).

To guarantee a rapid and professional solution to the problem, it is important that you have prepared as follows before calling:

- Try to describe the fault as accurately as possible
- Note the type and index designation of your unit (name plate)
- Have the Operating Instructions close to hand

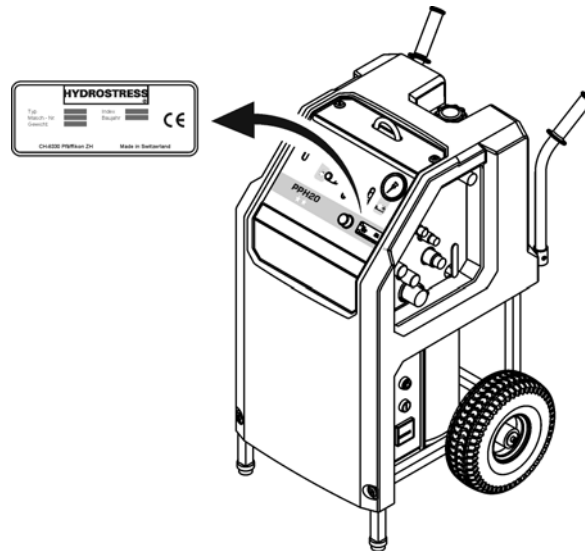


Fig. 7-1 Name plate

7.2 Storage

The Drive Unit PPH20** consists partially of materials which can corrode. If you take the unit out of service for an extended period, proceed as follows:

- Blow out the water from the water lines
- Lightly oil the unit
- Store in a dry location

8 Transport

8.1 Transport

The Drive Unit PPH20** is a high-quality, technical device. Protect it against transport damage:

- Do not place any parts on or against the Drive Unit PPH20**
- Protect the Drive Unit PPH20** from impacts
- The Drive Unit PPH20** must be secured against rolling away during transport

8.2 Safety instructions

It is essential to observe the following safety instructions, especially with regard to transport of the Drive Unit PPH20**.



Danger

Danger from incorrect crane transport.

**Crane transport must only be carried out using the crane suspension shackle provided.
Only undertake crane transport with serviceable building and mobile cranes.**

Failure to observe this regulation may lead to serious physical injury, possibly even death, and to property damage.



Warning

Danger from the lifting of heavy loads.

Units which weight more than 30 kg must not be lifted without suitable equipment.

For transport, use the handles provided. Always keep handles clean and free of grease.

Failure to adhere to this regulation may result in physical injury and damage to property.

8.3 Crane suspension shackle and transport handle

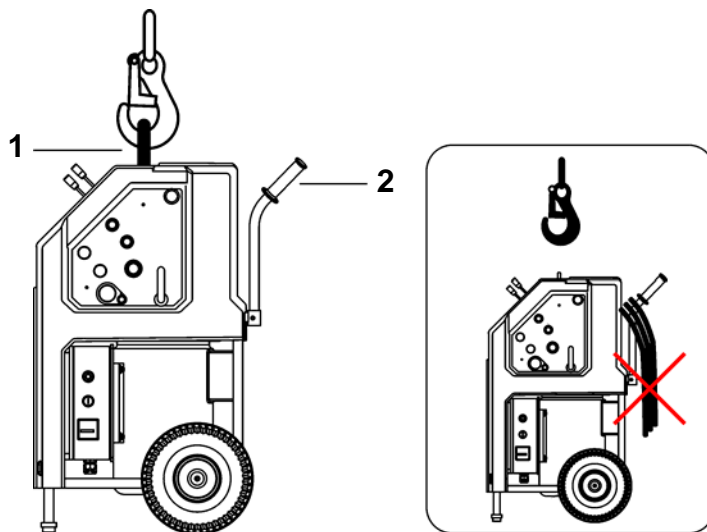


Fig. 8-1 Crane suspension shackle and transport handles

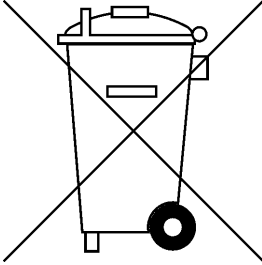
- 1 Crane suspension shackle
- 2 Transport handles with hose bracket



Danger	
<p>Danger of falling parts.</p> <p>When crane transport is used, the Drive Unit PPH20** must be transported alone, (without hoses).</p> <p>Failure to observe this regulation may lead to serious physical injury, possibly even death, and to property damage.</p>	

9 Disposal

9.1 General



The operator can recycle or dispose of the Drive Unit PPH20** himself provided that he observes the statutory provisions. In order to dismantle the unit correctly and to properly separate the materials, some knowledge of mechanical procedures and knowledge about the differentiation of waste materials is necessary.

Before proceeding, first of all read Chapter 2 "Safety instructions", 2-1 in these Operating Instructions. Be sure also to observe all the danger information given here and follow the instructions on how to prevent personal injury and damage to property.

9.1.1 Safety instructions

It is essential to observe the following safety instructions, especially in relation to disposal of the Drive Unit PPH20**.



Danger

Danger of falling heavy parts.

When performing the types of work described in this chapter, it is absolutely essential to wear the following personal protective equipment: goggles, protective gloves and safety shoes.

It is essential to ensure that the work instructions and procedures described in this safety manual are followed.

Failure to observe this regulation may lead to serious physical injury, possibly even death, and to property damage.

9.1.2 Personnel qualifications

Personnel who carry out the work described in this chapter must meet the following conditions:

- Have read and understood the safety instructions in "Chapter 2".
- Have completed their technical training (mechanical/electrotechnical) and are in a position to differentiate the various material groups.

9.2 Disposal regulations

The usual national and regional regulations and directives must be observed when disposing of the Drive Unit PPH20**.

9.3 Disposal of the Drive Unit PPH20**

To allow proper disposal, the components of the Drive Unit PPH20** must be dismantled. This is performed by the client's personnel.

The dismantled parts of the device are sorted by material type and sent separately to the appropriate collection points. Ensure, above all, that the following parts are correctly disposed of.

The Drive Unit PPH20 consists of the following materials:**

Cast aluminium	Rolled aluminium products
Copper	Steel
Rubber	Rubber / nylon fabric
Synthetic grease	Hydraulic oil
Plastic	

Ersatzteilliste

Spare Parts List / Liste des pièces détachées / Lista di parti di ricambio

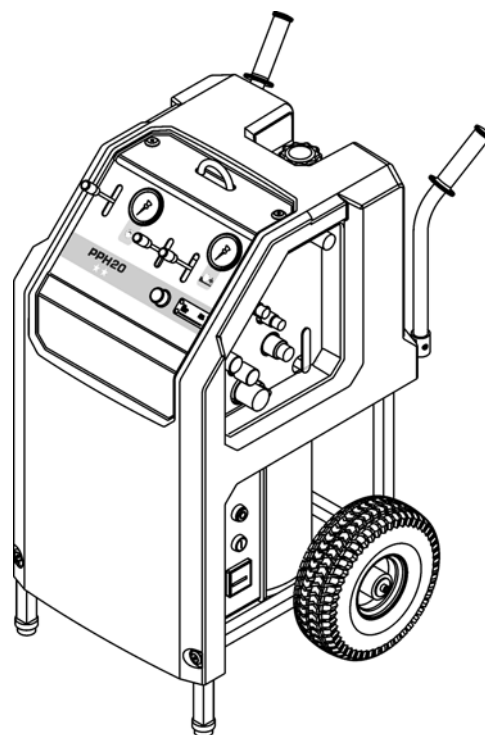
Antriebsaggregat PPH20**

*PPH20** drive unit*

*Groupe d'entraînement PPH20***

*Gruppo di comando PPH20***

Index / Indice 000



Verwendung der Ersatzteilliste

Die Ersatzteilliste ist keine Montage- oder Demontageanleitung. Diese Ersatzteilliste dient ausschliesslich zum einfachen und schnellen Finden von Ersatzteilen, die bei der untenstehenden Adresse bestellt werden können.

Sicherheitsvorschrift



Gefahr

Montieren oder demontieren von Baugruppen kann Risiken bergen, auf die in dieser Ersatzteilliste nicht hingewiesen wird.

Das Verwenden dieser Ersatzteilliste für Montage- oder Demontagezwecke ist strikte verboten. Für Montage- und Demontearbeiten sind ausschliesslich die entsprechenden Beschreibungen in der Betriebsanleitung zu befolgen.

Nichtbeachten dieser Vorschrift kann zu Verletzungen führen, die im schlimmsten Fall auch den Tod zur Folge haben könnten.

Bestellungen



Information

Um Falschlieferungen zu vermeiden sollten vor der Versendung die Angaben in der Bestellung auf Richtigkeit und Vollständigkeit (siehe unter Bestellangaben) überprüft werden.

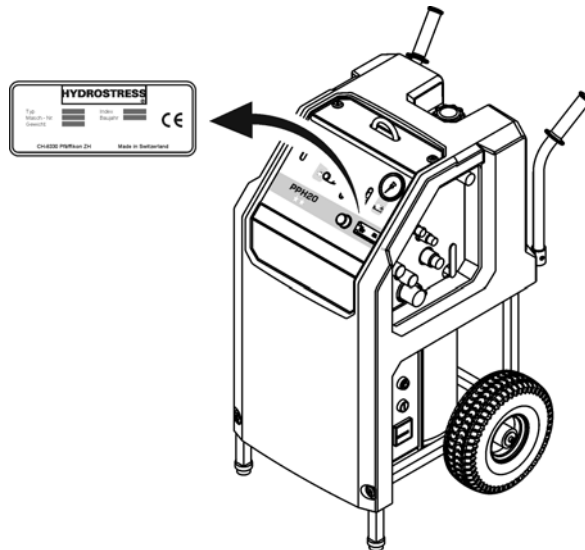
Es ist auch darauf zu achten, dass die Lieferadresse vollständig angegeben ist.

Bestelladresse:

TYROLIT Hydrostress AG
Witzbergstrasse 18
CH-8330 Pfäffikon
Switzerland
Telefon +41 (0) 44 / 952 18 18
Telefax +41 (0) 44 / 952 18 18
e-mail: info@tyrolit.com
www.tyrolit.com

0 Ersatzteilliste

0.1 Bestellangaben



Bei Bestellungen von Ersatzteilen benötigen wir folgende Angaben:

- Maschinentyp gemäss Typenschild (z.B. PPH20**)
- Maschinennummer gemäss Typenschild (z.B. 10977640)
- Maschinenindex gemäss Typenschild (z.B. 000)
- Ersatzteilnummer gemäss Ersatzteilliste (z.B. 10977530)

Für Bestellungen, Fragen und Informationen wenden Sie sich bitte an die zuständige Niederlassung.

How to use the spare parts list

The spare parts list is not intended as instructions for assembly or dismantling work. It is exclusively intended to help you to quickly and easily find spare parts, which can then be ordered at the address below.

Safety regulations



Danger

The assembling or dismantling of modules can involve risks which are not identified in this spare parts list.

The use of this spare parts list for assembly or dismantling purposes is strictly forbidden. For assembly or dismantling tasks it is essential to only follow the corresponding descriptions in the operating manual.

If this regulation is not heeded injuries may be incurred which in the worst case can also be fatal.

Ordering



Information

To avoid incorrect deliveries you should check the order details for correctness and completeness (see under ordering details) prior shipment.

You should ensure that the delivery address is given in full.

Order address:

TYROLIT Hydrostress AG

Witzbergstrasse 18

CH-8330 Pfäffikon

Switzerland

Tel. +41 (0) 44 / 952 18 18

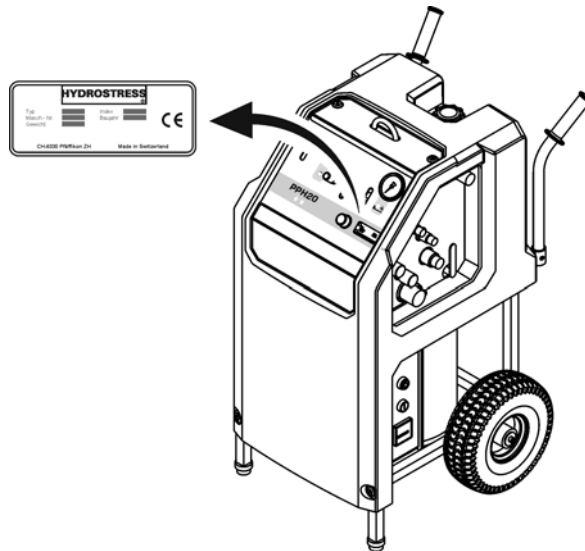
Fax +41 (0) 44 / 952 18 18

e-mail: info@tyrolit.com

www.tyrolit.com

0 Spare Parts List

0.1 Ordering details



When spare parts are ordered we need the following details:

- Machine type according to nameplate (e.g. PPH20**)
- Machine number according to nameplate (e.g. 10977640)
- Machine index according to nameplate (e.g. 000)
- Spare part number according to the spare parts list (e.g. 10977530)

For orders, questions and information please contact your responsible branch office.

Utilisation de la liste des pièces détachées

La liste des pièces détachées n'est pas une instruction de montage ou de démontage. Cette liste sert exclusivement à trouver simplement et rapidement les pièces détachées, qui peuvent être commandées à l'adresse mentionnée ci-dessous.

Prescription de sécurité



Danger

Le montage ou le démontage des modules peut présenter des risques dont il n'est pas fait mention dans cette liste des pièces détachées.

Il est strictement interdit d'employer cette liste des pièces détachées à des fins de montage ou de démontage. Pour les opérations de montage et de démontage, il faut exclusivement suivre les descriptions correspondantes dans le mode d'emploi.

Le non-respect de la présente prescription peut conduire à des blessures, pouvant même entraîner la mort.

Commandes



Information

Pour éviter des livraisons inappropriées, il est conseillé de vérifier avant l'expédition l'exactitude et l'exhaustivité des indications fournies dans la commande (voir Données de commande).

Il faut aussi veiller à bien indiquer l'adresse de livraison en entier.

Adresse de commande :

TYROLIT Hydrostress AG

Witzbergstrasse 18

CH-8330 Pfäffikon

Suisse

Téléphone +41 (0) 44 / 952 18 18

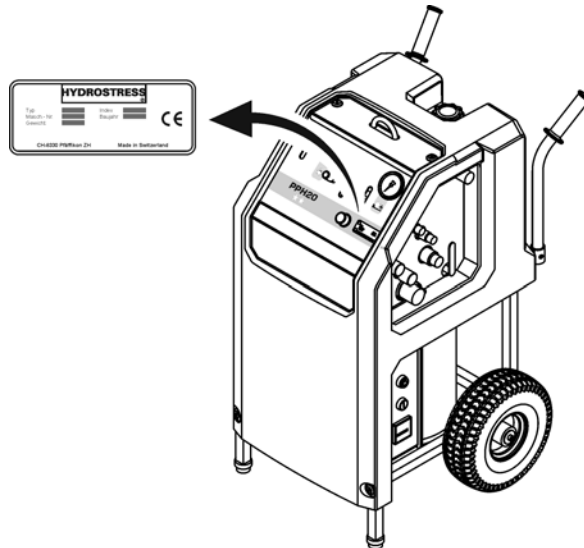
Télécopie +41 (0) 44 / 952 18 18

e-mail: info@tyrolit.com

www.tyrolit.com

0 Liste des pièces détachées

0.1 Données de commande



Lors de la commande de pièces détachées, nous avons besoin des données suivantes :

- Type de machine selon la plaque signalétique (p.ex. PPH20**)
- Numéro de machine selon la plaque signalétique (p.ex. 10977640)
- Indice de machine selon la plaque signalétique (p.ex. 000)
- Numéro de pièce détachée selon la liste des pièces détachées (p.ex. 10977530)

Pour les commandes, questions et informations, vous êtes prié de vous adresser à la filiale compétente.

Uso della lista di parti di ricambio

La lista di parti di ricambio non è un manuale d'istruzioni per montaggio o smontaggio. Questa lista di parti di ricambio serve esclusivamente per trovare in modo semplice e rapido parti di ricambio che possono essere ordinate all'indirizzo riportato qui sotto.

Norme di sicurezza



Pericolo

Il montaggio o lo smontaggio di componenti della macchina può comportare pericoli che non sono indicati in questa lista di parti di ricambio.

E' assolutamente vietato servirsi di questa lista di parti di ricambio per scopo di montaggio o di smontaggio. Per operazioni di montaggio o smontaggio occorre seguire esclusivamente le relative istruzioni nel manuale per l'uso della macchina.

La mancata osservanza di queste norme può comportare lesioni, e nel caso peggiore anche la morte.

Ordinazioni



Informazione

Per evitare forniture incorrette, occorre verificare prima dell'invio dell'ordinazione se i dati indicati in essa sono corretti e completi (vedere la lista dei dati per l'ordinazione).

Occorre verificare anche se l'indirizzo per la consegna è esatto e completo.

Indirizzo per ordinazioni:

TYROLIT Hydrostress AG

Witzbergstrasse 18

CH-8330 Pfäffikon

Svizzera

Tel. +41 (0) 44 / 952 18 18

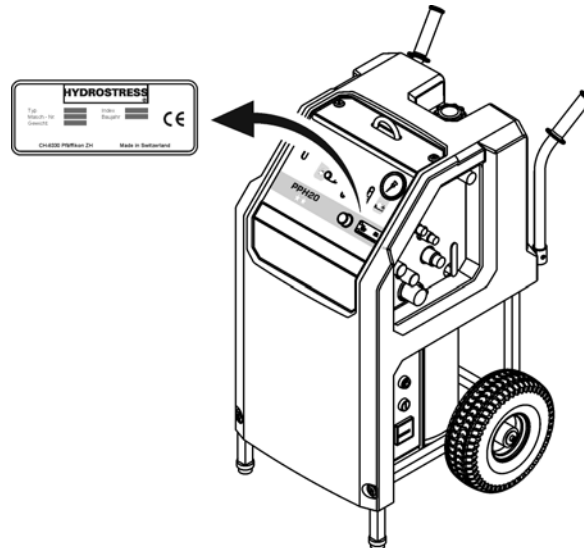
Fax +41 (0) 44 / 952 18 00

e-mail: info@tyrolit.com

www.tyrolit.com

0 Lista di parti di ricambio

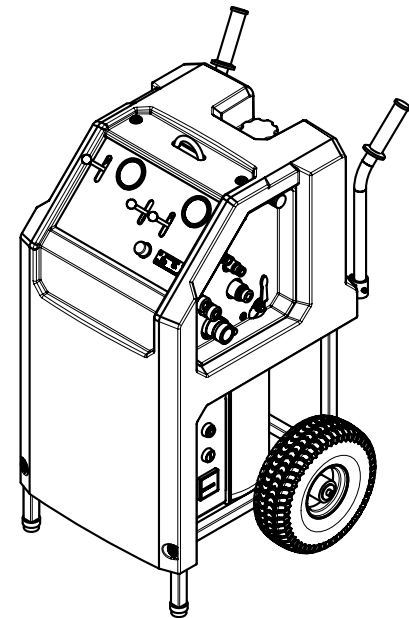
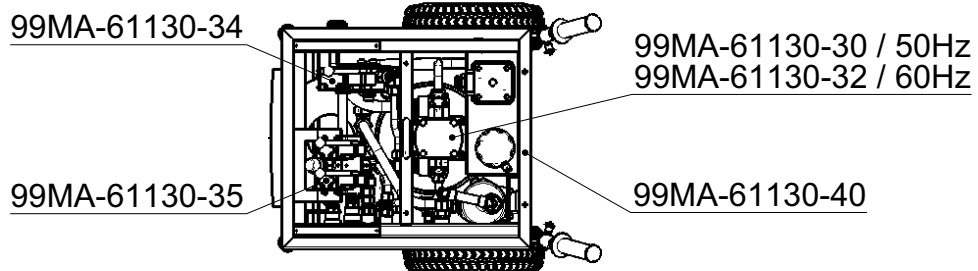
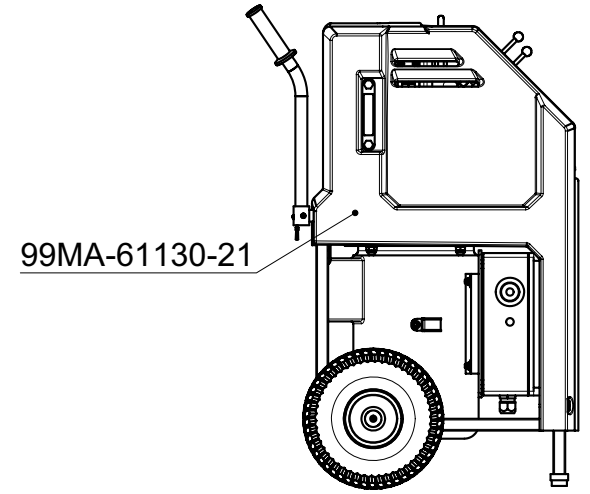
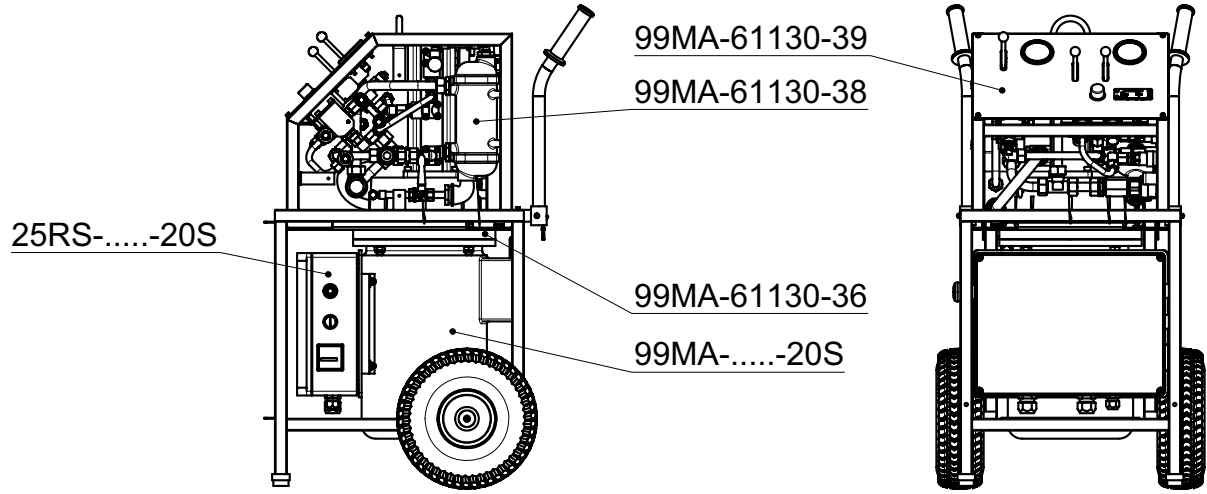
0.1 Dati per l'ordinazione



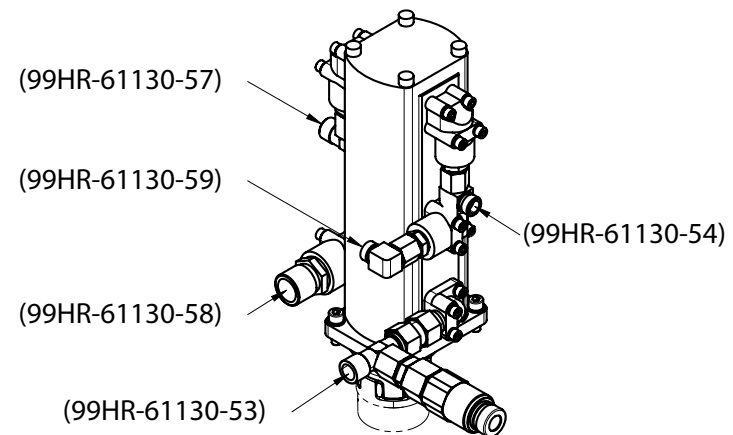
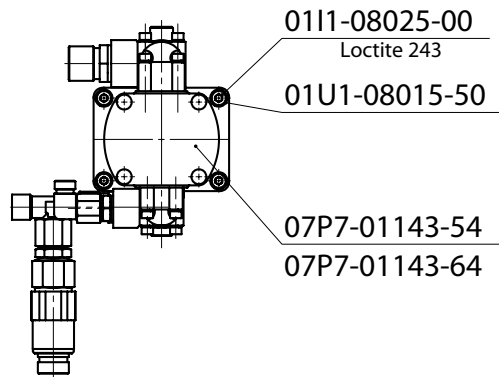
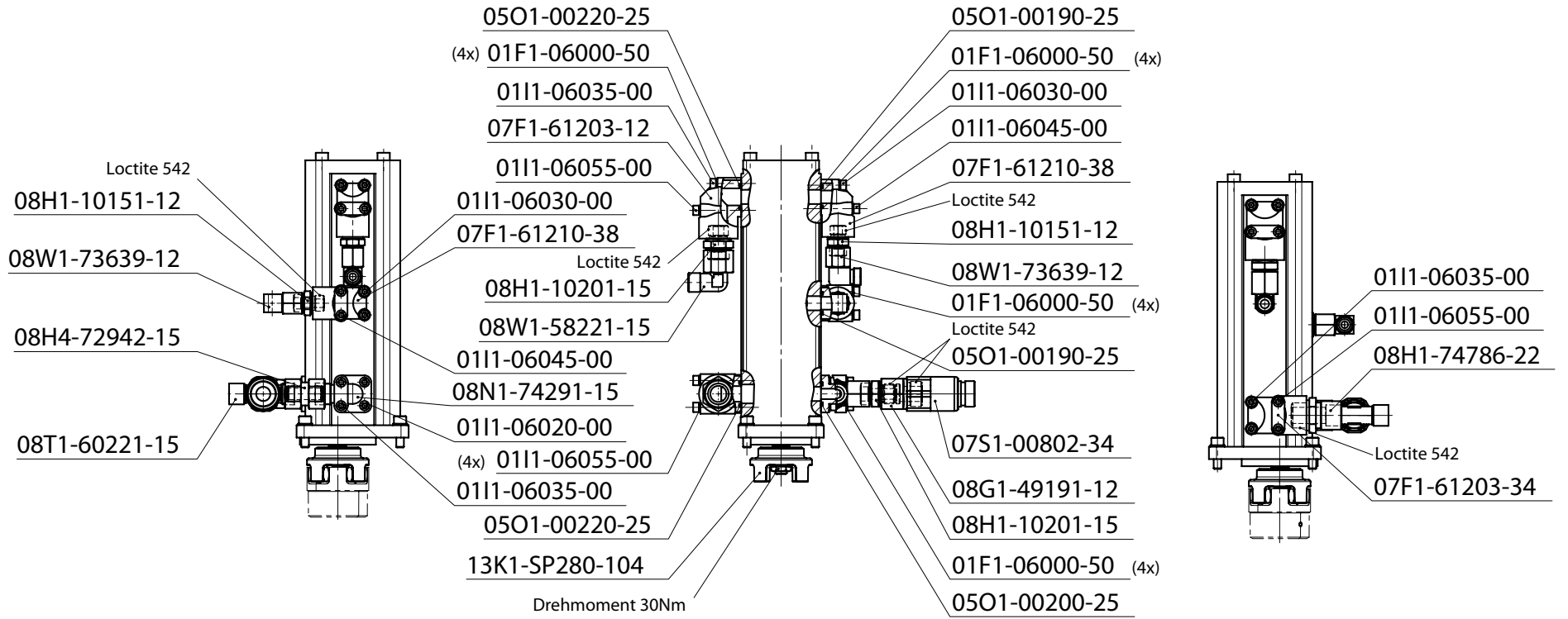
Per ordinazioni di parti di ricambio ci occorrono i dati seguenti:

- Tipo di macchina indicato sulla targhetta della macchina (per es. PPH20**)
- Numero della macchina indicato sulla targhetta della macchina (per es. 10977640)
- Indice della macchina indicato sulla targhetta della macchina (per es. 000)
- Numero della parte di ricambio secondo la lista di parti di ricambio (per es. 10977530)

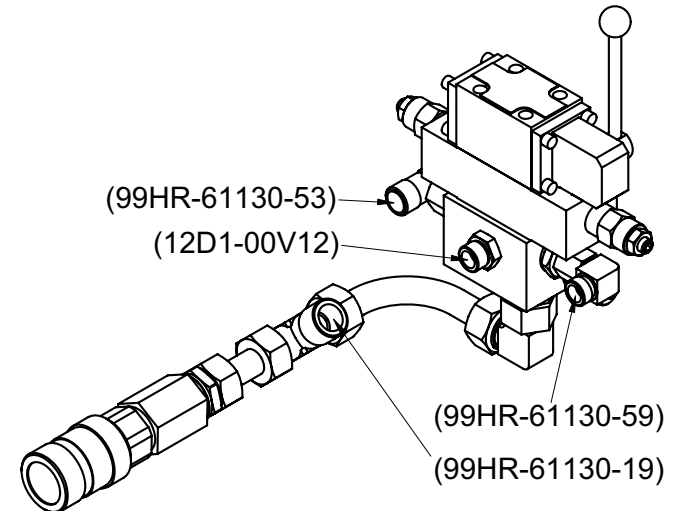
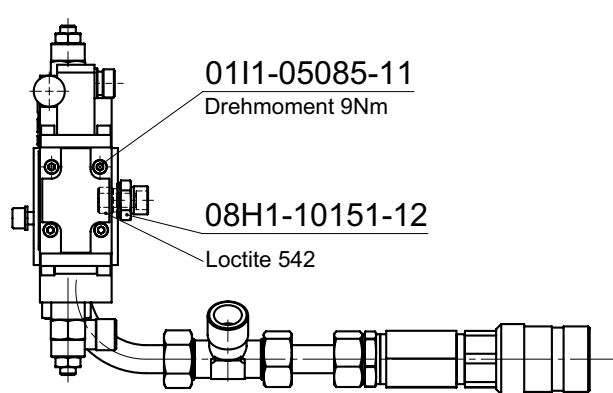
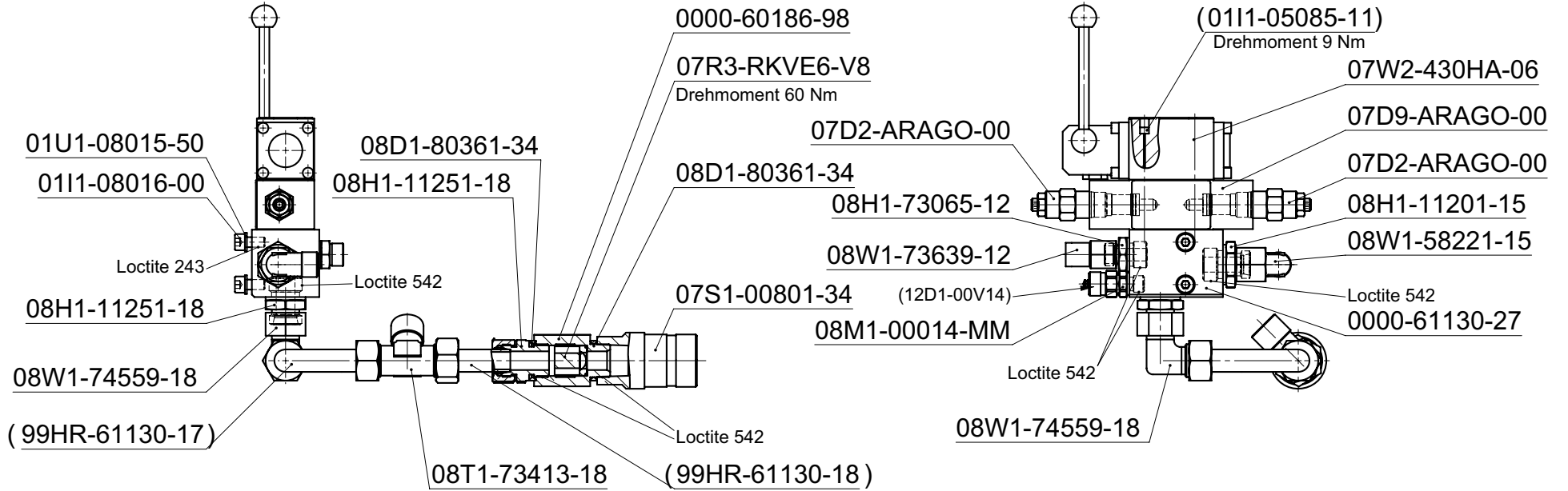
Per ordinazioni, domande o richieste d'informazioni Vi preghiamo di rivolgerVi all'agenzia competente.



MAHP-20400-20SL	10984814	Antriebsp. PPH20S-LOW	Antriebsp. PPH20S-LOW	Antriebsp. PPH20S-LOW	Antriebsp. PPH20S-LOW	1
MAHP-20486-20S	10986018	Antriebsp. PPH20S 60Hz	Antriebsp. PPH20S 60Hz	Antriebsp. PPH20S 60Hz	Antriebsp. PPH20S 60Hz	1
Zeichn. Nr.	Mat. Nr.	Deutsch	English	Français	Italiano	Stk.
99MA-61130-30	10984484	Pumpenturm 50Hz LOW	Pumpenturm 50Hz LOW	Pumpenturm 50Hz LOW	Pumpenturm 50Hz LOW	1
99MA-61130-32	10984486	Pumpenturm 60Hz LOW	Pumpenturm 60Hz LOW	Pumpenturm 60Hz LOW	Pumpenturm 60Hz LOW	1
99MA-61130-34	10984488	Hauptkreislauf	Hauptkreislauf	Hauptkreislauf	Hauptkreislauf	1
99MA-61130-35	10984489	Vorschubskreislauf	Advance feed circuits	Circuits d'avancement	Circuiti di avanzamento	1
99MA-61130-36	10984490	Antriebseinheit LOW	Antriebseinheit LOW	Antriebseinheit LOW	Antriebseinheit LOW	1
99MA-61130-38	10984492	Ölkühler	Oil cooler	Radiateur d'huile	Raffredatore olio	1
99MA-61130-39	10984493	Schalttafel	Switchboard	Tableau de commande	Quadro di comando	1
99MA-61130-40	10984494	Chassis und Öltank LOW	Chassis and Oiltank LOW	Châssis et réserv. à huile LOW	Telaio e serbatoio d'olio LOW	1
99MA-61130-21	10984088	Verschaltung kpl.PPH20S-L	Verschaltung kpl.PPH20S-L	Verschaltung kpl.PPH20S-L	Verschaltung kpl.PPH20S-L	1
99MA-38480-20S	10984813	El. Motor 20S 380-480/50,60	El. Motor 20S 380-480/50,60	El. Motor 20S 380-480/50,60	El. Motor 20S 380-480/50,60	1
99MA-20246-20S	10986021	El. Motor 20S3 200-240/60	El. Motor 20S3 200-240/60	El. Motor 20S3 200-240/60	El. Motor 20S3 200-240/60	1

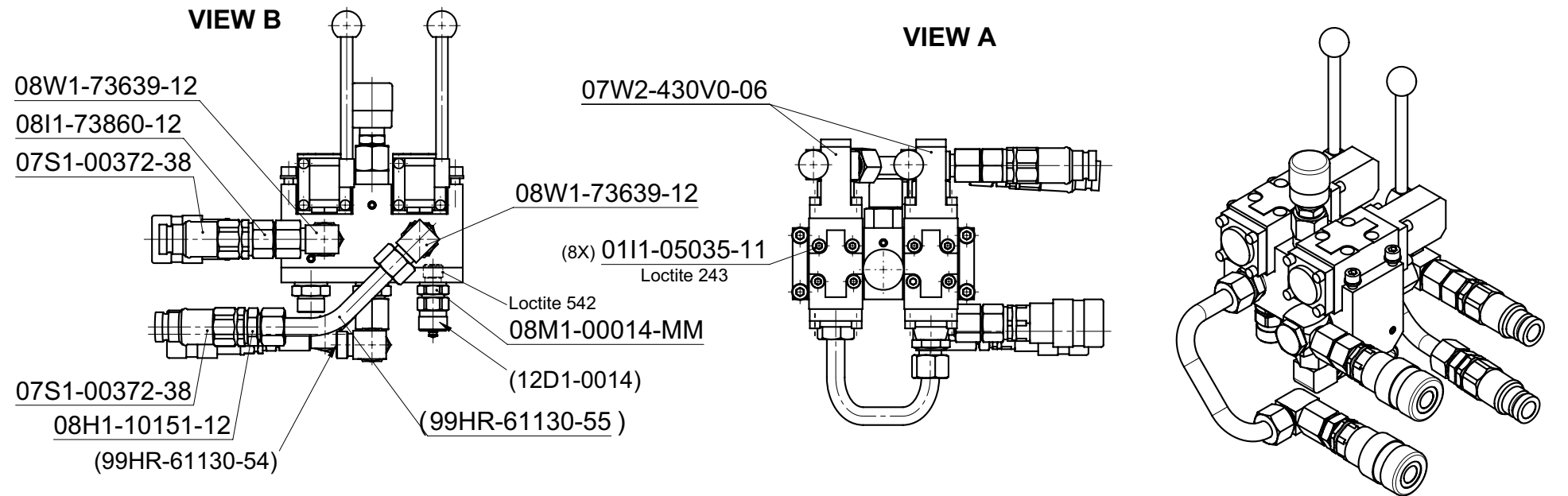
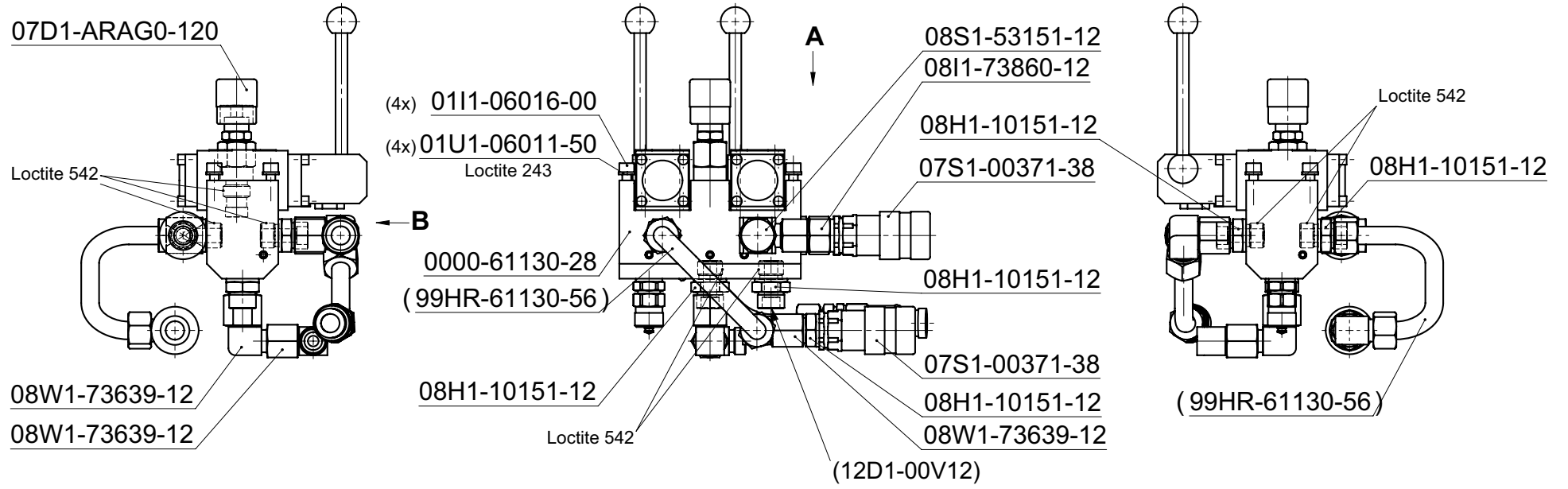


99MA-61130-30 99MA-61130-32	10984484 10984486	Pumpenturm 50Hz Pumpenturm 60Hz	Pumpenturm 50Hz Pumpenturm 60Hz	Pumpenturm 50Hz Pumpenturm 60Hz	Pumpenturm 50Hz Pumpenturm 60Hz	1 1
Zeichn. Nr.	Mat. Nr.	Deutsch	English	Français	Italiano	Stk.
01F1-06000-50	971628	Federring M6 DIN 127 A	Spring washer M6 DIN 127A	Rondelle él. Bombé M6 DIN 127A	Rosetta elastica M6 DIN 127A	20
0111-06020-00	971709	Inbus-Schraube M6x20	Allen head screw M6x20	Vis à six pans creux M6x20	Vite ad esagono cavo M6x20	2
0111-06030-00	971713	Inbus-Schraube M6x30	Allen head screw M6x30	Vis à six pans creux M6x30	Vite ad esagono cavo M6x30	4
0111-06035-00	971714	Inbus-Schraube M6x35	Allen head screw M6x35	Vis à six pans creux M6x35	Vite ad esagono cavo M6x35	6
0111-06045-00	971716	Inbus-Schraube M6x45	Allen head screw M6x45	Vis à six pans creux M6x45	Vite ad esagono cavo M6x45	4
0111-06055-00	971719	Inbus-Schraube M6x55	Allen head screw M6x55	Vis à six pans creux M6x55	Vite ad esagono cavo M6x55	4
0111-08025-00	979284	Inbus-Schraube M8x25	Allen head screw M8x25	Vis à six pans creux M6x25	Vite ad esagono cavo M8x25	4
01U1-08015-50	979353	U-Scheibe M8	U-washer M8	Rondelle en U M8	Rondella a U M8	4
05O1-00190-25	972233	O-Ring 19.00x2.50 N 70	O-Ring seal 19.00x2.50 N 70	Joint torique 19.00x2.50 N 70	Guarnizione OR 19.00x2.50 N 70	2
05O1-00200-25	972234	O-Ring 20.00x2.50 N 70	O-Ring seal 20.00x2.50 N 70	Joint torique 20.00x2.50 N 70	Guarnizione OR 20.00x2.50 N 70	1
05O1-00220-25	972238	O-Ring 22.00x2.50 N 70	O-Ring seal 22.00x2.50 N 70	Joint torique 22.00x2.50 N 70	Guarnizione OR 22.00x2.50 N 70	2
07F1-61203-12	972552	Motorflansch 2BK 1/2-40	Motor flange 2BK 1/2-40	Bride de moteur 2BK 1/2-40	Flangia motore 2BK 1/2-40	1
07F1-61203-34	972553	Motorflansch 2BK 3/4 -40	Motor flange 2BK 3/4 -40	Bride de moteur 2BK 3/4 -40	Flangia motore 2BK 3/4 -40	1
07F1-61210-38	10984238	Motorflansch 2BK 3/8"-35	Motor flange 2BK 3/8"-35	Bride de moteur 2BK 3/8"-35	Flangia motore 2BK 3/8"-35	2
07P7-01143-54	10984235	Pumpenturm 50Hz	Pumpenturm 50Hz	Pumpenturm 50Hz	Pumpenturm 50Hz	1
07P7-01143-64	10984236	Pumpenturm 60Hz	Pumpenturm 60Hz	Pumpenturm 60Hz	Pumpenturm 60Hz	1
07S1-00802-34	975971	Nippel FD VAT. 3/4 Zoll	Nipple 3/4" FD	Raccord mâle 3/4"	Raccirdo maschiante 3/4"	1
08G1-49191-12	972873	Gew.red. G3/4 A-G1/2 I	Fitting G3/4A-G1/2 I	Raccord G3/4 A-G1/2 I	Raccordo G3/4 A-G1/2 I	1
08H1-10151-12	972878	Ger.Verschr. 3/8-12L	Straight screw conn. 3/8-12L	Vissage droit 3/8-12L	Avvitamento diritto 3/8-12L	2
08H1-10201-15	972879	Ger.Verschr. 1/2-15L	Straight screw conn. 1/2-15L	Vissage droit 1/2-15L	Avvitamento diritto 1/2-15L	2
08H1-74786-22	976451	Ger.Verschr. 3/4-22L	Straight screw conn. 3/4-22L	Vissage droit 3/4-22L	Avvitamento diritto 3/4-22L	1
08H4-72942-15	972892	Gerade Verbind. Rohr 15L	Straight conn. pipe 15L	Gerade Verbind. Rohr 15L	Gerade Verbind. Rohr 15L	1
08N1-74291-15	10984237	Winkel Flanschver.15L/35	Winkel Flanschver.15L/35	Winkel Flanschver.15L/35	Winkel Flanschver.15L/35	1
08T1-60221-15	972972	T-Verschr. Rohr 15 L	T-fitting pipe 15 L	Raccord a T tube 15 L	Avvitamento a T Tubo 15 L	1
08W1-58221-15	972990	Winkelverschr. Rohr 15L	Angle connection Tube 15L	Raccord à vis coudé tube 15 L	Avvitamento angolare Tubo 15L	1
08W1-73639-12	10984239	Winkelverschr.Rohr 12L	Angle connection Tube 12L	Raccord à vis coudé tube 12 L	Avvitamento angolare Tubo 12L	2
13K1-SP280-104	10984229	Klauenkupp.Pumpe LOW	Klauenkupp.Pumpe LOW	Klauenkupp.Pumpe LOW	Klauenkupp.Pumpe LOW	1

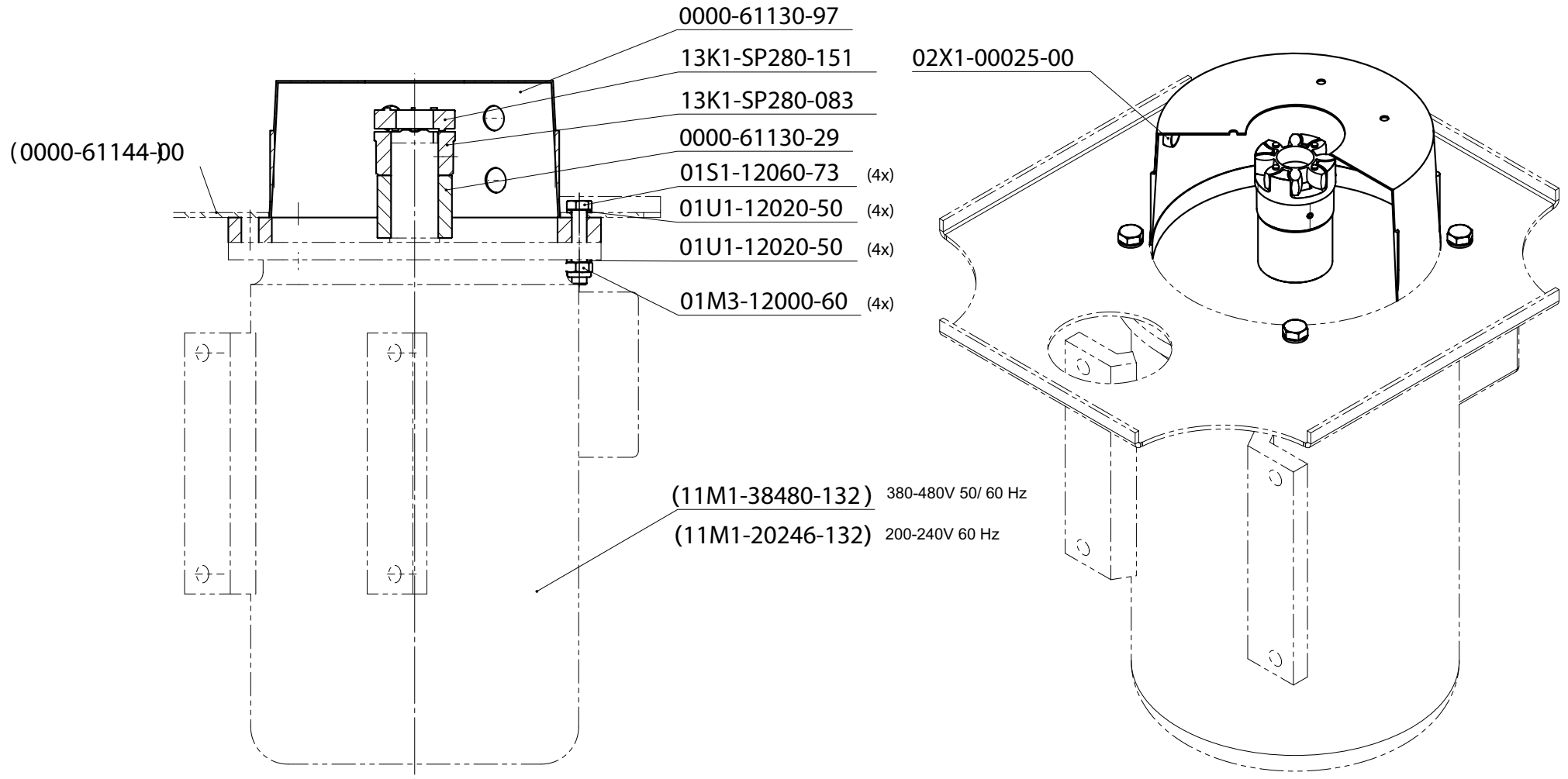




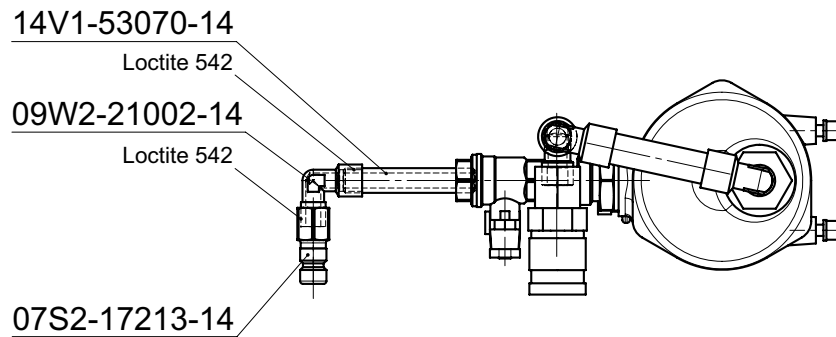
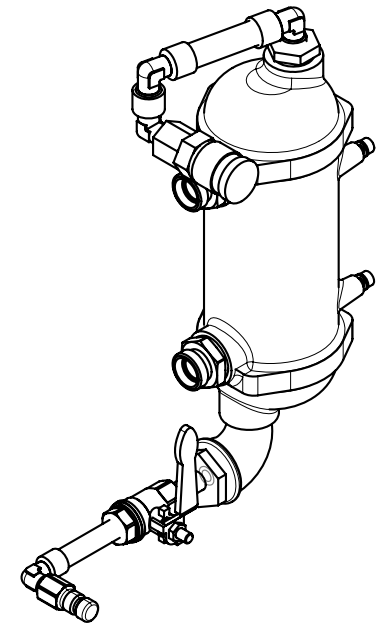
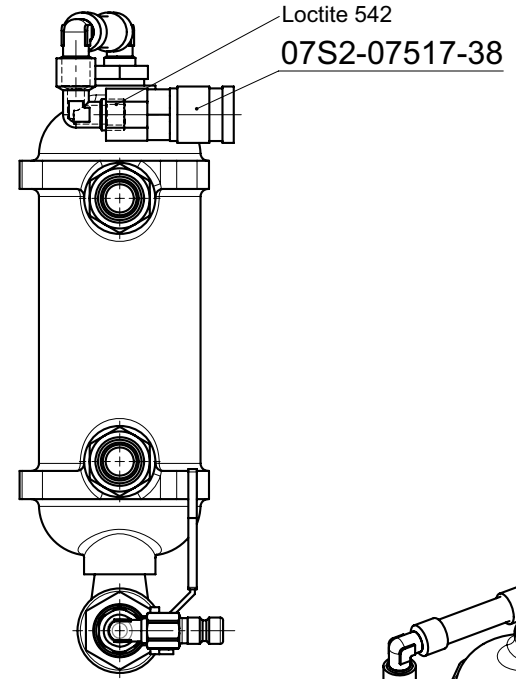
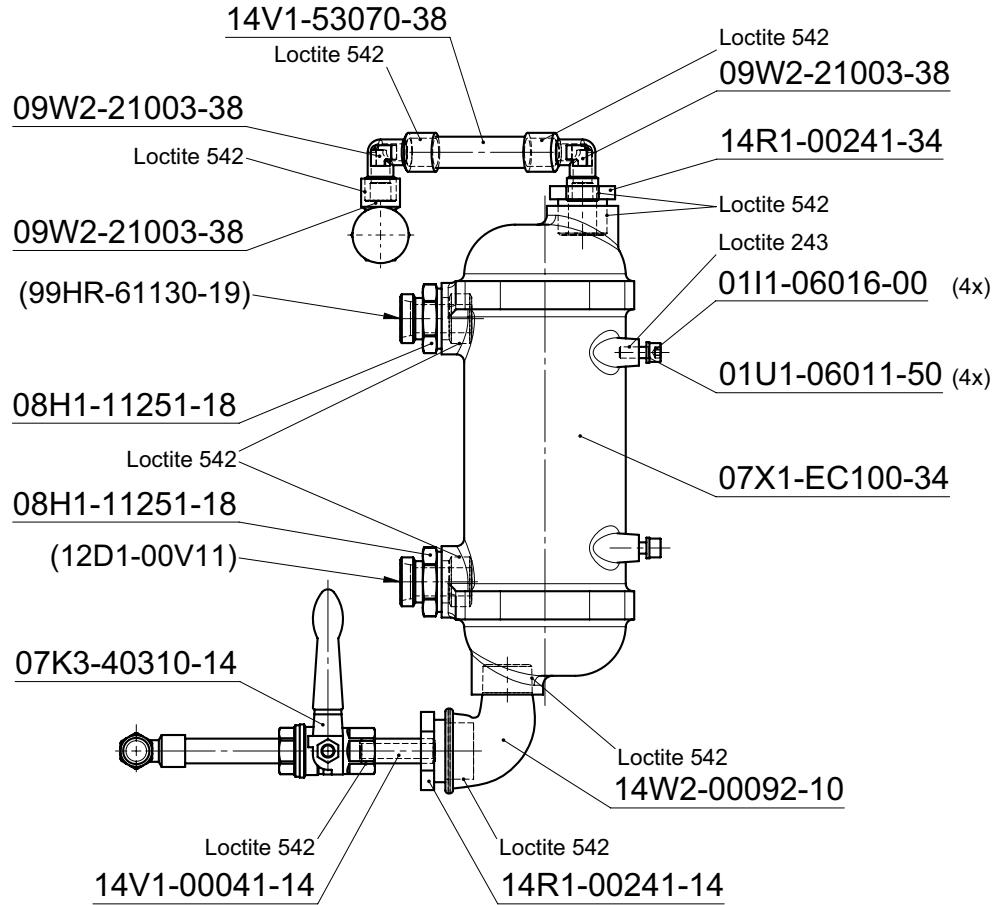
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Zeichn. Nr.	Mat. Nr.	Deutsch	English	Français	Italiano	Stk.
0000-60186-98	10980057	RV-Nippel 3/4"x3/4"xL43	Nipple RV 3/4"x3/4"xL43	Raccord mâle RV 3/4"x3/4"xL43	Raccordo RV 3/4"x3/4"xL43	1
0000-61130-27	10984830	Steuerblock Hauptkreisl.	Control block main circuit	Bloque de comm. circuit principal	Blocco di regol. circuito principale	1
0111-05085-11	10985082	Inb-Schraube M5x85 12.9	Allen head screw M5x85 12.9	Vis à six pans creux M5x85 12.9	Vite ad esagono cavo M5x85 12.9	4
0111-08016-00	971731	Inb-Schraube M8x16	Allen head screw M8x16	Vis à six pans creux M8x16	Vite ad esagono cavo M8x16	2
01U1-08015-50	979353	U-Scheibe M8	U-washer M8	Rondelle en U M8	Rondella a U M8	2
07D2-ARAG0-00	10984260	DBV Hauptkreislauf	Main circuit DBV	Circuit principal DBV	circuito principale DBV	2
07D9-ARAG0-00	10984259	Gehäuse DBV	Housing DBV	Boîtier DBV	Scatola DBV	1
07R3-RKVE6-V8	10984240	Rückschlagvent.RKVE-16 V8	Back press.valve RKVE-16 V8	Soupape de non-ret.RKVE-16 V8	Valvola di rimando RKVE-16 V8	1
07S1-00801-34	975969	Kupplung FD Mut. 3/4 Zoll	Coupling 3/4" FD	Raccord femelle 3/4"	Raccordo hydro femm. 3/4"	1
07W2-430HA-06	10984257	4/3 Wegvent.KRACHT Hauptk	Direct.contr.valve 4/3 KRACHT	Distributeur 4/3 KRACHT	Distributore 4/3 KRACHT	1
08B1-04251-18	972847	Ueberwurfmutter 18 L	Swivel nut 18 L	Ecrou de serrage 18 L	Dado a risvolto 18 L	2
08B1-04251-18	972847	Ueberwurfmutter 18 L	Swivel nut 18 L	Ecrou de serrage 18 L	Dado a risvolto 18 L	2
08C1-07252-18	972857	Schneidring Rohr 18	Cutting ring pipe 18	Douille à sertir pour tuyau 18	Anello maschiante per tubo 18	2
08C1-07252-18	972857	Schneidring Rohr 18	Cutting ring pipe 18	Douille à sertir pour tuyau 18	Anello maschiante per tubo 18	2
08D1-80361-34	972863	Dichtkantenring G 3/4	Sealing edge ring 3/4G	Anneau d'étanchéité à arr.3/4G	Anello di tenuta a spigoli 3/4G	2
08M1-00014-MM	10984264	Manom.-Verschr. 1/4	Manom.-Verschr. 1/4	Manom.-Verschr. 1/4	Manom.-Verschr. 1/4	1
08T1-73413-18	10984241	T-Verschr. 18L	Connection T 18L	Vissage T 18L	Avvitamento T 18L	1
08W1-58221-15	972990	Winkelverschr. Rohr 15L	Angle connection tube 15L	Raccord à vis coudé tube 15L	Avvitamento angolare 15L	1
08W1-73639-12	10984239	Winkelverschr.Rohr 12L	Angle connection tube 12L	Raccord à vis coudé tube 12L	Avvitamento angolare 12L	1
08W1-74559-18	972992	Winkelverschr. Rohr 18L	Angle connection tube 18L	Raccord à vis coudé tube 18L	Avvitamento angolare 18L	1



99MA-61130-35	10984489	Vorschubskreislauf	Advance feed circuits	Circuits d'avancement	Circuiti di avanzamento	1
Zeichn. Nr.	Mat. Nr.	Deutsch	English	Français	Italiano	Stk.
0000-61130-28	10984831	Steuerbl.Vorschubkreisl.	Control block adv.feed circuits	Bloque de comm.circ.d'avanc.	Blocco di regolazione circ.di avanz.	1
0111-06016-00	971705	Inbus-Schraube M6x16	Allen head screw M6 x 16	Vis à six pans creux M 6x 16	Vite ad esagono cavo M6X16	4
0111-05035-11	965772	Inbus-Schraube M5x35	Allen head screw M5 x 35	Vis à six pans creux M 5x 35	Vite ad esagono cavo M5X35	8
01U1-06011-50	971955	U-Scheibe M6	U-Washer M6	Rondelle a U M6	Rondella a U M6	4
07D1-ARAG0-120	10984266	DRV Vorschub	Feed DRV	Avance DRV	Avanzamento DRV	1
07S1-00371-38	979703	FF Kupplung 3/8 Zoll	Coupling 3/8	Raccord femelle alu 3/8"	Raccordo femm. 3/8"	2
07S1-00372-38	979707	Nippel 3/8 Zoll	Nipple 3/8	Raccord mâle alu 3/8"	Raccordo masch. 3/8"	2
07W2-430VO-06	10984268	4/3 Wegvent.KRACHT Vorsch	Direct.contr.valve 4/3 KRACHT	Distributeur 4/3 KRACHT	Distributore 4/3 KRACHT	2
08H1-10151-12	972878	Ger.Verschr. 3/8-12L	Straight screw conn. 3/8-12L	Vissage droit 3/8-12L	Avvitamento diritto 3/8-12L	7
08I1-73860-12	10984279	Ger.Aufsteckst. 3/8-12L	Ger.Aufsteckst. 3/8-12L	Ger.Aufsteckst. 3/8-12L	Ger.Aufsteckst. 3/8-12L	2
08M1-00014-MM	10984264	Manom.-Verschr. 1/4	Manom.-Verschr. 1/4	Manom.-Verschr. 1/4	Manom.-Verschr. 1/4	1
08S1-53151-12	972959	Schwenkverschr. 3/8-12 L	Swivelling fitting 3/8-12 L	Raccord à vis orientable 3/8-12 L	Collegam.a vite orientabile 3/8-12 L	1
08W1-73639-12	10984239	Winkelverschr.Rohr 12L	Angle connection pipe 12L	Raccord à vis coudé tube 12L	Avvitamento angolare tubo 12L	5



99MA-61130-36	10984490	Antriebseinheit LOW	Antriebseinheit LOW	Antriebseinheit LOW	Antriebseinheit LOW	1
Zeichn. Nr.	Mat. Nr.	Deutsch	English	Français	Italiano	Stk.
0000-61130-29	10985160	Distanzbüchse	Distance bush	Douille d'écartement	Boccola distanziatrice	1
0000-61130-97	10984227	Pumpenflansch	Pumpenflansch	Pumpenflansch	Pumpenflansch	1
01M3-12000-60	979309	Stop-Mutter M12 nied.Form	stop-nut M12 thin head	Ecrou d'arrêt f.basse M12	Dado d'arresto bas. M12	4
01S1-12060-73	979340	6kt-Schraube M12x60	Hexagonal screw M12x60	Vis à tête hexagonale M12x60	Vite a testa esagonale M12x60	4
01U1-12020-50	979354	U-Scheibe M12	U-Washer M12	Rondelle en U M12	Rondella a U M12	8
02X1-00025-00	979400	Verschlussstopfen Dm25	Plug dia25	Verschlussstopfen Dm25	Verschlussstopfen Dm25	1
13K1-SP280-083	10984230	Klauenkupp.Motor LOW	Klauenkupp.Motor LOW	Klauenkupp.Motor LOW	Klauenkupp.Motor LOW	1
13K1-SP280-151	10984231	Kupplungsstern LOW	Star coupling plate LOW	Etoile d'accouplement LOW	Accoppiamento a stella LOW	1

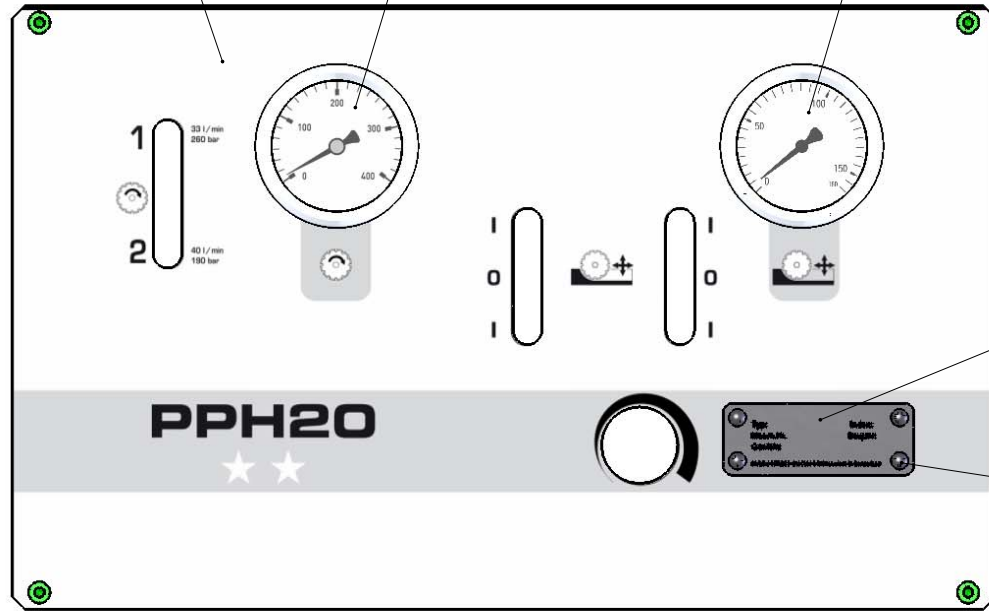


99MA-61130-38	10984492	Ölkühler	Oil cooler	Radiateur d'huile	Raffredatore olio	1
Zeichn. Nr.	Mat. Nr.	Deutsch	English	Français	Italiano	Stk.
0111-06016-00	971705	Inbus-Schraube M6x16	Allen head screw M6x16	Vis à six pans creux M6x16	Vite ad esagono cavo M6X16	4
01U1-06011-50	971955	U-Scheibe M6	U-Washer M6	Rondelle en U M6	Rondella a U M6	4
07K3-40310-14	972565	Kugelhahn Teflon G1/4"	Ball valve Teflon G1/4"	Robinet d'eau à bille teflon G1/4"	Rubinetto sferico teflon 1/4"	1
07S2-07517-38	972792	Steckkuppl. 3/8 I 0-WR517	Coupling 3/8 I 0-WR517	Raccord 3/8 I 0-WR517	Raccordo 3/8 I 0-WR517	1
07S2-17213-14	972794	Stecknippel 1/4 I 1-WR513	Plug-in nipple 1/4 I 1-WR513	Raccord mâle 1/4 I 1-WR513	Raccordo innestabile 1/4 I 1-WR513	1
07X1-EC100-34	10984247	Ölkühler	Oil cooler	Radiateur d'huile	Raffredatore olio	1
08H1-11251-18	10984261	Ger.Verschr. 3/4-18L	Straight screw conn. 3/4-18L	Vissage droit 3/4-18L	Avvitamento diritto 3/4-18L	2
09W2-21002-14	10984252	Winkelverschr. 1/4" I/A	Angle connection 1/4" I/A	Raccord à vis coudé 1/4" I/A	Avvitamento angolare 1/4" I/A	1
09W2-21003-38	10984251	Winkelverschr. 3/8" I/A	Angle connection 3/8" I/A	Raccord à vis coudé 3/8" I/A	Avvitamento angolare 3/8" I/A	3
14R1-00241-14	10984248	Reduktion GF241 1A-1/4I	Fitting GF241 1A-1/4I	Réduction GF241 1A-1/4I	Riduzione GF241 1A-1/4I	1
14R1-00241-34	973690	Reduktion GF241 3/4-3/8	Fitting GF241/3/4-3/8	Réduction GF241/3/4-3/8	Riduzione GF241/3/4-3/8	1
14V1-00041-14	973698	Rohnippel GF530 1/4 x 40	extension 1/4 x 40	Verlängerung 1/4 x 40	Raccordo 1/4" P. VUOTO	1
14V1-53070-14	10984250	Rohnippel GF530 1/4x70	Rohnippel GF530 1/4x70	Rohnippel GF530 1/4x70	Rohnippel GF530 1/4x70	1
14V1-53070-38	10984249	Rohnippel GF530 3/8x70	Rohnippel GF530 3/8x70	Rohnippel GF530 3/8x70	Rohnippel GF530 3/8x70	1
14W2-00092-10	980288	Winkel GF92 3/4 A -1 I	Angle GF92 G 3/4A-1 I	Raccord GF92 G 3/4 A -1 I	Angolo GF92 G 3/4 A -1 I	1

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07N1-40063-AR

07N1-16063-AR

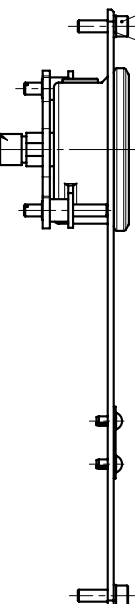


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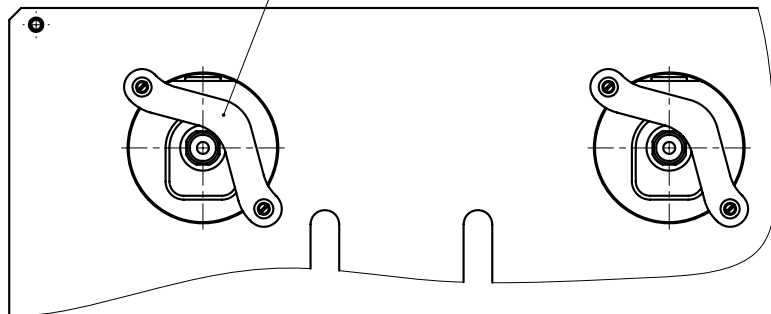
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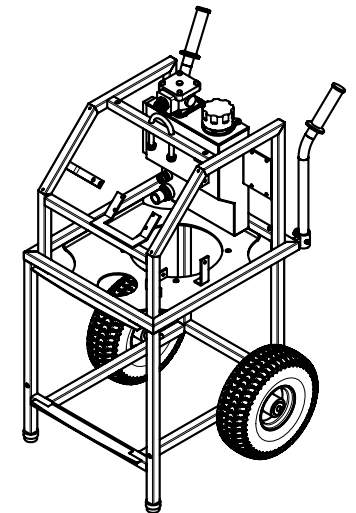
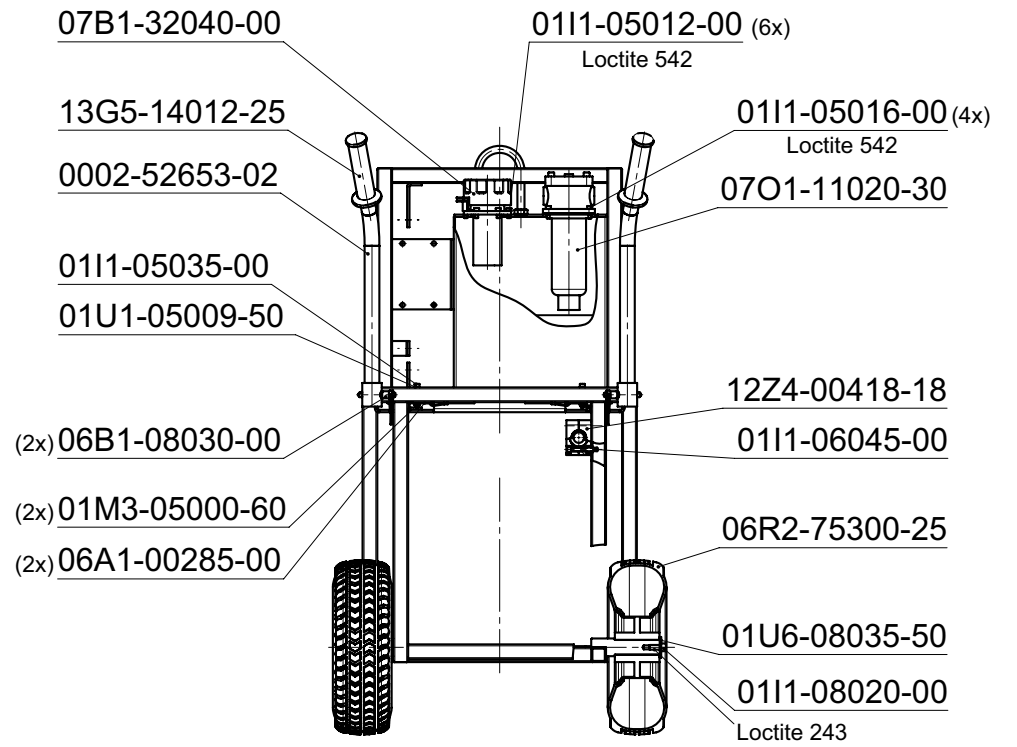
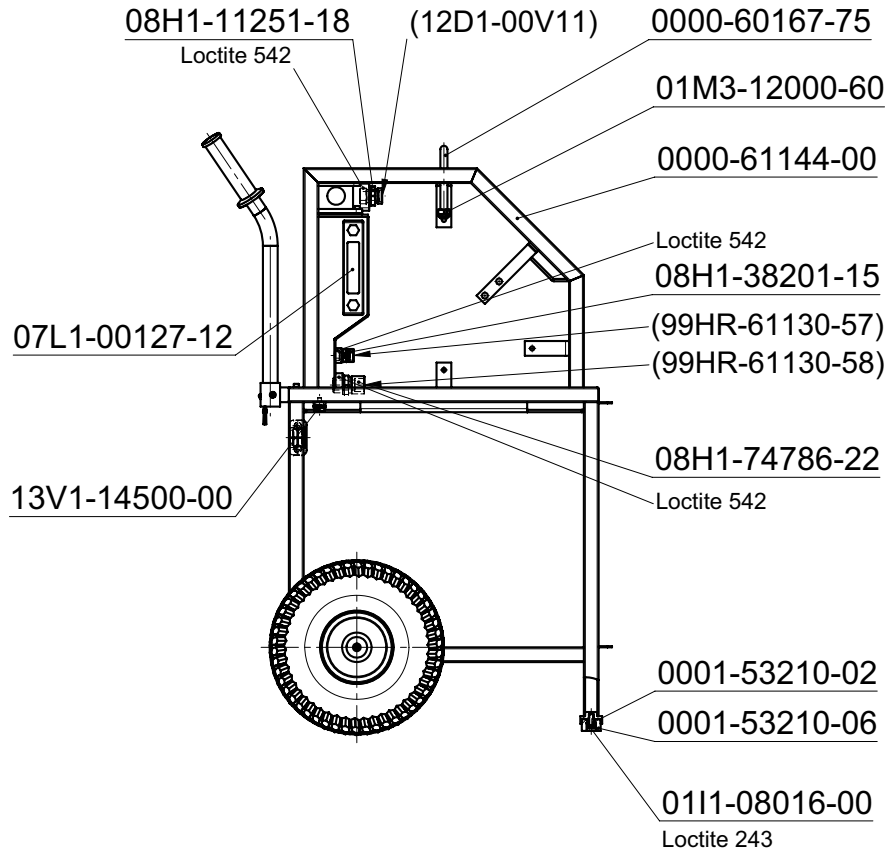
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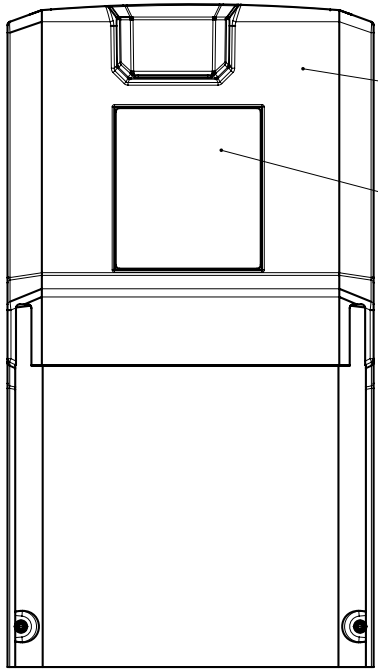


VIEW A

99MA-61130-39	10984493	Schalttafel	Switchboard	Tableau de commande	Quadro di comando	1
Zeichn. Nr.	Mat. Nr.	Deutsch	English	Français	Italiano	Stk.
0000-61130-12	10983943	Schalttafel PPH20	Switchboard PPH20	Tableau de commande PPH20	Quadro di comando PPH20	1
0002-54457-02	975924	HS-Typenschild klein	HS-type plate small	Plaque de fabrication petite HS	Targhetta piccola	1
0111-05016-00	971691	Inbus-Schraube M5x16	Allen head screw M5 x 16	Inbus-Schraube M 5x 16	Vite Brugola M5X16	4
01U1-05009-50	971953	U-Scheibe M5	Washer	Rondelle en U M5	Rondella a U M5	4
02L2-00040-08	971986	Kerbnagel 4x8	Grooved pin 4x8	Clou cannelé 4x8	Chiodo intagliato 4x8	4
07N1-16063-AR	10984253	Manometer 0-160bar NG63	Manometer 0-160bar NG63	Manomètre 0-160bar NG63	Manometro 0-160bar NG63	1
07N1-40063-AR	10984254	Manometer 0-400bar NG63	Manometer 0-400bar NG63	Manomètre 0-400bar NG63	Manometro 0-400bar NG63	1
07N1-90923-90	10984255	Befestigungsbügel zu NG63	Befestigungsbügel zu NG63	Befestigungsbügel zu NG63	Befestigungsbügel zu NG63	2

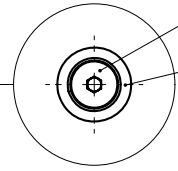
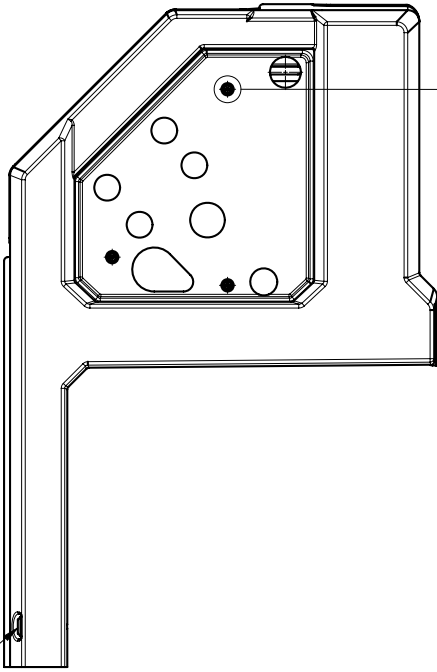


99MA-61130-40	10984494	Chassis und Öltank LOW	Chassis and Oiltank LOW	Châssis et réserv. à huile LOW	Telaio e serbatoio d'olio LOW	1
Zeichn. Nr.	Mat. Nr.	Deutsch	English	Français	Italiano	Stk.
0000-60167-75	962397	Aufhängebügel CR-5RC 72mm	Aufhängebügel CR-5 RC	Aufhängebügel CR-5 RC	Aufhängebügel CR-5 RC	1
0000-61144-00	10984242	Chassis LOW RAL 5015	Chassis LOW RAL 5015	Châssis LOW RAL 5015	Telaio LOW RAL 5015	1
0001-53210-02	970872	Haltehülse Antriebchassis	Holding sleeve chassis	Douille de retenue châssis	Manicotto di ritenuta telaio	2
0001-53210-06	10983966	Stützfuss schwarz Antr.	Supportfoot black antr.	Pied support noir antr.	Piede d'appoggio nero antr.	2
0002-52653-02	971266	Griffrohr	Grip tube	Poignee de Transp.	Maniglia di trasporto	2
0111-05012-00	971689	Inbus-Schraube M5x12	Allen head screw M5x12	Vis à six pans creux M4x12	Vite ad esagono cavo M5x12	6
0111-05016-00	971691	Inbus-Schraube M5x16	Allen head screw M5 x 16	Vis à six pans creux M5x16	Vite ad esagono cavo M5X16	4
0111-05035-00	971696	Inbus-Schraube M5x35	Allen head screw M5 x 35	Vis à six pans creux M5x35	Vite ad esagono cavo M5X35	2
0111-06045-00	971716	Inbus-Schraube M6x45	Allen head screw M 6x 45	Vis à six pans creux M6x45	Vite ad esagono cavo M6X45	2
0111-08016-00	971731	Inbus-Schraube M8x16	Allen head screw M 8x 16	Vis à six pans creux M8X16	Vite ad esagono cavo M8X16	2
0111-08020-00	979283	Inbus-Schraube M8x20	Allen head screw M8 x 20	Vis à six pans creux M8x20	Vite ad esagono cavo M8x20	2
01M3-05000-60	971859	Stop-Mutter M5 nied.Form	stop-nut M5 thin head	Ecrou d'arrêt f.basse M5	Dado d'arresto bas. M5	2
01M3-12000-60	979309	Stop-Mutter M12 nied.Form	stop-nut M12 thin head	Ecrou d'arrêt f.basse M12	Dado d'arresto bas. M12	2
01U1-05009-50	971953	U-Scheibe M5	U-Washer M5	Rondelle en U M5	Rondella a U M5	2
01U6-08035-50	971977	U-Scheibe Dm 8/35/2,5	U-Washer dia 8/35/2,5	Rondelle en U diam. 8/35/25	Rondella a U diam. 8/35/25	2
06A1-00285-00	972353	Befest.Kabel zu Ball-Lok	Securing kable for Ball-Lok	Cable fixa. Pour Ball-Lok	Cavo di fissaggio per Ball-Lok	2
06B1-08030-00	972355	Schnelltrennbolzen 8x30	Quick release bolt	Boulon de séparation rapide	Perno per separazione rapida	2
06R2-75300-25	979640	Luftrad mit Stahlfelge	Wheel with steel rim	Roue avec jante	Pneumatico tipo nuovo	2
07B1-32040-00	972500	Einfüllfilter	Filter element	Elément filtrant	Elemento filtrante	1
07L1-00127-12	972575	Oelstand FSA 127-1.1/12	Oil level FSA 127-1.1/12	Niveau d'huile FSA 127-1.	Livello dell'olio	1
07O1-11020-30	965530	Rücklauffilter RF110	Return filter RF110	Filtre de retour RF110	Filtro di ritorno RF110	1
08H1-11251-18	10984261	Ger.Versch. 3/4-18L	Straight screw conn. 3/4-18L	Vissage droit 3/4-18L	Avvitamento diritto 3/4-18L	1
08H1-38201-15	10977157	Ger.Versch. 3/8-15L	Straight screw conn. 3/8-15L	Vissage droit 3/8-15L	Avvitamento diritto 3/8-15L	1
08H1-74786-22	976451	Ger.Versch. 3/4-22L	Straight screw conn. 3/4-22L	Vissage droit 3/4-22L	Avvitamento diritto 3/4-22L	1
12Z4-00418-18	10979007	Rohrschelle m. Gi-Einsatz	Rohrschelle m. Gi-Einsatz	Rohrschelle m. Gi-Einsatz	Rohrschelle m. Gi-Einsatz	1
13G5-14012-25	973618	Gummigriff Antriebe	Rubber grip drive	Poignée en caoutchouc	Impugnatura in gomma	2
13V1-14500-00	10978647	Verschl.Schr.m.Magnet 1/4	Locking screw with magn.1/4	Bouchon de ferm.à vis magn. 1/4	Tappo a vite con magnete 1/4	1



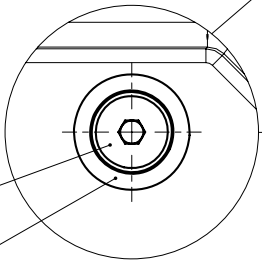
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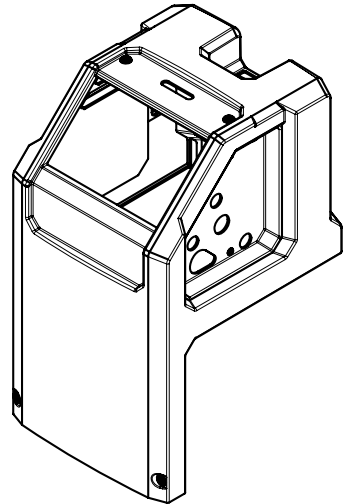
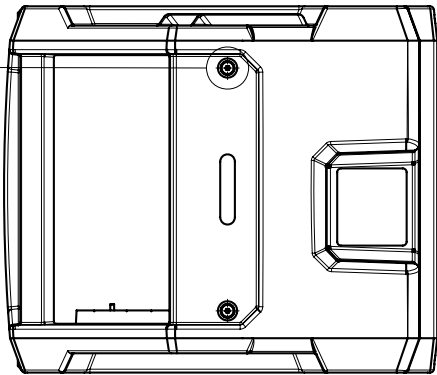
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01U6-05016-55 (3x)

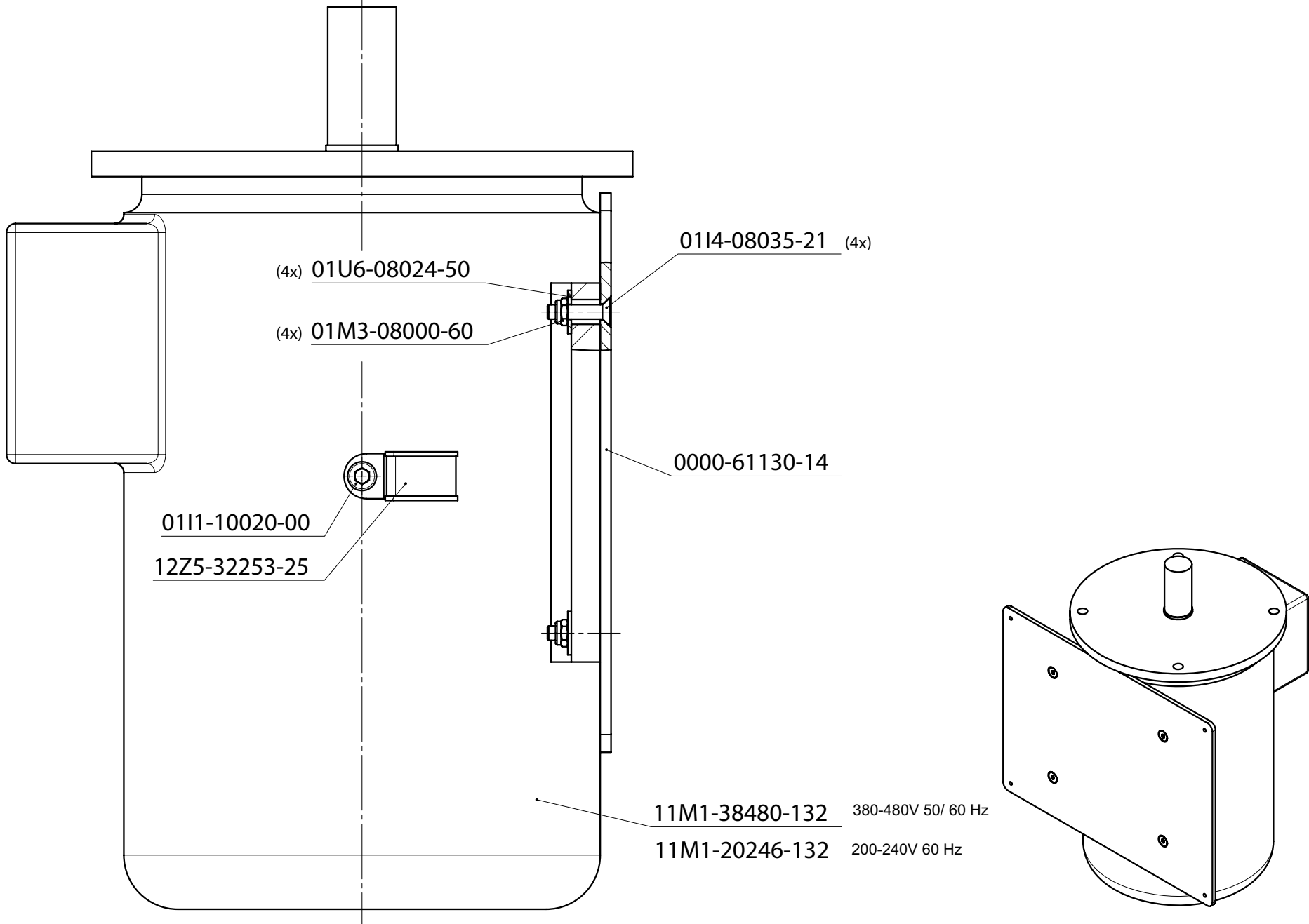


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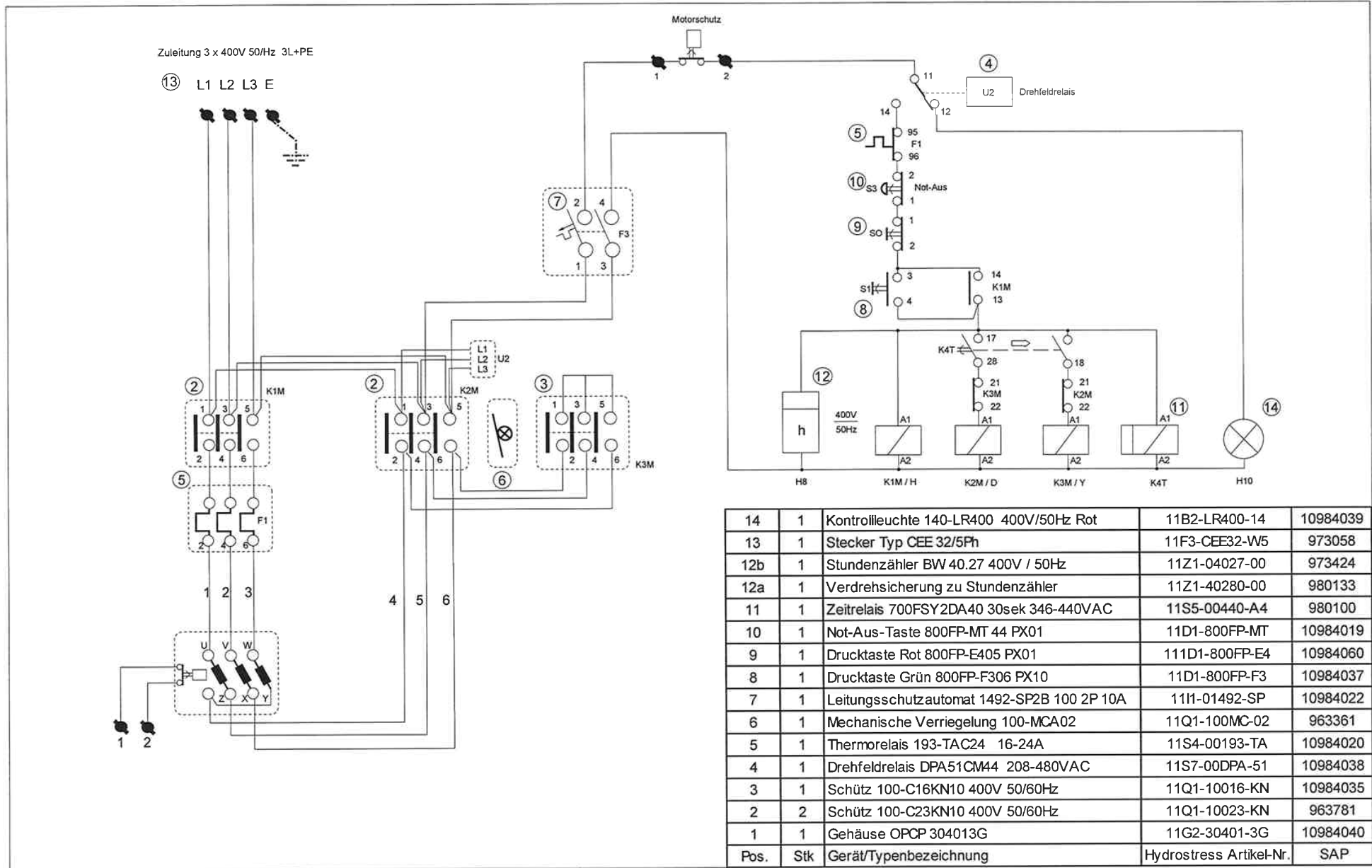
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99MA-61130-21	10984088	Verschaltung kpl.PPH20S-L	Verschaltung kpl.PPH20S-L	Verschaltung kpl.PPH20S-L	Verschaltung kpl.PPH20S-L	1
Zeichn. Nr.	Mat. Nr.	Deutsch	English	Français	Italiano	Stk.
0000-60187-31	10977871	Spez. U-Scheibe	U-Washer special	Rondelle en U special	Rondella a U speciale	4
0000-61130-11	10983942	Infoschild PPH20	Infoschild PPH20	Infoschild PPH20	Infoschild PPH20	1
0000-61130-23	10984090	Verschaltung PPH20S-L	Verschaltung PPH20S-L	Verschaltung PPH20S-L	Verschaltung PPH20S-L	1
0114-05016-21	971820	Senkkopfschraube M 5x 16	Countersunk head scre.M5x16	Vis à tête fraisée M 5x16	Vite a testa svasata M5X16	3
0114-08025-21	10979572	Senkkopfschraube M 8x 25	Countersunk screw M8x25	Vis à tête fraisée M 8x 25	Vite a testa svasata M8x25	4
01U6-05016-55	10983788	U-Scheibe M5 Senk. 90° A1	U-Washer M5 Sunk 90° A1	Rondelle en U M5 Senk. 90° A1	Rondella a U M5 Senk. 90° A1	3



Zeichn. Nr.	Mat. Nr.	Deutsch	English	Français	Italiano	Stk.
99MA-38480-20S	10984813	El. Motor 20S 380-480/50,60	El. Motor 20S 380-480/50,60	El. Motor 20S 380-480/50,60	El. Motor 20S 380-480/50,60	1
99MA-20246-20S	10986021	El. Motor 20S3 200-240/60	El. Motor 20S3 200-240/60	El. Motor 20S3 200-240/60	El. Motor 20S3 200-240/60	1
0000-61130-14	10984338	Adapter Platte Progressiv	Adapter plate Progressiv	Plaque d'adaptation Progressiv	Piastra di fissaggio Progressiv	1
0111-10020-00	971763	Inbus-Schraube M10x20	Allen head screw M10x 20	Vis à six pans creux M10x 20	Vite ad esagono cavo M10x 20	1
0114-08035-21	10984324	Senkkopfschraube M 8x 35	Countersunk head scr. M8x35	Vis à tête fraisée M8x35	Vite a testa svasata M8x35	4
01M3-08000-60	971861	Stop-Mutter M8 nied.Form	Stop-nut M8 thin head	Ecrou d'arrêt f.basse M8	Dado d'arresto bas. M8	4
01U6-08024-50	977191	U-Scheibe Dm 8.4/24x2	U-washer dia 8.4/24x2	Rondelle en U Diam. 8.4/24x2	Rondella a U diam. 8.4/24x2	4
11M1-20246-132	10986014	El.Mot.15 kW Progressiv	El.Mot.15 kW Progressiv	El.Mot.15 kW Progressiv	El.Mot.15 kW Progressiv	1
11M1-38480-132	10984093	El.Mot.15 kW Progressiv	El.Mot.15 kW Progressiv	El.Mot.15 kW Progressiv	El.Mot.15 kW Progressiv	1
12Z5-32253-25	973600	Rohrs.Schlaufenform Dm 32	Pipe bend template d. 32	Rohrs.Schlaufenform Dm 32	Rohrs.Schlaufenform Dm 32	1
99MA-61130-42	10984496	Hydr. Rohre und Schläuche	Hydr. Rohre und Schläuche	Hydr. Rohre und Schläuche	Hydr. Rohre und Schläuche	1
0000-61130-43	10984882	Hydr.- Rohr Ø18 (V2)	Hydraulic pipe Ø18 (V2)	Tuyau hydraulique Ø18 (V2)	Tubo idraulico Ø18 (V2)	1
0000-61130-44	10984883	Hydr.- Rohr Ø18 (V3)	Hydraulic pipe Ø18 (V3)	Tuyau hydraulique Ø18 (V3)	Tubo idraulico Ø18 (V3)	1
0000-61130-45	10984884	Hydr.- Rohr Ø18 (V4)	Hydraulic pipe Ø18 (V4)	Tuyau hydraulique Ø18 (V4)	Tubo idraulico Ø18 (V4)	1
0000-61130-46	10984885	Hydr.- Rohr Ø15 (V5)	Hydraulic pipe Ø15 (V5)	Tuyau hydraulique Ø15 (V5)	Tubo idraulico Ø15 (V5)	1
0000-61130-47	10984886	Hydr.- Rohr Ø12 (V6)	Hydraulic pipe Ø12 (V6)	Tuyau hydraulique Ø12 (V6)	Tubo idraulico Ø12 (V6)	1
0000-61130-48	10984887	Hydr.- Rohr Ø12 (V7)	Hydraulic pipe Ø12 (V7)	Tuyau hydraulique Ø12 (V7)	Tubo idraulico Ø12 (V7)	1
0000-61130-49	10984888	Hydr.- Rohr Ø12 (V8)	Hydraulic pipe Ø12 (V8)	Tuyau hydraulique Ø12 (V8)	Tubo idraulico Ø12 (V8)	1
0000-61130-50	10984889	Hydr.- Rohr Ø15 (V9)	Hydraulic pipe Ø15 (V9)	Tuyau hydraulique Ø15 (V9)	Tubo idraulico Ø15 (V9)	1
0000-61130-51	10984890	Hydr.- Rohr Ø22 (V10)	Hydraulic pipe Ø22 (V10)	Tuyau hydraulique Ø22 (V10)	Tubo idraulico Ø22 (V10)	1
0000-61130-52	10984891	Hydr.- Rohr Ø12 (V13)	Hydraulic pipe Ø12 (V13)	Tuyau hydraulique Ø12 (V13)	Tubo idraulico Ø12 (V13)	1
12D1-00V11	10984832	Hydr.-Schlauch PPH20S V11	hydraulic hoses PPH20S V11	tuyaux hydrauliques PPH20SV11	tubi idraulici PPH20S V11	1
12D1-00V12	10984833	Hydr.-Schlauch PPH20S V12	hydraulic hoses PPH20S V12	tuyaux hydrauliques PPH20SV12	tubi idraulici PPH20S V12	1
12D1-00V14	10984303	Hydr.-Schlauch PPH20S V14	hydraulic hoses PPH20S V14	tuyaux hydrauliques PPH20SV14	tubi idraulici PPH20S V14	2



14	1	Kontrollleuchte 140-LR400 400V/50Hz Rot	11B2-LR400-14	10984039
13	1	Stecker Typ CEE 32/5Ph	11F3-CEE32-W5	973058
12b	1	Stundenzähler BW 40.27 400V / 50Hz	11Z1-04027-00	973424
12a	1	Verdrehsicherung zu Stundenzähler	11Z1-40280-00	980133
11	1	Zeitrelais 700FSY2DA40 30sek 346-440VAC	11S5-00440-A4	980100
10	1	Not-Aus-Taste 800FP-MT 44 PX01	11D1-800FP-MT	10984019
9	1	Drucktaste Rot 800FP-E405 PX01	11D1-800FP-E4	10984060
8	1	Drucktaste Grün 800FP-F306 PX10	11D1-800FP-F3	10984037
7	1	Leitungsschutzautomat 1492-SP2B 100 2P 10A	11I1-01492-SP	10984022
6	1	Mechanische Verriegelung 100-MCA02	11Q1-100MC-02	963361
5	1	Thermorelais 193-TAC24 16-24A	11S4-00193-TA	10984020
4	1	Drehfeldrelais DPA51CM44 208-480VAC	11S7-00DPA-51	10984038
3	1	Schütz 100-C16KN10 400V 50/60Hz	11Q1-10016-KN	10984035
2	2	Schütz 100-C23KN10 400V 50/60Hz	11Q1-10023-KN	963781
1	1	Gehäuse OPCP 304013G	11G2-30401-3G	10984040
Pos.	Stk	Gerät/Typenbezeichnung	Hydrostress Artikel-Nr.	SAP

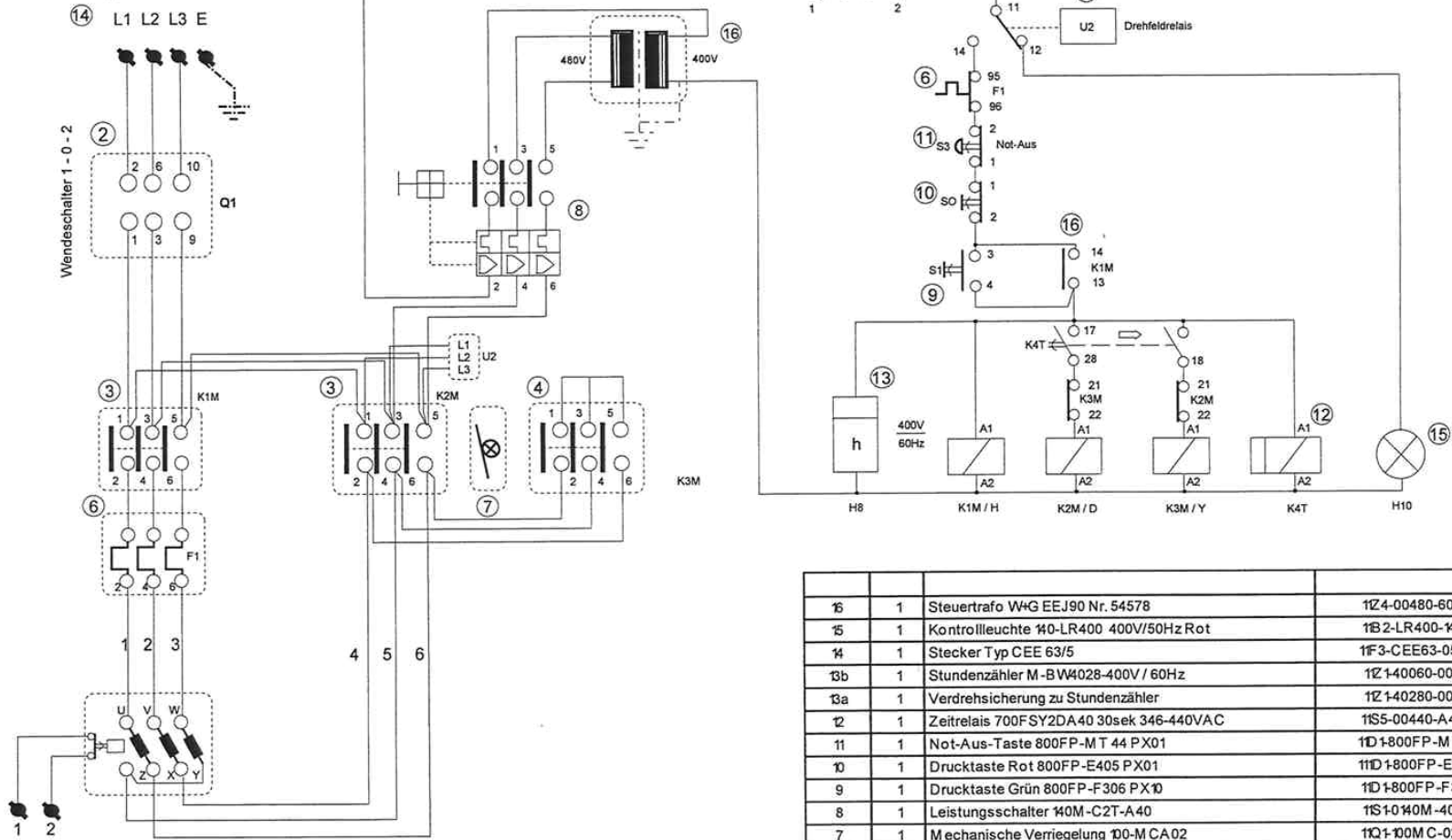
Elektroschema

Maschinentyp: Power Pack 15kW
3 x 400V 50Hz PPH20 Progressiv 2007

HS-Index 001
Datum 27. März 2007

Tyrolit Hydrostress AG ETEL- Power Pack PPH
15kW 3 x 400V / 50Hz

Zuleitung 3 x 480V 60/Hz 3L+PE



Schema FW-0443-0957

Pos.	Stk	Gerät/Typenbezeichnung	Hydrostress Artikel-Nr.	SAP
16	1	Steuertrafo W+G EEJ90 Nr. 54578	1Z4-00480-60	960685
15	1	Kontrollleuchte 140-LR400 400V/50Hz Rot	1B2-LR400-14	10984039
14	1	Stecker Typ CEE 63/5	1F3-CEE63-05	973060
13b	1	Stundenzähler M-BW4028-400V / 60Hz	1Z1-40060-00	999607
13a	1	Verdrehsicherung zu Stundenzähler	1Z1-40280-00	980133
12	1	Zeitrelais 700FSY2DA40 30sek 346-440VAC	1S5-00440-A4	980100
11	1	Not-Aus-Taste 800FP-MT 44 PX01	1D1-800FP-MT	10984019
10	1	Drucktaste Rot 800FP-E405 PX01	1D1-800FP-E4	10984060
9	1	Drucktaste Grün 800FP-F306 PX10	1D1-800FP-F3	10984037
8	1	Leistungsschalter 140M-C2T-A40	1S1-0140M-40	10984731
7	1	Mechanische Verriegelung 100-M CA02	1Q1-100M-C-02	963361
6	1	Thermorelais 193-TAC24 16-24A	1S4-00193-TA	10984020
5	1	Drehfeldrelais DPA51CM 44 208-480VAC	1S7-00DPA-51	10984038
4	1	Schütz 100-C 16KN 10 400V 50/60Hz	1Q1-10016-KN	10984035
3	2	Schütz 100-C23KN 10 400V 50/60Hz	1Q1-10023-KN	963781
2	1	Wendeschalter C32 A401-600E	1S2-40160-E0	10985245
1	1	Gehäuse OP CP 3040 13G	1K2-30401-3G	10984040

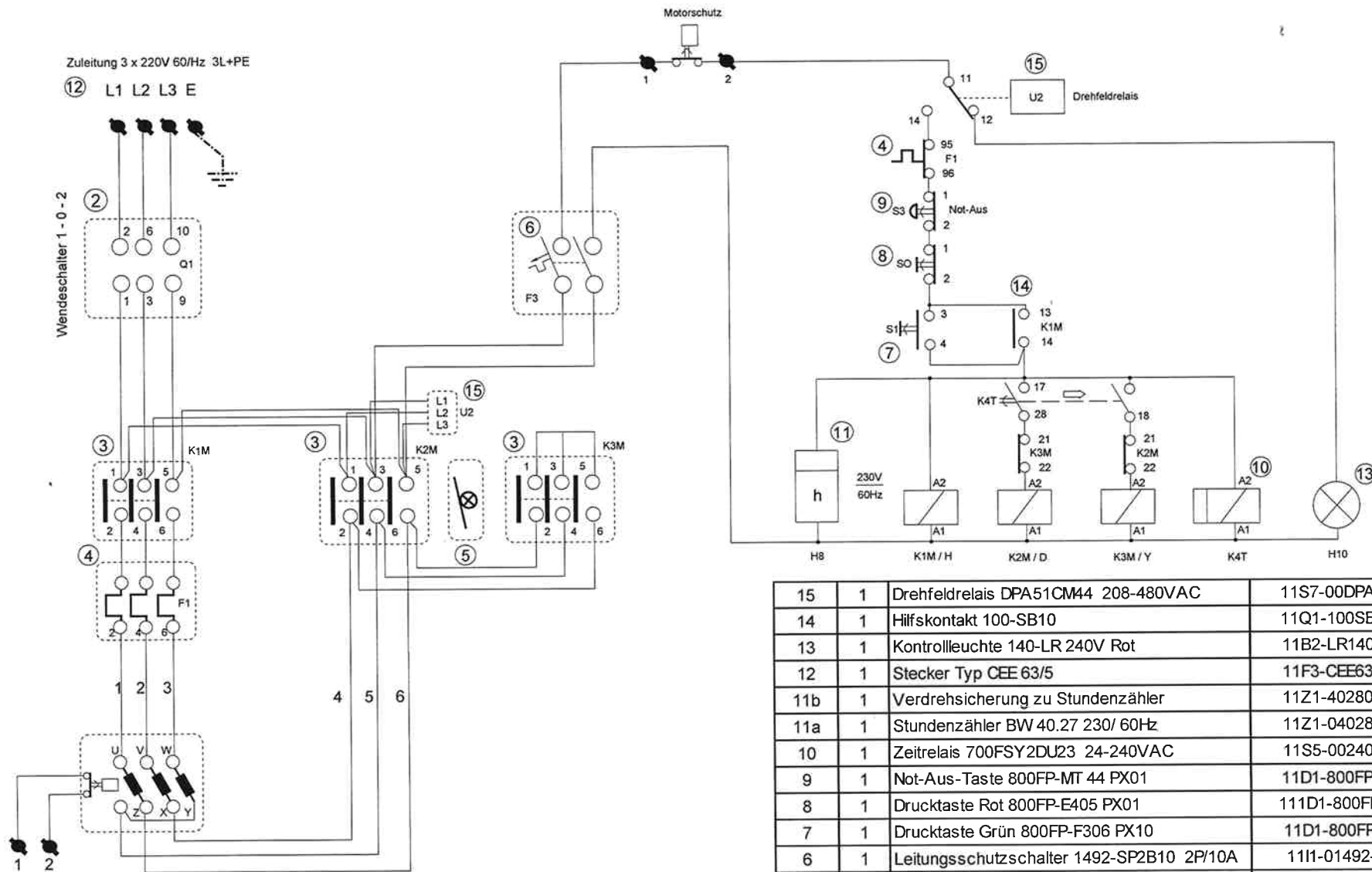
Elektroschema

Maschinentyp: Power Pack PPH20S
3 x 480V 60Hz Modell 2008

HS-Index 001
Datum 12. Juni 2008

Tyrolit Hydrostress AG

ETEL- Power Pack
PPH20S2 3x480V / 60Hz
PPH25S2 3x480V / 60Hz



Schema FW-0443-0960

15	1	Drehfeldrelais DPA51CM44 208-480VAC	11S7-00DPA-51	10984038
14	1	Hilfskontakt 100-SB10	11Q1-100SB-10	964267
13	1	Kontrollleuchte 140-LR 240V Rot	11B2-LR140-24	10986712
12	1	Stecker Typ CEE 63/5	11F3-CEE63-05	973060
11b	1	Verdrehsicherung zu Stundenzähler	11Z1-40280-00	980133
11a	1	Stundenzähler BW 40.27 230/ 60Hz	11Z1-04028-00	10984733
10	1	Zeitrelais 700FSY2DU23 24-240VAC	11S5-00240-23	969642
9	1	Not-Aus-Taste 800FP-MT 44 PX01	11D1-800FP-MT	10984019
8	1	Drucktaste Rot 800FP-E405 PX01	111D1-800FP-E4	10984060
7	1	Drucktaste Grün 800FP-F306 PX10	11D1-800FP-F3	10984037
6	1	Leitungsschutzschalter 1492-SF2B10 2P/10A	1111-01492-SP	10984022
5	1	Elektro-Mechanische Verriegelung 100-MCA02	11Q1-100MC-02	963361
4	1	Thermischer Motorschutz 193-TBC45 30-45A	11S4-193TB-C45	10986713
3	3	Schütz 100-C37KG00 200-220V/60Hz	11Q1-100C3-KN	963359
2	1	Wendeschalter CA63 A401-600E	11S2-40160-63	10986714
1	1	Gehäuse OPCP 304013G	11G2-30401-3G	10984040
Pos.	Stk	Gerät/Typenbezeichnung	Hydrostress Artikel-Nr.	SAP

Elektroschema

Maschinentyp: Power Pack 15,5kW
3 x 220V 60Hz Modell 2008

HS-Index

001

Datum

25. April 2008

Tyrolit Hydrostress AG

ETEL- PPH20S3
15,5 kW 3 x 220V / 60Hz