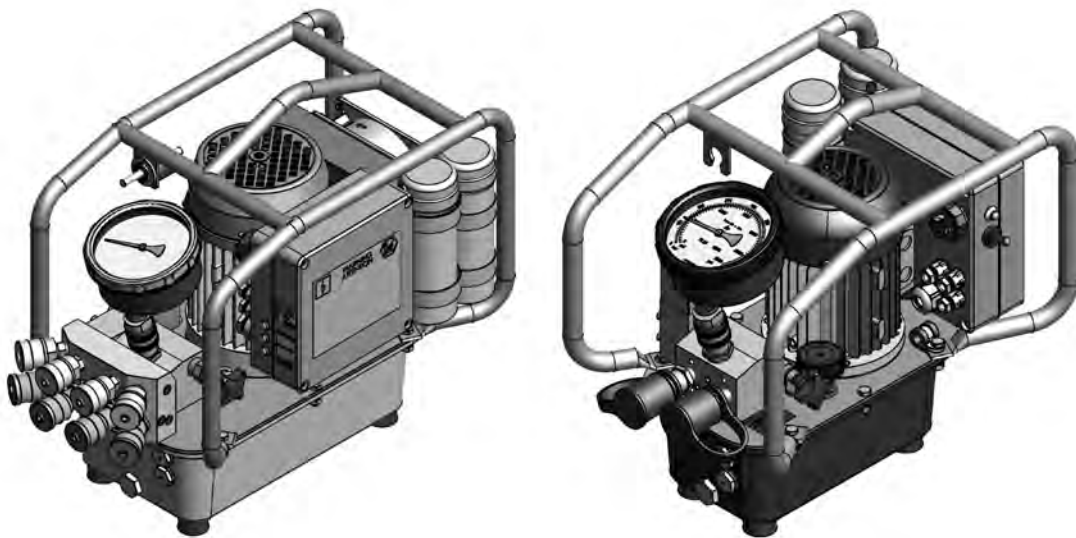


## Hydraulic assembly

- HY-115-CSA
- JetPro-S-115-CSA



## English translation of the original German manual

for qualified and authorized operating personnel

Version 03/2023

## Important safety instructions

### Keep this manual in a safe place

Read and follow the operating instructions before using the unit

In order to reduce the risk of injury, you must be particularly careful when using the unit near children.

Do not touch any moving parts.

Non-observance can lead to injury and possibly death.

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We reserve the right to make technical changes in the course of further development.

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## Notes concerning this manual and the manufacturer

This manual assists in the safe use of hydraulic units HY-115-CSA and/or JetPro-S-115-CSA.

In the following, they are abbreviated to "unit".

Where the operation of the pumps differs, the pump type to which the description applies is indicated.

### Keep the manual available

These operating instructions are a part of the unit. Make sure that the operating instructions are always accessible for the user at the site and are in legible condition. Enclose the operating instructions when you sell the unit or transfer it in any other way.

### Design features of this manual

Various elements of these operation manual have fixed design characteristics. These allow you to easily distinguish the following elements:

Normal text

- Lists

- ▶ Action steps

References to headers are set in quotation marks.

'Labels' of switches or other elements are set in inverted commas.

**Table titles** are set in bold.

 Tips. Contains additional information.

## Referenced documents

| <b>⚠ WARNING</b>                                                                  |                                                                                                                                                                                                                                                                                          |
|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | <p>Risk of injury from non-compliance with the applicable documentation.</p> <ul style="list-style-type: none"><li>▶ Prior to working with the unit, read all applicable documents and comply with them.</li><li>▶ These can be found in the documentation folder of the unit.</li></ul> |

More information, instructions and details about the unit components can be found in the documentation from the respective manufacturers. These documents are regarded as a part of these instructions. Store these documents together with this manual. Hand over these documents when selling the unit or passing it on in other ways.

Applicable documents are especially the following document types:

- Operating instructions
  - Assembly instructions
  - Maintenance and repair manuals
  - Circuit diagrams
  - Terminal layouts
  - Hydraulic layouts
  - Safety data sheets
  - Drawings
  - Spare parts lists
  - Declarations of conformity or declarations of incorporation
- ▶ Please heed and comply with the information from the applicable documents.

These can be found in the documentation folder of the unit.

## Manufacturer's address

HYTORC Technologies GmbH  
Kleinbeckstr 3–17  
45549 Sprockhövel  
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## **Person responsible for documentation**

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Michael Westermann  
Kleinbeckstr 3-17  
D-45549 Sprockhövel  
Germany

## **Warranty and liability**

In general our General Terms and Conditions apply. Warranty and liability claims for personal injury or property damage are always excluded if they are due to one or more of the following causes:

- Improper use of the unit
- Improper transport, installation, commissioning, operation and maintenance of the unit
- Ignoring the instructions in this manual
- Ignoring the hazard notices on the unit
- Unauthorized modifications of the unit
- Inadequate monitoring of components which are subject to wear.
- Incorrectly executed repairs
- Disasters caused by outside intervention or an act of God.

## Safety

| <b>⚠ WARNING</b>                                                                  |                                                                                                                                                                                                                                                                                                                              |
|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | <p>Severe injuries or death caused by accidents due to disregard of the instructions in this guide.</p> <p>In particular the failure to observe the instructions in the Chapter on Safety, can lead to accidents.</p> <p>► Read and follow all instructions in this manual before you begin working with or on the unit.</p> |

In addition to the notes in these operating instructions, also follow, in any case, the statutory and other regulations, e.g.:

- Accident prevention regulations
- Regulations for safe and professional work
- The applicable on-site regulations for explosion protection and fire protection

### Responsibilities of the operating company

- The operator must ensure that all accident prevention regulations are complied with.
- The operator must ensure that only qualified and authorized operating personnel performs work on and with the unit.

### Persons at particular risk

The following groups of persons must not be granted access to the unit as they might sustain serious or lethal injuries:

- children
- persons with physical or mental limitations
- persons under the influence of drugs and medication
- persons under the influence of alcohol
- unauthorized persons, e. g. pedestrians
- People without the qualifications specified in the following section.



## Qualification of personnel

These operating instructions are addressed to qualified and authorized operating personnel.

The following sections list the necessary qualification for each activity on or with the unit.

### Power supply connection

The following skills and experience are required for the operating personnel:

- have been taught and trained for the work
- know that improper operation, maintenance and repairs can cause accidents
- can assess hazards that arise from electrical voltage and power
- can assess hazards that arise from noise and heat
- can provide the unit's power connection using the provided power cable

### Tool connection

The following skills and experience are required for the operating personnel:

- have been taught and trained for the work
- know that improper operation, maintenance and repairs can cause accidents
- can assess risks and environmental damage that could be caused by hydraulic oil
- can assess risks that may arise from the high pressure components
- can assess hazards that arise from noise and heat
- can detect leaks
- can handle screw couplings to connect tools to the unit

### Setting pressure/torque

The following skills and experience are required for the operating personnel:

- have been taught and trained for the work
- know that improper operation, maintenance and repairs can cause accidents
- can assess risks that may arise from the high pressure components
- can assess hazards that arise from noise and heat
- can set a predetermined pressure on the unit

### **Assessing the state of the unit**

The following skills and experience are required for the operating personnel:

- have been taught and trained for the work
- know that improper operation, maintenance and repairs can cause accidents
- can assess hazards that arise from electrical voltage and power
- can assess risks and environmental damage that could be caused by hydraulic oil
- can assess risks that may arise from the high pressure components
- can assess hazards that arise from noise and heat
- can detect errors in the condition of the unit by performing a visual inspection prior to commissioning
  - Leaks
  - Kinks in electric lines
  - Kinks in hydraulic hoses
  - External damage to electrical lines
  - External damage to hydraulic hoses
  - Incorrect fill level in the unit

### **Carrying the unit**

The following skills and experience are required for the operating personnel:

- have been taught and trained for the work
- can assess hazards that arise from improper carrying
- know that, with a weight of 25 kg, the unit is only permitted to be carried with the help of a second person.

### **Ban of unauthorized conversions**

Unauthorized conversions or changes on the unit may lead to serious or even lethal injuries. This applies in particular to changing and altering safety devices.

- ▶ Never bypass or shunt any safety devices.

## Personal protective equipment

Crushing of the feet when lifting and carrying the unit is possible!

- ▶ Wear safety shoes with steel toe caps.

Slipping and thereby risk of fractures when performing hydraulic work is possible!

- ▶ Wear safety shoes with non-slip soles.

Skin irritation and eye damage when in contact with hydraulic oil and hydraulic components is possible!

- ▶ Wear oil resistant nitrile gloves and chemical-resistant goggles.

Burns on contact with hot fluids and components are possible!

- ▶ Wear protective gloves against thermal risks.

Cuts and abrasions of the skin on sharp-edged components are possible!

- ▶ Wear protective gloves against mechanical risks.

Hearing impairments while unit is running are possible!

- ▶ In areas with high noise wear hearing protection.

Risk of poisoning possible in poorly ventilated rooms! The unit may overheat. In this case, oil mist and oil vapors can form.

- ▶ If this is the case, wear a respirator.

## Basic safety information

### Preventing serious injury or death

Severe injury or death caused by failure of tools or hoses. Tools or hoses that do not match the tool and hose specifications may fail.

- ▶ Only use tools and hoses, which the manufacturer of the unit allows as an accessory.

### Preventing explosion hazards

Operating and maintaining the unit in hazardous areas can lead to serious injury or death.

- ▶ Operate and service the unit only in areas where there is no explosive atmosphere.

**Preventing electric shock**

Severe injury or death from electric shock is possible!

- ▶ To disconnect the unit from the electrical supply, switch off all controls (position 0).
- ▶ Unplug the power plug from the power socket. For this, only hold the plug.
- ▶ Check the electrical supply line for damage.
- ▶ Disconnect the power plug from the power socket when you are not using the unit and before servicing or cleaning it.
- ▶ Never operate the unit with a damaged cable or power plug.
- ▶ Never operate the unit if the unit does not function properly, has been dropped or has been damaged in any way.
- ▶ In such a case, take the device to the nearest authorized service center for inspection, repair, or electrical or mechanical adjustment.
- ▶ Use the unit only with immaculate lead.
- ▶ Immediately have a damaged electrical lead replaced by authorized personnel.
- ▶ Make sure that the ground wire connection (green yellow cable) on the unit is properly constructed and connected.
- ▶ Connect the power plug of the unit only to a properly grounded power socket with the correct electrical voltage and frequency.
- ▶ Unplug the power plug from the power socket before performing any electrical work on the unit or cleaning the unit. For this, only hold the plug.
- ▶ Only dry clean the unit. Do not clean the unit with a pressure washer, cold cleaner or water.
- ▶ Never immerse the unit in water or other liquids.
- ▶ Place the unit in such a way that it cannot fall down or be pulled into a sink or tub.

**Preventing burns from fire**

A short circuit could cause a fire and cause severe burns.

- ▶ When not in use and before any maintenance work pull the mains plug from the wall outlet. For this, only hold the plug.
- ▶ Remove all unneeded and flammable materials from the work area.
- ▶ Make sure that a fire extinguisher with powder or foam extinguishing agent is available.

**Preventing burns from oil and hot surfaces**

During and after operation, burns on metallic surfaces or from hydraulic oil are possible.

- ▶ When working on or with the unit wear protective gloves against thermal risks.

## Preventing poisoning

The unit may overheat. In this case, oil mist and oil vapors can form.

- ▶ Make sure there is sufficient ventilation.
- ▶ In poorly ventilated areas and upon formation of oil mist and oil vapors, wear a respirator.
- ▶ Switch the unit off when it overheats.
- ▶ Allow the unit to cool down.
- ▶ With the help of a non-contact infrared thermometer, ensure that the unit is cooled down to 25 °C (77 °F).
- ▶ Check the unit for possible damage.
- ▶ Have the unit repaired, if damaged, by qualified personnel before recommissioning.

When fluids leak, proceed as follows:

- ▶ Wear temperature- and media-resistant gloves.
- ▶ Take up liquid spills immediately with a suitable binding agent and a rag.
- ▶ Dispose of the binding agent and rag environmentally correct.

## Preventing bone fractures and crushing

Fractures and bruising possible. When lifting and carrying the unit and unstable setting up, the unit might fall or overturn.

Slipping on leaked liquids and thereby risk of fractures is possible!

- ▶ Never reach into moving parts.
- ▶ Always set up the unit on a flat, solid and stable base.
- ▶ Secure the unit and tools against falling.
- ▶ When lifting and carrying the unit, wear safety shoes with steel toe caps.
- ▶ Wear safety shoes with non-slip soles when working on hydraulics.
- ▶ Remove liquid spills.

## Preventing eye damage

At pressures of more than 700 bar (10,000 psi) and operating the unit outside of the tool and tubing specifications can lead to bursting of the hydraulic hoses and spraying of hydraulic oil.

- ▶ Make sure that the permissible pressure defined by the manufacturer is not exceeded.
- ▶ Observe the tool and hose manufacturer's specifications.
- ▶ Observe and follow the operating instructions of the tools and hose specifications.
- ▶ Wear chemical-resistant goggles.

### **Preventing skin irritation**

Contact with hydraulic oil may cause skin irritation.

- ▶ Always provide a strong and tight connection between the unit and hydraulic tools.
- ▶ Wear nitrile gloves at work where you might come in contact with hydraulic oil.
- ▶ Make sure that the permissible pressure defined by the manufacturer is not exceeded.
- ▶ Observe the tool and hose manufacturer's specifications.
- ▶ Observe and follow the operating instructions for the hydraulic tool.

### **Preventing material damage**

- ▶ Avoid soiling the couplings by installing the protective caps and protective plugs when the couplings are not in use.
- ▶ Always set the hydraulic tool down safely.

### **Intended use**

The unit is used exclusively for driving hydraulic assembly tools for screws and nuts in the commercial sector. With the screwing assembly tool, screw connections can be loosened or tightened with a predetermined torque.

Intended use also includes observing and following all instructions in this manual, especially the safety instructions. Any other use is considered to be improper and will void the warranty and liability claims.

## Ambient conditions

Make sure that the unit is used under the following environmental conditions:

- Temperature range:  $-20\text{ }^{\circ}\text{C}$  to  $+55\text{ }^{\circ}\text{C}$  ( $-4\text{ }^{\circ}\text{F}$  to  $131\text{ }^{\circ}\text{F}$ )
- Humidity non-condensing

Make sure that the unit is stored and transported under the following environmental conditions:

- Temperature range:  $-30\text{ }^{\circ}\text{C}$  to  $+60\text{ }^{\circ}\text{C}$  ( $-22\text{ }^{\circ}\text{F}$  to  $140\text{ }^{\circ}\text{F}$ )
- Humidity non-condensing

## Design characteristics of warning information

| <b>⚠ DANGER</b>                                                                    |                                                                                                                |
|------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------|
|   | Sections with the word DANGER warn of imminent dangerous situations that lead to death or serious injury.      |
| <b>⚠ WARNING</b>                                                                   |                                                                                                                |
|   | Sections with the word WARNING warn of imminent dangerous situations that may lead to death or serious injury. |
| <b>⚠ CAUTION</b>                                                                   |                                                                                                                |
|  | Sections with the word CAUTION warn of dangerous situations that may lead to minor or moderate injuries.       |

Special symbols may be used in the warnings, in addition to the general danger signs. These symbols indicate the possible danger. The meanings of the individual symbols are found in the following section.



## Explanation of Symbols



Danger of electric shock



Danger of slipping due to leaked fluids



Danger of burns, scalding



Risk of eye damage due to splashing liquid



Risk of explosion and explosive media discharge

## Design of information about property damage

| <b>ATTENTION!</b> |                                                                                            |
|-------------------|--------------------------------------------------------------------------------------------|
|                   | These notes warn of situations that can lead to property damage and limited functionality. |

## Warning and information signs

- ▶ Make sure that all warnings and signs attached to the unit are clearly visible and legible.
- ▶ Replace damaged or lost warnings and signs immediately.

The following labels are affixed to the unit:

### Warning or information sign

**WARNING: DO NOT USE  
IN EXPLOSIVE ENVIRONMENT  
(USE AIR PUMP INSTEAD)**

**WARNING** 

HIGH PRESSURE (10,000PSI)  
STAY ALERT!  
Do not Use in an Explosive  
Environment!  
(Use a HYTORC Air Pump Instead)  
Only Tool Handler Should  
Operate Remote Control!

**CHANGE OIL  
AFTER EVERY  
MAJOR USE!  
(USE GRADE 46 OIL)**

**FOR TOOL OPERATOR  
ONLY**

### Meaning or explanation

The unit is not suitable for the use in explosive environments.

- ▶ Do not use the unit in an explosive environment.
- ▶ In an explosive environment, use an air-operated pump for driving the tools.

The unit produces a high pressure  
(700 bar/10,000 psi)

- ▶ Do not use the unit in an explosive environment.
- ▶ In an explosive environment, use an air-operated pump from HYTORC for driving the tools.
- ▶ Do not leave the unit unattended during operation.
- ▶ The tool and remote control should be operated by the same person!
- ▶ Change the oil as required or after every major application.
- ▶ Use oil of Class 46.

The remote control may only be operated by the tool user.

HYTORC – Recommendation  
for Gaskets and Critical Applications  
**4 TOOL USE !**  
Decrease in Number of Passes.  
Precision Load Control !

FOR SAFE OPERATION, PLEASE READ:

PROPERTY: \_\_\_\_\_  
REMARK: \_\_\_\_\_

CONNECTIONS: \_\_\_\_\_  
LEAKS: \_\_\_\_\_  
PRESS: \_\_\_\_\_  
TOLL: \_\_\_\_\_  
PLAN: \_\_\_\_\_

Recommendation of the manufacturer for seals and other critical applications:

When using four tools simultaneously.

- ▶ Reduce the number of cycles per workpiece and ensure in this way a more accurate pretension force.

Notes for safe use:

- ▶ Do not use the unit in a moist or an explosive environment.
- ▶ Do not use the unit with pressure probes.
- ▶ Only authorized operators can operate the unit.
- ▶ When working on the unit, use goggles and gloves.
- ▶ During operation, ensure that no persons are near the work areas.  
Make sure that no unauthorized persons linger at the unit.
- ▶ During operation, keep distance from the tool and reaction arm.
- ▶ During operation, ensure that no body parts can be crushed on the tools.
- ▶ Do not touch moving parts during operation.
- ▶ Only use the unit when all connections and cables are in perfect condition.
- ▶ Make sure that the tools fit the connections.  
Plug and socket must exactly match.
- ▶ If possible, do not use any connections with thin bushes.  
When using thin bushes during operation keep a distance from the connections.
- ▶ Ensure that plugs and jacks are securely connected.
- ▶ Connect the reaction arm with the tool.
- ▶ Set the reaction arm so that it is not pressed from the tool by the torque during operation.
- ▶ Set the reaction arm so that the tool cannot slip.
- ▶ Test the setting of the reaction arm at low pressure before use.
- ▶ During operating, hold the hydraulic hoses to the tool at their protection jackets.
- ▶ Set the pressure or torque here.
- ▶ Always set the pressure from low to high pressure.

**PRESET PRESSURE!**  
**TORQUE HERE!**  
**ALWAYS ADJUST**  
**FROM LOWER TO**  
**HIGHER PRESSURE**

**PUMP WILL SHUT OFF AFTER 20 SECONDS IN RETRACT POSITION**

The unit switches itself off automatically after 20 seconds in the return stroke position.

**TURN-OFF  
IF NOT IN USE!**

- Switch off the unit when not in use.

**Adjust torque  
valve only with  
connected  
hoses**

- Use the torque valve only when hydraulic hoses are connected.

|        |                              |
|--------|------------------------------|
| green  | All right                    |
| yellow | Warning                      |
| red    | <b>BAD!</b>                  |
| red    | <b>Shutdown</b>              |
|        | (Pull power plug to restart) |

Displays of operating states by LED:

Green: Normal operating status

Yellow (warning): One or more operating parameters are outside of the optimum range. You can continue the operation.

Red (fault): One or more operating parameters are outside of the permissible range. Interrupt the operation. Remedy the cause of the error message.

Red (safety shutdown): A restart is required.

- To restart, disconnect the unit from the power supply.

**Undervoltage**

Error displays of the LED:

Undervoltage: The voltage is below the permissible value.

**Overvoltage**

Overvoltage: The voltage is above the permissible value.

**Temperature  
too low/high**

Temperature too low/high

Temperature: The temperature is outside the permitted range of values.



**WARNING  
ATTENTION**



-Do not touch the electrical equipment. To reduce the risk of electrical shock, unplug before cleaning or servicing.  
 -This equipment incorporates parts, such as snap switches, receptacles, and the like that tend to produce arcs or sparks and, therefore, when located in a garage, it should be in a room or enclosure provided for the purpose, or should be 18in (457mm) or more above the floor.  
 -Risk of electrical shock. Connect to a properly grounded, GFCI protected outlet only.

-Ne touchez pas l'équipement électrique. Pour réduire le risque d'un choc électrique, débranchez le cordon d'alimentation avant le nettoyage ou l'entretien.  
 -Cet appareil contient des pièces tels que des interrupteurs, prises de courant et autres, qui ont la tendance à produire des arcs ou des étincelles. L'appareil devrait donc, s'il est dans un garage, être situé dans un espace ou un logement appropriés. Ou il devrait être au moins 18" (457mm) plus élevé que le sol.  
 -Risque de choc électrique. Exclusivement connecter à une mise à la terre, protégé par une prise GFCI.

- ▶ Do not touch any electrical components.
- ▶ To minimize the risk of electric shock, unplug the unit before cleaning or maintaining.

The unit contains components that can produce sparks.

- ▶ If you want to use the unit in a garage, place it in a designated separate area.
- ▶ Alternatively, place the unit at least 18 in (457 mm) above the ground.

Risk of electric shock.

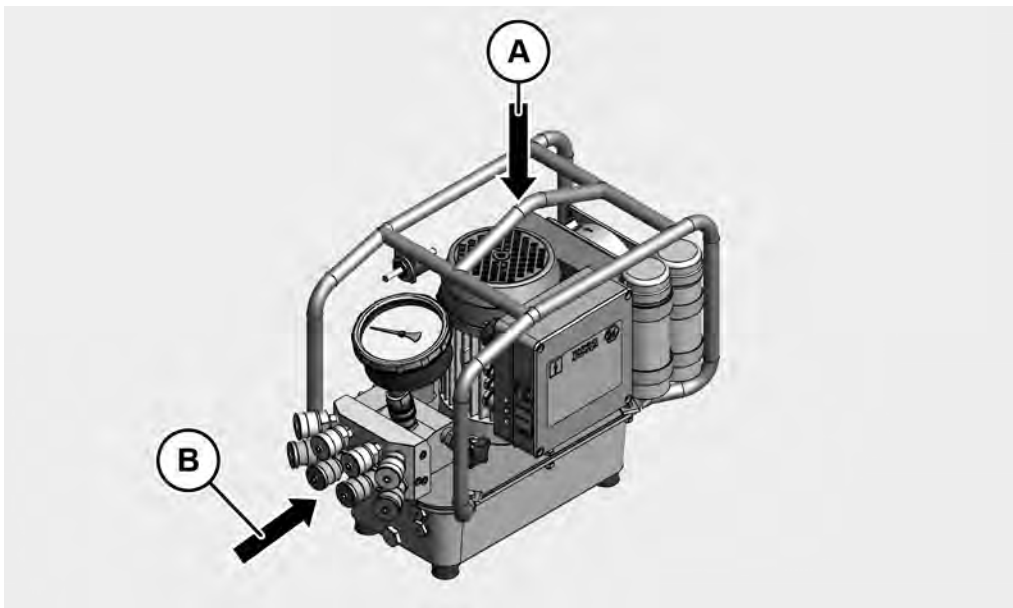
- ▶ Connect the unit only to a properly grounded connection equipped with fault current circuit breaker.

## Description

### Directions HY-115-CSA

In this guide, the following directions are defined for the unit:

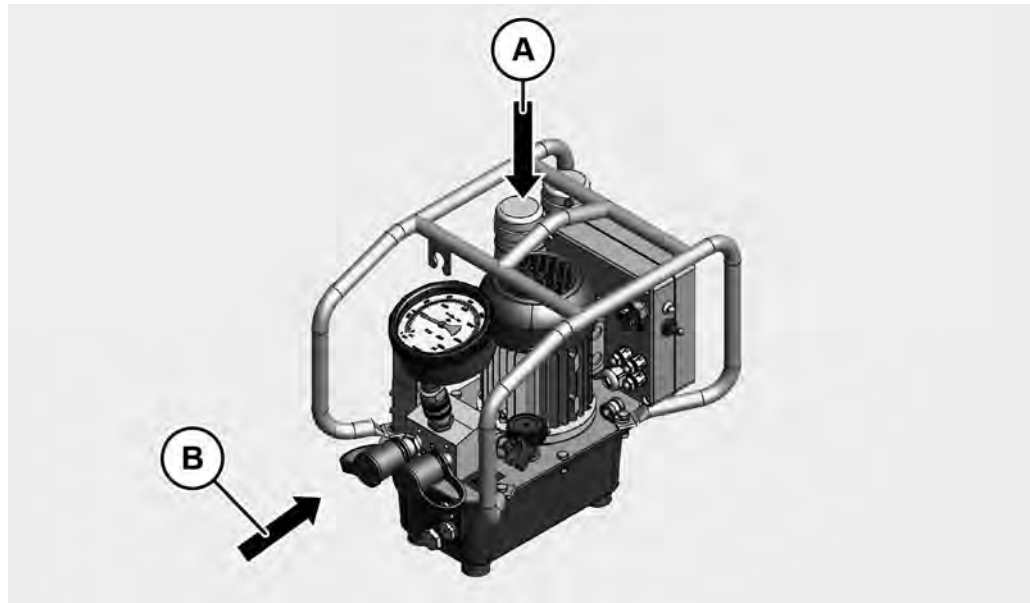
- Front: On the front side (B) you can see the couplings.
- Rear: On the rear side you will see the oil cooler fan.
- Right: On the right side you will see the electric control.
- Left: On the left side you see on the solenoid valve.
- Top: On the upper side (A) you see the installed components
- Bottom: On the lower side the rubber feet are arranged.



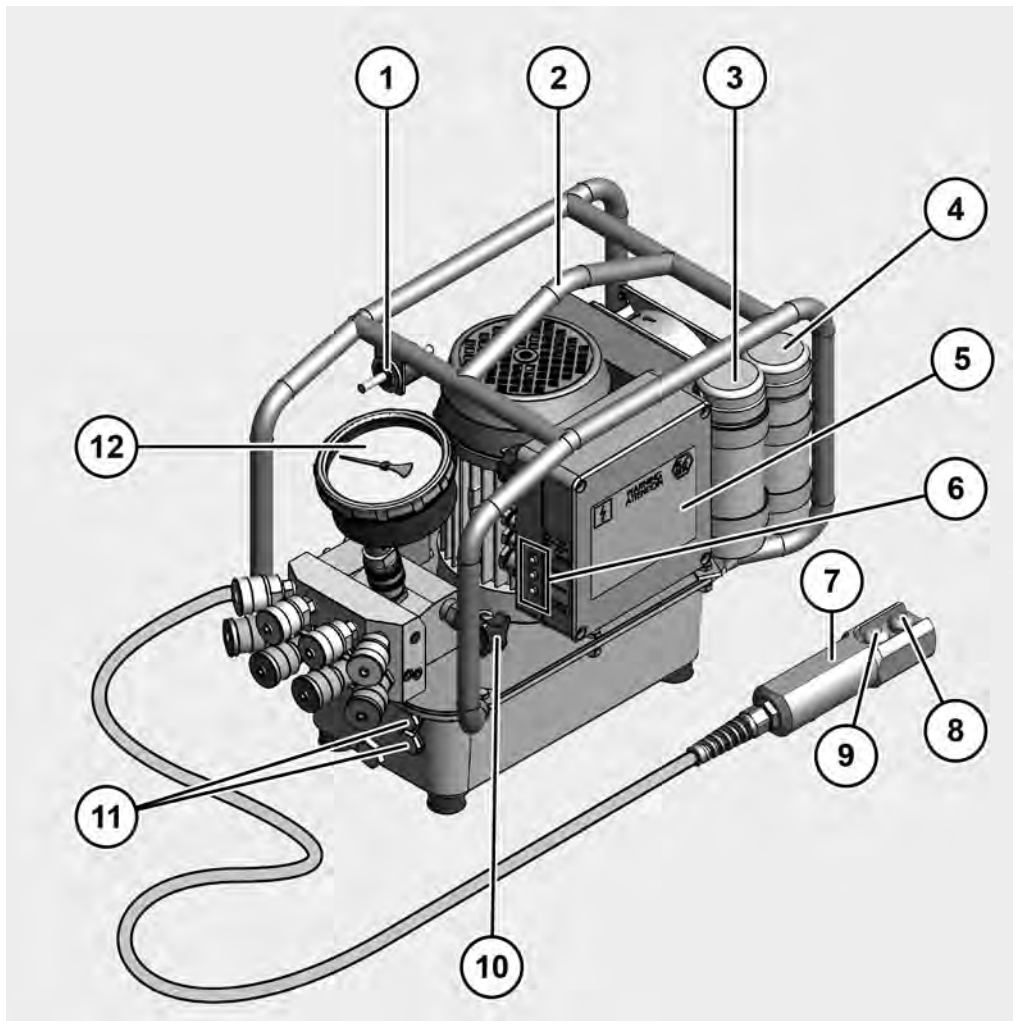
## Directions JetPro-S-115-CSA

In these instructions, the following directions are defined for the unit:

- Front: On the front side (B), you can see the couplings.
- Rear: On the rear side you will see the electric control.
- Right: On the right side, you can see the torque valve.
- Left: On the left side, you can see the solenoid valve.
- Top: On the upper side (A) you see the installed components
- Bottom: On the lower side the rubber feet are arranged.



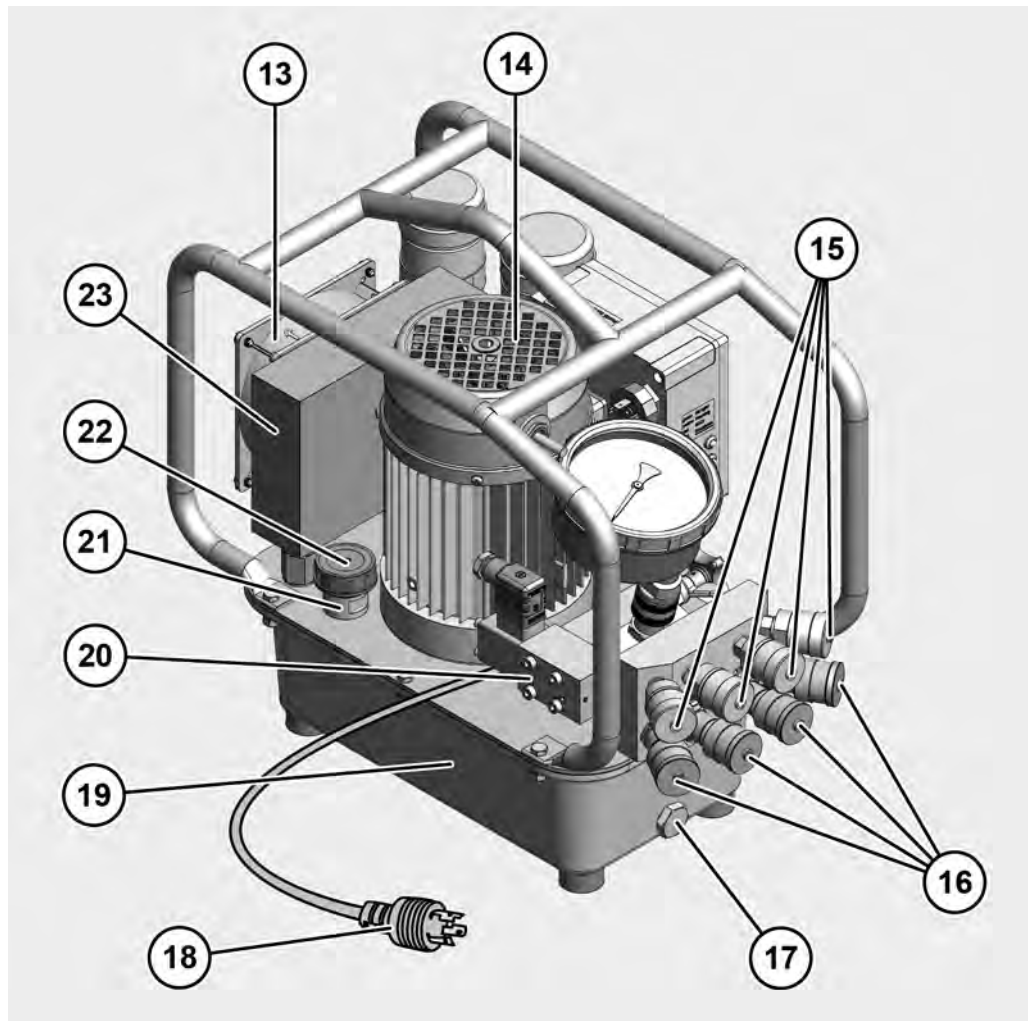
## Overview HY-115-CSA front right



| No. | Name                                                  |
|-----|-------------------------------------------------------|
| 1   | Tension relief                                        |
| 2   | Bracket                                               |
| 3   | Operating capacitor                                   |
| 4   | Start capacitor                                       |
| 5   | Electric control                                      |
| 6   | LEDs                                                  |
| 7   | Remote control                                        |
| 8   | Red button (switch unit in standby mode)              |
| 9   | Green button (build pressure, actuate connected tool) |
| 10  | Torque valve                                          |
| 11  | Sight glasses                                         |
| 12  | Pressure gage                                         |

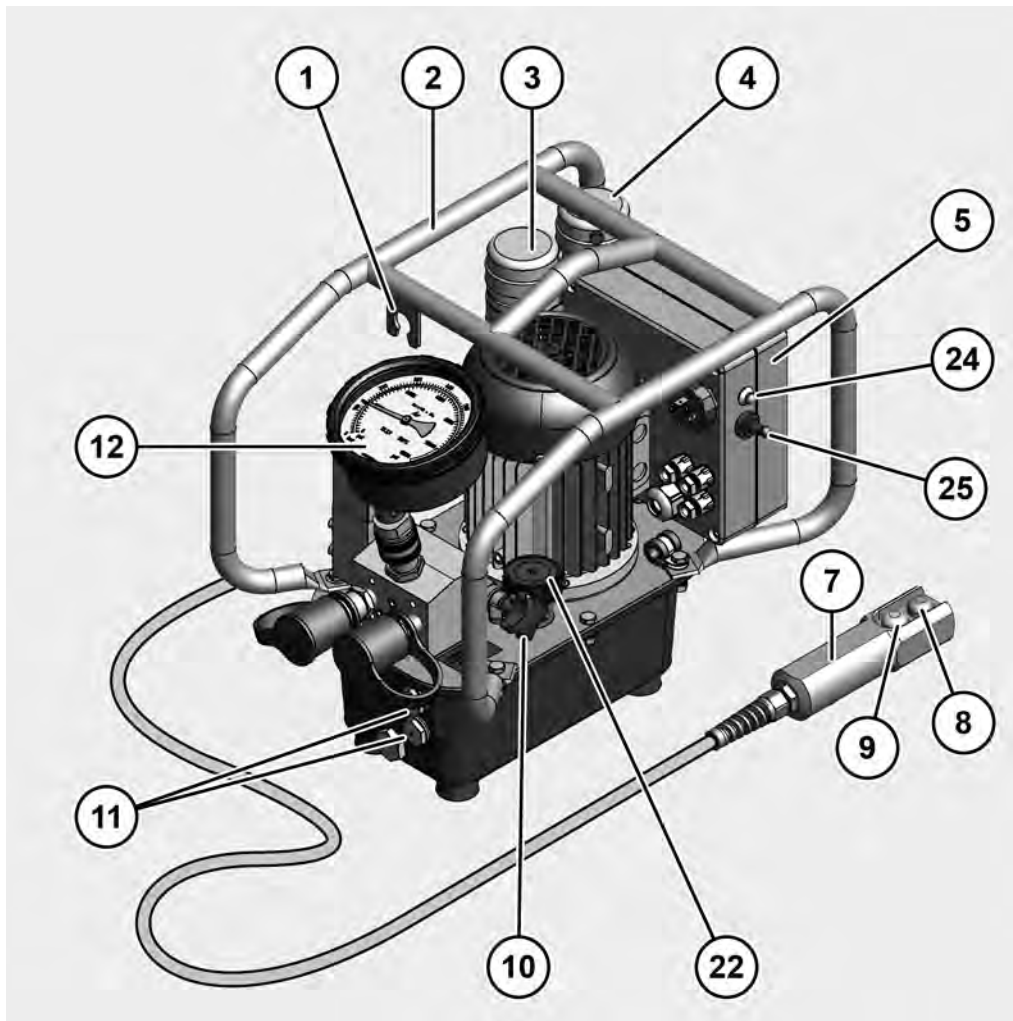


## Overview HY-115-CSA front left



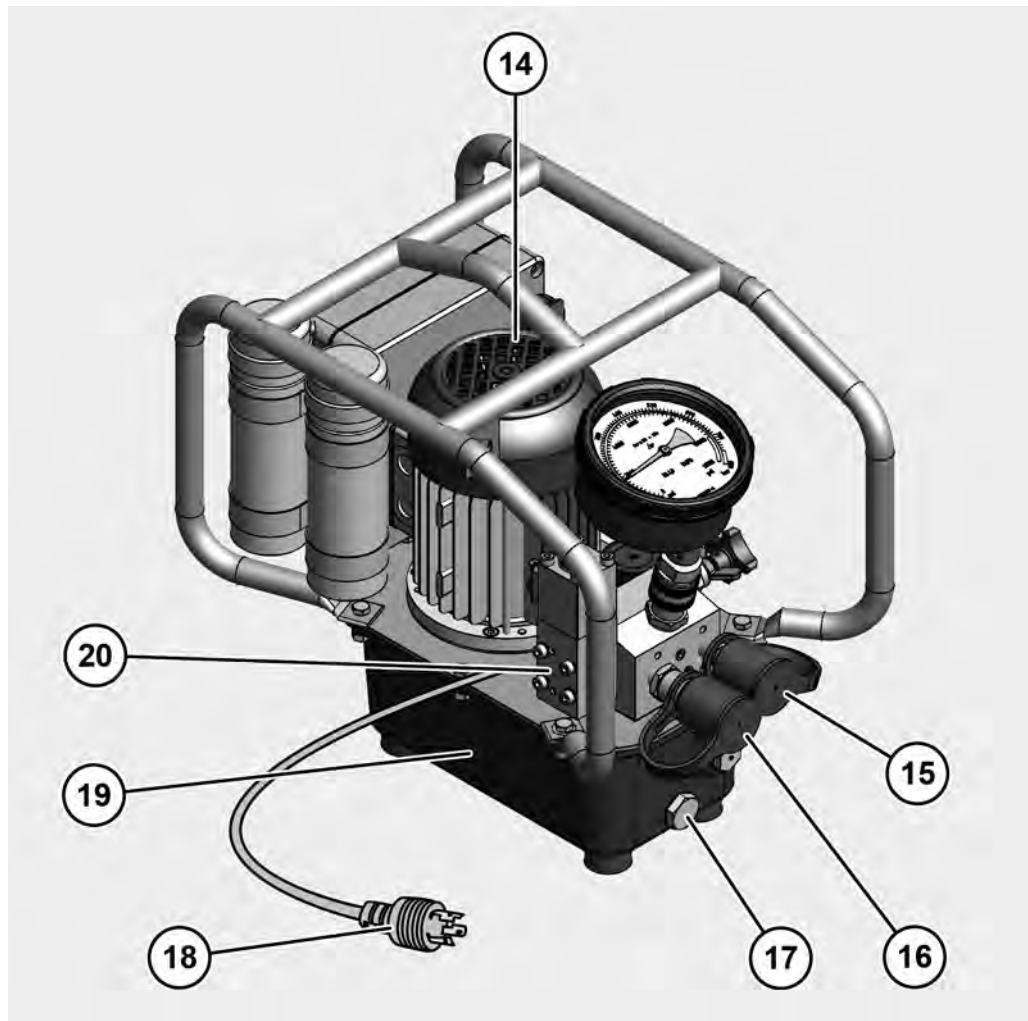
| No. | Name                              |
|-----|-----------------------------------|
| 13  | Oil cooler (fan motor)            |
| 14  | Electric motor of motor pump unit |
| 15  | Couplings (oil intake)            |
| 16  | Couplings (oil return flow)       |
| 17  | Oil drain screw                   |
| 18  | Power plug                        |
| 19  | Oil container                     |
| 20  | Solenoid valve                    |
| 21  | Oil fill opening                  |
| 22  | Ventilation and bleed valve       |
| 23  | Oil cooler (cooling body)         |

## Overview JetPro-S-115-CSA front right



| No. | Name                                                  |
|-----|-------------------------------------------------------|
| 1   | Tension relief                                        |
| 2   | Bracket                                               |
| 3   | Operating capacitor                                   |
| 4   | Start capacitor                                       |
| 5   | Electric control                                      |
| 7   | Remote control                                        |
| 8   | Red button (switch unit in standby mode)              |
| 9   | Green button (build pressure, actuate connected tool) |
| 10  | Torque valve                                          |
| 11  | Sight glasses                                         |
| 12  | Pressure gage                                         |
| 22  | Ventilation and bleed valve                           |
| 24  | Operating light                                       |
| 25  | On-off switch                                         |

## Overview JetPro-S-115-CSA front left



| No. | Name                              |
|-----|-----------------------------------|
| 14  | Electric motor of motor pump unit |
| 15  | Coupling (oil intake)             |
| 16  | Coupling (oil return flow)        |
| 17  | Oil drain screw                   |
| 18  | Power plug                        |
| 19  | Oil container                     |
| 20  | Solenoid valve                    |

## Layout

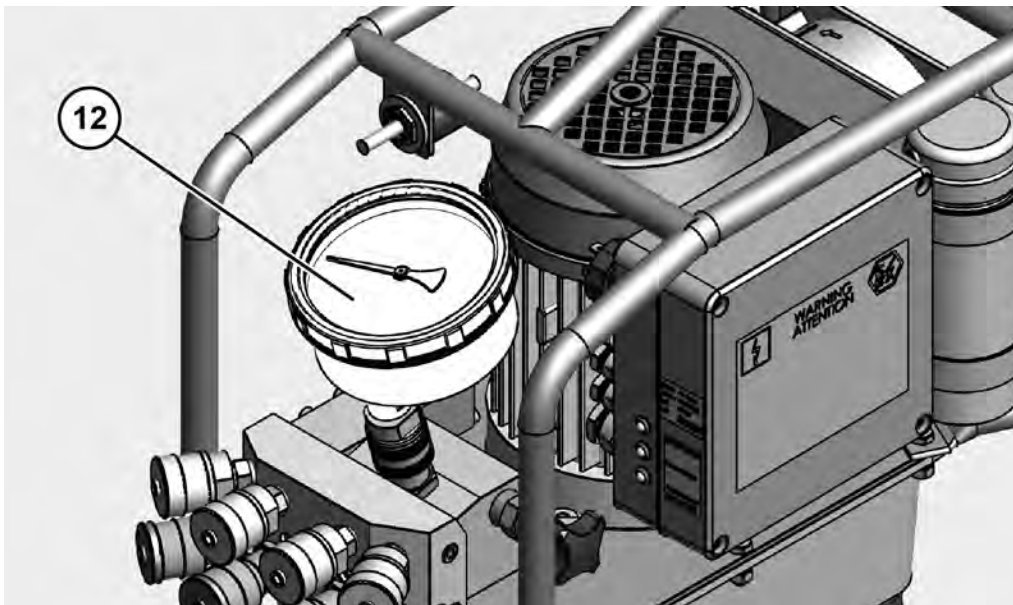
The unit consists of the following main components:

- Electric motor pump unit
- Oil container
- Valve block
- Oil cooler (only HY-115-CSA)
- Couplings
- Bracket.

## Display and operating elements

### Pressure gage

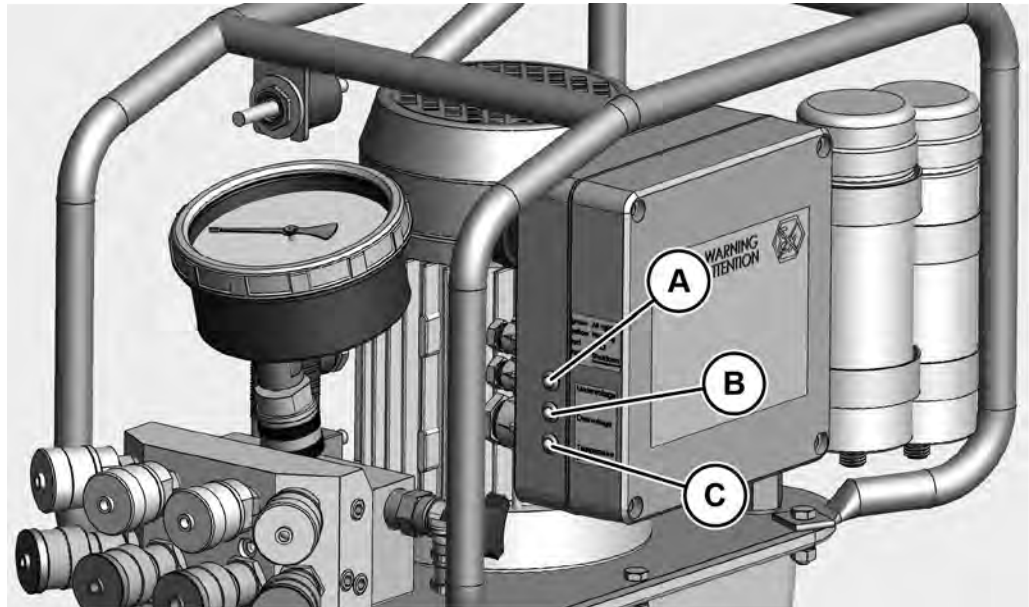
The pressure gage (12) shows the current pressure in bar or psi.



## LEDs

❗ Applies only to HY-115-CSA.

Three multi-colored LEDs are located at the side on the electric control. These indicate the operating states.



| Pos. | Description               |
|------|---------------------------|
| A    | Undervoltage              |
| B    | Overvoltage               |
| C    | Oil and motor temperature |

Explanations about the displays of the LEDs are found in the following tables.

| LED A: Undervoltage                                                                      |                                       |
|------------------------------------------------------------------------------------------|---------------------------------------|
| Green                                                                                    | The mains voltage is more than 105 V. |
| Yellow                                                                                   | The mains voltage is 90–105 V.        |
| Red                                                                                      | The mains voltage is 87-90 V.         |
| The motor switches off automatically if the voltage is less than 87 V for more than 5 s. |                                       |

| LED B: Overvoltage                                                                                                 |                                                                                                                                    |
|--------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------|
| <b>In standby:</b>                                                                                                 |                                                                                                                                    |
| Green                                                                                                              | The mains voltage is less than 138 V.                                                                                              |
| All LEDs (A, B, C) are flashing red, if the mains voltage is more than 138 V. The unit switches off automatically. |                                                                                                                                    |
| <b>In operation:</b>                                                                                               |                                                                                                                                    |
| Green                                                                                                              | The mains voltage is less than 128 V.                                                                                              |
| Red                                                                                                                | The mains voltage is more than 128 V.<br>The motor switches off automatically if the voltage is more than 128 V for more than 5 s. |

| LED C: Oil and motor temperature |                                                                                                                                                                              |
|----------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Oil temperature:</b>          |                                                                                                                                                                              |
| Green                            | The oil temperature is 0 °C (32 °F)–90 °C (194 °F).                                                                                                                          |
| Yellow                           | The oil temperature is less than 0 °C (32 °F) or more than 90 °C (194 °F).<br>The solenoid valve is blocked automatically, if the oil temperature is less than 0 °C (32 °F). |
| Red                              | The oil temperature is more than 100 °C (212 °F).<br>The motor switches off automatically.                                                                                   |
| <b>Motor temperature:</b>        |                                                                                                                                                                              |
| Green                            | The motor temperature (coil temperature) is less than 160 °C (320 °F).                                                                                                       |
| Red                              | The motor temperature (coil temperature) is more than 160 °C (320 °F).<br>The motor switches off automatically.                                                              |

## Couplings

The couplings are arranged on the front side of the unit. The couplings are used to connect the tools. Using screw caps provides a tight connection between the tool and the unit.



## Remote control

The remote control is used to:

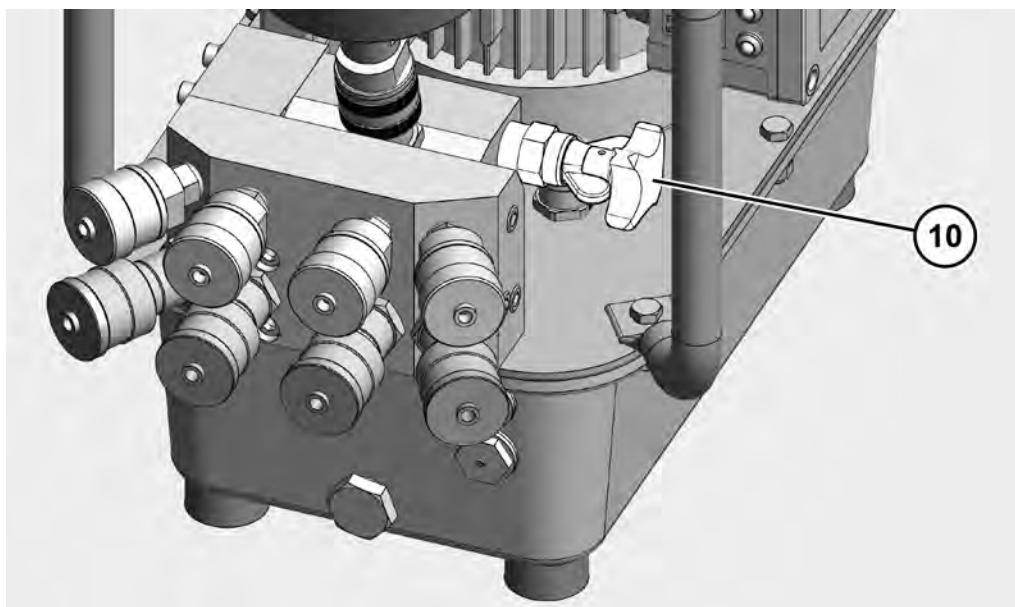
- Switch the pump on and off
- Operate the tool

| Remote control functions:                                |                                                                                                            |
|----------------------------------------------------------|------------------------------------------------------------------------------------------------------------|
| In standby:<br>► Press the green button and then release | The motor is started. The connected screw assembly tool is moved in the starting position (return stroke). |
| ► Hold the green button                                  | Screwing process is performed with the tool (forward stroke).                                              |
| ► Release the green button                               | The connected screw assembly tool is moved in the starting position (return stroke).                       |
| ► Press the red button                                   | Place the unit in standby.<br>The motor is stopped and the system de-pressurized.                          |

### Torque valve

The torque valve (10) serves for adjusting the required oil pressure. For information on the pressure required for a given torque, refer to the operating instructions of the screwing assembly tool. Alternatively, visit the download area on the HYTORC website.

- ▶ If necessary, loosen the wing nut.
- ▶ To increase the pressure, turn the T-handle of the torque valve clockwise.
- ▶ To decrease the pressure, turn the T-handle of the torque valve counterclockwise.
- ▶ To save the setting, turn the wing nut clockwise until it stops.
- ▶ See also, starting from page 53.



### Type plate

The type plate may be attached as a sticker on the top of the electric control or on the cover next to the solenoid valve. The type plate contains the following information:

- Name of distributor
- Name of the model
- Serial number
- Electrical voltage
- Output
- Manufacturer date
- Operating mode
- Name of manufacturer
- Manufacturer country



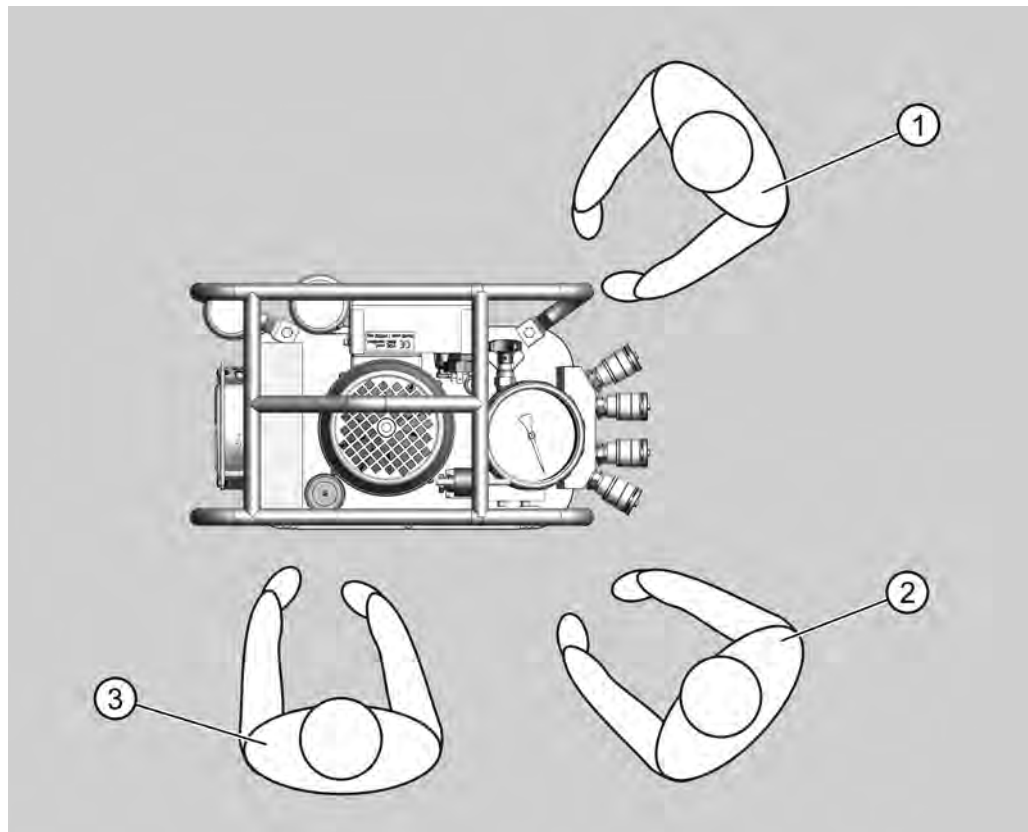
## Available accessories

The following tools are available as accessories:

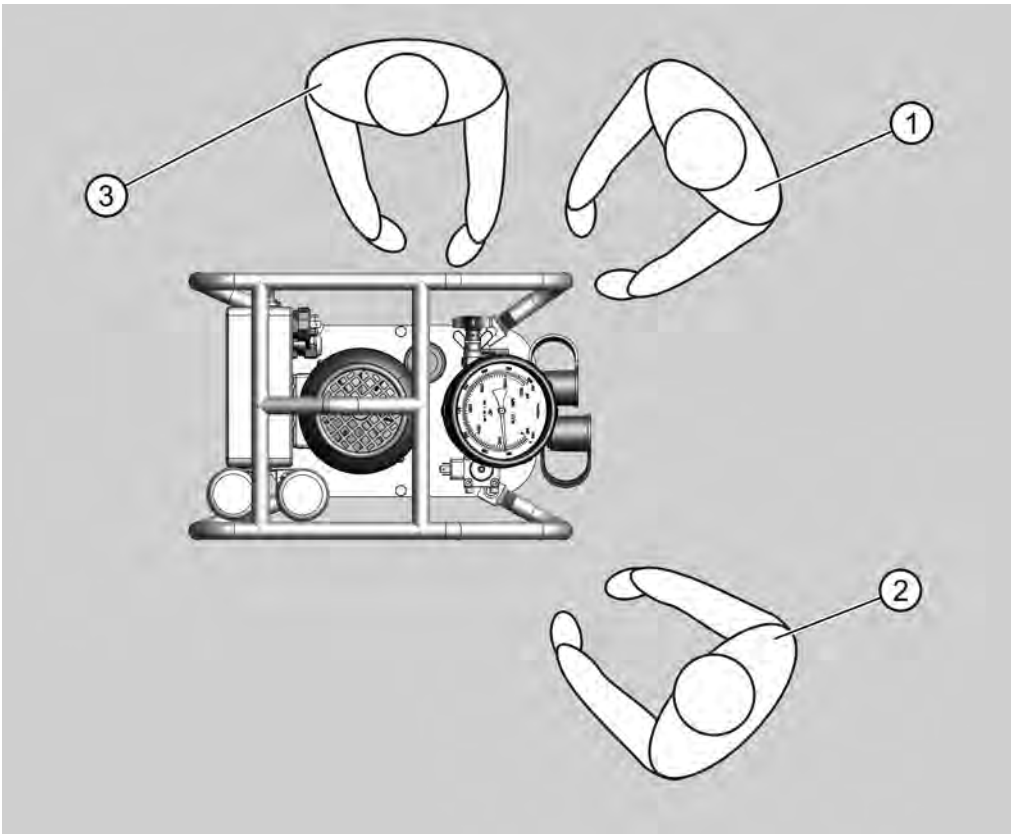
- Square torque wrenches
- Box wrench torque wrench
- Fitting systems.

## Workspaces and positions

### HY-115-CSA



| No. | Name                                                      |
|-----|-----------------------------------------------------------|
| 1   | Connect tools, operate unit, read the pressure, drain oil |
| 2   | Connect tools, operate unit, read the pressure, drain oil |
| 3   | Add oil                                                   |

**JetPro-S-115-CSA**

| No. | Name                                                      |
|-----|-----------------------------------------------------------|
| 1   | Connect tools, operate unit, read the pressure, drain oil |
| 2   | Connect tools, operate unit, read the pressure, drain oil |
| 3   | Add oil                                                   |

## Purpose and function

The unit is used to drive hydraulic screwing tools.

The electric motor pump unit generates hydraulic pressure. This can be adjusted with the torque valve. The maximum adjustable pressure is 700 bar and is limited by a pressure relief valve. A pressure gage is available for controlling the current pressure. The required torque is set on the screwing tool via the pressure. Refer to the screwing tool's operating instructions for information about the pressure required for a given torque.

The unit is equipped with an electric control. It monitors the operation and controls the connected actuators, electric motor and solenoid valve, as well as the display elements. Three LEDs can be found at the electric control (HY-115-CSA only).

The LEDs show the following information:

- State of the mains voltage
- State of the motor and oil temperature

During operation, the oil is passed through the oil cooler where it is cooled (HY-115-CSA only). .

Up to four screwing tools can be connected simultaneously to the existing eight couplings. The top four couplings are designed as plug. The bottom four couplings are designed as sockets. The upper couplings are responsible for the forward stroke of the connected tool. The lower couplings are responsible for the return stroke of the connected tool.

## Unit Installation

| <b>⚠ DANGER</b>                                                                   |                                                                                                                                                                                                                      |
|-----------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | <p>Fatal injuries may result if the safety instructions are not followed.</p> <ul style="list-style-type: none"><li>▶ Read and follow the safety instructions from the chapter on safety, see from page 8.</li></ul> |

### Unpacking and checking the delivery

#### Unpacking

The unit is supplied in a cardboard box. To unpack the unit, proceed as follows:

- ▶ Open the cardboard box.
- ▶ Remove the supplied documents.
- ▶ Remove the foam padding.

The unit is packaged in a plastic bag.

- ▶ Take the unit out of the box and place it on a flat, solid and stable base.
- ▶ Remove the plastic bag.
- ▶ Dispose of the packaging material according to the rules and regulations applicable on site.

#### Checking package and condition

- ▶ Check the delivery against the delivery note for accuracy and completeness.
- ▶ In case of deviations contact the manufacturer.
- ▶ Check the delivery for any damage.
- ▶ If you notice any damage, please indicate this on the delivery note.
- ▶ Have the damage confirmed by the signature of the supplier.
- ▶ Photograph the damage.
- ▶ Report the damage immediately to the manufacturer.

#### Storing the unit

- ▶ Store the unit standing on its feet in a dry, dust-free room with stable temperature.

The permissible temperature range is  $-30\text{ °C}$  to  $+60\text{ °C}$  ( $-22\text{ °F}$  to  $+140\text{ °F}$ ).

## Carrying and setting down

| <b>⚠ CAUTION</b>                                                                  |                                                                                                                                                                                                                          |
|-----------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | <p>Musculoskeletal injuries caused by the weight of the unit.</p> <ul style="list-style-type: none"> <li>▶ Never carry more than 25 kg (55 lbs).</li> <li>▶ Carry the unit with another person, if necessary.</li> </ul> |

- ▶ Carry the unit only on the carrying handle.
- ▶ Always place the unit on a flat, solid and stable base.
- ▶ Secure the unit and associated tools against falling.

## Commissioning the unit

When commissioning the unit, we distinguish between the initial commissioning and daily commissioning. Depending on the type of commissioning, you must perform different work tasks.

### Initial commissioning

If you want to take the unit for the first time in operation after delivery, you must first fill hydraulic oil in the oil tank of the unit. Also, the work tasks of the daily commissioning must be performed.

| <b>⚠ CAUTION</b>                                                                    |                                                                                                                                                                                                                                  |
|-------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | <p>Health hazard from contact with hydraulic oil.</p> <ul style="list-style-type: none"> <li>▶ Wear nitrile gloves and chemical-resistant protective goggles during work that may include contact with hydraulic oil.</li> </ul> |

| <b>⚠ CAUTION</b>                                                                    |                                                                                                                                                                                                    |
|-------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | <p>Risk of slipping due to leaked oil.</p> <ul style="list-style-type: none"> <li>▶ Take up spilled oil with a suitable binder agent.</li> <li>▶ Wear safety shoes with non-slip soles.</li> </ul> |

**CAUTION!**

The use of hydraulic oils that do not meet the manufacturer's recommendation may cause damage to the unit.

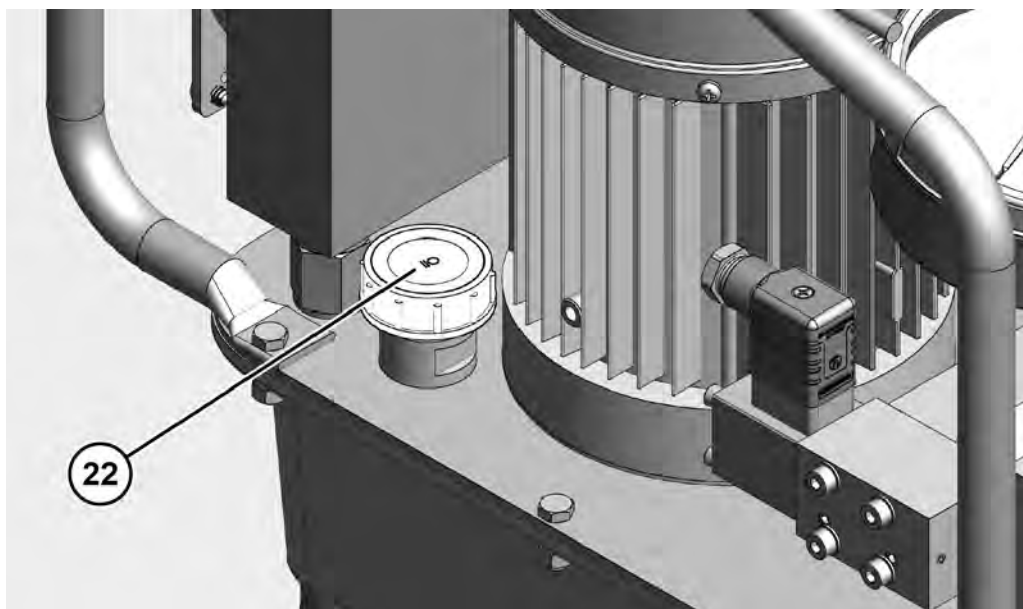
Warranty claims can become invalid.

- ▶ Only use hydraulic oil recommended by the manufacturer.
- ▶ Do not mix different types of oil with each other.
- ▶ Make sure that the oil types in the unit, the hydraulic hoses and the tool match.
- ▶ If in doubt, flush the components with the type of oil used in the unit.

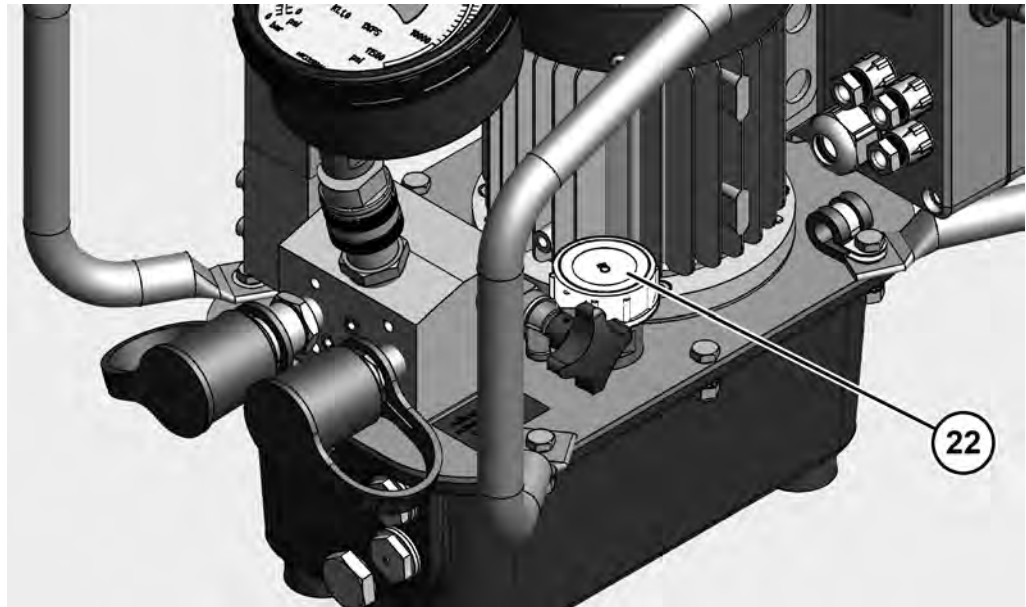
❗ The manufacturer-approved oils can be found starting on page 72.

To fill the hydraulic oil in the oil tank of the unit, proceed as follows:

- ▶ Make sure that the unit stands securely on a flat surface.
- ▶ Remove the bleed and ventilation valve (22) of the unit's filling opening.

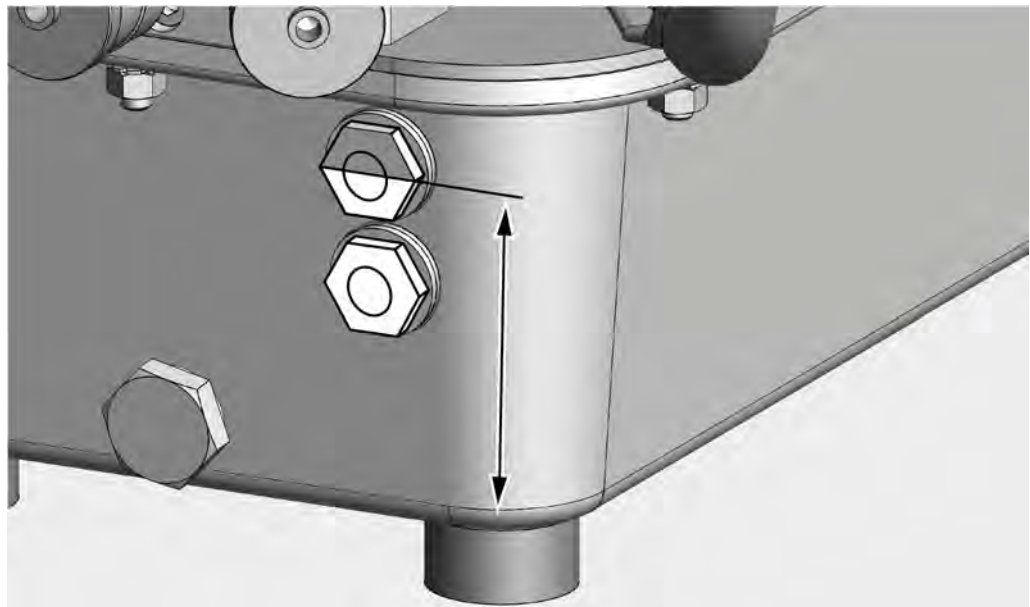


HY-115-CSA



JetPro-S-115-CSA

- Slowly fill fresh hydraulic oil into the oil container until the oil fills the upper sight glass half up.



- Put the bleed and ventilation valve on the filler opening.
- Tighten the bleed and ventilation valve by hand.

The remaining work tasks are no different from those in the daily operation.

- Proceed as described in the following section.

**Daily commissioning**

You must carry out the following work if the unit is put into operation daily:

- Check the power cable and remote control, including buttons and protective caps, to ensure they are in a perfect condition
- Remove the protective caps and plugs and connect the tools
- Connect the mains plug
- Check the oil level
- Bleed the screw system consisting of the assembly, hose and tool
- Check the tightness of the screwing tool during bleeding
- Check that the pressure gage is working.

► Only use an assembly in a perfect condition.

**Tool connection****⚠ WARNING**

Risk to life when using tools or hydraulic hoses that do not comply with the tool and hose specifications.

Unsuitable tools or hydraulic hoses can fail.

- Only use tools and hydraulic hoses which the manufacturer of the unit allows as an accessory.
- Observe and follow the operating instructions of the tools and the hose specification.

**ATTENTION!**

Damage and contamination of unprotected couplings.

The couplings can become leaky and hydraulic oil will escape.

- Protect the couplings when not in use with the protective caps and plugs against damage and contamination.

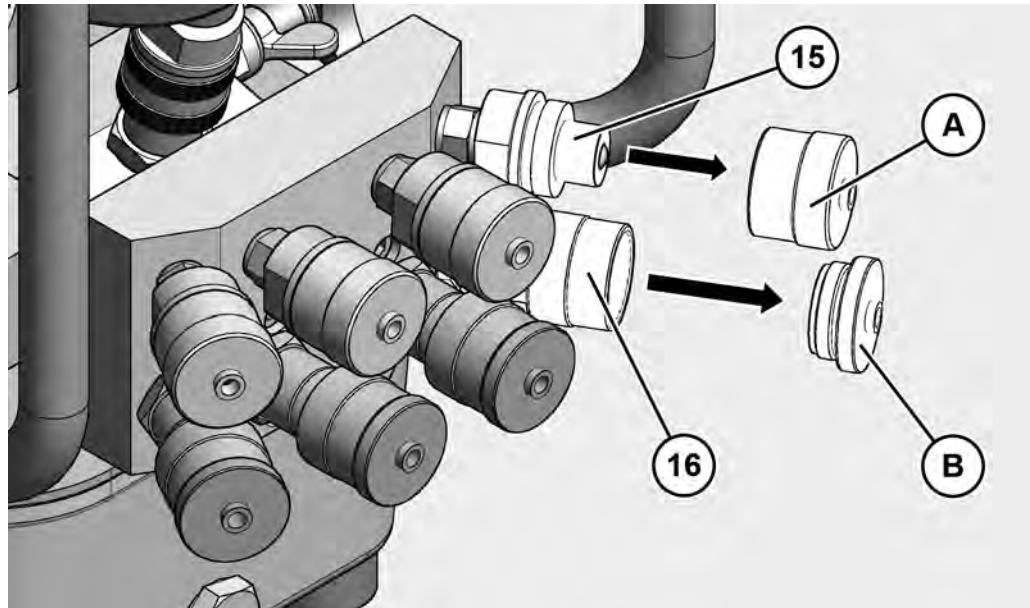


Before you can connect a tool, you must remove the protective cap and the protective plug of two stacked couplings. Proceed as follows:

- Screw the safety cap (A) counterclockwise from the corresponding connection (15).
- Screw the protective plug (B) counterclockwise from the corresponding connection (16).

The cap and the protective plugs are permanently connected to the corresponding coupling.

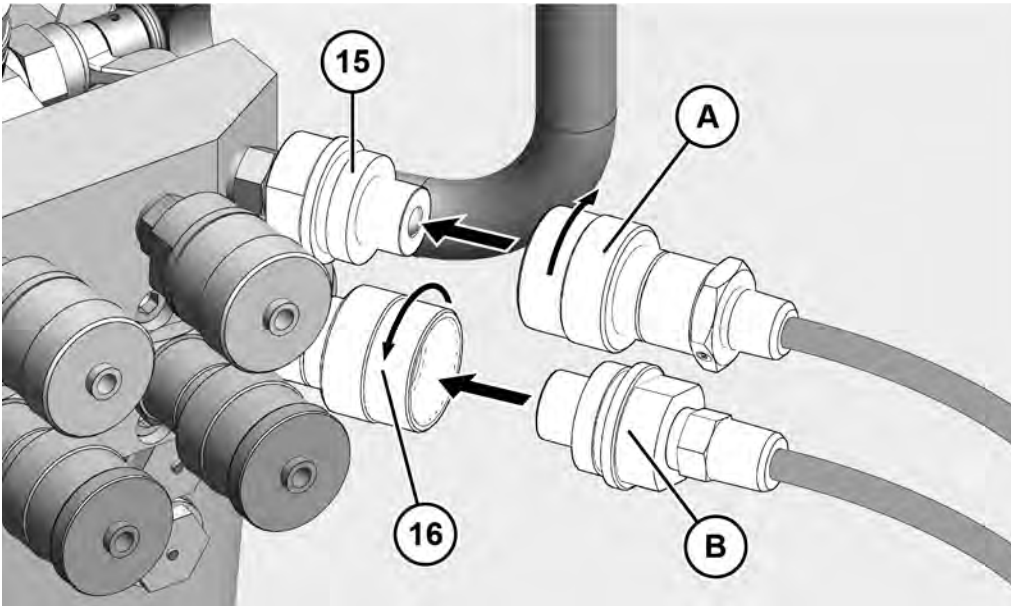
You can now connect a tool.



To connect a tool to the unit, proceed as follows:

- Ensure that the hydraulic hoses are not damaged.
- Plug the male connector (B) on the hydraulic hose of the tool on the female connection (16) of the unit.

- ▶ Hand tighten the connection with the union nut without using tools.
- ▶ Plug the female connection (A) on the hydraulic hose of the tool on the male connection (15) of the unit.
- ▶ Hand tighten the connection with the union nut without using tools.



## Instructions for grounding the unit

This unit must be properly grounded. In the event of a malfunction or defect, grounding provides a path with the least resistance to electric current reducing the risk of electric shock. The unit is equipped with a cable with an grounding conductor and a power plug. The power plug must be connected to an appropriate wall outlet that is properly installed and grounded in accordance with local codes and regulations.

| ⚠ DANGER                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|-----------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | <p>Electric shock due to incorrect connection of the grounding conductor (insulation green or green with yellow stripes).</p> <ul style="list-style-type: none"> <li>▶ Have work on the electrical supply line carried out only by a trained electrician -</li> <li>▶ If the cable or power plug has to be repaired, connect the grounding conductor only to the grounding connection provided for this purpose.</li> <li>▶ Never connect the grounding conductor to a live connection.</li> <li>▶ Do not make any changes to the power plug of the unit.</li> <li>▶ If the existing power plug does not fit into the existing electrical socket, have a qualified electrician install a suitable electrical socket</li> </ul> |

**Connect mains plug****⚠ CAUTION**

Risk of injury due to tripping over the power cable.

- Lay the power cable so that it does not pose a tripping hazard.

**ATTENTION!**

Damage caused by connecting the unit to the mains outlet with incorrect electrical voltage and frequency.

Incorrect electrical voltage and frequency destroys the electrical control.

- Make sure that the unit is only connected to a suitable grounded electrical outlet.

The voltage and frequency of the mains socket must match the information on the unit's type plate.

- Ensure that the power cable is not damaged.
- Connect the power plug of the unit only to a suitable grounded electrical outlet.

The unit is ready for operation (standby).

## Bleeding the screw system (generator, hose, tools)

When connecting the tools, air can pass into the hydraulic circuit. To ensure smooth and safe operation, you must bleed the screw system. Proceed as follows to do so:

- ▶ Press and release the green button (9) on the remote control (7) several times.

The connected screwing tool moves back and forth.

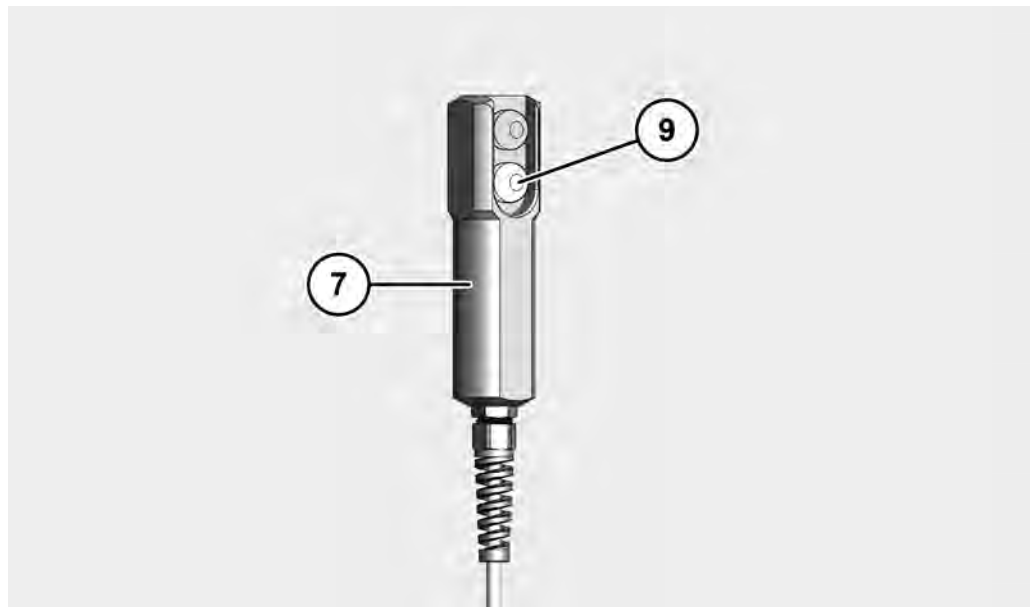
- ▶ Check the screwing tool for leaks while bleeding.

If the connected screwing tool moves back and forth without interruption, the screwing system is bled.

- ▶ Have the screwing tool repaired if you find leaks.

❗ Applies only to HY-115-CSA:

When the oil temperature is below 0 °C (32 °F), then the pump is automatically switched on after pressing the green button. The oil is circulated until the operating temperature of the oil is reached. The unit is now ready for operation (standby).



## Check oil level

| <b>⚠ CAUTION</b>                                                                  |                                                                                                                                                                                                                                                                       |
|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | <p>Health hazard from contact with hydraulic oil.</p> <ul style="list-style-type: none"> <li>▶ Wear nitrile gloves and chemical-resistant protective goggles during work that may include contact with hydraulic oil.</li> </ul>                                      |
| <b>⚠ CAUTION</b>                                                                  |                                                                                                                                                                                                                                                                       |
|  | <p>Risk of slipping due to leaked oil.</p> <ul style="list-style-type: none"> <li>▶ Take up spilled oil with a suitable binder agent.</li> <li>▶ Wear safety shoes with non-slip soles.</li> </ul>                                                                    |
| <b>ATTENTION!</b>                                                                 |                                                                                                                                                                                                                                                                       |
|                                                                                   | <p>The use of hydraulic oils that do not meet the manufacturer's recommendation may cause damage to the unit.<br/>Warranty claims can become invalid.</p> <ul style="list-style-type: none"> <li>▶ Only use hydraulic oil recommended by the manufacturer.</li> </ul> |

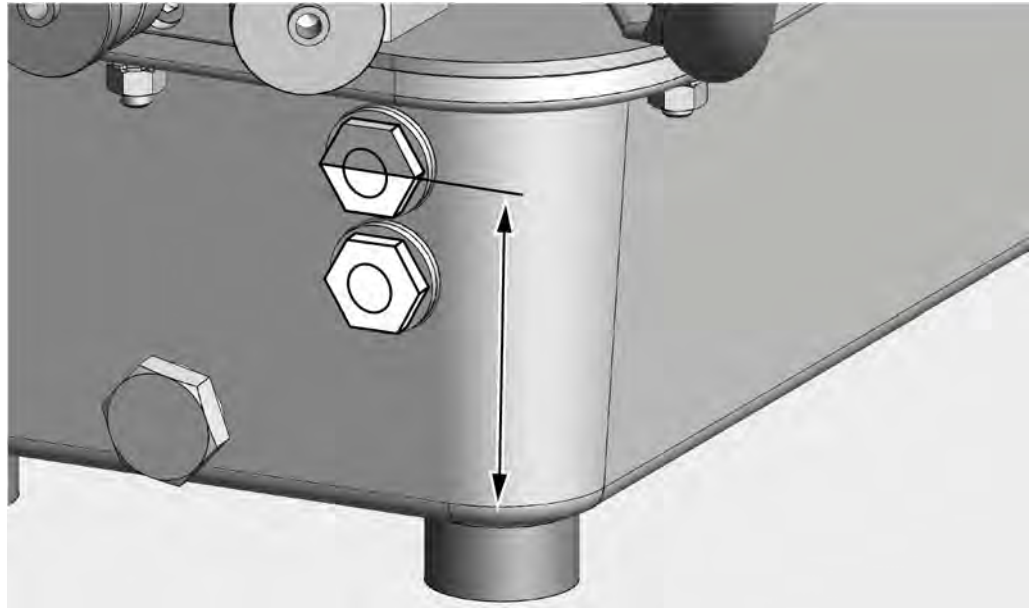
① The manufacturer-approved oils can be found starting on page 72.

To check the oil level, proceed as follows:

- ▶ Make sure that the unit stands securely on a flat surface.
- ▶ Check if the hydraulic oil is visible in the upper sight glass.
- ▶ Ensure that the hydraulic oil is clear and not white in color.

If the hydraulic oil is colored white, water has entered into the hydraulic oil.

- ▶ In this case, you need to change the hydraulic oil.
- ▶ When the hydraulic oil is not visible in the upper sight glass, top up fresh hydraulic oil recommended by the manufacturer, as described on page 37.



## Checking functioning of the manometer

To check the function of the pressure gage, proceed as follows:

- ▶ Press alternately the green button on the remote control and let the button go again.

The pressure gage needle must move.

- ▶ If the gage needle does not move, stop using the unit.
- ▶ Replace a defective pressure gage for a faultless one of the same type.

## Performing a test run

After commissioning, you must perform a test run to make sure that no oil leaks occur and all components are working properly. Proceed as follows:

- ▶ Set the pressure to max. 700 bar (10,000 psi) see page 53.
- ▶ Move the connected tool forward and back a few times.
- ▶ Check the unit and connected tools for proper function.
- ▶ Check the unit and connected tools for visible leaks.
- ▶ Use only a unit that is working properly and has no leakage.
- ▶ Use only tools according to manufacturer recommendation, which function properly and have no leakage.



## Operating the unit

| <b>⚠ DANGER</b>                                                                   |                                                                                                                                                                                                                                                                                                                                          |
|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | <p><b>Explosion hazard when operating the unit in explosion-hazardous areas</b></p> <p>Operating the unit in explosion-hazardous areas can lead to serious injury or death.</p> <ul style="list-style-type: none"> <li>▶ Operate the unit only in areas where there is no explosive atmosphere (check first for safe levels).</li> </ul> |

To operate the unit, proceed as follows:

- ▶ Make sure that the unit stands on a dry, level, solid and stable base.
- ▶ Turn the torque valve counterclockwise and set the pressure to 0 bar.

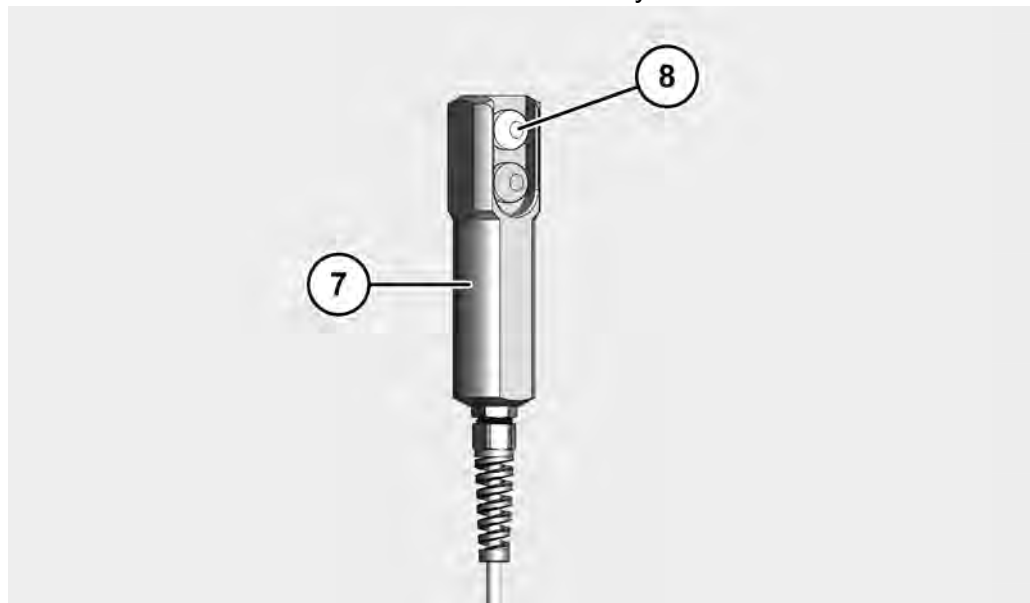
## Changing tools

| <b>⚠ WARNING</b>                                                                   |                                                                                                                                                                                                                                                           |
|------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | <p>Serious injury or death due to hydraulic oil under high pressure spouting.</p> <ul style="list-style-type: none"> <li>▶ Always switch off the unit with the red button on the remote control.</li> <li>▶ Ensure the unit is de-pressurized.</li> </ul> |

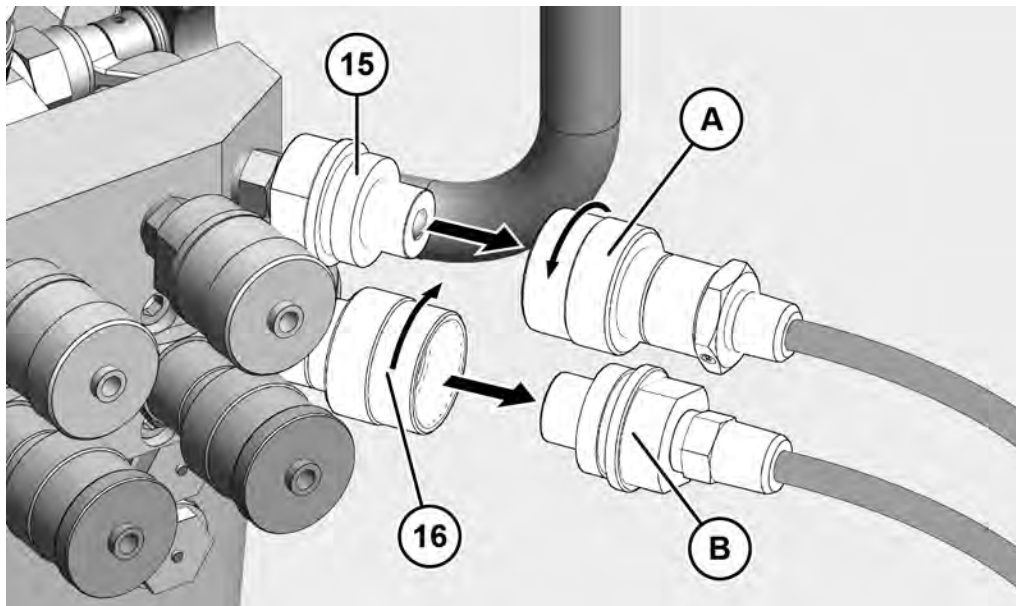
- ▶ Press the red button (8) on the remote control (7) several times, if need be.

The unit is in stand-by. The pressure decreases.

- ▶ Wait until the pressure gage pressure shows no pressure anymore.
- ▶ Press the red button several times if necessary.



- ▶ Loosen the nut (A).
- ▶ Pull the female connector (A) from the male connector (15) of the unit.
- ▶ Loosen the nut (16).
- ▶ Pull the male connector (A) from the female connector (16) of the unit.



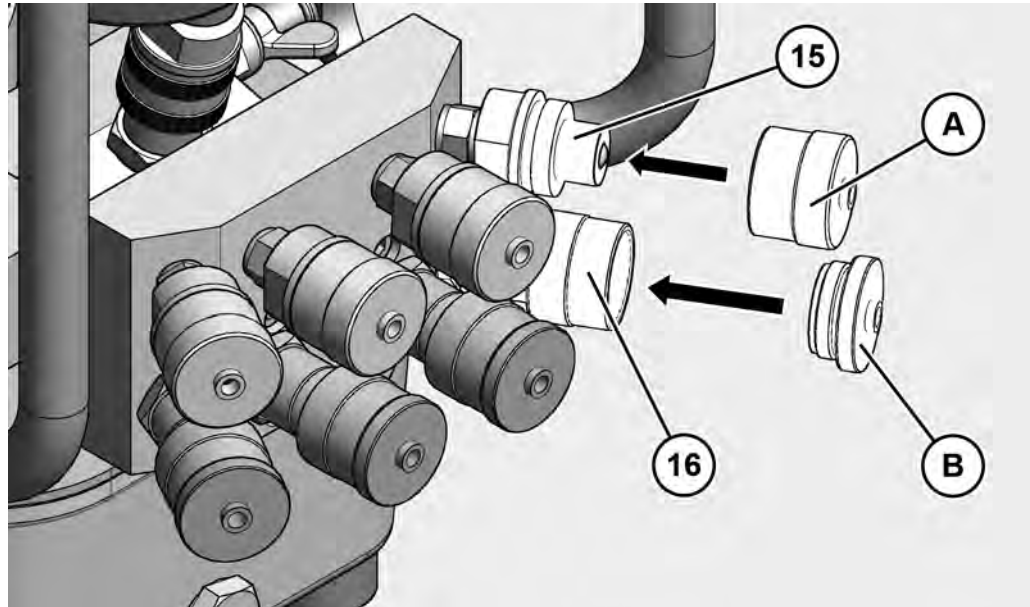
If you want to install a new tool at the same couplings, proceed as follows:

- ▶ Plug the male connector on the hydraulic hose of the tool on the female connection of the unit.
- ▶ Hand tighten the connection with the union nut without using tools.
- ▶ Plug the female connection on the hydraulic hose of the tool on the male connection of the unit.
- ▶ Hand tighten the connection with the union nut without using tools.

If you want to install the new tool at another coupling, proceed as follows:

If you have pulled a tool from the connection, you have to close the connection with a cap and protection plug to prevent damage. Proceed as follows:

- Screw the safety cap (A) clockwise on the corresponding connection (15).
- Screw the safety plug (B) clockwise on the corresponding connection (16).

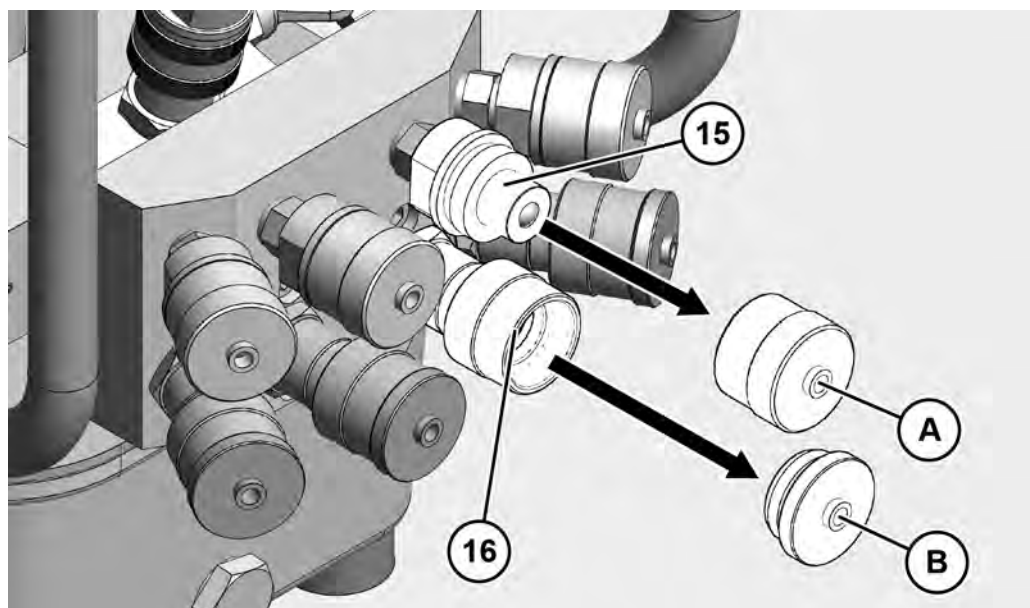


Before you can connect a tool, you must remove the protective cap and the protective plug of two stacked couplings. Proceed as follows:

- Screw the safety cap (A) counterclockwise from the corresponding connection (15).
- Screw the protective plug (B) counterclockwise from the corresponding connection (16).

The cap and the protective plugs are permanently connected to the corresponding coupling.

You can now connect a tool.



- ▶ Plug the female connection on the hydraulic hose of the tool on the male connection of the unit.
- ▶ Hand tighten the connection with the union nut without using tools.
- ▶ Plug the male connector on the hydraulic hose of the tool on the female connection of the unit.
- ▶ Hand tighten the connection with the union nut without using tools.

## Setting the pressure

### ⚠ WARNING



Risk to life from incorrect procedure when setting the pressure on the unit.  
Faulty adjustment of the pressure causes an incorrect adjustment of the torque for the screwing process.  
► Always set the pressure from a low value to a high value.

### ⚠ CAUTION



Risk of eye damage during pressure of more than 700 bar (10,000 psi)  
Pressure exceeding 700 bar (10,000 psi) can lead to bursting hydraulic hoses and hydraulic oil can squirt out.  
► Ensure that the permissible pressures are not exceeded.  
► Wear chemical-resistant goggles.

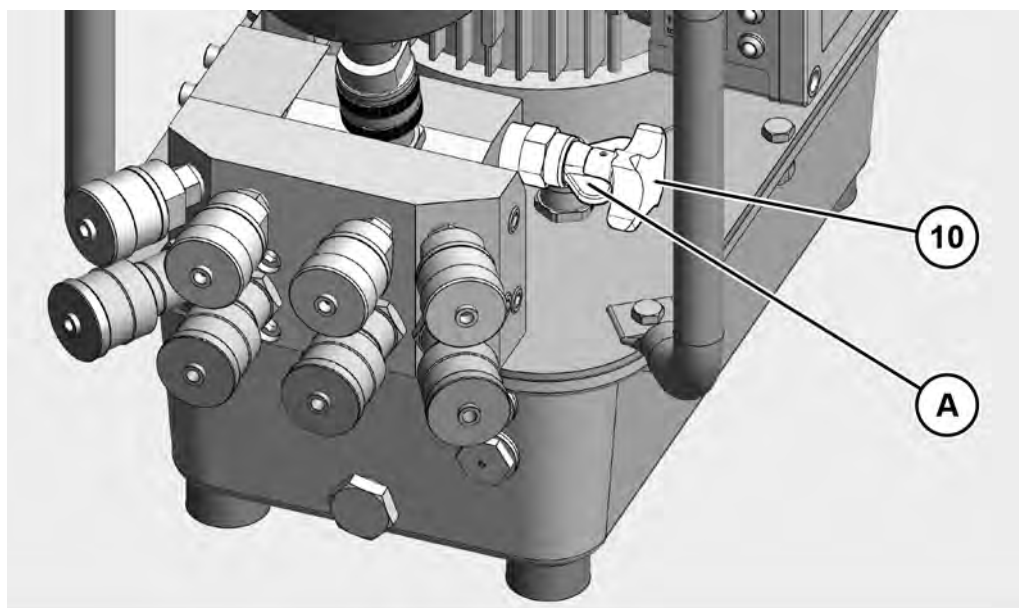
❗ The pressure to be set for the desired torque can be found in the operating instructions of the screwing tool.

To adjust the required pressure, proceed as follows:

- Make sure that the unit is fully connected and the proper power supply is available.
- Place the connected screwing tool safely on the ground.
- Loosen the wing nut (A).
- Turn the torque valve (10) counter-clockwise until it stops.
- Press the green button on the remote control and hold it down.

The motor-pump unit is switched on. Hydraulic pressure is built up in the unit.

- At the same time, turn the torque valve clockwise.



The current pressure is visible on the pressure gage.

- ▶ If the pressure exceeds the required value, release the green push button.
- ▶ Turn the torque valve counter-clockwise.
- ▶ Press the green button again to display the current pressure.
- ▶ If the pressure is still higher than the required value, repeat the previous steps.
- ▶ Press and hold the green button.
- ▶ Turn the torque valve clockwise until the desired pressure is displayed on the pressure gage.
- ▶ Tighten the wing nut (A), so that the set pressure can not be changed inadvertently.

The required pressure is set.

- ▶ Release the green button.

The unit can be used with the connected screwing tool to perform screwing processes.

## After use

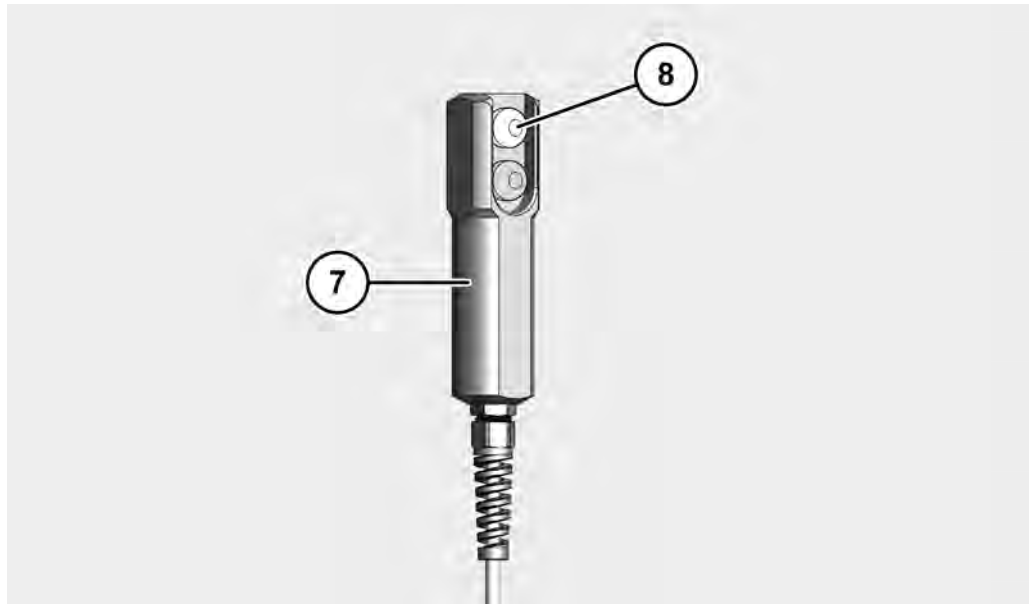
### ⚠ WARNING



Serious injury or death due to hydraulic oil under high pressure spouting.

- ▶ Always switch off the unit with the red button on the remote control.
- ▶ Ensure the unit is de-pressurized.

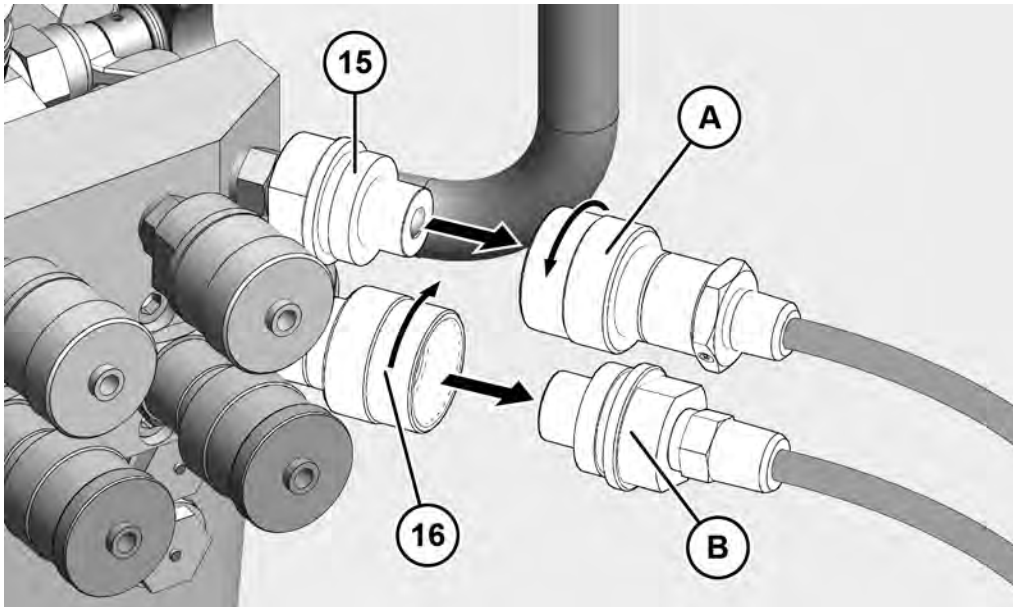
- ▶ Press the red button (8) on the remote control (7) several times, if need be. The unit is in stand-by. The pressure decreases.
- ▶ Wait until the pressure gage pressure shows no pressure anymore.
- ▶ Press the red button several times if necessary.



- ▶ Unplug the power cord from the wall outlet.

To remove the connected screwing tools, proceed as follows:

- ▶ Loosen the nut (A).
- ▶ Pull the female connector (A) from the male connector (15) of the unit.
- ▶ Loosen the nut (16).
- ▶ Pull the male connector (A) from the female connector (16) of the unit.



- ▶ Screw the protective caps and plugs on the couplings.
- ▶ You can now store or transport the unit.



## Decommissioning the unit

To take the unit out of operation for more than three months, proceed as follows:

- ▶ Switch off the unit by pressing the red button of the remote control.
- ▶ Unplug the power cord from the wall outlet.
- ▶ Remove attached screwing tools, see starting page 55.
- ▶ Empty the oil tank.

The emptying is described in section "Changing the hydraulic oil" starting from page 59.

- ▶ Dispose of the hydraulic oil according to the rules and regulations applicable on site.
- ▶ Store the unit as described starting on page 36.

## Servicing the unit

### Maintenance schedule

| Interval                     | Component                   | Action                                                                                                                                                                                                                                          |
|------------------------------|-----------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| prior to every operation     | Electrical connection lines | <ul style="list-style-type: none"> <li>▶ Check electrical connection cables for visible damage, twists and kinks.</li> <li>▶ Eliminate twists.</li> <li>▶ Have defective or kinked electrical leads replaced by qualified personnel.</li> </ul> |
|                              | Hydraulic hoses             | <ul style="list-style-type: none"> <li>▶ Check the hydraulic hoses for visible damage, twists and kinks.</li> <li>▶ Eliminate twists.</li> <li>▶ Have defective or kinked hydraulic hoses replaced by qualified personnel.</li> </ul>           |
|                              | Pressure gage               | <ul style="list-style-type: none"> <li>▶ Check the if pressure gage display responds after switching on the unit.</li> <li>▶ Replace a defective pressure gage for a faultless one of the same type.</li> </ul>                                 |
| before each coupling         | Couplings                   | <ul style="list-style-type: none"> <li>▶ Clean the couplings with a dry cloth.</li> </ul>                                                                                                                                                       |
| As necessary                 | Unit                        | <ul style="list-style-type: none"> <li>▶ Clean the unit with a dry cloth.</li> </ul>                                                                                                                                                            |
| Every 500 hours of operation | Oil container               | <ul style="list-style-type: none"> <li>▶ Change the hydraulic oil, see page 59.</li> </ul>                                                                                                                                                      |

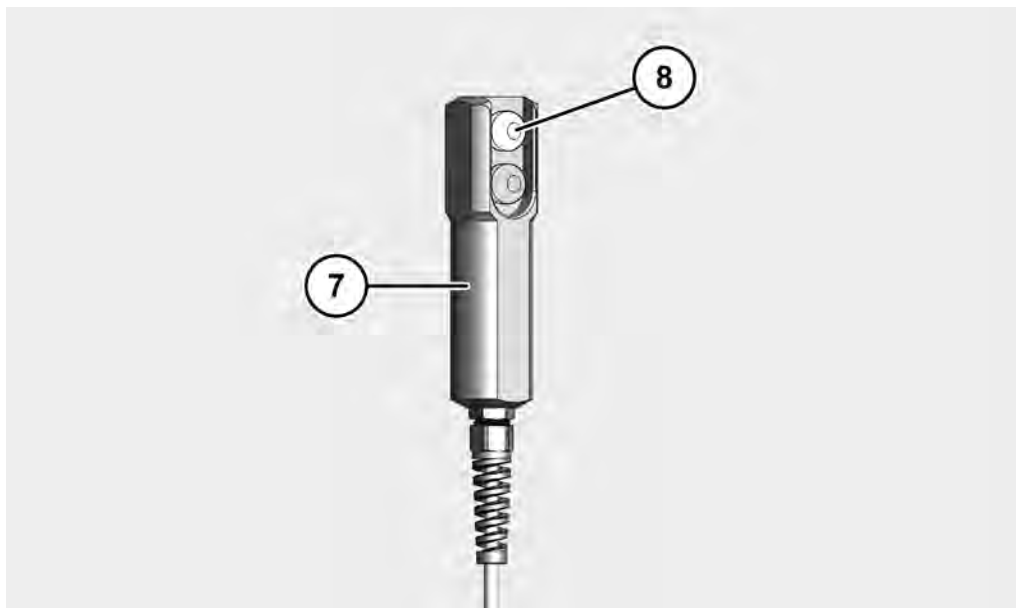
## Changing the hydraulic oil

| <b>⚠ WARNING</b>                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|-----------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | <p>Slipping hazard from leaked oil.<br/>Bruising and bone fractures possible.</p> <ul style="list-style-type: none"> <li>▶ Clean up any leaked oil with a cloth or suitable binding agents.</li> <li>▶ Wear safety shoes with non-slip soles.</li> </ul>                                                                                                                                                                                                                                                             |
| <b>⚠ CAUTION</b>                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|  | <p>Health hazard from contact with hydraulic oil.</p> <ul style="list-style-type: none"> <li>▶ Wear nitrile gloves and chemical-resistant protective goggles during work that may include contact with hydraulic oil.</li> </ul>                                                                                                                                                                                                                                                                                     |
| <b>CAUTION!</b>                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|                                                                                   | <p>The use of hydraulic oils that do not meet the manufacturer's recommendation may cause damage to the unit.<br/>Warranty claims can become invalid.</p> <ul style="list-style-type: none"> <li>▶ Only use hydraulic oil recommended by the manufacturer.</li> <li>▶ Do not mix different types of oil with each other.</li> <li>▶ Make sure that the oil types in the unit, the hydraulic hoses and the tool match.</li> <li>▶ If in doubt, flush the components with the type of oil used in the unit.</li> </ul> |

**i** The manufacturer-approved oils can be found starting on page 72.

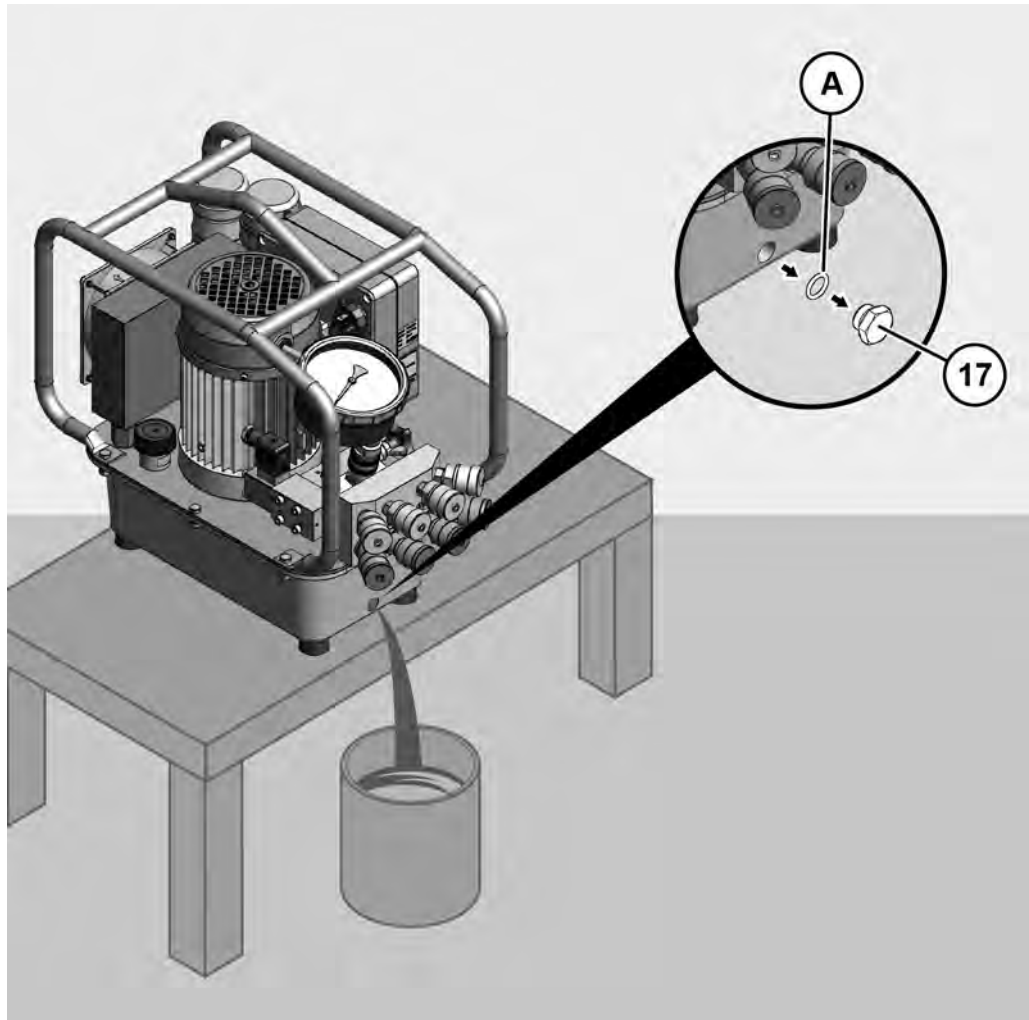
To change the hydraulic oil, proceed as follows:

- Always switch off the unit with the red button (8) on the remote control (7).



- ▶ Unplug the power cord from the wall outlet.
- ▶ Remove attached screwing tools from the couplings, see page 55.
- ▶ Place the unit on a solid flat surface, for you to be able to put a container under the oil drain plug.
- ▶ Place the unit in a manner that it is tilted slightly forward.
- ▶ Allow the unit including hydraulic oil to cool down.
- ▶ Under the oil drain plug, place a container that can hold the amount of oil contained in the unit of up to 5 l (1.32 US.liq.gal).
- ▶ Remove the oil drain plug (17) and the seal (A).

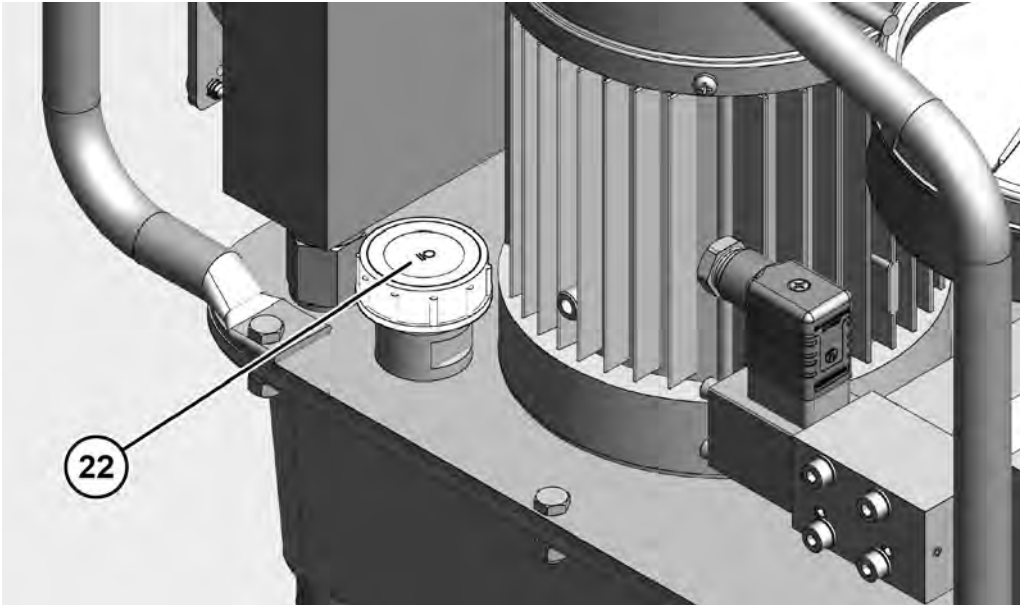
The hydraulic oil flows into the vessel.



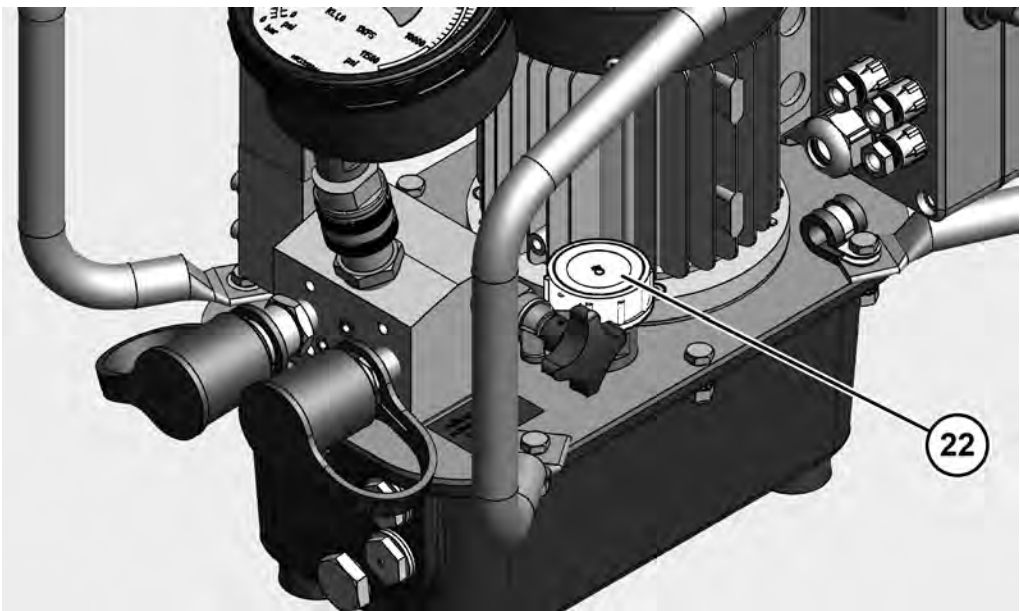
- ▶ Check the seal of the oil drain plug for damage.
- ▶ Replace a damaged seal.
- ▶ Wait until the hydraulic oil has completely drained out of the oil reservoir.
- ▶ Then insert the seal into the oil drain.
- ▶ Close the oil drain with the oil drain plug.
- ▶ Tighten the oil drain plug with a torque of 20 N m.

To fill the hydraulic oil in the oil tank of the unit, proceed as follows:

- Make sure that the unit stands securely on a flat surface.
- Remove the bleed and ventilation valve (22) of the unit's filling opening.

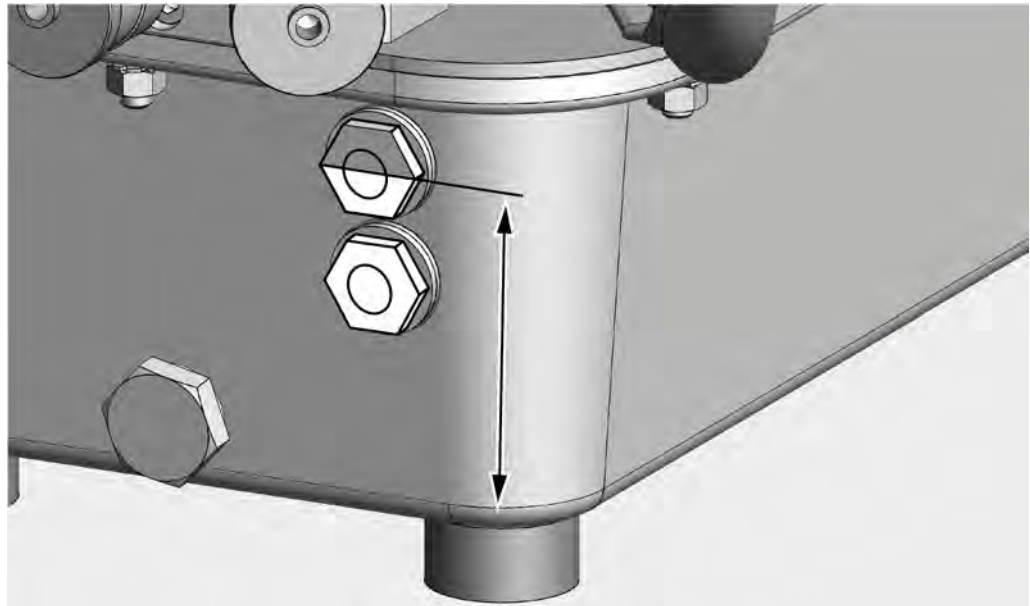


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- ▶ Slowly fill fresh hydraulic oil into the oil container until the oil fills the upper sight glass half up.



- ▶ Put the bleed and ventilation valve on the filler opening.
- ▶ Tighten the bleed and ventilation valve by hand.
- ▶ Dispose of the drained hydraulic oil according to the environmental regulations applicable on site.

## Cleaning the unit

### ⚠ WARNING



Risk of injury from electric shock.

- Prior to cleaning, pull the power plug from the socket.

### ⚠ WARNING



Slipping hazard from leaked oil.

Bruising and bone fractures possible.

- Clean up any leaked oil with a cloth or suitable binding agents.
- Wear safety shoes with non-slip soles.

### ⚠ CAUTION



Health hazard from contact with hydraulic oil.

- Wear nitrile gloves and chemical-resistant protective goggles during work that may include contact with hydraulic oil.

### ATTENTION!

Damage or malfunctions caused by water or steam in the unit is possible.

- Never clean the unit with a pressure washer, cold cleaner or water.

- Clean the unit with a clean and absorbent cloth.
- Dispose of the cloth in an environmentally friendly manner.



## Remedying faults or malfunctions

Table of faults

| Fault                             | Possible cause                                               | Remedy                                                                                                                                                                                                                                                                                   |
|-----------------------------------|--------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| The pump does not work.           | Electric components are damaged.                             | ► Have the electrical components checked and, if necessary, replaced by qualified personnel.                                                                                                                                                                                             |
|                                   | The power supply is interrupted.                             | ► Have the power supply checked or serviced by qualified personnel.                                                                                                                                                                                                                      |
|                                   | The remote control is defective.                             | ► Have the remote control checked and, if necessary, replaced by qualified personnel.                                                                                                                                                                                                    |
| The engine just hums.             | The stator is defective.                                     | <ul style="list-style-type: none"> <li>► Have the motor windings checked by qualified personnel.</li> <li>► Have a defective motor windings repaired by the manufacturer.</li> </ul>                                                                                                     |
|                                   | A capacitor is defective.                                    | <ul style="list-style-type: none"> <li>► Have the amperage of the capacitors checked by qualified personnel.</li> <li>► Have a defective capacitor replaced by qualified personnel.</li> </ul>                                                                                           |
| All LEDs light up red             | A button on the remote control is pressed when switching on. | <ul style="list-style-type: none"> <li>► Let go of the button.</li> <li>► Replace the remote control for a flawless one.</li> </ul>                                                                                                                                                      |
| The pressure is less than 70 bar. | The solenoid valve is defective.                             | <ul style="list-style-type: none"> <li>► Have the solenoid valve checked electrically by qualified personnel.</li> <li>► Have the solenoid valve checked hydraulically by qualified personnel.</li> <li>► Have the defective solenoid valve exchanged by qualified personnel.</li> </ul> |
|                                   | The torque valve is defective.                               | <ul style="list-style-type: none"> <li>► Have the torque valve checked hydraulically by qualified personnel.</li> <li>► Have a defective torque valve exchanged by qualified personnel.</li> </ul>                                                                                       |
|                                   | Leakage at the pump flange.                                  | <ul style="list-style-type: none"> <li>► Have the pump flange checked by qualified personnel.</li> <li>► Have defective pump flange repaired by the manufacturer.</li> </ul>                                                                                                             |

| Fault                             | Possible cause                                  | Remedy                                                                                                                                                                                                                                                                                   |
|-----------------------------------|-------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                   | The screen filter is clogged.                   | <ul style="list-style-type: none"> <li>▶ Have the screen filter checked by qualified personnel.</li> <li>▶ Have the screen filter cleaned by qualified personnel.</li> </ul>                                                                                                             |
|                                   | The maximum-pressure valve is leaking.          | <ul style="list-style-type: none"> <li>▶ Have the maximum-pressure valve checked by qualified personnel.</li> <li>▶ Have a defective maximum-pressure valve exchanged by qualified personnel.</li> </ul>                                                                                 |
|                                   | The piping is leaking.                          | <ul style="list-style-type: none"> <li>▶ Have the piping checked by qualified personnel.</li> <li>▶ Have leaky pipes replaced by qualified personnel.</li> <li>▶ Have leaky pipe joints sealed by qualified personnel.</li> </ul>                                                        |
| The pressure is only 70 bar.      | The low-pressure switch-off valve is defective. | <ul style="list-style-type: none"> <li>▶ Have the low-pressure switch-off valve checked by qualified personnel.</li> <li>▶ Have a low-pressure switch-off valve exchanged by qualified personnel.</li> </ul>                                                                             |
|                                   | The piping is leaking.                          | <ul style="list-style-type: none"> <li>▶ Have the piping checked by qualified personnel.</li> <li>▶ Have leaky pipes replaced by qualified personnel.</li> <li>▶ Have leaky pipe joints sealed by qualified personnel.</li> </ul>                                                        |
| The pressure is only 70 – 80 bar. | The solenoid valve is defective.                | <ul style="list-style-type: none"> <li>▶ Have the solenoid valve checked electrically by qualified personnel.</li> <li>▶ Have the solenoid valve checked hydraulically by qualified personnel.</li> <li>▶ Have the defective solenoid valve exchanged by qualified personnel.</li> </ul> |
|                                   | The return pressure valve is leaky.             | <ul style="list-style-type: none"> <li>▶ Have the return pressure valve checked by qualified personnel.</li> <li>▶ Have a defective return pressure valve exchanged by qualified personnel.</li> </ul>                                                                                   |
|                                   | The piping is leaking.                          | <ul style="list-style-type: none"> <li>▶ Have the piping checked by qualified personnel.</li> <li>▶ Have leaky pipes replaced by qualified personnel.</li> <li>▶ Have leaky pipe joints sealed by qualified personnel.</li> </ul>                                                        |

| Fault                                                                             | Possible cause                           | Remedy                                                                                                                                                                                                                                                                                                               |
|-----------------------------------------------------------------------------------|------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| The max. pressure of 700 bar is not reached, though no visible leaks are present. | The torque valve is defective.           | <ul style="list-style-type: none"> <li>▶ Have the torque valve checked for proper condition by qualified personnel.</li> <li>▶ Have a defective torque valve exchanged by qualified personnel.</li> </ul>                                                                                                            |
|                                                                                   | One or more pump elements are defective. | <ul style="list-style-type: none"> <li>▶ Have the pump elements checked by qualified personnel.</li> <li>▶ Have the defective pump elements replaced by qualified personnel.</li> </ul>                                                                                                                              |
|                                                                                   | The piping is leaking.                   | <ul style="list-style-type: none"> <li>▶ Have the piping checked by qualified personnel.</li> <li>▶ Have leaky pipes replaced by qualified personnel.</li> <li>▶ Have leaky pipe joints sealed by qualified personnel.</li> </ul>                                                                                    |
| The motor switches off.                                                           | The motor temperature is too high.       | <ul style="list-style-type: none"> <li>▶ Wait for about 10 minutes and switch the unit on.</li> <li>▶ If the motor again switches off, have the motor checked by qualified personnel.</li> </ul>                                                                                                                     |
| The indicator on the pressure gage varies greatly at about 700 bar.               | The non-return valve is defective.       | <ul style="list-style-type: none"> <li>▶ Have a defective non-return valve exchanged by qualified personnel.</li> </ul>                                                                                                                                                                                              |
| Oil mist and oil vapor is forming                                                 | The unit is overheating                  | <ul style="list-style-type: none"> <li>▶ Wear breathing protection if ventilation is insufficient.</li> <li>▶ Wear chemical-resistant safety goggles</li> <li>▶ Make sure there is sufficient ventilation.</li> <li>▶ Switch the unit off.</li> <li>▶ Have the unit valve checked by qualified personnel.</li> </ul> |
|                                                                                   | The piping is leaking.                   | <ul style="list-style-type: none"> <li>▶ Have the piping checked by qualified personnel.</li> <li>▶ Have leaky pipes replaced by qualified personnel.</li> <li>▶ Have leaky pipe joints sealed by qualified personnel.</li> </ul>                                                                                    |

## Replacing fuses

### **⚠ WARNING**

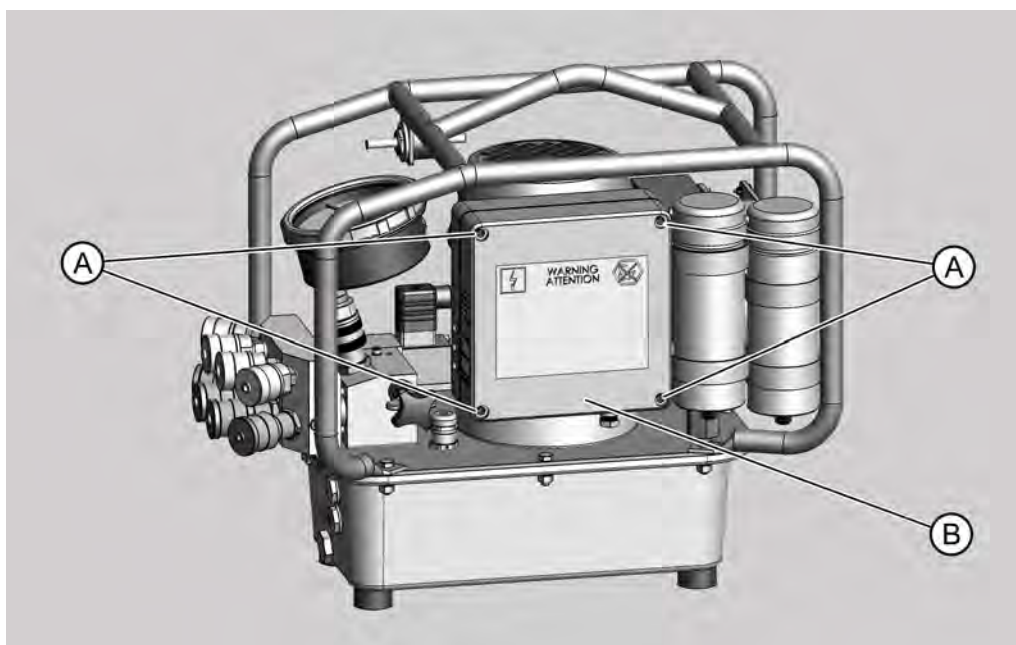


Risk of injury from electric shock caused by inexperienced work on the electrical equipment.

- ▶ Disconnect the mains plug from the socket.
- ▶ Have work on electrical equipment carried out only by specialist personnel who are qualified for these tasks.

To replace a defective fuse, proceed as follows:

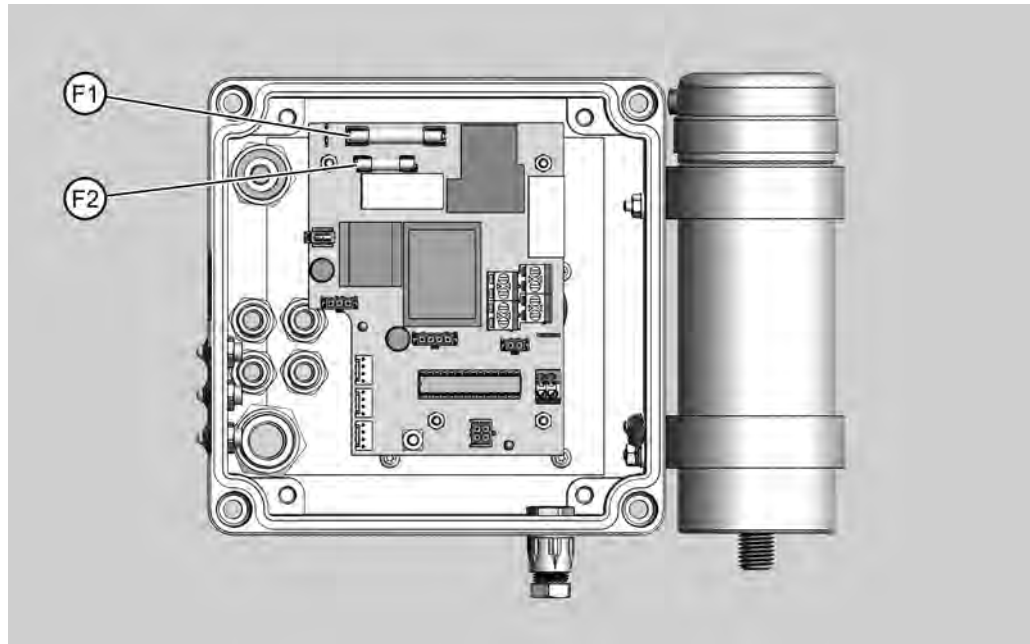
- ▶ Unplug the power cord from the wall outlet.
- ▶ Put the unit on stable ground.
- ▶ Use a PH3 Phillips head screwdriver to remove screws (A).
- ▶ Remove the cover (B) from the electric control.



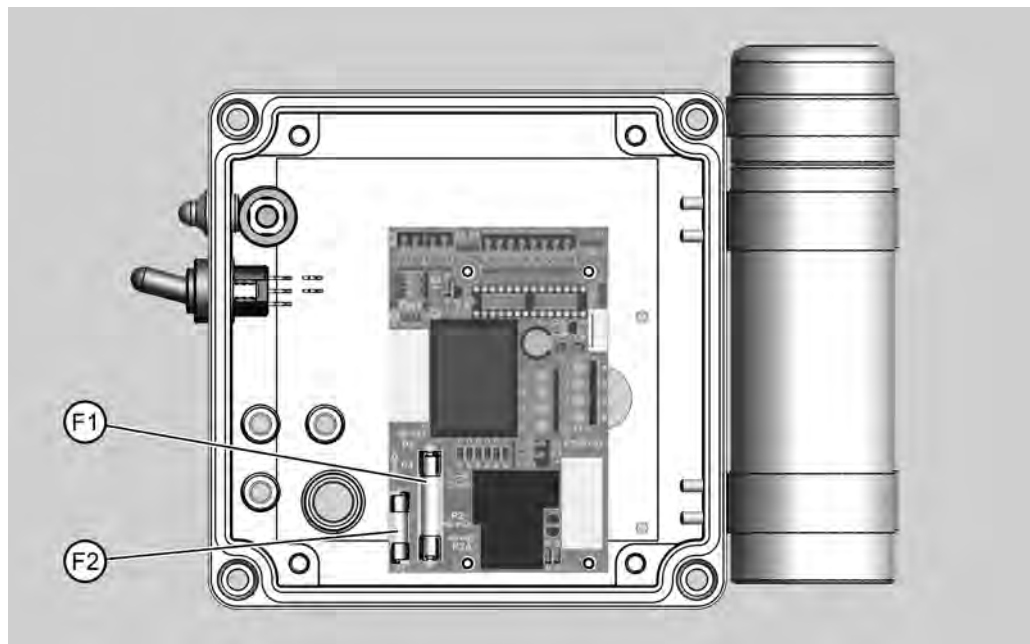
- Check proper condition of fuses (F1, F2).

If one or both fuses are discolored or mechanically defective, replace them.

- Make sure that the new fuse is of the same type and capacity as the fuse to be replaced.



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- Attach the cover with the screws on the electrical control.

## Disposal

### In the USA

Observe and follow the regulations for disposal. If in doubt, please consult your municipal or local authority.

#### ⚠ WARNING



Risk of poisoning from hydraulic oil  
Hydraulic oil can contaminate ground water and soil.  
► Always dispose of hydraulic oil in an environmentally friendly manner using a specialist firm.

#### ⚠ CAUTION



Health hazard from contact with hydraulic oil.  
► Wear nitrile gloves and chemical-resistant protective goggles during work that may include contact with hydraulic oil.

- Dispose of hydraulic oil in an environmentally friendly manner using a specialist firm.

Replaced wear parts and defective components consist of e. g. the following materials:

- steel
- rubber
- plastic
- copper

#### ⚠ WARNING



Risk of poisoning from hydraulic oil  
Hydraulic oil can contaminate ground water and soil.  
► Use a cloth to remove hydraulic oil from parts to be disposed of.  
► Dispose of the cloth in an environmentally friendly manner after use.

- Remove any residue of hydraulic oil from the replaced wear parts or defective components with a cloth.
- Dispose of the cloth in an environmentally friendly manner.
- Dispose of the unit in an environmentally friendly manner through the manufacturer.

## In Europe

Observe and follow the regulations for disposal. If in doubt, please consult your municipal or local authority.

| <b>⚠ WARNING</b>                                                                  |                                                                                                                                                                                                              |
|-----------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | <p>Risk of poisoning from hydraulic oil<br/>Hydraulic oil can contaminate ground water and soil.</p> <p>► Always dispose of hydraulic oil in an environmentally friendly manner using a specialist firm.</p> |
| <b>⚠ CAUTION</b>                                                                  |                                                                                                                                                                                                              |
|  | <p>Health hazard from contact with hydraulic oil.</p> <p>► Wear nitrile gloves and chemical-resistant protective goggles during work that may include contact with hydraulic oil.</p>                        |

- Dispose of hydraulic oil in an environmentally friendly manner using a specialist firm.

Replaced wear parts and defective components consist of e. g. the following materials:

- steel
- rubber
- plastic
- copper

| <b>⚠ WARNING</b>                                                                    |                                                                                                                                                                                                                                                               |
|-------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | <p>Risk of poisoning from hydraulic oil<br/>Hydraulic oil can contaminate groundwater and soil.</p> <p>► Remove hydraulic oil from the parts to be disposed using a cloth.</p> <p>► Dispose of the cloth in an environmentally friendly manner after use.</p> |

- With a cloth, remove traces of hydraulic oil from the unit, exchanged wearing parts or defective components.
- Dispose of the unit, replaced worn parts or defective components in accordance with environmental regulations.
- Dispose of the cloth in accordance with environmental regulations.



## Technical specifications

### HY-115-CSA

| Dimensions and weights |                                     |
|------------------------|-------------------------------------|
| Width:                 | 480 mm (18.89 in)                   |
| Height:                | 410 mm (16.14 in)                   |
| Depth:                 | 250 mm (9.84 in)                    |
| Weight:                | 26 kg (57.3 lbs) (Without oil fill) |

### JetPro-S-115-CSA

| Dimensions and weights |                                   |
|------------------------|-----------------------------------|
| Width:                 | 390 mm (15.4 in)                  |
| Height:                | 350 mm (13.8 in)                  |
| Depth:                 | 270 mm (10.6 in)                  |
| Weight:                | 15 kg (33 lbs) (Without oil fill) |

### HY-115-CSA and JetPro-S-115-CSA

| Electrical data                 |                   |
|---------------------------------|-------------------|
| Drive type:                     | Electric motor    |
| Mains voltage HY-115-CSA:       | 1PH 90-125V/60Hz  |
| Mains voltage JetPro-S-115-CSA: | 1PH 100-115V/60Hz |
| Protection category:            | IP 24             |

| Information about the hydraulics               |                                                                                                |
|------------------------------------------------|------------------------------------------------------------------------------------------------|
| Oil recommendations <sup>1</sup> :             | Hyspin HVI 32, alternatively Bio-Hydraulic oil on mineral oil basis e. g., Shell Naturella HFE |
| Recommended viscosity grades:                  | from +10 °C (50 °F) 32-46 mm <sup>2</sup> /s,<br>under +10 °C (50 °F) 15-22 mm <sup>2</sup> /s |
| Tank volume:<br>HY-115-CSA<br>JetPro-S-115-CSA | 5 l (1.32 US.liq.gal)<br>3 l (0.79 US.liq.gal)                                                 |
| Working pressure:                              | max. 700 bar (10,000 psi)                                                                      |

- 1 Operate the unit exclusively with clean hydraulic oil based on mineral oil. Alternatively, you can operate the unit with bio-oil based on mineral oil such as Shell Naturella HFE. In order to use the bio-oil, all the equipment of the unit must be either unused or have been previously flushed with bio-oil.