HYTORC


# **LIGHTNING™ PUMP Series** / Smart and Standard Models
# Basic Operations Manual

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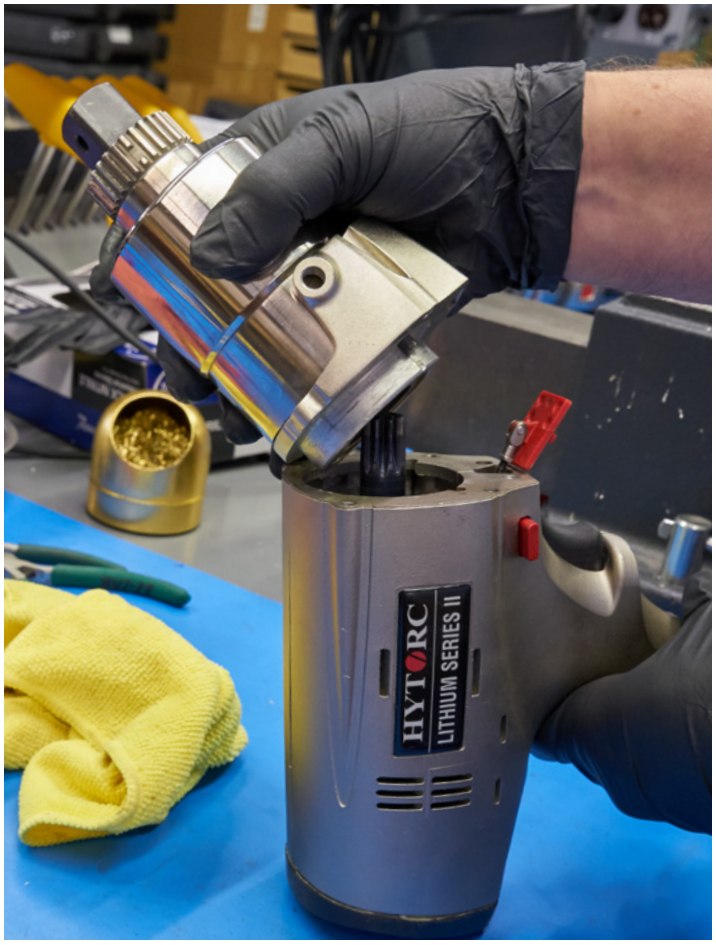
edition 1.2

# HYTORC

## HY-CARE SERVICE PLANS

*Never Settle For Less.*




## WHERE UNMATCHED SUPPORT MEETS OPERATIONAL PEACE OF MIND

Downtime due to tool maintenance can significantly impact project timelines and operational efficiency. Our HY-Care service plans directly address this issue, providing essential support when you need it most. With this program, the hassle and uncertainty of tool servicing are taken off your shoulders, allowing every bolt tightened to be a step towards a more efficient, safer, and cost-effective operation.

**HY-Care Service Plans are available within 90 days of purchase and offer the following features:**

- **Up to 3-Year Hassle-Free Warranty on Electric Tools**
- **Up to 5-Year Hassle-Free Warranty on Hydraulic & Pneumatic Tools**
- **Up to 1-Year Hassle-Free Out of Warranty Service**
- **No Deductible**
- **24-Hour Loaner Tools**
- **Lifetime Product Upgrades**
- **Discounted Calibration Rates***
- **And much more.**

*Not included in HY-Care Basic.

## GENERAL POWER TOOL SAFETY WARNINGS

⚠ **WARNING Read all safety warnings, instructions, illustrations and specifications provided with this power tool.** *Failure to follow all instructions listed below may result in electric shock, fire and/or serious injury.*

**Save all warnings and instructions for future reference.**

*The term "power tool" in the warnings refers to your mains-operated (corded) power tool or battery-operated (cordless) power tool.*

### 1) Work area safety

a) **Keep work area clean and well lit**. *Cluttered or dark areas invite accidents*.
b) **Do not operate power tools in explosive atmospheres, such as in the presence of flammable liquids, gasses or dust**. *Power tools create sparks which may ignite the dust or fumes*.
c) **Keep children and bystanders away while operating a power tool**. *Distractions can cause you to lose control*.

### 2) Electrical safety

a) **Power tool plugs must match the outlet. Never modify the plug in any way. Do not use any adapter plugs with earthed (grounded) power tools**. *Unmodified plugs and matching outlets will reduce risk of electric shock.*
b) **Avoid body contact with earthed or grounded surfaces, such as pipes, radiators, ranges and refrigerators**. *There is an increased risk of electric shock if your body is earthed or grounded*.
c) **Do not expose power tools to rain or wet conditions**. *Water entering a power tool will increase the risk of electric shock*.
d) **Do not abuse the cord. Never use the cord for carrying, pulling or unplugging the power tool. Keep cord away from heat, oil, sharp edges or moving parts**. *Damaged or entangled cords increase the risk of electric shock.*
e) **When operating a power tool outdoors, use an extension cord suitable for outdoor use**. *Use of a cord suitable for outdoor use reduces the risk of electric shock*.
f) **If operating a power tool in a damp location is unavoidable, use a residual current device (RCD) protected supply**. *Use of an RCD reduces the risk of electric chock*.

### 3) Personal safety

a) **Stay alert, watch what you are doing and use common sense when operating a power tool. Do not use a power tool while you are tired or under the influence of drugs, alcohol or medication**. *A moment of inattention while operating power tools may result in serious personal injury*.
b) **Use personal protective equipment. Always wear eye protection**. *Protective equipment such as a dust mask, non-skid safety shoes, hard hat or hearing protection used for appropriate conditions will reduce personal injuries*.
c) **Prevent unintentional starting. Ensure the switch is in the off-position before connecting to power source and/or battery pack, picking up or carrying the tool**. *Carrying power tools with your finger on the switch or energizing power tools that have the switch on invites accidents*.
d) **Remove any adjusting key or wrench before turning the power tool on**. *A wrench or a key left attached to a rotating part of the power tool may result in personal injury.*
e) **Do not overreach. Keep proper footing and balance at all times**. *This enables better control of the power tool in unexpected situations*.
f) **Dress properly. Do not wear loose clothing or jewelry. Keep your hair and clothing away from moving parts.** *Loose clothes, jewelry or long hair can be caught in moving parts*.
g) **If devices are provided for the connection of dust extraction and collection facilities, ensure these are connected and properly used**. *Use of dust collection can reduce dust-related hazards*.
h) **Do not let familiarity gained from frequent use of tools allow you to become complacent and ignore tool safety principles**. *A careless action can cause severe injury within a fraction of a second*.

## 4) Power tool use and care

a) **Do not force the power tool. Use the correct power tool for your application**. *The correct power tool will do the job better and safer at the rate for which it was designed*.

b) **Do not use the power tool if the switch does not turn it on and off**. *Any power tool that cannot be controlled with the switch is dangerous and must be repaired*.

c) **Disconnect the plug from the power source and/or remove the battery pack, if detachable, from the power tool before making any adjustments, changing accessories, or storing power tools**. *Such preventive safety measures reduce the risk of staring the power tool accidentally*.

d) **Store idle power tools out of the reach of children and do not allow persons unfamiliar with the power tool or these instructions to operate the power tool**. *Power tools are dangerous in the hands of untrained users*.

e) **Maintain power tools and accessories. Check for misalignment or binding of moving parts, breakage of parts and any other condition that may affect the power tool's operation. If damaged, have the power tool repaired before use**. *Many accidents are caused by poorly maintained power tools*.

f) **Keep cutting tools sharp and clean**. *Properly maintained cutting tools with sharp cutting edges are less likely to bind and are easier to control*.

g) **Use the power tool, accessories and tool bits etc. in accordance with these instructions, taking into account the working conditions and the work to be performed**. *Use of the power tool for operations different from those intended could result in a hazardous situation*.

h) **Keep handles and grasping surfaces dry, clean and free from oil and grease**. *Slippery handles and grasping surfaces do not allow for safe handing and control of the tool in unexpected situations*.

## 5) Battery tool use and care

a) **Recharge only with the charger specified by the manufacturer**. *A charger that is suitable for one type of battery pack may create a risk of fire when used with another battery pack*.

b) **Use power tools only with specifically designated battery packs**. *Use of any other battery packs may create a risk of injury and fire*.

c) **When battery pack is not in use, keep it away from other metal objects, like paper clips, coins, keys, nails, screws or other small metal objects, that can make a connection from one terminal to another**. *Shorting the battery terminals together may cause burns or a fire*.

d) **Under abusive conditions, liquid may be ejected from the battery; avoid contact. If contact accidentally occurs, flush with water. If liquid contacts eyes, additionally seek medical help**. *Liquid ejected from the battery may cause irritation or burns*.

e) **Do not use a battery pack or tool that is damaged or modified**. *Damaged or modified batteries may exhibit unpredictable behavior resulting in fire, explosion or risk of injury*.

f) **Do not expose a battery pack or tool to fire or excessive temperature**. *Exposure to fire or temperature above 130 °C may cause explosion*.

g) **Follow all charging instructions and do not charge the battery pack or tool outside the temperature range specified in the instructions**. *Charging improperly or at temperatures outside the specified range may damage the battery and increase the risk of fire*.

## 6) Service

a) **Have your power tool serviced by a qualified repair person using only identical replacement parts**. *This will ensure that the safety of the power tool is maintained*.

b) **Never service damaged battery packs**. *Service of battery packs should only be performed by the manufacturer or authorized service providers*.

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ORIGINAL INSTRUCTIONS

TABLE OF CONTENTS


# 1

# NOTES CONCERNING THIS MANUAL AND THE MANUFACTURER

# 1. Notes Concerning This Manual and The Manufacturer

This manual will help you to use the hydraulic LIGHTNING PUMP Series safely; it is simply referred to as “pump” in the following.

Keep the manual available

These operating instructions are a part of the pump. 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 pump or transfer it in any other way.

| |
|---|
| **The original English manual for qualified and authorized operating personnel.** |
| **Last updated: October, 2024** |
| **Important safety instructions**<br>**Keep this manual in a safe place.** |
| **Read and follow the manual before using the pump.**<br>**To reduce the risk of injury, you must be particularly careful when using the pump near children.**<br>**Do not touch any moving parts.**<br>**Failure to comply with the instructions may cause injury or even death.** |

| | |
|---|---|
| **Publisher** | HYTORC Technologies GmbH<br><br>Kleinbeckstr. 3–17<br><br>45549 Sprockhövel, Germany, Germany<br><br>Tel.: +49 (0) 2324 847 93-0<br>Fax: +49 (0) 2324-84793-999<br><br>info@hytorctech.com<br><br>www.hytorctech.com |
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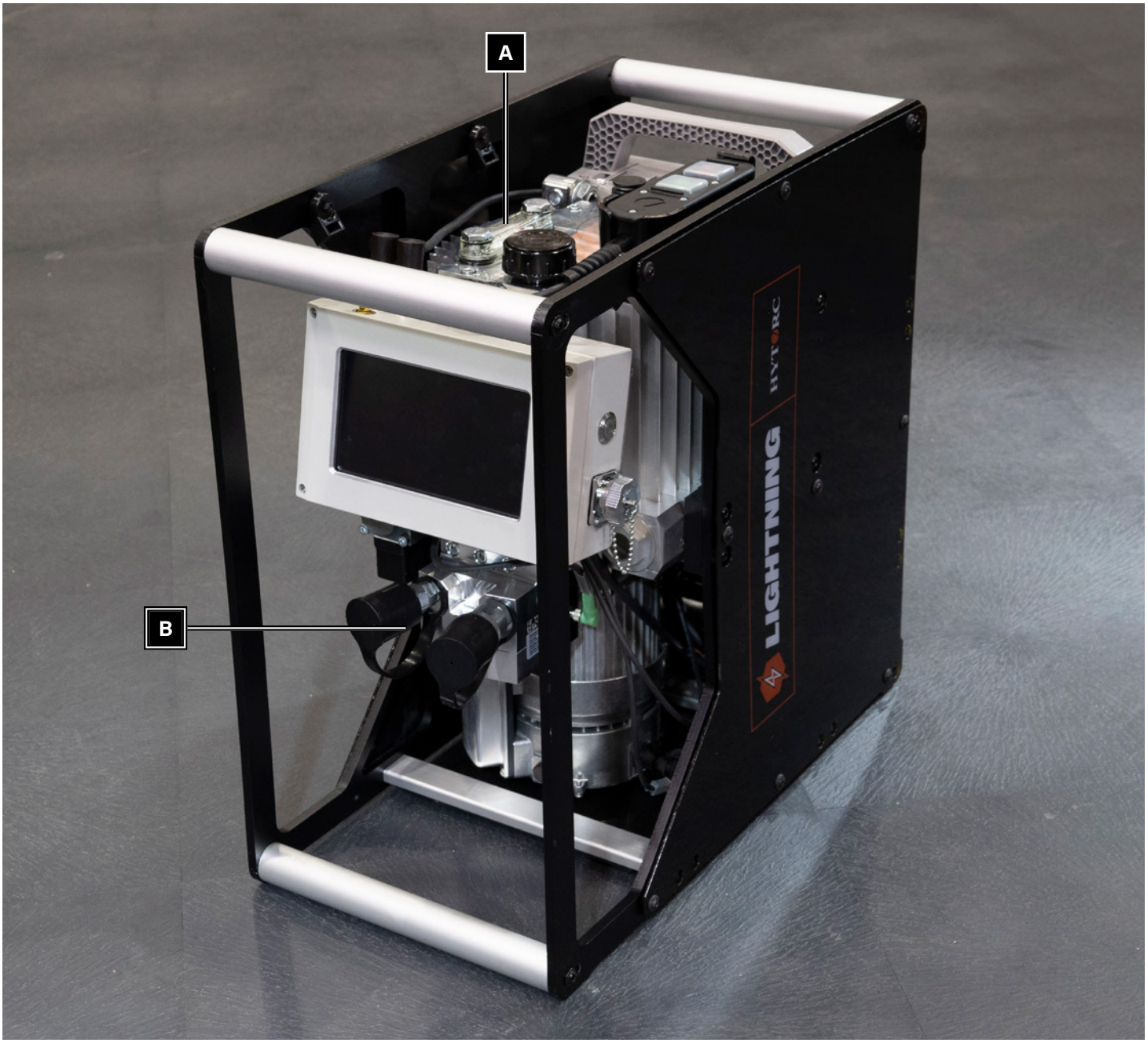
# 2

# POSITION

# 2. Position

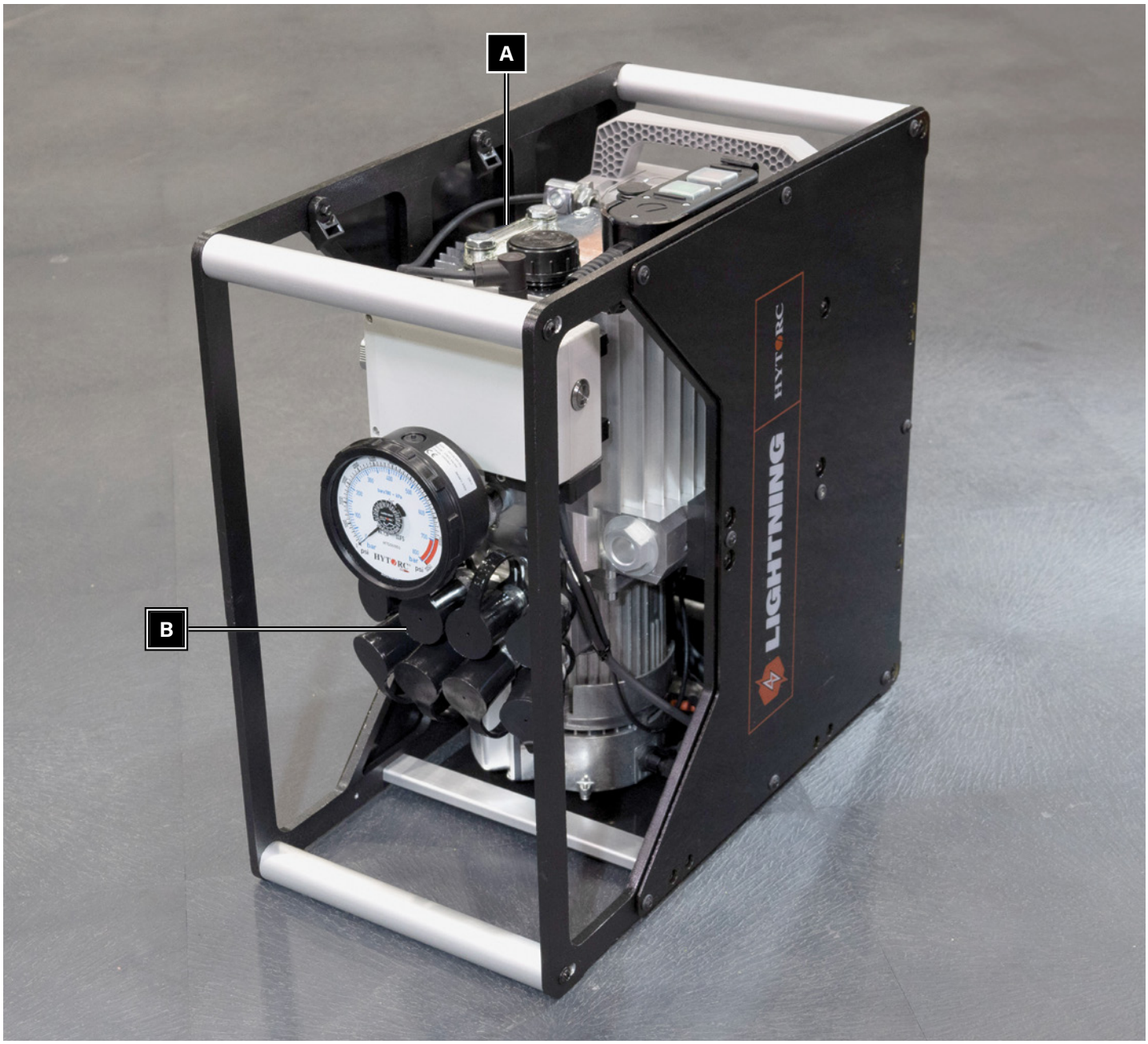
**Tips Contain additional information.**




## DIRECTIONAL DATA - SMART

- On the front side (B), you can see the couplers.
- **Rear:** On the rear side, you can see the battery pack.
- **Left and right:** The sides of the frame are paneled.
- **Top:** The remote control holder and the sight glass for the oil level are situated on the top (A).
- **Bottom:** The hydraulic drive is located at the bottom.

## DIRECTIONAL DATA - STANDARD

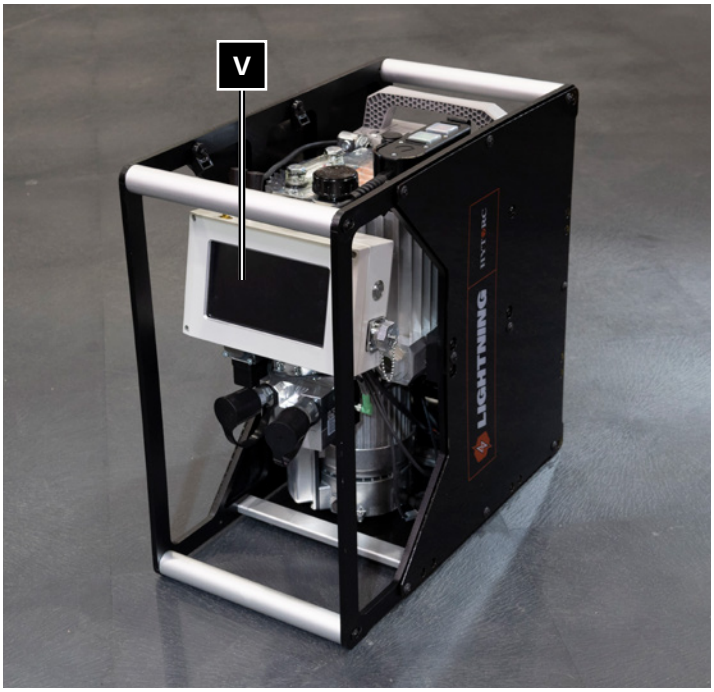


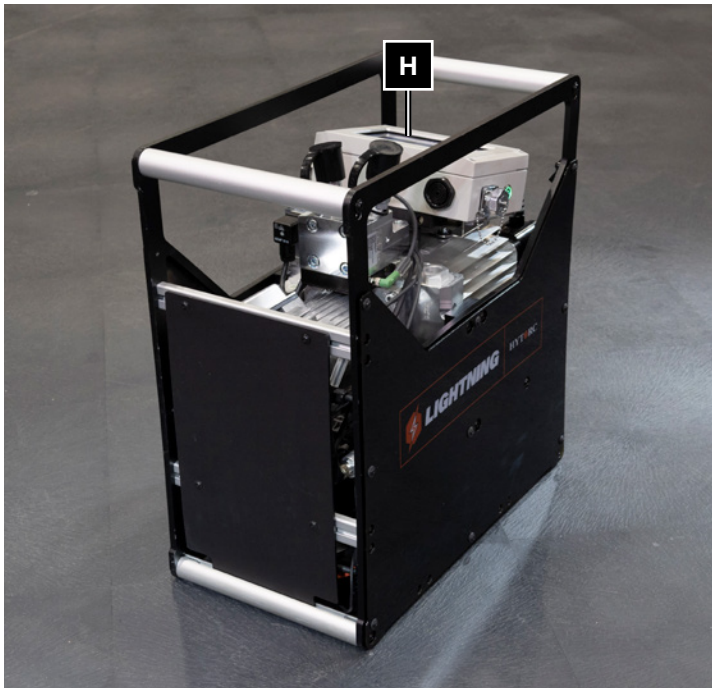

- **Front:** On the front side (B), you can see the couplers.
- **Rear:** On the rear side, you can see the battery pack.
- **Left and right:** The sides of the frame are paneled.
- **Top:** The remote control holder and the sight glass for the oil level are situated on the top (A).
- **Bottom:** The hydraulic drive is located at the bottom.

The pump can be operated in two positions:

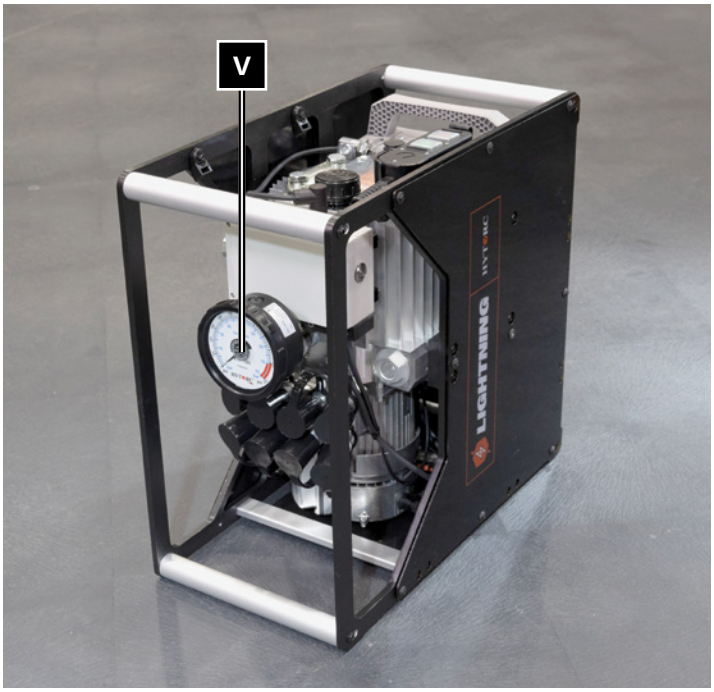
- **Vertical position (V):** In the vertical position, the pressure gauge or screen is vertical and/or front facing (forward). The couplers face forward in this position. The sight glass is also horizontal in this position and cannot be used to check the oil level.
- **Horizontal position (H):** In the horizontal position, the pressure gauge or screen is on the top of the pump. In this position, the couplers face up. The horizontal position is necessary, e. g. for draining or changing the oil.

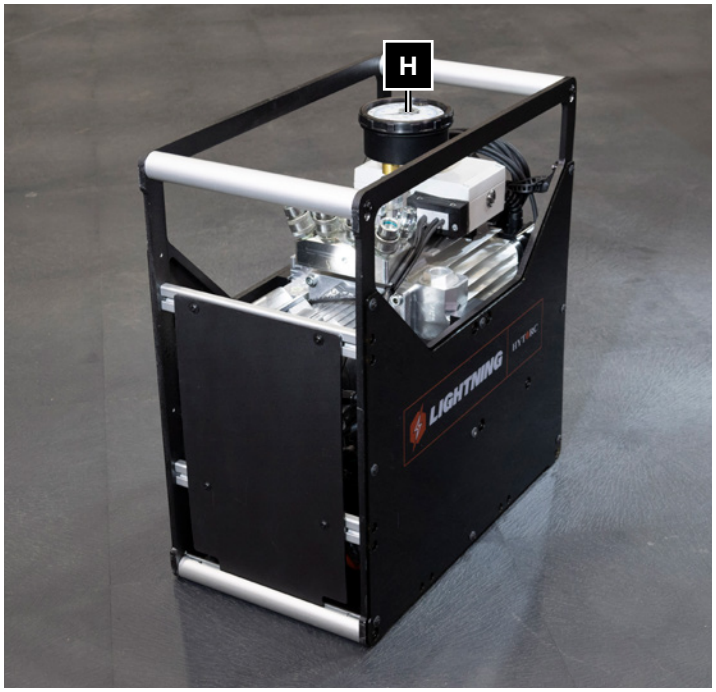
## LIGHTNING PUMP - SMART




## LIGHTNING PUMP - STANDARD

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HYTORC
DC
23
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27
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# 3

# DOCUMENTS

# 3. Documents

**Risk of injury from non-compliance with the applicable documentation.**
**Prior to working with the pump, read all applicable documents and comply with them.**

More information, instructions and details about the pump 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 pump or passing it on in other ways.

**Applicable documents are especially the following document types:**

- Operating instructions
- Assembly instructions
- Maintenance and repair manuals
- Spare parts lists
- Declarations of conformity or declarations of incorporation

► Please heed and comply with the information from the applicable documents

**Manufacturer's address**

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Web: www.hytorctech.com

**Person responsible for documentation**

HYTORC Technologies GmbH
Michael Westermann
Kleinbeckstr. 3–17
45549 Sprockhövel, Germany


# 4

# WARRANTY AND LIABILITY

# 4. Warranty and Liability

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

# 5

# SAFETY AND COMPLIANCE

# 5. Safety and Compliance

- **Severe injuries or death caused by accidents due to disregard of the instructions in this guide.**
- **In particular the failure to observe the instructions in the Chapter on Safety, can lead to accidents.**
- **Read and follow all instructions in this manual before you begin working with or on the pump.**

**WARNING**

**Read all safety warnings, instructions, illustrations and specifications provided with this battery. Failure to follow all instructions listed below may result in electric shock, fire and/or serious injury.**

Save all warnings and instructions for future reference.

**Battery tool use and care**

- **Recharge only with the charger specified by the manufacturer.** A charger that is suitable for one type of battery pack may create a risk of fire when used with another battery pack.
- **Use power tools only with specifically designated battery packs.** Use of any other battery packs may create a risk of injury and fire.
- **When battery pack is not in use, keep it away from other metal objects, like paper clips, coins, keys, nails, screws or other small metal objects, that can make a connection from one terminal to another.** Shorting the battery terminals together may cause burns or a fire.
- **Under abusive conditions, liquid may be ejected from the battery; avoid contact. If contact accidentally occurs, flush with water. If liquid contacts eyes, additionally seek medical help.** Liquid ejected from the battery may cause irritation or burns.
- **Do not use a battery pack or tool that is damaged or modified.** Damaged or modified batteries may exhibit unpredictable behavior resulting in fire, explosion or risk of injury.
- **Do not expose a battery pack or tool to fire or excessive temperature.** Exposure to fire or temperature above 130 °C may cause explosion.
- **Follow all charging instructions and do not charge the battery pack or tool outside the temperature range specified in the instructions.** Charging improperly or at temperatures outside the specified range may damage the battery and increase the risk of fire.

**Service**

- **Never service damaged battery packs.** Service of battery packs should only be performed by the manufacturer or authorized service providers.

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

### Intended use

- The pump is used exclusively for driving hydraulic assembly tools for bolts and nuts in the commercial sector. With the torque tool, torque 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.

### Basic safety information

- Preventing serious injury or death
- Avoid 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 pump allows as an accessory.

### Preventing serious injury or death

- Avoid 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 pump allows as an accessory.

### Preventing explosion hazards

- Operating and maintaining the pump in hazardous areas can lead to serious injury or death.
- Operate and service the pump only in areas where there is no explosive atmosphere.

### Preventing electric shock

- Risk of serious or fatal injuries from electric shocks or battery pack catching fire!
- Check the electric cables for damage.
- Only use the pump if all cables are in in working condition and not damaged.
- Have damaged electric cables replaced immediately by authorized personnel.
- Unplug the battery pack before performing any electrical work on the pump or cleaning the pump.
- Only dry clean the pump. Do not clean the pump with a pressure washer, cold cleaner or water.
- Never immerse the pump in water or other liquids.
- Observe and follow the instructions for handling batteries in the following section and in the battery pack and charger manufacturer's manuals.

### Handling batteries safely

- Risk of serious or fatal injuries from electric shocks or fire if the battery pack is not used properly!
- Observe and follow the instructions in the supplied manual when using the battery pack and charger.
- Only use the battery pack and charger if they are in perfect working order.
- Do not make any changes to the battery pack or charger. Contact our customer service department if you need any repairs.
- Only charge the battery pack using the charger supplied.
- Allow the charger to warm up to room temperature before charging to prevent condensation from forming.
- Do not touch the mains and charging plugs of the charger with wet hands.
- Only connect the charger to a suitable power supply.
- Ensure that the plug and sockets of the charger are dry and clean.
- Only charge the battery pack under supervision and in a non-flammable, well-ventilated, dry and dust-free environment.
- Do not cover the charger or the battery pack when charging.
- Do not overcharge the battery pack.
- Never short-circuit the battery pack.
- Protect the battery pack from sunlight.
- Ensure that the battery pack is not exhaustively discharged.
- Only clean the battery pack case with a cloth slightly moistened with a neutral cleaning agent.
- Do not use high-pressure or steam cleaners to clean the battery pack.
- Never immerse the battery pack in water or other liquids.
- Remove the battery pack from the pump when not in use for a long period.
- Do not store the battery pack on radiators or near other sources of heat.

Skin and respiratory tract may become irritated if liquids or gases escape from the battery pack!

- Do not touch escaping liquids.
- Do not inhale escaping gases.
- Seek medical treatment immediately if leaking liquids come into contact with the eyes or irritate the respiratory tract.

### Preventing burns from fire

- A short circuit could cause a fire and cause severe burns.
- Remove the battery pack from the pump when not in use and before any maintenance work.
- Remove all unnecessary and flammable materials from the work area.
- Make sure that a fire extinguisher with powder or foam extinguishing agent is available.
- Escaping hydraulic oil may ignite and cause serious burns.
- Only operate the pump if it is in perfect working condition.
- Ensure that the hydraulic system of the power pump is tight.
- Remove and dispose of any leaking hydraulic oil.

**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 pump wear protective gloves against thermal risks.

**Preventing poisoning**

The pump 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 pump off when it overheats.
- Allow the pump to cool down.
- With the help of a non-contact infrared thermometer, ensure that the pump is cooled down to 25 °C (77 °F).
- Check the pump for possible damage.
- Have the pump repaired, if damaged, by qualified personnel before using.
- 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.

**Avoid fractures and contusions**

Fractures and contusions are possible. The pump might fall, when unstable or during lifting and carrying. Slipping and thereby risk of fractures when performing hydraulic work is possible!

- Always set up the pump on a flat, solid and stable base.
- Secure the pump and tools against falling.
- When lifting and carrying the pump, wear safety shoes with steel toe caps.
- Wear safety shoes with non-slip soles when working on hydraulics.

**Preventing eye damage**

- At pressures of more than 700 bar (10,000 psi) and operating the pump 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 pump 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 tools.

**Preventing material damage**

Risk of damage or malfunctions due to dirty couplers and plugs!

- To avoid contaminating the couplers, fit the protective caps and protective plugs when the couplers are not in use.

**Risk of damage to the hydraulic tool!**

- Always store the hydraulic tool safely.
- Risk of battery pack damage or malfunction!
- Do not drop the battery pack.
- Observe and follow the manufacturer's instructions for storing the battery pack.
- Check the charge level regularly.
- If necessary, recharge the battery pack.

**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 pump.

**Persons at particular risk**

The following groups of people cannot have access to the pump, since severe or deadly injuries are possible:

- Children
- People with physical or mental limitations
- People under the influence of drugs and/or medication
- People under the influence of alcohol
- Unauthorized persons such as passerby
- 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 pump.

**Establishing a power supply**

The operating personnel must have the following knowledge and experience:

- They have been taught and instructed for the work.
- They are aware that improper operation, maintenance and repairs can cause accidents.
- They are able to assess hazards that may arise from noise and heat.
- They are able to assess hazards that may arise from electrical voltage and power.
- They are able to establish a power supply to the pump with the battery pack and can safely charge the battery pack.

**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 torque couplers to connect tools to the pump

**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 pump

**Assessing the state of the pump**

- 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 pump by performing a visual inspection prior to Using
  - Leaks
  - Kinks in electric lines
  - Kinks in hydraulic hoses
  - External damage to electrical lines
  - External damage to hydraulic hoses
  - Incorrect fill level in the pump

### Carrying the pump

- 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/55 lbs., the pump is only permitted to be carried with the help of a second person.

### Ban of unauthorized conversions

- Unauthorized conversions or changes on the pump 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 pump 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 pump is running are possible!
- In areas with high noise wear hearing protection.
- Risk of poisoning possible in poorly ventilated rooms! The pump may overheat. In this case, oil mist and oil vapors can form.
- If this is the case, wear a respirator.

### Ambient conditions

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

- Temperature range: –20 °C to +50 °C (–4 °F to +122 °F)
- Humidity non-condensing
- Make sure that the pump is stored and transported under the following environmental conditions:
- Temperature range: –20 °C to +60 °C (–4 °F to +140 °F)

### Humidity non-condensing

Make sure that the battery pack is only used under the following environmental conditions:

- Temperature range for operation: –20 °C to +60 °C (-4 °F to +140 °F)
- Temperature range for charging: 0 °C to +45 °C (32 °F to +113 °F)
- Temperature range for storage: See the manual for the LIGHTNING S battery pack and LIGHTNING fast charger
- Humidity non-condensing

Also observe and follow all instructions in the manual for the LIGHTNING S battery pack and LIGHTNING fast charger.

### Design characteristics of warning information

**DANGER**

**Sections with the word DANGER warn of imminent dangerous situations that lead to death or serious injury.**

**WARNING**

**Sections with the word WARNING warn of imminent dangerous situations that may lead to death or serious injury.**

**CAUTION**

**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

Hazard from electric shock

Slipping hazard from leaked media

Burning hazard, scalding hazard

Risk of eye damage due to splashing liquid

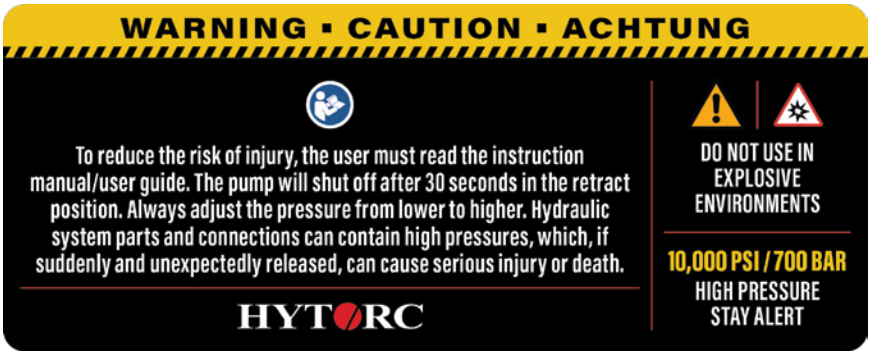
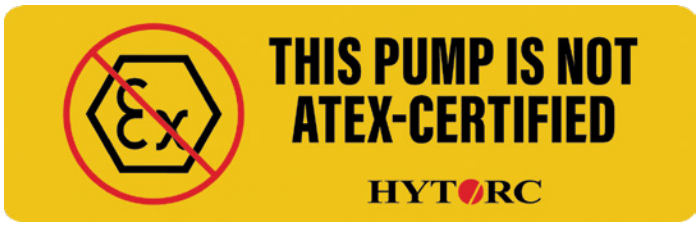
Risk of explosion and explosive media discharge

## ATTENTION

**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 pump are clearly visible and legible.
- Replace damaged or lost warnings and signs immediately.
- The following labels are affixed to the pump:

| Warning or information sign | Meaning or explanation |
|---|---|
|  <br>  | Parts of the pump are under voltage during operation.<br><br>Do not touch any electrical components of the pump during operation.<br><br>The pump is not suitable for the use in explosive environments.<br><br>Notes on use:<br><br>Do not use the pump in an explosive environment.<br><br>Observe and follow all instructions in these operating instructions and in the supplied manuals.<br><br>The pump operates at high working pressure. There is a risk of injury if pressurized hydraulic fluid escapes.<br><br>Always set the required pressure by increasing the pressure from an initial lower pressure.<br><br>When not in use, the pump automatically switches off after 30 seconds in the Retract position. |


# 6 OVERVIEW

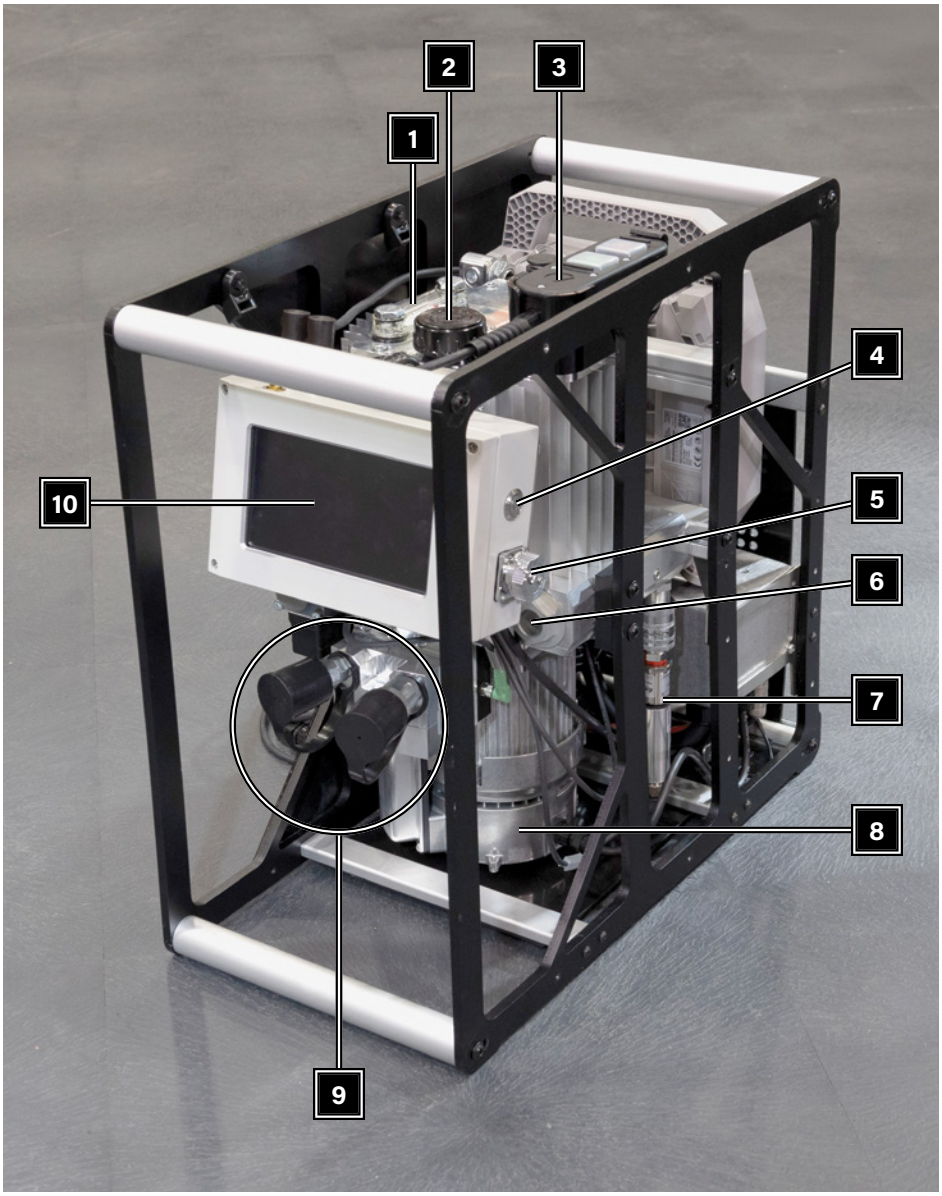
# 6. Overview

### Description

The hydraulic pump comes with one or four pairs of couplers as tool connections. You can convert an existing pump with one tool connection to have four tool connections. For this, please contact the manufacturer.

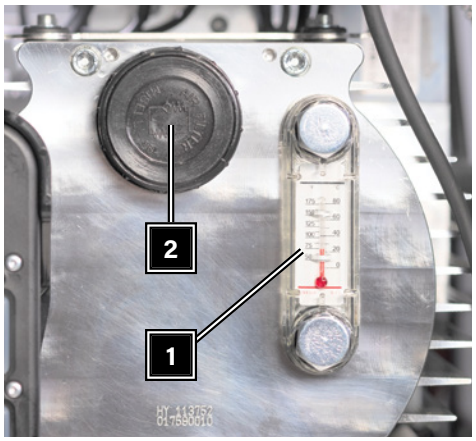
**The figures and descriptions in this manual refer to a hydraulic pump with four pairs of couplers. The hydraulic pump with one tool connection differs only in the number of tool connections. For a better overview, the side panels are not shown in individual figures.**

## OVERVIEW FRONT RIGHT AND TOP - SMART

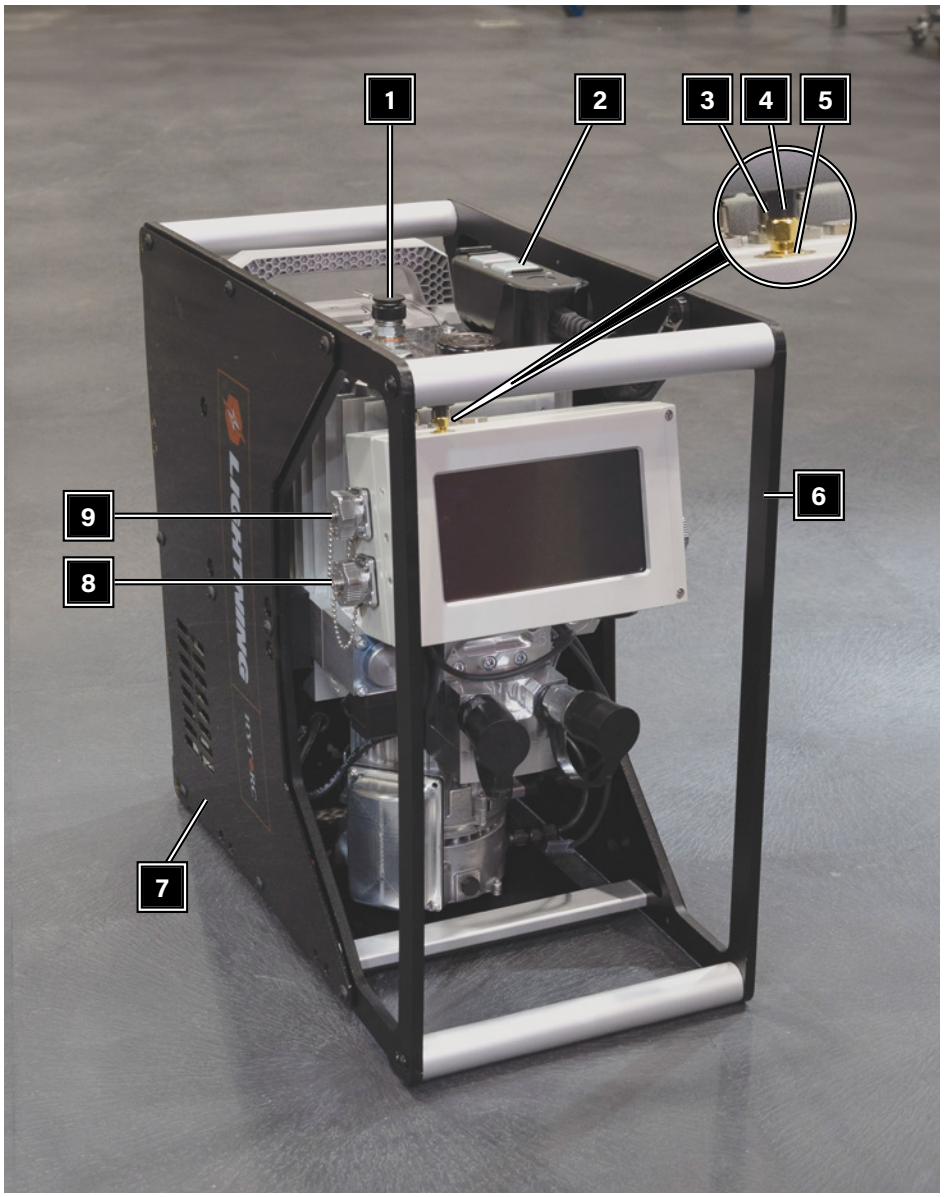



(Side panel removed for clarity.)

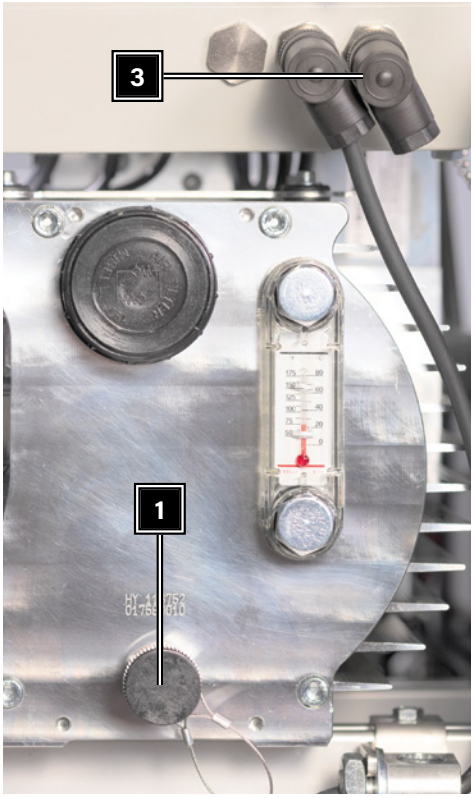
| | NAME |
|---|---|
| 1 | Sight glass |
| 2 | Oil cap with air relief valve |
| 3 | Remote control in holder |
| 4 | Power button |
| 5 | HDMI port |
| 6 | Oil filter |
| 7 | Pressure sensor |
| 8 | Electric motor |
| 9 | Couplers |
| 10 | Electrical control system with display |



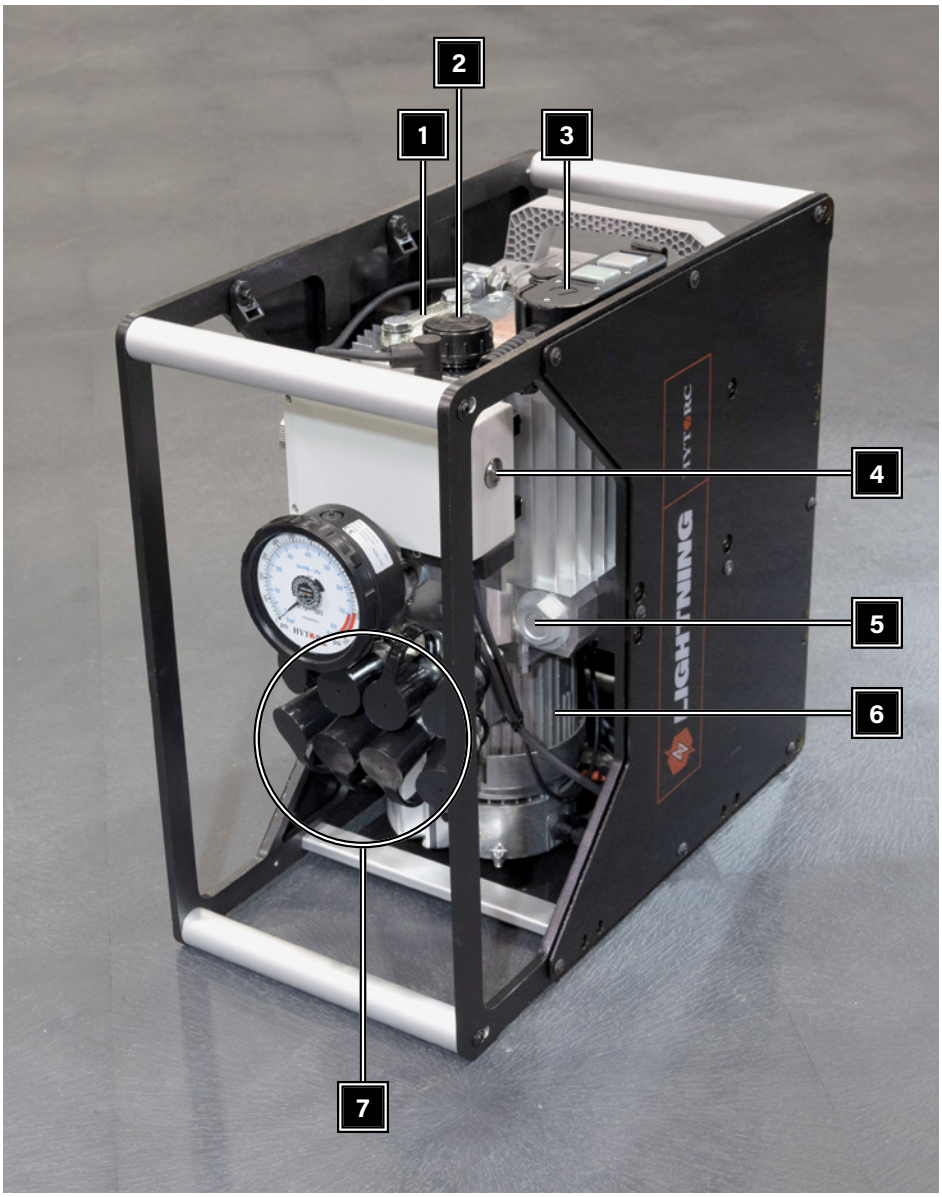
## OVERVIEW FRONT LEFT AND TOP - SMART



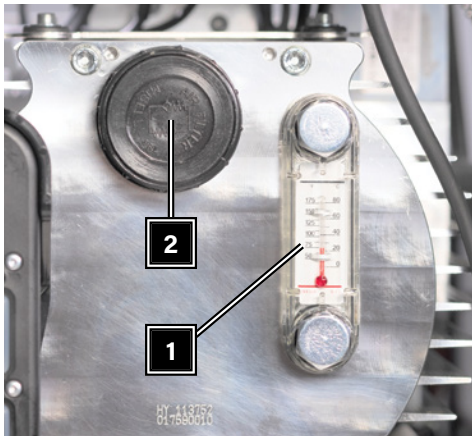

| | NAME |
|---|---|
| 1 | Oil drain |
| 2 | Remote control in holder |
| 3 | Connection for remote control |
| 4 | CAN-connection for subsequent extensions |
| 5 | Antenna |
| 6 | Frame |
| 7 | Protective side panel |
| 8 | USB A port |
| 9 | Ethernet port |



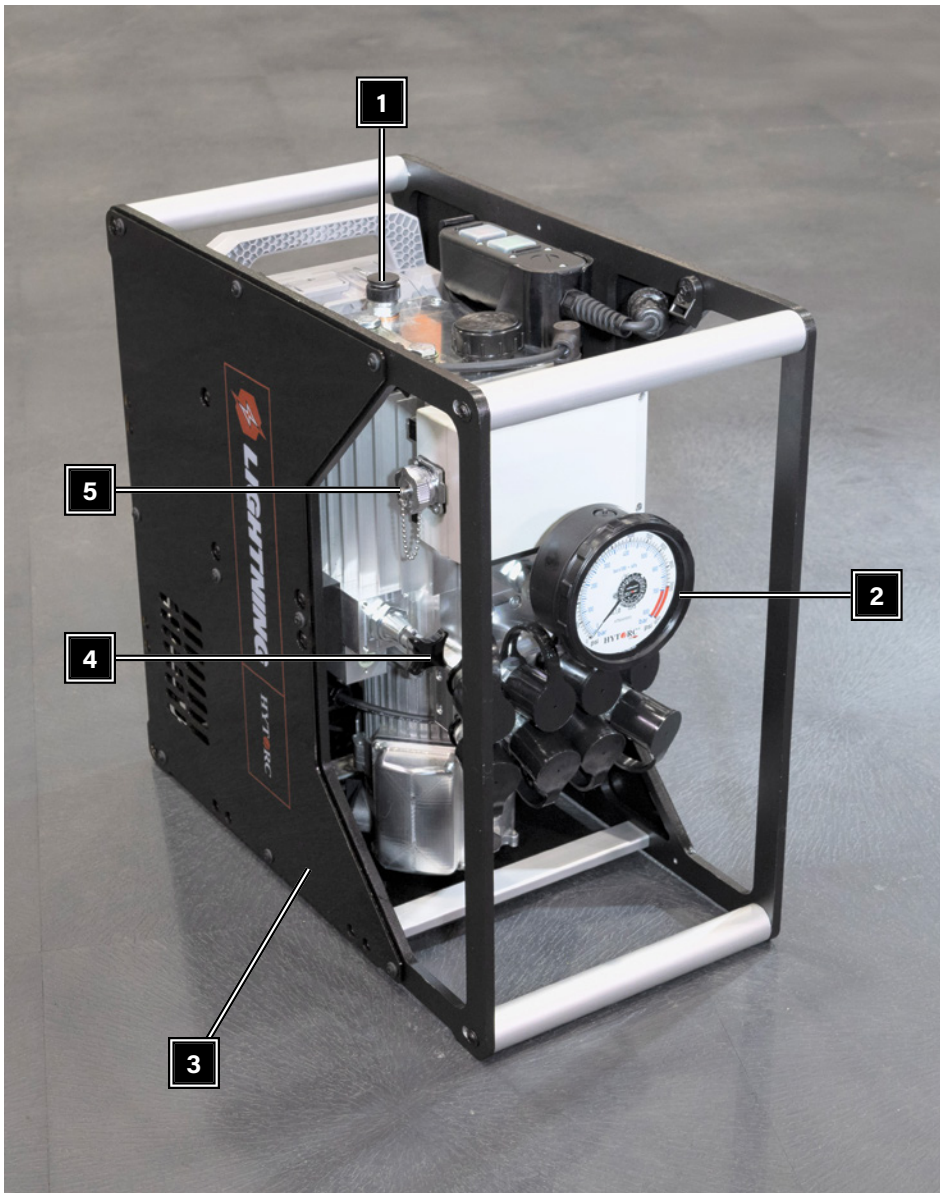
## OVERVIEW FRONT RIGHT AND TOP - STANDARD




| | NAME |
|---|---|
| 1 | Sight glass |
| 2 | Oil cap with air relief valve |
| 3 | Remote control in holder |
| 4 | Power button |
| 5 | Oil filter |
| 6 | Electric motor |
| 7 | Couplers |

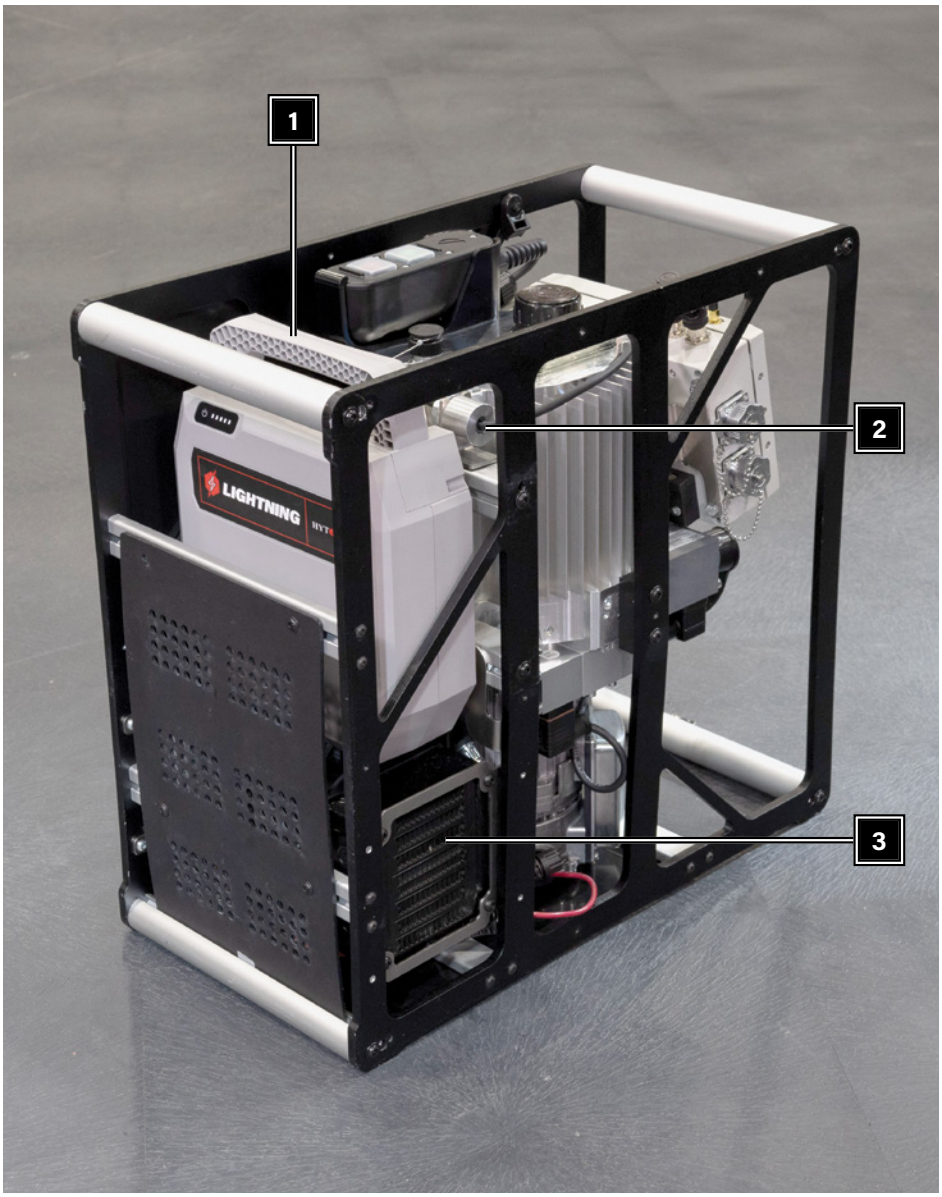


## OVERVIEW FRONT LEFT AND TOP - STANDARD




| | NAME |
|---|---|
| 1 | Oil drain |
| 2 | Pressure gauge |
| 3 | Protective side panel |
| 4 | Pressure control valve |
| 5 | USB A port |

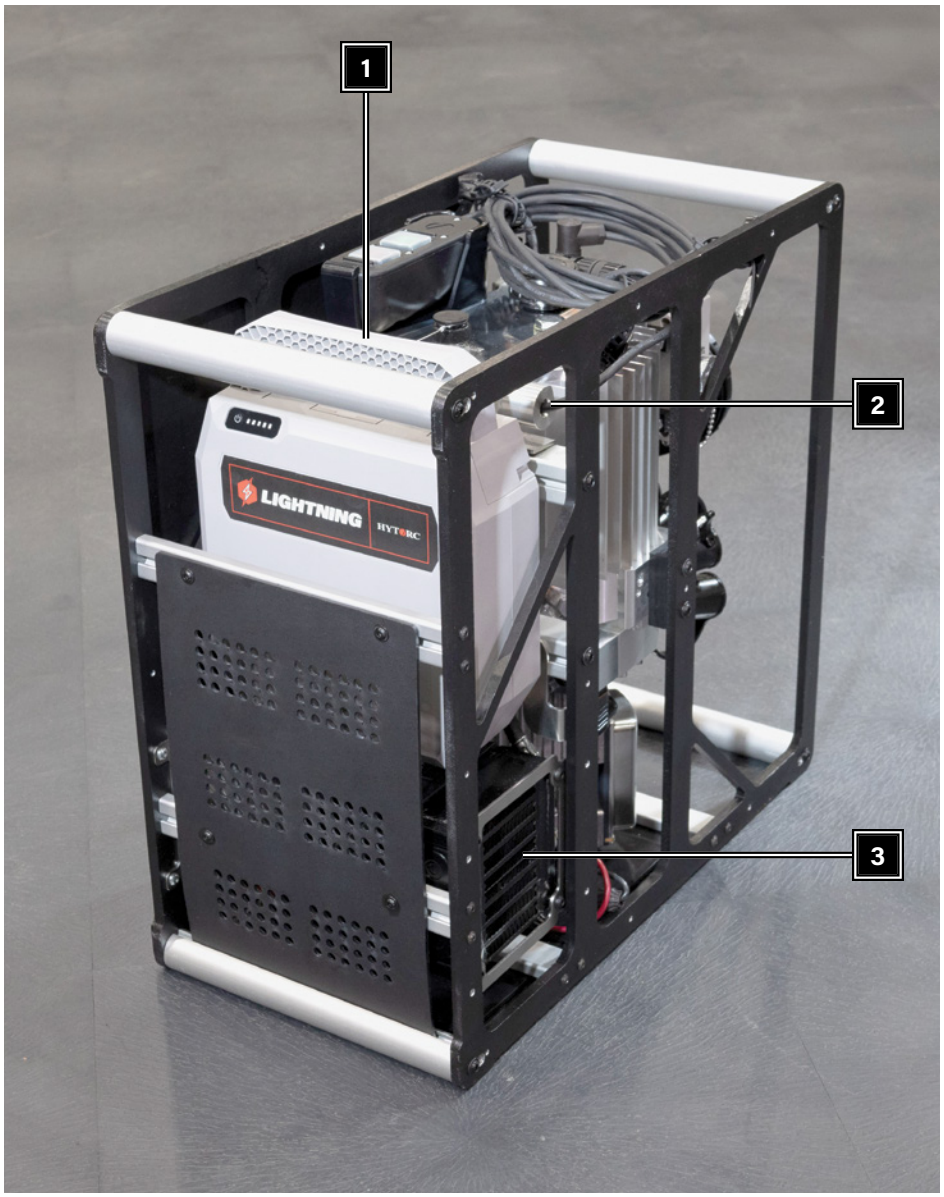
## OVERVIEW REAR LEFT AND TOP - SMART




| | NAME |
|---|---|
| 1 | Battery pack LIGHTNING S |
| 2 | Remote cable lock |
| 3 | Oil cooler |

(Side panel removed for clarity.)

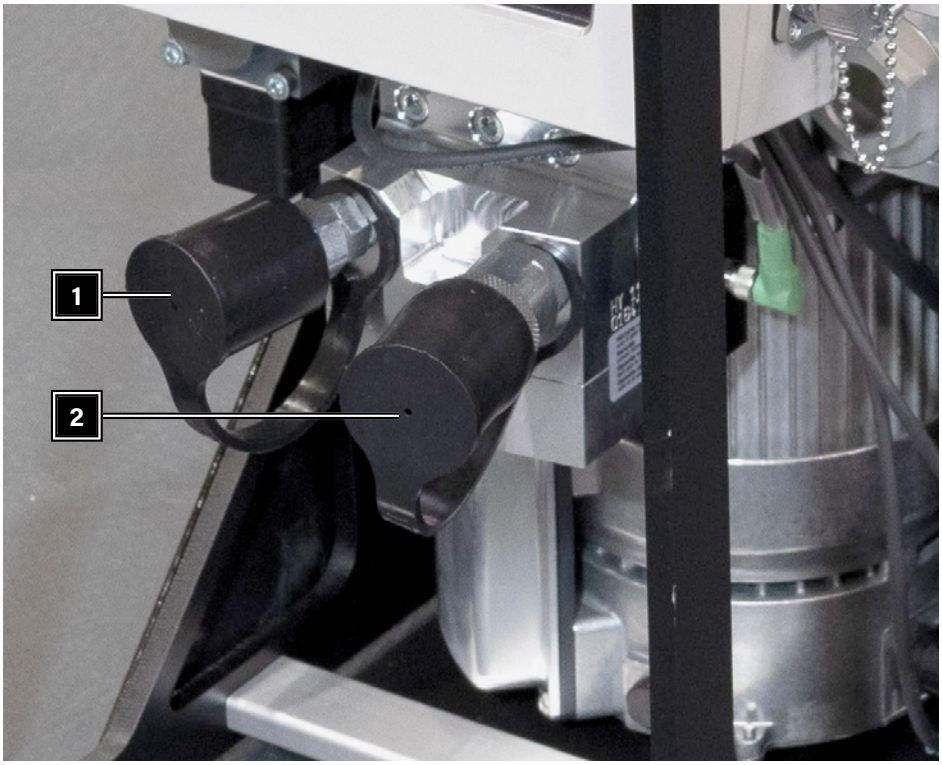
## OVERVIEW REAR LEFT AND TOP - STANDARD




| | NAME |
|---|---|
| 1 | Battery pack LIGHTNING S |
| 2 | Remote cable lock |
| 3 | Oil cooler |

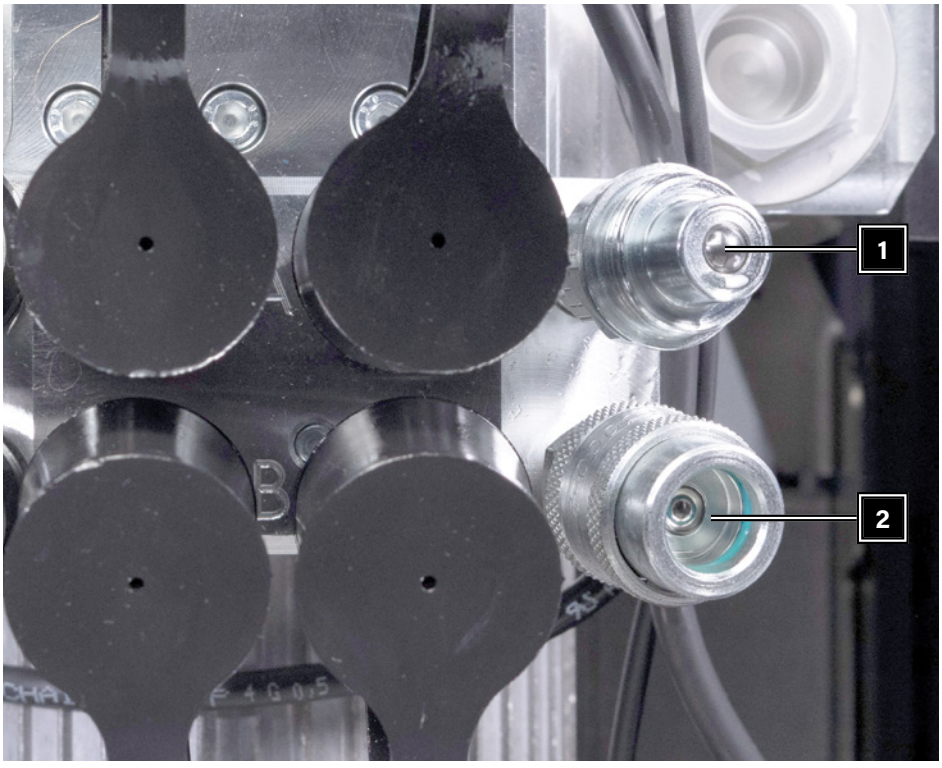
(Side panel removed for clarity.)

## OVERVIEW OF THE HYDRAULIC PUMP WITH A ONE-TOOL CONNECTION




| | NAME |
|---|---|
| 1 | Advance Coupler |
| 2 | Retract Coupler |

## OVERVIEW OF THE HYDRAULIC PUMP WITH A FOUR-TOOL CONNECTION

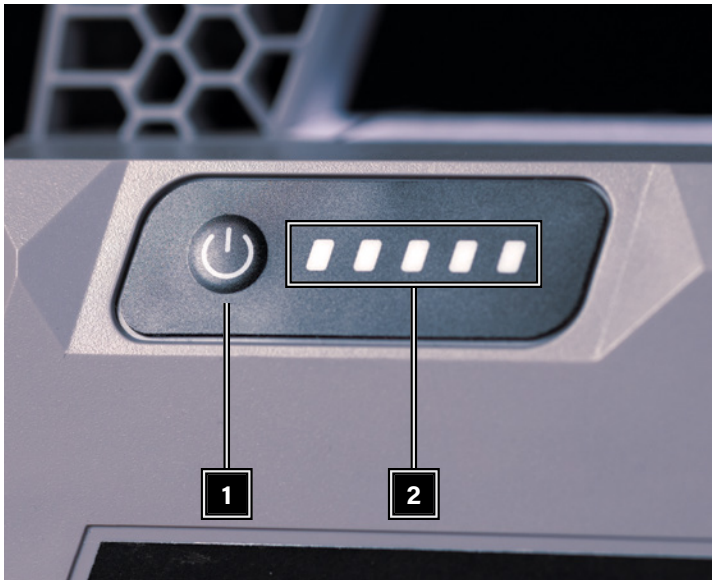


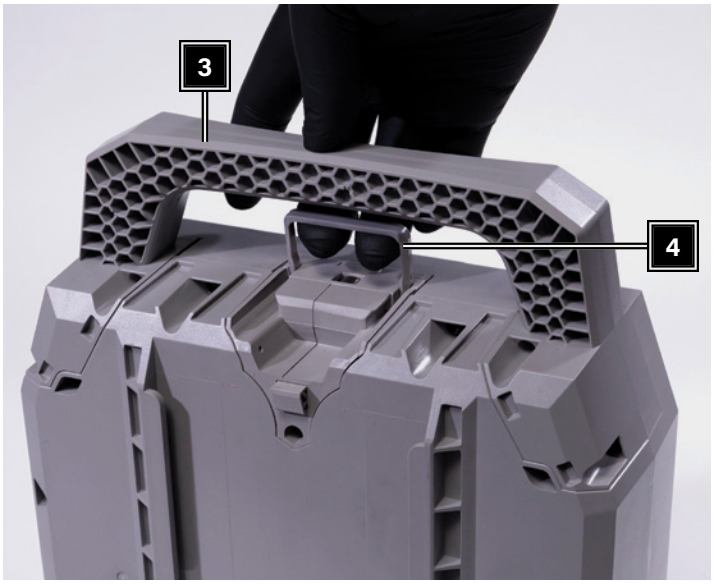

| | NAME |
|---|---|
| 1 | Advance coupler ("A") – Upper Row |
| 2 | Retract coupler ("B") – Lower Row |

## CHECKING LEVELS AND CHARGING THE BATTERY PACK

### Battery pack

Checking levels and charging the battery pack




| | NAME |
|---|---|
| **1** | Power Button |
| **2** | LEDs |

| | NAME |
|---|---|
| **3** | Handle |
| **4** | Release Lever |

- To check the charge level of the battery press the power button (5) on the battery pack.
- The charge level of the battery pack is indicated by the LEDs (4) (Pictured left.)

- If you would like to charge or store the battery pack remove it as follows:
- The LED in the power button (1) on the battery pack goes out.
- Fold the battery pack release lever (4) upwards and pull up to release it. (Pictured above.)
- Lift the battery pack out of the battery pack holder by the handle (3).
- Charge the battery pack with the LIGHTNING fast charger.

- Make sure that the battery pack is only used under the following conditions:
  - Temperature range for operation: –20 °C to +60 °C (4 °F to +140 °F)
  - Temperature range for charging: 0 °C to +45 °C (32 °F to +113 °F)
  - Temperature range for storage: See the manual for the LIGHTNING S battery pack and LIGHTNING fast charger.
  - Humidity non-condensing

- Also observe and follow all instructions in the manual for the LIGHTNING S. battery pack and LIGHTNING fast charger.

## COUPLERS

The couplers are arranged on the front side of the pump. The couplers are used to connect the tools.

There are one or four pairs of couplers on the pump depending on the model. One coupler on each set is used to connect the Advance function ("A"), the other to connect the Retract function ("B").

| **One-tool version:** | **Four-tool version:** |
|---|---|
| Left = Advance | Top row of couplers = Advance |
| Right = Retract | Bottom row of couplers = Retract |

The Smart model comes with quick connect couplers (71 series Quick Connect).

The Standard model comes with screw style couplers.

## DISPLAYS AND CONTROLS ON THE REMOTE CONTROL

- The remote control is used to switch the torquing process on and off and to start and stop it.
- There are two buttons on the remote control for this purpose. The function of the buttons differs depending on the selected operating mode.
- There is a holder for the remote control on top of the case.
- When the remote control is not use, put it in the holder.

## TYPE PLATE - STANDARD & SMART

The type plate may be attached as a sticker on top of the electrical control system or on the oil container cover. The type plate displays data that includes the following:

- Name of distributor
- Name of model
- Serial number
- Electrical voltage
- Output
- Manufacturer date
- Operating mode
- Name of manufacturer
- Country of manufacture

The following components of the tightening system are available separately from the manufacturer

- Square drive torque wrenches
- Low clearance torque wrench

The following accessories for the pump system are available separately from the manufacturer:

- Hydraulic hoses
- Battery pack type “LIGHTNING S”
- Charger type “LIGHTNING fast charger”
- Transport case  (Always sold with the Smart model)

The following components of the tightening system are available separately from the manufacturer:

- Hydraulic hoses
- Battery pack type “LIGHTNING S”
- Charger type “LIGHTNING fast charger”
- Hydraulic torque tool

These components are required to operate the pump.

## PURPOSE AND FUNCTION

The pump is used to drive hydraulic torquing tools.

The electric motor pump generates hydraulic pressure.

Smart: This can be set in the menu. The maximum adjustable pressure is 700 bar (10,000 psi) and is limited by a pressure valve. There is a pressure gauge in the menu for checking the current pressure. The required torque is set on the display. The Smart model has torque and pressure for applicable HYTORC tools already programmed into the pump.

Standard: The pressure is regulated and set using the star handle, wing nut, and pressure gauge. Refer to the torquing tool’s manual for information about the pressure required for a given torque operation.

During operation, the oil is passed through the existing oil cooler where it is cooled.

Depending on the type, the pump is equipped with one or four pairs of couplers for connecting torquing tools.

Up to four torquing tools can be connected to the pump with four pairs of couplers. The top four couplers are designed as plugs (“male”). The bottom four couplers are designed as sockets (“female”). The upper couplers are responsible for the Advance function of the connected tool. The lower couplers are responsible for the Retract function of the connected tool.

## TECHNICAL SPECIFICATIONS

| Dimensions | |
|---|---|
| **Width:** | 290 mm (11.41 in) |
| **Height:** | 510 mm (20.08 in) |
| **Depth:** | 535 mm (21.06 in) |

| Dimensions of transport case | |
|---|---|
| **Width:** | 401 mm (15.8 in) |
| **Height:** | 680 mm (26.8 in) |
| **Depth:** | 662 mm (26.1 in) |

| Operating weight including hydraulic oil and battery pack | |
|---|---|
| **One pair of couplers** | 37.9 kg (82.2 lbs.) / 40.6 kg (80.5 lbs.) |
| **Four pairs of couplers** | 38.9 kg (85.8 lbs.) / 42.4 kg (93.4 lbs.) |

| Electrical data | |
|---|---|
| **Drive type:** | Electric motor |
| **Voltage:** | 48 V DC |
| **Output:** | 1.9 kW (2.55 HP) |
| **Protection category:** | IP 65 |
| **Battery pack type:** | LIGHTNING S |

| Information about the hydraulics | |
|---|---|
| **Oil recommendation[1] for temperatures above 10 °C (50 °F):** | AVIA fluid HVI 32 or other oils recommended by HYTORC. |
| **Recommended viscosity grades:** | Starting at +10 °C (50 °F) 32–46 $mm^2/s$, below +10 °C (50 °F) 15–22 $mm^2/s$ |
| **Tank volume:** | 2.45 l (0.65 US. liq. gal) |
| **Working pressure:** | Max. 700 bar (10.000 psi) |

[1] Only operate the pump with clean mineral oil-based hydraulic oil.
Alternatively, you can operate the pump with mineral oil-based bio-oil. To be able to use the bio-oil, the entire pump must be flushed through with bio-oil beforehand. Tools and hoses have to be flushed.

## STORING THE PUMP

- Remove the battery pack from the pump before storage.
- Store the battery pack according to the specifications in the supplied manual.
- Store the pump standing up in a dry, dust-free room with a consistent temperature.

The permissible temperature range is –20 °C to +60 °C (–4 °F to +140 °F). The humidity must not be condensing.

*Carrying and setting down*

Further information can be found in the documents supplied with the transport case.

The cross members on the pump frame are also used as handles.

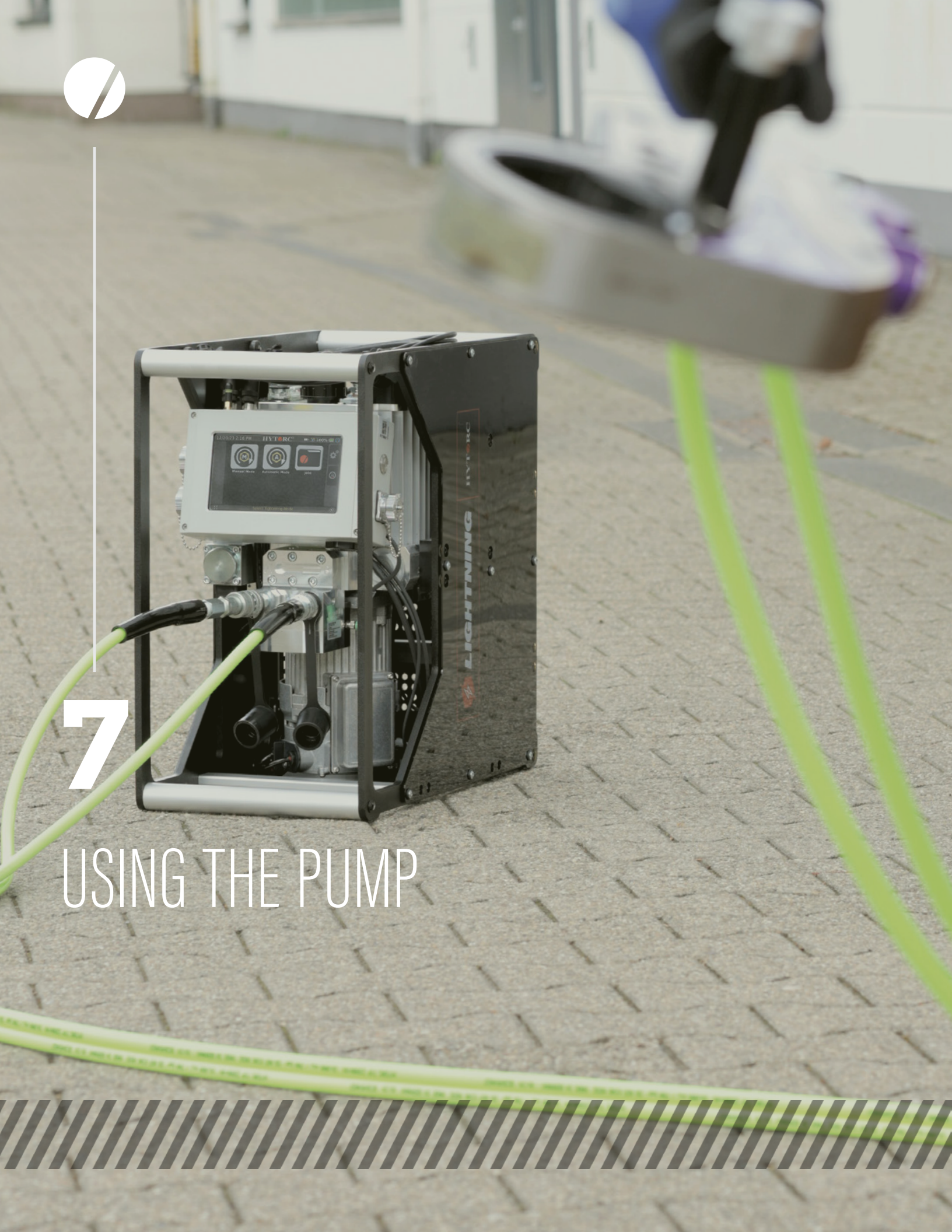
► Lift or carry the pump only using the handles.
► Place the pump in the required position on a flat, solid, stable surface.
► Secure the pump and associated tools to prevent falling and tipping.

Smart only: The pump is supplied in a transport case. This transport case is equipped with a handle and a set of wheels to transport the pump on flat surfaces.

(Available as an add-on for the Standard model.)

**CAUTION**

**Musculoskeletal injuries caused by the weight of the pump.**
► Never carry more than 25 kg (55 lbs.).
► Carry the pump with another person, if necessary




# 7

# USING THE PUMP

# 7. Using the Pump

## INITIAL USE

When you use the pump for the first time after delivery, you must:

- Fill with hydraulic oil.
- Check the battery pack and remote control are in working condition and not damaged.
- Charge battery pack.
- Insert the battery pack.
- Power on the pump.
- Configure initial basic software settings. (Smart model only.)
- Configure general software settings. (Smart model only.)
- Remove the protective caps and connect the tools.
- Perform a test run.

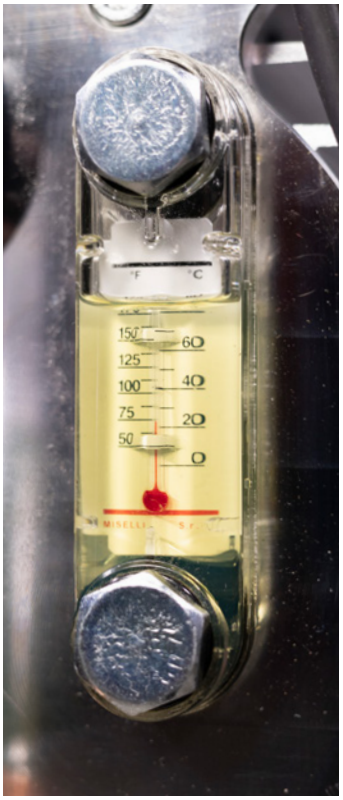
**CAUTION**

**The use of hydraulic oils that do not meet the manufacturer's recommendation may cause damage to the pump. 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 pump, the hydraulic hoses and the tool match.
► If in doubt, flush the components with the type of oil used in the pump.

**Risk of damage from wrong indication on the sight glass**
**If the pump is in a vertical position, the indicators on the sight glass are not correct.**

► Only read the values on the sight glass when the pump is in horizontal position.




**Sight glass for hydraulic oil**

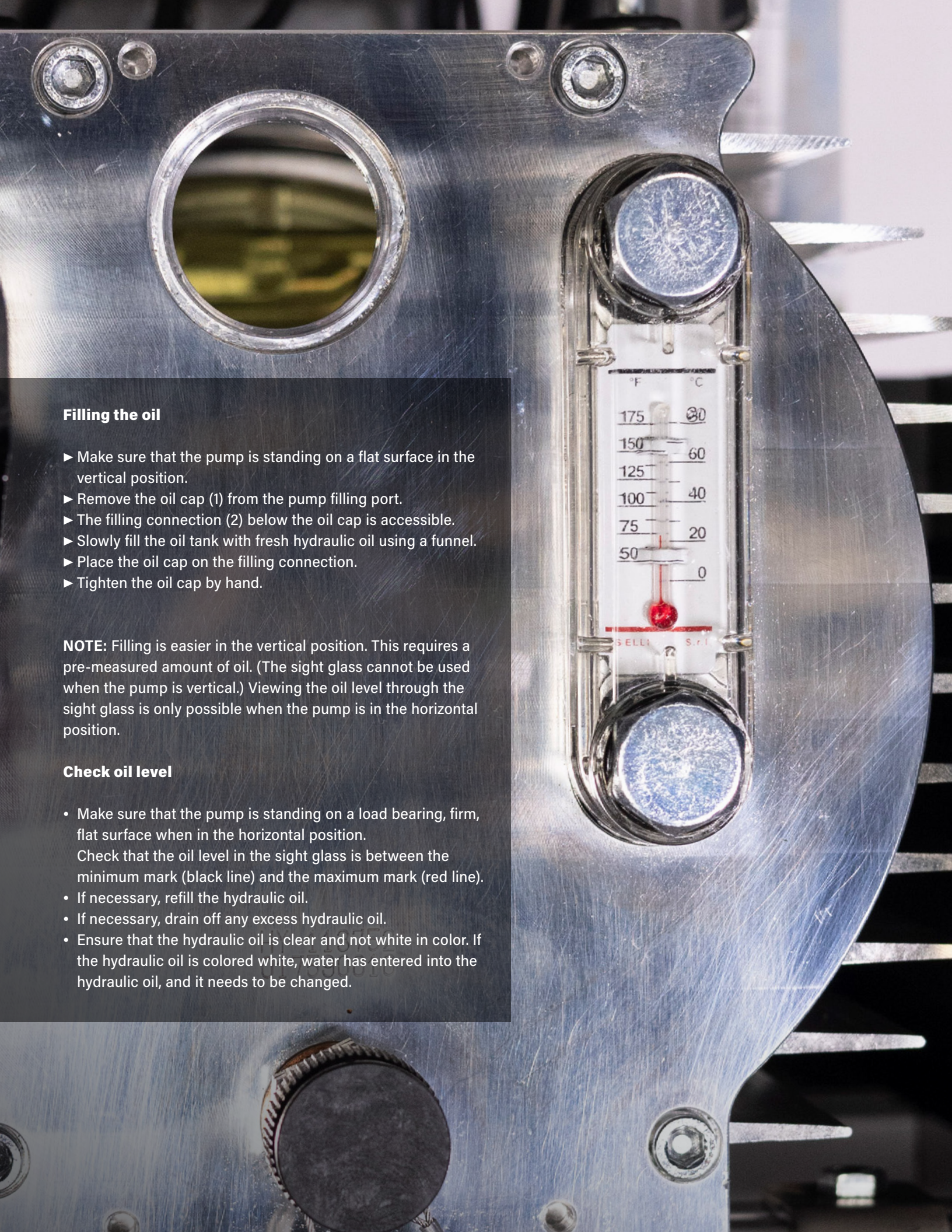
The following hydraulic oil properties are displayed on the sight glass in the horizontal pump position:

- Minimum quantity (marking) – red line (pictured left)
- Maximum quantity (marking) – black line (pictured left)
- Oil temperature (scale) - thermometer on sight glass

**CAUTION**

**Risk of damage from wrong indication on the sight glass**
**If the pump is in a vertical position, the indicators on the sight glass are not correct.**

► Only read the values on the sight glass when the pump is in horizontal position.




**Filling the oil**

- ► Make sure that the pump is standing on a flat surface in the vertical position.
- ► Remove the oil cap (1) from the pump filling port.
- ► The filling connection (2) below the oil cap is accessible.
- ► Slowly fill the oil tank with fresh hydraulic oil using a funnel.
- ► Place the oil cap on the filling connection.
- ► Tighten the oil cap by hand.

**NOTE:** Filling is easier in the vertical position. This requires a pre-measured amount of oil. (The sight glass cannot be used when the pump is vertical.) Viewing the oil level through the sight glass is only possible when the pump is in the horizontal position.

**Check oil level**

- Make sure that the pump is standing on a load bearing, firm, flat surface when in the horizontal position.
  Check that the oil level in the sight glass is between the minimum mark (black line) and the maximum mark (red line).
- If necessary, refill the hydraulic oil.
- If necessary, drain off any excess hydraulic oil.
- 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, and it needs to be changed.

**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.

**Risk of slipping due to leaked oil**

► Take up spilled oil with a suitable binder agent.

► Wear safety shoes with non-slip soles..

**The use of hydraulic oils that do not meet the manufacturer's recommendation may cause damage to the pump. Warranty claims can become invalid.**

► Only use hydraulic oil recommended by the manufacturer.

► Do not mix different types of oil with each other.

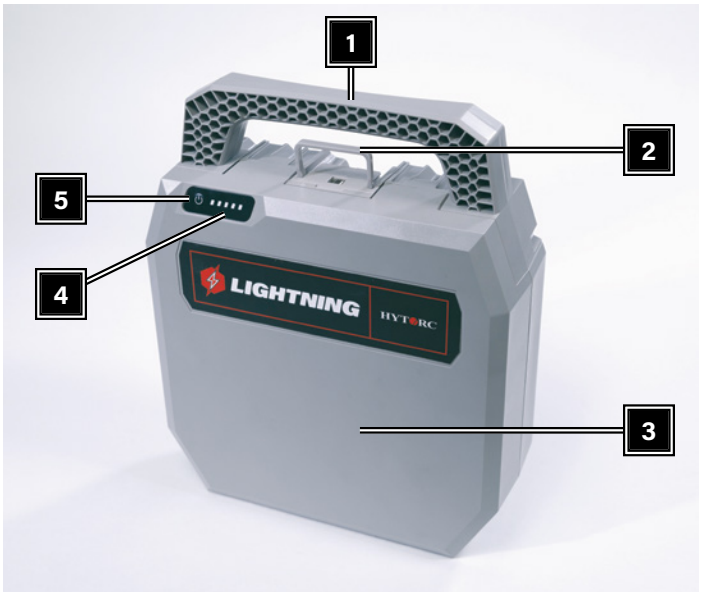
► Make sure that the oil types in the pump, the hydraulic hoses and the tool match.

► If in doubt, flush the components with the type of oil used in the pump.

**Damage caused by using the wrong battery pack.**

**Incorrect electrical voltage and frequency can damage the electrical control system. The pump power may be reduced.**

► Make sure that only the battery pack supplied or an identical battery pack from the same manufacturer is used in the pump.


**Inserting the battery pack**

► Make sure that the battery pack (3) is charged according to the manufacturer's specifications.

► Make sure that the battery pack and the locking mechanism (2) are not damaged.

► Make sure the protective cap for the battery holder connection is off before inserting the battery.

► **Make sure that the release clip on the locking mechanism is folded down.**

► Lift the battery pack by the handle (1).

► Place the battery pack in the battery pack holder so that the two grooves on the back of the battery pack face the front of the pump. Use the guide rails on the pump to slide it in so that it locks into place.

► The battery pack is automatically switched on as soon as you press the power button on the electrical control system of the pump.

► To check the charge level of the battery pack press the ON/OFF button (5) on the battery pack.

The charge level of the battery pack is indicated by the LED (4).

**CAUTION**

**Injuries caused by the ejection of the torquing tool from the torque connection.**

► Prior to switching on the pump, place the torquing tool on the ground.

► Make sure that no unauthorized persons are in the work area.

### Power button

An LED power button is located on the right-hand side of the electrical control system. The LED indicates the various operating states as follows:

- LED off: Pump is switched off.
- Multicolored LED light: Pump has been switched on; the system is starting up.
- Flashing or red light: System errors
- Green light: Pump is ready for operation.

### Powering on the pump for the first time

► Press the power button on the electrical control system.

The power button lights up with different colors when the pump is initialized. Once the initialization process has been successfully completed, the power button lights up green. If the power button lights up red, there is an error.

► If an error occurs, press the power button again to switch off the pump.
► Repeat the power-on procedure.
► If the error continues to occur, contact the manufacturer.

### Configuring initial software settings - Smart

You must configure the following settings on the display the first time the pump is turned on.

- Language
- Date and Time
- Network Settings
- Choose the units for
  - Temperature
  - Torque
  - Pressure

You cannot go back in the menu during the initial configuration. However, the settings can still be changed later on (in some cases only with supervisor authorization).

The chosen value will be highlighted by a yellow box.

**CAUTION!**

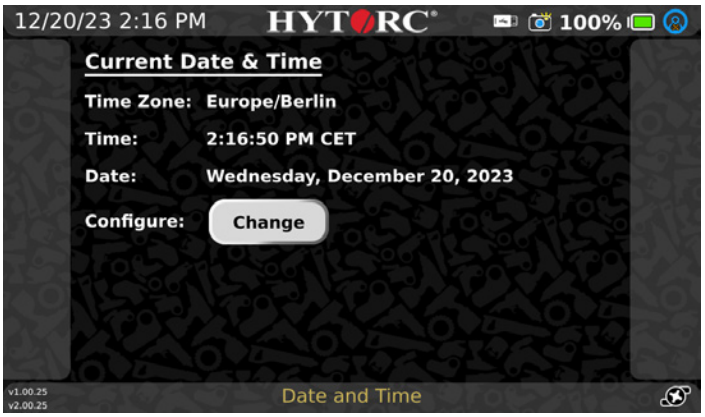
**Operating errors due to setting incorrect language.**
**After setting the language, the language changes immediately.**
► Do not set a language you do not understand.


### Setting the language

When powering on for the first time, the first screen prompts you to set a language.

**The representation of the languages in the following figure is an example.**

► Choose the required language by pressing the icon for that language.
The language changes immediately. The menu for date and time is then shown in the selected language.

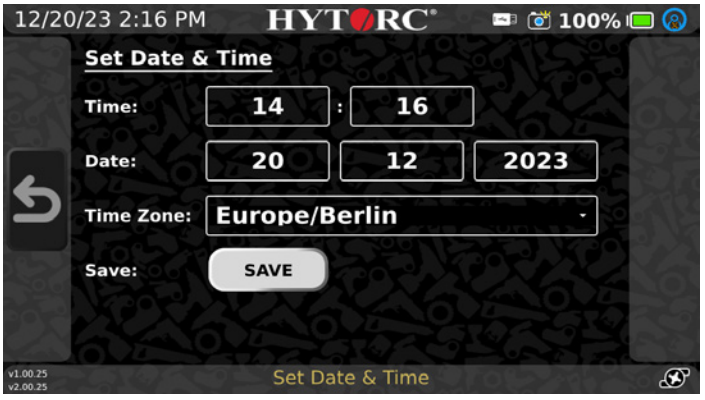



### Setting the date and time

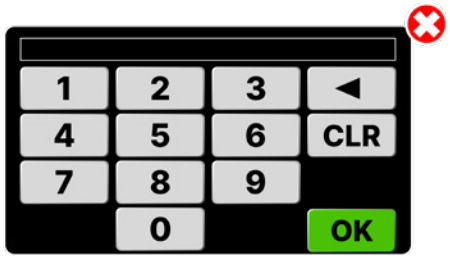
The date display format depends on the selected language.

► Press “Change” to change it.

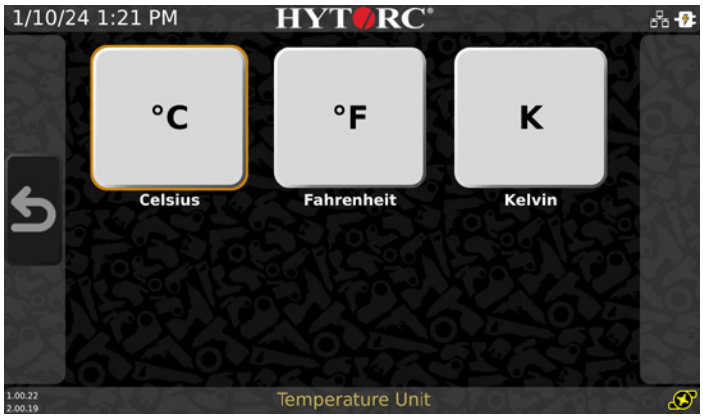
The menu for setting the Date and Time is displayed.




Press the value to be changed.
The numerical keypad is displayed:



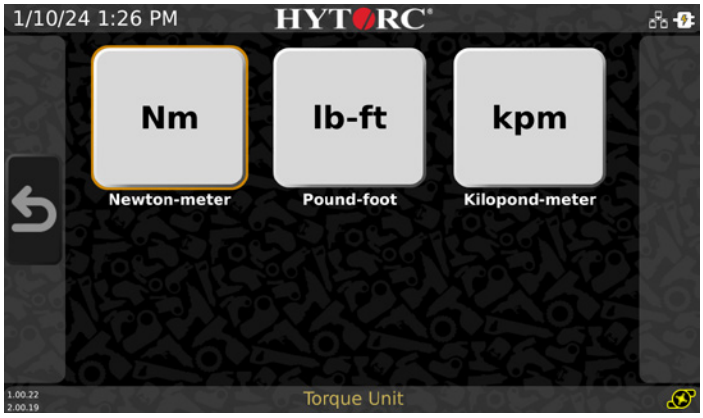

► Use the numerical keypad to set the correct value for each field.
► Confirm each entry by clicking OK .
► Choose the relevant Time Zone in the dropdown menu.
► Press “Save”.




### Setting the temperature units

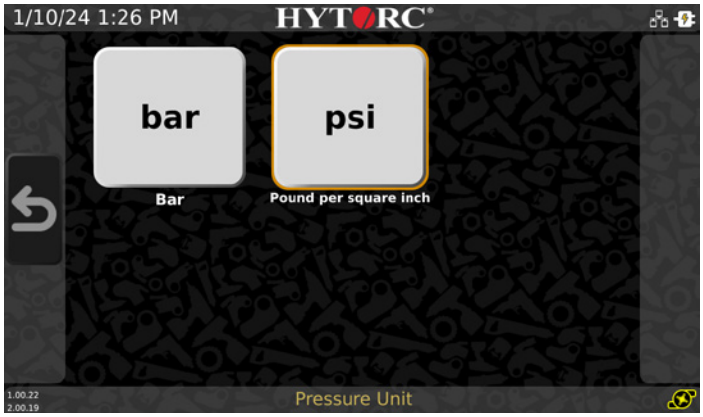
► Choose the temperature unit by pressing one of the icons:
- °C (Celsius)
- °F (Fahrenheit)
- K (Kelvin)

► Then press the back button.




### Setting the torque unit

► Choose the torque unit by pressing one of the icons:
- Nm (Newton-meter)
- ft.-lb. (foot-pound)
- kpm (kilopond-meter)



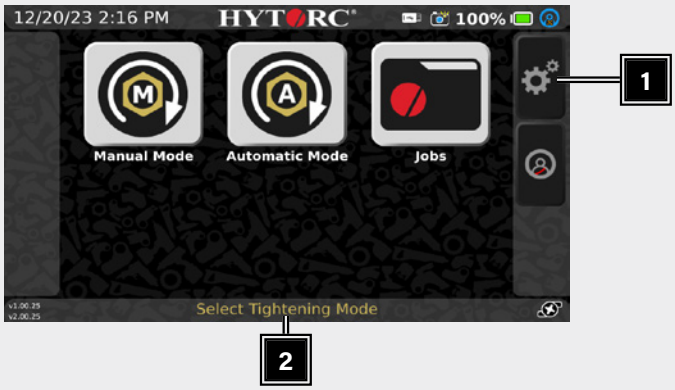

### Setting the pressure unit

► Choose the pressure unit by pressing one of the icons:
- bar
- psi

The initial configuration is complete; the pump is ready for use. The start screen is then displayed.

## TOUCH SCREEN DISPLAY – SMART

### START SCREEN




| | NAME |
|---|---|
| 1 | Settings Menu |
| 2 | Name of current menu screen |

#### Daily Use – both models

For daily operation you must:

- Check the oil level.
- Check that the battery pack and remote control are in in working condition and not damaged.
- Charge battery pack.
- Insert the battery pack.
- Remove the protective coupler caps and connect the tools.
- Power on the pump.
- Perform a test run.

► Only use a pump in working condition and not damaged.

**CAUTION!**

**Risk of damage from wrong indication on the sight glass**
**If the pump is in a vertical position, the indicators on the sight glass are not correct.**
► Only read the values on the sight glass when the pump is in horizontal position.

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

## SETTING THE PRESSURE WITH THE PRESSURE CONTROL VALVE – STANDARD


### Pressure Gauge

The pressure control valve is used for adjusting the required oil pressure. Refer to the torque tool's manual for information about the pressure required for a given torque value. Alternatively, visit the download area on the HYTORC website.

Check for correct pressure on the pressure gauge (pictured left).

### Pressure Regulator

- Press and hold the green button on the remote control to switch the motor on. Hydraulic pressure is built up in the pump.
- Turn the star handle on the pressure control valve clockwise and hold the green button at the same time/until required pressure is confirmed.
- The current pressure is visible on the pressure gauge.
- If the pressure exceeds the required value, release the green button and turn the star handle on the pressure control valve slightly counterclockwise.
- Press the green button again to display the current pressure.
- If the pressure is still higher than the required value, repeat the previous steps.
- Tighten the wing nut so that the set pressure cannot be changed inadvertently. The required pressure is now set.
- Release the green button.
- The pump is now ready to be used with the connected torque tool to perform torque processes.

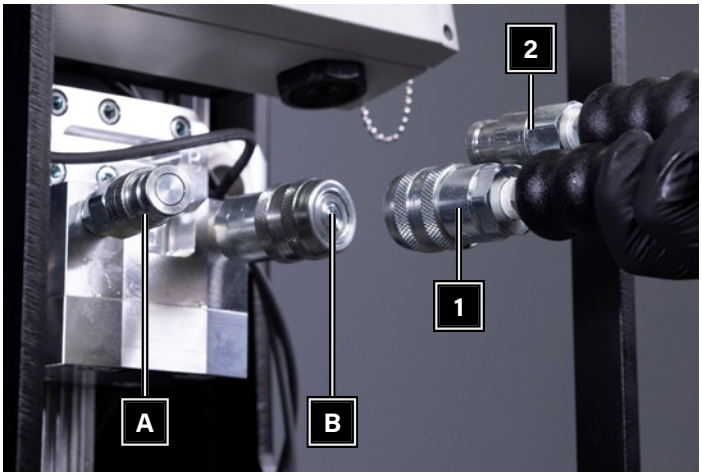
Note: The pressure is ALWAYS to be set from bottom to top, or lower to higher.

**The pressure may only be adjusted by increasing the pressure. Otherwise, incorrect values are displayed.**

## CONNECTING TOOLS

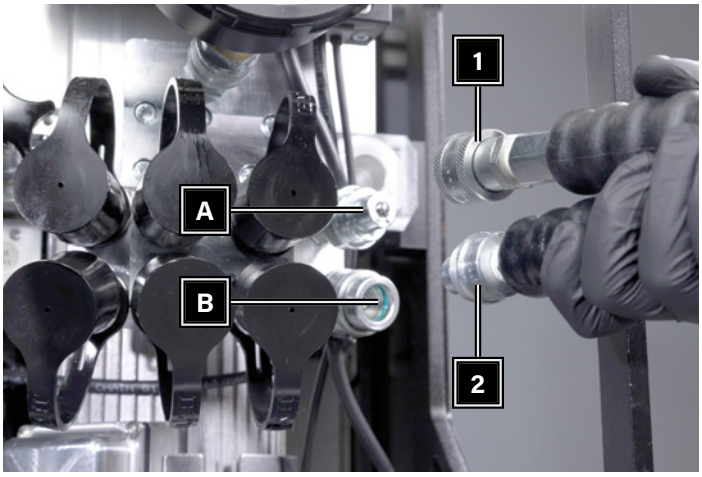
Before you can connect a tool, you must remove the protective caps from the pair of couplers. The protective caps are permanently connected to the corresponding couplers.

### Connecting a tool with a quick connect coupler (Smart)




- ► Ensure that the hydraulic hoses are not damaged.
- ► Clean the couplers on the pump and hydraulic hoses with a dry cloth.
- ► Press the socket (“female”) connection (1) on the hydraulic hose onto the plug (“male”) connection (A) and make sure it is secure. Then turn the collar and lock it into place.
- ► Press the plug (“male”) connection (2) into the hydraulic hose into the socket (“female”) connection (B) and make sure it is secure. Then turn the collar and lock it into place.
- ► Pull firmly on the hose to make sure it is secure.

### Connecting a tool with a screw style coupler (Standard)




- ► Ensure that the hydraulic hoses are not damaged.
- ► Clean the couplers on the pump and hydraulic hoses with a dry cloth.
- ► Plug the socket (“female”) connection (1) of the hydraulic hose into the plug (“male”) connection (A) of the pump. Twist until the connection with the screw style coupler is hand tight.
- ► Plug the plug (“male”) connection (2) on the hydraulic hose into the socket (“female”) connection (B) of the pump. Twist until the connection with the screw style coupler is hand tight.
- ► Pull firmly on the hose to make sure it is secure.

### Air in the system error (Smart only)

If the error message “Air in the system” is displayed, proceed as follows:

► Ensure that none of the components of the torquing system is leaking.
► Connect a twin-line hydraulic hose to a pair of couplers.
► Connect the free hydraulic hose connections to each other.
► Power on the pump.
► Switch to manual mode.
► Choose an average setpoint for the pressure (ex. 5,800 psi (~400 bar).
► Choose the pressure control valve tool.
► Press and hold the green button on the remote control for about 30 seconds.

### Remote control

### Using the remote control – Smart (manual mode) & Standard

| OPERATION | RESULT |
|---|---|
| ► Press the green button once and then release. | The motor is started. The connected tool is moved into the starting position (Retract, "B"). |
| ► Hold the green button. | Performs the torquing process with the tool once (Advance, "A"). |
| ► Press and release the green button repeatedly. | Cycles the tool. |
| ► Press the red button. | Stops the torquing process. The motor is stopped and the system depressurized. |

### Using the remote control in automatic mode – Smart

| OPERATION | RESULT |
|---|---|
| ► Press and hold the green button. | Carries out the torquing process with the selected settings. |
| ► Release the green button. | The torquing process is interrupt-ed/paused. |
| ► Press the red button. | Stops the torquing process. The motor is stopped, and the system depressurized. |

Before and after each tool change perform a test run. This ensures that no oil leaks occur, and all components are functioning correctly. Once a test run is successful, the pump can used for tightening.

**Performing a test run – Smart**

► Choose Manual Mode on the start screen.
► Confirm this choice by pressing OK .
► Connect a torque tool.
► Enter a torque value for the connected tool.
► Choose the connected torque tool in the tool menu.
► Perform system measuring (See System Measuring section.)

**Performing a test run – Standard**

► Connect tool to pump. Set pressure to max. 10,000 psi (700 bar).
► Advance and retract the tool using the remote control.
► Ensure there are no leaks on pump and tool.
► Ensure pump and tool are properly functioning and tool is engaging correctly.

**DANGER**

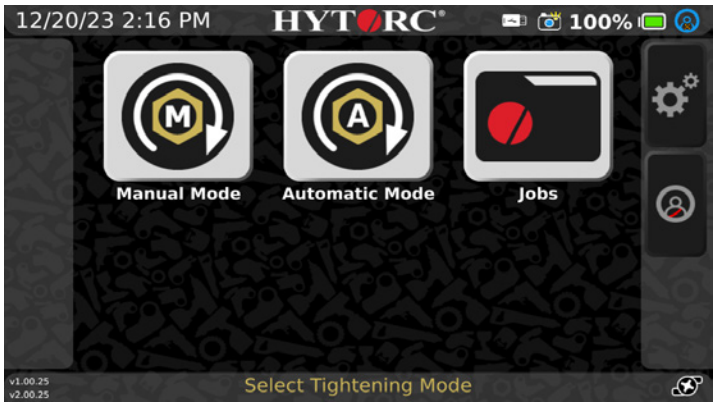
**Explosion hazard when operating the pump in explosion-hazardous areas**
**Operating the pump in explosion-hazardous areas can lead to serious injury or death.**
► Operate the pump only in areas where there is no explosive atmosphere (check first for safe levels).

**Operating the pump – Standard**

- Make sure that the pump is standing on a dry, level, solid and stable base.
- Connect the tool to pump.
- Set the pressure on the pump.
- Apply the tool onto the application and cycle the tool until torque is reached.

**Operating the pump - Smart**

- Make sure that the pump is standing on a dry, level, solid and stable base.
  - Connect the tool to the pump.
  - Turn on the pump.
- The start screen appears after switching on the pump.
- Choose Tightening mode.
- Enter torque settings.
- Follow directions on the screen.
- Put the tool onto application and cycle the tool until torque is reached.




The start screen appears after switching on the pump.

### User levels (Smart ONLY)

The pump control system distinguishes between three types of user groups with different user permissions and levels

- User
- Supervisor
- HYTORC service technician

**Users:** The users have access to all functions that are required for bolting. They can only see the settings that are made visible to them. Users can operate the pump without entering a password.

**Supervisors:** Supervisors have advanced configuration options and authorizations. Supervisors log in with a password. The default password is 1871. Change the password immediately after the first use.

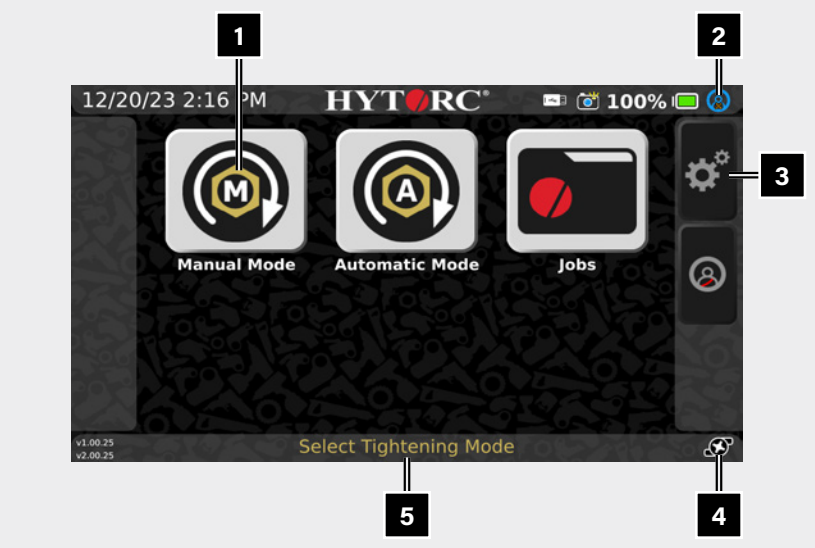
**A logged-in supervisor is identified on the display by a turquoise-colored user icon.**

### Basic software operation

► Operate the software by pressing the icons in the center (1) or at the side (3).
This will take you to other menus or allow you to run a function.

The top line displays the operating status (2).

The bottom (4) line displays the menu you are in and what the status of the motor is.




| | NAME |
|---|---|
| 1 | Keypads for function selection |
| 2 | Upper indicator bar |
| 3 | Keypads for navigating the menu |
| 4 | Lower indicator bar |
| 5 | Name of current menu screen |

### Explanation of the Symbols

The following icons can be found on the sides of the screen.

| SYMBOL | DESCRIPTION |
|---|---|
|  | Back to home screen. |
|  | Scroll up. |
|  | Scroll down. |
|  | Back |
|  | Save current job. |
|  | Go to settings menu. |
|  | Login (supervisor) |
|  | Go to job settings. |
|  | Delete entry. |
|   | Confirm a selection or input. |
|   | Trigger the stop function. |

### Explanation of the icons (indicators)

The following icons can be displayed in the top and bottom bars of the display screen.

| ICON | DESCRIPTION |
|---|---|
|  | The USB connection is in use. |
|  | A screenshot is taken. |
|  | The Ethernet connection is in use. |
|  | There is an error message. |
|   | White characters: Battery pack charge status |
|   | Orange characters: Backup battery pack charge status on the circuit board |
|  | A user with "supervisor" access rights is logged on. |
|   | "Software versions:<br>– Top (v1.0): Frontend<br>– Bottom (v2.0): Backend" |
|  | Rotating icon: The fan is active. |
|   | Current oil temperature |
|  | "Pump icon:<br>– Yellow: The motor has not been started up.<br>– White: The motor has been started up.<br>– Green rotating fan wheel: The green button on the remote control is pressed down." |

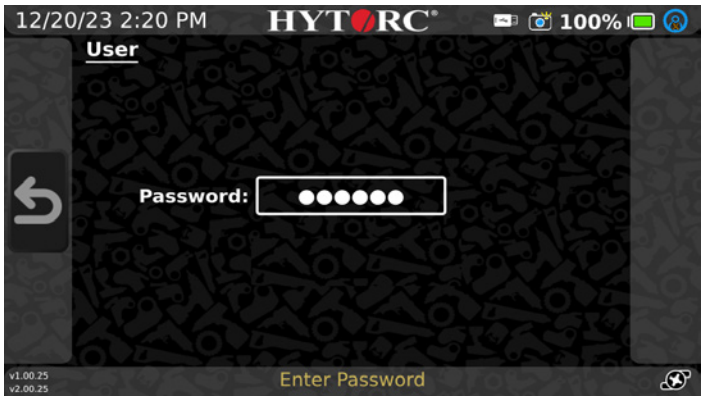
*Settings menu*

The settings menu can be accessed by all users (does not require a login with password):


- Language
- Date and time
- Network
- Display
- Units

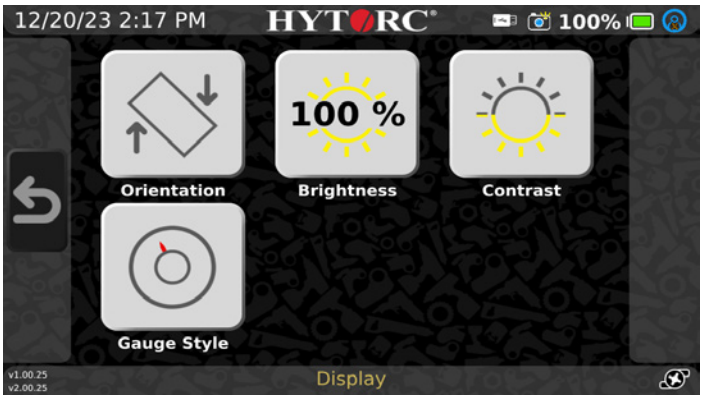

Settings menu for supervisors (requires a login with password).

- All settings for users
- Advanced settings



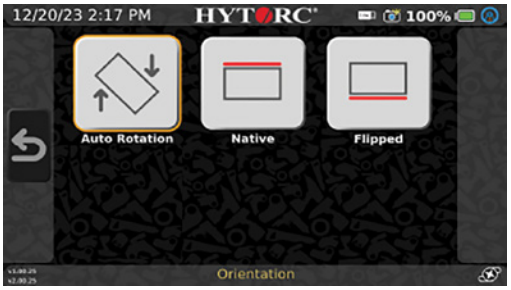

**Logging in as supervisor**

► Press the “Login” icon on the start screen. The Enter Password field is shown.
► Use the numerical keypad to enter the current password.




### Adjusting the display

► Press an icon to call up the setting.

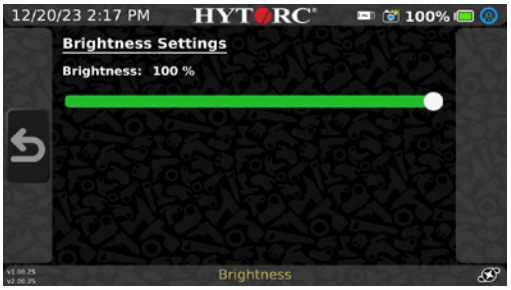

### Orientation

The red line indicates the top of the screen.

**Auto Rotation-** The screen orientation automatically rotates as you shift the pump from vertical to horizontal and back.

**Native –** The default screen position.

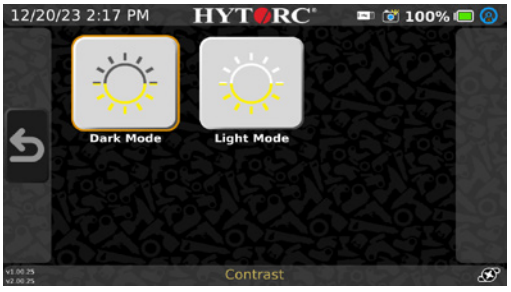
**Flipped –** The screen is upside down when the pump is vertical and stays that way.


### Brightness

Use your finger to move the slider left or right to adjust the brightness.

**The minimum value is 25%.**


### Contrast

- "Dark Mode": White lettering on a black background.
- "Light Mode": Black lettering on a white background.

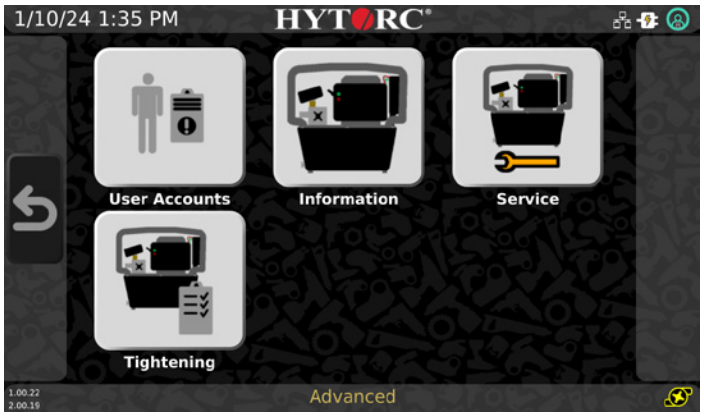

### Gauge Style

**Circular scales are used for illustration in this manual.**

Select desired style and the go back to Start Screen.

You can choose between two display options to indicate the pressure during measurement and tightening.

- "Default": circular scale
- "Modern": curved scale

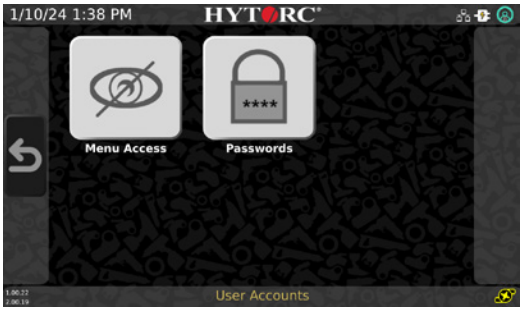



### *Advanced settings at supervisor level*

The advanced settings for supervisors include:

- User accounts
- Information
- Service
- Tightening

► To change advanced settings, you must be logged in with the supervisor password.

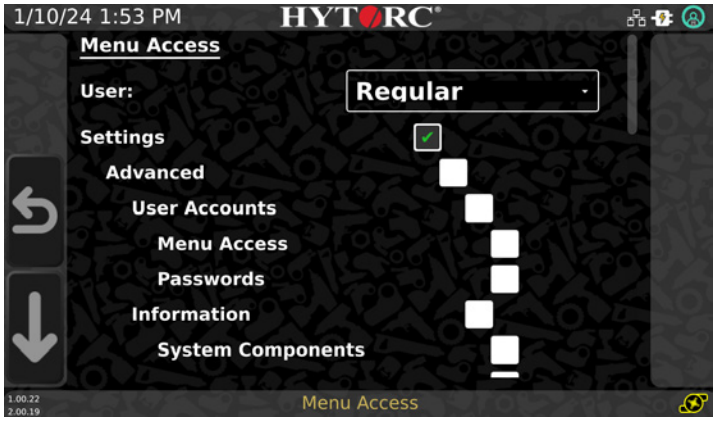

### *User Accounts menu*

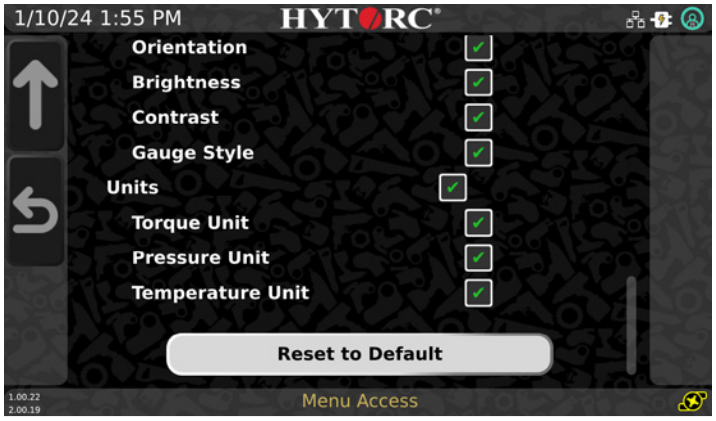
- Menu access
- Passwords

### Changing the menu authorizations for user accounts

► Press a box to check or uncheck certain menus or pages. The menu and/or screen is only visible to users if checked.

**If the check mark for a menu is deleted, the screens following it will automatically be hidden, even if the check marks for those screens are still set.**




**WARNING**

**Unauthorized changes to settings in the software can result in incorrect tightening.**
**Risk of injury and material damage!**

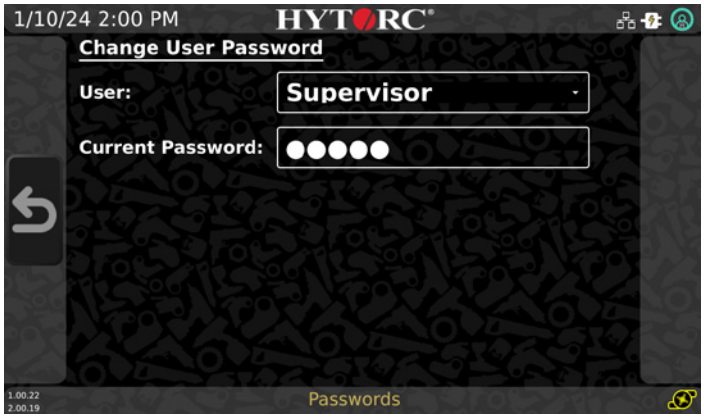
► Change the supervisor password directly after the first Use.
► Make sure that only qualified personnel receive the password.


### Change password

► Press the “Passwords” icon in the “User Accounts” menu. “Supervisor” is displayed under “User”.

**Other user levels displayed in the dropdown list are reserved for the manufacturer’s service personnel.**

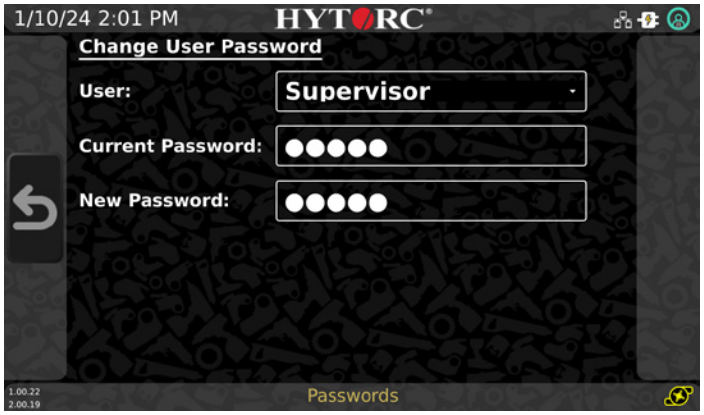
► Choose Supervisors from the drop down menu
► Use the numerical keypad to enter the current password under “Current Password”.




The “New Password” input field is displayed.

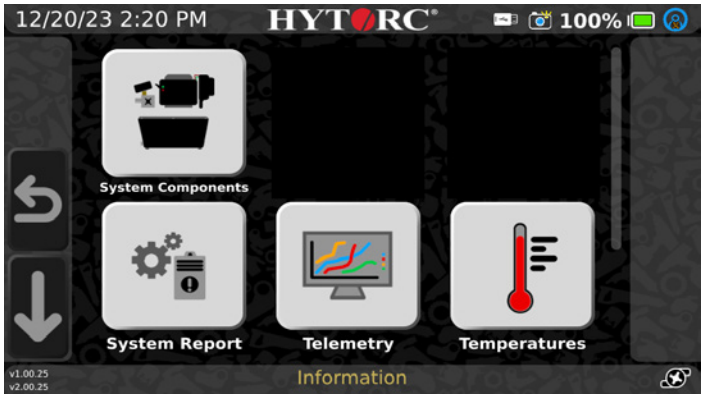
**The new password can be made up of any number of characters.**

► Enter the new password under “New Password”.
The password is changed.
► Make a note of the new password and keep this safe from unauthorized access.




*Information menu*

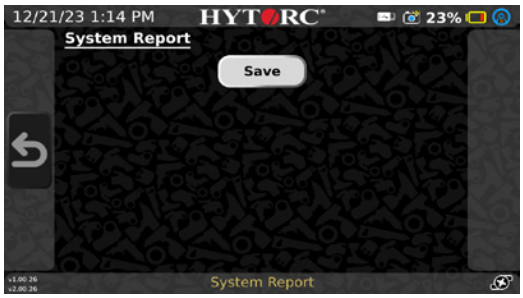
- System Components
- System Report
- Telemetry
- Temperatures




**System components**

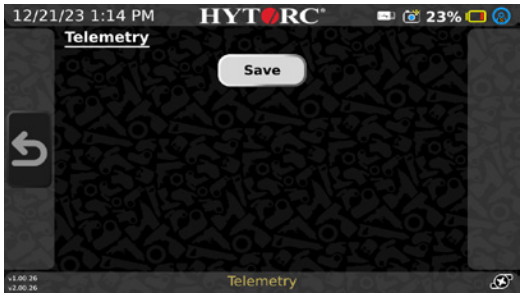
► Press System Components icon
► Use the arrows or scroll bar to scroll up and down and view all the information.

**The error messages are in English. The error code is the most important detail to have when informing the manufacturer of an error.**

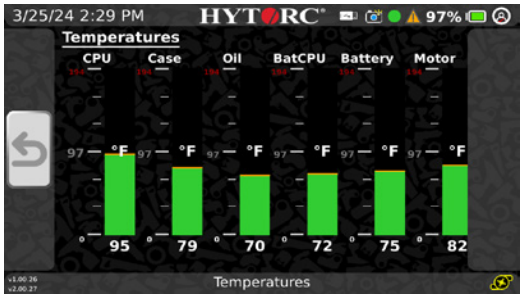

### System report

► Press System Report icon.
► Connect a USB data storage device to the USB port on the left-hand side of the touchscreen case.
► Press the "Save" icon.
► The System Report is saved. This can be read by the manufacturer's service personnel.

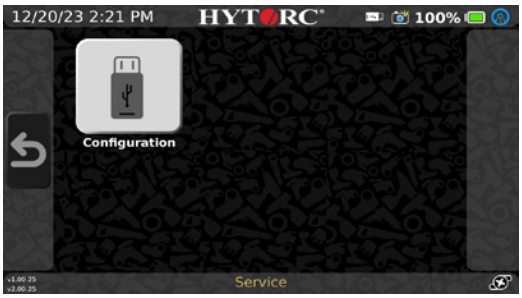

### Saving the telemetry data

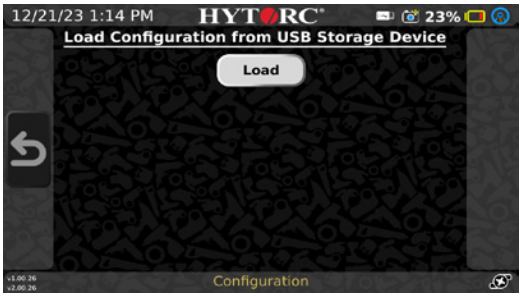
► Press Telemetry icon
► Connect a USB data storage device to the USB port on the left-hand side of the touchscreen case.
► Press the "Save" icon.
► The telemetry data of a tightening process is saved. These can be read by the manufacturer's service personnel.


### Temperatures

- Press the Temperature icon.
  - The temperatures of the following components are displayed:
  - CPU
  - Case (CPU)
  - Oil
  - Battery pack CPU
  - Main battery pack
  - Motor

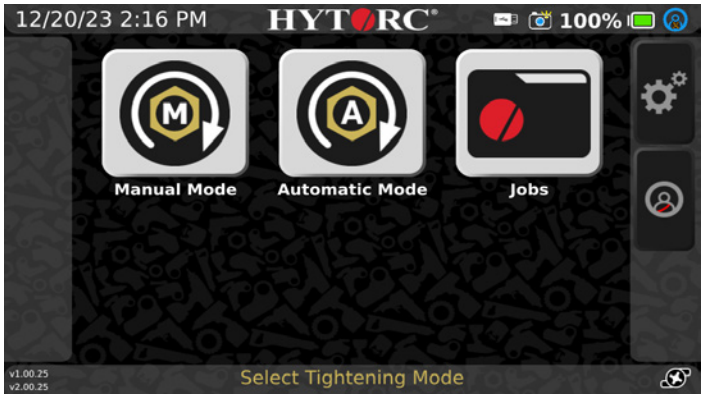

*Service menu*

**Loading the configuration**

Configuration files contain customer-specific parameters or licenses, such as the license for a specific future software upgrade.

► To obtain configuration data for the pump, contact the manufacturer.
► Connect a USB data storage device with a saved configuration to the USB port on the left-hand side of the display.

► Press the "Configuration" icon to open the menu for loading.
► Press the "Load" icon to load the configuration.
► Follow the instructions on the display.


*Tightening*

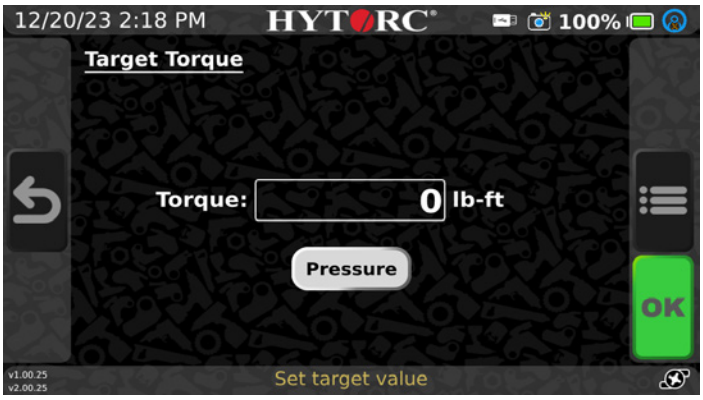
**Initiating the tightening process**

The tightening process is initiated on the start screen:

The tightening process comprises **system measuring** and the **torquing process**. These can be performed in manual or automatic mode.

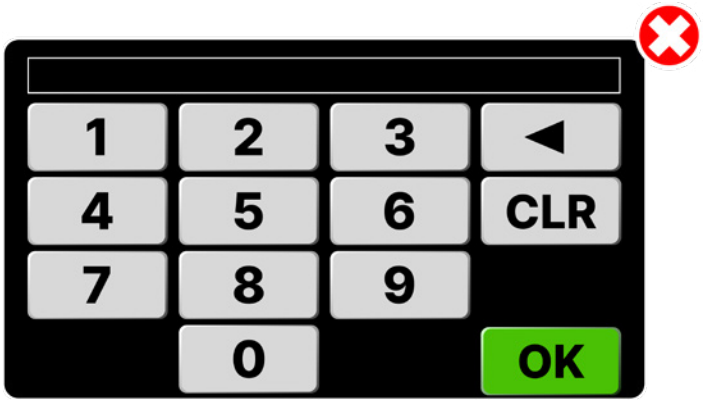
- **Manual:** The individual torquing processes are performed manually.
- **Automatic:** The torquing processes are performed automatically. (Documentation function is available only in automatic mode.)

If jobs have already been entered, the start screen will have the "Jobs" icon too.



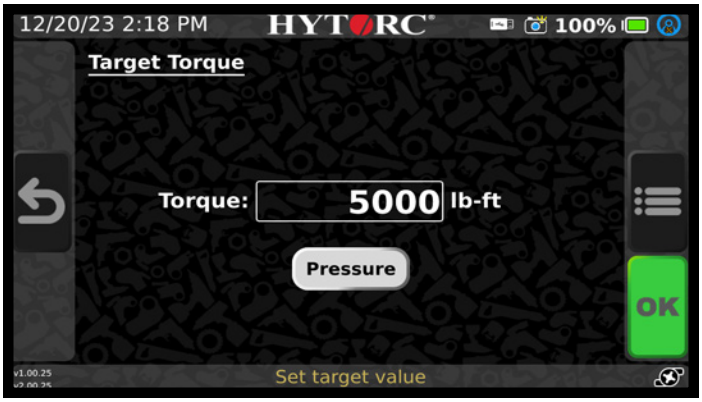

## Tightening in manual mode

- Press “Manual” on the start screen.
  The “Target Torque” menu is displayed:
- Press the input field for the target torque.




The numerical keypad is displayed:

► Use the CLR icon to delete any preset value.
► Use the numerical keypad to enter the required torque.
► Confirm this input by pressing OK .

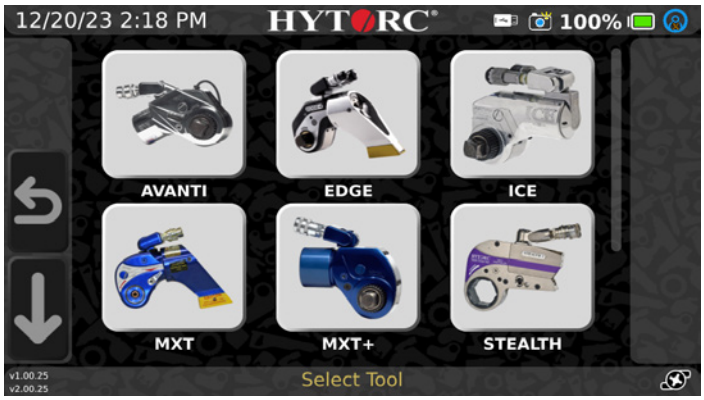



The target torque is displayed.

**The “Pressure” button is not provided to input data for this purpose. The pressure is only entered for service purposes or if no pressure/torque chart is available from the manufacturer. If you do not have a pressure/torque chart, request it from the manufacturer.**

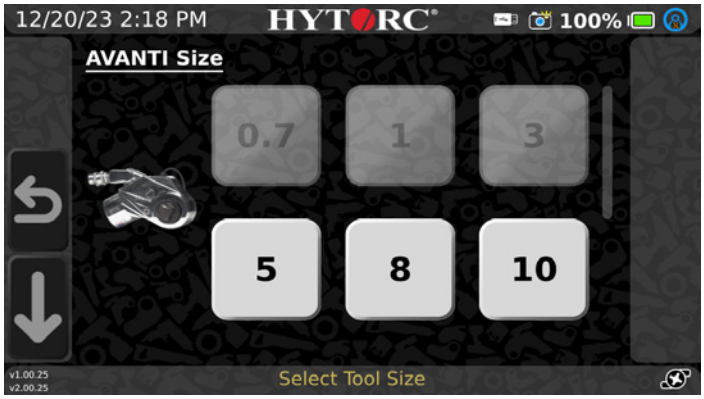
### Tool selection (manual mode)

► To see all tool choices, move the screen display using the arrow keys or the scroll bar until the required tool is displayed.
► Select the required tool.
► Tap a tool image once to highlight it.
► Tap the tool image a second time to select the tool.

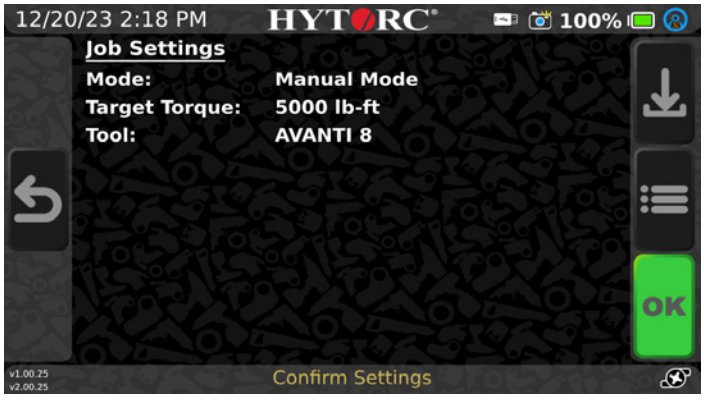



The next screen shows all the available tool sizes. (Incompatible tool sizes are grayed out.)

► Press the required tool size to select it.



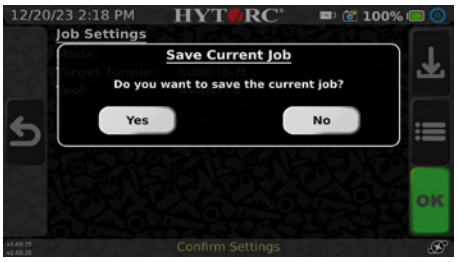

► The overview of the currently configured parameters is then displayed.
► Once all inputs are correct, confirm the job settings by pressing OK .
► To change an input go back to the last menu by using .

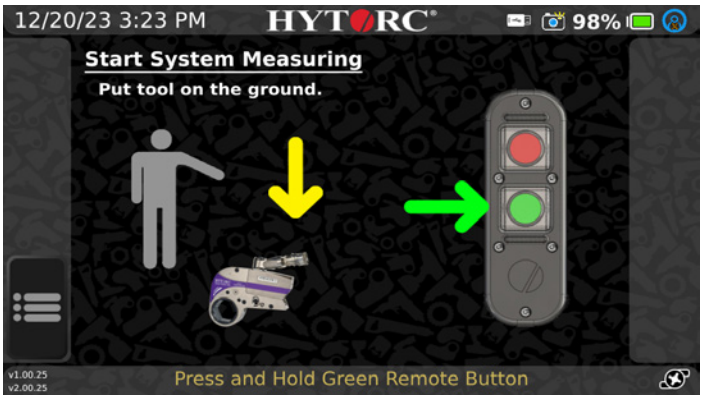



### Saving the current job (manual mode)

► If you would like to store a job for later use from the current job, press "Save." .
► In the following query, confirm by pressing "Yes".
► A job is created; this appears in the job list.
► Confirm by pressing OK .

Then you will see this screen.

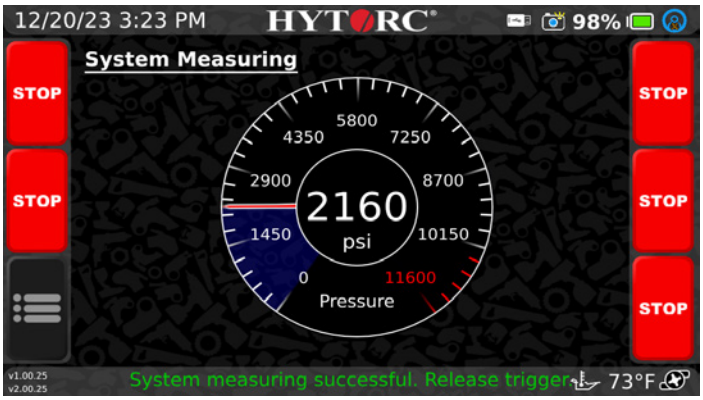




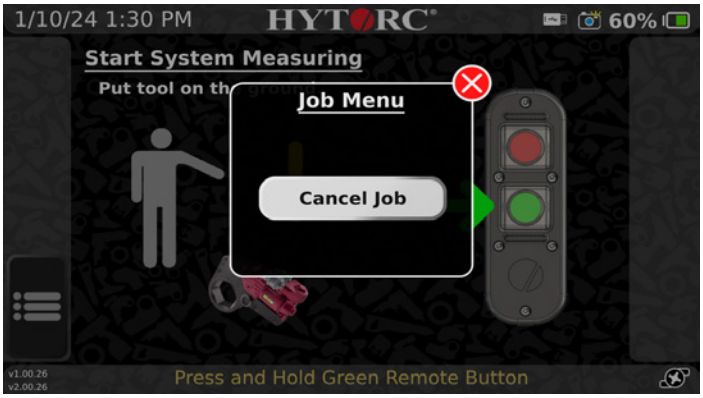

### System measuring (manual mode)

System measuring starts and checks the current status of the pump.

► Place the connected torque tool on the ground.
► Press and hold the green button on the remote control.
► When pressing the green button, the red one will also light up.
► When the target pressure is reached, a buzzer sound.




► Once the system has been measured, “System Measuring Successful” is displayed.
► Release the green button.

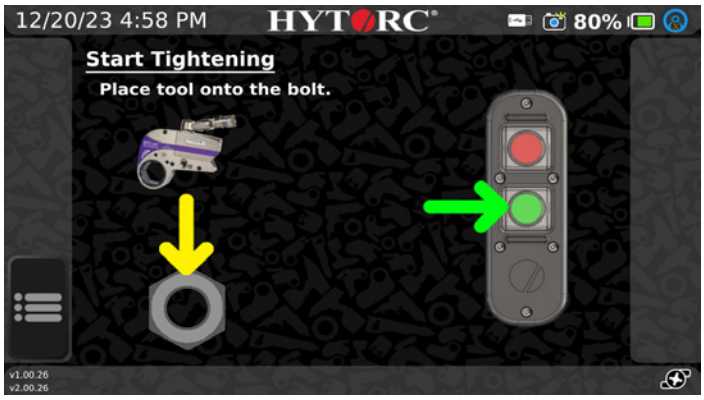



### Cancel job

► Press job menu icon
► Choose Cancel Job
► This can only be done before the bolting process has started.


### Stopping the torquing process (manual mode)

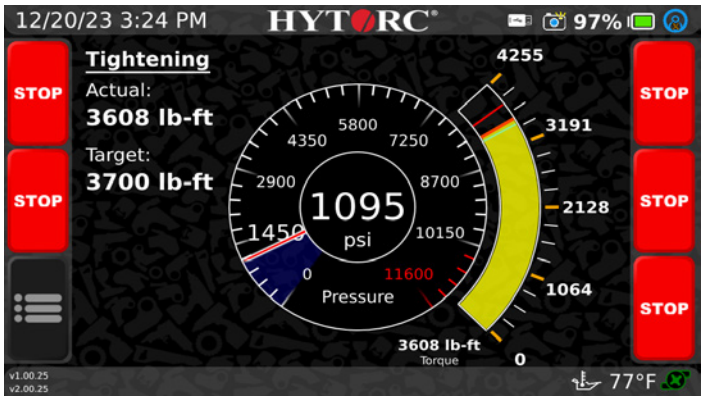
► In a hazardous situation, press the red button on the remote control or the icon on the display.
► Both buttons have the same function. The torquing process is canceled.
► The motor will stop and pressure will be released.




**Carrying out the tightening process (manual mode)**

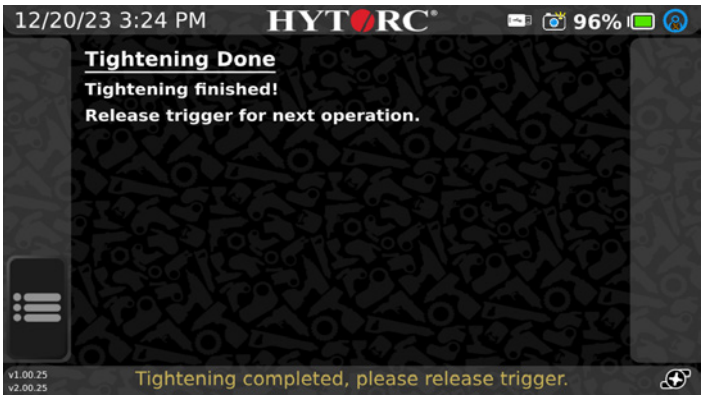
Once the system measuring has been successfully completed, the torquing process can be started.

► Place the connected tool on the first bolt.
► Press the green button on the remote control.



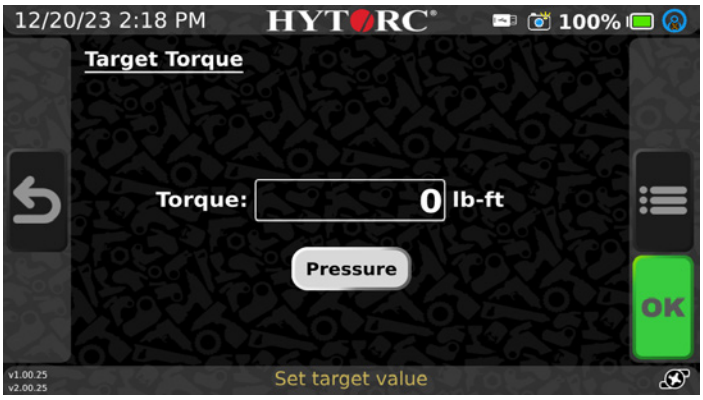

► The menu with the scales for torque and pressure is displayed. You can see the progress on the scale display.
► The curved yellow bar indicates the torque reading.
► Press the green button to advance the tool.
► Release the green button to retract the tool.
► Press the green button repeatedly until the target torque is reached on the dial gauge and the bolt is correctly tightened.
► Press the red button to switch off the motor.

Tightening is complete.




The Operation Results menu appears.

► Press “Save” to save the job parameters.
► Press “Return” to go back to the start screen.




## Tightening in automatic mode

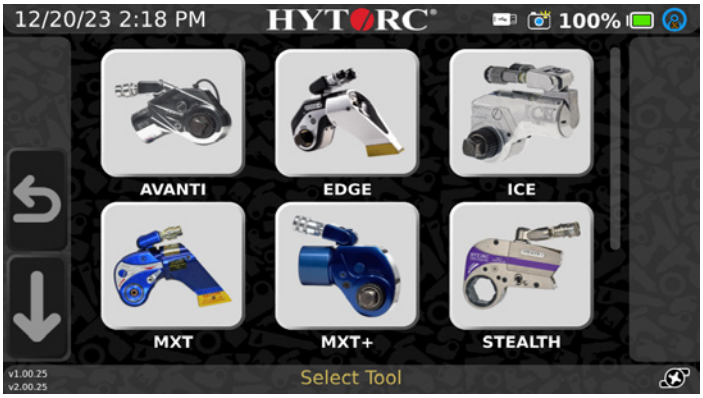
► Press “Automatic” on the start screen.
The “Target Torque” menu is displayed:

► Press the input field for the target torque. The numerical keypad is displayed.
► Use the CLR icon to delete any preset value.
► Use the numerical keypad to enter the required torque.
► Confirm this input by pressing OK .


**The “Pressure” button is not provided to input data for this purpose. The pressure is only entered for service purposes or if no pressure/ torque chart is available from the manufacturer.**

**The target torque is displayed**

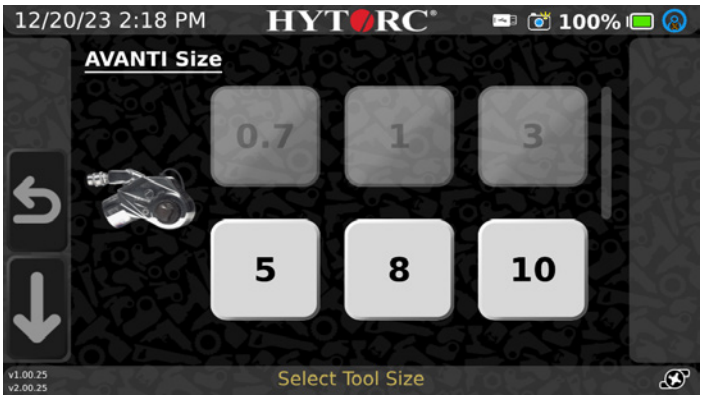
If you do not have a pressure/target torque, request it from the manufacturer.



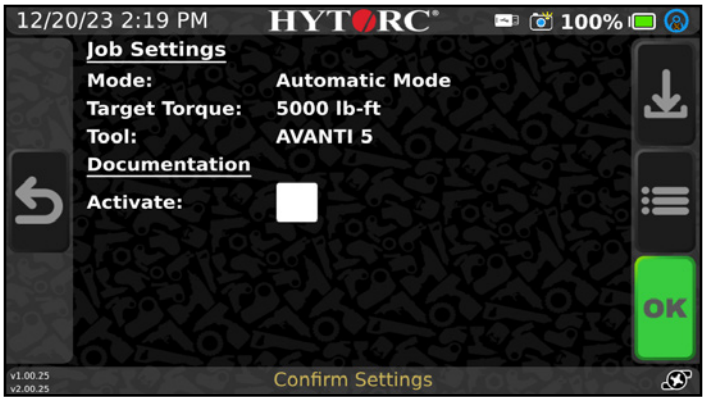

## Tool Selection (automatic mode)

► To see all tool choices, move the screen display using the arrow keys or the scroll bar until the required tool is displayed.
► Select the required tool.
► Tap a tool image once to highlight it.
► Tap the tool image a second time to select the tool.

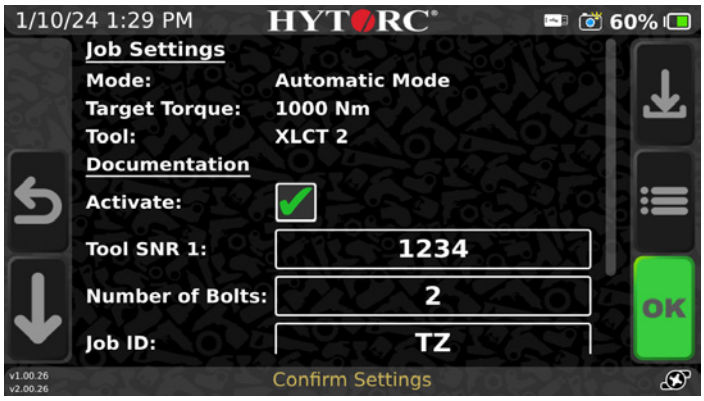
This is followed by the selection of tool sizes for the selected tool. Press the required tool size to select it. Incompatible tool sizes are grayed out.

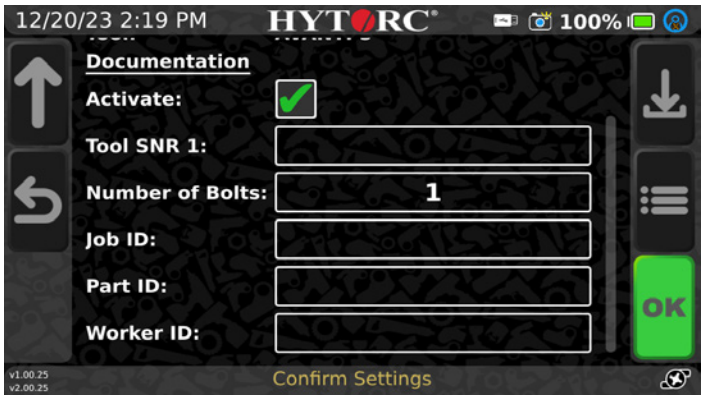



The overview of the currently configured parameters is displayed.




► Once all inputs are correct, confirm the job settings by pressing OK .
► To change an input go back to the required menu using .



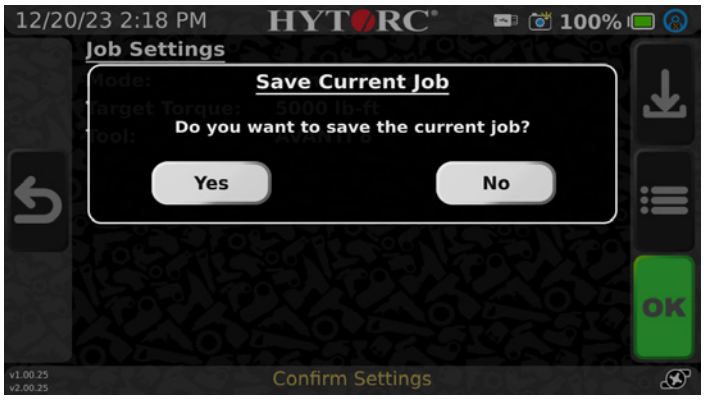

**Documentation (only in automatic mode)**

This function allows you to document the torquing processes. Press the "Activate" button to display Documentation input field.

► If necessary, scroll the screen to display the required input.
► Any of the following can be saved for documentation:
► You will be prompted to enter the following information.
- Tool serial number
- Number of bolts
- Job ID
- Part ID
- Worker ID

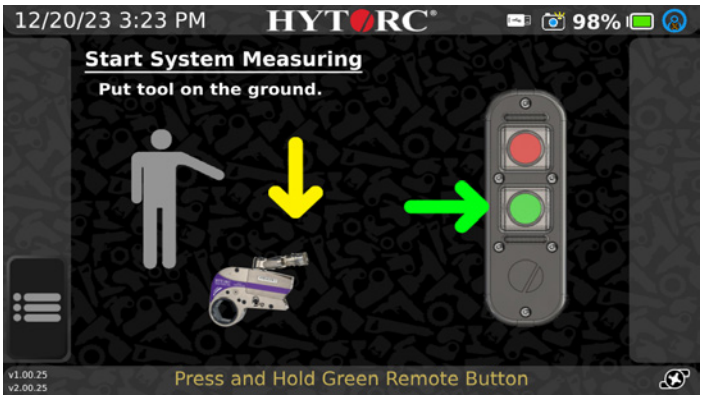
► To change parameters on the screen, press an input field.
► Depending on the input field, either a letter or numerical keypad opens.
► Change the settings as required.
► Fill out every field required for the current job.

Example: Number of bolts - This is where you specify how many bolting operations you want to carry out in one process. If more than one bolting operation is involved, you will be prompted to move to the next step during the bolting process.




**Save the current job (automatic mode)**

► To save the current job and parameters, press "Save" .
► Press Yes to save.
► Confirm by pressing OK .




### System measuring (automatic mode)

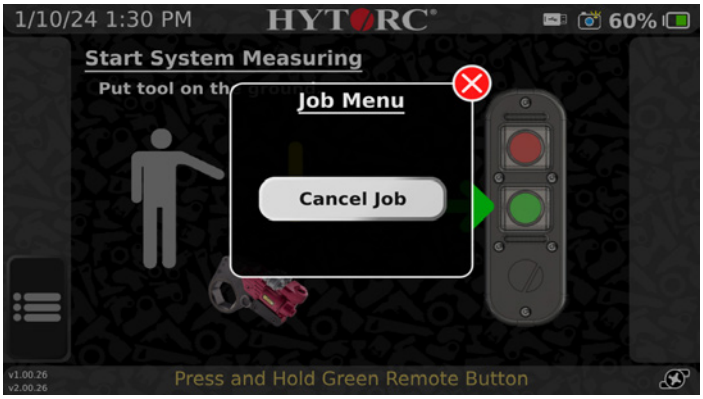
System measuring starts and it checks the current status of the pump.

► Place the connected torque tool on the ground.
► Press and hold the green button on the remote control.
► When pressing the green button, the red one will also light up.

When the target pressure is reached, a buzzer sounds.

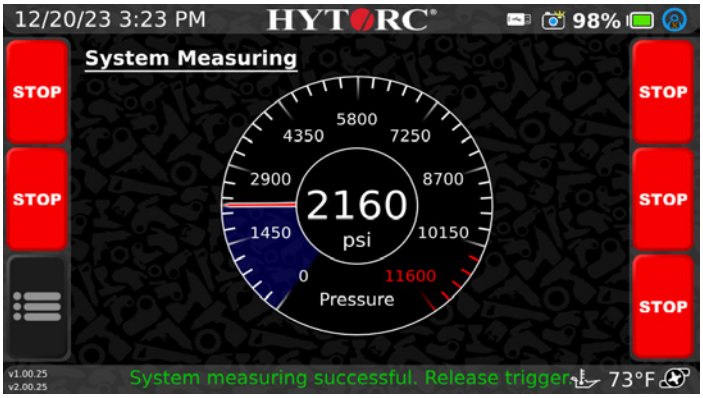
Once the system has been measured, "System Measuring Successful" is displayed.

► Release the green button.




### Cancel job

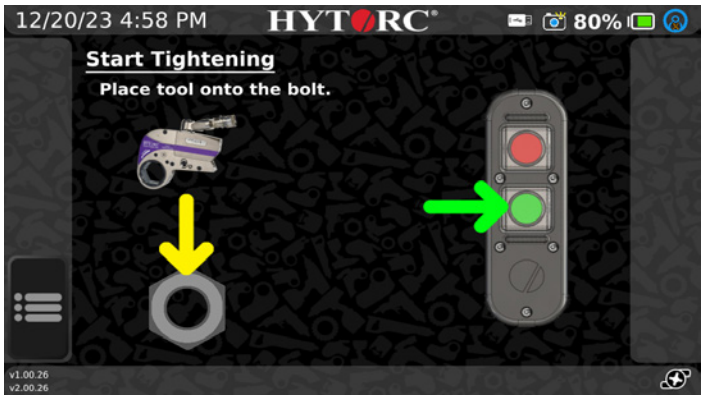
► Press job menu icon
► Choose Cancel Job
► This can only be done before the bolting process has started.




### Stopping the torquing process (automatic mode)

► In a hazardous situation, press the red button on the remote control or the STOP icon on the display.

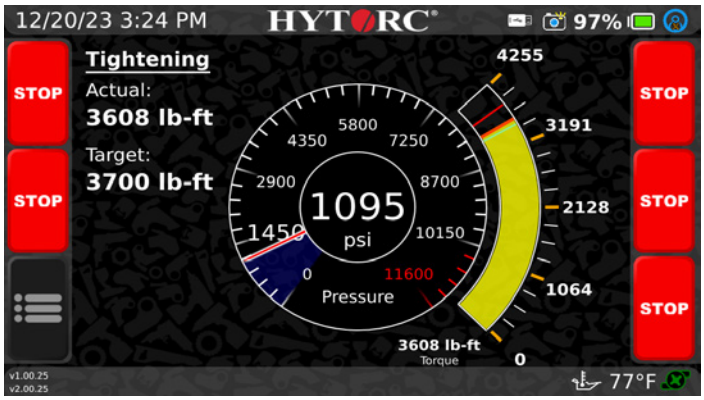
Both buttons have the same function. The torquing process is canceled.



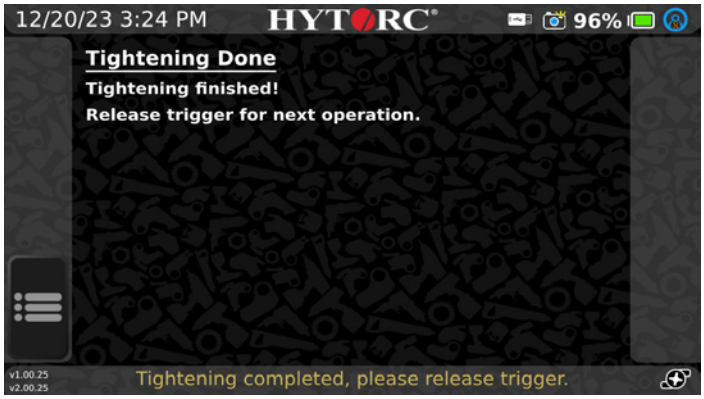

## Carrying out the tightening process (automatic mode)

Once the system measuring has been successfully completed, the torquing process can be started.

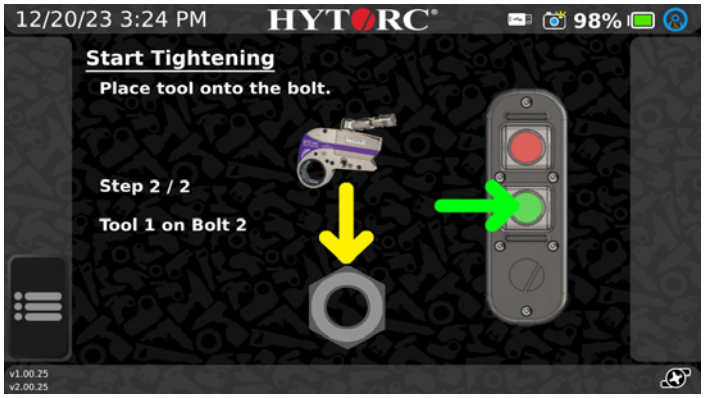
► Place the connected tool on the first bolt.
► Press the green button on the remote control.




► The menu with the scales for torque and pressure is displayed. You can see the progress on the scale display.
- The curved yellow bar indicates the torque reading.
- Press the green button again to advance the tool. Then press and hold the green button.
- The tool moves back and forth automatically until the target torque and the calculated pressure are reached.
- Release the green button when the end of the torquing process is signaled by the remote vibrating and buzzer sounding.




► If more than one tightening operation has been preselected in the documentation, start the next bolt now.
► Place the tool on the next bolt.
► Press and hold the green button to tighten.




- At the end of the tightening process, there is a loud buzzer, and the remote control vibrates.
- The motor switches off and the Operation Results menu appears.
- Press “Save” to save the job parameters.
- Press “Return” to go back to the start screen.


### Releasing the tool during the tightening operation

It may be necessary to release a tool during the tightening process (example:  because it is under strain or gets stuck).

► Open the job menu using the menu icon.
► In the job menu, choose “Release Tool”
► Press the green button.

This does not cancel the job. (If you want to cancel the job, select “Cancel Job.”)


The “Release Tool” screen is displayed.

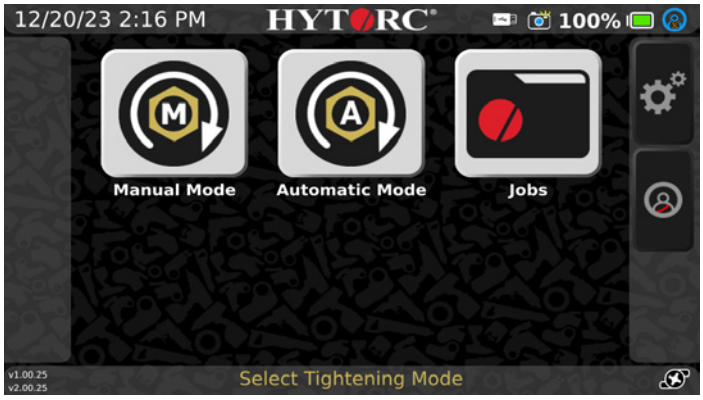
• Press and hold the green button.
The pump extends one stroke to the tool.

► Release the tool and correct the position if necessary.
► Press the red button to switch off the motor when finished.
► Open the job menu again using the menu icon.
► Press “Return to Job” to continue with the job.


### Stop function activated

After pressing , the pump is switched off. To get the torque tool ready to use again, proceed as follows:

► Make sure that any causes for the stop function being triggered have been remedied.
► The tool is ready for use again.
► To continue the interrupted torquing process, press the green button.



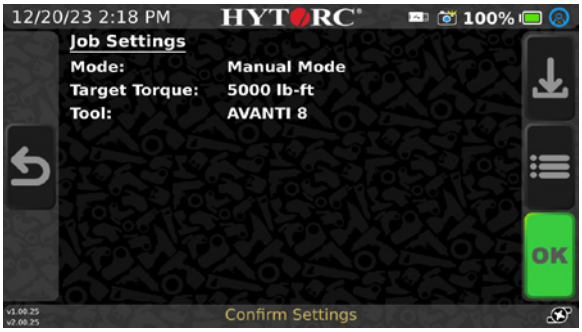

### Calling up an existing job

► Press the “Jobs” icon.


The overview of saved jobs is displayed.

If necessary, scroll the screen until the required job is displayed.

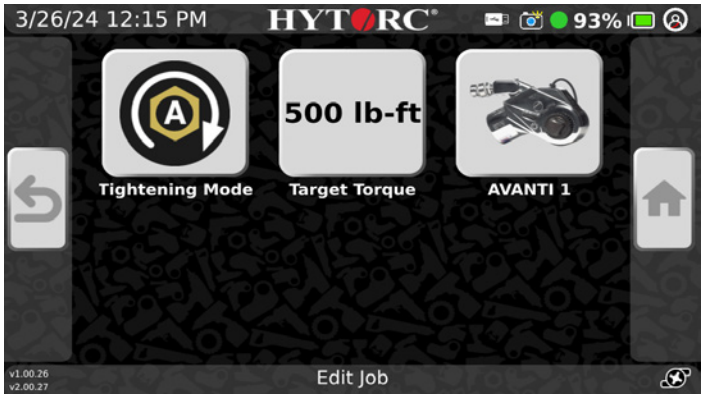
► To select the job, press that job icon once to select the job
► Tape a job once to highlight it.
► Tap the job a second time to select it.
► If you want to use the job in manual or automatic operating mode, proceed as described earlier.

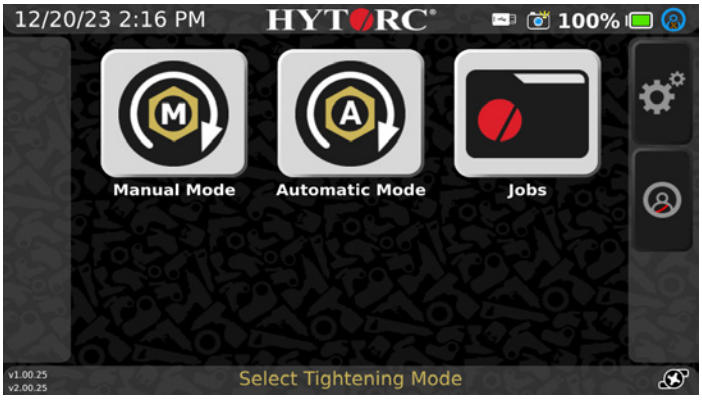



### Edit job

► To edit the job settings press the menu icon.
The job settings are displayed.

► Choose from the following settings.





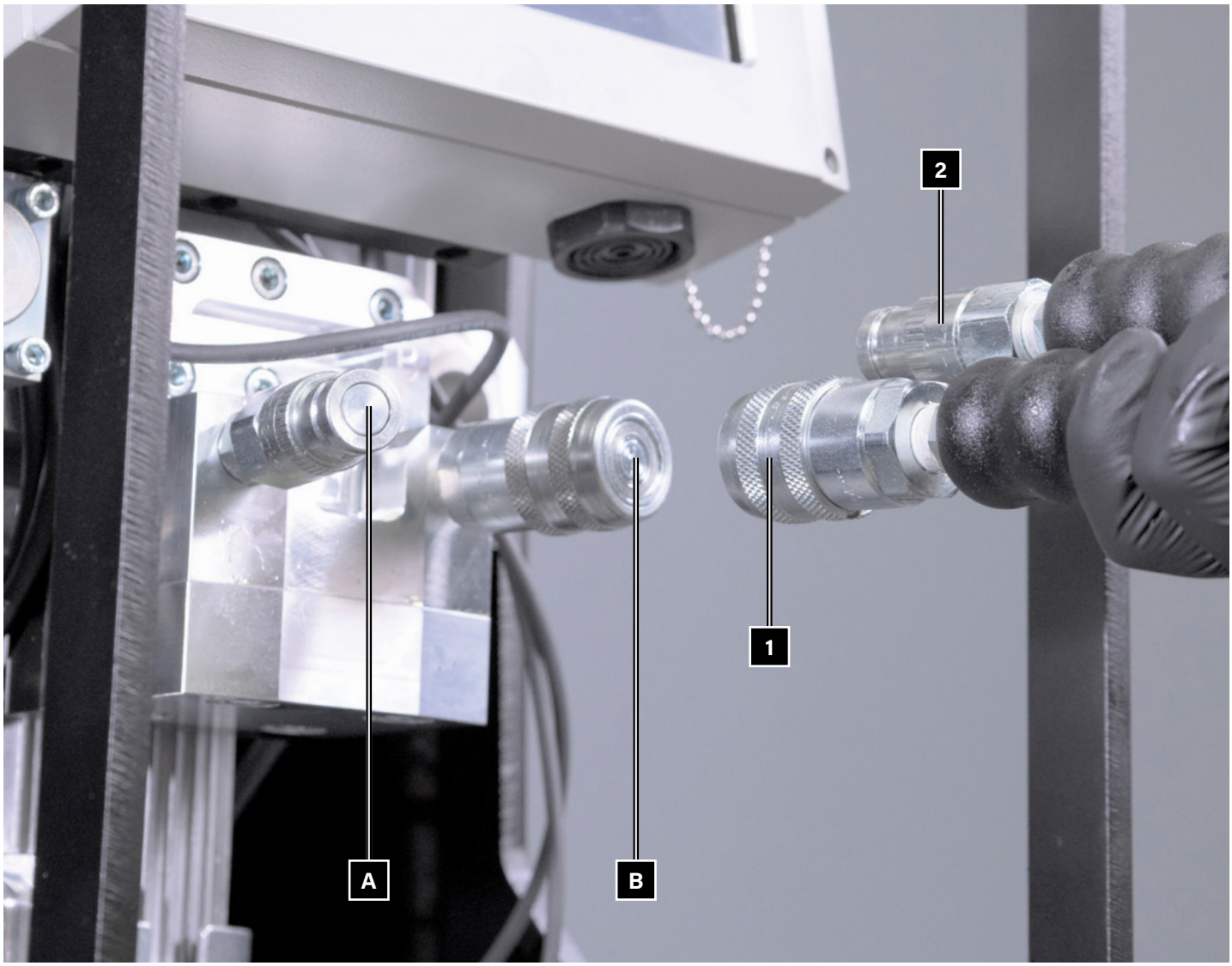

### Saving the current job

After a change is made, the “Save” icon is displayed in the menu.

► Confirm by pressing “Save” .
► To save the current job press “Yes” in the following query.
If changes are made, another job is created.

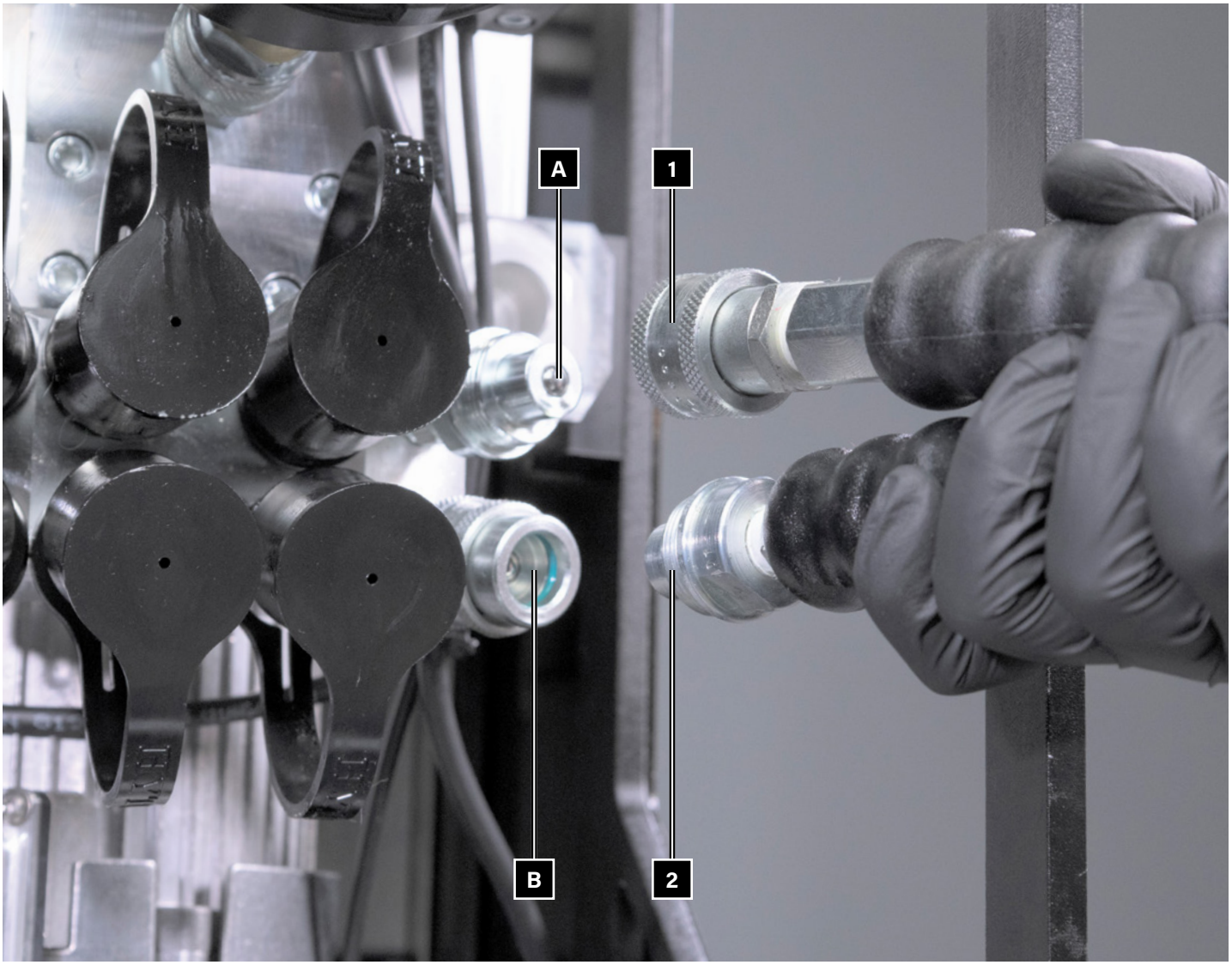

### Deleting a job

► To delete the job, select it in the job list.
► Press “Delete” .




**Removing tools - Smart (quick connect coupler)**

► Align the notch and turn to unlock the coupler.
Detach the socket (“female”) connection (1) on the hydraulic hose of the tool from the plug (“male”) connection (A) of the pump.
► Align the notch and turn to unlock the coupler. Detach the plug (“male”) connection (2) on the hydraulic hose of the tool from the socket (“female”) connection (B) of the pump.
► Clean the couplers on the pump and hydraulic hoses with a dry cloth.




**Removing tools – Standard (screw style coupler)**

► Twist the screw style coupler off the socket (“female”) connection (B) until loose.
► Detach the plug (“male”) connection (2) from the socket (“female”) connection (B).
► Twist the screw style coupler off the socket (“female”) connection (1) until loose.
► Detach the socket (“female”) connection (2) from the plug (“male”) connection (A) of the pump.
► Ensure that the hydraulic hoses are not damaged.
► Clean the couplers on the pump and hydraulic hoses with a dry cloth.

**ATTENTION!**

**Damage and contamination of unprotected couplers.**
**The couplers can become leaky and hydraulic oil will escape.**

# 8

# AFTER USE

# 8. After Use

## POWERING OFF THE PUMP

### Daily use

- ► Press the red button on the remote control. The motor is switched off and the pressure is released.
- ► Wait until there is no more pressure shown on the pressure gauge.
- ► If necessary, press the red button several times.
- ► When no more pressure is displayed, press the power button on the electrical control system to switch off the pump.
- ► Remove the battery pack from the pump.
- ► Store the battery pack according to the specifications in the LIGHTNING S manual.
- ► If you are not using the pump for a longer period of time, attach the remote control to the top of the case.

### Long-Term

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

- ► Release pressure.
- ► Switch the pump off using the power button.
- ► Remove the battery pack.
- ► Remove the connected torquing tools.
- ► Drain the hydraulic oil.
- ► Dispose of the hydraulic oil according to the rules and regulations applicable at the installation site.
- ► Store the pump.

**WARNING**

**Risk of severe or fatal injuries due to high-pressure hydraulic oil spouting out.**

- ► Always switch off the pump using the power button on the electric control pump.
- ► Ensure that the pump is depressurized.

### Cleaning the pump

- ► Switch the pump off.
- ► Remove the battery pack.
- ► Clean the pump with a clean absorbent cloth.
- ► Dispose of the cloth in accordance with environmental regulations.

**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.

# 9

# CHANGING THE HYDRAULIC OIL

# 9. Changing the Hydraulic Oil

**Draining the hydraulic oil**

Proceed as follows to change the hydraulic oil:

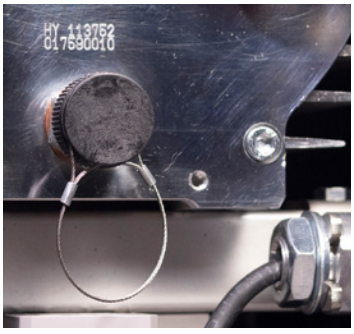
► Switch the pump off.
► Remove the battery pack.
► Remove connected torquing tools from the couplers.
► Place the pump horizontally on a load bearing, solid, flat surface so that a container can be positioned under the oil drain plug.
► Leave the pump, including the hydraulic oil, to cool down to a lukewarm temperature.

**CAUTION!**

**When connecting the oil drainpipe, small quantities of hydraulic oil may leak out.**
► Remove the leaking hydraulic oil immediately.
► Dispose of hydraulic oil according to the regulations applicable at the site of use.

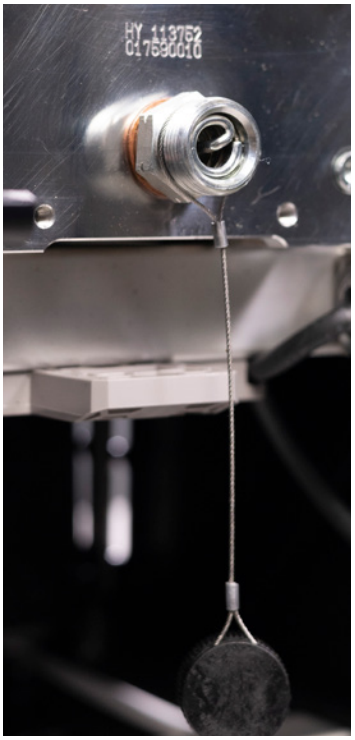
► Remove the cap from the oil drain (2).
► Place the oil drainpipe on the oil drain using the screw fitting on the top of the oil drainpipe.
► Place a container under the oil drainpipe that can hold the oil quantity contained in the pump of up to 2.45 l (0.65 US. liq. gal).
► Position the lower end of the oil drainpipe above the container.
► Only turn the screw fitting on the top of the oil drainpipe by hand until it feels tight (4). The hydraulic oil flows into the container.
► Wait until the hydraulic oil has fully drained.
► Unscrew the oil drainpipe (4) from the oil drain.
► Remove the oil drainpipe and store safely.
► Set the cap on the oil drain (2).
► Dispose of the drained hydraulic oil according to the regulations applicable on site.

**1.**



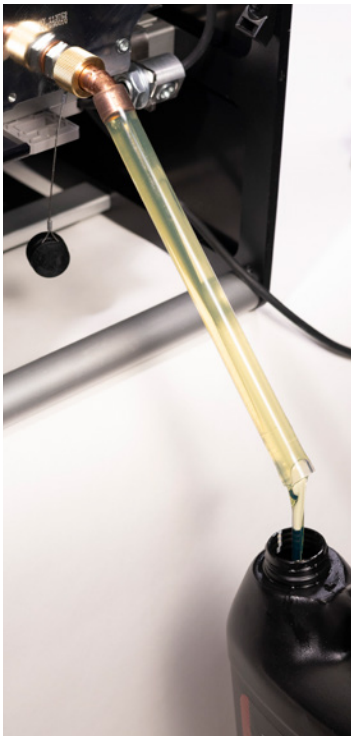
**2.**

**3.**



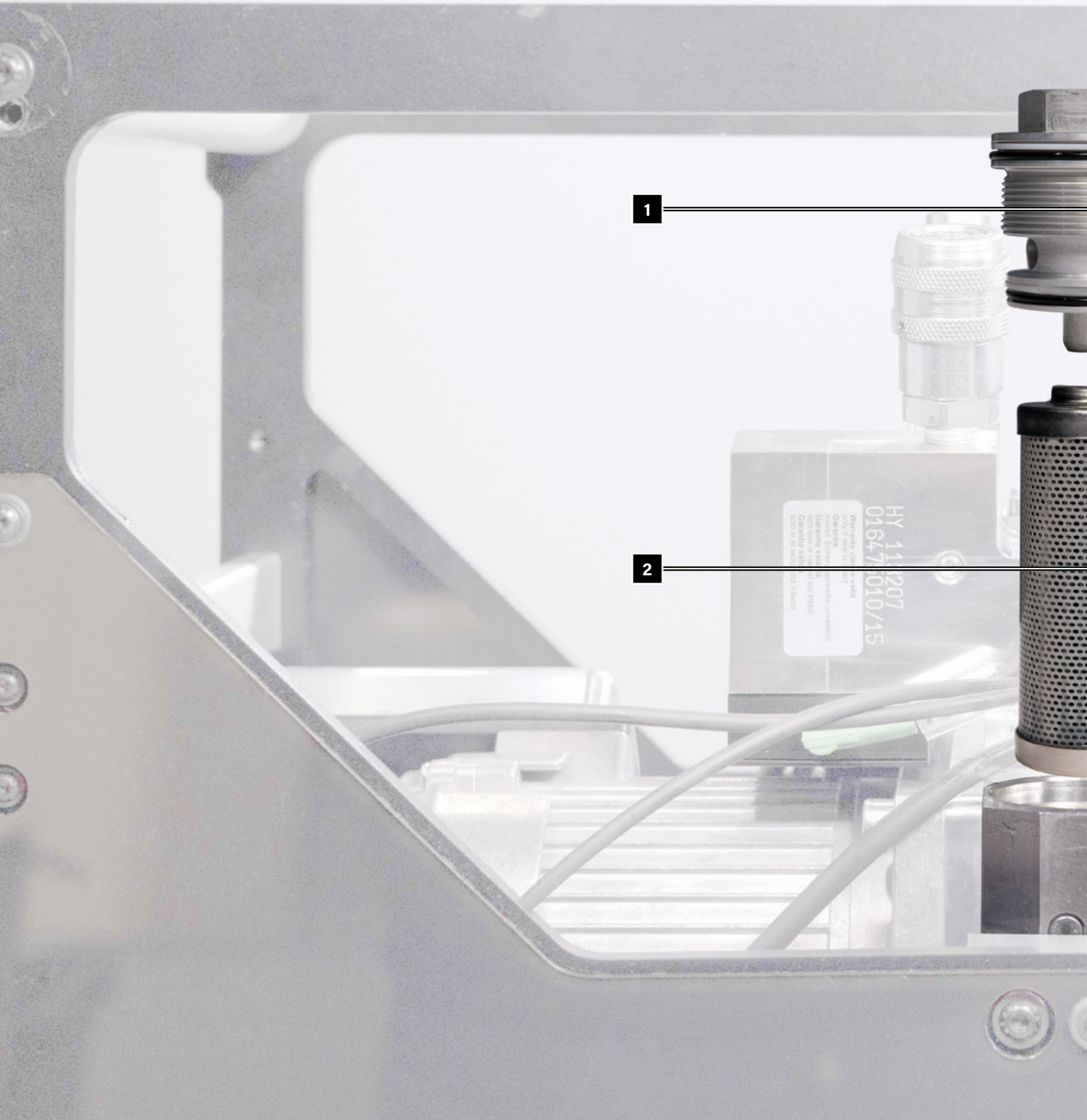
**4.**

**5.**



**Replacing the oil filter**

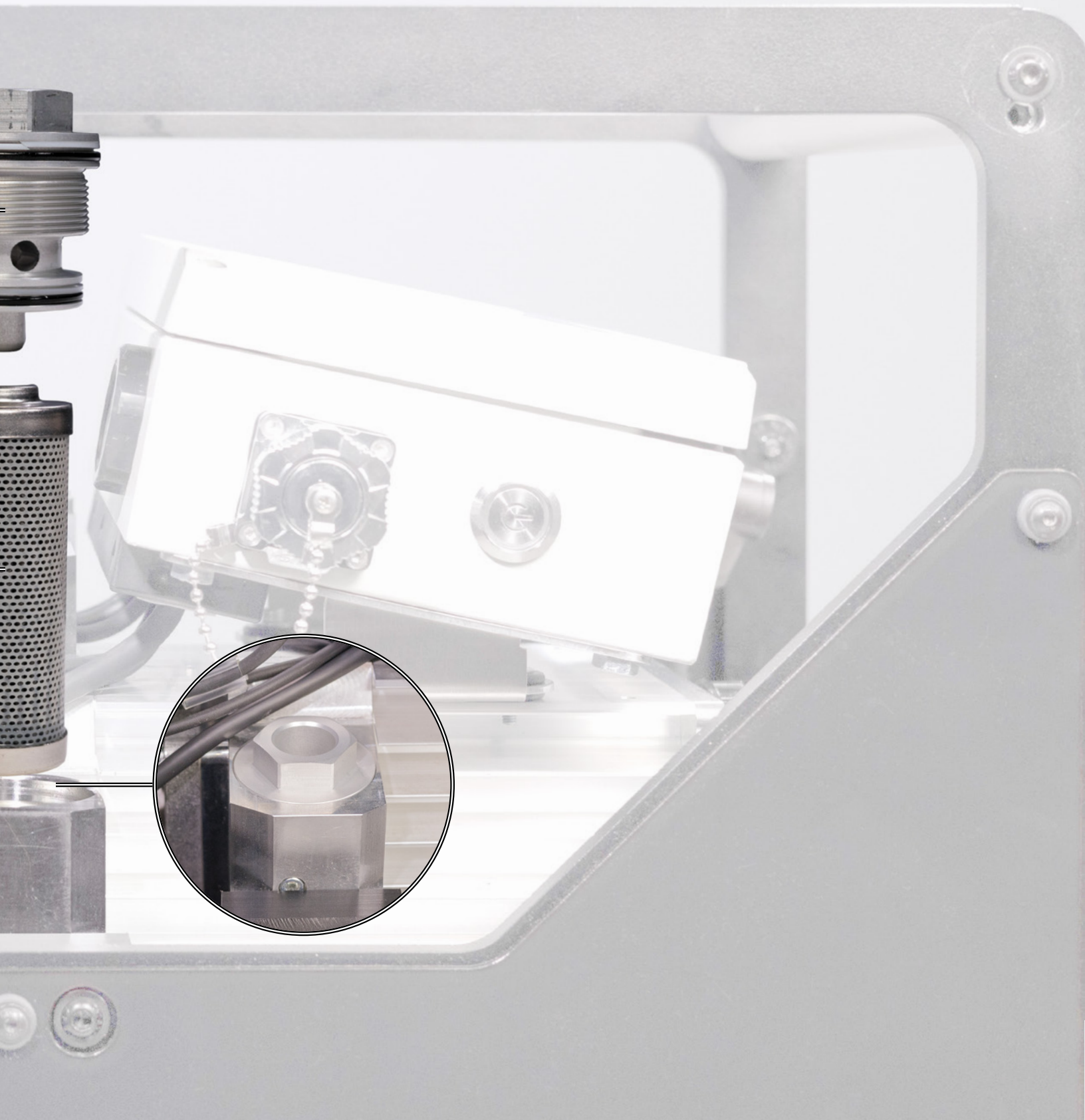
► Place the pump in its horizontal position.
► Unscrew the cap (1) from the pump housing using a size 30 wrench. The oil filter (2) is found in the cap (1).
► Pull the oil filter (2) out of the cap.
► Replace the oil filter with a new oil filter of the same type.
► Install the new oil filter in reverse order of the removal procedure.



**CAUTION!**

**The case will come apart by undoing the wrong torque connections.**

- ► Only undo the nine protruding hexagon socket torques.
- ► Make sure that all countersunk screws remain securely fastened.




# 10

# SERVICING THE PUMP

## SERVICING THE PRESSURE SENSOR - SMART ONLY

The pressure sensor must be calibrated at least once a year. Depending on the local operating conditions, the operator can also specify shorter intervals.

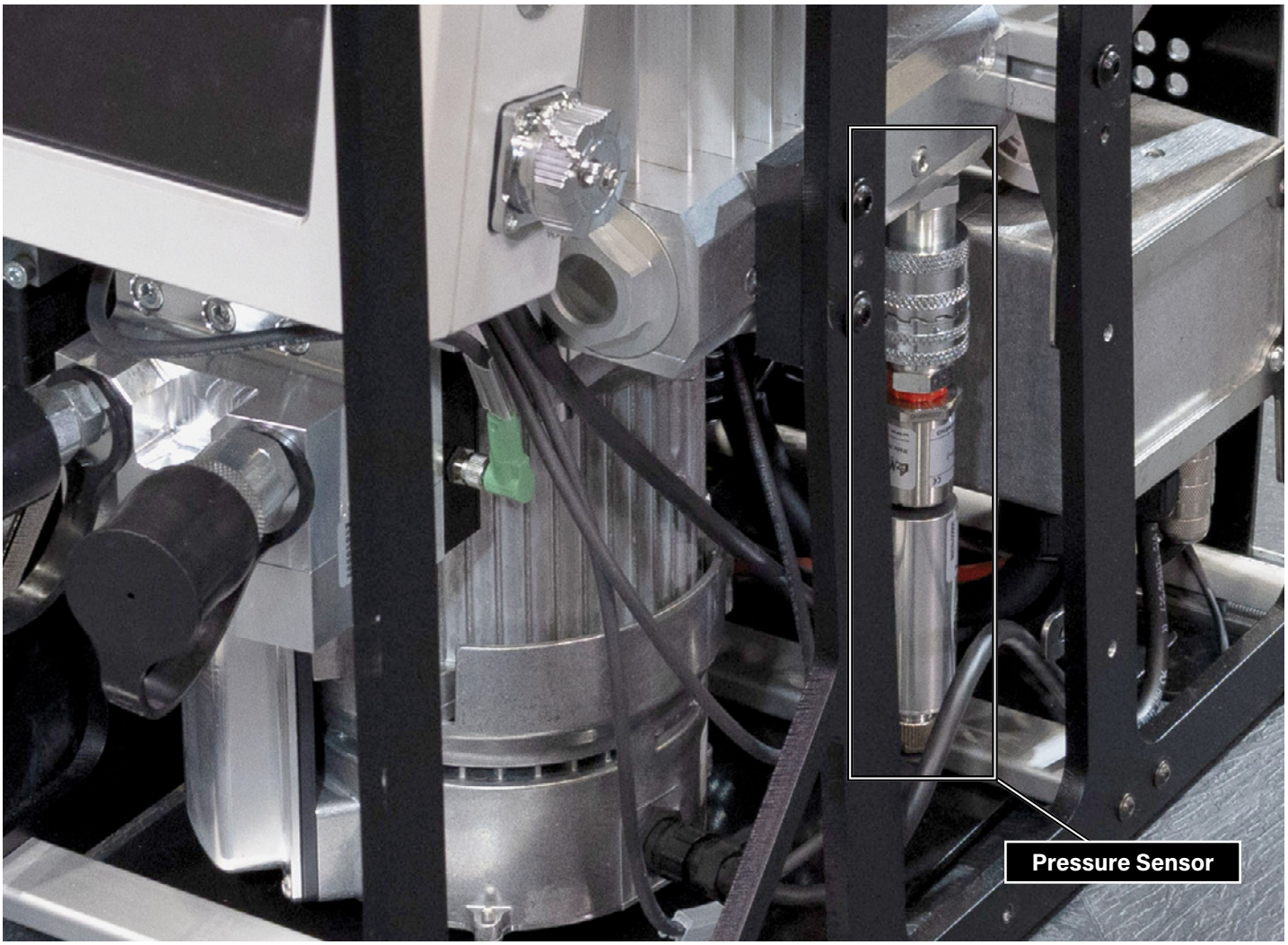
> It is easier to access the pressure sensor by removing the side panel.

To remove and install the pressure sensor (pictured right),
the right-hand side panel should be removed from the pump. Proceed as follows:

- ► Remove the nine protruding hexagon socket screws.
- ► Remove the right-hand side panel.
- ► Disconnect the plug of the pressure sensor connection cable.
- ► Unscrew the pressure sensor from the holder.
- ► Have the pressure sensor calibrated by qualified personnel.
- ► Screw the calibrated pressure sensor into the holder.
- ► Plug the connection cable plug into the socket.
- ► Attach the side panel to the pump.
- ► Tighten the nine hexagon socket screws hand tight.

Ensure that all screws on the side panel are hand-tightened.

**LIGHTNING PUMP - Smart** (without side panel)



## Maintenance schedule

| INTERVAL | COMPONENT | ACTION |
|---|---|---|
| **Prior to every operation** | Electric cables | ► Check electrical cables for visible damage, twists and kinks.<br>► Eliminate twists.<br>► Have defective or kinked electrical cables replaced by qualified personnel. |
| **Prior to every operation** | Hydraulic hoses | ► Check the hydraulic hoses for visible damage, twists and kinks.<br>► Eliminate twists.<br>► Have defective or kinked hydraulic hoses replaced by qualified personnel. |
| **Before using each coupler** | Couplers | ► Clean the couplers with a dry cloth. |
| **As required** | Pump | ► Clean the pump with a dry cloth. |
| **Annually or according to the operating conditions** | Pressure sensor | ► Calibrate the pressure sensor.<br>► Please contact your HYTORC partner. |
| **Every 6 years or according to operator frequency. Always inspect before use.** | Hydraulic hoses | ► Have all hydraulic hoses replaced by qualified personnel. |
| **According to the specification on the pump information sign** | Hydraulic oil | ► Change the hydraulic oil. |
| **After 40 hours of use or depending on what color the oil is.** | Oil filter | ► Change the oil filter. |


**Firmware Update - Smart**

- ► Put the file on a USB drive and plug it into the pump.
- ► Power on the pump.
- ► Follow the instructions on the pump display. The update is installed.

**Firmware Update - Standard**

- ► Put the file on a USB drive and plug it into the pump
- ► Power on the pump.
- ► Power button will pulse a purple color.
- ► Once power button has a steady green color, the update is installed.


# 11

# DISPOSAL

# 11. Disposal

**Disposal** (In the USA – Contact your local HYTORC representativle for more information and disposal locations.)

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.

► Have the hydraulic oil disposed of by a specialist company in line with environmental regulations.

Replaced wear parts and defective components comprise the following materials, e. g.:

- Steel or aluminum
- Rubber
- Plastic
- Copper

► Dispose of the battery pack LIGHTNING S and the LIGHTNING fast charger according to the specifications in the manufacturer's manuals.

**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 pump in an environmentally friendly manner through the manufacturer.

**Disposal** (In Europe)

Observe and follow the regulations for disposal. If in doubt, please consult your municipal or local authority.
Contact your local HYTORC representativle for more information and disposal locations.

**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.

► Observe and follow the regulations for disposal. If in doubt, please consult your municipal or local authority. Have the hydraulic oil disposed of by a specialist company in line with environmental regulations.

Replaced wear parts and defective components comprise the following materials, e. g.:

- Steel or aluminum
- Rubber
- Plastic
- Copper

► Dispose of the battery pack LIGHTNING S and the LIGHTNING fast charger according to the specifications in the manufacturer's manuals.

**WARNING**

**Risk of poisoning from hydraulic oil**
**Hydraulic oil can contaminate groundwater and soil.**

► Remove hydraulic oil from the parts to be disposed using a cloth.
► Dispose of the cloth in an environmentally friendly manner after use.

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

The operating status of the pump is indicated to the operator acoustically, haptically or visually.

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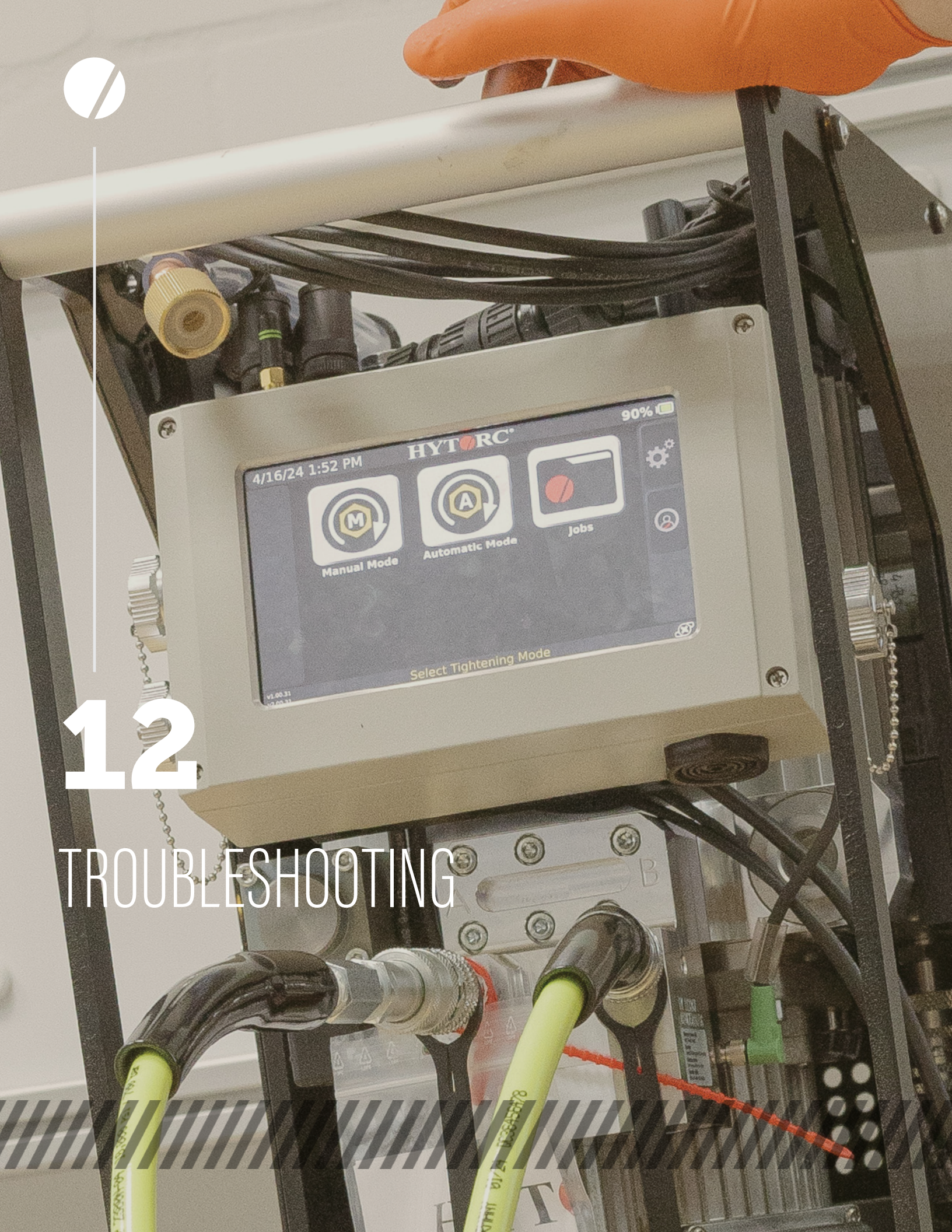


# 12

# TROUBLESHOOTING

# 12. Troubleshooting

The following errors may be indicated by the power button:

| INDICATOR | CAUSE | REMEDY |
|---|---|---|
| **The power button lights up yellow.** | The battery pack charge level is low.<br>The battery pack is empty. | ► Switch off the motor.<br>Charge the battery pack as soon as possible. |
| **The power button flashes red briefly and then lights up red longer; the red remote button flashes.** | | ► Switch off the motor<br>► Charge the battery pack. |
| **The power button flashes red briefly twice and then lights up red longer.** | The remote control is defective. | ► Switch the pump off.<br>► Replace the remote control. |
| **The power button flashes red briefly three times and then lights up red longer; the red button flashes.** | The motor is defective. | ► Have the motor replaced by qualified personnel. |
| **The power button flashes red briefly four times and then lights up red longer; the red button flashes.** | A firmware update failed. | ► Please contact the manufacturer. |
| **The power button flashes red briefly five times and then lights up red longer; the red button flashes.** | There is no configuration file saved in the electrical control system. | ► If necessary, contact the manufacturer.<br>Load the configuration file provided by the manufacturer. |

The warning horn is not used to indicate an error.

## Error indicators

| FAULT | POSSIBLE CAUSE | REMEDY |
|---|---|---|
| **The pump is not working.** | Electrical components are damaged. The power supply has been disconnected or the battery pack is empty. The remote control is defective. | ► Have the electrical components checked, serviced, or replaced by qualified personnel. Charge the battery pack.<br>► Place the battery pack properly in the battery pack holder.<br>► Power on the battery pack.<br>► Have the power supply checked, serviced, or replaced by qualified personnel.<br>► Have the remote control checked and, if necessary, replaced by qualified personnel." |
| **The pressure is less than 70 bar/1000 psi.** | The solenoid valve is defective. The pressure control valve is defective. Leaking pump flange. The maximum pressure valve is leaking. | ► Have the solenoid valve checked electrically by qualified personnel<br>► Have the solenoid valve checked hydraulically by qualified personnel<br>► Have the defective solenoid valve exchanged by qualified personnel.<br>► Have the pressure control valve checked hydraulically by qualified personnel.<br>► Have a defective return pressure control valve replaced by qualified personnel.<br>► Have the pump flange checked, serviced, or replaced by qualified personnel.<br>► Have the maximum pressure valve checked, serviced, or replaced by qualified personnel." |
| **The pressure is only 70 bar/1000 psi.** | The shut-off valve is defective. | ► Have the shut-off valve checked, serviced, or replaced by qualified personnel. |
| **The pressure is only 70 – 80 bar/1000 – 1200 psi.** | The solenoid valve is defective. The return pressure valve is leaky. | ► Have the solenoid valve checked electrically by qualified personnel.<br>► Have the solenoid valve checked hydraulically by qualified personnel.<br>► Have the defective solenoid valve exchanged by qualified personnel.<br>► Have the return pressure valve checked, serviced, or replaced by qualified personnel. |
| **The max. pressure of 700 bar/10,000 psi is not reached, even though there are no visible leaks.** | The pressure control valve is defective. The maximum pressure valve is leaking or defective. One or more pump elements are defective. | ► Have the pressure control valve checked or replaced by qualified personnel.<br>► Have the maximum pressure valve checked or replaced by qualified personnel.<br>► Have the pump elements checked or replaced by qualified personnel. |
| **The motor switches off.** | The motor temperature is too high. The battery pack temperature is too high. The battery pack is defective or empty. | ► Wait for about 10 minutes and switch the pump on. If the motor switches off again, have the motor checked by qualified personnel. Use the battery pack within the limits given in the manufacturer's specifications. Check the charge level of the battery pack. Place a charged battery pack in the battery pack holder. Replace the battery pack. |
| **Oil mist forming** | The check valve has overheated. | ► Have any defective check valve replaced by the manufacturer. |
| **Oil mist and oil vapor forming** | The pump has overheated. | ► Wear breathing apparatus if there is insufficient ventilation. Wear chemical-resistant safety goggles. Ensure that there is sufficient ventilation. Switch the pump off<br>► Have the pump checked by qualified personnel. |
| **The tightening speed is significantly reduced.** | One or more pump elements are defective. The motor speed is too low. | ► Have pump elements checked, serviced, or replaced by qualified personnel<br>► Have the hydraulic motor checked, serviced, or replaced by qualified personnel. |
| **The pump is leaking.** | The connections on the oil cooler or the mating connections on the pump flange are leaking. The shut-off valve is leaking. The solenoid valve is defective and/or leaking. There is a leak between the measurement counter and coupler. | ► Have the pump checked, serviced, or replaced by qualified personnel.<br>► Have the shut-off valve checked, serviced, or replaced by qualified personnel.<br>► Have the solenoid valve checked, serviced, or replaced by qualified personnel<br>► Have the connection and components checked, serviced, or replaced by qualified personnel. |

## 24/7 WORLDWIDE CUSTOMER SUPPORT


## URGENT SOLUTIONS REQUIRE IMMEDIATE SUPPORT

Every minute of downtime can mean lost productivity and revenue, which is why HYTORC's 24/7 Customer Support is your steadfast partner against the unpredictable nature of bolting challenges. Imagine a support system where, no matter the time, a live HYTORC bolting specialist is always ready to provide swift, customized solutions that keep your operations running smoothly. With our 24/7 customer support, expert solutions, and commitment to your success, we're here to ensure your operations are seamless and efficient, day and night.

## FEATURES AND BENEFITS

- **Live Support Anytime, Anywhere:** Forget automated responses. HYTORC guarantees a live representative available 24/7/365, ready to address your needs promptly.
- **Global Network of Specialists:** Access to over 1,000 bolting experts across more than 100 countries, ensuring local support with global expertise.
- **Comprehensive Solutions:** From free consulting and site surveys to custom engineering solutions and tool rentals, we offer an extensive range of services to tackle any bolting challenge.
- **Time and Cost Savings:** Our efficient support and solutions are designed to keep your projects on schedule and within budget, minimizing downtime and maximizing productivity.

## CHANGELOG

**05/2024 -** First edition.

**10/2024 -** Compliance updates.

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