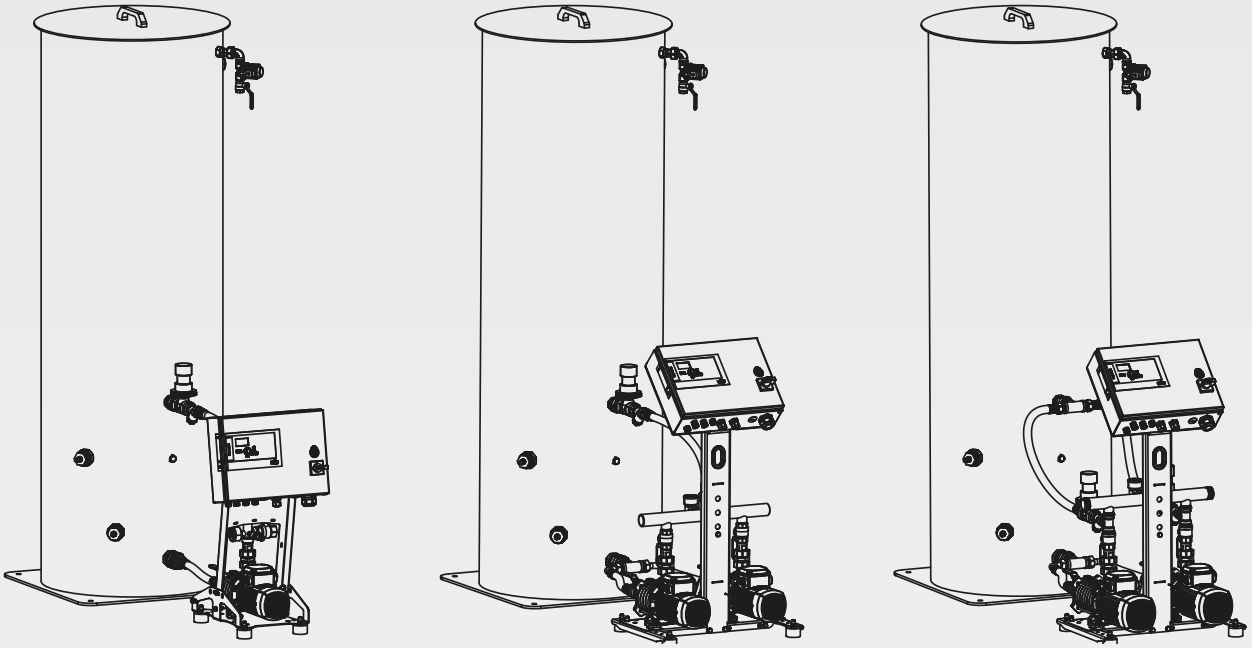
Pioneering for You

Wilo-WEH



en Installation and operating instructions

4259464 • Ed.02/2025-03

Fig. 1a

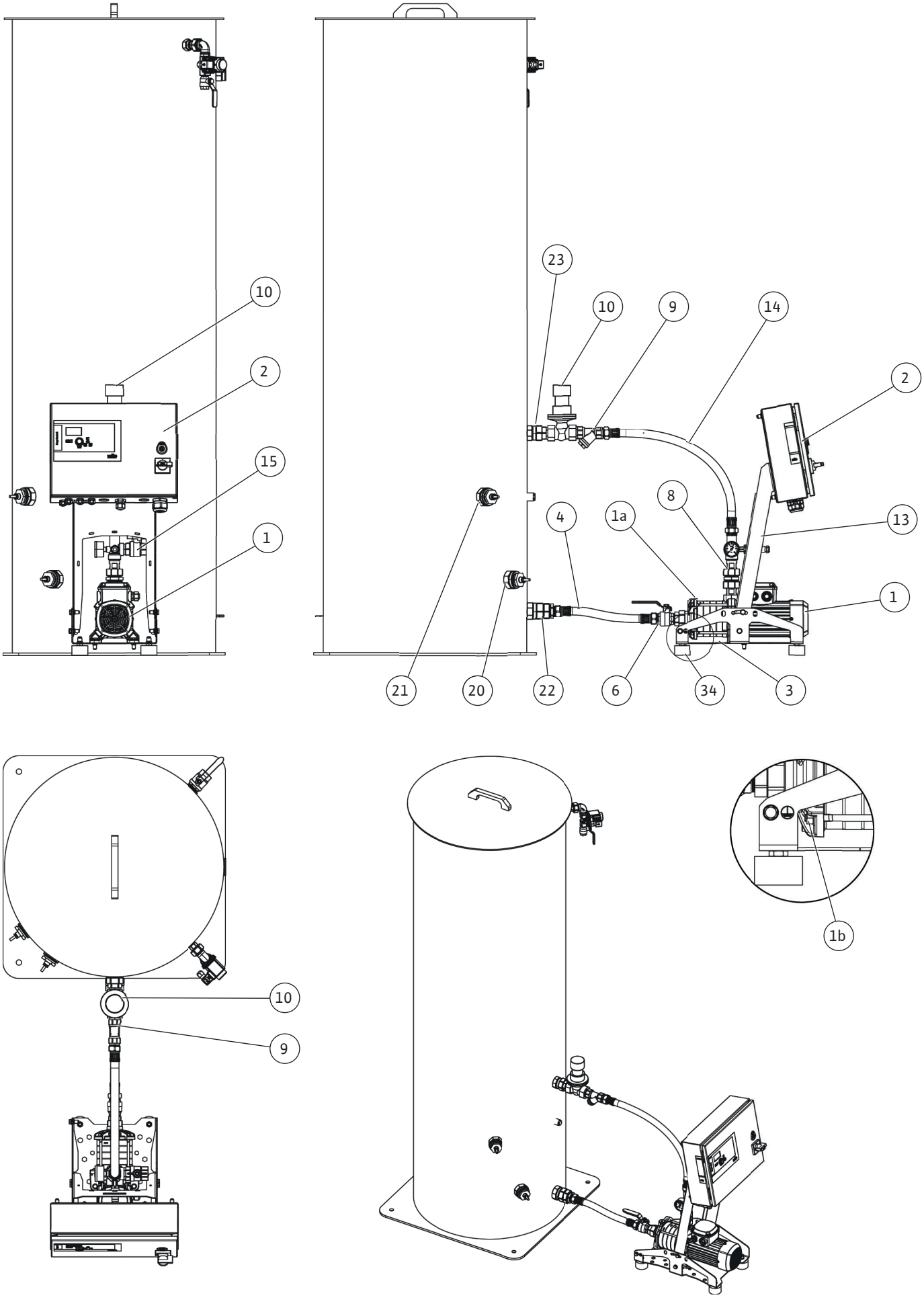
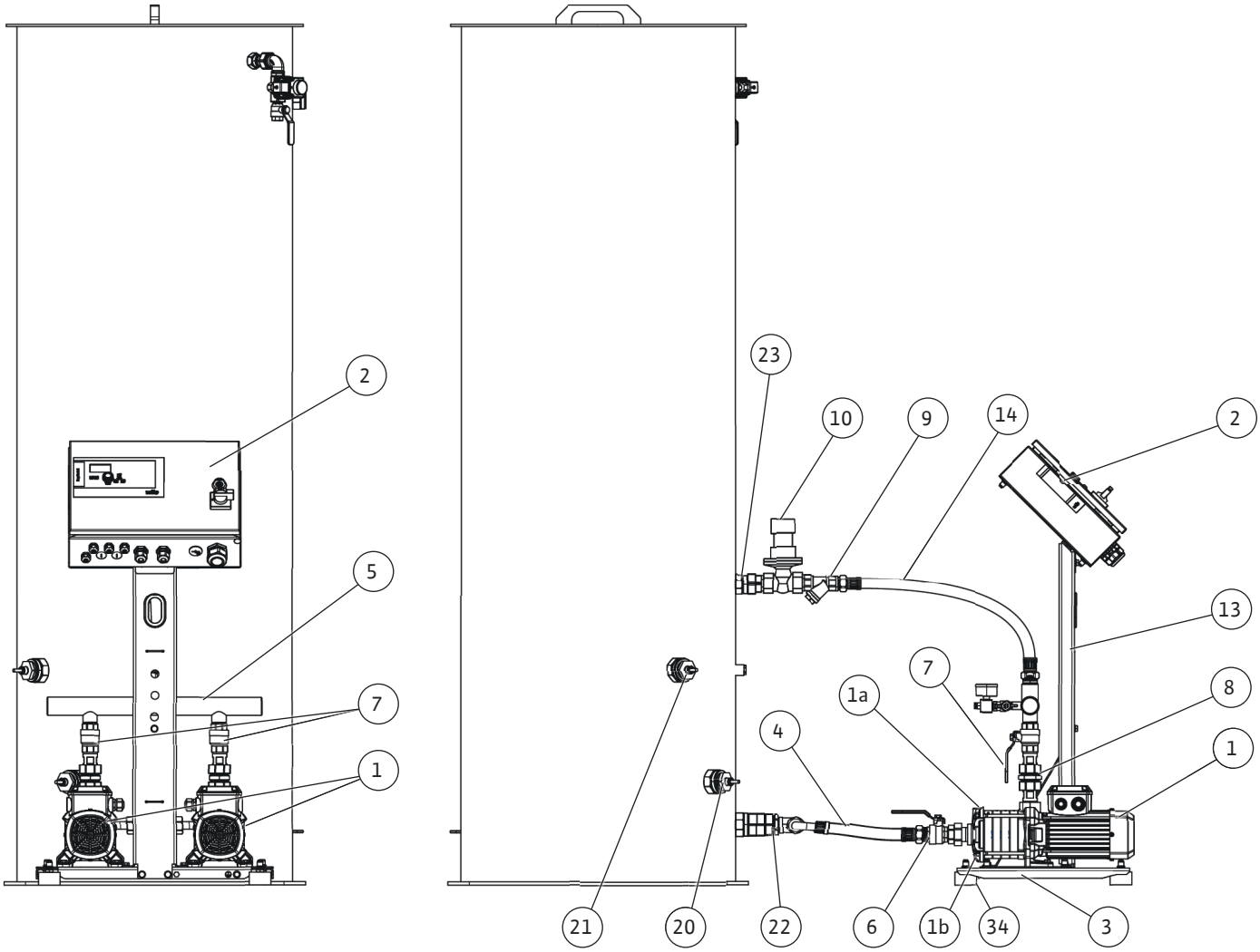
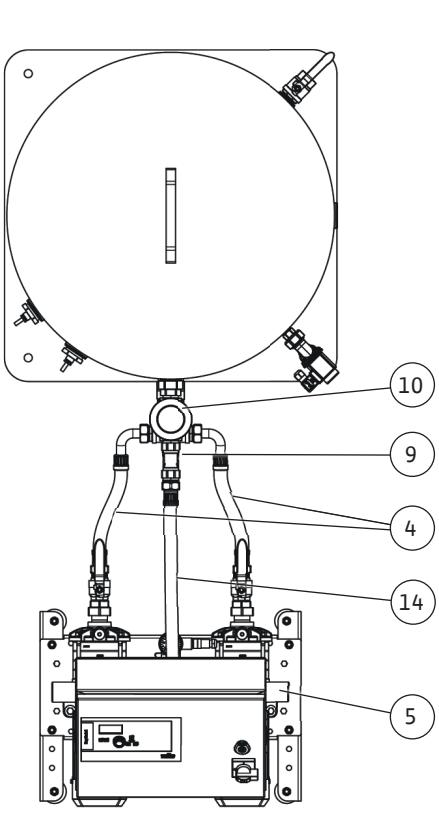


Fig. 1b





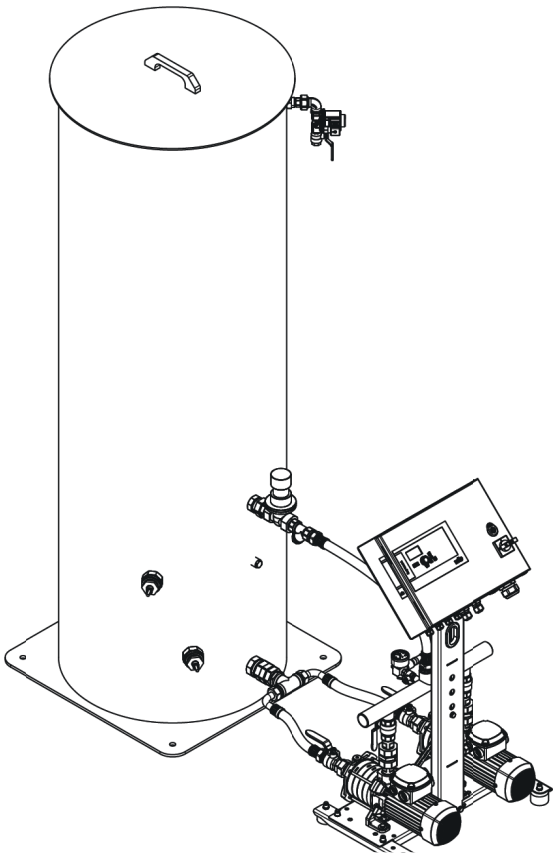


Fig. 1c

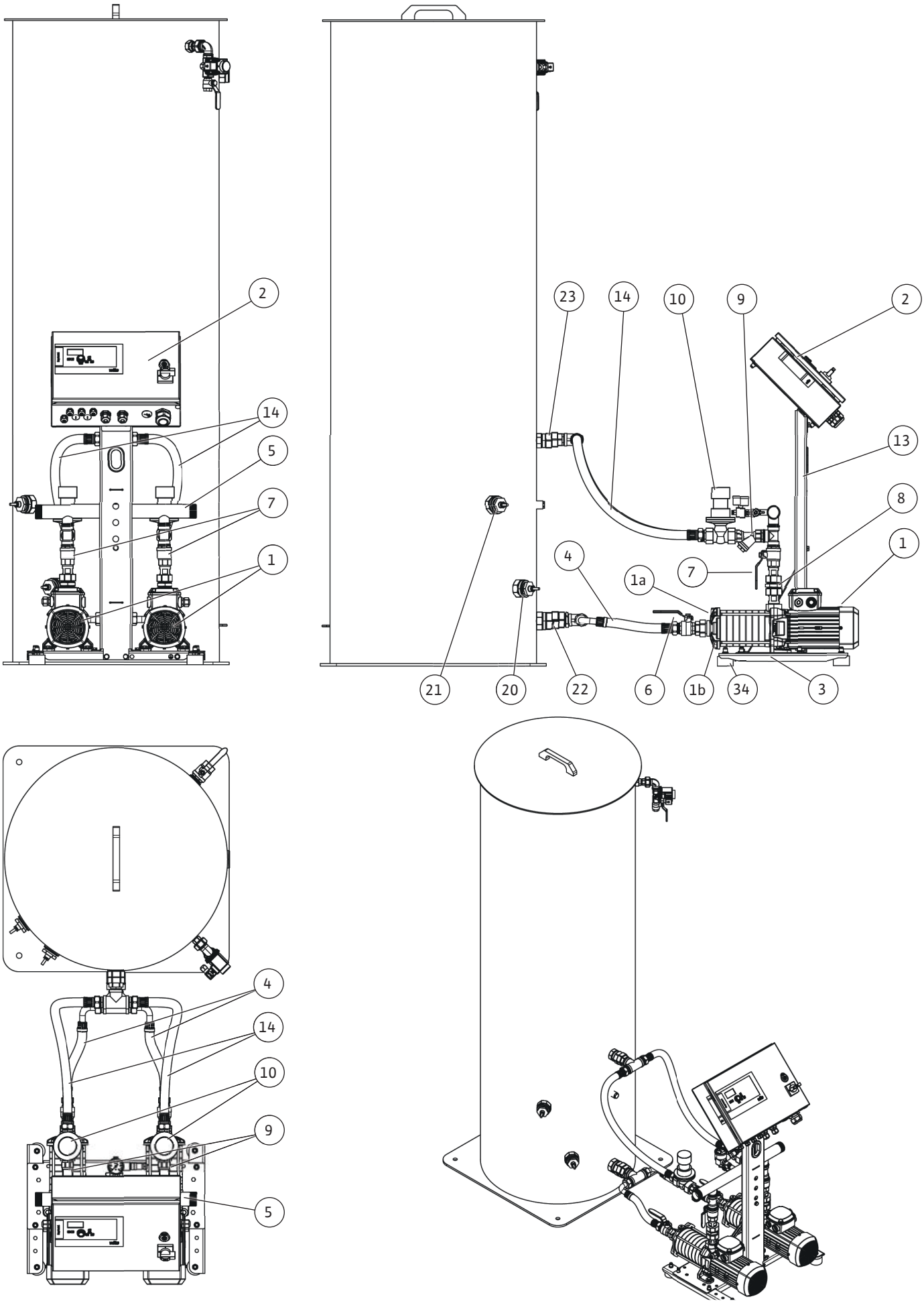
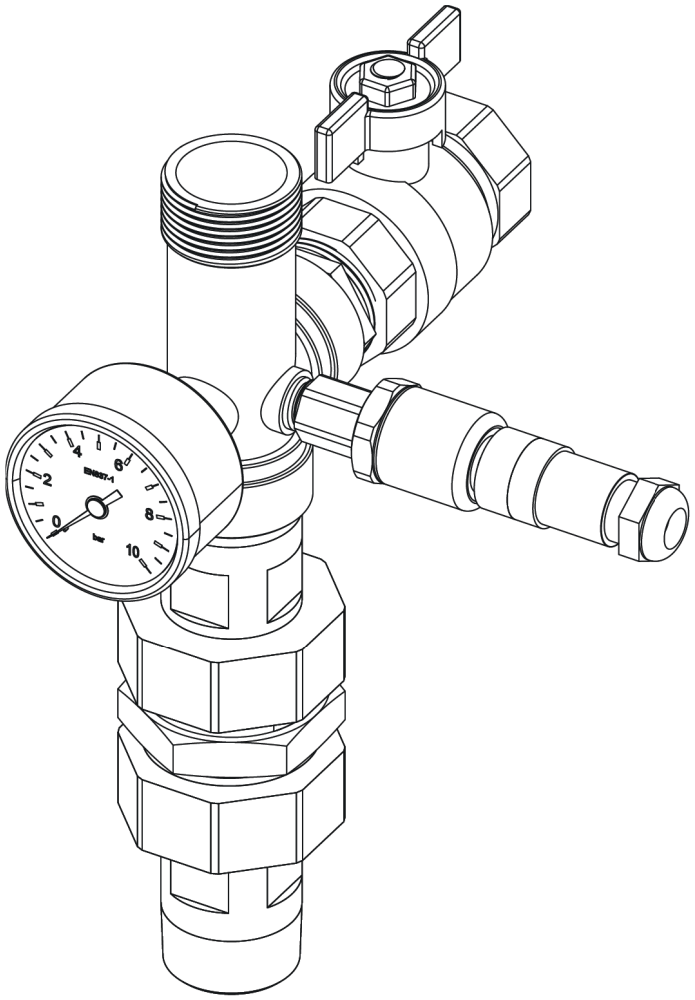
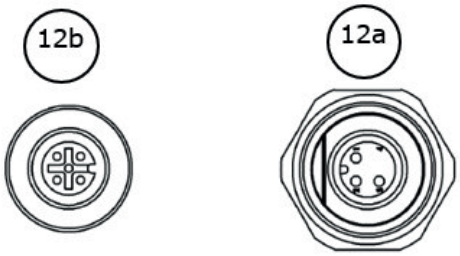
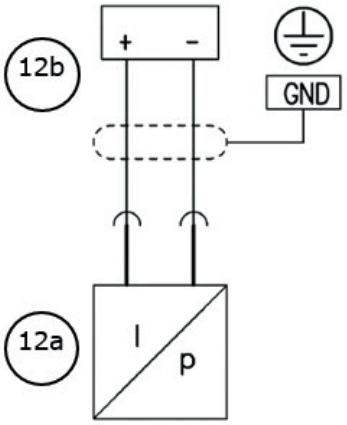


Fig. 2a







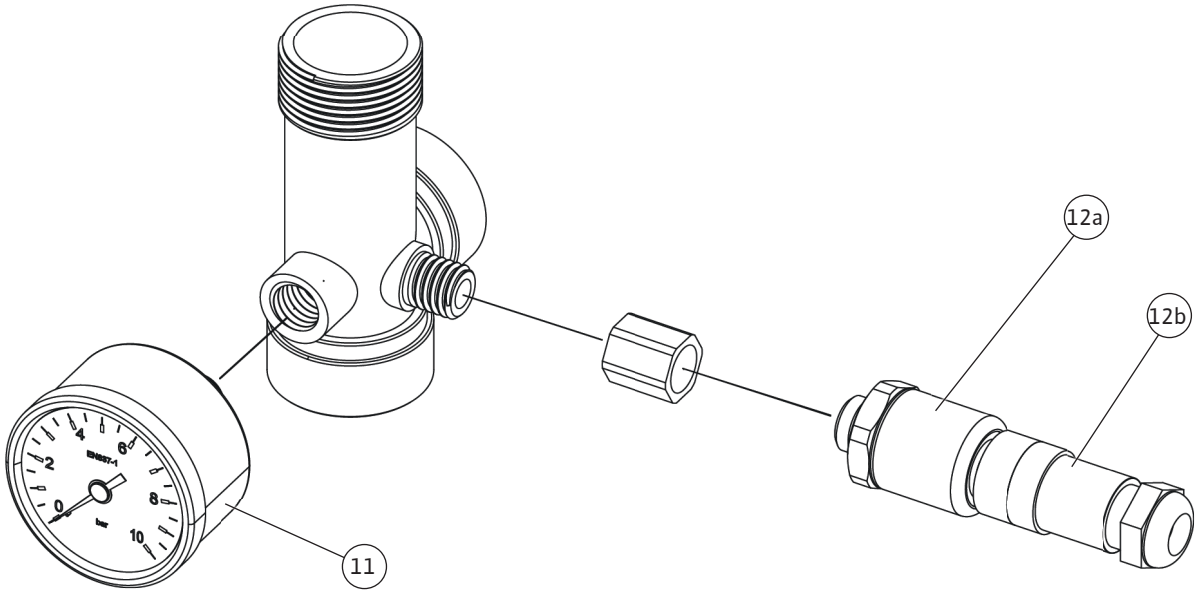
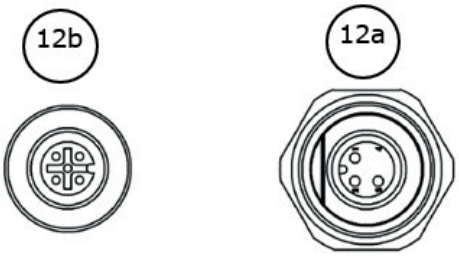
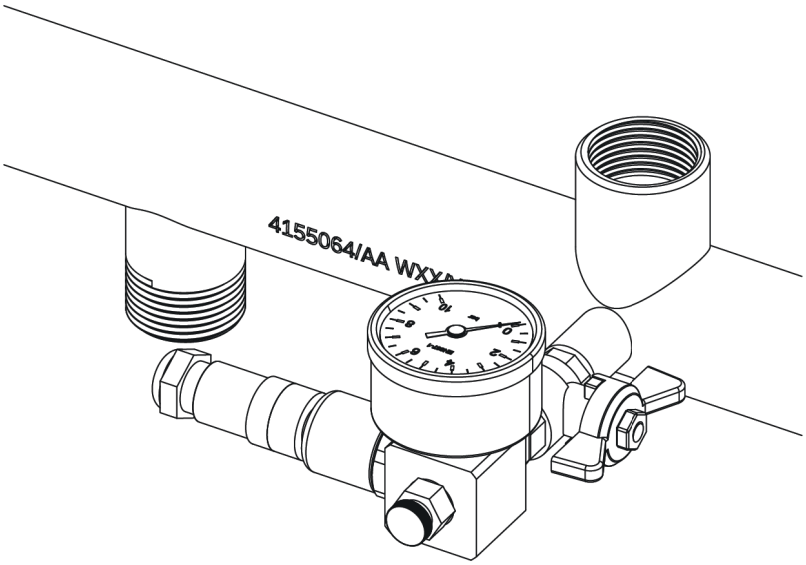
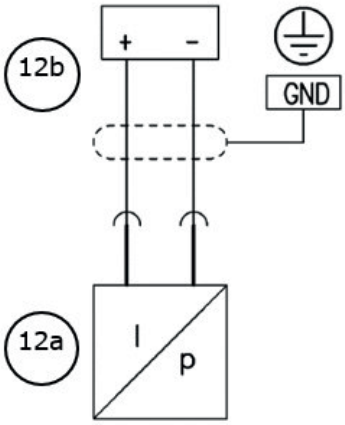


Fig. 2b







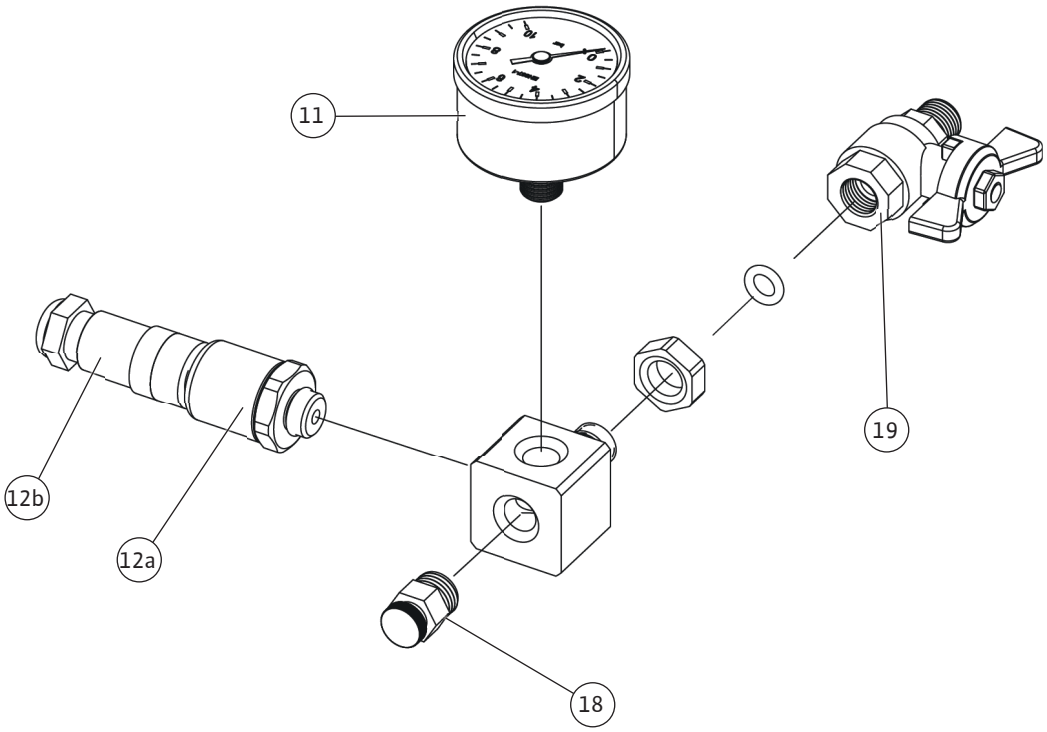


Fig. 3

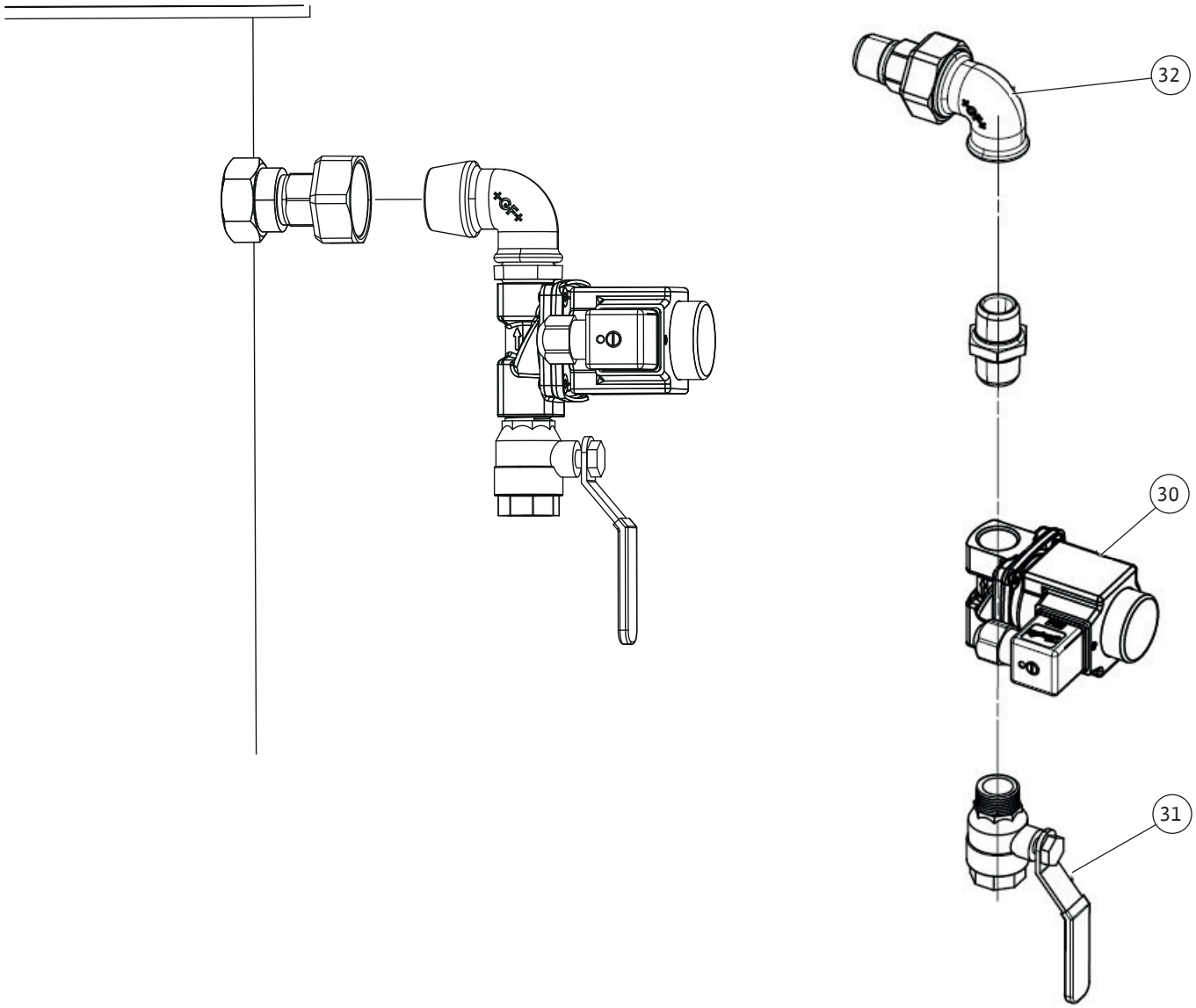


Fig. 4

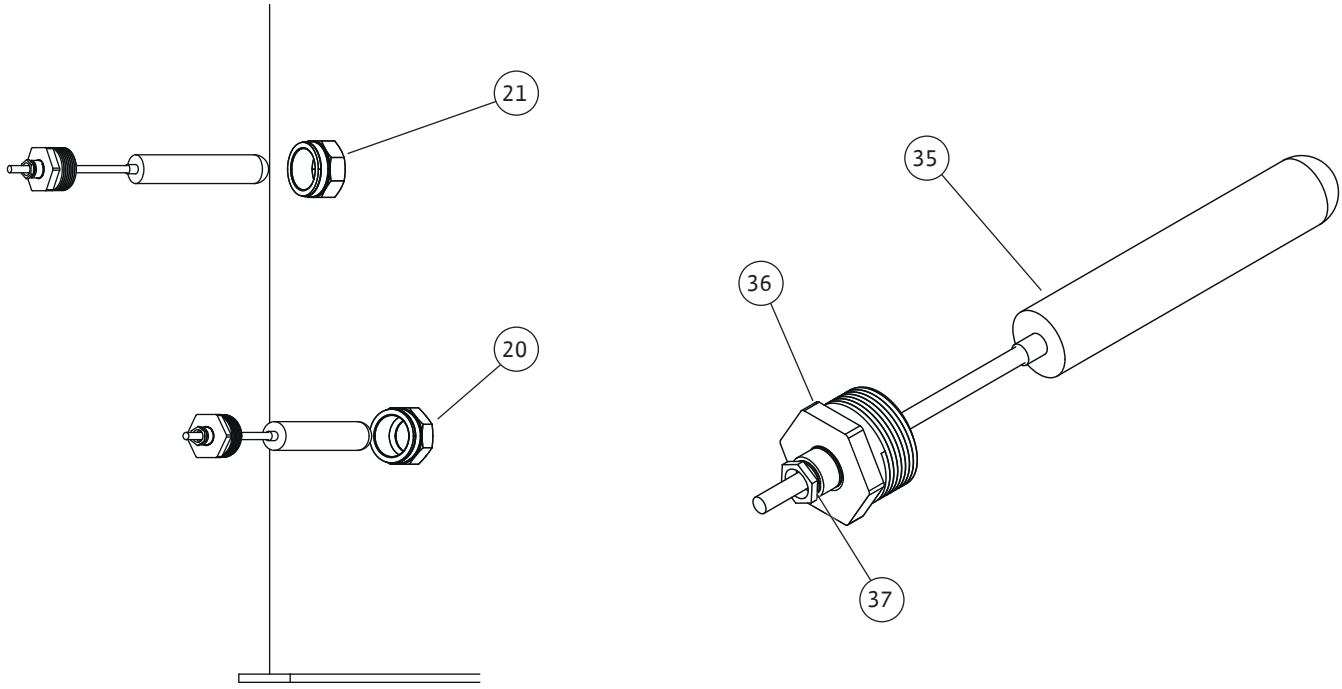


Fig. 5

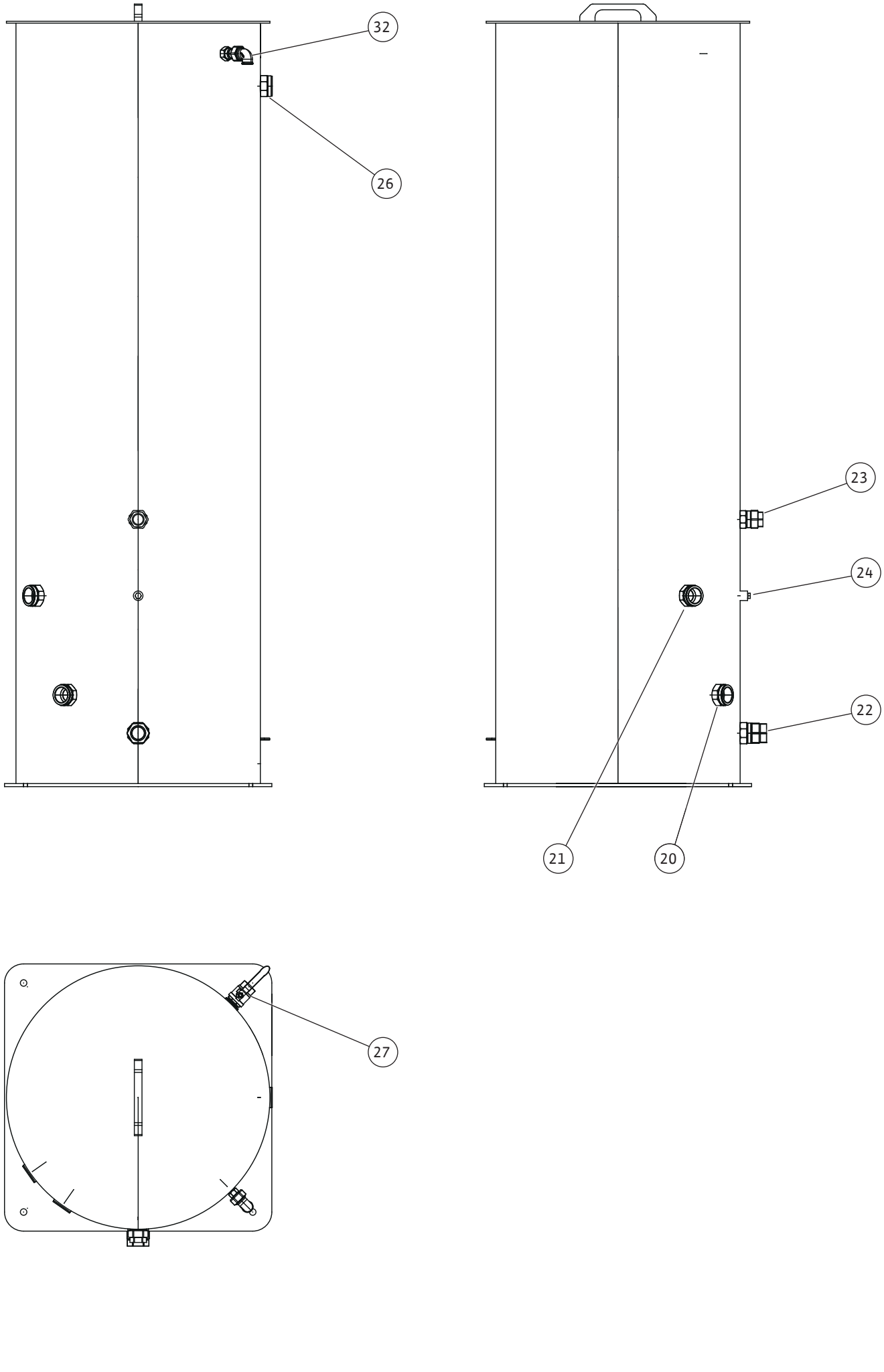


Fig. 6a

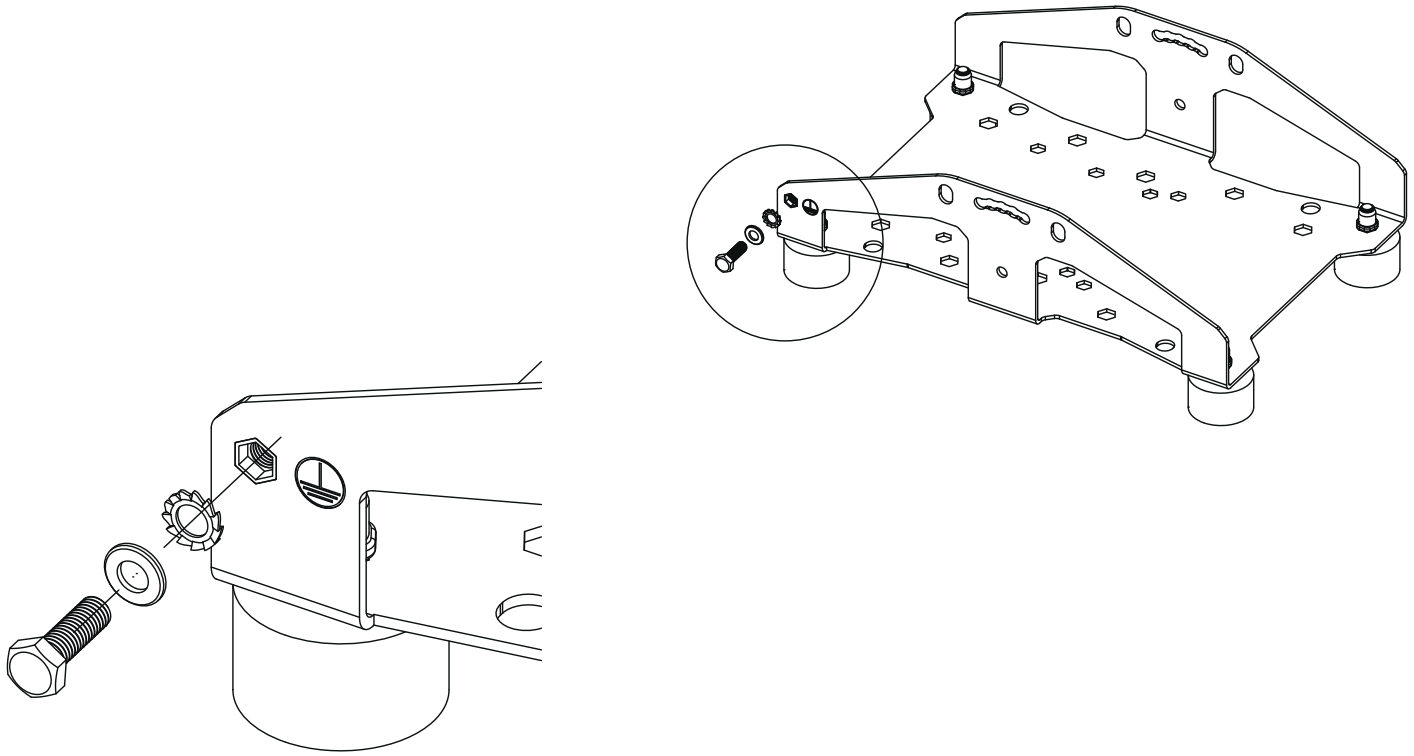


Fig. 6b

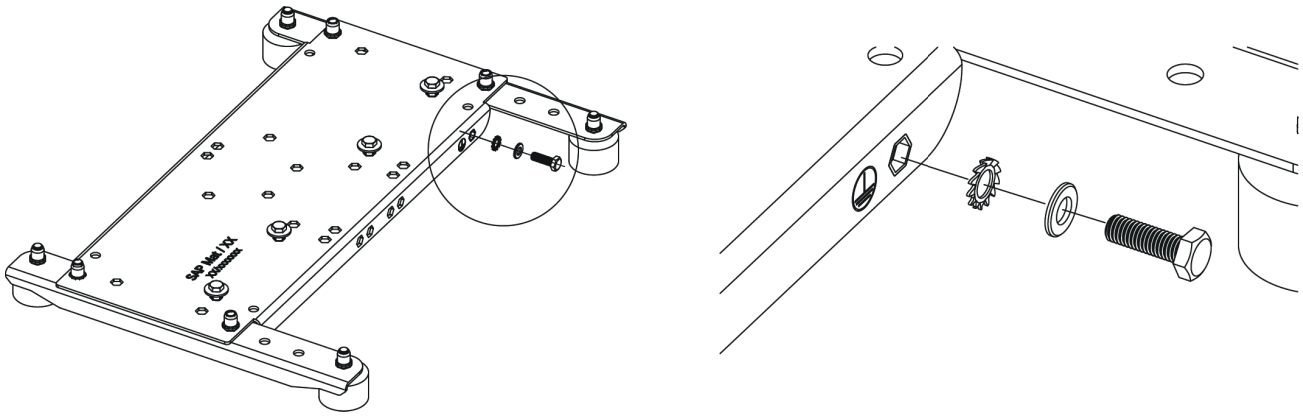


Fig. 7

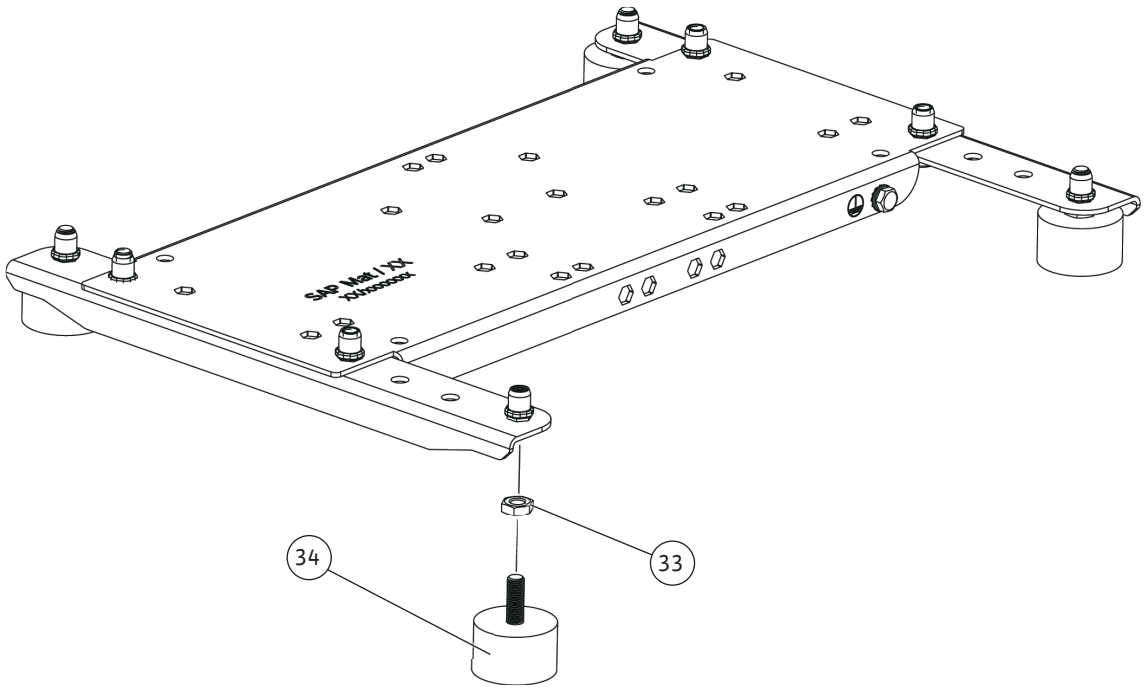


Table of contents

1 General

1.1 About these instructions

These instructions form part of the product. Compliance with the instructions is essential for correct handling and use:

- Read the instructions carefully before all activities.
- Keep the instructions in an accessible place at all times.
- Observe all product specifications.
- Observe the markings on the product.

The language of the original operating instructions is German. All other languages of these instructions are translations of the original operating instructions.

1.2 Copyright

1.3 Subject to change

Wilo shall reserve the right to change the listed data without notice and shall not be liable for technical inaccuracies and/or omissions. The illustrations used may differ from the original and are intended as an exemplary representation of the product.

1.4 Exclusion from warranty and liability

Wilo shall specifically not assume any warranty or liability in the following cases:

- Inadequate configuration due to inadequate or incorrect instructions by the operator or the client
- Non-compliance with these instructions
- Improper use
- Incorrect storage or transport
- Incorrect installation or dismantling
- Insufficient maintenance
- Unauthorised repairs
- Inadequate construction site
- Chemical, electrical or electrochemical influences
- Wear

2 Safety

This section contains basic information about the individual stages in the life cycle of the pump. Failure to observe this information leads to:

- Danger to persons
- Danger to the environment
- Property damage
- Loss of claims for damages

2.1 Identification of safety instructions

These installation and operating instructions set out safety instructions for preventing personal injury and damage to property. These safety instructions are shown differently:

- Safety instructions relating to personal injury start with a signal word, are **preceded by a corresponding symbol** and are shaded in grey.

DANGER

Type and source of the danger!

Consequences of danger and instructions for avoidance.

- Safety instructions relating to property damage start with a signal word and are displayed **without** a symbol.

CAUTION

Type and source of the danger!

Consequences or information.

Signal words

- **DANGER!**
  Failure to follow the instructions will result in serious injuries or death!
- **WARNING!**
  Failure to follow the instructions can lead to (serious) injury!
- **CAUTION!**
  Failure to follow the instructions can lead to potentially irreparable property damage as well as to total loss.

- **NOTICE!**
  Useful information on handling the product

Markups

✓ Prerequisite

1. Work step/list
   ⇒ Notice/instructions
   ► Result

Symbols

These instructions use the following symbols:


General danger symbol


Danger caused by electric voltage


General warning symbol


Warning – suspended loads


Warning – hot surfaces


Personal protective equipment: wear a safety helmet


Personal protective equipment: wear hearing protection


Personal protective equipment: wear safety footwear


Personal protective equipment: Wear protective gloves


Useful information

2.2 Personnel qualifications

Personnel must:

- Be instructed about locally applicable regulations governing accident prevention.
- Have read and understood the installation and operating instructions.

The personnel must have the following qualifications:

- Electrical work must be carried out by an authorised electrician (in accordance with EN 50110-1).
- Lifting work: trained specialist for the operation of lifting devices
  Lifting equipment, lifting gear, attachment points
- Installation/dismantling must be carried out by a qualified technician who is trained in the use of the necessary tools and fixation materials.
- The product must be operated by persons who have been instructed on how the complete system functions.

Definition of "qualified electrician"

A qualified electrician is a person with appropriate technical education, knowledge and experience who can identify **and** prevent electrical hazards.

2.3 Electrical work

- Observe applicable local regulations when connecting to the mains power supply.
- Comply with the requirements of the local energy supply company.
- Have electrical work carried out by a qualified electrician.
- Earth the device.

- Carry out the electrical connection according to the instructions of the switchgear and control device.
- Train personnel on how to make electrical connections.
- Train personnel on the options for switching off the device.
- Disconnect device from the mains and secure it against being switched on again without authorisation.
- Replace defective connection cables. Contact customer service.

2.4 Transport

- Wear the following protective equipment:
  - Safety footwear
  - Safety helmet (when using lifting equipment)
- Locally applicable laws and regulations on work safety and accident prevention must be complied with.
- Only use legally prescribed and approved lifting and hoisting gear.
- Select the lifting gear based on the prevailing conditions (weather, attachment point, load, etc.).
- Always attach the lifting gear to the attachment points.
- Ensure that the lifting gear is securely attached.
- Ensure that the hoisting gear is stable.
- Ensure a second person is present to coordinate the procedure if required (e.g. if the operator's field of vision is blocked).
- Standing under suspended loads is not permitted. Do **not** move suspended loads over workplaces where people are present.

2.5 Installing/dismantling

- Wear the following protective equipment:
  - Safety footwear
  - Safety gloves for protection against cuts
- Locally applicable laws and regulations on work safety and accident prevention must be complied with.
- Disconnect device from the mains and secure it against being switched on again without authorisation.
- All rotating parts must stop.
- Clean the device thoroughly.

2.6 Maintenance tasks

- Wear the following protective equipment:
  - Safety footwear
  - Safety gloves for protection against cuts
- Disconnect device from the mains and secure it against being switched on again without authorisation.
- Ensure cleanliness, dryness and good lighting in the work area.
- Only carry out maintenance tasks described in these installation and operating instructions.
- Only original parts of the manufacturer may be used. The use of any non-original parts releases the manufacturer from any liability.
- Collect any leakage of fluid and operating fluid immediately and dispose of it according to the locally applicable guidelines.
- Clean the device thoroughly.

2.7 Unauthorised modification and manufacture of spare parts

Unauthorised modification and manufacture of spare parts will impair the safety of the product/personnel and void the manufacturer's declarations regarding safety.

- Only carry out modifications to the product following consultation with the manufacturer.
- Only use original spare parts and accessories authorised by the manufacturer.
  The use of other parts will absolve the manufacturer of liability for any consequences arising therefrom.

2.8 Operator responsibilities

- Provide installation and operating instructions in a language which the personnel can understand.
- Make sure that the personnel have received the required training for the specified work.
- Provide protective equipment. Ensure that the protective equipment is worn by personnel.
- Ensure that safety and information signs mounted on the device are always legible.
- Train the personnel on how the system operates.
- Eliminate any risk from electrical current.
- Leakages of hazardous fluids (e.g. explosive, toxic or hot) must be removed so that no danger occurs to persons or the environment. Comply with national statutory provisions.
- Demarcate and cordon off the working area.
- Define a personnel work plan for safe workflow.
- Carry out a sound pressure measurement. From a sound-pressure level of 85 dB(A) upward, wear hearing protection. Include a note in the work regulations!

Observe the following points when handling the device:

- Use is not permitted for persons under the age of 16.
- Persons under the age of 18 must be supervised by a technician!
- Use is not permitted for persons with limited physical, sensory or mental capacities!

3 Transportation and storage

3.1 Delivery

- After delivery, check product and packaging for defects (damage, completeness).
- The transport company or the manufacturer must be notified of any defects the day the shipment is received, and the damage noted on the freight documentation.

Claims cannot be asserted if the notification of defects takes place at a later date.

3.2 Transport

WARNING

Risk of injury due to improper transport.

- Only use suitable hoisting and lifting equipment.
- Only allow transport work to be carried out by qualified personnel.

CAUTION

Damage to property due to unapproved slinging points.

Loads caused by transport via the pipework, the tank and the tank connections causes leakages.

- Only attach lifting slings to the base frame.
- Observe sticker.

- The system is packed in plastic wrap to protect it from humidity and dirt.
- If the outer packaging is damaged or no longer present, apply suitable protection from humidity and dirt.
- Do not remove the outer packaging until you are at the installation site and dispose of it in an environmentally friendly manner.
- If the system is transported again at a later date, fit new suitable protection against moisture and dirt.
- Demarcate and cordon off the working area.
- Keep unauthorised persons away from the working area.
- Use approved lifting equipment: Polyester webbing slings.

3.3 Storage

CAUTION

Damage to property due to incorrect storage!

Moisture and certain temperatures can damage the product.

- Protect the product against moisture and mechanical damage.
- Avoid temperatures outside the range of –30 °C to +60 °C.

4 Application/use

4.1 Intended use

The pressure-maintaining system is used to maintain pressure in heating or cooling water circulation systems in which temperature fluctuations may occur. The system can be used to refill the heating system. The system is refilled via the municipal water supply network.

4.2 Improper use

- Only use with fluids that have been approved by the manufacturer.
- Never operate the pump beyond the specified limits of use.
- Never carry out unauthorised conversions.
- Use authorised accessories and genuine spare parts only.

Intended use also includes compliance with this manual. Any other use is regarded as non-compliant with the intended use.

5 Product description

5.1 Description of the system

The pressure-maintaining system is a compact unit with complete pipework that is ready for connection.

- The connections for the inlet and discharge line and to the power supply must be installed on site.
- For connection to the public water supply network, comply with the applicable regulations or standards.
- If necessary, observe additional requirements of the water supply companies (additional filter, pressure reducer) and local special features (e.g. suction pressure that is too high).

Accessories ordered separately are not included within the scope of delivery and are supplied separately.

5.2 Components of the system

Mechanical and hydraulic system components (Fig. 1a, 1b and 1c)

The pressure-maintaining system is mounted on a base frame (steel) (Item 3) with vibration absorbers (Item 34). It consists of one or two high-pressure multistage centrifugal pumps (Item 1) with filling (Item 1a) and drainage screw (Item 1b) as well as a switchgear (Item 2).

- Pressure-maintaining system with one pump (Fig. 1a):
  - Swing check valve on the discharge side (Item 8)
  - Stop valve on the discharge side (Item 15)
  - Kit (Fig. 2a) with pressure sensor (Item 12) and pressure gauge (Item 11) on the discharge side
  - One drain valve (Item 10), depending on the version, with strainer (Item 9).
  - Float switch for fill level control (Fig. 4, Item 35), installation in the tank (Fig. 4, Fig. 5, Item 21)
  - Float switch for low-water detection (Fig. 4, Item 35), installation in the tank (Fig. 5, Item 20)
  - Kit (Fig. 3) with solenoid valve (Item 30) and G1/2" stop valve (Item 31), installation with removable pipe elbow (Item 32) on the tank.
- Pressure-maintaining system with two pumps (Fig. 1b, 1c):
  - Pressure collecting pipe (Item 5) made of 304 stainless steel
  - One stop valve (Item 6, 7) per pump on the suction side and one on the discharge side
  - One swing check valve (Item 8) per pump on the discharge side
  - Kit (Fig. 2b) with pressure sensor (Item 12), pressure gauge (Item 11) and stop valve on the discharge side
  - One or two drain valves (Item 10), depending on the version, with strainer (Item 9).
  - Float switch for fill level control (Fig. 4, Item 35), installation in the tank (Fig. 4, Fig. 5, Item 21)
  - Float switch for low-water detection (Fig. 4, Item 35), installation in the tank (Fig. 4, Fig. 5, Item 20)
  - Kit (Fig. 3) with solenoid valve (Item 30) and G1/2" stop valve (Item 31), installation with removable pipe elbow (Item 32) on the tank.

High-pressure multistage centrifugal pumps (Fig. 1a, 1b and 1c; Item 1)

Different types of high-pressure multistage centrifugal pumps are used in the pressure-maintaining system depending on the application and the performance parameters required. For information on the pumps, see the enclosed installation and operating instructions.

Switchgear (Fig. 1a, 1b and 1c; Item 2)

The EC series switchgear is used to control and regulate the pressure-maintaining system. The switchgear is installed on a mounting bracket (Item 13). The electrical components of the system are connected to the switchgear. For information on the switchgear, see the enclosed installation and operating instructions.

Pressure sensor kit on the discharge side (Fig. 2a and 2b)

- Pressure gauge (Item 11)
- Pressure sensor (Item 12a)
- Electrical plug connection for pressure sensor (Item 12b)
- Drain cock (Item 18) only for 2 pump version
- Stop valve (Item 19) only for 2 pump version

Filling kit (Fig. 3)

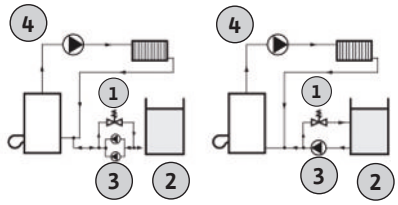
- Solenoid valve (Item 30)
- Stop valve (Item 31)
- Pipe elbow (Item 32) with connection to the tank

Floater kit (Fig. 4)

- Floater (Item 35)
- Floater/tank connection (Item 36)
- Threaded cable gland (Item 37)

The switchgear (Item 2) is mounted on the frame with a bracket (Item 13). All electrical components are connected ex works.

5.3 Mode of operation



1	Drain valve
2	Tank
3	Pump(s)
4	Heating and cooling water circulation systems

The pressure-maintaining system is used to maintain a certain pressure in a heating or cooling water circulation systems. If the pressure is too high, the drain valve opens to let water into the tank and reduce the system pressure. If the pressure is too low, the pump(s) will pump water out of the tank to increase the system pressure.

The pressure is monitored via the pressure sensor. The actual pressure value is measured continuously and communicated to the switchgear. As required, the switchgear starts or stops the pump(s) until the preset control parameters are reached.

Together with the float switch and solenoid valve, the pressure-maintaining system ensures the tank is sufficiently full. (For a description of the control mode and the control process, see the installation and operating instructions for the switchgear). The pressure-maintaining system can be refilled with water from the water supply via the solenoid valve.

5.4 Type key

Example: WEH2.0-2-405-PN10-T/EC-2D	
WE	Wilo Expansion
H	Horizontal pump
2.0	Pressure-maintaining system
2	1: 1 pump 2: 2 pumps
4	Volume flow Q in m³/h
05	Number of impellers
PN 10	Max. pressure (bar)
T	M: Single-phase 230 V T: Three-phase 400 V
EC	Electronically controlled (switchgear)
2D	1D : 1 drain valve 2D : 2 drain valves

5.5 Technical data

Mains voltage	See rating plate
Mains frequency	See rating plate
Motor efficiency	See rating plate
Protection class	See rating plate
Insulation class	See rating plate
Max. operating pressure	6 bar
Fluid temperature	+5 °C...+90 °C
Ambient temperature	0 °C...+40 °C

5.6 Scope of delivery

- Scope of delivery, see Fig. 2
  - System (without tank)
  - Switchgear
  - Installation and operating instructions for the system, pumps and the switchgear
  - Proof of certification

5.7 Accessories

- Tank according to system size (200 l to 5000 l available)

Additional accessories can be ordered separately (see accessories catalogue; e.g., standard accessories: 8 l tank kit, counter flange kit, vibration absorber, etc.).

6 Installation and electrical connection

6.1 Installation location

- Install the pressure-maintaining system in a dry, well-ventilated and frost-proof room that is separate and can be locked.
- Ensure transport routes (door frames, etc.).
- Sufficiently sized floor drainage (sewer connection, etc.) must be available in the installation room.

- No harmful gases may enter the room or be present there.
- Provide adequate space for maintenance work. The pressure-maintaining system should be freely accessible from at least two sides.
- Position the tank and the pressure-maintaining system at the same height.
- The installation surface must be horizontal and level. A slight height adjustment for stability is possible by means of the vibration absorbers in the frame (Fig. 7). Adjust the height as follows:
  - Loosen the counter nut (Item 33).
  - Screw the vibration absorber (Item 34) in or out as required.
  - Fix the counter nut again (Item 33).
- Before installing the pressure-maintaining system, ensure that all vibration absorbers are mounted and locked with the threaded nut (Fig. 7, Item 33).
- Ensure that the ambient temperatures are maintained (see technical data).
- Do not install the pressure-maintaining systems near living rooms or bedrooms.
- Use flexible connection pipes to avoid transmission of structure-borne noise and to ensure stress-free connection of the pipes.

6.2 Hydraulic connection

CAUTION

Damage to property due to incorrect installation.

- Observe the requirements laid out by the water supply company.
- Observe locally applicable standards.

CAUTION

Damage to property due to incorrect installation.

If the connections on the tank are not tightened or loosened properly, damage may occur.

- Connections must be countered with an additional open-end wrench when loosening or tightening.

CAUTION

Damage to property due to incorrect installation.

Pipework with varying diameter damages the pump

- Select piping for home installation that is appropriate for the pressure-maintaining system. (diameter of home installation pipework ≥ diameter of pressure-maintaining system connection)

- To isolate the pumps from the system during work, install stop valve in the discharge and suction lines.
- The pressure-maintaining system must always be equipped with a tank (connection see Fig. 5).
- Always install pipes stress-free.
- Use flexible connection pipes or vibration-absorbing collars to avoid distortion of the pipework and minimise the transfer of oscillations to the building installation.
- Connect the inlet pipes of the system to the T-connector or to the manifold (2 pump version).
- Connect the return pipe of the system to the drain valve.

Connect tank

- Connect the suction line (Fig. 1, Item 4) to the stop valve (Fig. 1, Item 6) with a flat gasket (included within the scope of delivery).
- Connect the suction line to the tank using the 1¼" adaptor (Fig. 1, Item 22).
- Version with 1 drain valve:
  - Connect the drain valve kit with filter to the tank using the 1" adaptor (Fig. 1, Item 23).
  - Connect the drain valve kit with filter and hose (Fig. 1, Item 14) and flat gasket (included within the scope of delivery) to the tank. 1 pump version: Connection to five-way distributor. 2 pump version: Connection to pressure collecting pipe.
- Version with 2 drain valves:
  - Connect T-connector kit with 1" adaptor (Fig. 1, Item 23) to the tank.
  - Connect the T-connector kit with hose (Fig. 1, Item 14) and flat gasket (included within the scope of delivery) to the system.

- Connect the 1" solenoid valve kit (Fig. 3) to the tank with ½" pipe elbow (Fig. 3, Item 32).
- Connect the float switch for low water (Item 20) and filling (Item 21) to the tank.
  - Mount the floater kit (Fig. 4) to the floater/tank connection (Item 36) and threaded cable gland (Item 37).

A 1" drain valve (Item 27) is supplied along with the tank.

- Connect the overflow opening (1¼" (Item 26)) to the wastewater system.
- With the 2 pump version, the pressure collecting pipe (Fig. 1, Item 5) can be connected on the right or on the left side. Close unused openings with the stoppers provided.
- It is recommended to limit pressure losses (lengths, diameters of connections, radii, etc.).

6.3 Align float switch

The float switches are already connected to the control device at the factory.

- Float switch for low water:
  - Position the float switch in the tank so that the minimum water level is at least 10 cm above the drain-priming plug of the pump.
- Float switch for filling:
  - Position the float switch in the tank so that filling starts when the water level for filling is reached.

6.4 Electrical connection

DANGER

Risk of fatal injury due to electrical current!

Improper conduct when carrying out electrical work can lead to death due to electric shock!

- Electrical work must be carried out by a qualified electrician in accordance with the locally applicable regulations.
- If the product is disconnected from the mains, secure it against being switched on again.

- To make the electrical connection, the corresponding installation and operating instructions and attached electrical wiring diagrams must be observed.
- Only connect the switchgear to the voltage specified on the rating plate and on the electrical connection diagram.
- Select the electrical connection cable according to the total power of the system (see rating plate).
- Earth the pressure-maintaining system according to local regulations and conditions. The connections provided for this purpose are marked (see circuit diagram).
- Earth the frame using an earthing strap. Connect the earthing strap to the frame using the screw provided.
  - 1 pump version (Fig. 6a)
  - 2 pump version (Fig. 6b)

7 Commissioning

CAUTION

Damage to property due to dry run.

If the pump runs dry, the mechanical seals will be damaged.

- Fill the pump with water and vent it before commissioning.

It is recommended that the initial commissioning of the pressure-maintaining system be carried out by Wilo customer service (In France: SESEM).

7.1 Preparing for commissioning

- Check that all pipe adaptors are stress-free.
- Fill the system with foreign substance and check the system for leakages via visual inspection.
- Open the stop valves at the pumps and in the suction and discharge line.
- Open the tap water inlet upstream of the solenoid valve.
- Check all wiring, including earthing.
- Check the motor protection switch in the switchgear to make sure that the correct rated current is set according to specifications on the motor rating plate.
- Check the supply voltage at the terminals of the switchgear.
- Activate the switchgear via the main switch and allow the tank to fill. Set automatic mode for filling the tank.

DANGER

Danger of death due to electrical current!

Voltage is applied to the terminals.

- Switch off the system's main switch before swapping the phases.

- Check direction of rotation monitoring for the pumps: Activate briefly to check whether the direction of rotation of the pump matches the arrow on the pump sticker. If the direction of rotation is incorrect, swap 2 phases in the terminal box of the motor.
- When the tank is filled, check that the water level is above the pump hydraulics.
- Vent the hydraulic system and pumps by opening the venting screws on the pumps.
- Check the setting of the required operating parameters on the switchgear (see installation and operating instructions for switchgear).

7.2 Setting the pressure

For information on the settings for automatic control, refer to the installation and operating instructions for the switchgear. The start and stop levels of the pumps are set according to the set pressure of the system.

Minimum operating pressure = static pressure of the building* + reserve (10 to 15 metres).

*Static pressure of the building = height difference between the pressure-maintaining system and the most unfavourable point of the building.

Switch-off pressure = Operating pressure +0.5 bar (may vary depending on installation).

The start and stop levels of the system are determined by these setting points:

- Pressure too high: Increased switch-off pressure from approx. 0.5 bar to 1 bar.
- Pressure too low: Decreased switch-off pressure from approx. 1 bar to 1.3 bar. These values must be adjusted according to the specific requirements of each installation.

7.3 Building up system pressure

- Open the stop valves on the discharge side and the stop valve of the pressure-maintaining system.
- Close the drain valve(s) (Fig. 1, Item 10) by turning the setpoint rotary knob clockwise as far as it will go.
- Start the filling process through the switchgear (see installation and operating instructions for switchgear).
- Start pumps manually until the pump switch-on pressure is reached (see pressure setting [▶ 22]).

7.4 Setting the drain valve

After setting the switchgear (see switchgear installation and operating instructions), set the drain valve(s).

NOTICE

Before setting the drain valve(s), determine the system pressure value to be maintained.

The pump switch-off pressure is reduced by approx. 0.1 bar when the drain valve is opened.

Turning the drain valve rotary knob clockwise increases the pressure.

1. Turn the drain valve rotary knob (Fig. 1a, 1b, 1c, Item 10) clockwise as far as it will go.
2. Stop the pump at the desired opening pressure. If necessary, adjust with the drain valve of the boiler.
3. Turn the rotary knob anticlockwise until the pressure drops.
   ▶ The drain valve is set.

7.5 Commissioning the system

CAUTION

Damage to property due to incorrect commissioning.

During operation, the stop valve (Fig. 2b, Item 19) must always be open.

CAUTION

Damage to property due to incorrect commissioning.

Do not allow the pump to run for longer than one minute with the drain valve closed.

When all preparations and checks from the previous sections have been carried out, automatic mode can be set. The pressure sensor measures the existing pressure and transfers the signal to the switchgear. If the pressure is below the preset start-up pressure, the pump is started. The pump runs until the circuit is filled with water and the preset pressure is reached.

NOTICE

After the system has reached its temperature, it may be necessary to refine the settings for starting and stopping the pump (see the installation and operating instructions for switchgear).

8 Maintenance

8.1 Maintenance tasks

- Maintenance and repair work may only be carried out by qualified personnel.
- 8 days after commissioning, clean the sieve (Fig. 1a, 1b, 1c; Item 9).
- Clean the sieve (Fig. 1, Item 9) every six months.
- Operate the stop valve every six months to prevent it from becoming stuck.

In case of frost or longer downtimes:

- Drain the pump by removing the lower screw plug (Fig. 1a, 1b, 1c; Item 1b).
- Manually vent the pump and carry out commissioning [▶ 21].
- Have an annual check of the system carried out by Wilo's customer service.
- Have an annual test of the watertightness of the installation carried out.

The pump does not require maintenance.

9 Faults, causes and remedies

DANGER

Danger of death due to electrical current!

The external electrical power supply is also present at the terminals when the main switch is switched off!

- Disconnect the external power supply before any work.
- Electrical work must be carried out by a qualified electrician.
- Observe local regulations.

WARNING

Risk of injury due to improper repair!

- Only allow repairs to be carried out by qualified personnel.

Fault	Cause	Remedies
One or two pumps are not pumping	Air intake on the suction side	Check all connections on the suction line for leaks. Check that the suction level in the tank is covered with water.
	High level of pressure loss on the suction side	Calculate pressure losses and ensure that they correspond to the NPSH of the pumps.
	Clogged suction pipe or clogged valve on the suction pipe	Check valve position and clean valve if necessary. Check the suction pipe and clean if necessary.

Fault	Cause	Remedies
Pump is not running	Thermal motor protection has triggered	The “Pump fault” light on the switchgear lights up. Check and reset the motor protection setting. Check the direction of rotation, the coupling or the absorbed current of the affected motor. Check mains voltage at each pump for correctness
	Defective magnetic circuit breakers or fuses	Check phases for short-circuit. Replace the motor if necessary. Reset circuit breaker or replace fuses (check calibration).
	Pump shaft blocked	Disconnect the power supply to the switchgear and check that the shaft rotates freely. If the shaft is blocked, disassemble the pump.
	Winding error	Disconnect the affected terminal strip of the motor from the mains supply and check the insulation of the earth’s stator. Replace the motor if necessary.
Pressure on the discharge side too low	Volume flow of the entire system is higher than the product capacity.	Replace the product with a suitable product (contact Wilo).
	Incorrect direction of rotation of the pump	Swap phases.
	Pump blocked by foreign objects.	Dismantle the pump and clean it.
	Power supply of the motors not sufficient	Check the power supply at the motor terminals.
	Air intake on the discharge side	Vent the pump(s).
Frequent pump starts	Pressure sensor defective	Check setting. Replace pressure sensor if necessary.
	Drain valve(s) not set or leaking	Check setting. Check valve and valve seat. Replace defective parts if necessary.
	Pressure loss too high	Reduce pressure losses between mains and product (see chapter Hydraulic connection [▶ 20]). Install the additional 8 l tank kit.
Frequent triggering of the low-water cut-out switchgear	Floater in the tank not set or defective	Check floater settings and adjust if necessary.
	Volume flow of the entire system is higher than the product capacity.	Replace the product with a suitable product (contact Wilo).
	Leakage	Eliminate the leakage.
Automatic mode defective	Switchgear defective.	Observe the installation and operating instructions of the switchgear.
	Cable break	Check connection of the terminal strip for the switchgear. Check the connections between the terminal strips in the switchgear. Observe the installation and operating instructions of the switchgear.
	Pressure sensor defective	Check contacts. Replace the pressure sensor if necessary.
Leakage at drain valve	Valve seal defective	Replace valve seal.

Fault	Cause	Remedies
System does not switch off or start	Stop valve of the pressure sensor closed (only for version with 2 pumps)	Open valve (Fig. 2b, Item 19).
	Stop valves closed	Open valves.
	Sensor fault	Check and clean or replace sensors.
	Incorrect setting on the sensor	Adjust the sensor parameterisation.
Water leakage at the overflow of the tank	Floater of the filling control defective	Replace if necessary.
	Gasket of the solenoid valve defective (foreign object present)	Dismantle and clean the gasket of the solenoid valve.
	Incorrect tank configuration	Check volume based on installation data.
Tank not adequately filled	Floater defective	Replace floater.
	Incorrect solenoid valve pressure	Check supply pressure.

- If the fault cannot be remedied, contact Wilo factory customer service.

10 Spare parts

Spare parts are ordered via customer service. To avoid return queries and incorrect orders, the serial or article number must always be supplied. **Subject to change without prior notice!**

11 Disposal

11.1 Oils and lubricants

Operating fluids must be collected in suitable containers and disposed of in accordance with the locally applicable guidelines. Wipe up drips immediately!

11.2 Protective clothing

Used protective clothing must be disposed off in accordance with the locally applicable guidelines.

11.3 Information on the collection of used electrical and electronic products

Proper disposal and appropriate recycling of this product avoids environmental damage and risks to personal health.

NOTICE

Disposal in domestic waste is prohibited!

In the European Union this symbol may be included on the product, the packaging or the accompanying documentation. It means that the electrical and electronic products in question must not be disposed of along with domestic waste.

Please note the following points to ensure proper handling, recycling and disposal of the used products in question:

- Hand over these products at designated, certified collection points only.
- Observe the locally applicable regulations!

Please consult your local municipality, the nearest waste disposal site, or the dealer who sold the product to you for information on proper disposal. Further recycling information at http://www.wilo-recycling.com.

12 Appendix

12.1 Captions

Fig. 1a Fig. 1b Fig. 1c	Example of WEH pressure-maintaining system with 1 pump and 1 drain valve Example of WEH pressure-maintaining system with 2 pumps and 1 drain valve Example of WEH pressure-maintaining system with 2 pumps and 2 drain valves
1	Pumps
1a	Pump filler screw
1b	Pump drainage screw
2	Switchgear
3	Framework
4	Suction line

Fig. 1a Fig. 1b Fig. 1c	Example of WEH pressure-maintaining system with 1 pump and 1 drain valve Example of WEH pressure-maintaining system with 2 pumps and 1 drain valve Example of WEH pressure-maintaining system with 2 pumps and 2 drain valves
5	Pressure collecting pipe
6	Stop valve suction side
7	Stop valve discharge side
8	Swing check valve
9	Filters
10	Drain valve
13	Mounting bracket for fixation of the switchgear
14	Discharge line
15	Stop valve discharge side
20	Floater level switching – low fill level (low water)
21	Floater level switching – high fill level (overflow)
22	Suction connection
23	Drain valve connection
34	Vibration absorber

Fig. 2a Fig. 2b	View of pressure sensor version with 1 pump View of pressure sensor version with 2 pumps
11	Pressure gauge
12a	Pressure sensor
12b	Pressure sensor (plug), electrical connection, PIN assignment
18	Drain cock
19	Stop valve

Fig. 3	Solenoid filler valve kit
30	Solenoid valve
31	Stop valve
32	Pipe elbow

Fig. 4	Floater kit
20	Float switch – low fill level (low water)
21	Float switch – high fill level (overflow)
35	Floater
36	Floater/tank connection
37	Threaded cable gland

Fig. 5	Tank connections
20	Floater level switching – low fill level (low water)
21	Floater level switching – high fill level (overflow)
22	Suction connection
23	Drain valve connection
24	Degassing opening – vertical version only
26	Overflow opening
27	Drain valve
32	Pipe elbow for solenoid filler valve kit

Fig. 6a: Earth connection, 1 pump version

Fig. 6b: Earth connection, 2 pump version

Fig. 7	Vibration absorber settings
33	M10 counter nut
34	Vibration absorber

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