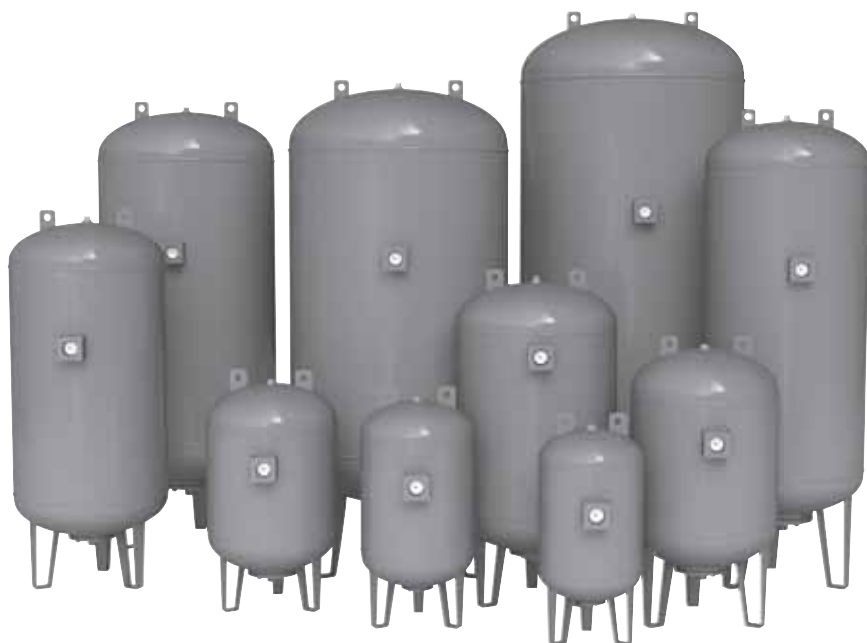


GT-U+

Installation and operating instructions



Other languages

<http://net.grundfos.com/qr/i/99376199>

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innovate

GRUNDFOS 

English (GB) Installation and operating instructions

Original installation and operating instructions

These installation and operating instructions describe Grundfos GT-U+.

Sections 1-5 give the information necessary to be able to unpack, install and start up the product in a safe way.

Sections 6-10 give important information about the product, as well as information on service, fault finding and disposal of the product.

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Read this document before installing the product. Installation and operation must comply with local regulations and accepted codes of good practice.

1. General information

1.1 Hazard statements

The symbols and hazard statements below may appear in Grundfos installation and operating instructions, safety instructions and service instructions.

DANGER



Indicates a hazardous situation which, if not avoided, will result in death or serious personal injury.

WARNING



Indicates a hazardous situation which, if not avoided, could result in death or serious personal injury.

CAUTION



Indicates a hazardous situation which, if not avoided, could result in minor or moderate personal injury.

The hazard statements are structured in the following way:

SIGNAL WORD



Description of hazard

Consequence of ignoring the warning.
- Action to avoid the hazard.

1.2 Notes

The symbols and notes below may appear in Grundfos installation and operating instructions, safety instructions and service instructions.



Observe these instructions for explosion-proof products.



A blue or grey circle with a white graphical symbol indicates that an action must be taken.



A red or grey circle with a diagonal bar, possibly with a black graphical symbol, indicates that an action must not be taken or must be stopped.



If these instructions are not observed, it may result in malfunction or damage to the equipment.



Tips and advice that make the work easier.

2. Receiving the product

2.1 Inspecting the product

On receipt of the product, do the following:

1. Check that the product is as ordered. If the product is not as ordered, contact Grundfos.
2. Check that no visible parts have been damaged. If any visible parts have been damaged, contact the transport company.

3. Installing the product

3.1 Location

Install the tank in a dry and covered location, where a leak will not cause water damage. Install the tank on the outlet side of the pump and as close to the pump as possible to reduce friction loss.

It must be possible to inspect the tank from all sides. The gas-filling valve and the nameplate must be visible.

The tank must not be allowed to rub against any surrounding walls or hard surfaces.

3.1.1 Thermal expansion tank location

The thermal expansion tank must be installed on the outlet side of the pump and on the return side of the water heater.

Install the thermal expansion tank indoors in a frost-free room.

3.2 Mechanical installation



Installation must be in accordance with local regulations.

Check the tank nameplate for maximum operating pressure and temperature before installing the tank.



The maximum system pressure must be lower or equal to the maximum operating pressure for the tank.

The maximum operating pressure must not be exceeded during normal operation or during system check.

Install the tank so that it is not stressed by the pipes. If vibrations are likely to occur, we recommend that the tank is installed so that vibrations are absorbed.

We recommend to follow these steps, described in detail below:

1. Lift and position the tank.
2. Level as required.
3. Secure the tank.
4. Connect the pipes, fittings and valves.
5. Check and adjust, if necessary, the precharge pressure.



No additional loads from the pipe system or equipment are allowed.



Do not use a tank with signs of damage, such as dents, leakage or corrosion.

3.2.1 Foundation

Place the tank on its frame in a vertical position on a solid and level floor or foundation.

Secure the tank to the floor or foundation by means of bolts. Use bolts, washers and nuts that are suitable for the surface of the floor or base frame. Use all bolt holes in the frame when securing the tank.

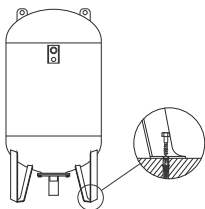


Fig. 1 Example of floor installation

TM06 7710 3716

3.2.2 Lifting the tank

! DANGER

Crushing hazard

- Death or serious personal injury
- Use a lifting crane or similar lifting equipment.
 - Wear safety shoes when handling the pump.



Use all lifting eyes on the tank when lifting the tank.

Be careful not to damage the tank during handling.

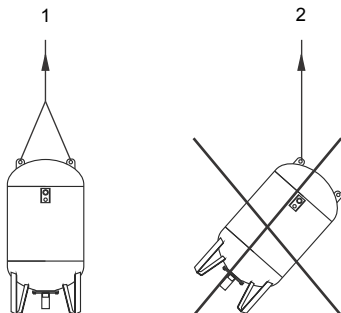


Fig. 2 Lifting the tank

TM06 7626 3616

Pos.	Description
1	Correct lifting
2	Incorrect lifting

3.2.3 Relief valve

We recommend to install a suitable pressure-relief valve.

3.2.4 Isolating valve

We recommend to install an isolating valve between the pressure tank and pipe so you can isolate the pressure tank for service.

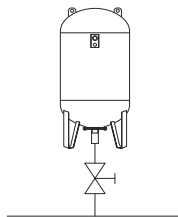


Fig. 3 Isolating valve

TM07 0426 5017

3.3 Multiple tank installation



All tanks must have the same precharge pressure for the system to function properly.

Tanks must be installed on a header to ensure all tanks receive equal and balanced pressure.

Adjust the precharge pressure of each tank as described in section [4.2 Adjusting the precharge pressure](#).

4. Starting up the product

4.1 Precharge pressure

Correct precharge pressure is required for proper tank performance.

The precharge pressure must be adjusted according to the actual application and the installed pump.



The difference between the precharge pressure and the system pressure must never exceed 4 bar (58 psi). If system pressure needs to be lowered, the tank must be isolated or emptied.

Recommended precharge pressures:

- 0.9 x cut-in for fixed-speed pumps with a differential pressure < 2 bar (30 psi).
- 0.7 x cut-out for fixed-speed pumps with a differential pressure > 2 bar (30 psi).
- 0.7 x setpoint for variable-speed pumps.

4.1.1 Precharge pressure for heating applications

Heating expansion tanks accommodate the natural expansion of water as it is heated.

- Tanks in closed-loop heating circuits must be precharged to system fill pressure.
- Tanks in open-loop heating storage systems must be precharged to the pressure of the mains supply.

4.2 Adjusting the precharge pressure

CAUTION

Pressurised system



Minor or moderate personal injury
- Make sure there is no pressure on the tank before starting any work on the tank.

CAUTION

Pressurised system



Minor or moderate personal injury
- Never exceed the maximum operating pressure of the tank.
- Always precharge the tank with air at ambient temperature only.



The tanks are supplied from the factory with a precharge pressure. See the tank nameplate.

Release or add air to set the recommended precharge pressure.

1. Isolate the tank from the system.
2. Open a drain valve and drain the tank. The tank must be completely empty to avoid that water pressure affects precharge readings.
3. Release or add air by means of the tank air valve to the desired precharge pressure. Use an air compressor to add air.
4. Reconnect the tank to the system.

4.2.1 Precharge pressure above 4 bar (58 psi)

To precharge the tank above 4 bar (58 psi), follow this procedure:

1. Isolate the tank from the system.
2. Drain all water from the tank. If the tank pressure is high, release air to reduce the precharge pressure to 3 bar (44 psi) before you open the drain valve.
3. Increase the precharge pressure in steps of maximum 3 bar (44 psi). After each step, equalise the system pressure by filling water into the system.

5. Handling and storing the product

5.1 Handling the product

See section [3.2.2 Lifting the tank](#)

5.2 Storing the product

Store tanks in a covered, dry and ventilated place, protected from rain and sun.

Used tanks must be emptied of water before storing.

6. Product introduction

GT-U+ pressure tanks are vertical tanks ranging from 100 to 3000 litres and available in 10, 16 and 25 bar pressure ratings. The tanks are designed with a replaceable bladder and built-in pressure gauge. The pressure tank body is made of steel.

6.1 Intended use

Typical applications include booster systems, heating expansion and hammer arresting in high-rise and multistorey buildings.

GT-U+ tanks are suitable for use in:

- indoor domestic applications: heated buildings with a clean atmosphere such as offices, shops, schools and hotels.
- indoor commercial applications: non-heated buildings where condensation may occur, such as storehouses and sports halls.
- outdoor applications with a clean or slightly contaminated atmosphere, mainly rural areas.

6.2 Pumped liquids

The following liquids can be used in the pressure tank:

- Potable water, well water.
- Grey water: domestic wastewater from dishwashers, washing machines, cabinet showers.
- Water mixture with a maximum of 50 % glycol.

6.3 Identification

6.3.1 Nameplate

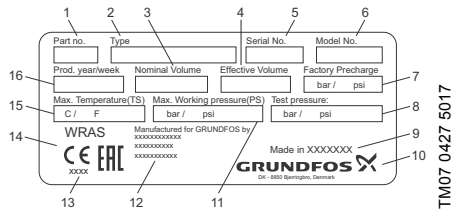


Fig. 4 Example of a nameplate

Pos.	Description
1	Product number
2	Type designation
3	Total tank volume [L/Gallon]
4	Effective tank volume [L/Gallon]
5	Serial number
6	Model number
7	Factory-set precharge pressure
8	Test pressure
9	Country of origin
10	Manufacturer
11	Maximum system pressure
12	Production site
13	Notified body
14	Markings and approvals
15	Maximum operating temperature
16	Production code (year and week)

7. Servicing the product

7.1 Maintaining the product

CAUTION

Pressurised system

- Minor or moderate personal injury
- Make sure there is no pressure on the tank before starting any work on the tank.
 - Release all air pressure and empty all water from the tank before dismantling parts exposed to pressure.



Do not use a tank with signs of damage, such as dents, leakage or corrosion.

Precharge pressure check	every six months
Visual external check	every five years

Checking the precharge pressure:

- Follow the instructions in section [4.2 Adjusting the precharge pressure](#).

Performing visual external check:

1. Is corrosion visible?
2. Are scratches or dents visible?

In case of serious damage, contact your nearest Grundfos company.

8. Fault finding the product

CAUTION

Pressurised system



Minor or moderate personal injury

- Make sure there is no system pressure on the tank before starting any work on the product.
- Release all air pressure and empty all water from the tank before dismantling parts exposed to pressure.

Fault	Cause	Remedy
1. Water escapes during the precharge pressure check.	a) The bladder is defective. The tank is full of water.	Check the air valve mounted on the tank. If water escapes when the valve pin is pushed down, the bladder has burst. Replace the tank or the bladder.
2. Drained water is rusted, calcified or has solid deposits.	a) The bladder is defective.	The bladder is torn or has burst. Replace the tank or the bladder.
	b) The tank is blocked.	Check the tank drainage plug and the tank outlet connection. If it is difficult to drain the tank, the tank is blocked by a collapsed or burst bladder or by sediment. Replace the tank or the bladder.

9. Technical data

See the tank nameplate.

10. Disposing of the product

This product or parts of it must be disposed of in an environmentally sound way:

1. Use the public or private waste collection service.
2. If this is not possible, contact the nearest Grundfos company or service workshop.

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