

Installation and Operation Instructions

THERMAL STORES
PS 3000 N25, PS 4000 N25 and PS 5000 N25



CE

EN
v. 1.1

Regulus

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1 - Description

PS N25 Thermal Stores are intended for storing and subsequent distribution of thermal energy from solid-fuel fired boilers, heat pumps, solar collectors, electric boilers etc. No heating coils can be installed into these tanks, just an el. heating rod. Electric heating elements of 2-12 kW output, power supplied either with 230V or 3x230V/400V, can be installed into the 2,5" sleeves using a reducing piece. Tanks are fitted with nine side sleeves to connect heat sources, four for sensor sheaths and one for a safety valve. As an option, 100mm thick insulation for these tanks is sold separately.

1.1 - Models

Three models of 3022, 3991 and 4989 l capacity.

1.2 - Tank protection

The inner surface has no finish, no anticorrosion protection, the outer surface is lacquered in gray.

1.3 - Thermal insulation

Tank insulation is available as a separate item, installed on the tank on the spot for easier handling. The insulation is made of 100 mm thick flexible polyurethane foam and fitted with a zippered PVC surface layer.

1.4 - Connection points on the tank

8 side sleeves in a 90° sector, G 2,5" F thread

1 top sleeve, G 2,5" F thread

4 side sleeves for sensor sheaths, G ½" F thread

1 side sleeve for a 3 bar safety valve, G ½" F thread

1.5 - Packing

Tanks are delivered standing, each screwed to its pallet, packed in bubble wrap.

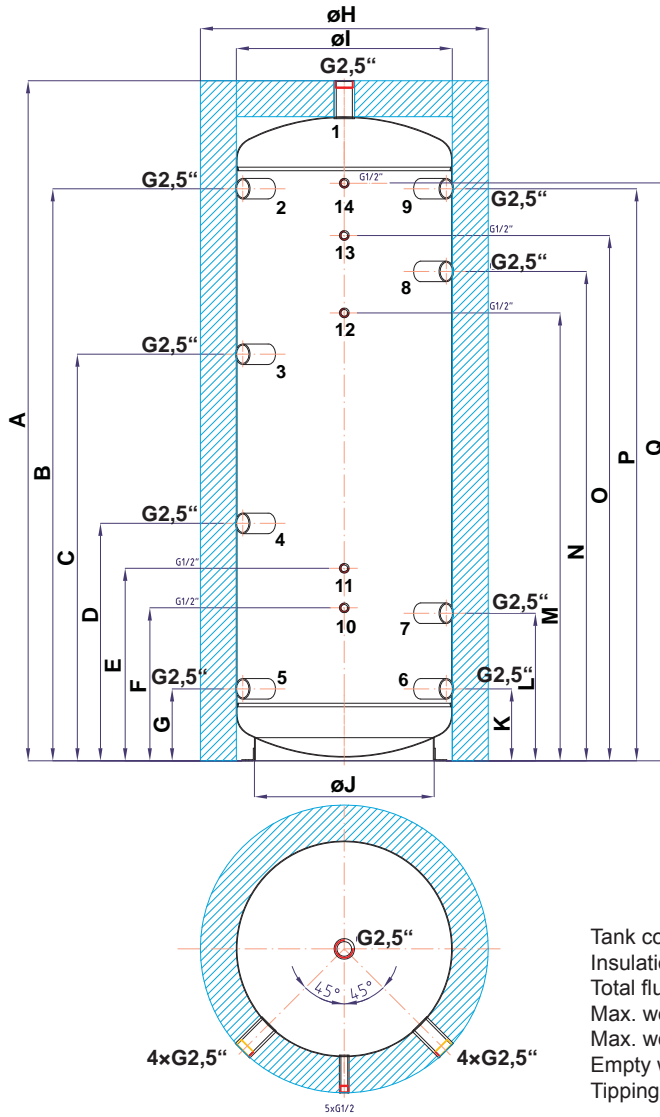
2 - General Information

This Owners Manual is an integral and important part of the product and must be handed over to the User. Read carefully the instructions in this Manual as they contain important information concerning safety, installation, operation and maintenance. Keep this Manual for later reference. The appliance shall be installed by a qualified person according to valid rules and Manufacturer's Instructions, otherwise the warranty is null and void.

This appliance is designed to accumulate heating water and distribute it subsequently. It shall be connected to a heating system and heat sources.

Using the thermal store for other purposes than above described is forbidden and the manufacturer accepts no responsibility for damage caused by improper or wrong use. The thermal store shall not be used as a DHW tank!

3 - Technical Data and Dimensions



Tank code: a
 Insulation code: b
 Total fluid volume in tank: c
 Max. working pressure in tank PS3000 N25 + PS5000 N25: **3 bar**
 Max. working temperature in tank: **95 °C**
 Empty weight: d
 Tipping height without insulation: e

Type - model		PS3000 N25	PS4000 N25	PS5000 N25
Tank code	a	14454	14457	14331
Insulation code	b	14456	14459	14333
Fluid volume in tank [l]	c	3022	3991	4989
Empty weight [kg]	d	309	423	485
Tipping height [mm]	e	2180	2490	2970
Dimensions [mm]	A	2065	2355	2855
	B	1545	1815	2315
	C	1185	1375	1705
	D	805	905	1075
	E	715	780	925
	F	545	600	670
	G	445	465	465
	Ø H	1700	1800	1800
	Ø I	1500	1600	1600
	Ø J	1300	1500	1500
	K	445	465	465
	L	645	675	775
	M	1265	1490	1855
	N	1345	1605	2005
	O	1445	1705	2105
	P	1545	1815	2315
	Q	1565	1835	2235

4 - Operation

In the thermal store, heating water is heated up from several heat sources like various types of hot-water boilers, renewable energy sources (heat pumps, solar collectors), or electric heating elements. The thermal store shall be connected to a heat source through G 2,5" threaded fittings. Should the tank be connected to a solar system, this must be done via a heat exchanger because solar systems are not filled with heating water. Individual connection points are assigned according to the circuits to be connected. There is a wide choice of combinations, just some examples are described in the following chapter.

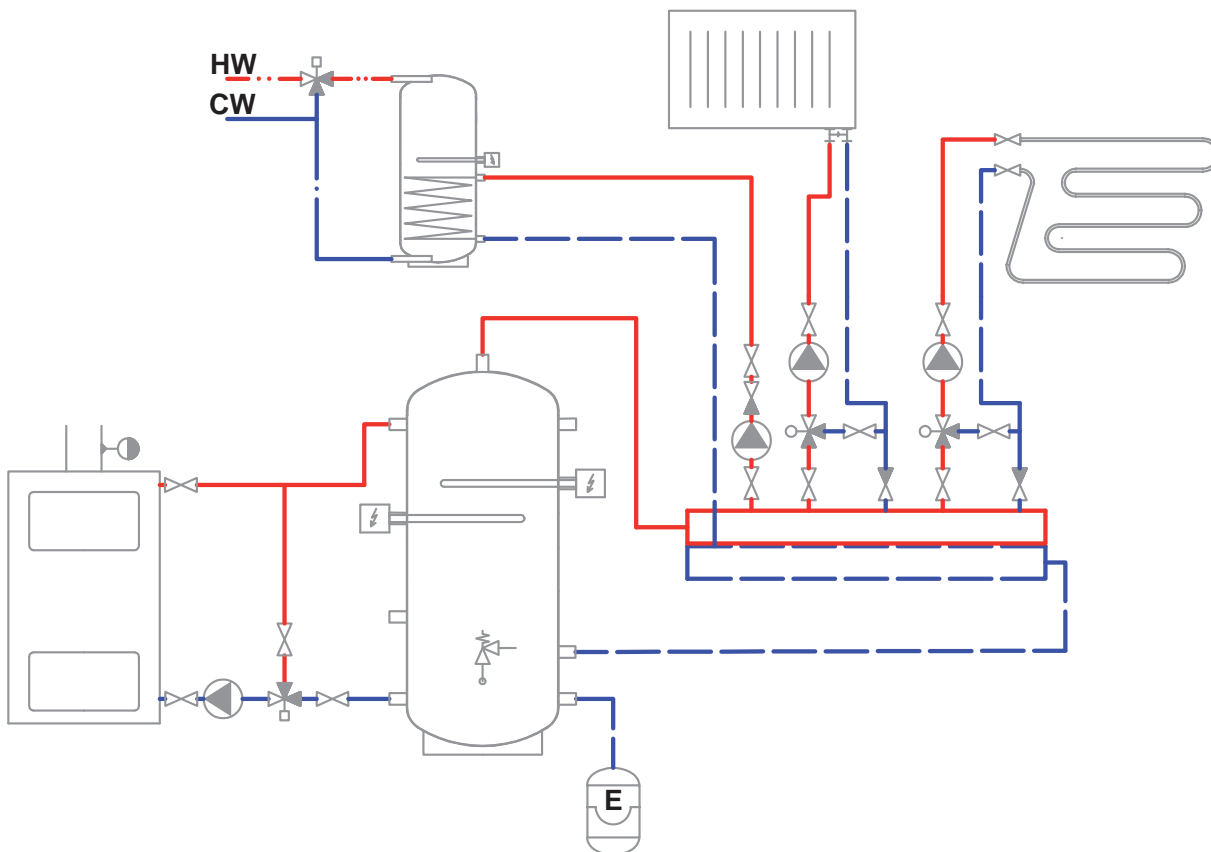
5 - Examples of ports allocation

Conn. point	Example I. -solid boil. + el.	Example II. - firepl. + gas boil.	Example III. - heat p. + el.
1	outlet to a heating system	outlet to a heating system	outlet to a heating system
2	inlet from a solid fuel boiler	outlet to a gas boiler	el. heating element
3	el. heating element	plug	inlet from a heat pump
4	plug	plug	plug
5	inlet to a solid fuel boiler	inlet to a fireplace	return line to a heat pump
6	drain valve, expansion vessel	drain valve, expansion vessel	drain valve, expansion vessel
7	return line from a heating system	return line from a heating system	return line from a heating system
8	plug	plug	plug
9	el. heating element	plug	el. heating element
10	safety valve, G 1/2", 3 bar	safety valve, G 1/2", 3 bar	safety valve, G 1/2", 3 bar
11,12,13,14	sheaths for weather compensated controller, thermometer, thermostat...		

Connections depend on the circuit to be connected, the a.m. examples are informative only.

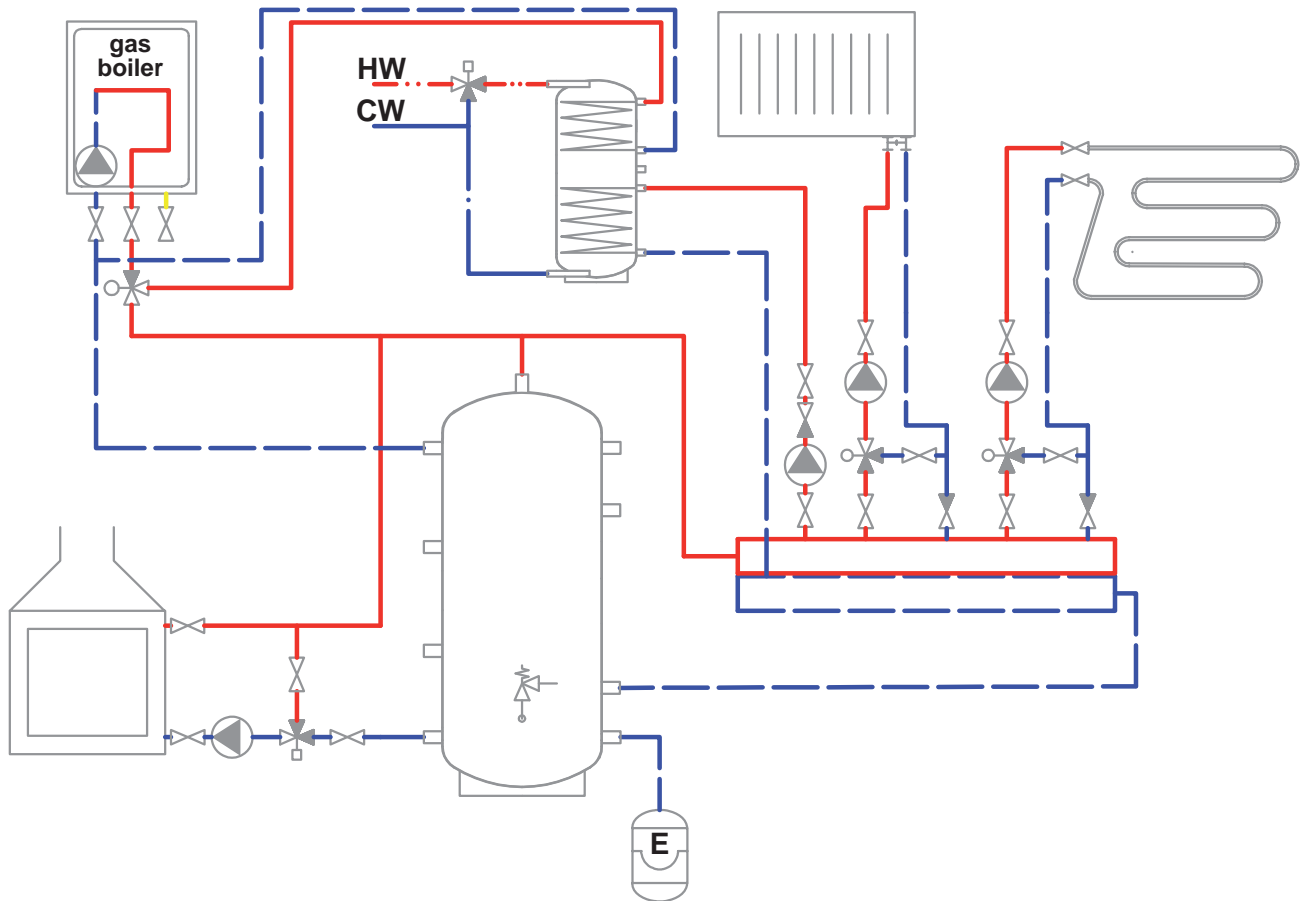
Example I.

Solid fuel boiler and el. heating element.



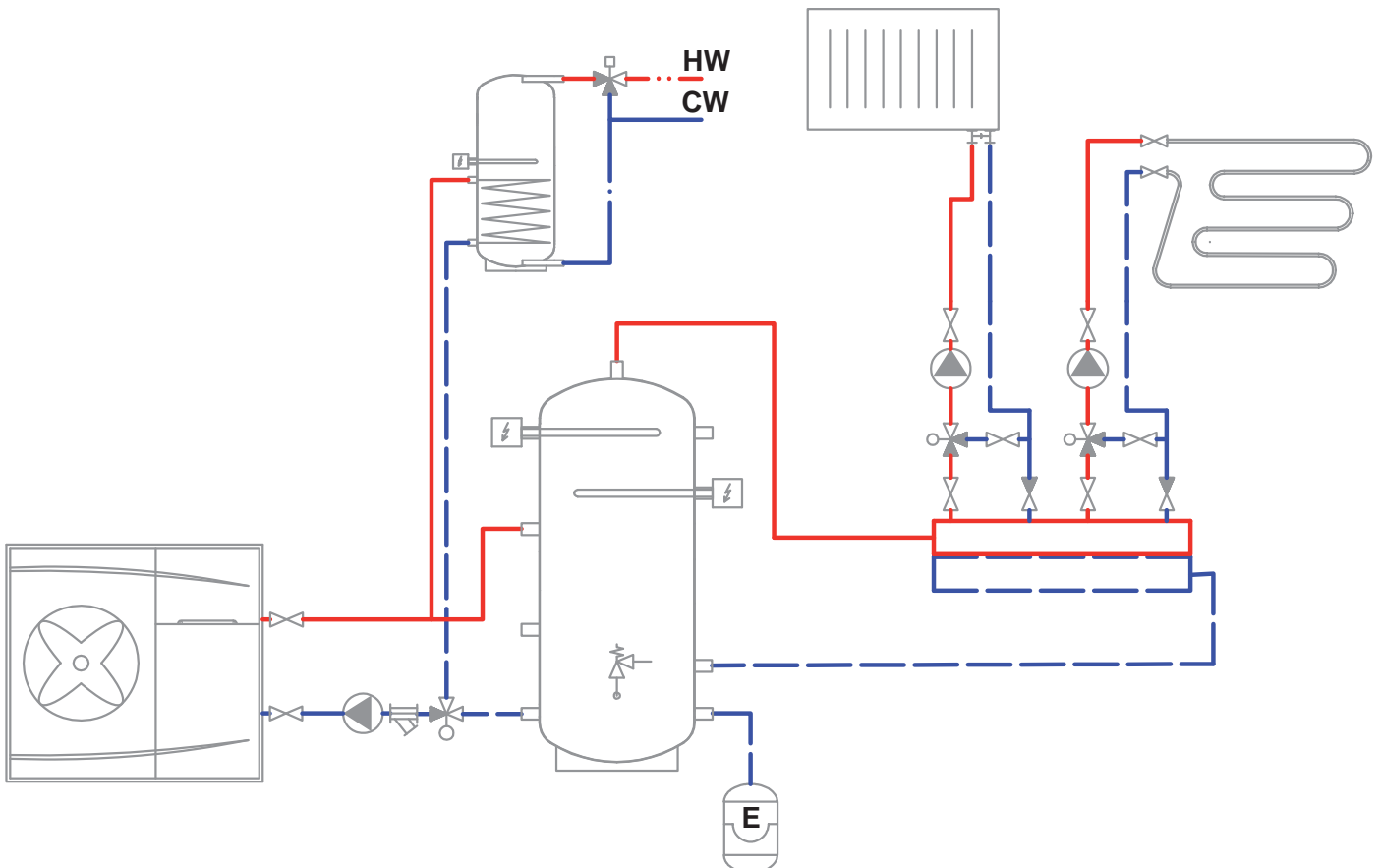
Example II.

Gas fired boiler and hydronic fireplace.



Example III.

Heat pump and electric heating element.



6 - Installation and Commissioning

Installation shall meet valid rules and may be done by qualified staff only.

Defects caused by improper installation, use or handling are not covered by warranty.

After the tank is installed and connected to an existing heating system, it is recommended to clean the entire heating system using a suitable cleaning agent, e.g. MR-501/R.

Anti-corrosion protective liquid should be also used, e.g. MR-501/F or F1.

6.1 - Connection to heat sources

Place the tank on the floor, as close to your heat source as possible. Mount the insulation, cf. Installing Insulation on the Tank. Connect the heating circuits to inlets and outlets respecting the thermal stratification in the tank. Install a drain valve at the lowest point of the tank. Install an air vent valve at the highest point of the system. Insulate all the connecting piping.

6.2 - Connection to a solar system

The tank can is not primarily intended for use with a solar system but if needed, this can be done via a heat exchanger between the solar system and the tank. In such a case, insulate well all the piping between the tank and the solar system.

6.3 - El. heating element installation

The tank may be fitted with electric heating elements up to 12kW output. They can be power-supplied either directly (elements with built-in thermostat) or via a controller for the entire heating system.

All electric heating elements shall be protected by a safety thermostat.

Electric heating elements shall be installed by an authorized person only.

6.4 - Commissioning

This tank is not designed for DHW heating.

The tank shall be filled up together with the heating system, respecting valid standards and rules. In order to minimize corrosion, special additives for heating systems should be used. The quality of heating water depends on the quality of filling water at commissioning, on the top-up water and on the frequency of topping up. This has a strong influence on the lifetime of heating systems. Poor quality of heating water may cause problems like corrosion or incrustation, esp. on heat transfer surfaces.

Fill the heating circuits with the appropriate fluids and air-bleed the entire system. Check all connections for leaks and verify the system pressure. Set the heating controller in compliance with the documentation and manufacturer's recommendations. Check regularly proper function of all control and adjustment elements.

7 - Installing Insulation on the Tank

Instructions

Product description

Thermal insulation of flexible polyurethane foam with a zippered PVC surface layer.

Warning

Insulation installation shall be done in two or three persons, depending on its size. The zippered, PVC coated flexible-foam insulation **must not be installed at temperatures below 20 °C**. If this cannot be avoided, the insulation shall be pre-warmed in another room to at least 20 °C. It is impossible to install insulation of lower temperature, there is a risk of damage, esp. to the zipper.

Do not use any tools for installation.

Keep away from open fire.

Installing Insulation

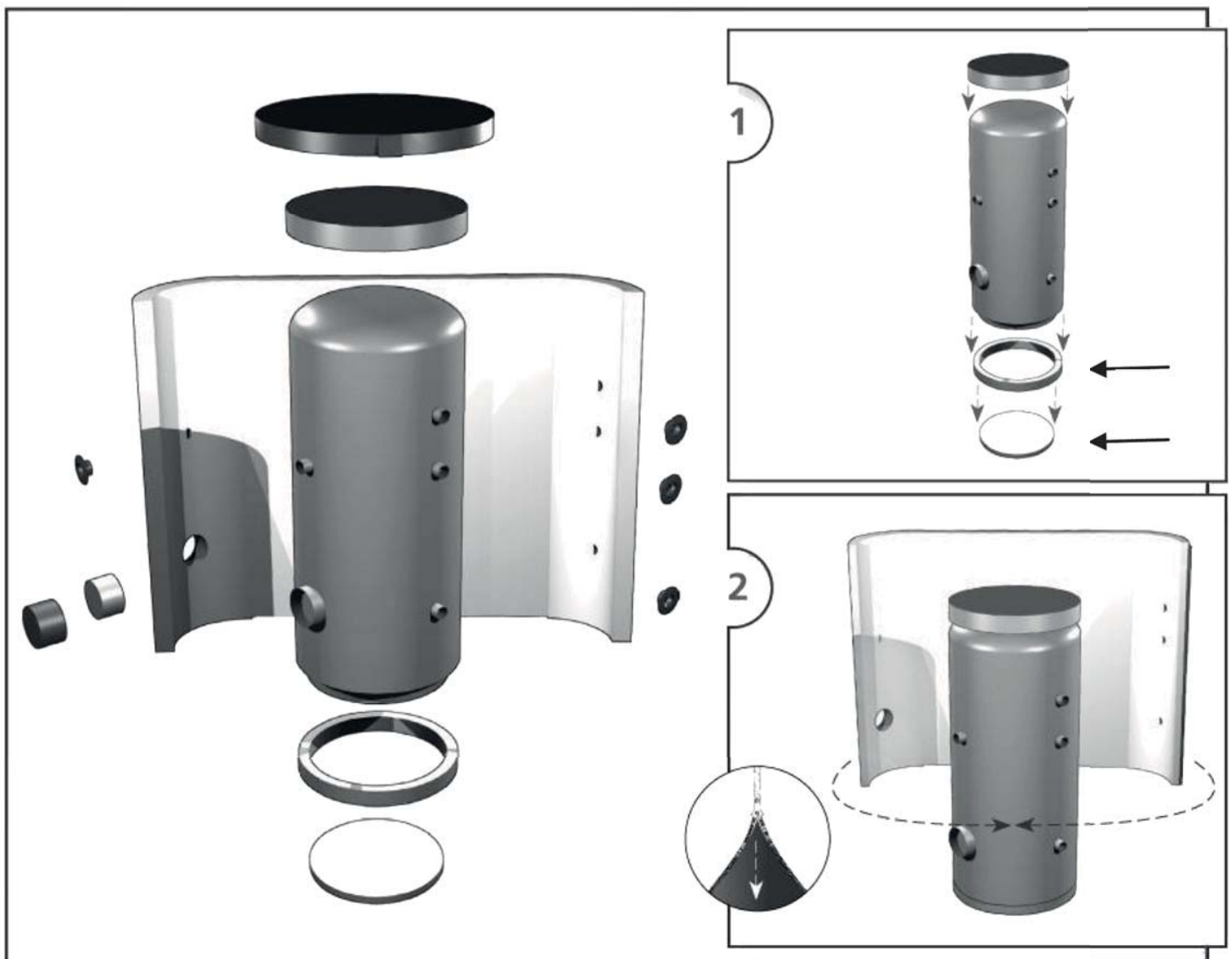
1. Fix the tank following installation instructions.
2. Wrap the insulation around the tank carefully. Check that the insulation adheres to its body perfectly. This can be reached by rubbing and patting the insulation by hand from its center evenly in both directions until the insulation adheres to the tank's surface completely and no bubbles are left.
3. Use the holes for sleeves as a rest during the insulation installation.
4. At least one person presses the insulation to the tank, pulling both ends together. The other person closes the zipper.
5. Put on the upper insulation and cover.
6. Push on the covering plastic rosettes depending on the size of sleeves, or put on the flange plug(s) with insulation.
7. Finish the tank installation in compliance with the respective instructions and valid standards and rules.

Warranty on insulation

The insulation is covered by a 24-month warranty. This period starts the next day after the insulation is sold.

- Warranty shall become null and void if:
 - the procedure described in the Installation Manual was not respected,
 - the product was used for other purposes than intended.
- Warranty does not cover:
 - usual wear and tear,
 - damage caused by fire, water, electricity or a natural disaster,
 - defects caused by failure to use the product in compliance with its intended purpose, by improper use and insufficient maintenance,
 - defects caused by mechanical damage to the product,
 - defects caused by tampering or incompetent repair.

Installation instructions for soft insulation with PU leather surface



8 - Maintenance

If the tank is fitted with a heating element, disconnect it from the mains first. Clean the exterior of the tank with a soft cloth and a mild detergent. Never use abrasive cleaners or solvents. Check all connections for leaks.

9 - Disposal

Packing shall be disposed of in compliance with the valid rules. When the product reaches the end of its life, it shall not be disposed of as household waste. It shall be dropped off at a Local Waste Recycling Center. Insulation shall be recycled as plastic and the steel vessel as scrap iron.

10 - Warranty

This product is covered by warranty under the conditions listed in this Manual and in compliance with the Warranty Certificate. A Warranty Certificate is an integral part of this thermal store scope of supply.



REGULUS spol. s r.o.
Do Koutů 1897/3
143 00 Praha 4
CZECH REPUBLIC

<http://www.regulus.eu>
E-mail: sales@regulus.cz