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PS N25

Installation and Operation Manual

THERMAL STORES

PS 500 N25, PS 1000 N25, PS 1500 N25, PS 2000 N25, PS 3000 N25, PS 4000 N25, PS 5000 N25

EN

PS N25

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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. These tanks do not enable installation of tube heat exchangers. 230V or 3x230V/400V heating elements can be installed directly into the 2.5” connections. Tanks are fitted with nine connections for heat sources or a heating system, four connections for installing sensor sheaths and one connection for a safety valve. A 100mm thick insulation can be purchased as a separate item.

1.1 - Models

Seven models of 476, 960, 1506, 2007, 3022, 3991 and 4989 l volume.

1.2 - Tank protection

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

1.3 - Thermal Insulation

Thermal insulation is available as a separate item. For easier handling, the insulation shall not be fitted on the tank untilit reaches its definite place of installation. The insulation is made of fleece, 100 mm thick, with a hard polystyrene surface. It is closed by a quick lock.

1.4 - Connection points on the tank

8× side connections in a circular section of 90°, G 6/4“ F thread
1× top connection, G 6/4“ F thread
4× side connections for sensor sheaths, G 1/2“ F thread
1× connection for installation of a 3bar safety valve, G 1/2“ F thread

1.5 - Packaging

Thermal stores are delivered standing, each screwed to its separate pallet, packed in bubble wrap.

2 - General Information

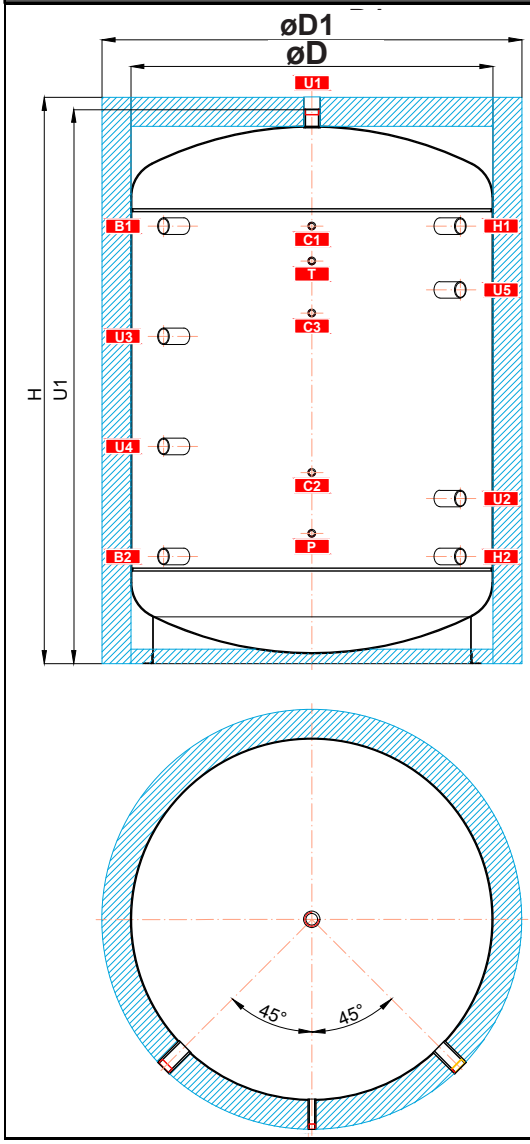
This Manual is an integral and important part of the product and must be handed over to the User. Read carefully the instructions in this Manual as they contain important information concerning safety, installation, operation and maintenance. Keep this Manual for later reference. The appliance shall 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 thermal energy of heating water and distribute it subsequently. It must 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 must not be used as a hot water storage tank!

3 - Dimensions and Other Technical Data

Dimensions



CONNECTIONS	
pos.	connections
Heat sources	
B1	G 2,5" F
B2	G 2,5" F
Heating system	
H1	G 2,5" F
H2	G 2,5" F
Control and safety	
C1	G 1/2" F
C2	G 1/2" F
C3	G 1/2" F
T	G 1/2" F
P	G 1/2" F
Control and safety	
U1	G 2,5" F*
U2	G 2,5" F
U3	G 2,5" F
U4	G 2,5" F
U5	G 2,5" F

** for PS 1000 N25 tank there is G 6/4" F thread at U1 connection*

Tank code: ..... **a**
Insulation code: ..... **b**
Storage volume: ..... **c**
Max. working pressure in tanks PS 500 N25 a PS 1000 N 25: ... **4 bar**
Max. working pressure in tanks PS 1500 N25 ÷ PS 5000 N25: .. **3 bar**
Max. working temperature in tank: ..... **95 °C**
Empty weight: ..... **d**
Tipping height without insulation: **V1**

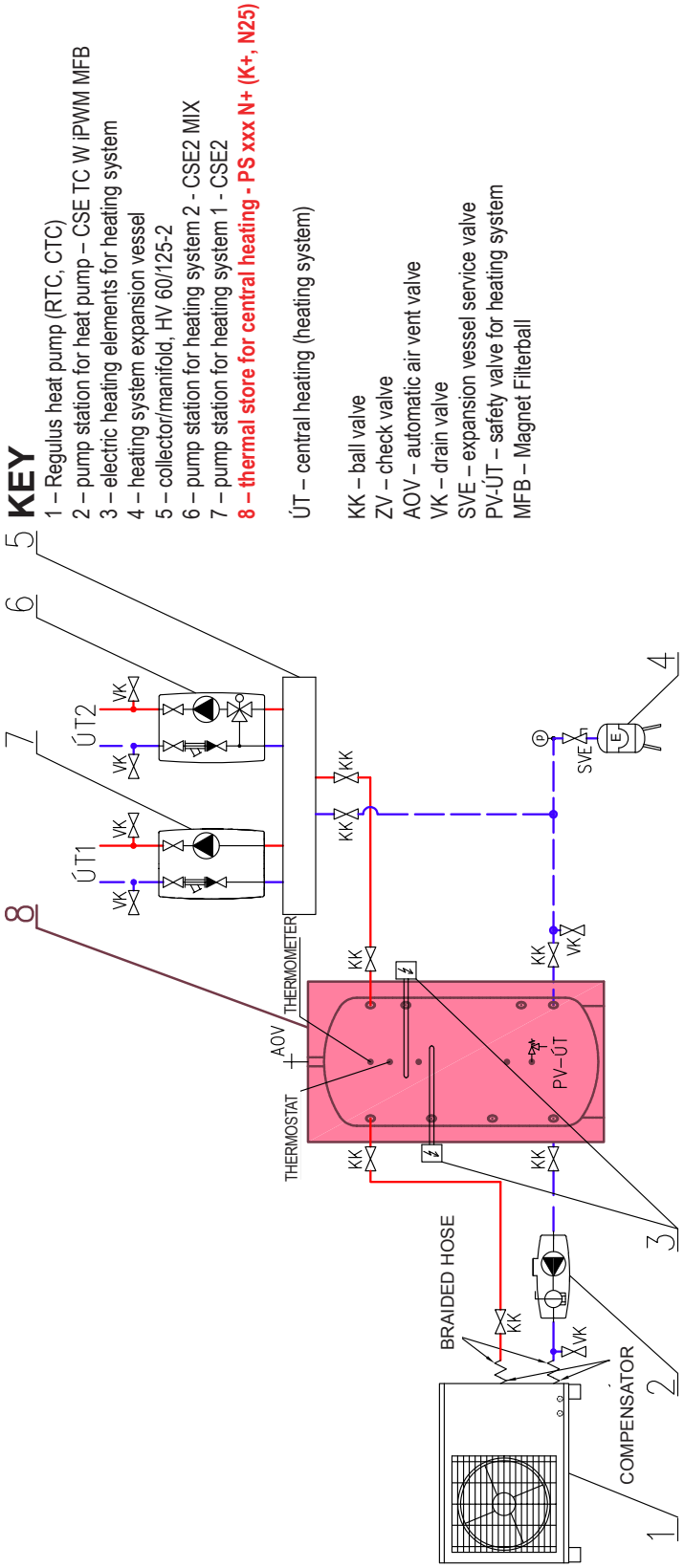
Type - model		PS 500 N25	PS 1000 N25	PS 1500 N25	PS 2000 N25	PS 3000 N25	PS 4000 N25	PS 5000 N25
Tank code	a	19272	21366	19379	19370	14454	14457	14331
Insulation code	b	19274	21464	19381	19372	19345	19352	19358
Storage volume [l]	c	476	960	1506	2007	3022	3991	4989
Empty weight [kg]	d	74	112	172	203	345	384	485
Tipping height [mm]	V1	1940	2075	1965	2055	2180	2490	2970
Dimensions [mm]	ø D1	800	990	1300	1450	1700	1800	1800
	ø D	600	790	1100	1250	1500	1600	1600
	B1	1605	1780	1465	1498	1545	1815	2315
	B2	245	280	355	390	445	465	465
	H	1915	2124	1885	1955	2065	2355	2855
	H1	1915	1780	1885	1955	2065	2355	2855
	H2	245	280	355	390	445	465	465
	C1	1615	1780	1475	1510	1565	1835	2335
	C2	560	615	625	660	715	780	925
	C3	1270	1435	1175	1210	1265	1490	1855
	T	1485	1650	1355	1390	1445	1705	2105
	P	450	415	450	450	545	600	670
	U1	1605	2044	1465	1498	1545	1815	2315
	U2	435	490	535	582	645	675	775
	U3	1155	1280	1095	1130	1185	1375	1705
	U4	685	780	715	750	805	905	1075
	U5	1385	1550	1255	1278	1345	1605	2005

4 - Operation

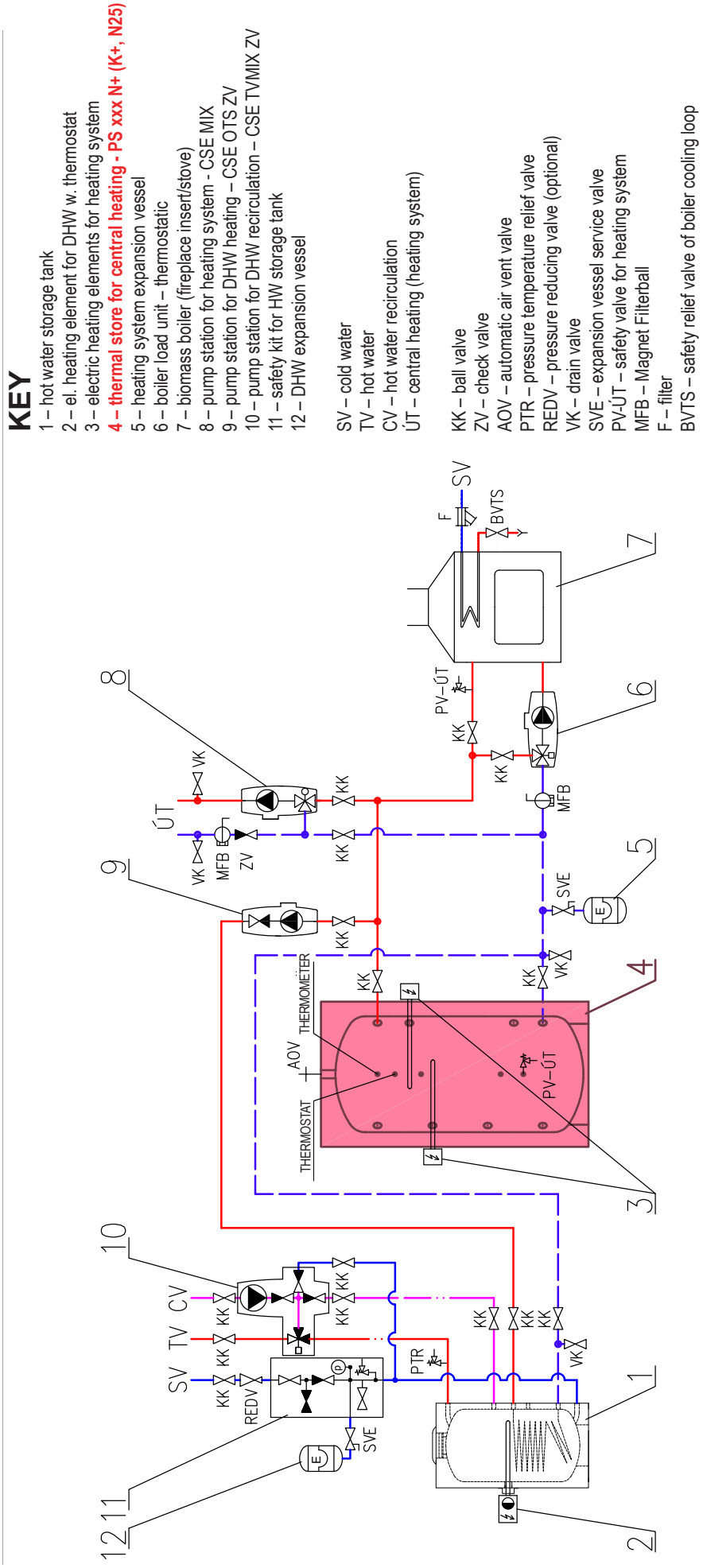
In a thermal store, heating water can be heated up by various types of hot-water boilers, renewable energy sources (heat pumps, solar collectors), or possibly also by electric heating elements.
The thermal store is connected to the energy source using a G 2.5“ connection fitting. Should the tank be connected to a solar thermal system, a heat exchanger shall be used for the connection because heating water is not used as the heat transfer fluid in a solar thermal system. The individual tank outlets are fitted according to the circuits to be connected.

5 - Typical Layout Examples with Thermal Store

Example I.
Heat pump and electric heating element.



Example II.
Biomass boiler (fireplace insert/stove) 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 heatingsystem using a suitable cleaning agent, e.g. BP 400 PLUS.
Anti-corrosion protective liquid should be also used, e.g. BP 100 PLUS.

6.1 - Connection to heat sources

Place the tank on the floor, as close to your heat source as possible. Fit the insulation, cf. Installing Insulation on the Tank. Connect the heating system according to the recommended connection layout - see Chap. 5.Install a drain valve at the lowest point of the system. Install an air vent valve at the highest point of the system. If an electric heating element is installed in the tank, install a safety valve. There must not be any shut-off valve between the tank and the safety valve. Insulate all the connecting piping.

6.2 - Connection to a solar thermal system

This thermal store is primarily not designed to be connected to a solar thermal system. However, when needed, such a connection can be done by means of a heat exchanger between the solar thermal system and the thermal store. In such an event, all the connecting piping between the tank and this heat exchanger shall be thoroughly insulated.

6.3 - El. heating element installation

These thermal stores can be equipped with electric heating elements of output up to 12 kW depending on the volume of the thermal store - see the table of max. output of heating elements in hot water tanks and thermal stores. They can be connected either directly (elements with integrated thermostat) or via the controller of the entire heating system.
All electric heating elements shall be protected by a safety thermostat.
The electric heating element shall be wired by a professionally qualified person only.

6.4 - Commissioning

Ground the tank before 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 quality 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.

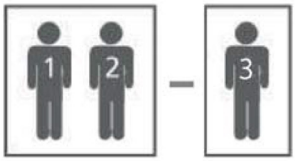
7 - Installing Insulation on the Tank

Product description
Fleece insulation with a hard polystyrene surface, closed by a quick lock.

Warning
Insulation installation shall be done in two or three persons, depending on its size. The PU leather surface coated fleece 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.
Do not use any tools for installation.
Keep away from open fire.

Installing insulation
1. Put the bottom insulation under the tank and place 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 centre evenly in both directions until the insulation adheres to the tank's surface completely and no bubbles are left.
3. Use the holes for connections 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 quick lock from the side.
5. Put on the upper insulation and cover.
6. Push on the covering plastic rosettes depending on the size of connections, 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 another 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.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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 tank connections for leaks.

9 - Disposal

Packaging 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 Centre. Insulation shall be recycled as plastic and the steel vessel as scrap iron.

10 - Warranty

This product is covered by warranty according to the conditions described in this Manual and according to the Warranty Certificate. A Warranty Certificate is an integral part of the supply.

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