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PS ES+

Installation and Operation Manual  
**THERMAL STORES**  
PS 600 ES+, PS 900 ES+ and PS 1100 ES+

**EN**

**PS ES+**

## 1 - Description

PS ES+ Thermal Stores are intended for storing and subsequent distribution of thermal energy from solid-fuel fired boilers, heat pumps, electric boilers etc. 230V or 3x230V/400V heating elements of 2-8.2 (12) kW output can be installed directly into the 6/4" tapping. Tanks are fitted with three side tapplings, one top tapping and one tapping for sensor sheath. A 100mm thick insulation for these tanks is a separate item.

### 1.1 - Models

Three models of 560, 860 and 1037 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 fleece and fitted with a zippered PVC surface layer.

### 1.4 - Connection points on the tank

3 side tapplings, G 6/4" F thread

1 top tapping, G 6/4" F thread

1 side tapping for sensor sheath, G 1/2" F thread

### 1.5 - Packaging

The tanks are delivered standing, each screwed to its pallet.

## 2 - General Information

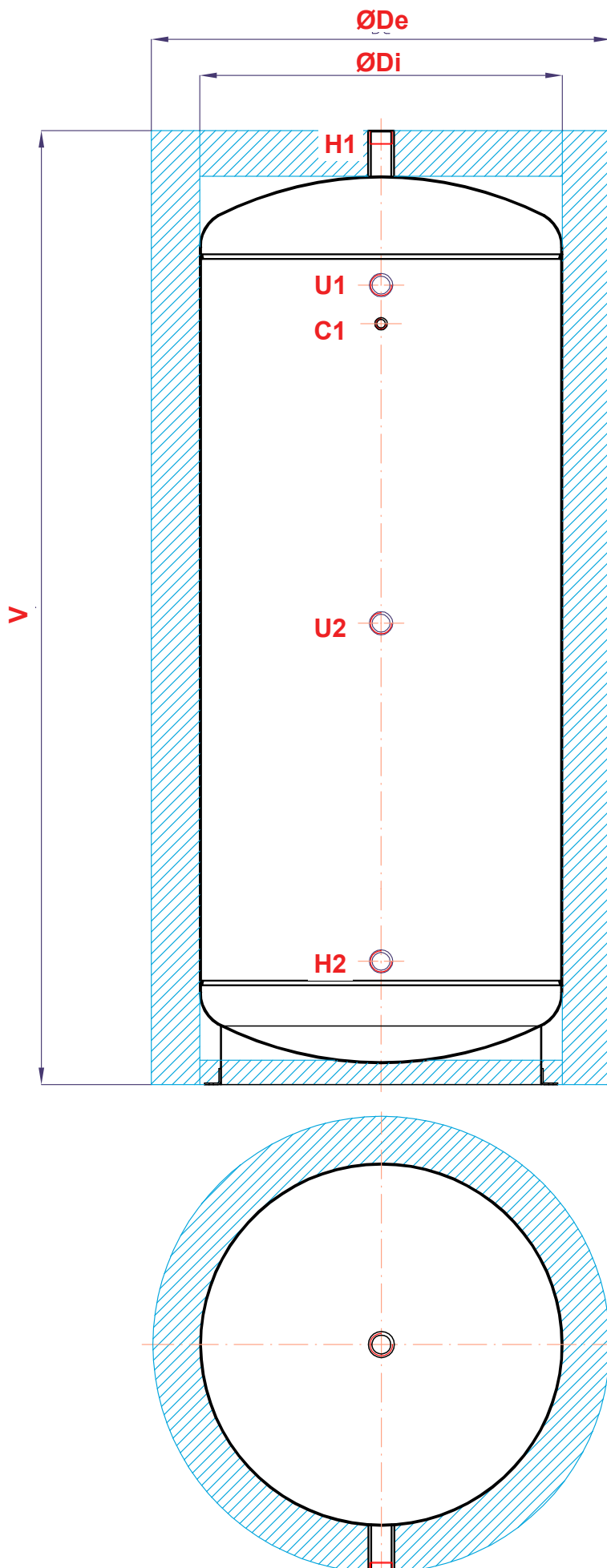
This Operation Manual is an integral and important part of the product and must be handed over to the User. Read carefully the instructions in this Manual as they contain important information concerning safety, installation, operation and maintenance. Keep this Manual for later reference. The appliance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

This device is designed for storage and subsequent distribution of thermal energy. It shall be connected to a heating system and heat sources.

**Using the thermal store tank 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 hot water storage tank!**

The appliance shall be installed by a qualified person according to valid rules and Manufacturer's Instructions, otherwise the warranty is null and void.

### 3 - Technical Data and Dimensions of PS ES+ Models



<b>Code</b>			
Thermal store	<b>PS 600 ES+</b>	<b>PS 900 ES+</b>	<b>PS 1100 ES+</b>
Tank code	15527	15530	15956
Insulation code (accessor.)	16333	16340	16348
<b>Application</b>			
Storage and subsequent distribution of thermal energy from solid-fuel boilers, heat pumps or other heat sources.			
<b>Energy efficiency data (as per EC Regulation No. 813/2013)</b>			
	<b>PS 600 ES+ w. insulation</b>	<b>PS 900 ES+ w. insulation</b>	<b>PS 1100 ES+ w. insulation</b>
Energy efficiency class	-	-	-
Standing loss	<b>101 W</b>	<b>125 W</b>	<b>139 W</b>
Storage volume	<b>560 l</b>	<b>860 l</b>	<b>1037 l</b>
<b>Technical data</b>			
Total tank volume	560 l	860 l	1037 l
Max. working temperature in tank	95 °C	95 °C	95 °C
Max. working pressure in tank	3 bar	3 bar	4 bar
<b>Material</b>			
Tank material	S235JR	S235JR	S235JR
<b>Dimensions, tipping height, weight</b>			
Tank diameter	650 mm	790 mm	850 mm
Tank diameter with insulation	850 mm	990 mm	1050 mm
Tank overall height	1935 mm	1975 mm	2080 mm
Tipping height without insulation	1960 mm	2015 mm	2335 mm
Heating elem. max. length / output	700 mm / 8,2 kW	815 mm / 12 kW	815 mm / 12 kW
Empty weight	62 kg	84 kg	123 kg
<b>Accessories</b>			
Insulation	code 16333	code 16340	code 16348
El. heating element	models ETT-A, C, D, F, G, K, L, M		

<b>Thermal store</b>	<b>PS 600 ES+</b>		<b>PS 900 ES+</b>		<b>PS 1100 ES+</b>	
Tipping height without insulation	1960 mm		2015 mm		2335 mm	
<b>Marking</b>	<b>Connection</b>	<b>Height [mm]</b>	<b>Connection</b>	<b>Height [mm]</b>	<b>Connection</b>	<b>Height [mm]</b>
<b>Heating system</b>						
<b>H1</b>	G 6/4"	1935	G 6/4"	1975	G 6/4"	2080
<b>H2</b>	G 6/4"	235	G 6/4"	225	G 6/4"	255
<b>Control and safety</b>						
<b>C1</b>	G 1/2"	1510	G 1/2"	1530	G 1/2"	1620
<b>Universal inlet/outlet</b>						
<b>U1</b>	G 6/4"	1635	G 6/4"	1655	G 6/4"	1745
<b>U2</b>	G 6/4"	935	G 6/4"	955	G 6/4"	1045
<b>Tank dimensions [mm]</b>						
<b>V</b>	Tank height	1935	Tank height	1975	Tank height	2080
<b>∅ Di</b>	Tank diameter	650	Tank diameter	790	Tank diameter	850
<b>∅ De</b>	Diam. w. insulation	850	Diam. w. insulation	990	Diam. w. insulation	1050

## 4 - Operation

In a thermal store, heating water can be heated up by several heat sources like various types of hot-water boilers, renewable energy sources or electric heating elements.  
The thermal store shall be connected to a heat source through G 6/4" threaded fittings. Connections depend on the circuits to be connected.

## 5 - Installation and Commissioning

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

**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 or a similar one offered by Regulus.  
Anti-corrosion protective liquid for heating circuits should be also used, e.g. MR-501/F.

### 5.1 - 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 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.

### 5.2 - El. heating element installation

The G 6/4" side tapping is designed to accommodate an electric heating rod. A thermal store can be fitted with an el. heating rod depending on the tank diameter and rod length. It can be controlled either directly (thermostat-equipped elements), or by a heating system controller.

**Warning: Electric heating elements shall be protected by a safety thermostat.**

The installation may be done by qualified staff only.

### 5.3 - 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.

## 6 - Installing Insulation on the Tank

### Product description

Fleece insulation with PU leather surface, zippered.

### Warning

Insulation installation shall be done in two or three persons, depending on its size. The zippered, 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, esp. to the zipper.

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 tappings 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 tappings, 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.

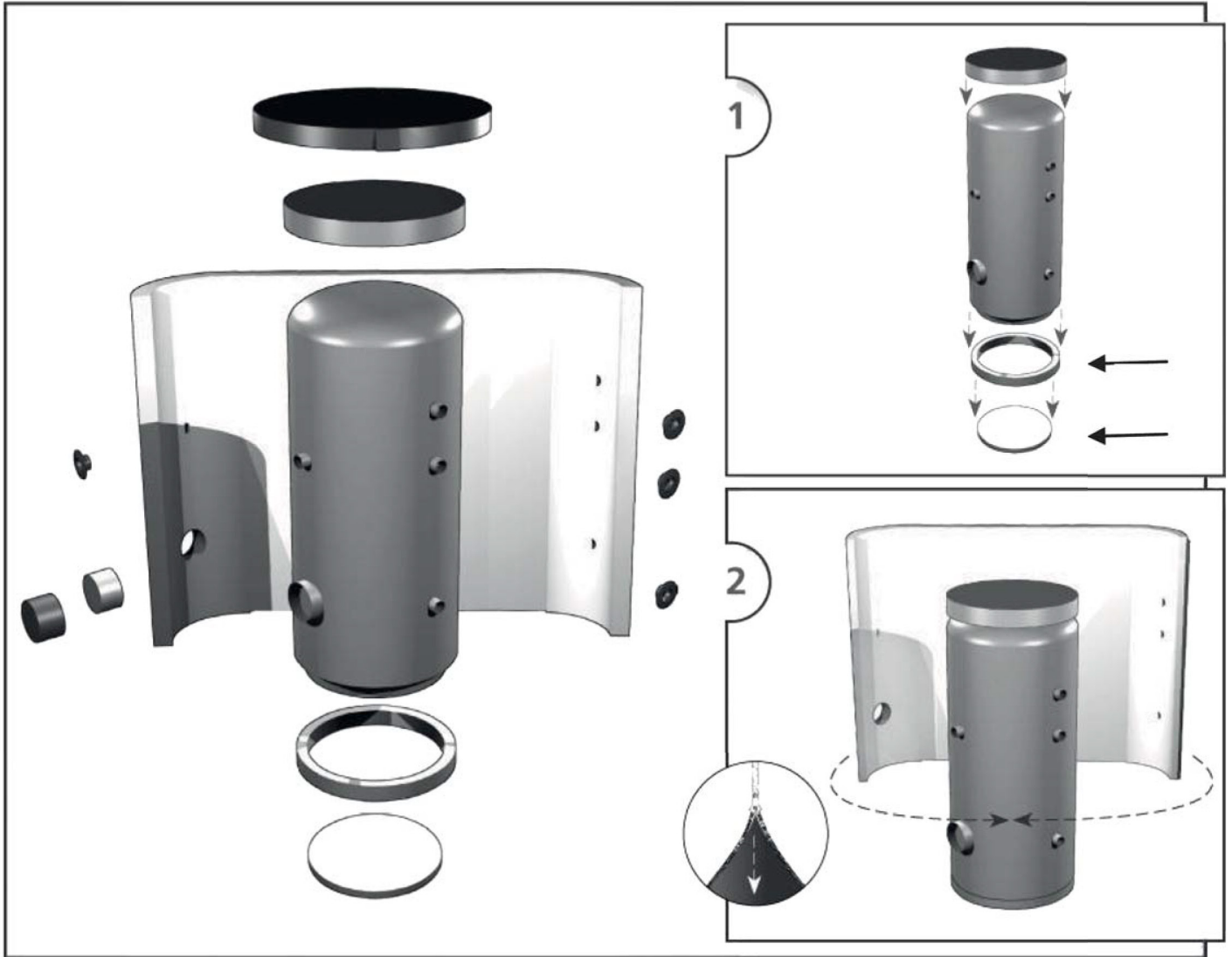
### Warranty on insulation

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.



+ 20.0° C  
+ 68.0° F



## **7 - 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.

## **8 - 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.

## **9 - 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.