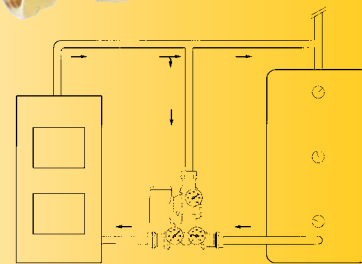


TERMOVAR LOADING UNIT



TECHNICAL DATA

Voltage	230 VAC 50/60 Hz
Power consumption	45-110 VA
Max. boiler capacity	80 kW
Max. operating temperature	110°C
Max. operating pressure	1.0 MPa (10 bar)
Opening temperature	45°C, 55°C, 61°C, 72°C or 80°C, fixed
Loading pump	Grundfos UPS 25-60
Sizes	Rp 1", Rp 1 1/4" and 28 mm
Body	Cast iron
Dimensions	210 x 210 x 110 mm
Weight	5.0 kg

TERMOVAR LOADING UNIT has several advantages:

- The pre-fabricated unit saves time and provides a quick and trouble-free installation
- The unit provides a constant loading temperature to the storage tank
- Can be installed on the right-hand or left-hand side of the boiler
- Automatic self-circulation in case of power failure or pump break-down
- The unit is mounted in the return pipe which means that the supply pipe is free for expansion and the unit is never affected by steam in case of an overheated boiler
- Service friendly. All parts can be changed without draining the system

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TERMOVAR LOADING UNIT is a pre-fabricated, automatic, thermally operated valve unit for solid-fuel boiler/storage tank installations, where heating and domestic hot water are taken from the storage tank. TERMOVAR LOADING UNIT ensures a minimum return-water temperature into the solid-fuel boiler, which increases the boiler efficiency, prevents tarring and considerably prolongs the lifetime of the solid-fuel boiler. TERMOVAR eliminates the risk of destructive thermal shock caused by surges of cold return water. TERMOVAR renders a more effective burning and is therefore a necessary part of a solid fuel installation with a storage tank.

TERMOVAR INCLUDES

1. Thermally operated loading valve
2. Backflow preventer
3. Circulation pump
4. Three thermometers
5. Three ball valves
6. Insulation EPP (optional)

ORDERING DATA

Order No.	Type		
4725	TERMOVAR LOADING UNIT 25	Rp 1"	61°C
4825	TERMOVAR LOADING UNIT 25	Rp 1"	72°C
4925	TERMOVAR LOADING UNIT 25	Rp 1"	80°C
4732	TERMOVAR LOADING UNIT 32	Rp 1 1/4"	61°C
4832	TERMOVAR LOADING UNIT 32	Rp 1 1/4"	72°C
4932	TERMOVAR LOADING UNIT 32	Rp 1 1/4"	80°C
4728	TERMOVAR LOADING UNIT 28	28 mm	61°C
4828	TERMOVAR LOADING UNIT 28	28 mm	72°C
4928	TERMOVAR LOADING UNIT 28	28 mm	80°C
4725S	TERMOVAR LOADING UNIT 25	Rp 1"	61°C
4825S	TERMOVAR LOADING UNIT 25	Rp 1"	72°C
4925S	TERMOVAR LOADING UNIT 25	Rp 1"	80°C
4732S	TERMOVAR LOADING UNIT 32	Rp 1 1/4"	61°C
4832S	TERMOVAR LOADING UNIT 32	Rp 1 1/4"	72°C
4932S	TERMOVAR LOADING UNIT 32	Rp 1 1/4"	80°C
4728S	TERMOVAR LOADING UNIT 28	28 mm	61°C
4828S	TERMOVAR LOADING UNIT 28	28 mm	72°C
4928S	TERMOVAR LOADING UNIT 28	28 mm	80°C

S = without backflow preventer, I = with insulation (e.g. 4832SI)

Other temperatures on request.

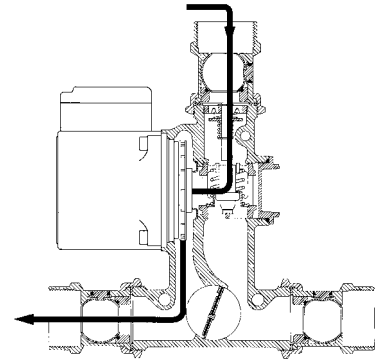
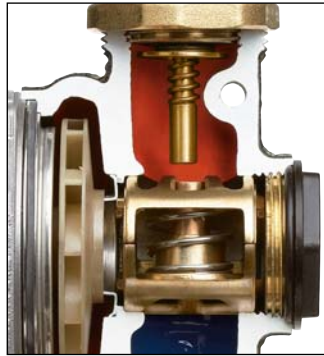
 **ACASO-AB**

Controls and valves for heating systems

TERMOVAR LOADING UNIT

1. The heat up phase

The loading pump should be controlled by a thermostat that measures flue-gas temperature. The pump will start when the boiler is fired up and stop when it has ceased to fire. The boiler water is circulating to the loading unit and back while the temperature of the boiler is rising.



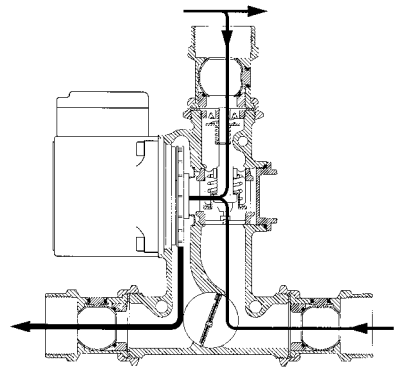
2. The loading phase

The thermostat element in the loading unit is affected by the temperature of the water circulating from the boiler to the loading unit. (See table below.) The thermostat element starts opening at 61/72/80°C * and is fully open at 73/84/92°C *. When the temperature in the boiler reaches 61/72/80°C * the thermostat element opens and allows return water from the storage tank to be mixed with supply water before it returns back to the boiler. The temperature of the supply water determines the working position of the thermostat element.

A balancing valve in the loading unit regulates the internal flow of the supply water. The working position of the thermostat element determines the closing position of the balancing valve. (See table below.) When the temperature is 67/78/86°C * the thermostat element starts to close the balancing valve. This causes a higher flow of return water into the boiler. When the temperature reaches 73/84/92°C * the thermostat element is 100 % open and the balancing valve is 100 % closed.

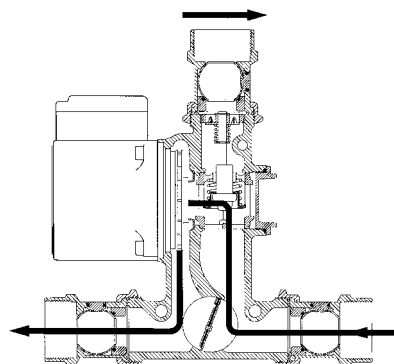
* depending on selected opening temperature

Thermostat Temp. °C	Thermostat Opening position %	Balancing valve Closing position %
61/72/80	0	0
63/74/82	16	0
65/76/84	33	0
67/78/86	50	0
69/80/88	67	35
71/82/90	83	70
73/84/92	100	100



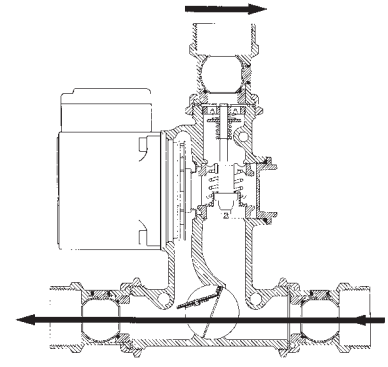
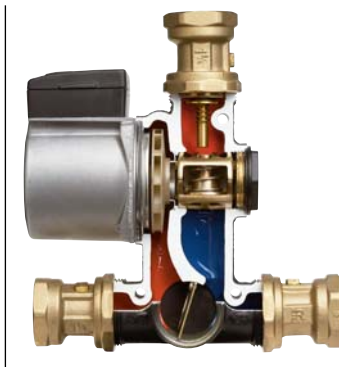
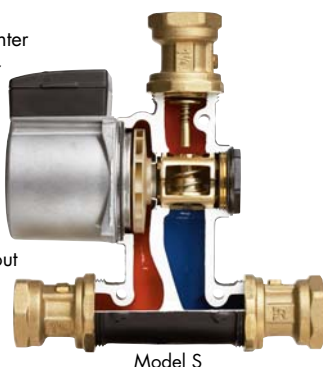
3. The end phase

The thermostat element is fully open. The balancing valve is closed. This results a maximum cooling of the boiler and the storage tank is filled with supply water.



4. Self-circulation

In case of power or pump failure the backflow preventer will open automatically for self-circulation.



Model S is delivered without backflow preventer.

Model S