



TERMOVAR Loading Unit

The link between bio-energy boiler and storage tank system

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 to the solid-fuel boiler, which increases the boiler efficiency, prevents tarring and considerably prolongs boiler lifetime.

TERMOVAR eliminates the risk of destructive thermal shock caused by surges of cold return water.

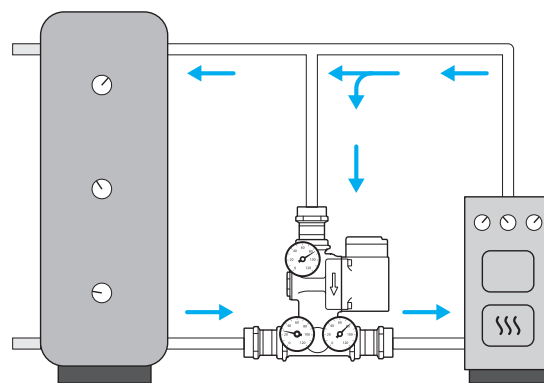
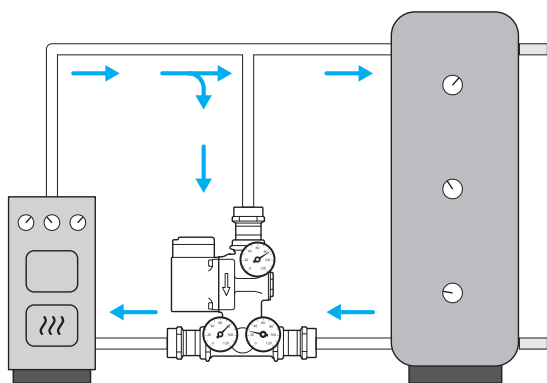
TERMOVAR promotes more effective combustion and is therefore a necessary part of a solid fuel installation with a storage tank.



TERMOVAR LOADING UNIT has several advantages:

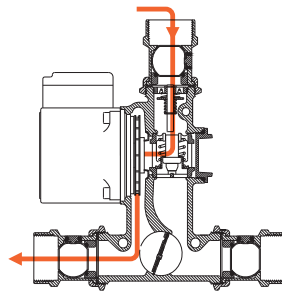
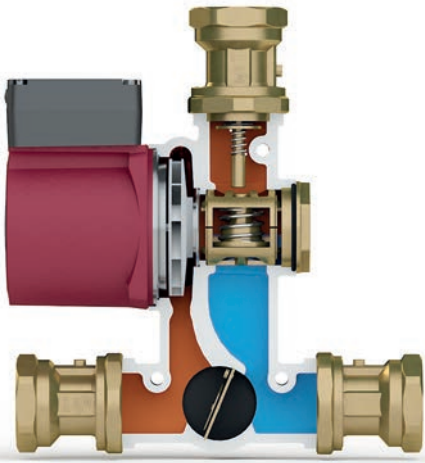
The pre-fabricated unit saves time and provides a quick and trouble-free installation.

The only thing you have to do when choosing a right or left installation is to move the thermometers to the opposite side.



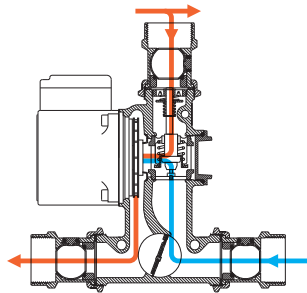
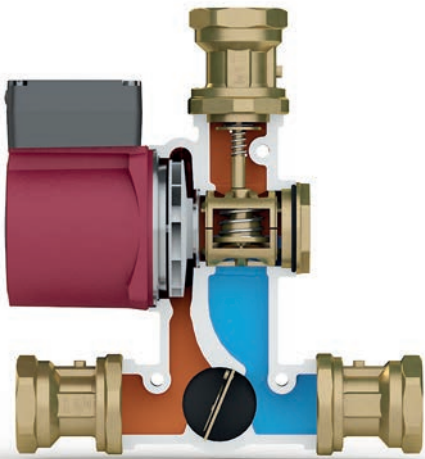
The unit starts with a “warm up” process before loading starts

The thermostat is closed until the thermostat's operating temperature is reached.



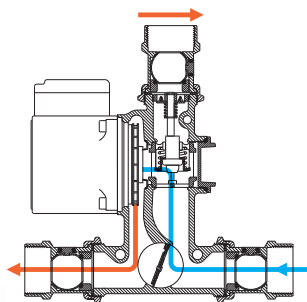
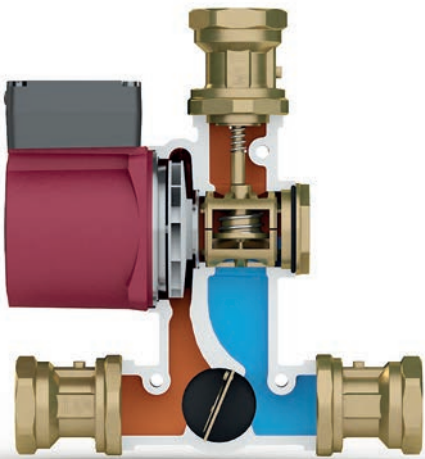
The unit provides a constant loading temperature to the storage tank

The thermostat is placed in the position where hot water from the boiler is affecting the thermostat element which means that the thermostat's open position is regulated by the boiler power. The most common thermostat temperature is 72 °C. At 25 kW the working temperature is 78 °C and return temperature to boiler 68 °C. At 50kW the working temperature is 80 °C and return temperature to boiler 60 °C.



A smart balancing and closing valve provides maximum loading power to storage system

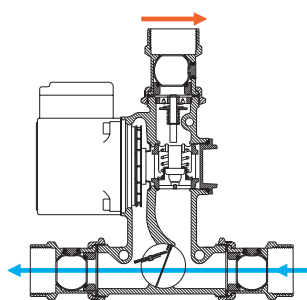
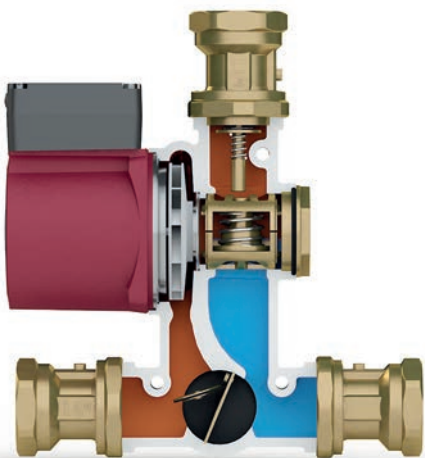
The thermostat is placed in the position where it first opens to 50% without affecting the balancing and closing valves. When storage tank system begins to be loaded the temperature increases and the thermostat opens more to finally the maximum position. Between 50% to 100% opening, the thermostat also controls and finally closes the balancing and closing valve. In the closed position the pump power is used 100% to load the storage tank system.



Automatic self-circulation when the pump not is active

The return flow preventer is made of reliable Viton rubber material and opens easily for self-circulation and has three important functions:

- In case of power failure or pump break down, hot water can self-circulate to storage tank.
- The boiler residual heat will be used after boiler has stopped burning and pump stopped.
- When the storage tank is heated by another heat source it can't self-circulate back to boiler.

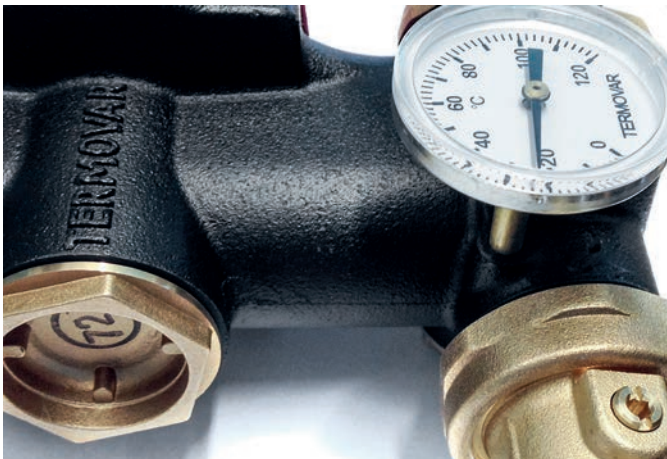


Very service friendly and easy to access all parts without draining the system

The thermostat and return flow preventer are easy to access from both sides in all installations.

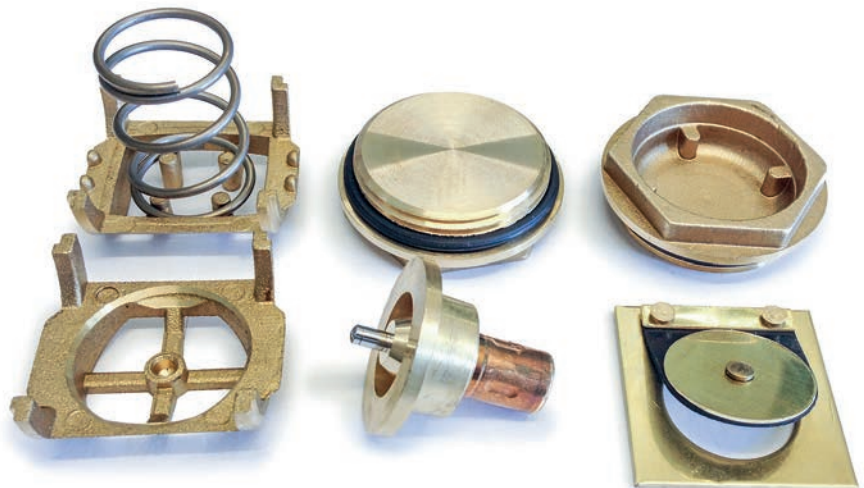


Cast iron housing with high quality design



High quality internal parts

The loading unit has high quality parts made mainly of brass. EPDM material is used for sealing of brass plugs. The return flow preventer is made with a Viton rubber seal.



Union ball valves in new design

The loading unit has union ball valves of new design to prevent leaking. The dimensions are DN25–DN32 and 28mm.



The stem that opens and closes the valve has two EPDM o-rings to avoid leakage



The ball is solid with new EPDM gaskets that are tight to the area around the ball in both open and closed positions. This prevents constant pressure on the stem o-rings.

Delivered with GRUNDFOS quality pump

UPS2 40/60

- EuP2015 ready
- Max electricity consumption 48 watts at 2500 l/h
- All existing TERMOVAR loading units sold since 1994 can be changed to Grundfos UPS2 electrical pump power head

UPSO 15-65 CIL2

- Max electricity consumption 95 watts at 2500 l/h
- **Note!** This pump will not be delivered after 01.08.2015 because of EuP2015 directive



Delivery dimension of loading unit

The loading unit has union ball valves of new design to prevent leaking. The dimensions are DN25–DN32 and 28mm.



DN25



DN32



CU28 mm

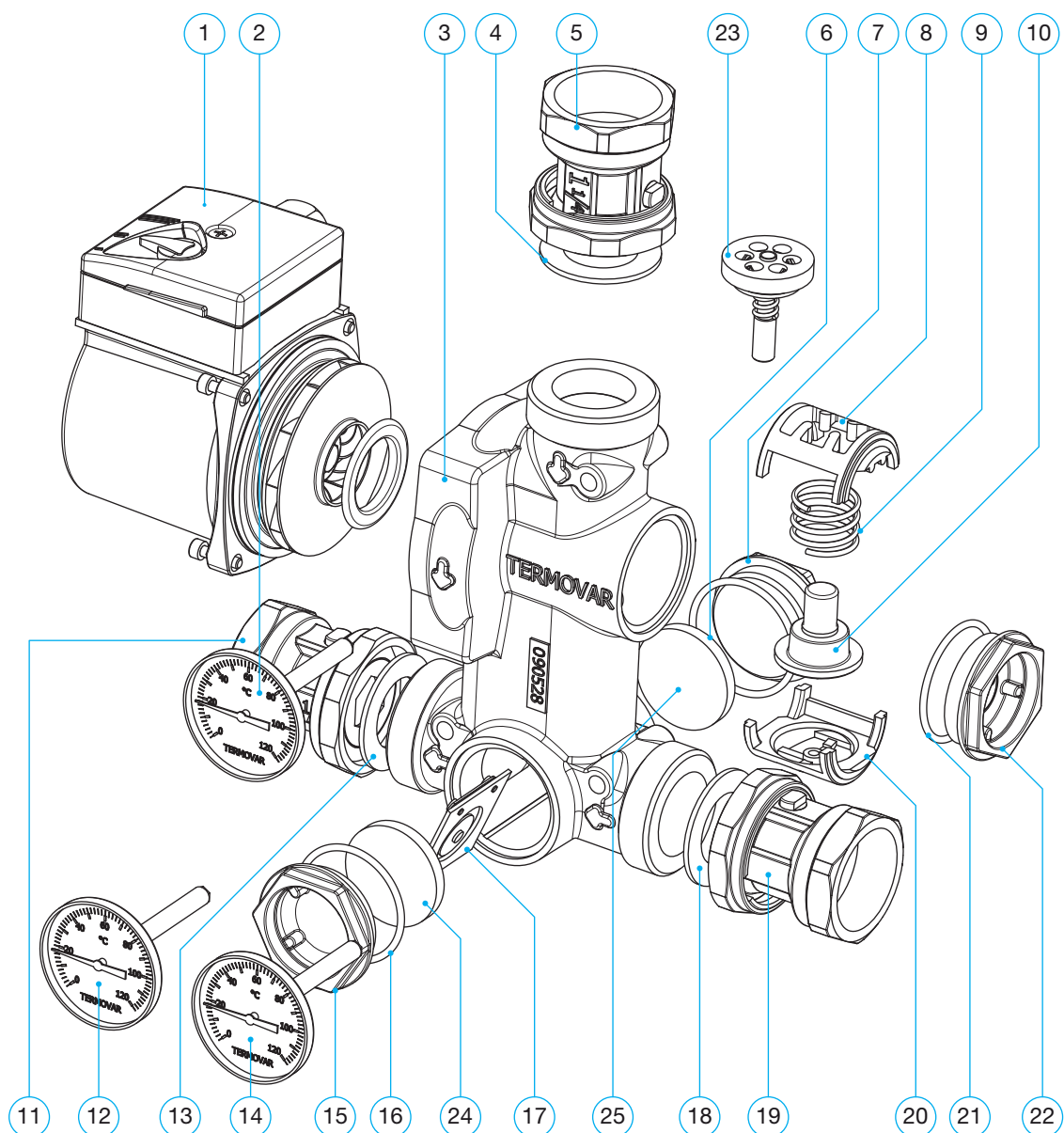
TERMOVAR delivery includes

- Thermally operated loading valve unit
- Backflow preventer
- Circulation pump
- Three thermometers
- Three ball valves
- Insulation EPP

Technical data

Voltage	230 VAC 50/60 Hz
Power consumption	7–48 VA
Max. boiler capacity	65 kW
Max. operating temperature	110°C
Max. operating pressure	0,6 MPa (6 bar)
Opening temperature	45°C, 49°C, 55°C, 61°C, 66°C, 72°C or 80°C, fixed
Loading pump	Grundfos UPS2 40/60
Sizes	Rp 1", Rp 1¼" and 28 mm
Body	Cast iron
Dimensions	210 x 210 x 110 mm
Weight	5.0 kg

TERMOVAR Loading Unit part list



Part no.	Order no.	Part name
1	1920809	Grundfos UPSO-65
	1920803	Grundfos UPS2-60
2, 12, 14	1920623	Thermometer 51 x 7 mm
3	1920784	Termovar body 45°C
3	1920785	Termovar body 55°C
3	1920786	Termovar body 61°C
3	1920787	Termovar body 72°C
3	1920788	Termovar body 80°C
4, 13, 18	1920746	Seal 44 x 32 x 2 mm
5, 11, 19	1920627	Ball valve Rp 1½" x 28 mm
5, 11, 19	1920625	Ball valve Rp 1½" x 1"
5, 11, 19	1920626	Ball valve Rp 1½" x 1¼"

Part no.	Order no.	Part name
6, 16, 21	1920629	O-ring EPDM Ø 36.2 mm x 3 mm
7, 15, 22	1920215	Cover G 1¼"
8, 9, 20	1920070	Thermostat retainer with spring
10	1920061	Thermostat 45°C
10	1920062	Thermostat 55°C
10	1920063	Thermostat 61°C
10	1920064	Thermostat 72°C
10	1920065	Thermostat (78) 80°C
17	1920209	Backflow preventer (not in model S)
	1920811	Backflow preventer blocking plate
23	1920219	Balancing valve (included in part 3)
24, 25	1920426	Seal Ø 40 mm x 5 mm

TERMOVAR Loading Unit most common spare parts



1920061	Thermostat element 45 °C
1920062	Thermostat element 55 °C
1920063	Thermostat element 61 °C
1920064	Thermostat element 72 °C
1920065	Thermostat element 80 °C



1920076 Return flow preventer



1920811 Plug instead of return flow preventer

Ordering data

1400200	TERMOVAR 25 55 °C, EPP, Grundfos UPS2 40/60
1400201	TERMOVAR 32 55 °C, EPP, Grundfos UPS2 40/60
1400202	TERMOVAR 28 55 °C, EPP, Grundfos UPS2 40/60
1400210	TERMOVAR 25 61 °C, EPP, Grundfos UPS2 40/60
1400211	TERMOVAR 32 61 °C, EPP, Grundfos UPS2 40/60
1400212	TERMOVAR 28 61 °C, EPP, Grundfos UPS2 40/60
1400220	TERMOVAR 25 72 °C, EPP, Grundfos UPS2 40/60
1400221	TERMOVAR 32 72 °C, EPP, Grundfos UPS2 40/60
1400222	TERMOVAR 28 72 °C, EPP, Grundfos UPS2 40/60