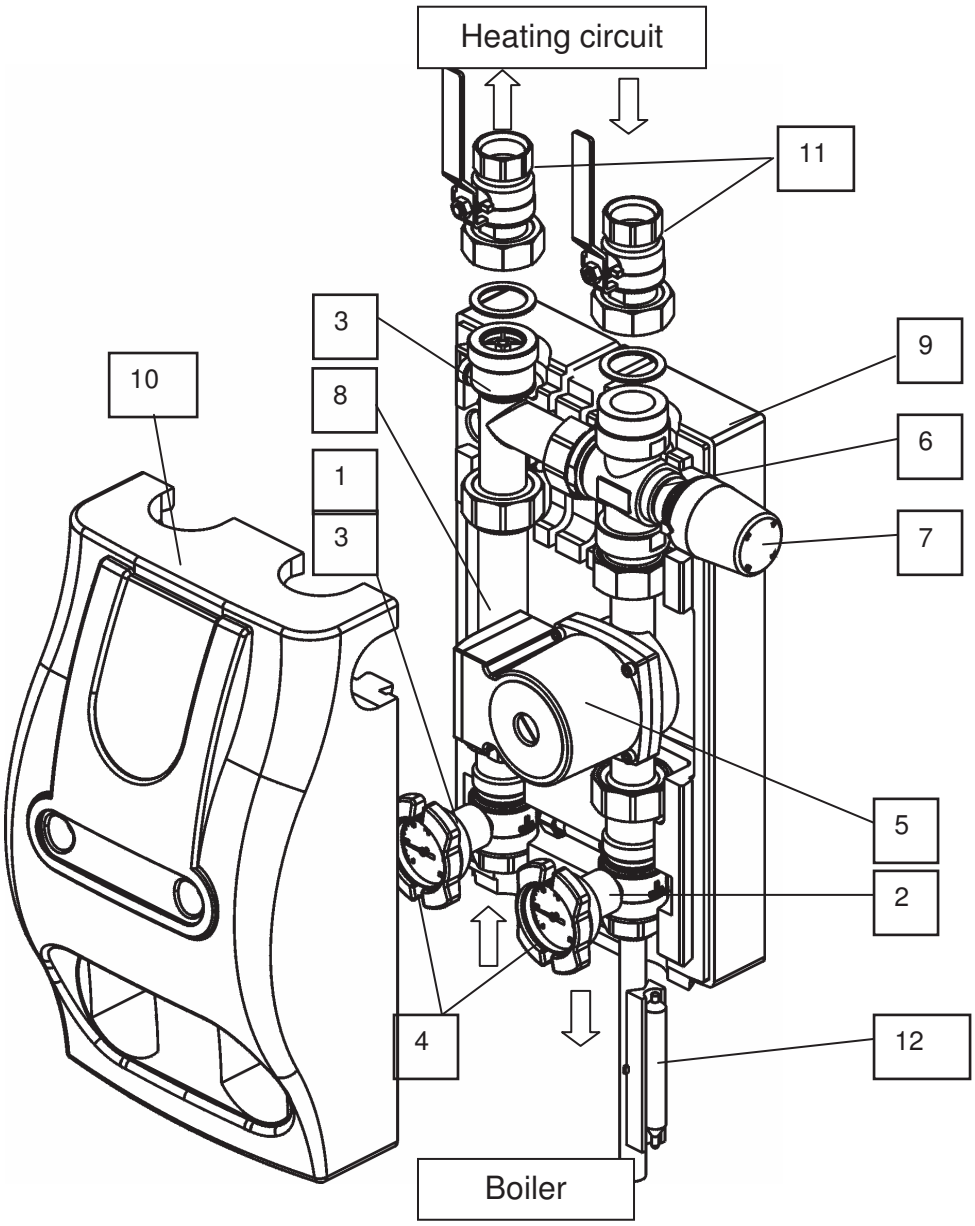
Ergo-Pro Solid Fuel - Buffer loading Pump Group Installation and Operating Instructions



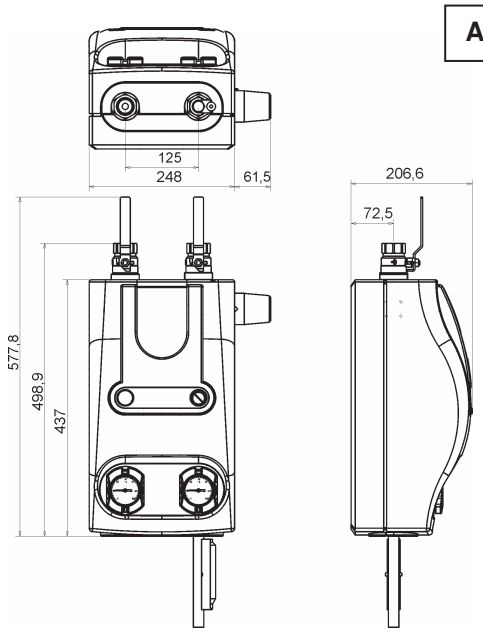
Pos.	Description	***Art. no.***
1.	Ball valve flow female thread Rp 1	
2.	Ball valve return female thread Rp 1	
3.	Check valve	
4.	Dial thermometer	
5.	Circulation pump	
6.	Changing valve	
7.	Thermostatic head 40-70℃	
8.	Balance tube180 mm	
9.	Rear isolation shell	
10.	Front isolation shell	
11.	Shut off valve female thread Rp 1	
12.	Tube contact temperature sensor	

Technical data	
Working pressure:	max. 3 bar
Medium temperature:	max. 115°C
Medium:	Heating water
Dimension/ thermal rating:	DN 25 / max.20 kW with Δt 20 K, v_{max} 1m/s
Sealings:	asbestos-free, flat sealing screwing, nuts G1 ½
Connections	
towards the boiler	Female therad Rp 1
towards the heating circuit	Female thread Rp 1
Materials:	
Housing: Connecting pieces	CW 617 N (2.0402) CW 614 N (2.0401)
Isolation	EPP foam
Thermal conductivity:	0,038 W/mK

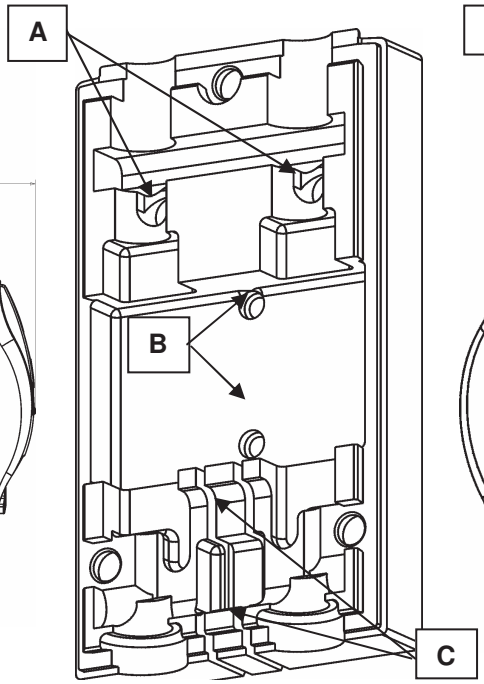
Application

The pump group PGF-V is a particularly developed, economic and time-saving solution for connecting a solid fuel boiler with a buffer tank.
The pump group is apt for circulation pumps with an overall length of 180 mm and flat sealing screwing G 1½ .
The boiler is heated up very quickly with the aid of a thermostatic changing valve.
To avoid a loss of heat the pump group is equipped with an isolation made of EPP foam. To avoid a loss of heat the pump group is equipped with an isolation made of EPP foam.

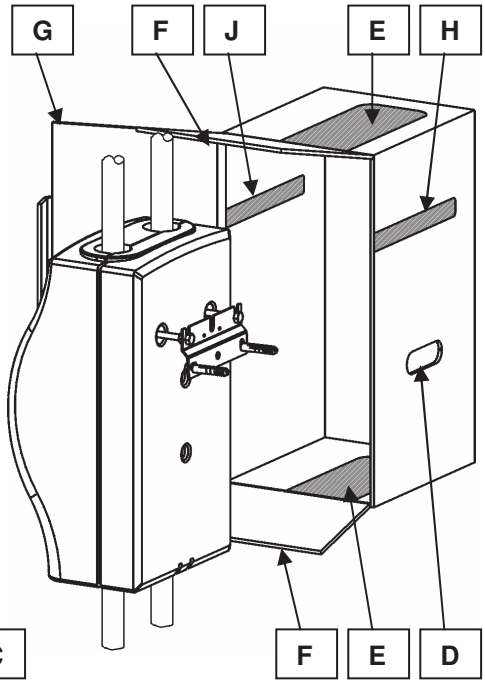
Dimensions



Cable guiding



Packaging



A	Punching holes for wall holder
B	Punching holes for cable guiding behind the pump group
C	Cable guiding for pump cables in case of wall fastening

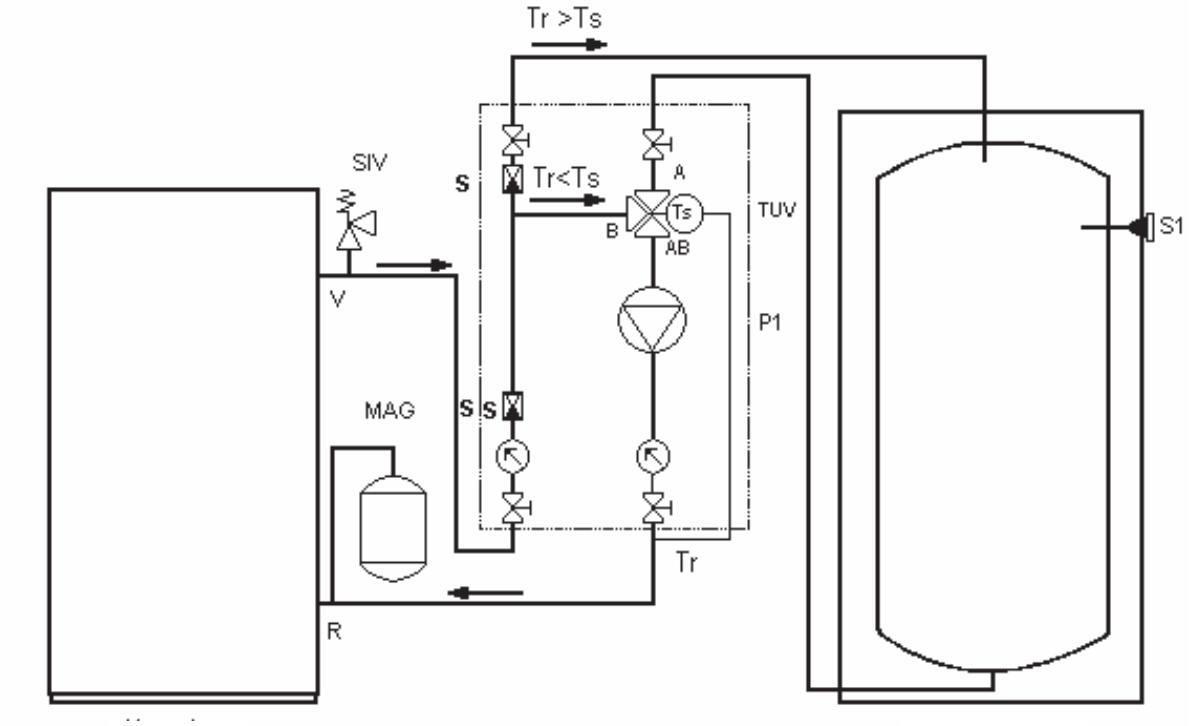
Packaging for transport and protection on construction sites
Transport Press in suspension clip (D) gemäß nebenstehender Abbildung eindrücken aber nicht entfernen
Protection on construction sites After the installation of the pump group the packaging can still be used as protection on the construction site. Thereto remove the grey parts (E) and the clips (F). Stow the pump cable away and push the packaging sideways onto the pump group. Close it with the cover (G).
In case of pump groups with wall holder remove also part (H).
In case of installation of two pump groups mounted on a collector the covers of the packaging have to be opposite to be put in the opposite packaging.
In case of an additional wall holder the cover on the corresponding site has to be removed as well as part (J).

Function

In phase of heating up of the solid fuel boiler heating water on the flow side is diverted via the short circuit to the changing valve mounted on the return side. The temperature of the returning heating water (Tr) is lower than the preset temperature on the thermostat Ts (Tr<Ts). The return flow from the buffer tank ist interrupted.

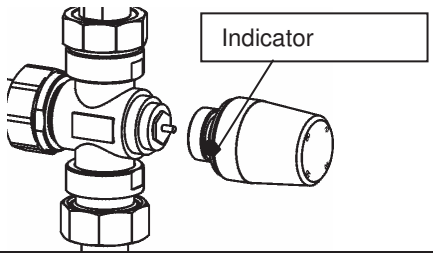
Once the temperature has scaled the preset temperature (Ts) the return flow from the buffer tank to the the boiler is opened by the changing valve. (Tr>Ts)

In the first phase this mechanism of diversion to the return flow helps to heat up the boiler quickly and to avoid that the temperature falls under the dew point and the boiler is in danger of sooting.

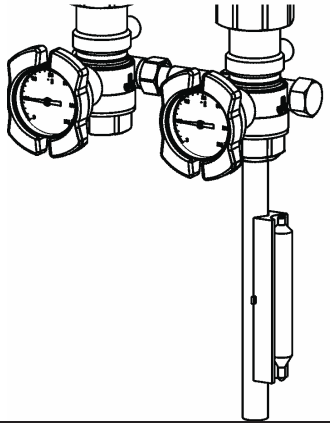


Installation schema

Mounting of the thermostatic head and the tube contact temperature sensor



Remove protection tap from the valve.
Mount the thermostatic head on the valve with indicator directing in front direction.



For achieving the preset temperature the tube contact temperature sensor has to be mounted on a socket with the included tightening strap on the return tube in a distance of approximately 50 cm / 20 inches underneath the pump group.

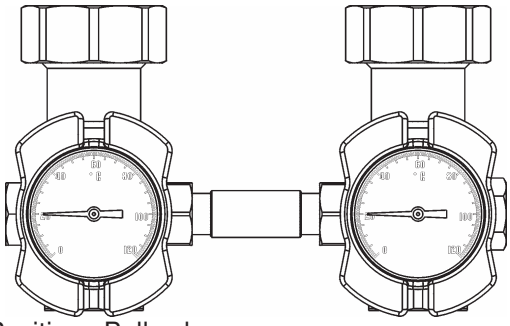
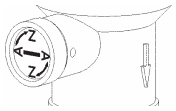
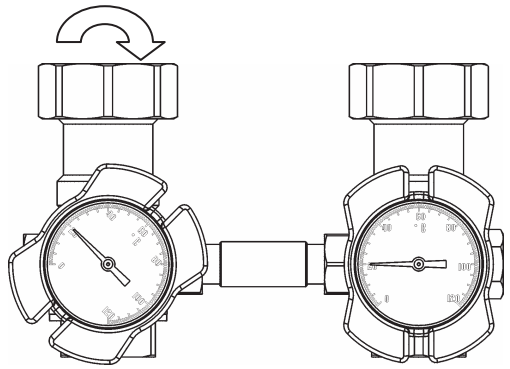
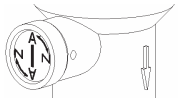
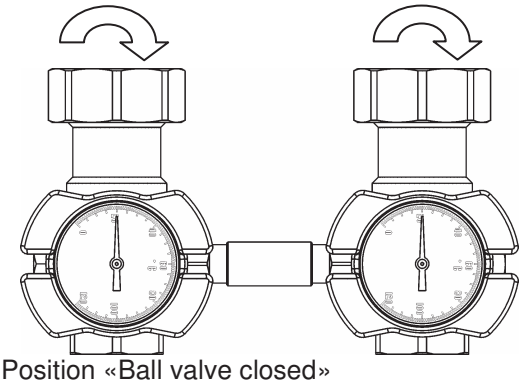
Attention

Do not bend the capillary tube of the tube contact temperature sensor!

Functioning of the check valve

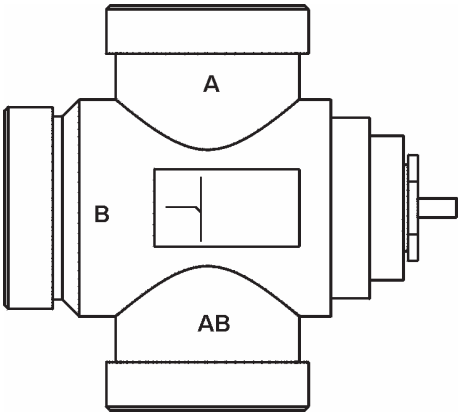
Opening pressure of the check valve	20 mbar

In order to prevent reverse circulation in the heating circuit a check valve is integrated in the ball valve on the flow side and the T piece. The check valve is actuated by turning the handle of the ball valve and the spindle of the T piece respectively.

Flow	Return	T piece	
 Position «Ball valve open»			Working position **In order to prevent gravity circulation the valve disk may not be open.** **Ball valves are open and check valves are closed.** **The slots in the handles of the ball valve are in a vertical position..** **The lever of the shutt valve (Pos.11) are in a vertical position.** **The slot of the spindle in the T piece is in an horizontal position.**
 Position «Ball valve slightly open»			Draining **For draining the heating system the disk of the check valve has to be opened slightly.** **The handle of the flow ball valve has to be turned 45° in clockwise direction to open the check valve slightly.** **The ball valves are open.** **The slot in the spindle of the T piece ist in a vertical position.**
 Position «Ball valve closed»			Maintenance position **In case of maintenance (eg exchanging the pump) the handles of both ball valves have to be turned 90° in clockwise direction.** **The slot in the handles has to be in an horizontal position.** **The levers of the shut valve are in an horizontal position (Pos.11).**

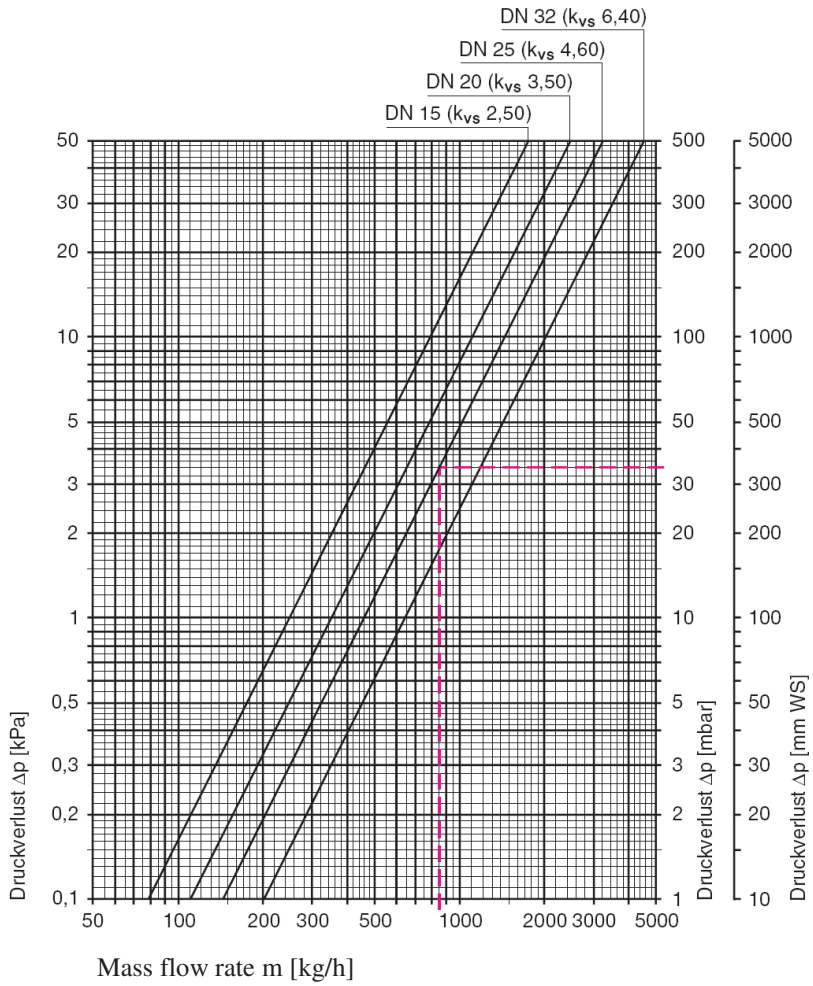
Three way changing valve DN25 with thermostatic head K	Range thermostatic head:	40-70°C

Diagram of pressure loss



k_{VS}	4,6m³/h

The flow coefficient figure corresponds to the flow in angle direction B-AB with the valve completely open or in straight direction A-AB with the valve shut.



Pressure loss Δp [kPa]

Pressure loss Δp [mm WS]