

Installation and Operating Instructions

Ergo-Pro Three-line Solar Station For use with two collector fields

677.23.80

Technical Data

Operating pressure::	max. 6 bar
Operating temperature:	Flow: max. 140°C
	Return: max. 120°C
Medium:	Water with max. 50% glycol
Nominal size:	DN 20
Connections:	flat seal screw-cap G1
Materials:	
Seals:	EPDM
Case	CW 617 N (2.0402)
Connections	CW 614 N (2.0401)
Lagging	EPP foam
Heat conductivity:	0,038 W/mK

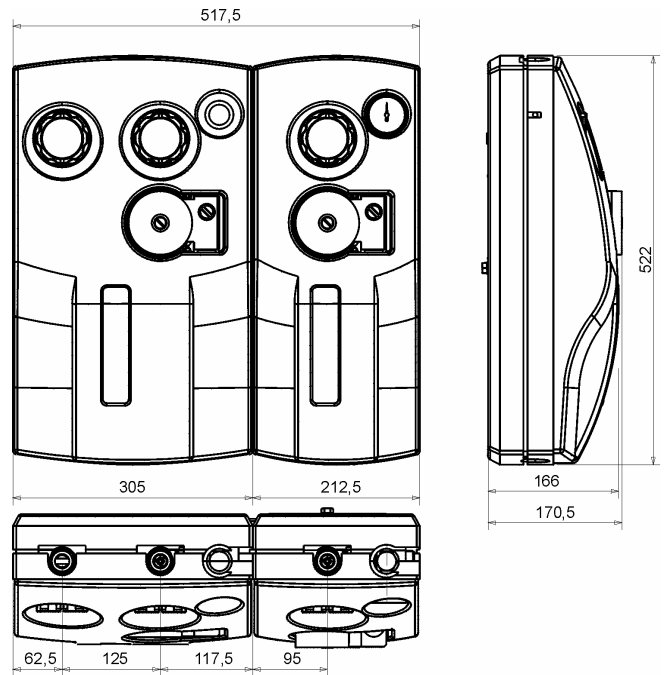


fig. 1: Dimensions

Included in the package

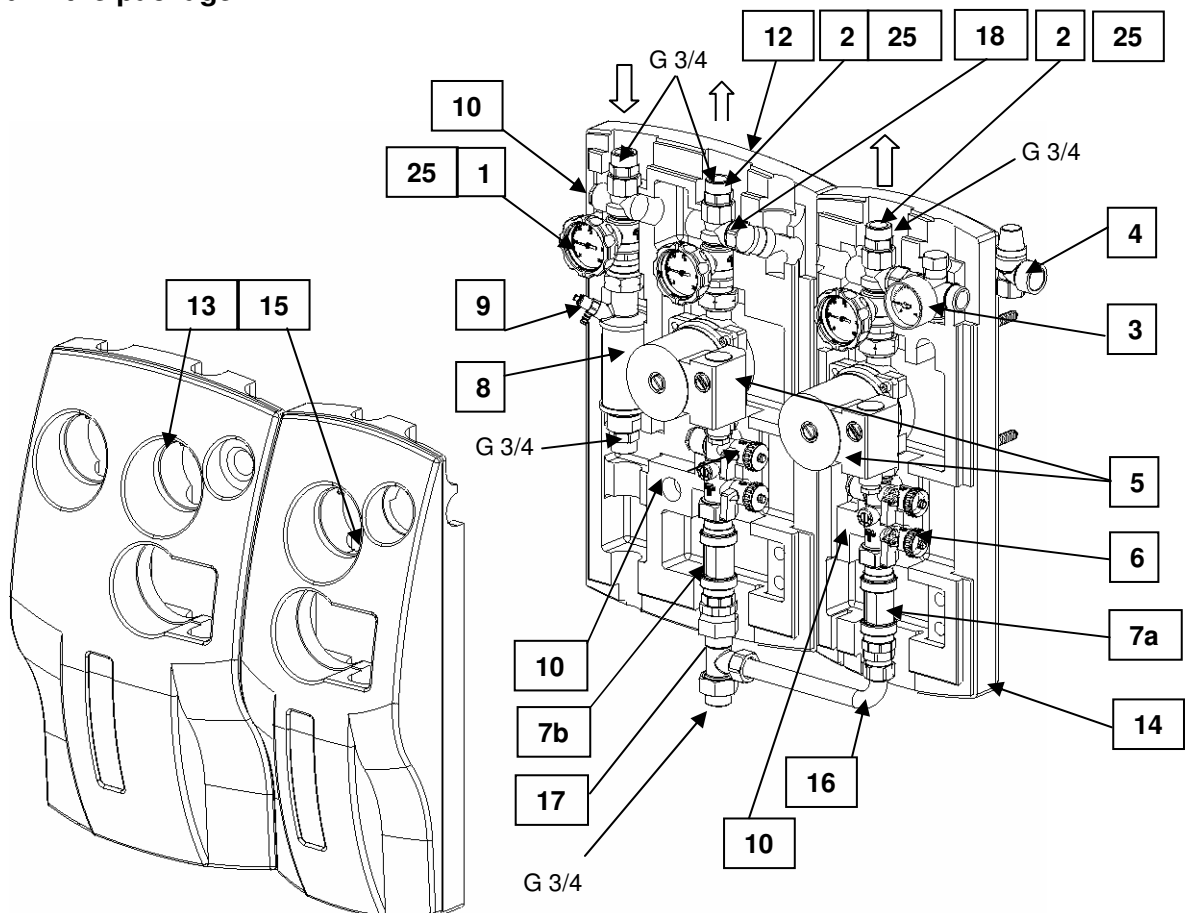
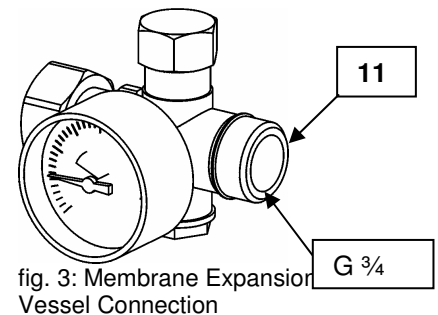


fig. 2: Components

Pos.	Description	Pos.	Description
1	Flow valve with thermometer (pos.25), integrated gravity brake	12	Back insulation half shell (2-line)
2	Return ball valve with thermometer (pos.25), integrated gravity brake	13	Front insulation half shell (2-line)
3	Pressure gauge	14	Back insulation half shell (1-line)
4	Solar safety valve, 6 bar (apart)	15	Front insulation half shell (1-line)
5	Pump: WILO ST 20/ 6	16	Connection pipe
6	Fill/Drain fitting	17	T-fitting
7	Flow indicator	18	Cap G ³ / ₄
8	Air-jet	19	Valve coupling for Membrane Expansion Vessel
9	Manual ventilation nipple	20	Fastening material
10	Connecting piece G ¹ / ₂ female thread, closed with tap	21	Wall support for Membrane Expansion Vessel
11	Membrane Expansion Vessel connection	25	Thermometer

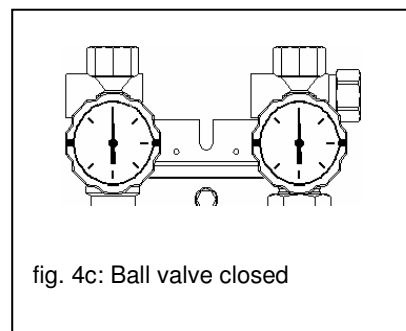
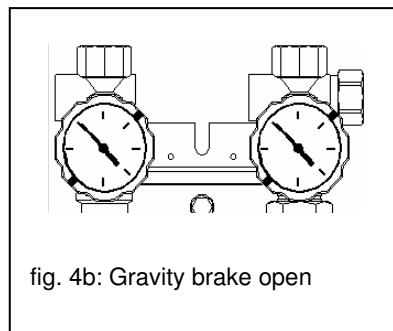
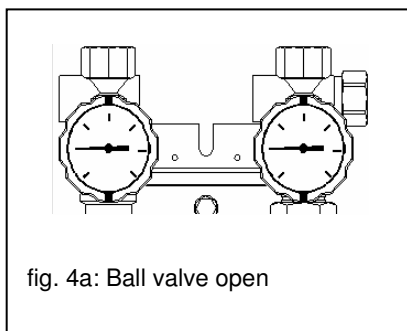
In case of maintenance (e.g. change of pump) all ball valves have to be closed (fig.2, pos.1 and 2)



Function of the gravity brakes

Opening pressure of the gravity brake: 20 mbar each.

The gravity brakes are integrated in the flow and return ball valves. They are operated by turning the handles.



To avoid circulation due to gravity the valve may not be open. The gravity brake is in operating position (closed). The slots in the handle are in a vertical position.

To fill and completely empty the solar station, turn the handle to the right and open the gravity brake. The slots will be in a position of 45°.

Turn the handle to the right by a total of 90°. The ball valve will be closed.

6 – Fill/Drain Fitting

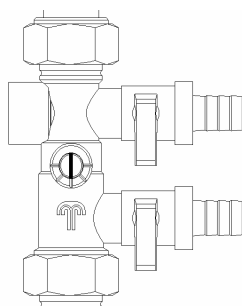


fig. 5a: Cleaning valve fully open

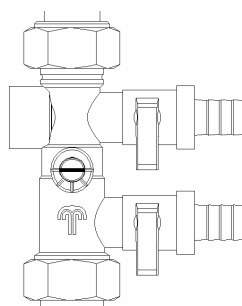
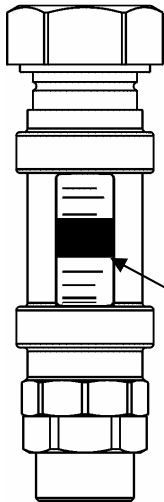


fig. 5b: Cleaning valve closed.

For cleaning and filling the solar station there are KFE-valves at the cleaning and filling valve.

To drain the system, the slot of the spindle must be in a 90° position.



7- Flow indicator

The adjustment of the flow rate of the thermal carrier medium takes place by controlling the speed levels (I, II, III) of the circulation pump on the throttle in the fill/drain fitting (fig.6)

The flow indicator shows the set flow rate..

Read volume flow values at the bottom of the rotameter.

fig6: Flow indicator

8- Air-jet

The remaining air, which the thermal carrying medium contains, is collected in the air-jet and can be released manually by the help of the venting nipple. (fig.2, pos. 9)

Therefore attach a hose on the nozzle and collect the escaping medium in an appropriate vessel.

The process of venting may only be conducted by instructed specialist staff. Uncontrolled venting will lead to a loss of pressure and malfunction in the solar station.

Caution! Danger of scalding!

The escaping air and the escaping medium may reach temperatures of over 100°C.

Afterwards close the nipple firmly. Please check the operating pressure while venting. If necessary, refill the solar station with the thermal carrying medium.

10- Connecting pieces

An immersion sleeve with a G $\frac{1}{2}$ male thread for integrating a temperature sensor may be installed in the flow ball valve (fig.2, pos.1) and in the fill/drain fitting (fig.2, pos.6)

Connecting the Valve Coupling for Membrane Expansion Vessels

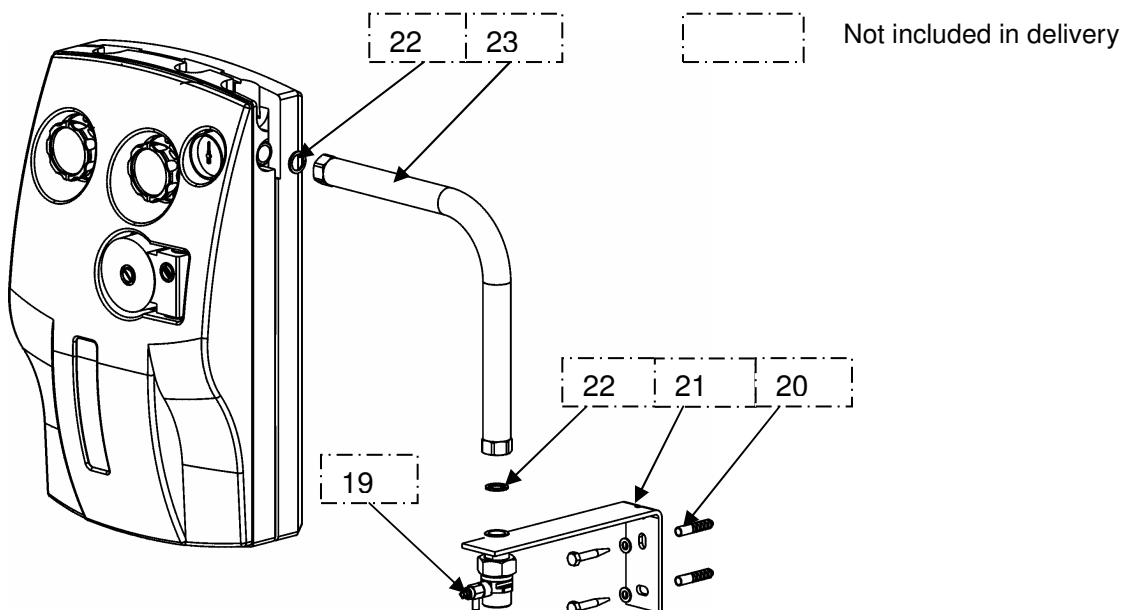


fig. 7: Connecting the valve coupling