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INSTRUCTIONS

FOR INSTALLING & USING

AQ.510 SOLARFILL



AQ.510 SOLAR FILL PUMP OPERATING INSTRUCTIONS

Introduction

The **AQ.510 SOLARFILL** is a solar thermal filling set designed to make the filling and flushing of aqueous-glycol based systems easy.

The **AQ.510** features a robust trolley type design, with swivel wheels allowing it to be easily manoeuvred into position in the plant room.

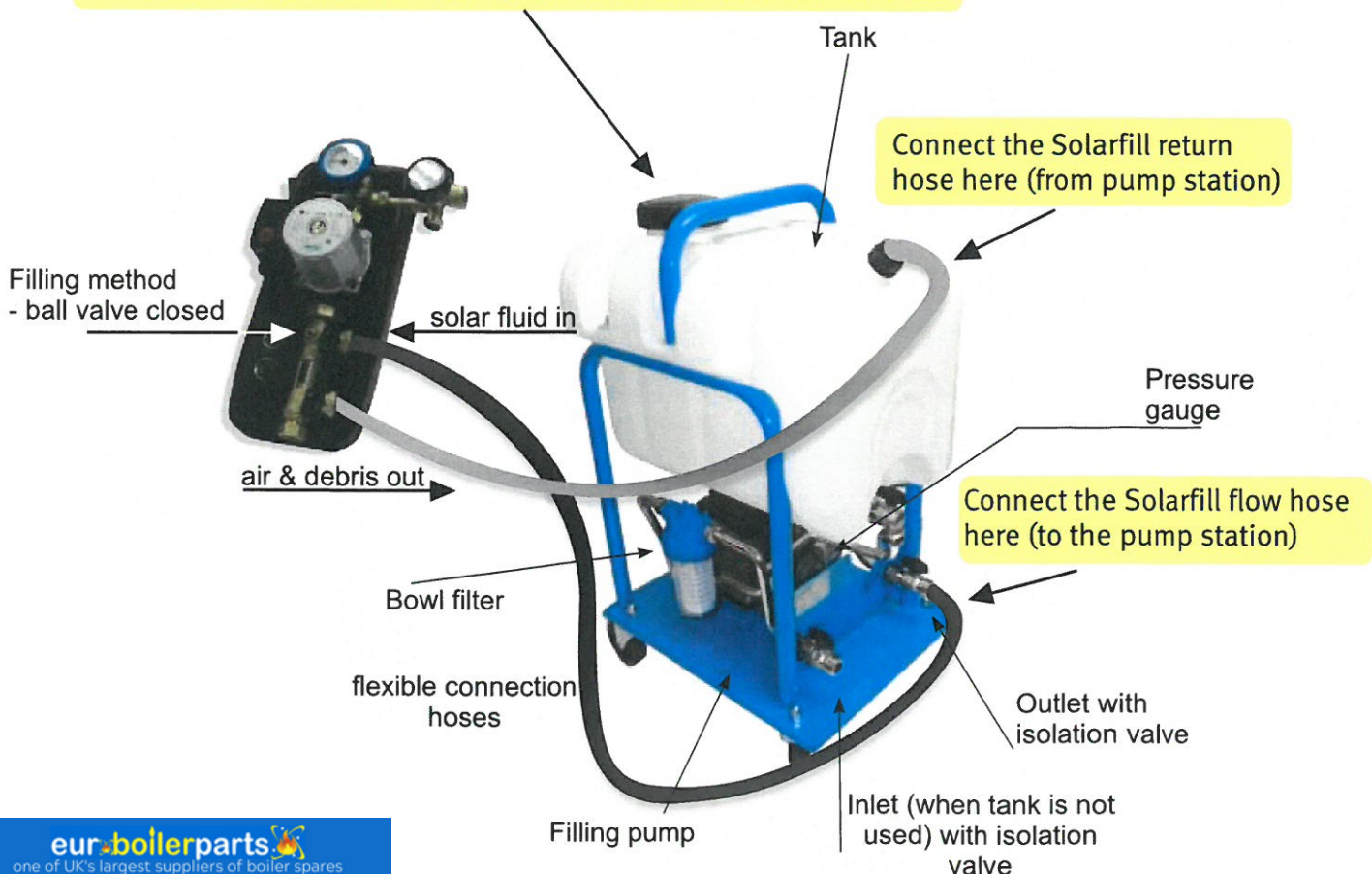
Key features

- Increased capacity 30 litre solar fluid tank with large lid for easy filling
- New 0.5 Hp pump
- Reduced noise level during operation
- Filling port with shut-off ball valve and flexible connection hose
- Flushing/de-aeration port with shut-off ball valve & flexible hose
- Clear large capacity bowl filter replaces old “Y” strainer
- Pressure gauge
- High output filling pump with cast iron body and brass manifold
- Variable pressure regulator to set fill pressure
- Inlet for connection to an external tank
- Optional manual pump for pressurising (without electrical power)

By employing the **AQ.510**, cleaning, draining, venting and filling of pipe systems is made much easier and can take place in a single operation. It's also no longer necessary to work on the roof adjacent to the solar array and solar air vents on the roof can be omitted from the system design. System debris can also be flushed out through the inbuilt strainer.

Instructions for use

Fill the tank here with the Glycol/water pre-mix.
Do not seal airtight during the operation as the object is to remove the air.



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Read before operating

Never run the pump set unmanned

Avoid running the pump without fluid

Hot fluid returning from the collectors can pose a scalding risk. Temperatures can exceed 60°C

On sunny days, cover the collectors or avoid filling the system during the hottest part of the day

Ensure the flexible connection pipes are fitted to the correct connections on the pump set and system

Only use on aqueous and aqueous-glycol systems

If required, clean or flush the solar fluid tank with the strainer open

Use bund trays and avoid operation with wet hands

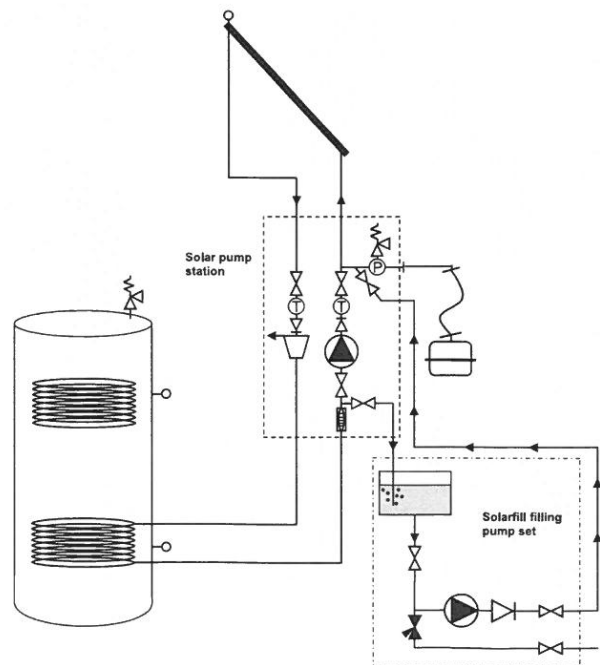
Filling and flushing

These instructions should be used in conjunction with the instructions for the components contained within the solar thermal installation.

Before filling and flushing, carry out system checks and ensure the solar expansion vessel has the correct gas charge.

1. Securely fit the connection hoses to the solar thermal system. Use the connections on the solar pump station, if installed.
2. When using the integral tank, use a funnel and a bund tray and carefully fill the integral tank. When using IBC or external solar fluid containers or tanks, dip the flexible inlet hose in the container.
3. Depending on the source of the fluid, either open the isolation valve below the integral tank or the isolation valve at the side of the pump set outlet. Whichever one is open - the other must be shut.
4. Open the outlet isolation valve.
5. Close the isolation valve between the flushing and filling points on the solar pump station.
6. Open the flushing and filling isolation valves on the solar pump station.
7. Switch on the Solarfill pump set and refill the tank when necessary. Always turn the pump off when refilling the tank. There is no need to use the isolation valves as there is a non-return valve on the discharge side of the filling pump.
8. Fill and flush until there are no more bubbles visible in the integral tank. Then, continue for 15 minutes to deaerate.
9. Close the flushing isolation valve and pressurize to the required fill pressure.
10. Switch off the filling pump and shut off the filling isolation valve on the solar pump station.
11. Where vents are used, deaerate the system and recharge using the filling pump set when necessary.
12. Switch on the solar circulation pump using manual output on the solar controller and allow it to run for 1 hour.
13. Deaerate again using vents where provided and refill to required pressure if necessary.
14. Shut-off the inlet and outlet isolation valves on the filling set.
15. Carefully remove the connection pipes from the solar pump station, avoid spills using a bucket or container. Then, drain down the flexible pipes.

Important: Most collector manufacturers recommend not to fill the system when the collectors are hot. Therefore, either fill the system during times of the day when the collectors are cooler (i.e. 1st thing in the morning or late afternoon) or better still, cover the collectors.



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Troubleshooting

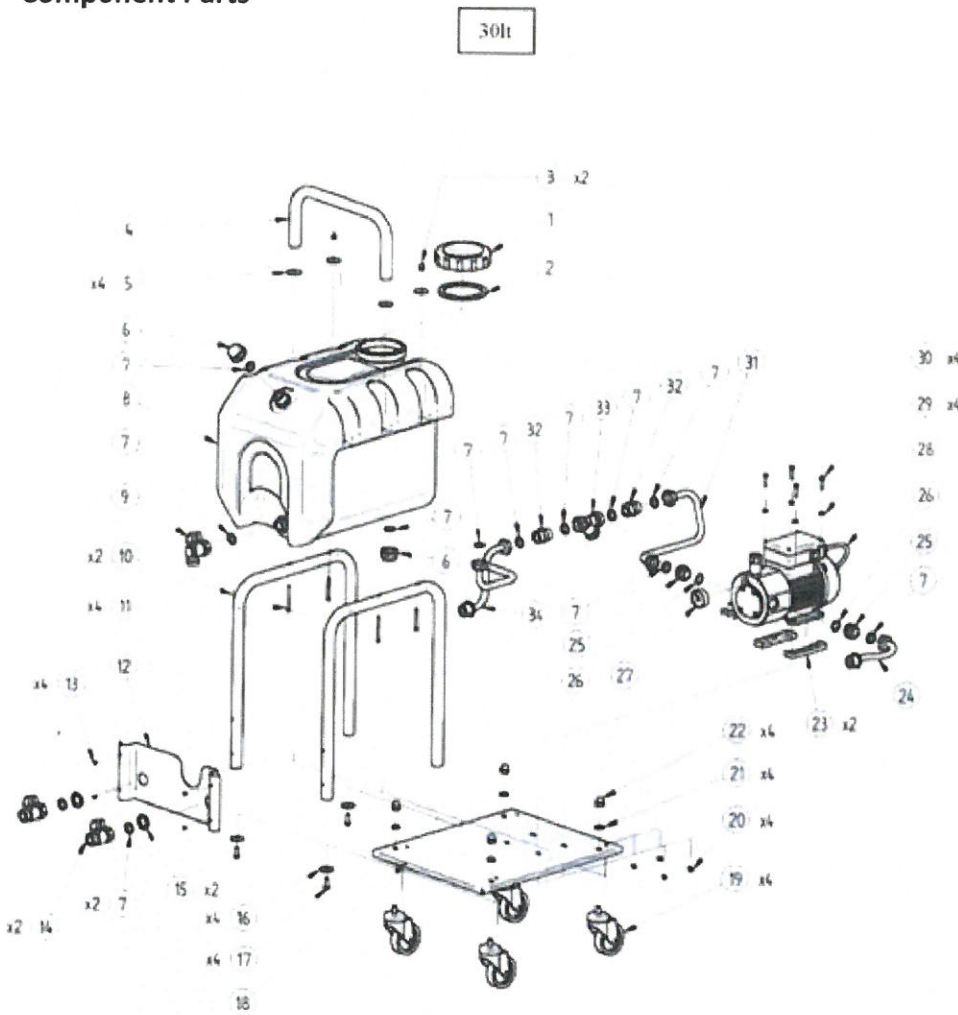
Defect	Cause	Remedy
The motor does not start	There is no voltage	Check fuses or loose contacts and check the value of line voltage
	The capacitor is ineffective	Replace the part
	Low supply voltage or line drop	Increase the voltage within the nominal limits specified
The electric motor is running but the pump is not producing pressure	The filter is clogged	Clean the filter
	The suction tube is clogged	Remove & clean. Check seals are undamaged
	The pump is by-passing the system	Check valve positions on the pump station
	System is not in pressurise test configuration	Shut the out valve on the pump station. Pressurise to 4 bar, turn off system inlet and outlet valves, then turn off the electric power
The over-heat safety switch cuts out the electric motor	Excessive overheating of the electric motor	Check voltage and fan
	The electric motor is damaged	Contact Intaeco Customer Services
Hose connections leaking	The seals are damaged	Replace seals
On system test, pressure is lost	Check the hose seals first before checking the system for leaks. If no leaks, then check the system.	Tighten joints

Technical details

Max. flow rate	23 litres per minute
Max. pressure	5 bar g
Size	390mm d x 320mm w x 780mm h (with wheels)
Connections	¾" BSP male
Weight	15.5kg when empty
Electrical	230v/110v options Net frequency 50Hz Motor IP55
Min. Glycol temp.	+05°C
Max. Glycol temp.	+35°C

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Component Parts



Position	Description	Quantity
1	Cap	1
2	Gasket	1
3	Hexagon nut	2
4	Handle	1
5	Washer	4
6	Cap 3/4"	2
7	Seal	12
8	Tank	1
9	Tap go	1
10	Tank stand	2
11	Screw	4
12	Console plate	1
13	Screw	4
14	Tap straight	2
15	Hexagon nut	2
16	Washer	4
17	Screw	4
18	Base support	1
19	Wheel	4
20	Hexagon nut	4
21	Washer	4
22	Hexagon nut	4
23	Anti-vibration	2
24	Outlet tube	1
25	Nipples	2
26	O-ring	2
27	Pressure gauge	1
28	Pump	1
29	Washer	4
30	Screw	4
31	Tube filter	1
32	Nipples	2
33	Filter	1
34	Inlet tube	1