Technical Bulletin

Product: Greenstar 8000 45kW combi boiler

LOW MAINS WATER PRESSURE INSTALLATIONS - NEW BUILD DWELLINGS & NHBC REQUIREMENTS

(TO BE READ IN CONJUNCTION WITH WORCESTER BOSCH TECHNICAL BULLETIN – TB116)

In new build dwellings it may not be possible to achieve the required dynamic mains water pressure to deliver the maximum flow rate stated in the Greenstar 8000 45kW combi installation manual and required by the NHBC Technical Standards. In such instances, the following advice may be followed.

An adjustable pressure reducing valve (PRV) with pressure gauge will be required on the cold mains inlet to provide equalised pressure on hot and cold supplies. A mini expansion vessel (shock arrestor) must be installed downstream of the PRV.

NOTE 1: If the required dynamic pressure stated in the manual for maximum flow rate is available (i.e. 2.2 bar), and the stated flow rate is achieved +/-15%, then these modifications should not be carried out.

NOTE 2: There must be at least 1.5 bar standing pressure available to fill the heating system.

The modification described in this document should allow the flow rate required by the NHBC standards to be achieved at mains water pressures that are lower than those stated in the Technical Data section of the installation instructions.
The flow rate stated in this document is approximate and measured at the appliance outlet. Flow rates at user outlets may vary from site-to-site dependant on specific site conditions. Resistance through pipework and outlet fittings will affect the results.

Before carrying out any modification to the appliance, you must ensure there is sufficient flow rate available at the appliance mains water inlet, at the dynamic pressure stated in this document.

Fig. 1 Shows the maximum possible flow rate at the appliance outlet with the modified silencer assembly.

Note: This does not guarantee that the same flow rate will be obtained from hot water outlets. The PRV may be adjusted to increase dynamic pressure to overcome any additional pipework or fitting resistance in order to achieve the maximum stated flow rate for the appliance.

Dynamic pressure available at the appliance inlet	Maximum Flow rate possible at the appliance outlet
1.5 bar	19 l/min

Fig 1

Providing sufficient dynamic pressure is available, you may follow the guidance below to remove the flow silencer and flow restrictor assembly from the cold water inlet assembly of the appliance.

You should ensure that the PRV is adjusted to provide the stated design flow rate as per the NHBC guidance for simultaneous hot water use in a dwelling with a bathroom with shower over the bath and two separate shower rooms i.e 18 L/min, this will ensure a 35°C temperature rise.

Warning: If maximum stated flow rates are exceeded, a lower temperature rise may be achieved and result in reduced hot water comfort during times when the mains water is especially cold.

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Modifying the flow silencer assembly:

1) Ensure the appliance is safely isolated from the electrical and mains water supplies before commencing any work.
2) Refer to the installation & servicing manual for additional guidance.
3) Remove the mains water inlet pipe from between the isolation valve and cold water inlet connection at the hydraulic manifold. Fig. 2A
4) Withdraw the complete flow turbine and silencer assembly from the inlet manifold. Fig. 2B
5) Refer to Fig. 2C: Unscrew the cap (item 1) from the back of the flow turbine adaptor (item 2) and remove the complete silencer and limiter assembly (item 3). Discard the flow silencer and limiter assembly.
   This may be a one or two piece silencer, depending upon appliance output.
6) Refit the screw on cap. Refit the flow turbine assembly and silencer housing in return order.

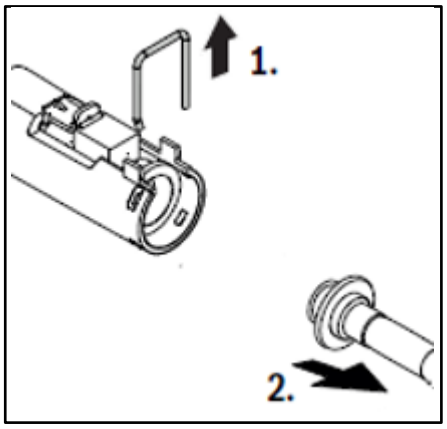

Fig. 2A

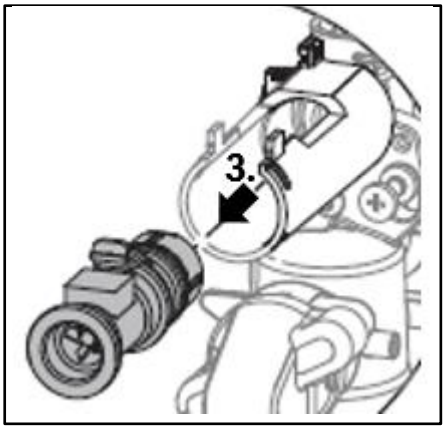

Fig. 2B

Commissioning the appliance.

1) Ensure the PRV is adjusted to provide slightly over the required pressure to provide the desired flow rate at the appliance outlet. Fig 1
2) Open sufficient hot taps to achieve at least the stated maximum flow rate of the appliance. Adjust the PRV to achieve the required flow rate through the appliance.
   Measuring the flow rate can be achieved by measuring the total flow from all hot taps with a flow cup or by checking Hot Water flow rate in the Benchmark menu. (8300 = menu A-b2. 8700 = Hot Water flow rate) Refer to the manual for further guidance on navigating menus.

Note: Once the PRV has been adjusted, it should be locked to prevent tampering, or if no anti tamper lock is available, it should be clearly labelled "Do not adjust".

Warning: Under no circumstances must a flow rate of 25 l/min be exceeded as this can result in damage to the flow turbine. To avoid this, the PRV must not be initially set any higher than 1.6bar.

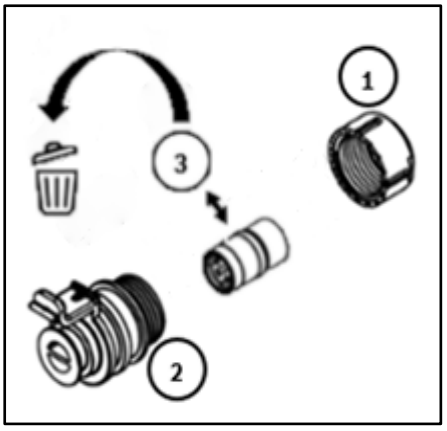

Fig. 2C

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