

Combis

in hot water



Tarquin Purdie from Powerflush discusses resolving hot water problems associated with combination boilers.



Photo 1. Removing pump face.



Photo 2. Attaching pump adaptor.



Photo 3. Attaching power flushing hoses.



Photo 4. Combi boiler being descaled.



Hot water problems associated with combination boilers can be a very confusing subject for heating engineers let alone home owners who have only just heard of power flushing – which they can, and do, confuse with descaling.

Hot water problems experienced with combination boilers can be as a result of one or more of the following scenarios.

Scenario 1

Symptoms: The heating works, but there is no hot water (or vice versa). Heating system water is dirty.

Problem: The diverter valve may be stuck in either the heating or the hot water setting.

Cause: Corrosion debris from radiator system.

Recommended action:

Power flush from either side of the diverter valve (i.e. connect onto the circulator pump body, using a pump head connector and then onto the tails of one radiator), followed by freeing or replacing the diverter valve.

Scenario 2

Symptoms: The heating works but the hot water temperature fluctuates. Heating system water is dirty.

Problem: The hot water plate heat exchanger or temperature sensing thermistors are blocked with corrosion debris.

Cause: Corrosion debris from radiator system.

Recommended action:

Power flush the plate heat exchanger using a pump head connector, possibly followed by replacing the plate heat exchanger and/or the thermistors if necessary.

Scenario 3

Symptoms: The heating works, hot water is warm and increases in temperature as the water flow from the hot tap is reduced. Heating system water is clean.

Problem: The hot water plate heat exchanger is blocked with lime scale deposits.

Cause: Lime scale from mains water.

Recommended action:

Descale the domestic water side of the plate heat exchanger, possibly followed by replacement if not completely cleared. Subsequently fit lime scale polyphosphate water conditioner giving the customer guidance for changing cartridges when necessary.

NOTE: A secondary fault often found in dirty sealed systems is leaking pressure release valves, due to trapped debris preventing proper closure.

Use of a pump adaptor

To thoroughly clean pipes and radiators when power flushing, it is important to connect at the pump rather than at a radiator, in order to have proper control of flow through the system. With combination boilers a second reason to connect at the pump is so that when the system calls for water and the diverter valve moves to the hot water position, the power flush machine is still part of the circuit (a connection at a radiator or connections 'teed' into flow and return pipework would not be).

There are some boiler designs where it is not practical to remove the complete pump assembly, and a pump adaptor which replaces the pump head/motor and attaches to the pump manifold can be used. These adaptors do not fit all circulator pump designs and care is required when attaching to some plastic manifolds to avoid damage.

If a diverter valve is stuck in the water position then the power flush machine can be attached to radiator tails and hot water supplied to the machine from a domestic hot tap.

When making power flushing connections inside the casing of a combination boiler, as well as adopting safe isolation practices, care is required to avoid water leaks causing damage to electrical components.

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