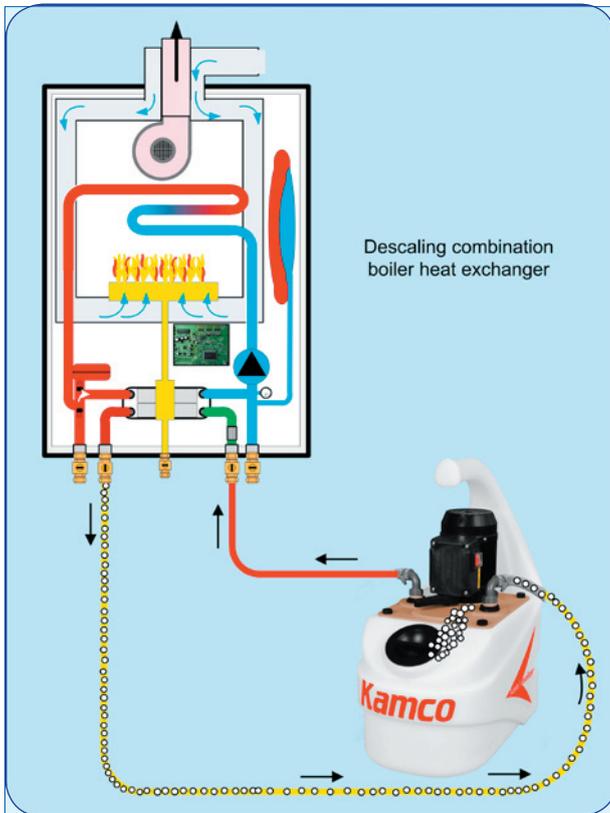


## Guidance notes on descaling combination boilers



### CHOICE OF DESCALING CHEMICAL:

The heat exchanger of most combination boilers is stainless steel, and SCALEBREAKER FX OR SR Crystals should be used. Do not use SCALEBREAKER HD with stainless steel, as it will etch the surface.

### Procedure

1. Disconnect the cold water inlet pipework to the boiler, and the connection leading to the hot water outlet. (There is no need to touch the radiator flow and return pipework.)
2. Screw the outer ends of the descaling pump flow and return hoses securely to the connections under the boiler (as in the diagram), using threaded adaptors & PTFE tape if necessary.
3. Connect the power cable to a suitable earthed power supply. As the pump will be used in a damp location, we recommend that a residual current circuit breaker plug top be used.
4. Fill the tank with sufficient descaling solution to cover the pump rotor housing. The minimum liquid level is shown on the tank.
5. Venting of the carbon dioxide gas evolved during descaling is through the pump tank cap aperture. The cap should be screwed on by no more than one quarter of a turn. This will vent the gas, but reduce fumes and splashes.
6. Switch on the pump. As circulation commences, bubbles in the return hose to the pump indicate that limescale is being dissolved.
7. Continue circulation through the boiler and pump, briefly reversing the direction of flow periodically.
8. The direction in which the flow reverser handle points indicates the direction of flow of the liquid. Flow reversal reduces descaling time considerably and can clean piping which is almost totally obstructed.
9. Check all connections for tightness and leaks. If foaming is excessive, add FOAMBREAKER to the tank.
10. Scale removal can be considered complete when bubbles are no longer seen in the return pipe, and yet the descaling solution is still sufficiently strong to remove hard water deposits.
11. A pH meter, or pH indicator paper, may be used to check the pH of the descaling solution. When the pH rises to 3.5 to 4, its ability to dissolve limescale and corrosion deposits is effectively spent, and more descaling chemical or a fresh solution will be required.
12. Disconnect the descaling pump, and remake pipework connections. Flush fresh water through hot water taps for some minutes, checking that water is neutral with pH paper or a pH meter.
13. If the pump is not to be used for a period of time, circulate clean water through it to prevent any residues of descaling process from drying and "gumming up" the rotor.

Caps should be kept securely on all chemical containers whilst not in use. Operators should avoid standing directly over the open neck of chemical containers or the filling neck of the descaling pump whilst adding chemicals.

**Note 1: When working with acidic descaling chemicals always wear suitable protective clothing and goggles. Check and observe instructions supplied with descaling chemicals.**

**Note 2: When descaling with any acid, some hydrogen gas may be evolved. Hydrogen is flammable and the working area should be well ventilated. Avoid smoking nearby.**

**Legal disclaimer: It is stressed that these are guidance notes only, and the above information is based on the present state of our knowledge of boilers in general. It is given in good faith, but due to the diverse and varied nature of such equipment, the user must satisfy himself that the above procedure is viable in the prevailing situation.**