

Descaling...

There are two separate types of 'descaling'. Cleaning the corrosion deposits from the radiator system and main heat exchanger of a boiler, and cleaning hard water deposits out of a combi boiler.

The former is more accurately described as 'powerflushing'. Powerflushing and descaling are closely related because the same equipment and chemicals are used, even though the faults being addressed are different.

Powerflushing:

The expression was coined by Kamco Ltd, who are the originators of the technique and the equipment needed to do it. Read ALL about it on their website www.kamco.co.uk

In summary, a heating system is connected to a large pump with a reservoir via which either chemicals or clean water can be introduced and circulated around the heating system. The pump distributes these chemicals at high speed through each individual radiator in turn where they loosen and bring into suspension most of the magnetite corrosion deposits. This dirty fluid is then pumped out to drain at high speed and replaced with fresh water and neutralising agent. This mixture is in turn flushed to drain and replaced with new water and corrosion inhibitor. The whole process takes several hours to carry out thoroughly in my experience. Roughly one hour per radiator on the system.

Descaling:

Descaling is needed when a heat exchanger accumulates a significant thickness of calcium on its surface, enough to insulate the water from the heat source and impair performance.

This effect only occurs on heat exchangers that carry fresh tap water. Sealed systems such as radiator circuits contain a finite amount of calcium (typically 30 grams or so) that was contained in the initial fill of water, and once this has precipitated there is no more left to deposit. Fresh tap water on the other hand, can continuously deposit ever more calcium resulting in very thick layers of scale which can virtually seal off all water flow in extreme cases. Combi boilers and thermal stores (PulsaCoils, BoilerMates etc) suffer from this in particular. Symptoms can be reduced water flow, reduced temperature, wildly fluctuating water temperature, or any combination of these.

The answer is to either replace the heat exchanger, or pump descaling acid through it for an hour or two. It's a much simpler procedure than powerflushing as only one item (the heat exchanger) needs attention. The powerflushing pump is set up and connected to the heat exchanger via the washing machine hot and cold taps usually, turned on and the scale gradually dissolved away. Once performance has been restored the equipment is disconnected and the chemicals flushed from the pipework simply by restoring the water supply and turning on the taps.