



HOW TO POWERFLUSH

A HEATING SYSTEM

Provided by Powerflush Ltd



DID YOU KNOW

Powerflushing saves fuel and cost quite significantly and it also extends the life of the pipe system, thereby reducing the need to replace components.

How to Powerflush an open system with an accessible pump

Remove the circulatory pump and connect the Magnet Filter. It is very important to connect at the pump in order to have maximum control over flow as connecting at a radiator reduces this.

Powerflushing often involves clearing blockages and the classic Powerflush blockage is the cold feed. First the feed tank mains is stopped by turning off valves or tying up ball cocks and capping off the air vent.



Magnet filter before

Magnet filter after

Check to see if there is a blockage by opening the pump valve in the cold feed direction and if all is clear, the feed tank contents drop into the empty Powerflush container. If they do not, cut the feed pipe 20cm above where it joins the system pipe work, and have bucket and towels handy and manually clear the blockage. Sometimes cutting out and renewing this area is a good idea but this depends on how far your customer wants you to go.

Now reconnect the feed with a full-bore ball valve and turn it off so as to have a closed system. Open the second pump valve and start circulating the system water so it comes out from the pipework and radiators carrying loose rust debris to the Powerful Magnet Filter. The rust (which is Iron Oxide) sticks to the magnet and is largely removed at this point.

Always try to keep the Powerflush machine clean and filter the water before it enters the boiler heat exchanger.

Add chemicals, loosen and filter rust

The filtered water goes on to the Powerflush pump where a chemical cleaner is added. Whether an acid based chemical or a softer non-acid chemical is used is based on the engineers experience. On the one hand those responsible for the boiler heat exchanger do not want an acid to be used where they have an aluminum heat exchanger, on the other hand the person paying for the Powerflush wants a guarantee that their system is thoroughly clean.



The water and cleaning chemicals pass through the boiler and get hot. It is very important the chemicals get hot for two reasons;

1. Chemical reactions double in reaction time when temperature increases by 10°C, therefore by increasing temperature by 50°C the cleaning action is increased by 32 times.
2. As the hot chemicals go through the radiators use an Infra Red Thermometer to measure the radiator surface temperature. Where there is good flow you will see high temperature readings, where there are rust blockages you will see cold spots. The heat contrast enables you to see where the rust is and you can then vibrate these areas, reverse flow, add more chemical etc., until the whole surface reaches a uniform temperature. There will still be a layer of rust on the inner radiator surface so close the radiator valve and leave the hot chemicals to soak in. Repeat this process one by one for each radiator and the hot water coil until everything has soaked.

While the system is heating clean out the feed tank, either in situ or outside depending on the risk of causing other problems. After the last radiator is hot all over close it and open the hot water cylinder. Now close the hot water coil.

Purging

Once everything is soaking open the mains water connection into the Powerflush machine and open the valves on the first radiator which has been soaking for the longest. The clean water is now sent up the system flow pipes, through the first open radiator and back down the return pipes. At this point turn off the Magnet Filter to see the water condition, and dump the water down a drain. After a while the water will start to run clear so vibrate the bottom of the radiator so that the rust debris jumps up and is carried out of the radiator by the flow. This ensures as much rust debris is removed as possible. Continue purging and taking TDS (Total Dissolved Solids i.e. clean) and pH readings (if using acid based cleaner) of the dump water until the readings are clear. Close the first radiator. Repeat this process for each radiator and hot water coil until all are clean and pH neutral.

Finally

Add a small amount of Alkali neutraliser and then add a DWTA approved Rust Inhibitor. Disconnect equipment and replace the circulatory pump and then balance the system.

HOW TO GET £50 WITHOUT DOING ANY WORK!



Powerflush Ltd is offering £50 back for each job referred to them by heating engineers. They won't pinch any other work from you as they only do powerflushing jobs! If you are too busy to powerflush a system for your customer then call Powerflush Ltd and get yourself £50!

For further information contact Tarquin Purdie on FREEPHONE 0800 7317939 or go online at www.pflush.com