



## Power flushing pumps for professionals



Clearflow **CF40** Evolution.

Clearflow **CF90** Quantum2.

Clearflow **CF210** Titan.

### With Kamco CLEARFLOW power flushing pumps you get:

- Power flushing pumps suitable for all heating systems, including underfloor.
- Ultra high flow rates for maximum removal of sludge and corrosion debris.
- Instantaneous flow reverser.
- Operation up to 75°C; run dry capability.
- Portability - wheels, or carry.
- Hoses and fittings ready assembled.
- Starter pack of chemicals for 2+ jobs.
- Waterproof hose carry container.
- Kamco technical expertise, help-line support and service workshop.
- 12 months warranty; parts and labour.
- Free training course for customers at UK training centre.
- Link to customer website.
- Free mainland UK delivery.
- Dual purpose - acid proof construction allows pump to be used to descale boilers and water heaters.

### Why buy from Kamco?

1. We design and build our own pumps in the UK, and will advise on selecting the best pump for your needs.
2. We have full back-up facilities, with UK telephone help line, training, spares, and service facility.
3. The Kamco in-house training school. Courses include a power flush on a complete heating system, tips, wrinkles, and techniques.
4. Reassurance and support from the original Power Flushing pump company, producing pumps since 1992.

### What do people in the know say?

My Clearflow pump is the best earning tool I've ever bought.

My next power flush will be number 1274 so you really have a great product.




Fast, personal service and great people within the company.

PB, Harrow.

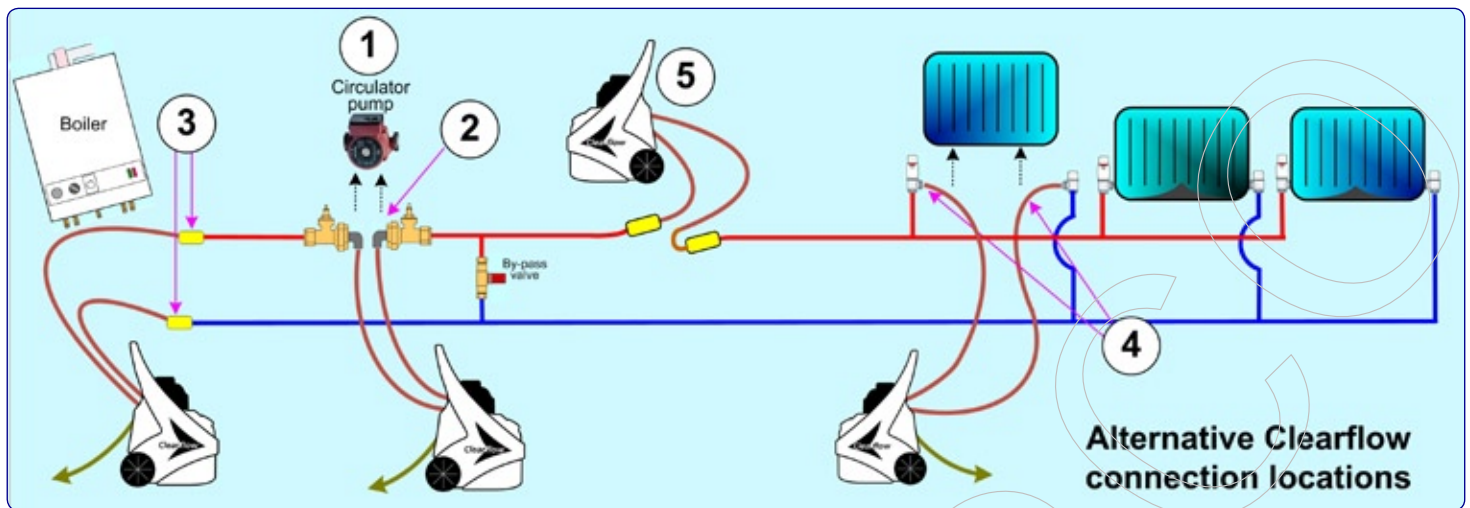
RF, Kent.

Corgi customers

## Power flushing pumps for domestic and small commercial systems

Technical data	CF40 EVOLUTION	CF90 QUANTUM2	CF210 TITAN
	 <p>Rear view of CF40 showing wheels</p>		
Application	Domestic heating systems	Domestic and small commercial heating systems	Domestic and commercial heating systems
Flushing capability	20/25 radiators max; 2/3 storeys	40 radiators max; 3 storeys	60 radiators max; 3 storeys
Tank capacity	39 litre translucent HDPE	57 litre translucent HDPE	125 litre translucent HDPE
Electric motor size	0.50 HP, IP55 rating, 230 or 110 volt	0.75 HP, IP55 rating, 230 or 110 volt	0.75 HP, IP55 rating, 230 or 110 volt
Max. flow rate	90 lt/min	150+ lt/min	170+ lt/min
Max. head	20 mt	24 mt	28 mt
Max. temperature	75° C.	75° C.	75° C.
Flow reverser type	instantaneous	instantaneous	instantaneous
Control valves	2 x 3-port combination valves for isolation and dumping	2 x 3-port combination valves for isolation and dumping	2 x 3-port combination valves for isolation and dumping
Flow and return hoses	2 x 5 metre hoses, 16 mm I.D. re-inforced PVC	2 x 5 metre hoses, 19 mm I.D. re-inforced PVC	2 x 5 metre hoses, 22 mm I.D. re-inforced PVC
Hose end fittings	3/4" BSP x 16 mm tool-free brass hose couplings	3/4" BSP x 19 mm tool-free brass hose couplings	1" BSP x 22 mm tool-free brass hose couplings
Dump hose	1 x 8 metre, 16 mm I.D. re-inforced PVC	1 x 8 metre, 19 mm I.D. re-inforced PVC	1 x 8 metre, 22 mm I.D. re-inforced PVC
Water inlet hose	1 x 8 metre re-inforced PVC	1 x 8 metre re-inforced PVC	1 x 8 metre re-inforced PVC
Overflow hose	1 x 3 metre, 16 mm I.D. re-inforced PVC	1 x 3 metre, 19 mm I.D. re-inforced PVC	1 x 3 metre, 22 mm I.D. re-inforced PVC
Other hoses supplied	2 x adaptor hoses for connection to 1.5" circulator pump fittings.	2 x adaptor hoses for connection to 1.5" circulator pump fittings.	2 x adaptor hoses for connection to 1.5" circulator pump fittings.
Carrying / transport	Integral handle; 75mm wheels	Integral handle: large diameter 200mm wheels.	Integral handle: large diameter 200mm wheels.
Weight (without hoses)	17 kg	22.5 kg	28.5 kg
Chemical handling ability	All commercially available acids, alkaline solutions, chlorine solutions.		
Dimensions (mm), w x d x h	390 x 440 x 690	390 x 590 x 890	530 x 680 x 890
Also included	Starter pack of flushing chemicals, inhibitor, and pH test strips, sufficient for 2+ standard power flushing jobs. 10 part kit of BSP threaded adaptors. Comprehensive operations manual; Waterproof hose set carry crate. Pack of 50 promotional leaflets explaining the benefits of power flushing to householders.		
Training	<b>FREE proficiency training at St Albans Training Centre.</b>		

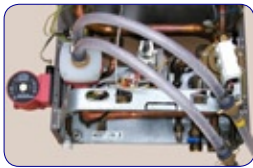
# Using a CLEARFLOW™ pump to power flush a heating system



Connection of the CLEARFLOW to a heating system may be made by several different methods, the choice of which will depend on accessibility and practicality:

1. Across the heating system circulator pump fittings, after removal of the pump. A set of adaptor hoses is included with every CLEARFLOW pump.

2. Using the CP2 pump head adaptor (an optional extra) to connect onto the body of the heating system circulator pump, after removing the electric motor. This is the preferred method when flushing combination



boiler heating systems, as the plate heat exchanger (primary water side) can also be power flushed without removal from the boiler.

3. Across the flow and return pipe connections at the boiler, isolating the boiler itself. This is the preferred method when replacing a boiler.

4. Across the two pipes leading to one radiator, having drained and disconnected this radiator only. Leave the radiator valves on the pipes. The standard CLEARFLOW hose end fittings will connect onto 3/4" radiator valves. Adaptors are supplied to fit 1/2" radiator valves.

5. A CLEARFLOW pump may be connected

into a length of larger diameter pipe work, using push-fit or compression connections adapted to 3/4" male BSP screw threads (or 1" male BSP screw threads if CF210 pump is used). See point 5 in diagram above.

## Vented systems

If the heating system is vented, it is necessary to make it into a sealed system for the duration of the power flush using temporary fittings.

Comprehensive instructions for use are included with every CLEARFLOW pump, and the telephone help line service ensures that pump users can get helpful and experienced advice on using both equipment and chemicals.

## Step-by-step guide to power flushing a central heating system

- 1 If system is vented, cap off the cold feed and expansion pipe (for the duration of the power flush only). Omit this step if the system is sealed.
- 2 Connect Clearflow pump into heating system. Connect discharge, water inlet, and overflow hoses to Clearflow pump.
- 3 Open all radiator valves (both ends of each radiator) and lock-shield valves, and set any zone valves to manual position, to allow full flow throughout heating system.
- 4 Switch on Clearflow pump. Set both Clearflow valves to circulation mode for ten minutes, reversing flow through system regularly.
- 5 Set one Clearflow valve into the dump position, so that dirty water is discharged to waste, and open water inlet valve.
- 6 Adjust inlet water valve to ensure that water level remains constant. Continue discharging until dump water is relatively clear.
- 7 Set Clearflow into circulation mode, with full flow through the whole heating system (both valves on every radiator open).
- 8 Remove tank cap and pour 2.5 litres PowerFlush FX2 flushing chemical (or 500ml of Hyper-Flush Concentrate) into Clearflow tank.
- 9 If possible, switch on boiler to heat water to 50°C. It is not necessary to leave boiler firing continuously.
- 10 Continue circulation through wide open system for fifteen minutes, to distribute chemical, whilst reversing flow regularly.
- 11 Close all radiator valves except on one radiator (usually the nearest to Clearflow pump). Allow full flow through radiator for five minutes, reversing flow regularly.
- 12 Shut off first radiator, and move to second. Work around heating system systematically, putting full flow through every radiator in turn.
- 13 After circulating through last radiator, switch to dumping on that one radiator, until water runs crystal clear.
- 14 Operate flow reverser and Clearflow valves to dump with water flow in opposite direction, until water again runs clear.
- 15 Open up previous radiator, and dump on that until water runs clear. Work around system in reverse, dumping through each radiator alone in turn.
- 16 Re-open all radiator valves completely. Set both Clearflow valves to circulation mode, restoring circulation through complete heating system.
- 17 If PowerFlush FX2 has been used, add one tube of Neutralising Crystals to Clearflow tank, and circulate for ten minutes. Omit this step if using Hyper-Flush Concentrate.
- 18 Commence final dump procedure, with all radiator valves wide open. Continue dumping until discharge water is crystal clear. Check TDS of dump water.
- 19 Test that dump water is neutral with pH meter or pH paper, and add Systemsafe-DM Concentrate corrosion inhibitor to Clearflow tank.
- 20 Circulate for ten minutes before disconnecting Clearflow pump. Restore system to normal operation, and bleed air from radiators. The power flush is now complete.

**Kamco**

## The chemicals and accessories to use with Clearflow™ pumps

POWERFLUSH FX2 and HYPER-FLUSH CONCENTRATE are formulated to penetrate, loosen, and break down corrosion debris and sludge into small particles, which are then forcibly expelled from the system by the high water velocity generated by the Clearflow pump.

Whilst high water velocity alone will remove some debris from heating systems, the smaller the particle size, the greater is the effect of the moving water, demonstrated by the dramatic increase in flushing efficiency when using POWERFLUSH FX2 and HYPER-FLUSH CONCENTRATE.

For the best results  
when using a CLEARFLOW pump  
use POWERFLUSH FX2 or HYPER-  
FLUSH CONCENTRATE

### Power Flushing Chemicals



#### PowerFlush FX2

High performance flushing chemical for maximum debris removal.



#### Hyper-Flush Concentrate.

Non-acidic mobiliser and solvent for sludge and iron oxides. Used when aluminium radiators or heat exchangers are present.



#### Systemsafe-DM Concentrate.

Scale and corrosion inhibitor for all domestic heating systems. For mixed metal systems including aluminium.



Systemsafe-DM Concentrate carries the Buildcert / DWTA logo, proof that it has passed a tough performance test in a laboratory independently monitored by Buildcert.



#### Neutralising Crystals.

Used after power flushing with PowerFlush FX2, to neutralise any acidic residues.



#### pH Paper.

To check that water within heating system is completely neutral.



#### Foambreaker Antifoam.

### Power Flushing Accessories



#### CP2 Circulator pump head adaptor.

Reduces set-up time and enables thorough flushing of combination boiler systems.



#### CombiMag power flushing filter.

Reduces power flushing time, increases efficiency and saves water.



#### CombiHeat power flushing heater.

Heats system water to boost flushing chemical efficiency.



#### CombiMag Dual combination filter & heater.

CombiMag filter and CombiHeat heater in a convenient twin cylinder unit.



#### CombiMag Twin high capacity magnetic filter.

Twin cylinder CombiMag for high performance power flushing pumps such as the Clearflow CF210.



#### RadHammer vibrator tool.

Loosens compacted radiator debris.



#### Systemsure IK6 injector unit.

Enables chemicals to be added to systems through radiator air bleed valves or filling loop.



#### Plate Heat Exchanger Adaptor Set.

Enables plate heat exchangers to be thoroughly flushed.



#### ecoTestr electronic TDS meter.

Checks water purity after a power flush in comparison to mains water supply.



#### ecoTestr electronic pH meter.

Checks that system water has a neutral pH.



#### Turbidity tube.

Checks clarity of water after a power flush.



#### Infra-Red laser spot thermometer.

The engineer's 'eye' inside a heating system.



#### Water analysis kit.

Enables system water to be checked for corrosion and contaminants.



#### Pipestopper plugs.

Enables expansion and cold feed pipes to be quickly isolated.



#### Electric syphon pump.

Saves time and mess when emptying feed & expansion tanks.



#### Waterproof Maintenance Mat.

Prevents accidental water damage.