SECTION D – USING THE CLEARFLOW FOR DESCALING BOILERS AND HEAT EXCHANGERS

DESCALING PROCEDURE

Safety Precautions

When working with acidic descaling chemicals always wear suitable protective clothing and goggles, and check and observe instructions supplied with descaling chemicals.

PLEASE FOLLOW THESE INSTRUCTIONS TO AVOID OPERATING OR SERVICING PROBLEMS.

Fill the tank with sufficient descaling solution to ensure that the pump rotor housing is submerged during use. The minimum liquid level is shown on the tank.

Screw the outer ends of the flow and return hoses securely to the plant or equipment to be descaled, using BSP threaded adaptors & PTFE tape if necessary. Connect the power cable to a suitable earthed power supply (220 or 110 volt [50 hz], according to model). As the pump will be used in a damp location, we recommend that a residual current circuit breaker plug top be used.

Switch on the pump, and check to ensure that the liquid level does not fall below the level of the rotor housing (see above), as some of the contents of the tank enter the equipment being descaled, particularly when the overall capacity of the system being descaled is greater than the tank capacity of the pump. If necessary, add more descaling solution, or water. Check all connections for leaks.

During use, the tank cap should remain loose and ***not*** **be screwed on by more than a quarter turn**, to allow for the passage and elimination of the gas evolved during descaling. Check that the foam level does not exceed the maximum filling level. If necessary, carefully add FOAMBREAKER to the solution.
The built-in flow reverser makes it possible to attack scale from both directions. During descaling periodically move the flow reverser handle from one side to the other. This reduces descaling time considerably, and is more effective in flushing out any solid matter, which may accumulate on the circumference of the base of the tank. By attacking scale from both sides it is possible to clean piping which is almost totally obstructed.

Scale removal can be considered complete when bubbles no longer form in the return pipe, and the solution is still acidic.

SCALEBREAKER descaling chemicals, with a built-in colour change to allow acid strength to be monitored visually, are available from KAMCO.

Caps should be kept securely on all chemical containers whilst not in use. As a matter of prudence, and to avoid splashes, operators should avoid standing directly over the open neck of either chemical containers or the filling aperture of the descaling pump whilst pouring or adding chemicals.

If the pump is not to be used for a period of time, wash it out after use by circulating clean water through it, to prevent any residues of the descaling process from drying and "gumming up" the rotor.

Please observe these precautions:

1. Always add the acid to the water, never the other way round.
2. Temperature of the descaling / flushing solution must not exceed 50°C.
   Monitor temperature closely when descaling plant / equipment which may already have a high temperature, such as the domestic water coil in storage water heaters, or large plastic injection moulding tools.
3. Do not dissolve solid or crystalline descaling chemicals directly in tank, as this may choke the pump inlet and cause abrasion damage. Dissolve such chemicals in a bucket first.
4. Always keep pump upright, particularly in transit, to avoid any liquid penetrating lower electric motor bearing, as this may cause the bearings to wear prematurely.

SUMMARY OF CHEMICALS USED WHEN DESCALING BOILERS AND HEAT EXCHANGERS

Product	Application	How much do you need?	How is it packed?
Scalebreaker SR	Descaling heat exchangers, boilers or water heaters. Suitable for materials including aluminium. Pour slowly into **CLEARFLOW** tank whilst re-circulating Works faster with heat.	It dissolves half of its own weight of scale. **Start with 500 gms** (approx 1-2 coffee cups full). Colour changes from red to yellow when exhausted, so add more.	**Carton of 6 x 2.5kg pails.** **# 15kg pail.**
Scalebreaker FX	Descaling heat exchangers, boilers or water heaters. NOT suitable for use with aluminium or galvanised steel.	In liquid form, ready to use. Make a solution of 1 part FX to 4 parts of water.	**Cartons of 4 x 5 litre.** **# 25 litre drums.**
Scalebreaker HD Note this is an extremely powerful chemical, use with caution.	Descaling heat exchangers, boilers or water heaters. **Not for use in CH systems.** NOT suitable for use with aluminium, galvanised or stainless steel.	In liquid form, ready to use. Make a solution of 1 part HD to 10 parts of water.	**# Cartons of 4 x 5 litre.** **# 25 litre drums.**
Neutralising Crystals	To neutralise acidic water to enable safe disposal down a **FOUL SEWER** Pour slowly into the **CLEARFLOW** tank whilst re-circulating.	Between 1 and 5% in water.	**Cartons of 6 x 2.5 kg pails.** **15 kg pails.**
pH paper	To check that the solution is neutral, pH reading should be 7 (i.e. same as tap water) Dip 3cm in dump water and compare colour with chart.	Approx. 10 cm.	**5 metre dispenser pack.**
Znl Booster	To protect galvanised pipes when being descaled with SR Crystals Pour slowly into the **CLEARFLOW** tank whilst re-circulating *BEFORE* addition of SR Crystals.	3% by weight of SR Crystals.	**450g tub.** to treat 15kg SR Crystals.
Foambreaker	To control excessive foaming whilst descaling.	**10ml per 50 litre** of descaling solution.	**1 litre dispenser pack.**

= Please note carriage restrictions apply with some chemicals / pack sizes, please call for advice.