

# Kamco limited

Unit 9, Curo Park, Frogmore, St Albans, AL2 2DD.

Tel: 01727 875020

Fax: 01727 875335

## HOW TO USE YOUR SCALEBREAKER AUTO REVERSE PUMP FOR DESCALING

### PLEASE FOLLOW 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 " CAUTION " label on the tank.

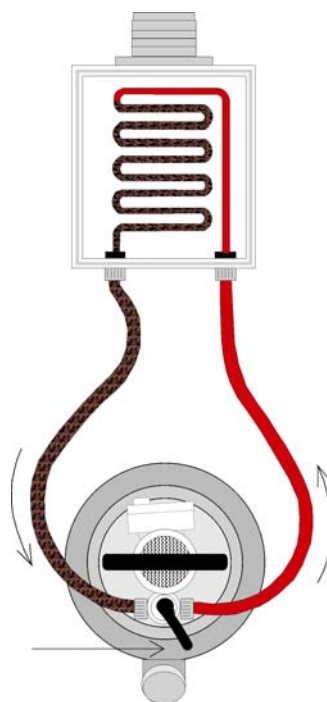
Screw the outer ends of the flow and return hoses securely to the plant or equipment to be descaled, using BSP threaded adaptors & PTFE tape if necessary. Connect the power cable to a suitable earthed power supply (220 volt [50 cps]. We recommend that a residual current circuit breaker plug top be used.

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 rest on top of the screwed stem, but should **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.

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

During descaling, the automatic flow reversal device periodically changes the direction of flow through the equipment being descaled, making it possible to attack scale from both directions.



This reduces the descaling time considerably, and is more effective in flushing out any solid matter, which will accumulate on the circumference of the base of the tank. By attacking scale from both sides it is also possible to clean piping which is almost totally obstructed.

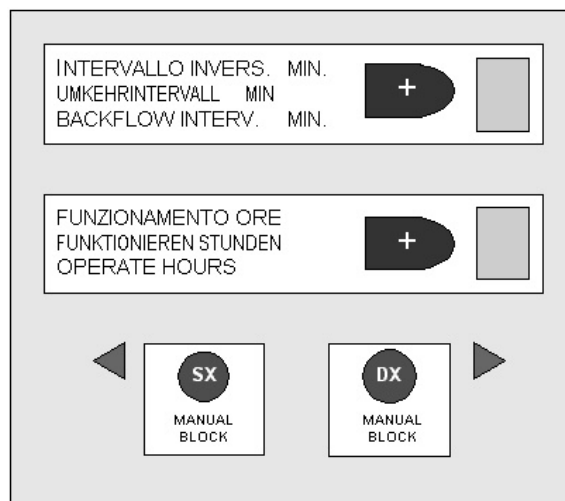
The total duration of the descaling process can be programmed with the AFR models, and also the time interval between automatic flow reversal.

### Programming

The descaling pump has an on/off switch on the lower edge of the control box. After switching on, the "OPERATE HOURS" red LED will flash with the number '0'.

### Manual operation

For manual operation of the pump, simply press either the 'DX' or 'SX' buttons, and the pump will commence to run. The figure '1' will be seen in the display. Pressing the 'SX' and 'DX' buttons



alternately will reverse the flow direction of the pump.

#### Automatic operation

Start the pump manually, and press the 'BACKFLOW INTERV. MIN +' button. The figure 1 will be displayed on the LED, and flow reversal will be carried out every minute.

To increase the time interval between flow reversal, press the same button again, once, and the display will flash. Press the button once more, and the display will change to '2', the new flow reversal time interval. By repeating this procedure, the flow reversal time interval can be increased up to a maximum of 9 minutes. If the button is not touched again for 3 seconds, the last value is maintained.

To increase the total duration of the pump running time, press the 'OPERATE HOURS +' button once, and this display will flash. Press the button once more, and the display will change to '2'. The pump will now run for a total of 2 hours.

By repeating this procedure, the total pump running time can be increased up to a maximum of 9 hours. If the button is not touched again for 3 seconds, the last value is confirmed and maintained.

Once the time set on the 'OPERATE HOURS' display is ended, the pump will switch off, and the display will commence flashing, and display the value '0'.

To restart the pump, press either the 'SX' or 'DX' buttons. The pump will start working in manual mode, and the value '1' will be seen on the 'OPERATE HOURS' display.

During automatic operation, the pump may be returned to manual control at any time simply by pressing either the 'SX' or 'DX' buttons twice.

#### Descaling chemicals

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 neck of the descaling pump whilst pouring or adding chemicals.

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

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

**Telephone help line : 01727 875020**

#### **Please observe these precautions:**

1. Temperature of the descaling / flushing solution must not exceed 50°C. Higher temperatures may warp the rotor cover.

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.

2. 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.

3. Always keep pump upright, particularly in transit, to avoid any liquid penetrating lower electric motor bearing, as this may cause the bearing to wear prematurely.