# Kamco scalebreaker cleaning units for the plastics industry and other areas

**Scale and corrosion debris from mold tools and cooling channels?**
**Deposit problems with oil temperature control?**
**Overheating problems?**
**Extended cycle times?**
**Problems in the feed hopper area?**

**Kamco has the solution:**
**With Kamco cleaning equipment using chemicals, lime, rust and corrosion residues are quickly and easily removed from the cooling channels of the molds, oil temperature control, mass feed hoppers, extruder cylinders and pipework in less time.**


**Scalebreaker C40**
with fresh water flush facility


**Scalebreaker C90**
with fresh water flush facility


**Scalebreaker C210**
with fresh water flush facility

- **High performance to enable descaling of severely fouled equipment.**
- **Descaling chemicals safely contained at all times within integral tank.**
- **Acid proof.**
- **Instantaneous flow reverser for increased efficiency.**
- **No seals to leak; run dry capability, maintenance free.**
- **Complete with hoses and fittings.**
- **39, 57 and 125 litre tanks.**
- **Light and portable.**
- **Supporting range of lime-scalebreakers descaling with chemicals.**
- **Optional fresh water flush facility on different models.**

**Regular cooling channels maintenance prevents cooling problems, improves cycle times, reduces product rejects, and minimises unplanned downtime.**

**Kamco Scalebreaker**
**Cooling Channel Cleaning Unit Mounted Pumps**

## Models available and technical data:

| Model | Tank capacity [l] | Motor [HP] | max. output [W] | max. head [m] | Weight [kg] | Dimensions [cm] | max. height [cm] | Flow & return hoses [m] | Hose and fittings |
|---|---|---|---|---|---|---|---|---|---|
| **C40 FWF*** | 39 | 0,5 | <90 | 20 | 17 | 39 x 44 | 69 | 2 x 3* | 3/4" |
| **C90 FWF*** | 57 | 0,75 | <150 | 24 | 22,5 | 39 x 59 | 89 | 2 x 3* | 3/4" |
| **C210 FWF*** | 125 | 0,75 | <170 | 24 | 28,5 | 53 x 68 | 89 | 2 x 3* | 1" |

* C40 FWF, C90 FWF and C210FWF models with freshwater facility also available with 3 m dump hose.

## Typical applications:

**Modell C40 FWF:** Small to medium size machine applications and molds

**Modell C90 FWF:** Medium sizes applications and larger plastic machinery

**Modell C210 FWF:** Very large mold tool waterways, cooling circuits

## General information:

All unit tank mounted pumps have self priming centrifugal type pump assemblies.

**Hoses and connections:**
All pumps are fitted with flow and return tubing, fitted with threaded female couplings.

**Operation temperature:**
All models have run-dry capability, but liquid temperature should not exceed 60 °C.

**Motors:**
All motors are totally enclosed fan-cooled type, with IP54 or IP55 protection, continuously rated, with integral plastic membrane covered switch and warning light, 230 V.

**Portability and handling:**
All models have an integral handle moulded into the tank, with hand grip recess on the front for ease of lifting. Pumps are designed for on-site use, with low weight and high stability.

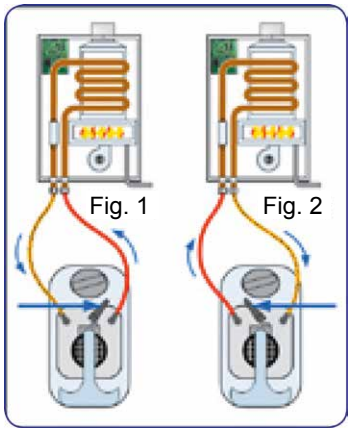
**Chemical handling capabilities:**
Unit pumps are acid-proof, and may be used with all acids in common descaling use – hydrochloric, phosphoric, sulphamic, citric, formic, acetic, etc. They may also used with alkalis, and chlorine solutions as used for sterilisation purposes. For compatibility with other chemicals, please check with us.

**Materials of Construction:**

| | |
|---|---|
| Motor support flange and body, flow reverser, volute and impellor: | Fibre reinforced polypropylene. |
| Impellor housing cover: | Polyphenylene sulphide engineering plastic. |
| Drive shaft: | Steel, sleeved in PP. |
| Tank: | Translucent HD polyethylene, to enable liquid level to be monitored visually. |
| Hoses: | Reinforced transparent and yellow PVC. |

## The advantages of reversing the flow during descaling and chemical cleaning:

All models are equipped with a flow direction changer. During the cleaning process, lime deposits are dissolved by biking gas. The resulting foam formation can create a barrier that affects the cleaning agent and sometimes even prevents a reaction with the deposits. By reversing the inlet and return direction with the flow changer. (see Fig. 1 and Fig. 2), foam and gas can escape through the container and the barrier is removed.
By reversing the flow, deposits can be attacked, penetrated and broken up from all sides, which speeds up the cleaning process considerably.





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**Kamco Cleaning Units**
**for the Quick and Effective Removal of Stubborn Water Deposits, Rust and Scale**

## Applications in the plastics industry:

- Cooling water circuits
- Injection Molding- and Extrusion Machines
- Cooling towers and evaporators
- Boiler and steam generator
- Combi boiler and water heater
- Condensers and coolers
- Heat exchangers and heat containers
- Catering equipment


## Cleaning supplies:

| **Type SR**<br>Crystalline acid for limescale deposits | **Type FX**<br>Cleaning liquid for descaling rust and limescale deposits | **Type CG**<br>Bio compatible cleaning agent for descaling devices in the food sector |
|---|---|---|
| Safe in storage and handling. It is a strong acid that is soluble in water. Safe to use with steel, stainless steel, cast iron, copper, brass, aluminum, PVC, polyethylene and most plastics / rubbers. | Pipeline cleaners; heating units, radiators, heating and cooling devices and systems with rust and limescale deposits. Dissolves oxidation deposits even at ambient temperatures. Not smoking. Safe to use with steel, stainless steel, cast iron, copper brass and most plastics, rubbers. | Water soluble, biodegradable crystals. Very safe to use and store. Removes limescale deposits in food preparation and catering equipment. Non steaming and oxidizing. Safe to use with steel, stainless steel, cast iron, copper, brass, aluminum and most plastics. |
| Kamco cleaning agents inhibit re-oxidation and corrosion of AS equipment.<br>A red to yellow pH color change shows the successful effect of the product. | | |

Mixing ratio for all cleaning agents: 1: 5 (cleaning agent: water)

## Other chemicals and products used in cleaning processes:

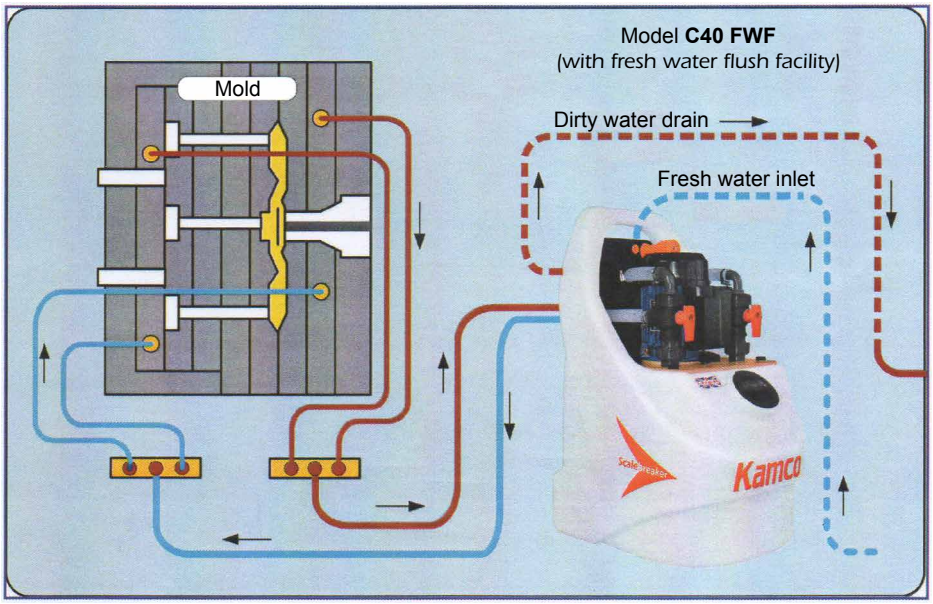
| **Neutralizing crystals** | **Anti-foaming liquid** | **pH-paper** |
|---|---|---|
| A crystalline solution in water to neutralize descaling chemicals before disposal.<br>Also used as a 0.5% solution after cleaning, to neutralize any residual activity. | A concentrated liquid additive to prevent excessive foaming when cleaning and to suppress existing foam. | to check the effectiveness of the chemicals during cleaning and after neutralization |

**Kamco- Cleaning Units**
**Pumps for Descaling and Chemical Cleaning of Coolant Channels**

## *Which cleaning units do you need?*

| Model | C40 FWF | C90 FWF | C210 FWF |
|---|---|---|---|
| Extrusion Cylinder | ✔ | | |
| Injection molding and extruder systems with oil cooling equipment | ✔ | ✔ | |
| Molds ≤ 200 t | ✔ | | |
| Molds ≥ 200 t | ✔ | ✔ | ✔ |
| Feed hopper | ✔ | | |
| Cooling towers and Piping | | ✔ | ✔ |

The choice of the appropriate model depends on the size of the injection molding machine. As a processor with machines with the usual clamping force, you choose the C40 device; unless you have very large shapes with complicated cooling water paths, for which the models C90 or C210 are the more suitable choice.
After cleaning a mold, it is advisable to rinse the coolant runs with fresh water as soon as possible. Our models are equipped to do this quickly and easily (see diagram below).





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