

## De-scaling Pumps



**NMAFR15**

**NMAFR15 Model includes:**  
Electronically controlled flow reversing device, which enables the pump to be left unattended during the descaling process. The automatic valve may be set to control overall running time, and the frequency of flow reversal. Also with a warning light to indicate when the unit is pumping. Includes upgraded 0.2HP motor.

Size	Type	Part No.
15lt	Electronic Flow Reverse	NMAFR15
20lt	Manual Reverse	NMAF20
39lt	Manual reverse	NMAF30
57lt	Manual reverse	NMAF90
125lt	Flush facility	NMAF210FF



**NMAF20**



**NMAF30**



**NMAF90**



**NMAF210FF**

In hard water areas, the use of water in cooling systems invariably results in a build up of limescale (hard water) deposits within the system, usually in the highest temperature zones. The resultant scale not only restricts water flow, but acts a very effective insulant, reducing heat transfer efficiency, and increasing running costs and costly downtime.

Kamco have a full range of SCALEBREAKER tank mounted pumps purpose built for descaling and chemical cleaning of heating plant, heat exchangers, and cooling systems. All units incorporate pump, tank, flow reversing device, hoses and fittings in a neat, portable unit that safely contains chemicals during descaling.

### NMAF15/NMAFR15 and NMAF30

- Self priming for ease and safety
- High performance for descaling severely fouled equipment
- Integral tank for safety and convenience
- Instantaneous flow reversing device
- Descaling chemicals safely contained at all times
- Compact and portable, yet extremely stable in use
- Maintenance-free, No seals to leak
- Translucent Tanks allow the chemical with colour change Ph to be visually monitored.

- Fewer tool repairs
- Increased Cycle Times
- Energy Saving
- Oil Coolers Last Longer
- Protect Chillers and Heater

Specifications:	NMAFR15	NMAF20	NMAF30
Capacity	15 Litres	20 Litres	39 Litres
HP	0.2HP	0.2 HP	0.33 HP
Hoses fitted	2x2 Mtr	2x2 Mtr	2x2 Mtr
Fittings	3/4" BSP	3/4" BSP	3/4" BSP
W x H cm	35x46	35x46	45x60
Weight (Kg)	6.5Kg	6Kg	9Kg

### Descaling Pumps

litres	Features	Brief description	ref	Part no
15	Auto	15 litre tank, 45 l/min flow rate, 9m head, automatic flow reversal and run-time controller. Set of two hoses.	CDP005AUTO	NMAFR15
20		20 litre tank, 60 l/min flow rate, 14m head, manual flow reverser. Set of two hoses.	CDP020	NMAF20
39		39 litre tank, 90 l/min flow rate, 20m head, manual flow reverser, 75mm wheels. Set of two hoses.	CDP040S	NMAF30
39	Flushing facility	39 litre tank, 90 l/min flow rate, 20m head, manual flow reverser, 75mm wheels, integral flushing and dumping facility, control valves. Set of four hoses.	CDP040	NMAF30FF
57		57 litre tank, 150 l/min flow rate, 24m head, manual flow reverser, 200mm wheels. Set of two hoses.	CDP090S	NMAF90
57	Flushing facility	57 litre tank, 150 l/min flow rate, 24m head, manual flow reverser, 200mm wheels, integral flushing and dumping facility, control valves, Set of four hoses.	CDP090	NMAF90FF
125	Flushing facility	125 litre tank, 170 l/min flow rate, 28m head, manual flow reverser, 200mm wheels, integral flushing and dumping facility, control valves. Set of four hoses.	CDP210	NMAF210FF

### CAUTION

Scalebreaker chemicals and their solutions are acidic and therefore suitable protective clothing, gloves and goggles should be worn. Refer to appropriate Material Safety Data Sheet before use. These area available from Kamco. When descaling with any acid, there is a possibility of flammable hydrogen gas being evolved and the working area should be well ventilated. Avoid smoking nearby, or any other means of ignition.

## GENERAL USAGE AND APPLICATION NOTES

As a general guide, the rate at which deposits are dissolved increases with higher solution temperatures. Lower Scalebreaker concentrations will require higher water temperature for best effect.

The prepared solution may be used to soak the equipment to be descaled and cleaned, although the process is significantly faster when the solution is circulated vigorously by means of a suitable pump, such as Scalebreaker tank mounted pumps.

When limescale is being dissolved, carbon dioxide gas is created and may cause foaming, dependant on the amount of scale present. Allowance should be made for the volume of foam when descaling commences. Foambreaker can be added to reduce foaming.

Descaling is complete when there is no further evolution of carbon dioxide, seen as bubbling in the solution, or in the return hose to a pump, but the Scalebreaker solution is still pink. If deposits have not been completely removed and the solution has changed colour to amber/yellow, either add further Scale-breaker, or repeat the



cleaning process.

After the descaling operation, drain the Scalebreaker solution, neutralise with Neutralising Crystals and dispose of safely. Rinse and flush the descaled equipment thoroughly with clean water.

	SCALEBREAKER descaling chemicals				Neutralising Crystals	Foambreaker Antifoam
	NESC1	NEFX1	NESCFH01	NESCCG1	NENC1	NEFO1
Usage rate	25-150gm per litre water. Dissolves faster in Hot water	10 to 20% in water	10 to 15% in water	50 - 150gm per litre water Dissolves faster in Hot water	1 to 5% in water	ca. 10ml per 50 litre of Descaling Solution
Appearance	Orange/pink crystals	Pink/red liquid	Pink/red liquid	Orange/pink crystals	White crystals	Creamy liquid
Odour	Very slightly sulphurous	Slightly sweet	Typical HCl	None	None	None
Density at 20°C	ca. 1.3g/ml	ca. 1.28g/ml	ca. 1.17g/ml	ca. 1.5g/ml	ca. 1.25g/ml	ca. 1.0g/ml
pH of 10% solution	< 0.5	< 0.9	< 0.1	< 1.7	< 12.5	ca 7.0
Solubility in water at 200°C	22gm/lit	infinite	infinite	> 500gm/lit	21gm/lit	infinite
Max. temp	70°C	80°C	80°C	80°C	n/a	n/a
Comment	Non flammable/ Non Volatile	Non flammable/ Non Volatile	Non flammable/ Not suitable for Stainless Steel	Non Toxic, Bio-degradable	neutralises spent descaling chemicals 0.5% as final flush	Disperses in water and acid solutions
Packaging	6x2.5kg	4x5 litre	4x5 litre	6x2.5kg	20x100grm 6x2.5kg	1 litre

## RECOMMENDED CHEMICALS



## Ph paper:

to check the strength of chemicals during descaling and after neutralisation.

Part No
NEPH1

Product	description	Pack	Part No.	Type
<b>Scalebreaker FX</b>	Descaling liquid for pipework, heating & cooling systems and equipment with rust or limescale deposits. Dissolves iron oxides at ambient temperature. Non fuming. Safe to use with steel, stainless steel, iron, copper, brass and most plastics/rubbers.	4 X 5lt	NEFX1	
<b>Scalebreaker HD high strength</b>	High solvency, powerful, economic liquid for cleaning heavily scaled equipment. Rapidly dissolves limescale and rust. Contains wetting agents to penetrate heavy deposits. Safe to use with steel, cast iron, copper, brass and most plastics.	4 X 5lt	NESCFH01	
<b>Scalebreaker CG food grade crystals</b>	Biodegradable crystals. Water soluble. Very safe to handle and store. Removes limescale deposits from equipment used for food preparation. Non fuming, non toxic. Safe to use with steel, stainless, iron, copper, brass, aluminium and most plastics.	6 x 2.5lt	NESCCG1	
<b>Scalebreaker Crystals</b>	Safe to handle and store.Strong acid when dissolved in water. Non fuming. Safe to use with steel, stainless, iron, copper brass, aluminium and most plastics/rubbers. Dissolves up to 50% of its own weight of scale. In 6 X 2.5kg bags	6 x 2.5kg	NESC1	
<b>Neutralising Crystals</b>	Crystalline powder for solution in water, to neutralise descaling chemicals before disposal. Also used as a 0.5% solution after descaling to neutralise any residue acidity. Add to CLEARFLOW tank after the final power flush	6 x 2.5kg	NENC1	
<b>Foambreaker</b>	Concentrated liquid additive to prevent excessive foaming when descaling, and to suppress existing foam.	1 litre	NEFO1	