

# Rhomar Water

## RHO-FLUSH™ 1000, RHO-MAG™ & RHO-HAMMER™ Operating & Maintenance Instructions



The Rhomar Water RHO-FLUSH™ 1000 pump is a purpose built unit for 'Power Flushing' central heating systems, designed to cure circulation and boiler noise problems caused by the accumulation of sludge, corrosion deposits and scale.

This manual contains detailed guidelines for the safe use of this pump as well as other complementary accessories that may be used alongside the pump. How to connect the pump into the heating system, step by step guide to the flushing process, and which chemicals are best suited for each application.

<p><b>Please take time to carefully read through these guidelines before using your Rhomar Water power flushing pump.</b></p>
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**RHOMAR WATER**  
Heat Transfer Fluids • Hydronic System Solutions

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## SECTION A – INTRODUCTION

### TECHNICAL DATA

Pump Type:	<b>RHO-FLUSH™ 1000</b> Positive drive centrifugal
Motor:	0.75 HP, 110 V
Degree of protection:	IP55
Motor rating:	Continuous
Temperature range:	32 °F (0 °C) to 167 °F (75 °C)
Dimensions:	15" (390 mm) W; 23" (590 mm) D; 35" (890 mm) H
Hose end-fittings (connections):	3/4" tool-free brass hose couplings
Tank capacity (to filler cap)	15 gallons
Weight (without hoses):	49.6 lbs
Wheels (dia):	7½"
Flow reverser type:	Instantaneous

### SAFETY PRECAUTIONS

- ❖ Precautions should be taken to ensure a safe working environment.
- ❖ Take care when lifting large or heavy items.
- ❖ Regularly check power leads for wear or damage, use with a residual circuit breaker.
- ❖ When handling chemicals wear suitable protective clothing, gloves and goggles.
- ❖ Use in a well ventilated area.
- ❖ PAT test (Portable Appliance Test) the electrics annually.

### CONTENTS OF EACH RHO-FLUSH POWER-FLUSHING CART

Each cart comprises the following:

- RHO-FLUSH™ 1000 power flushing pump.
- Two 16 ft. reinforced flow and return hoses.
- One 26 ft. reinforced PVC dump hose.
- One 10 ft. reinforced overflow hose.
- One 26 ft. ultra-tough water inlet hose.
- Two 1.67 ft. circulation pump adaptor hoses.
- 10 part BSP hose adaptor set
- Waterproof transit container.
- Comprehensive operating guidelines.

**Cleaning solutions: Hydro-Solv™ 9100 or Skale-X™ sold separately.**



## SECTION B – USING THE RHO-FLUSH™ 1000 PUMP FOR POWER FLUSHING

### INTRODUCTION

RHO-FLUSH™ 1000 pump is designed to power flush heating systems with minimal dismantling, by circulating water and flushing chemicals at high velocity, and then purging the dirty water from the system with a high flow of fresh, clean water. Radiators may be individually flushed without removing or disconnecting them from the system.

Your pump may be used with any commercially available flushing and descaling chemical, including strong acids or alkalis.

We recommend using Rhomar Water cleaners – **HYDRO-SOLV™ 9100** or **SKALE-X™** because of their efficacy, safety.

### SYSTEM INSPECTION AND PREPARATION

1. Turn on heating system in order to identify problem flow areas, cold radiators, or those with cold spots, etc. Switch off system.
2. Note how many turns are required to shut off radiator and lock shield valves so that settings may be re-instated after flushing to avoid system balancing. Use a copy of the chart provided to record the number of turns. Open all (both sides of radiator) valves fully.
3. Set any thermostatic radiator valves to the fully open position. Remove the heads and check that the plunger pin moves freely. Check that diverter or zone valves are in the fully open position, setting manually if necessary.
4. If an anti-gravity / check valve is present, this must be by-passed or bridged to allow the flow reversing action to be used. It may be possible to disassemble the anti-gravity valve, and remove internal components.
5. Tie up the ball cock or turn off the main water supply by another means.
6. Drain enough water from the system to empty the F & E (Feed & Expansion) tank. This can be drained into the RHO-FLUSH™ 1000 tank if it has been connected (connection details are in the next section).
7. With vented systems, it is necessary to cap off, or loop together, the expansion and cold feed pipes in order to avoid the flushing pump filling and overflowing the expansion tank.

The F & E pipes may be capped with push fit end caps or a temporary compression fitting gate valve.

Depending on the configuration of the heating system, looping the feed and expansion pipes together may enable these pipes to be flushed during the cleansing process, which can be beneficial when the cold feed pipe contains corrosion deposits.

**NOTE 1:** This will only be effective when the F & E pipes are not close coupled, or connected via an air separator, and may not remove deposits which have hardened over a long period of time.

**NOTE 2:** The looping connection may be made with any sturdy flexible tubing but should incorporate a valve in the loop to close the circuit when flushing individual radiators.

**Capping or looping the F & E pipes are only temporary measures, which must be removed after the flushing process.**

**ENGINEER'S TIP:** Don't drain water from the system to lower the water level in the F & E tank until after the flushing pump has been connected into the system.

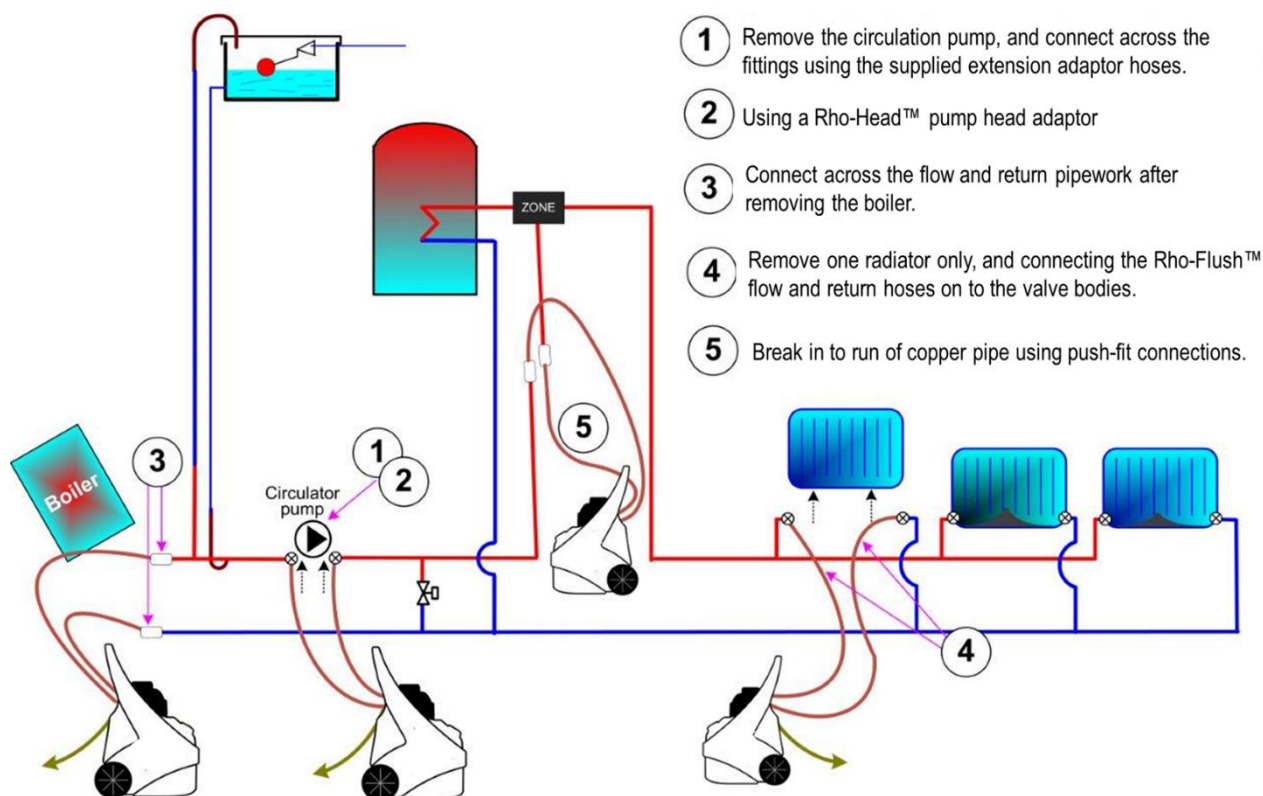
Tie up the F & E tank ballcock or otherwise turn off the cold water feed, and return to the flushing pump. Open both the isolating valves, without switching on the electric motor. The head of water in the house means that heating system water will run down the flow and return hoses and into the tank. Let the water run until the tank is half full. Close both isolating valves.

You should now have emptied the F & E tank sufficiently to carry out the necessary capping off of the cold feed.

**NOTE:** If there is a large amount of sludge or slime in the F & E tank, it must be cleaned manually and NOT drained into the system.



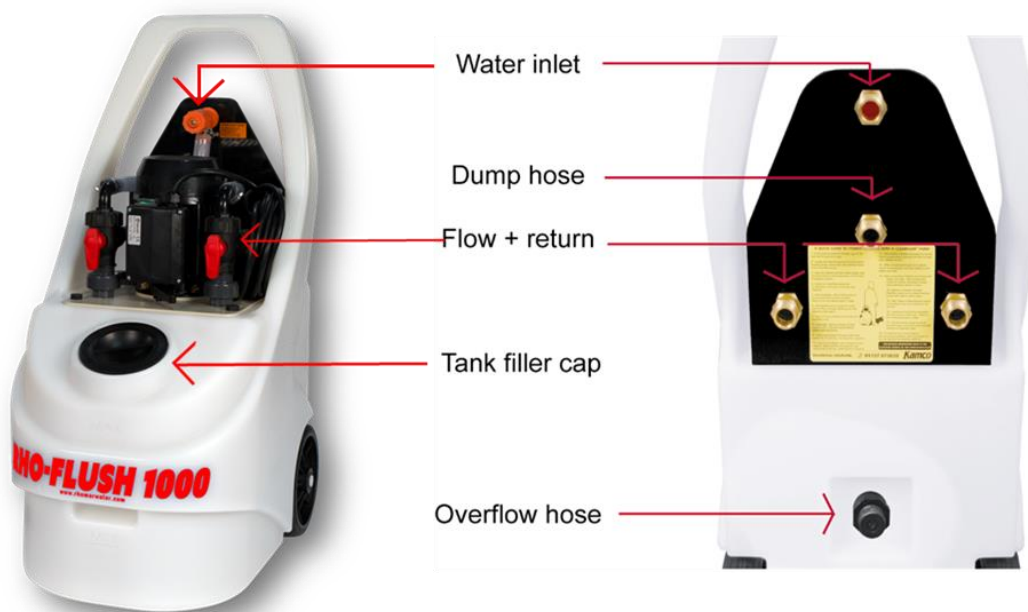
## LOCATION AND CONNECTION OF THE RHO-FLUSH™ 1000 PUMP



The connection point for the flushing pump may vary depending on the system to be cleaned, and the availability of suitable connection points.

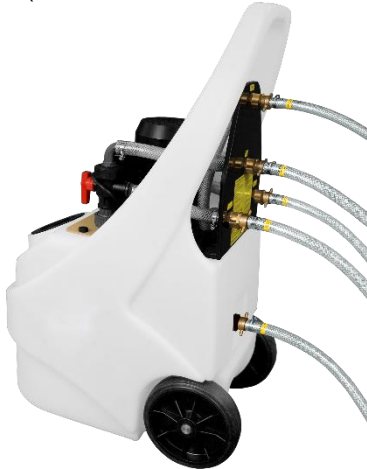
However, the optimum location is via the central heating circulation pump, using either the special hoses supplied to connect across the pump unions, or using the optional RHO-HEAD™ adaptor connected to the pump body. (see page E.2)

Generally, the unit should be located in a room with a suitable drain point, and near to a convenient main water supply, such as a bathroom or kitchen. The cold water supply for a washing machine or dish-washing machine is a convenient source when a mixer tap makes connection of a hose difficult. The normal precautions during work on any heating system should be taken, and it is prudent to place the pump on a waterproof groundsheet or drip tray.



## 1. Hose connections to the flushing pump

- a) Ensure that both valves are in the closed position (i.e. the valve handles are horizontal).



- b) The pump has two 16 ft. flow and return hoses, fitted with female brass hose connectors on either end of each hose.

One end of both flow and return hoses should be screwed onto the corresponding brass nipples on the rear of the hose support plate. The other ends of these hoses will be connected into the heating system.

- c) Connect the overflow hose connector to the BSP male overflow fitting on the rear of the pump tank, and lead to a suitable drain point.
- d) Connect the 26 ft. dump hose to the brass nipple on the reverse of the hose support plate, and lead the hose to a toilet pan or drain pipe gully leading to a sewer.
- e) Connect main water supply hose BSP female hose connector to the brass nipple on the rear of the hose support plate. Fill the tank with water to above the minimum liquid level, and then close the water inlet valve.
- f) Plug in the pump to a suitable power supply fitted with a residual current device (RCD) adaptor.

## 2. Hose connection to the system

Connect the flow and return hoses of the pump to the system at the selected point. This may be either:

- a) Across the 1½" BSP unions left once the circulating pump has been removed. The circulating pump isolating valves should be closed to isolate the flushing pump from the system until power flushing is commenced.



a total hose length of 18 ft.

- b) Connection via the optional RHO-HEAD™ adaptor (see page D.2). Remove the allen (or other) bolts that attach the circulation pump head to the pump body. Attach the adaptor to the pump body and the flow and return hoses to the short lead hoses.



- c) Across the "tails" of a radiator (having drained and disconnected the radiator) using appropriate 1/2" or 3/4" BSP adaptors to connect to the valves. The radiator valves should be closed to isolate the flushing pump from the system until power flushing is commenced.

This is likely to be the least effective method due to the restrictive effect that valves (more so thermostatic) may have on the flow rate.

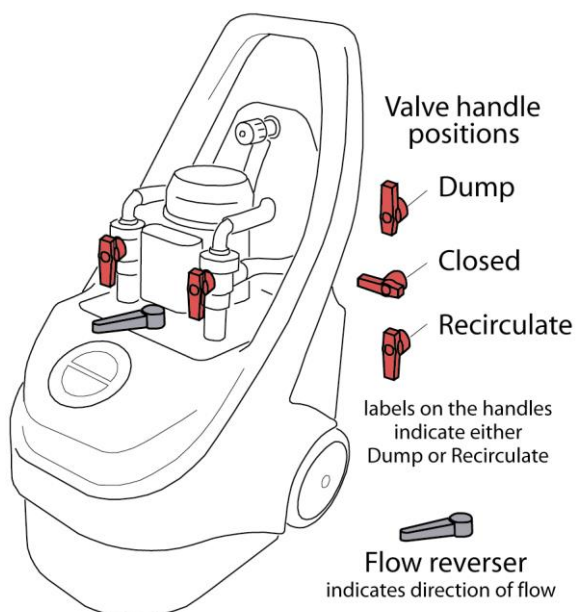
The above method is generally used on a combination boiler system when a RHO-HEAD™ adaptor is not available.

- d) Across the flow and return connections at the boiler, isolating the boiler itself. This is the preferred method when flushing a heating system prior to installing a new boiler, as corrosion debris may be purged from the heating system before the new boiler is attached. This is important with all modern boilers, particularly so if the new boiler incorporates a plate type heat exchanger with complex and narrow water passages.

## INITIAL FLUSHING PROCEDURE (WATER ONLY STAGE, BEFORE ADDITION OF CHEMICALS)

Note: In the following procedure, the pump is first used to loosen and mobilize loose silt and debris, before forcibly expelling it together with the existing heavily contaminated system water. This rids the system of as much debris and sludge at an early stage, before establishing full, chemically treated circulation through the flushing pump.

By removing loose corrosion products from the system before addition of any chemical, the full effect of the chemical is available to disturb, loosen, and dissolve more stubborn accumulations of debris.



1. Leave the pump tank cap loose, or on by no more than one turn if water splashes whilst flushing / descaling (to allow gas to escape).
2. Check that both valves are closed (horizontal). Open the isolating valves between flushing pump and heating system and switch on pump immediately. Ensure that liquid level in tank remains above the minimum mark, adding more water if necessary.
3. Allow the flushing pump to run for ten minutes, reversing the direction of flow regularly. If there is sludge and debris in the system, the water returning into the tank will be heavily discoloured as the high flow rate picks up looser debris.
4. Check all hoses and connections for leaks.
5. The pump has the ability to dump dirty water when the flow is in either direction.
 

Change the pump into dumping mode as follows, remembering that the flow reverser is constructed so that the direction in which the lever points also indicates the direction of flow.

  - a) Operate the flow reverser lever so that the water is flowing through the heating system in the same direction as it is during normal heating operation.
  - b) Rotate the valve on the return side 180° so that the dump label is clearly visible.

By doing this, system water is diverted to waste down the dump hose, instead of returning back into the tank. The liquid level in the tank will immediately begin to fall.
- c) The main water inlet supply (orange tap) should now be turned on and adjusted so that the volume of incoming water compensates for that being forced out of the system to waste. Continue dumping until the waste water runs relatively clear. Ensure that the water level in the tank remains above the minimum mark at all times.
 

Note: If the main water cannot keep up with the dump speed (i.e. the unit begins to empty) simply stop dumping until the tank fills up.
6. Once the water remains reasonably clear, restore circulation by rotating the valve back 180° into re-circulation mode.

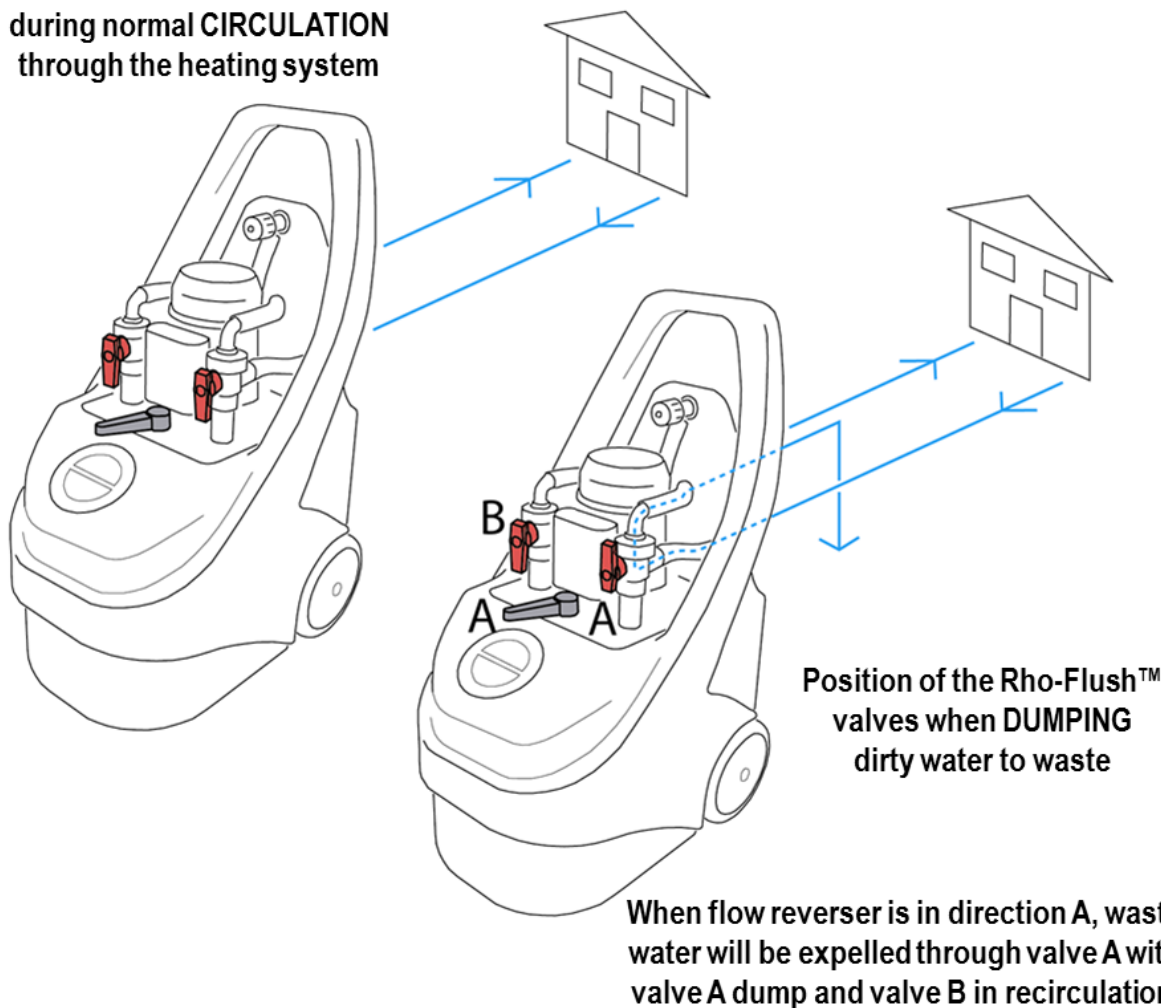


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7. Check that the liquid level in the tank remains above the minimum mark. Add more water if necessary. Vent all radiators to ensure that there are no air pockets. Use a cloth to absorb any liquid expelled, as the system water may be discoloured and likely to stain.
  8. The flushing chemical may now be added. See page B.6
- Leave the pump tank cap loose, or on by no more than one turn, whilst flushing / descaling.**

**Position of the Rho-Flush™ valves during normal CIRCULATION through the heating system**



## **CHEMICAL FLUSHING PROCEDURE – WHICH CHEMICAL TO USE**

Which chemical to use? SKALE-X™, or HYDRO-SOLV™ 9100.

Both of these chemicals will remove sludge, and the SKALE-X™ will also remove scale from the heating system.

### **SKALE-X™**



#### **Use SKALE-X™ when:**

- ❖ You consider the system to be heavily sludged, although in sound and reasonable condition.
- ❖ There are no aluminium heat exchangers or radiators present in the system.

- ❖ The system does not have old galvanised steel or stainless steel pipework
- ❖ You consider that there may be lime scale deposits present in the boiler or other system.

#### **Quantity to use:**

- ❖ Boilers & other systems – 1 gallon to 20 gallons of system volume.

#### **Where and when to add SKALE-X™:**

Into the RHO-FLUSH™ 1000 pump tank while power flushing, but not beforehand.

#### **Temperature required:**

SKALE-X™ may be used cold (necessary when changing a boiler). The very high flow rate of the pump means that during power flushing it is not necessary to work at temperatures above 122 °F. Do not exceed 180° F when using SKALE-X™.

***NOTE: Never leave SKALE-X™ in a system longer than recommended.***

This product is available in 32 Oz. jugs for use with the Skale-X™ Descaling kit. Also available in various container sizes ≥ 1 gallon.

### **HYDRO-SOLV™ 9100**



#### **Use HYDRO-SOLV™ 9100 when:**

- ❖ The system contains aluminium radiators or heat exchangers.
- ❖ You consider the system to have suffered severe internal corrosion and metal wastage.

- ❖ The system has old galvanised steel or stainless steel pipework

#### **Quantity to use:**

- ❖ We recommend 16 Oz. for every 25 gallons of system volume. However, this product will not harm system metals if more is used.

#### **Where and when to add HYDRO-SOLV™ 9100:**

Inject into the system up to 14 days prior to power flushing (via the F&E tank) or into the pump tank while power flushing.

#### **Temperature required?**

HYDRO-SOLV™ 9100 works best at higher temperatures. We recommend working with the operating temperature of the system being power flushed. However, the high flow rate of the pump may help with the power flushing once heating of the system is off.

**NOTE FOR CONTRACTOR:** Add HYDRO-SOLV™ 9100 on a prior visit up to 14 days before the power flush, and ask the householder to leave the system running at its operating temperature.

This product is available in either 16 Oz. pint bottles or 16 Oz. aerosol cans. Also available in various container sizes ≥ 1 gallon.

## **CHEMICAL FLUSHING PROCEDURE USING SKALE-X™**

1. Switch on the RHO-FLUSH™ 1000 pump.
2. While re-circulating water through the pump and the heating system, slowly add sufficient amount of SKALE-X™ for the volume of the system being cleaned.
3. Switch on the boiler, if fitted, and in safe working order. Allow the system water to reach 122 °F, and then switch boiler off.



4. Circulate throughout the complete system for 15 minutes, reversing the flow direction regularly, and monitoring the system for leaks.
5. Close off all radiators (one valve only per radiator is enough), and allow the full flow to go through the coil in the cylinder (if present in the system).
6. Reverse the flow regularly.
7. Divert the full flow to the radiator circuit, in preparation to putting the full flow of the pump through each radiator in turn.
8. Fully open both valves of the radiator on the ground floor nearest to the flushing pump.
9. Flush this radiator, reversing the flow regularly, until all cold spots have disappeared, and the temperature across the radiator is consistent. Close the radiator valves.
10. Note: If your initial system check identified cold or partially blocked radiators, commence the individual radiator flushing procedure with the worst radiator first, progressing to less problematic radiators. This ensures that the strongest concentration of chemical is directed at the worst areas of the system.
11. Open the valves on the next radiator, and repeat the procedure.

12. Work through the rest of the radiators in turn, so that you have flushed every radiator individually, including upstairs radiators.
13. When you have flushed the last radiator, and obtained an even temperature across the surface, switch the pump into dumping mode, as previously described.
14. With only this radiator open, and the pump set to dump, run until the water leaving the dump hose is completely clear. Now operate the flow reverser and change the valves to dump in the opposite direction until clear. When dump water is clear, close radiator valve.
15. Go back to the previous radiator that you had flushed, ensure both valves are open, and repeat the dumping procedure on this one radiator, alternating the direction of flow in each direction as you dump. Close radiator valve.
16. Work your way back around the house in the opposite direction you previously worked, until you have carried out the dumping process on every radiator individually.
17. Now with the pump still set to dump direct the flow through the cylinder coil until it runs clear. Dump in the other direction until clear.

**Note:** SKALE-X™ is an acidic cleaner. It is therefore necessary to thoroughly and completely flush it from the system. While SKALE-X™ contains specific inhibitors so that its presence during a power flush presents no problems, it is bad practice to leave system water acidic over a long period of time.

18. Check the pH using either an electronic pH meter or pH test strips. Continue dumping until the pH of the dump water is the same as that of the fresh water used.
19. If you have a TDS meter (Total Dissolved Solids) it is useful to test the water at this stage. The reading should be within 5 – 10 % of the main water sample reading.
20. Return to re-circulation mode and move to page B.9.



## **CHEMICAL FLUSHING PROCEDURE USING HYDRO-SOLV™ 9100 (CONCENTRATE)**

1. Switch on the RHO-FLUSH™ 1000 pump.
2. While re-circulating water through the pump and the heating system, slowly add 16 Oz. of HYDRO-SOLV™ 9100 into the RHO-FLUSH™ 1000 tank, sufficient for a typical residential system (*DON'T add any cleaner if this was done on a prior visit*), and ensure thorough distribution around the system.
3. Switch on the boiler, if in safe working order. Allow the system water to reach its operating temperature and then switch boiler off.
4. Circulate throughout the complete system for half to one hour, reversing the flow direction regularly, and monitoring the system for leaks.
5. Close off all radiators (one valve only), and allow the full flow to go through the coil in the cylinder (if present in the system).
6. Reverse the flow regularly.
7. Divert the full flow to the radiator circuit, in preparation to putting the full flow of the pump through each radiator in turn.
8. Fully open both valves of the radiator nearest to the flushing pump.
9. Flush this radiator, reversing the flow regularly, until all cold spots have disappeared and the temperature across the radiator is consistent. Close the radiator valves.



10. Open the valves on the next radiator, and repeat the procedure.
11. Work through the rest of the radiators in turn, so that you have flushed every radiator individually, including upstairs radiators.
12. When you have flushed the last radiator, and it has an even temperature across the surface, switch the pump into dumping mode.
13. With only this radiator open, and the pump set to dump, run until the water leaving the dump hose is completely clear. Now operate the flow reverser and change the valves to dump in the opposite direction until clear. When dump water is clear, close radiator valve.
14. Go back to the previous radiator that you had flushed, ensure both valves are open, and repeat the dumping procedure on this one radiator, alternating the direction of flow in each direction as you dump. Close radiator valve.
15. Work your way back around the house in the opposite direction you previously worked, until you have carried out the dumping process on every radiator individually.
16. Now with the pump still set to dump direct the flow through the cylinder coil until it runs clear. Dump in the other direction until clear.
17. If you have a TDS meter (Total Dissolved Solids) it is useful to test the water at this stage. The reading should be within 5 – 10 % of the main water sample reading.
18. Return the flushing pump into normal re-circulation mode, re-open all radiator valves, and the cylinder coil, and move to page B.9.

**Note:** If your initial system check identified cold or partially blocked radiators, commence the individual radiator flushing procedure with the worst radiator first, progressing to less problematic radiators. This ensures that the strongest concentration of chemical is directed at the worst areas of the system.

**NOTE:** When using HYDRO-SOLV™ 9100, there is no requirement to neutralise after the flushing process. However, it is important to check the pH of the fluid of the dump water and compare it with that of the main water supply. The pH values should be the same.

*For additional cleaning instructions when using HYDRO-SOLV™ 9100, please see the label for this product.*



## **INHIBITION AND CORROSION PROTECTION – PRO-TEK® 922**

### **IMPORTANT**



1. The system is now full of fresh, clean water and to protect system metals from corrosion and scaling, a good quality corrosion inhibitor such as PRO-TEK® 922 or PRO-TEK® QT should be added to the system water.

The inhibitor may be added to the system using the RHO-FLUSH™ 1000 pump as follows:

2. Briefly open a dump valve to lower the water level in the tank to just above the minimum level, close the dump valve. Add the PRO-TEK® 922 inhibitor into the tank. Allow circulation through the system for ten minutes, isolate the flushing pump from the heating system, and switch off.
3. If the system is vented, the residual water in the RHO-FLUSH™ 1000 tank, which will contain a small quantity of inhibitor, may be poured into a bucket and added to the F & E tank after this has been cleaned.

**Note:** In a pressurised system the inhibitor may be injected into the system as PRO-TEK® QT – the aerosol form of the aluminium safe multimetal safe premium corrosion inhibitor. Screw the swivel connector fitted on the aerosol can directly onto the boiler drain valve and press the injection button.



### **UPON COMPLETION**

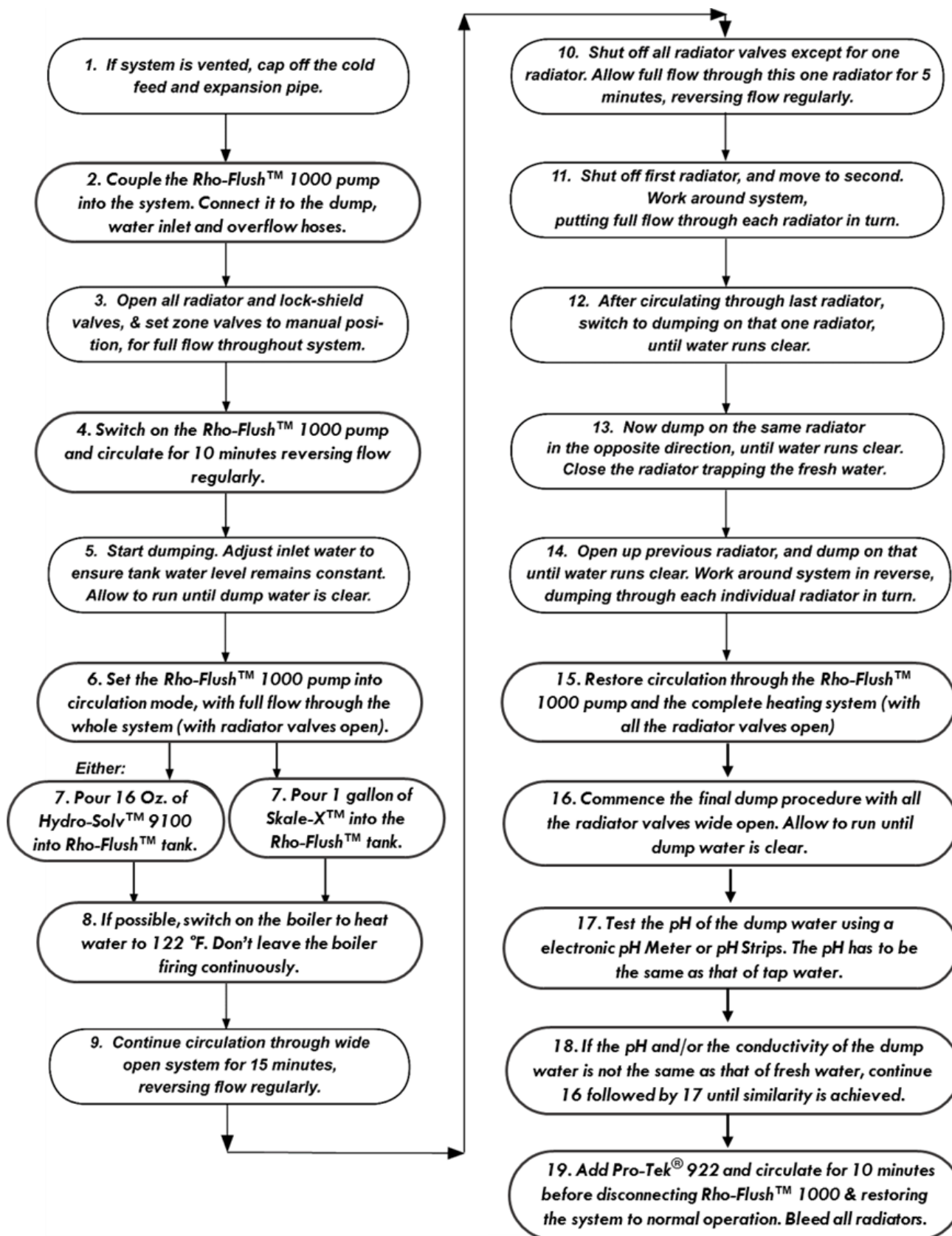
1. Restore system to its normal operational state, restoring radiator balance valves to original settings, removing any temporary isolating valves or caps on the expansion and cold feed pipes, and restoring non return valves to normal operation if necessary.
2. Before re-connecting the feed & expansion (F & E) tank, it should be thoroughly cleaned, removing all traces of dirty water and sludge. It may be necessary to disinfect the tank.

The RHO-FLUSH™ 1000 is also very powerful descaling pump, suitable for use when descaling combination boiler domestic water heat exchangers, any conventional domestic boiler, water heaters, direct fired water heaters, thermal store type water heaters, showers, and calorifiers.

**Rhomar Water has numerous high quality corrosion inhibitor products. See [www.RhomarWater.com](http://www.RhomarWater.com) or contact us for more information.**



**QUICK GUIDE TO POWER FLUSHING**



For the above power flushing quick guide, we assumed a typical residential system with 25 gallons.

## SECTION C – SAFETY PRECAUTIONS WHILE DESCALING BOILERS and HEAT EXCHANGERS

### 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 grounded power supply (110 volts [50 hz]). Since the pump will be used in a damp location, we recommend that an RCD adaptor 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 an antifoam 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.

Caps should be kept securely on all chemical containers while 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 while 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 STRICTLY OBSERVE THESE SAFETY PRECAUTIONS:

1. Always add the acid to the water, never the other way round.
2. Temperature of the descaling / flushing solution must not exceed 122 °F.  
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.

## SECTION D – TROUBLE SHOOTING, SERVICE & REPAIR

When your new **RHO-FLUSH™ 1000** pump was first supplied it was flow and pressure tested after assembly to ensure that it would perform to a high standard. However, over time and use parts may have been physically damaged, worn out, or partially blocked by non-soluble matter.

If you are concerned that your pump may not be producing the same performance as when it left our factory, there are a number of steps that you can take to test, and repair, your unit. These are listed below, they are not time consuming, do not require a high level of expertise and will not invalidate the warranty.

### **Trouble shooting / problem solving.**

A flow chart is included on the following page to assist in diagnosing common problems that can be experienced on site. The chart and illustrated test are a useful guide in determining if a problem is related to the **RHO-FLUSH™ 1000** pump or if it is a problem related to the heating system.

### **HOW TO CHECK THE PERFORMANCE OF YOUR RHO-FLUSH™ 1000**

We suggest these checks be conducted outside and not within a client's premises.

#### **Test 1 - Pressure test**

**What you need:** Pressure gauge 0-30 psi adapted to the appropriate BSP male.

- 1) Fill the tank ½ full of water.
- 2) Point the flow reverser lever to the left.
- 3) Position the left hand valve to "Circulate".
- 4) Position the right hand valve to "Dump".
- 5) Attach one supply/return hose to the BSP nipples (short circuiting the flow).
- 6) Attach the dump hose as normal.
- 7) Holding the end of the dump hose away from you to a suitable discharge point, switch on the motor for five seconds. You should see a strong jet of water.
- 8) Attach the pressure gauge into the hose end and turn the motor on for 30 seconds.

While the motor is running you should get a reading of 26-28 psi for the **RHO-FLUSH™ 1000**.

#### **Test 2 - Flow rate test**

**What you need:** Empty clean 5-gallon container

- 1) Repeat steps 1-7 of Test 1 above.
- 2) Hold the dump hose so that it will discharge water into the empty container.
- 3) When ready, use an assistant to time how long it takes to fill the 5-gallon container.

You should get a reading of between 7 - 8 seconds for the **RHO-FLUSH™ 1000**.

#### **Inspection**

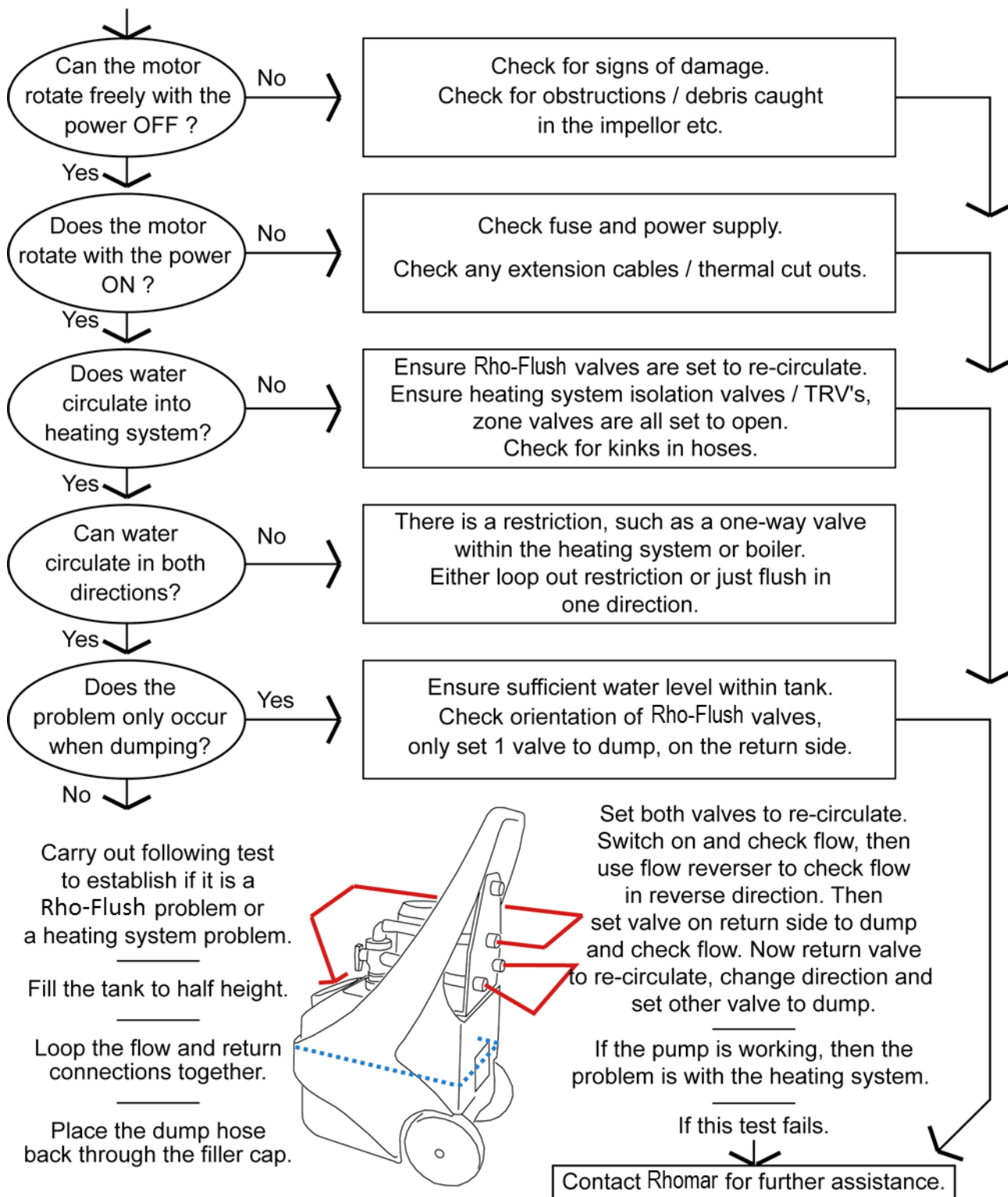
- 1) Remove the 4 bolts that connect the flange to the tank.
- 2) Lift and withdraw the pump assembly from the tank.
- 3) Inspect the rotor cover at the bottom of the unit to ensure:
  - a) It is flat.
  - b) There are no bolts damaged or missing
  - c) The O-ring is still in place and has not been pushed out.
- 4) Inspect the inside of the impeller to make sure that there is no debris inside.
- 5) Check all hose connections to ensure they are secure.

If none of the above faults are apparent, please call the Rhomar Water's Technical Help line on  
**1-800-543-5975**

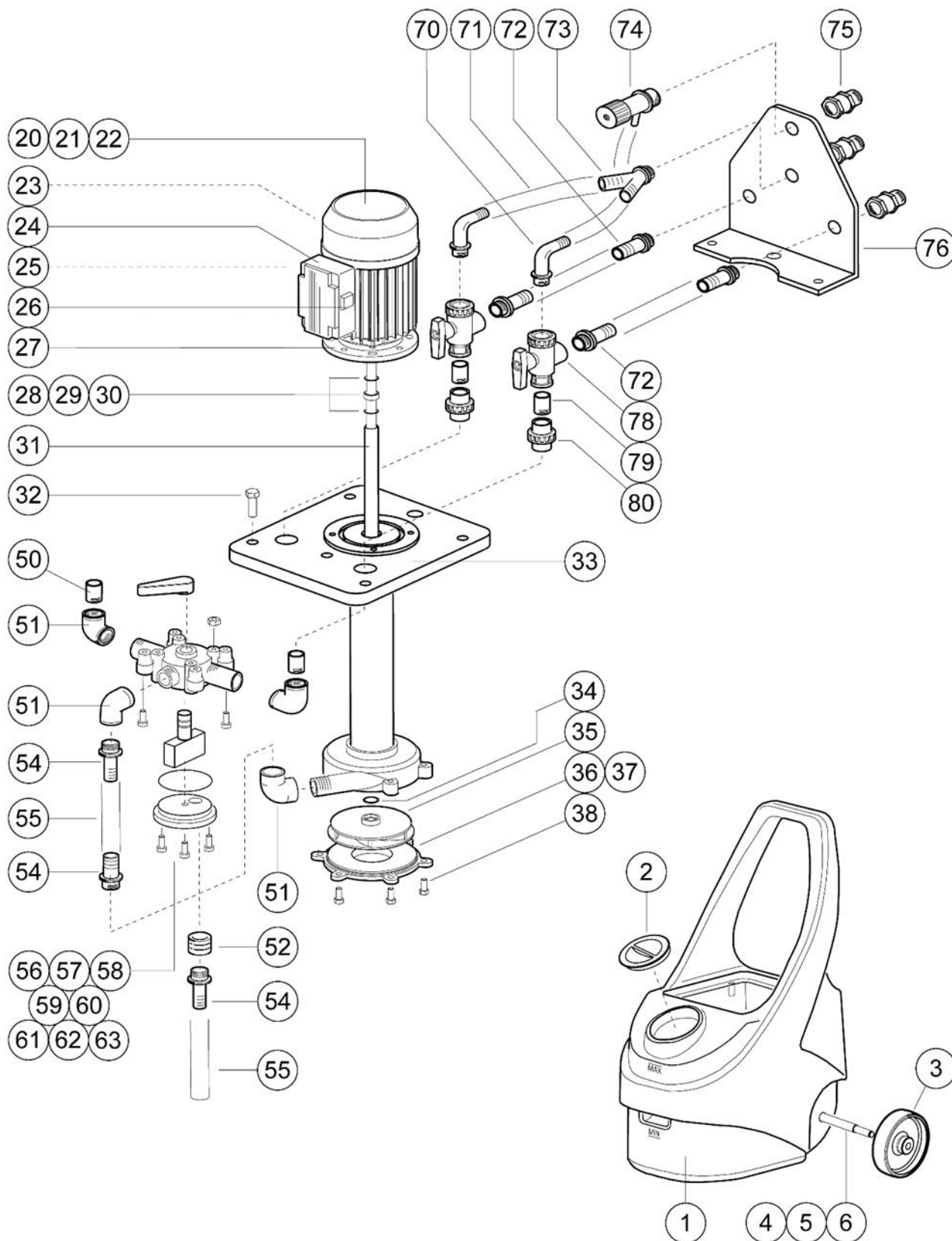


## TROUBLE SHOOTING / PROBLEM SOLVING FLOW CHART

Use the flow chart to determine any likely problem and then if necessary undertake the simple flow test to establish if the **RHO-FLUSH™ 1000** pump is functioning. If the pump is circulating and dumping with a good flow rate, then any problem must be related to the heating system.



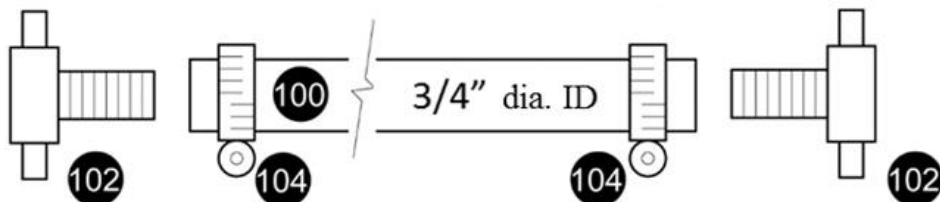
**RHO-FLUSH™ 1000 EXPLODED VIEW AND SPARES DIAGRAM**



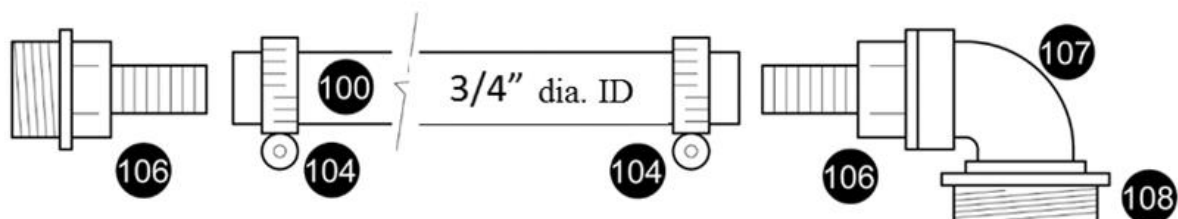
Refer to the following pages for component descriptions and part codes.

**RHO-FLUSH™ 1000 EXPLODED VIEW OF HOSE ASSEMBLIES**

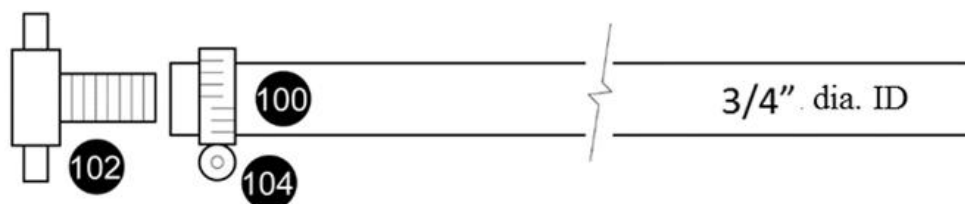
2 x Flow and Return Hoses, each 16 ft. long.



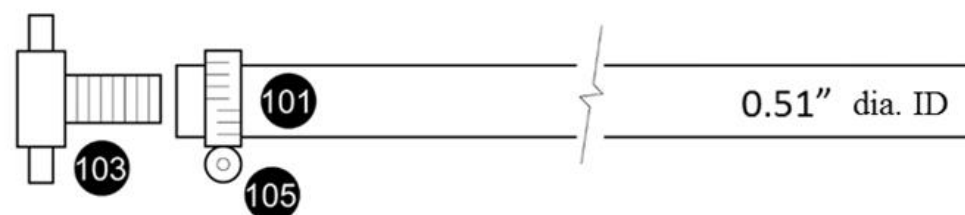
2 x Circulation Pump Hoses, each 1.64 ft. long.



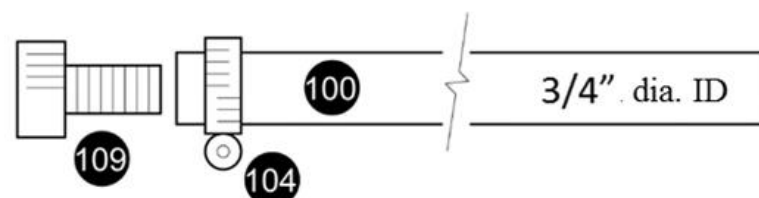
1 x Dump Hose, 26 ft. long.



1 x Water Inlet Hose, 26 ft. long.



1 x Overflow Hose, 10 ft. long.



**UNITS CONVERSION: 1 mm = 0.0393701 inches. 1 inch = 25.4 mm. 1 m = 1000 mm.  
1 foot = 12 inches. 1 foot = 304.8 mm**

Refer to the following pages for component descriptions and part codes.

**RHO-FLUSH™ 1000 SPARES LIST**

No. on Diagram	Product Code	Description	Unit Price
1	H09006K	RHO-FLUSH™ 1000 Moulded Tank	
2	H04005	RHO-FLUSH™ 1000 Tank Cap	
3	H09008K	RHO-FLUSH™ 1000 Wheel (each)	
4	H09007K	RHO-FLUSH™ 1000 Axle	
5	H09009K	RHO-FLUSH™ 1000 Axle Circlip Inner 22.2mm (7/8")	
6	H09010K	RHO-FLUSH™ 1000 Axle Circlip Outer 20mm (0.79")	
20	H09002L11K	RHO-FLUSH™ 1000 Motor 110 V	
21	H04012KA	Fan cover	
22	H04012KB	Motor Fan	
23	H03002B	Motor Bearings	
24	H03002F	Motor Switch Box	
25		RHO-FLUSH™ 1000 Capacitor 110 V	
26	H01502C	On/off switch for motor	
27	H030HJ08	M8 x 35 mm (1.38") Brass Bolt	
27	H030HJ07	M8 Brass Nut	
27	H030HJ09	M8 Brass Washer	
28	H03002A	Motor Shaft Circlip	
29	H03006	White Arnite Bush	
30	H03007	Drive Shaft 'O' Ring	
31	H09005K	RHO-FLUSH™ 1000 Drive Shaft Sleeve	
32	H01507K	M12 Polypropylene Bolt	
33	H09001K	RHO-FLUSH™ 1000 Flange and Body	
34	H0150211A	Impellor 'O' Ring	
35	H09004K	RHO-FLUSH™ 1000 Impellor	
36	H04017K	Rotor Cover	
37	H04016K	Rotor Cover 'O' Ring	
38	H03012K	M10 Polypropylene Bolt	
50	H04018KF	3/4" bsp Threaded Nipple – 45 mm (1.77") long	
51	H03023	3/4" bsp f/f elbow	
52	H030F46	3/4" bsp Threaded Socket	
53	H030F11	3/4" bsp m/f elbow	
54	H190F15	3/4" m x 25 mm (0.98") Polypropylene Hose adaptor	
55	HH2229	Clear Hose 22 mm (0.87") ID (per mtr)	
50	H04018KF	3/4" bsp Threaded Nipple – 45 mm (1.77") long	
56	H04018KA	Flow Reverser Handle	
57	H04018KB	Flow Reverser Paddle	
58	H04018KC	Flow Reverser Body	
59	H04018KD	Flow Reverser Top Plate	
60	H04018KE	'O' Ring for Reverser Top Plate	
61	H03007	'O' Ring for Flow Reverser Paddle	
62	MI022	M6 x 30 mm (1.18") Socket Cap Head Screw	
<b>UNITS CONVERSION: 1 mm = 0.0393701 inches. 1 inch = 25.4 mm. 1 m = 1000 mm.  1 foot = 12 inches. 1 foot = 304.8 mm</b>			

.....continued on next page.



**RHO-FLUSH™ 1000 SPARES LIST (CONTINUED)**

No. on Diagram	Product Code	Description	Unit Price
70	H090F03	3/4" m x 20 mm (0.79") 90° Hose Adaptor	
71	HH019X30	Clear Hose 3/4" ID (per mtr)	
72	H090F04	3/4" m x 3/4" Polypropylene Hose Adaptor	
73	H030HJ06	3/4" m x 3/4" 'Y' piece Hose Adaptor	
74	H190F16	3/4" x 3/4" Water Inlet Tap	
75	H090F06	3/4" f x 3/4" m Brass Adaptor	
76	H09011K	RHO-FLUSH™ 1000 Hose Support Bracket	
78	H090F01	3/4" Single Union L Port Valve	
79	H04023K	3/4" bsp Threaded Nipple – 35 mm (1.38") long	
80	H04019K	3/4" bsp Union	

**RHO-FLUSH™ 1000 HOSE COMPONENTS**

100	HH019X30	Clear hose 3/4" ID per metre (state length)	
101	HH013X30	Yellow hose 13 mm (0.51") ID per metre (state length)	
102	H090F07	3/4" f x 3/4" brass hose adaptor	
103	H090F10	3/4" f x 13 mm (0.51") brass hose adaptor	
104	H030F13A#	Worm drive clip, 16-25 mm (0.63" – 0.98")	
105	H030F13	Worm drive clip, 12-22 mm (0.47" – 0.87")	
106	H090F04	3/4" m x 20 mm (0.79") PP hose adaptor	
107	H030F11	3/4" m/f elbow	
108	H030F19	1 3/4" m x 3/4" brass bush (each)	
109	H030F69	3/4" f x 3/4" Polypropylene hose adaptor	
	H090F06A	RHO-FLUSH™ 1000 complete hose washer kit	
	H030F06	Pack 10 x 3/4" washers	
	H030F38	1 1/2" washer (each)	
	H030F21	Transit container	

**RHO-FLUSH™ 1000 HOSE ASSEMBLIES**

	HHCF9SET	Full hose set for RHO-FLUSH™ 1000 (7 hoses)	
	HHCF9DH	26 ft. dump hose	
	HHCF9FR	16 ft. supply and return hoses (pair)	
	HHCF9OH	10 ft. overflow hose	
	HHCF9WI	26 ft. water inlet hose	
	HHCF9CP	1.64 ft. 1 1/2" circulation pump adaptor hoses (pair)	

**UNITS CONVERSION: 1 mm = 0.0393701 inches. 1 inch = 25.4 mm. 1 m = 1000 mm.  
 1 foot = 12 inches. 1 foot = 304.8 mm**

## SECTION E – OPTIONAL POWER FLUSHING ACCESSORIES

The following optional accessories are available for use with a RHO-FLUSH™ 1000 pump to either assist with the connection onto the heating system, to assist the process, or to improve the accuracy of system testing.

### **RHO-HEAD™ circulator pump body adaptor ###**

The adaptor connects directly onto the body of a standard heating system circulator pump after the removal of the motor head, eliminating the need to physically disconnect the whole unit at the 1½" unions which are often seized and difficult to remove.

### **RHO-MAG™ power flushing filter ###**

An in-line magnetic filter to collect magnetic iron oxides circulating during flushing. Thoroughly cleans the water, safeguards the boiler, reduces dumping time and water, and demonstrates the sludge removed from the system.

### **RHO-HAMMER™ radiator vibration tool**

Vibration tool to assist with the loosening of stubborn deposits within radiators.

### **Water Analysis Test Kit**

To determine the quality of the water within a heating system. Tests for total dissolved solids, pH, total hardness, chloride and sulfate level.

### **Additional Water Treatment Chemicals**

Chemicals for specialist applications.

Instructions for the use of all the above equipment are detailed within the following pages.

### **### = Special Note:**

Please note that the '**RHO-HEAD™ adaptor**' and '**RHO-MAG™ filter**' are all supplied with 3/4" bsp fittings to suit the RHO-FLUSH™ 1000 power flushing pump.

## **RHO-HEAD™ CIRCULATOR PUMP BODY ADAPTOR**



The RHO-HEAD™ adaptor has been developed for use with heating system power flushing pumps, to enable them to be connected directly onto the body of standard heating system circulator pumps, after removal of the motor head.

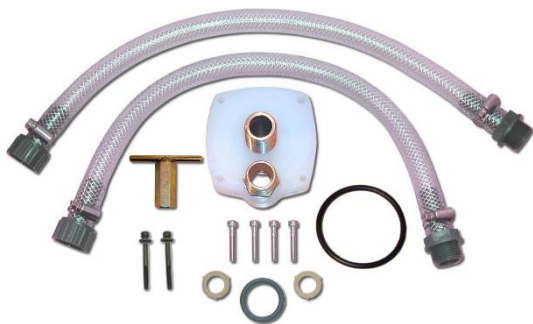
The compact dimensions of the RHO-HEAD™ allow for easy connection of a power flushing pump even in boilers which contain the circulator pump within the casing, such as combination and system boilers, where access is often difficult, or which have non-standard connections.

When using the RHO-HEAD™ adaptor, there is no need to physically disconnect the circulator pump 1½" unions, which are often seized and difficult to remove.

During power flushing, the circulator pump body (volute), which may often contain considerable corrosion debris, is included in the cleaning process.

**All** radiators may be power flushed, as there is no need to remove one to connect the power flushing pump onto the radiator tails.

The central heating (primary) water side of the secondary heat exchanger of combination boilers can be efficiently flushed with the heat exchanger in place (in the boiler casing). This saves time.



### **Instructions for use**

#### **Before you start:**

Switch off or electrically isolate the existing circulation pump and make safe the cable and connectors. Protect the area around the pump from water leakage.

Close the circulator pump isolation valves (where fitted), remembering that it is common for valves not to seal completely even though they are apparently fully closed.

#### **Procedure:**

1. Remove the four Allen screws and then carefully remove the circulator pump head and motor assembly, leaving the circulator pump body installed as normal.
2. As you withdraw the pump head, a small volume of water (the capacity of the pump itself and a short length of pipe work) should be collected in a drip tray, and disposed of safely.
3. Clean the loose rust off the inside of the pump body with a cloth and make sure that there is a clean surface area for both of the supplied O rings to seat on. Use a flat bladed screwdriver if necessary.
4. A small quantity of silicon grease can be used to hold the central 'O' ring in place on the brass centre boss whilst securing the RHO-HEAD™.
5. Attach the adaptor with the hexagon socket cap (Allen) screws provided. Using an Allen key, tighten the bolts evenly, using strong finger pressure but no extra mechanical leverage.
6. Using the supplied large hexagonal centre boss key, gently tighten the brass centre boss until you feel it seal on the inner 'O' ring. Only medium finger pressure is necessary.



**NOTE:** Do not overtighten, as this may damage the large 'O' ring, or the main body of the RHO-HEAD™ adaptor.

7. Connect the hoses to the adaptor and to the supply and return hoses of your flushing pump.
8. Open the isolation valves on the RHO-FLUSH™ 1000 power flushing pump.
9. Slowly open the circulator pump isolation valves, and check the RHO-HEAD™ adaptor and all hoses for leaks.

10. Switch on the power flushing pump for approx. 5 seconds, and recheck the system for leaks. Carry out the power flushing procedure as normal.

Particular care must be taken to avoid water leaks and splashes when using the RHO-HEAD™ adaptor within the casing of a combination boiler, because of the close proximity of sensitive electronics and PCBs. Use only chemical resistant O-rings. Never add chemicals until you have checked the entire system for leaks.

**Procedure when flushing  
a combination boiler system:**

When the radiator circuit power flush is complete, turn on a hot tap, so that the boiler directs all of the flow through the plate heat exchanger, and the boiler fires up.

If the liquid in the tank of the RHO-FLUSH™ 1000 reaches 122 °F, turn the boiler off until it cools.

Note: Some boilers will only allow flow in one direction when in hot water mode.

Set the RHO-FLUSH™ 1000 into dump mode, and dump (and then in reverse direction if possible) until the dump water is clear.

While this procedure of power flushing only the plate heat exchanger may be carried out as a stand-alone procedure, without power flushing the rest of the heating system, we would always recommend a total system power flush when a heat exchanger has been blocked.

If this is not carried out, there is a high probability that the heat exchanger will again block in future, as system debris is carried into the heat exchanger with the normal flow and operation of the boiler.

**Note 1: To achieve the maximum flow rate around a system when power flushing, the number of bends and restrictions should be kept to a minimum, and the pipe sizes should be as large a diameter as possible.**

**Note 2:** Take care when using on combination boilers which have valves allowing flow in one direction only.

Always refer to manufacturer instructions before use.

**Engineers tip**

On certain pumps it can be difficult to get a seal on the large outer 'O' ring. In such cases the addition of a standard flat 'O' ring\* attached to the RHO-HEAD™ adaptor body can enable a seal to be made.



The RHO-HEAD™ adaptor was primarily designed for combination boiler pumps, but will also fit a number of other units, including some Circulating Pumps.



## **RHO-MAG™ POWER FLUSHING FILTER**



The RHO-MAG™ filter increases power flushing efficiency by removing circulating magnetic iron oxide contamination from the system water. The filter is simply installed in line between the heating system and the power flushing pump.

The RHO-MAG™ controls the flow of water to give a high residence time within the cylinder, to ensure that the maximum amount of magnetic iron oxide is extracted from the water by the powerful magnet.

The design is such that even at maximum capacity, there is always a clear passage for the circulating water.

The transparent cylinder enables progress of a power flush to be visually monitored, and enables the engineer to quickly check if the magnet requires cleaning.

The built in bypass enables the magnet to be cleaned without the need to temporarily stop the power flushing process.

### **Benefits**

Reduces dumping time by removing solids from the water while circulating.

Collects circulating deposits that could lead to blockages in restricted areas, and prevents them from re-entering the system.

Protects the boiler during power flush.

By-pass enables the magnet to be inspected without the need to interrupt the power flush.

Reduces environmental contamination by collecting the iron oxide and reducing the amount of water consumed.

Provides an impressive visual aid to both the householder and the engineer by showing the quantity of sludge removed from the system, and confirming the need for a power flush.



Demonstrates why a permanently installed magnetic filter may be beneficial.

Wipe clean magnetic surface to minimize cleaning time and effort.

### **Specification**

Magnet: 11,000 gauss neodymium rare earth magnet, sleeved in stainless steel.

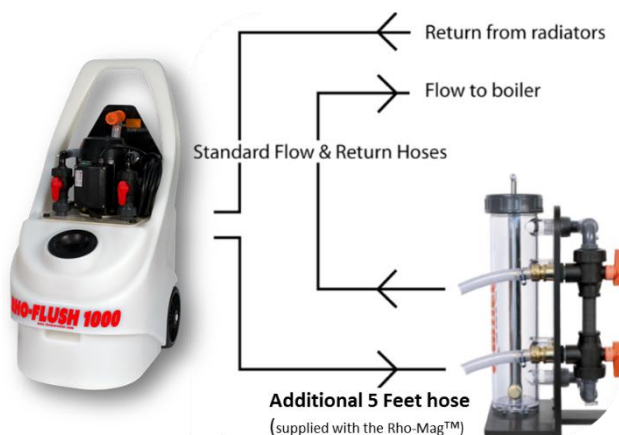
Maximum magnetic iron oxide capacity: 4.63 lbs.

Long water residence time within the cylinder.

Collects small as well as large particles.

Dual three-port by-pass valve system.

## **RHO-MAG™ POWER FLUSHING FILTER (CONTINUED)**



### **Connecting the Filter**

The power flushing pump can circulate the system water in either direction by operation of the flow reverser. However, we suggest that the initial set-up is such that the RHO-MAG™ filter is installed before the boiler to offer the boiler a higher level of protection in the early stages of the flushing process.

1. Place the RHO-MAG™ filter adjacent to the power flushing pump on a suitable drip tray.
2. Select the required direction of flow and position the flow reverser lever in that direction.
3. Connect the filter to the flushing pump, using the short (1½") hose supplied, ensuring the flow enters the bottom of the cylinder and leaves at the top.
4. Using the power flushing pump standard flow and return hoses, connect both the pump and filter to the heating system.
5. The RHO-MAG™ isolation valves should be open with the by-pass closed.

### **Operating Instructions**

1. Turn on the power flushing pump and immediately check all connections and the top of the RHO-MAG™ canister for leaks.
2. Proceed with the power flushing in the normal manner.
3. After initial circulation for approximately 10 minutes, visually check the cylinder, clean the magnet if necessary.
4. Remove the securing ring from the top of the canister and, gripping the handle firmly, carefully lift out the magnet.
5. Inspect the magnet for collected deposits and, if necessary, clean as follows:



6. Grip the canister lid and handle with one hand. While wearing disposable gloves, grip and slide the magnetite sludge down and off the magnet.

**Note:** Only remove a proportion of the deposits with each stroke, starting at the lower end of the magnet, rather than all at the same time. Clean the end of the magnet.

7. Collect the sludge in a suitable container for later disposal.



8. Re-assemble the unit ensuring the magnet locates within the central recess at the base of the cylinder, re-open the isolating valves closing the by-pass, checking the canister lid for any leakage.
9. Repeat the inspection and cleaning procedure at regular intervals during the flushing process.

### **NOTE: On Cleaning the Magnet**

It is not necessary to remove all deposits during intermediate cleaning while power flushing, but to ensure a long life the magnet should be thoroughly cleaned and dried at the end of each job.

### **Caution**

The RHO-MAG™ contains a very strong magnet. When removed from the canister the magnet is easily attracted to metal surfaces. Take care not to trap fingers and avoid contact with sensitive equipment such as watches, mobile phones, credit cards etc.

## **RHO-HAMMER™ RADIATOR VIBRATION TOOL**



Over time corrosion and sludge can build up in heating systems and this often accumulates within the radiators creating cold spots.

These deposits can, especially on older systems, become quite solid and stubborn to shift. To speed up the chemical flushing process and improve the cleansing efficiency it is recommended to vibrate the radiator surface to loosen the deposits within.

The RHO-HAMMER™ has been developed for that purpose. Designed to fit into a standard SDS chuck, the RHO-HAMMER™ has a replaceable flat-faced head.

### **Caution**

- Always refer to the SDS drill manufacturer's safety instructions before use, and wear ear protectors.
- Never use the RHO-HAMMER™ on any radiator that is connected to anything other than standard copper pipework.
- The vibration and removal of stubborn deposits may uncover hidden corrosion that is already present within the heating system leading to potential leaks.
- Loose paint may be damaged or removed.
- Always indemnify yourself from damage the use of the product may cause.

### **Operating Instructions**

Monitor each radiator for cold spots, noting their locations. An infra-red thermometer is ideal for this.

During flushing, check these locations to ascertain any stubborn areas where deposits still remain.

Attach the RHO-HAMMER™ to the SDS drill, and set the drill to "hammer only" mode (non-rotational).

Clean any debris or dirt from the face of the RHO-HAMMER™ and the surface of the radiator. Hold the drill so the face of the RHO-HAMMER™ makes flat contact with the surface of the radiator at the problem area. Turn on the drill for 3 seconds while holding the RHO-HAMMER™ against the radiator, applying moderate pressure.



Check the radiator temperature and repeat the operation in other stubborn areas, if required.

### **Note**

Only use the RHO-HAMMER™ on an individual radiator that is receiving the full flow of the RHO-FLUSH™ 1000 pump, to ensure loosened debris is carried away.

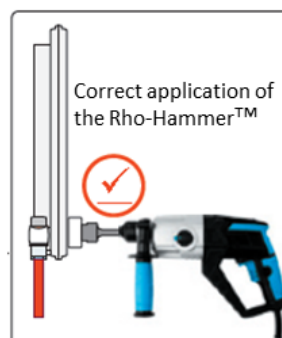
Do not use excessive force.

The more pressure applied to the SDS drill, the more powerful the vibrational force on the radiator will be, and you may damage the paint surface. Apply pressure in accordance with your assessment of the overall condition of the radiator.

**Note: the RHO-HAMMER™ is not intended for either continuous use, or for use over the whole radiator area. Excessive use could result in damage to either the radiator or the RHO-HAMMER™ head.**

The RHO-HAMMER™ is an impact instrument and the replaceable head will wear with time. The life of the head will be considerably reduced if the RHO-HAMMER™ is applied to radiators at an angle.

Replacement heads are available from Rhomar Water: please quote part No MI040B.



## SECTION F – POWER FLUSHING & WATER TREATMENT PRODUCTS

### SUMMARY OF CHEMICALS USED WHEN DESCALING BOILERS AND HEAT EXCHANGERS

Product	Application	How much do you need?	How is it packed?
<b>Hydro-Solv™ 9100</b>	Descaling heat exchangers, boilers or water heaters.  Suitable for materials including aluminium.  Pour slowly into <b>RHO-FLUSH™ 1000</b> tank while re-circulating  Works faster with heat.	1 gallon for every 50 gallons of system volume.	<b>1 gallon jugs*; 4 per case.</b>  <b>Also available in 5 gallon buckets or 55 gallon drums if needed for multiple jobs.</b>  <i>*1 gallon jugs may be sold separately.</i>
<b>Skale-X™</b>	Descaling Tankless water heaters, heat exchangers, boilers.  NOT suitable for use with aluminium or galvanised steel.	1 gallon to 10 – 15 gallons  32 Oz. for every 3 gallons	<b>1 gallon jugs; 4 jugs per case</b>  <b>32 Oz. jugs#; 12 jugs per case</b>  <b>#For Tankless water heaters</b>

### PRODUCTS TO HELP PROTECT YOUR SYSTEM FROM CORROSION

*To be used in boilers and other heat exchange systems after the descaling is completed.*

<b>Pro-Tek® 922</b>	To protect multi-metals including aluminium. For these systems, the pH needs to be between 7.5 and 8.5.  Pour slowly into the <b>RHO-FLUSH™ 1000</b> tank and re-circulate in the system	1 gallon for every 50 gallons of system volume.	<b>1 gallon jugs and 5 gallon buckets.</b>
<b>BoilerGard™ 1200</b>	To protect metals such as copper, mild steel, iron, stainless steel.	1 gallon for every 50 gallons.	<b>1 gallon jugs and 5 gallon buckets.</b>

### OTHER PRODUCTS YOU MAY NEED TO HELP WITH THE CLEANING PROCESS

<b>pH Strips</b>	To check that the solution is neutral, pH reading should be 7 (or the same as that of tap water)	1 strip each time you need to check the pH.	<b>A pack 50 pH Test Strips.</b>
<b>Infra-red Thermometer</b>	To help identify the cold spots in the radiators and thus eliminate them using the <b>RHO-HAMMER™</b> .	NA	<b>One thermometer packed in a box</b>
<b>TDS Meter</b>	To help determine the total dissolved solids before, during and after cleaning.	NA	<b>Packed alongside the Water Analysis Test Kit</b>

*PLEASE NOTE: Carriage restrictions may apply with some chemicals / pack sizes, please call for advice.*



## **ANTIFREEZE/INHIBITED PROPYLENE GLYCOL-BASED HEAT TRANSFER FLUIDS**

The following chemicals have special applications for protecting the system against corrosion, as well as, serve as heat transfer fluid with the additional advantage of protecting system metals from bursting or freezing during cold conditions.

### **EnviroGard™ Inhibited Propylene Glycol**

**The NSF registered incidental food contact safe (HT1) inhibited propylene glycol based heat transfer fluid.**



**EnviroGard™** is an inhibited propylene glycol based heat transfer fluid that can be used in hydronic systems. It is composed of ingredients the FDA and USDA considers GRAS. This product is NSF registered under category code HT1 and can thus be used in systems where incidental food contact is possible.

**EnviroGard™** provides burst and freeze protection in addition to corrosion protection to ferrous and non-ferrous metals including cast iron, copper, steel (mild, stainless, carbon) among other metals.

**EnviroGard™** is available in an ultra-concentrated form as well as in custom premixes (RTU – “ready-to-use”). We recommend the concentrated product be diluted with DI water or equivalent.

Whenever inhibitor concentrations are low, they can be boosted with Rhomar Water’s **Boiler-Gard™ 1202**.

### **RhoGard™ Inhibited Propylene Glycol**

**The aluminium and stainless steel safe multi-metal antifreeze and heat transfer fluid for hydronic heating and cooling systems.**



**RhoGard™** inhibited glycol-based heat transfer fluids offer freeze and burst protection to your heating and cooling system down to <-60 °F and -100 °F respectively. Product is also available in an ultra-concentrated form as **RhoGard™ Ultra** or in the Rhomar Water customized ready to use premixes as **RhoGard™ RTU** (which is “ready-to-use”).

The inhibitors in **RhoGard™** protect multi-metals commonly found in these heating and cooling systems including aluminium, stainless steel, mild steel, copper, brass and PEX tubing, among other components.

Whenever inhibitor concentrations are low, they can be boosted with Rhomar Water’s **Pro-Tek®**.

#### **RECOMMENDED DILUTIONS OF RhoGard™ OR EnviroGard™**

50 % solution provides protection down to +7 °F  
60 % solution provides protection down to -1 °F  
75 % solution provides protection down to -18 °F



**RHOMAR WATER**  
Heat Transfer Fluids • Hydronic System Solutions

**RHO-FLUSH™ 1000, RHO-MAG™ AND  
RHO-HAMMER™ OPERATING & SERVICING GUIDE**

## SECTION G – CONTACT RHOMAR WATER

### **RHOMAR WATER**

2103 E. Rockhurst Street  
Springfield, MO, 65082

**Tel: 1-800-543-5975**

**Fax: 417-862-6410**

(Monday to Friday 8.00 am to 5.00 pm)  
Central Time  
*Closed on Public Holidays*

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