RHOMBUS INSTALLATION & MAINTENANCE INSTRUCTIONS

Before installing and using your new reverse osmosis system, carefully read through the instructions and ensure that your feed water meets the guidelines below (e.g. minimum water pressure 2.7 bar (40 psi) and maximum water pressure 5.8 bar (85psi). if you suspect that the pressure is too high or low, check this before installing. Operating a system outside the guidelines will result in poor performance and will void the warranty. Your installation should comply with national and local bylaws.

OPERATING PARAMETERS	
Minimum water pressure 2.7 bar (40psi)	Maximum water pressure 5.8 bar (85psi)
Maximum dissolved solids 1500ppm	Range of pH 5 – 9 (inclusive)
Minimum feed water temp. 4 deg. C (40 deg. f)	Maximum feed water temp. 29 deg. C (85deg. f)
Production rate (max / 24hr) 150ltr*	Feed water type: Municipal mains cold

*Production rate is based upon optimum feed water conditions. Actual rate of production will depend upon site conditions and age of membrane.

INSTALLATION SPECIFICATION		
Main Module	**Reservoir**	**General Data**
Height 425mm	Height 420mm	Inlet valve 15mm
Width 400mm	Diameter 280mm	Drain clamp 1.5” WP
Depth 140mm	Capacity (max) 9 litre	DO NOT FREEZE

After removing your system from the outer packaging and before you start the installation procedure, check that all the parts listed below are included (please refer to picture).

Purification module	2 Gallon Reservoir (10)	Faucet (14)	Tubing (15)
Drain clamp (13)	TDS meter (16)	Membrane	Spanner
Inlet valve (12)	Tank valve (11)	Inlet gauge	

TOOLS YOU WILL NEED

An electric drill with a 12mm bit and a 4mm drill bit.
An adjustable spanner.
Gloves for handling the membrane.
Stanley knife / scissors / tube snip.
Pozi – drive screwdriver.
Hammer.
Centre pop (optional).
Hacksaw / Copper tube cutter.

USING A PLUMBER

You may need a plumber if you are not confident, need to fit a deeper trap to a sink unit (the drain clamp should be above the water line of a trap to comply with the regulations) or believe that the installation of the mains cold water branch will be a complicated procedure.

INSTALLATION PROCEDURE - RHOMBUS R.O.

I PURIFICATION MODULE

This is the main unit, comprising two filter housings, membrane housing and control devices. The unit should be installed against a vertical surface, in a position which allows for the filters and membrane to be replaced periodically. The module should be as close as possible to the storage tank (10) and faucet (14), to give a good flow of water. Using the bracket as a template, mark the position of the fixing screws, leaving at least 40mm of free space below the housings for filter changes.

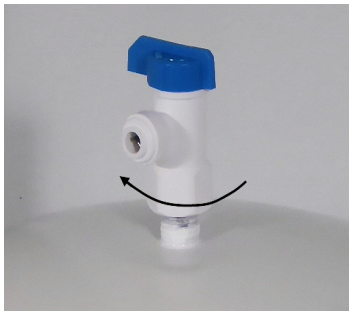
II FEEDWATER INLET VALVE (12)

Identify a suitable length of 15mm mains cold water pipe work that is straight, clean and free from paint. Turn off the supply, drain down the pipe and remove sufficient pipe to allow for the pushfit tee to be fitted. The cuts to the tubing should be square and free from burrs. Ensure that the lever valve to the ¼" branch is turned off before the water supply is turned back on.

III DRAIN SADDLE (13)

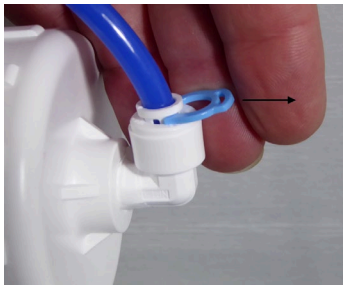
Push out the centre part of the self adhesive foam seal and remove the yellow backing paper. Stick the seal to the inside of the drain clamp, so it sits squarely over the hole.
The drain saddle should be fitted above the sink trap (i.e. the pipe loop below the basin / sink), or onto a washing machine stand pipe. **Be sure to comply with local plumbing codes**. Choose your spot so that there will be enough room to fix the two halves of the clamp together. Drill a 4.0mm hole in the 1.5" waste pipe and line up the tube adaptor collar hole with the one you have drilled by using an awl (or nail). Tighten the mounting bolts firmly.

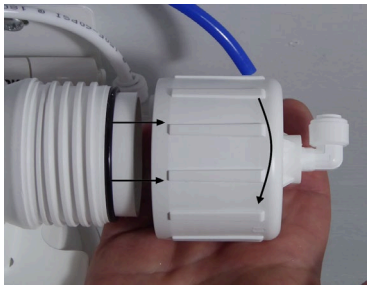
IV RESERVOIR ISOLATING VALVE (11)

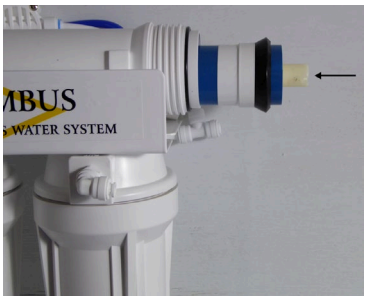


Simply wind four wraps of P.T.F.E. around the threads of the reservoir inlet / outlet. Offer the vacant threaded port of the valve onto the threads and tighten clockwise. **Do not over tighten** – this is not a high pressure joint.

V INSTALLATION OF THE MEMBRANE







The membrane is supplied separate to the module (blue item in sealed bag). **This is a fragile, high value item that must be handled with care (using rubber gloves).**
Remove the blue horse shoe collet lock from the membrane inlet cap fitting and remove the tube by pushing down on the collet (white ring) while pulling the tube.
Remove the membrane housing cap, which is at the right hand side and has ribs on it.

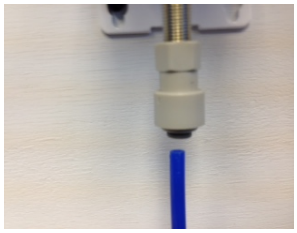
Remove the membrane from the packaging and insert it into the membrane housing making sure that the pipe with the two small 'O' rings goes in first. Push membrane in firmly and twist to seat it.
Replace the membrane housing cap and white tubing, finishing off with the horse shoe collet clip.

VI FAUCET / TAP (14)

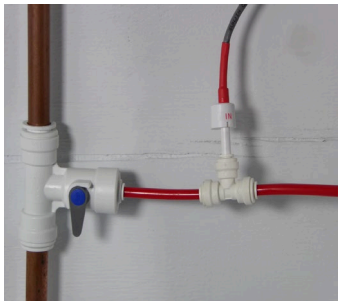
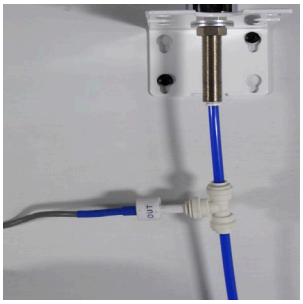
Select a position for the tap on the counter or sink shoulder. The faucet should be located in a position that gives a flow of water into the sink bowl. Ensure (check) that you have enough room below the desired position to connect the tubing (15) to the tap. Using a centre pop (or nail) mark where the centre of the tap stud will be and drill a 12mm hole through the surface. Secure the tap in place by using the fixing kit provided.

INLET GAUGE (NDPTS4 – not shown)

CONNECTIONS

		Connect a length of black tubing between the drain clamp (13) and the drain restrictor on the module (this is the white fitting marked 250ml). Remove the horse shoe collet clip and dust cap before trying to push the tubing into the fitting. The ends of the tubing should be cut square with no scratches or burrs.
		Connect a length of red tubing between the inlet valve (12) and the isolating valve on the tee of the pressure gauge (NDPTS4). Connect a length of red tubing between the tee of the pressure gauge and the inlet of the module (I).
		Screw the quick connect tap adaptor' hand tight' to the stud of the tap. Nip up the adaptor with a spanner (do not overtighten) Connect a length of blue tubing between the quick connect tap adaptor and the outlet of the module (O).
		Connect a length of yellow tubing between the storage tank valve (11) and the post filter inlet tee.

IN LINE TDS METER (HMDM2)

		The RHOMBUS system is supplied with an in-line TDS monitor, which allows the operator to monitor the quality of two separate water lines (i.e. the feed and the product. Please follow the instructions that are supplied with the meter. The tee pieces are 'spliced' into the target tubing in the same way that the tubing is fitted on the rest of the system.

START UP PROCEDURE

Once all the tubes are tightly connected, open the inlet valve branch lever. This will allow water to flow and the system as a whole should be checked for leaks. Water will flow to drain until the storage tank reaches its' cut off pressure. It may take a few hours to fill the system from empty.

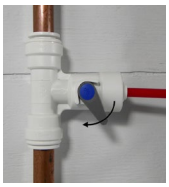
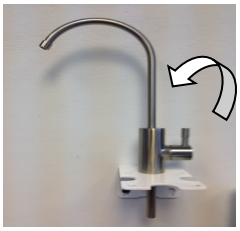
CAUTION
A new system contains preservatives that must be flushed to drain before water from the system is used. Allow the tank to fill for at least two hours and then empty the storage tank via the faucet until the faucet only drips. The system will now be ready to use. Please discount any readings on the in line TDS monitor during this purging stage of the installation.

SYSTEM MAINTENANCE

It is very important to follow the scheduled maintenance programme. Change the consumables as below:

Pre – filter	AC18/10	Up to six months
Post – filter	AC20R	Depends on required water quality
Membrane	ACTFC50	1 – 3 YEARS (depends on feed water quality)

PRE FILTER / DE-MIN FILTER CHANGING

	Turn off the inlet valve.
	Turn off the tank valve.
	Open the faucet to relieve the system pressure.
	Place a drip tray beneath the module and remove the filter housing sumps by rotating them to the left until they disengage. Remove the filters. Clean out the insides of the housing sumps using a mild detergent and rinse. Remove the cellophane wrapper from the pre-filter (carbon block) and place it in the pre-filter sump (LHS).
	Unscrew the base cap off the (post) resin filter.
	Tip out the old resin into a plastic bag and then rinse out the filter casing.
	Refill the post filter casing with new resin and tamp it down as you fill. The resin level should be approximately 40mm from the lip of the casing before the sponge is placed upon the top of the resin.

	Push the sponge down on top of the resin, so it sits flush with the lip of the casing.
	Screw the base cap back on to the casing. Place the filter back into the post filter housing sump, ensuring that the screw cap end of the filter goes into the sump first.
	Check that the filter 'O' rings and housing sump 'O' rings are in place before tightening the sumps back on to the module.
The system can now be brought back on line. Open the inlet valve. Open the tank valve. Flush 2 litres of water through the post filter before turning off the faucet.	

MEMBRANE CHANGES

Follow the procedure as above to de-pressurize the system.
Refer to the original fitting instructions for installing a membrane.
The old membrane will need to be pulled out with a pair of pliers.
The first two hours of production should be sent to drain to flush out any preservatives.

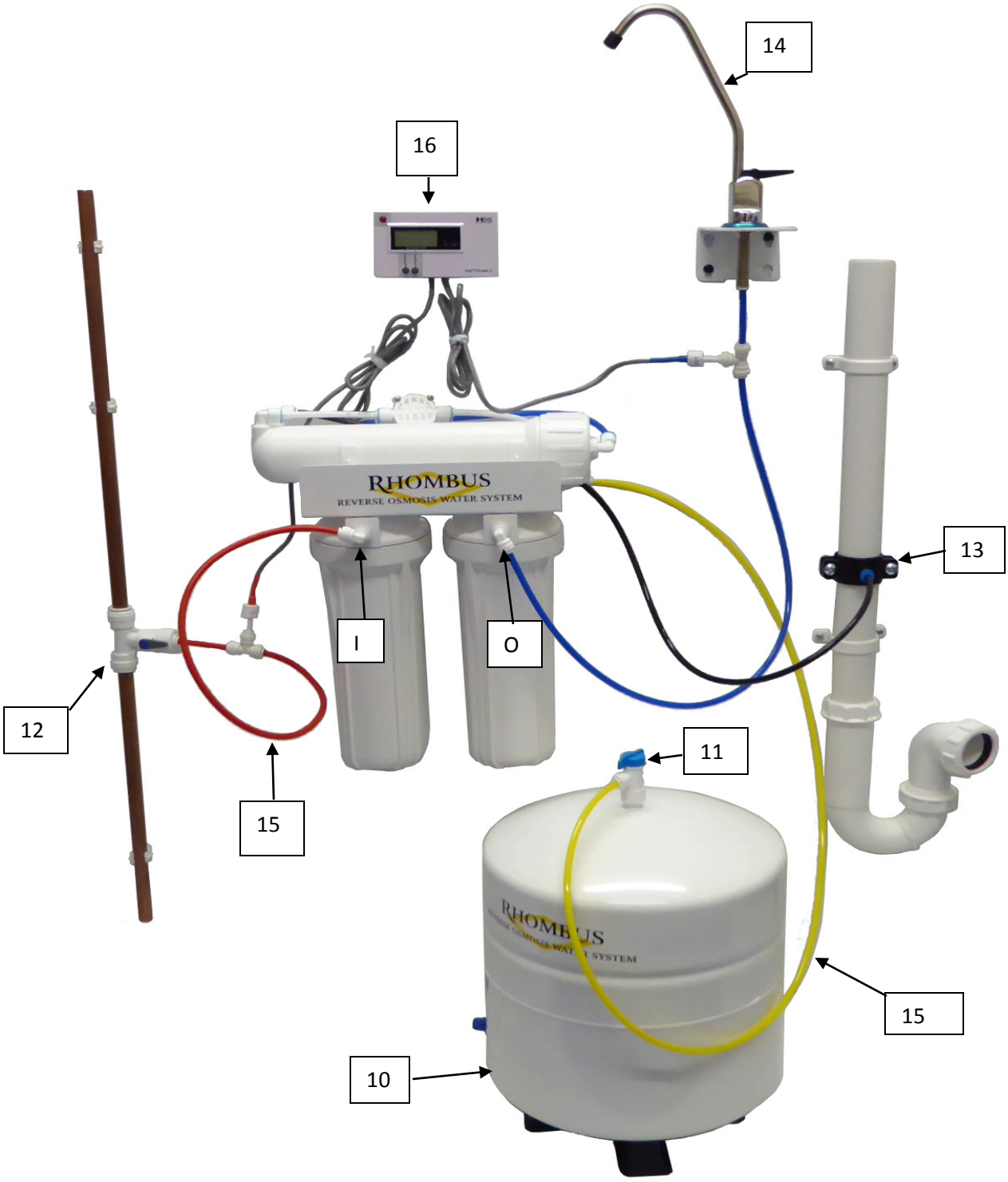
SANITISING THE SYSTEM

Shut down (isolate) the system and drain off the storage tank.
Remove both filters and the membrane from the system and add the sanitizing agent to the pre-filter sump.
Replace the sumps and membrane housing end-cap.
Turn on the feed water slowly and allow the system to fill for 5 minutes.
Turn off the feed water supply and allow the system to stand for 30 minutes.
After the 30 minutes has elapsed, drain the system down and re-fit the membrane and filters.

(7/9)

FAULT FINDING

SYMPTOM	POSSIBLE CAUSES	CORRECTIVE ACTION
1 Lack of product water	1a Blocked pre-filter, low mains water pressure. Membrane old / scaled up. Tank exhausted.	1b Renew pre-filter. Check mains flow from saddle valve (fit booster set if pressure is below 40psi). Check membrane performance and replace if necessary. Allow tank to re-fill.
2 Tank is heavy but no flow	2a Pre charge of air has been lost from tank. Tank diaphragm is ruptured.	2b Re-pressurise the tank to 7psi. Replace the tank.
3 High 'IN' reading on TDS meter	3a Membrane failure	3b Replace membrane. Replace non return valve elbow on pure water outlet from membrane.
4 Humming noise from unit	4a Membrane failure Defective non return valve Low tank pre-charge	4b Replace membrane Check non return valve Re-set tank pressure to 7psi
5 Tank never runs out	5b Defective non return valve Membrane failure	5b Check non return valve Replace membrane
6 Product water tastes or smells 'off'	6a Ruptured membrane and / or bacterial contamination	6b Replace the membrane Sanitise the system
7 No product water at all	7a Mains water supply is off Saddle vale / tank valve off Feed pipe is kinked	7b Restore the water supply Open the valve/s Re-route the pipe work
8 High 'OUT' reading on TDS meter, but 'IN' reading normal	8a Resin post filter (RHS) is exhausted	8b Fit new resin cartridge, or recharge the resin infill
9 Waste water flow never stops	9a Poor production rate Defective non return valve No tank pressure Defective auto shut off valve	9b See above Check non return valve Re-set tank pressure (7psi). Replace valve with identical one
10 TDS reading suspect or display is feint	10a Batteries spent Meter readings inaccurate	10b Renew batteries (2 x AA) Check TDS reading against standard buffer solution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RHOMBUS
REVERSE OSMOSIS WATER SYSTEM
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