

Total Purity RO System - 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° C (40° F)	Maximum feed water temp.	29° C (85° 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 (11)
Drain clamp (13)	Membrane	Spanner	
Saddle valve (12)	Tank valve (9)		

TOOLS YOU WILL NEED

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

USING A PLUMBER

You may need a plumber if you are not confident, you may 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 – TOTAL PURITY 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 the mains cold water pipe, using a section that is straight and free from paint, scratches or dents. Connect the saddle valve to the cold-water pipe. Finger tighten the clamp by turning the bottom nut. Then tighten properly with a spanner. **DO NOT OVER TIGHTEN.** One or two spanner turns after finger tight should do. **Do not split your pipe!** The aim is simply to make the saddle valve immovable on the pipe.

Once saddle clamp is secured firmly on the pipe, turn the T bar tap on the saddle clamp clockwise until it stops turning. (This will pierce the pipe with a metal pin – invisibly). Turning the T bar tap a few turns back will allow the water flow. **Only do this when you are ready to ‘start up’ the system.**

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.

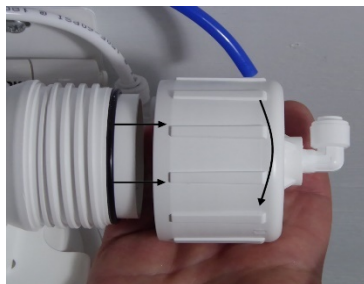
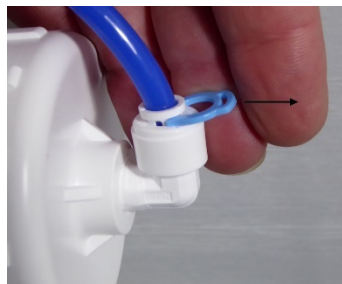
The drain saddle should be fitted above the sink trap (i.e. the pipe loop below the basin / sink), or onto a washing machine stand pipe. **Be sure to comply with local plumbing codes.** Choose your spot so that there will be enough room to fix the two halves of the clamp together. Drill a 4.0mm hole 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.



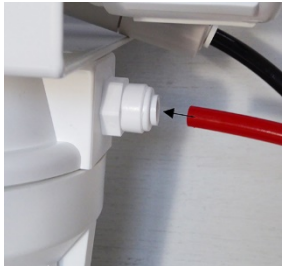
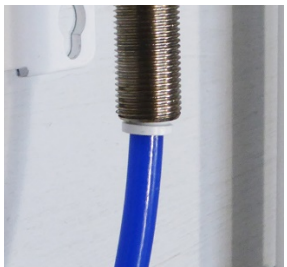
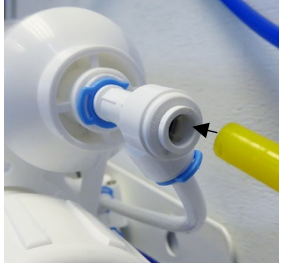

Replace the membrane housing cap and white tubing, finishing off with the horse shoe collet clip.

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 (11) 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.

CONNECTIONS

		<p>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.</p>
		<p>Connect the red tubing from the saddle valve to the inlet of the module (I).</p>
		<p>Connect a length of blue tubing between the push-fit fitting on the tap and the outlet of the module (O).</p>
		<p>Connect a length of yellow tubing between the storage tank valve (9) and the post-filter inlet tee.</p>

START UP PROCEDURE

Once all the tubes are tightly connected, open the inlet valve. 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

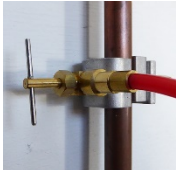

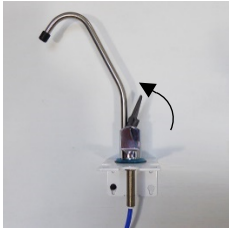
A new system contains preservatives that must be flushed to drain before water from the system is used. Allow the tank to fill for at least two hours and then empty the storage tank via the faucet until the faucet only drips. The system will now be ready to use. Please discount any readings on the in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


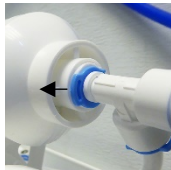
Pre – filter	AC21/5P	Up to six months
Secondary filter	AC18/10E	Up to six months
Post – filter	ACFF39P (or H10PA)	Up to six months
Membrane	ACTFC50	1 – 3 YEARS (depends on feed water quality)


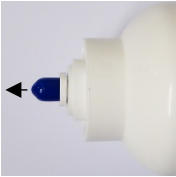
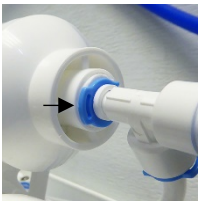
CHANGING THE PRE FILTER / SECONDARY FILTER

	Turn off the inlet valve.
	Turn off the tank valve.
	Open the faucet to relieve the system pressure.

	<p>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 wrapper from the pre-filter (sediment) and place it in the pre-filter sump (RHS).</p>
	<p>Fit the pre-filter (sediment) into the right hand side filter housing.</p>
	<p>Fit the secondary filter into the left hand side filter housing.</p>
	<p>Check that the filter 'O' rings and housing sump 'O' rings are in place before tightening the sumps back on to the module.</p>
<p>The system can now be brought back on line. Open the inlet valve. Open the tank valve.</p>	

CHANGING THE POST-FILTER

	<p>Follow the shut-down procedure (as per steps 1-3 above) to de-pressurize the system.</p>
	<p>Remove the blue collet lock from the push-fit connectors on the inlet/outlet.</p>

	<p>Remove fittings from inlet/outlet by depressing white collet ring whilst pulling the fitting.</p>
	<p>Remove the blue dust plugs and install the new post-filter ensuring correct direction of flow.</p>
	<p>Replace blue collet locks.</p>
<p>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.</p>	

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 10" filters and the membrane from the system and add the sanitizing agent to the pre-filter sump. If the post-filter is removed, you will need a 1/4" push-fit straight or elbow to connect the inlet tee to the tube feeding the faucet.
 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.

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 Waste water flow never stops	8a Poor production rate Defective non return valve No tank pressure Defective auto shut off valve	8b See above Check non return valve Re-set tank pressure (7psi). Replace valve with identical one

No	Description	Part No.	No	Description	Part No.
1	10" ¼" Ports Housing x2	AC100SPANPR	15	Membrane Housing	ACROH10
2	Housing 'O' Ring ♦	ACW014	16	TFC Membrane ♦	ACTFC50
3	Twin Housing Bracket	ACB16	17	Waste Flow Controller ♦	ACRFC250
4	Housing Screw ♦	SCRE02	18	GAC Post-filter	H10PA
5	2" x 2.5" Bracket	ACB21A	19	¼" Stem x Push-fit tee	PCROFIT2
6	Membrane Housing Clip	ACB21	20	¼" Stem Elbow	PCROFIT3
7	¼" NPT x ¼" Push-fit Elbow	PI480822S	21	Product Water Non-return Valve ♦	PCROCV1
7a	¼" Stem Elbow	PCROFIT3			
8	¼" Barrel Nipple ♦	ACBN02	22	Auto Shut-off Valve ♦	ACASV
9	Storage Tank Valve	PPSV500822W	23	5 Micron Primary Filter ♦	AC21/5P
10	2 Gallon Storage Tank	ACRES2	24	Carbon Block Secondary Filter ♦	AC18/5
11	¼" Tubing	ACT144 / ACT147			
12	Saddle Tapping Valve	ACSVCV5	25	Housing Spanner ♦	TGISP1
13	Drain Clamp	ACRDC	26	Collet Covers ♦	PIC1808R
14	Faucet	ACLRF1	27	1/8" NPT x ¼" Elbow	PCROFIT1
14a	Faucet Push-fit Adaptor ♦	CI3208U7S			
14	1/8" NPT x ¼" Elbow	PCROFIT1		♦ = not shown	

