

Manual Control Panel User Guide



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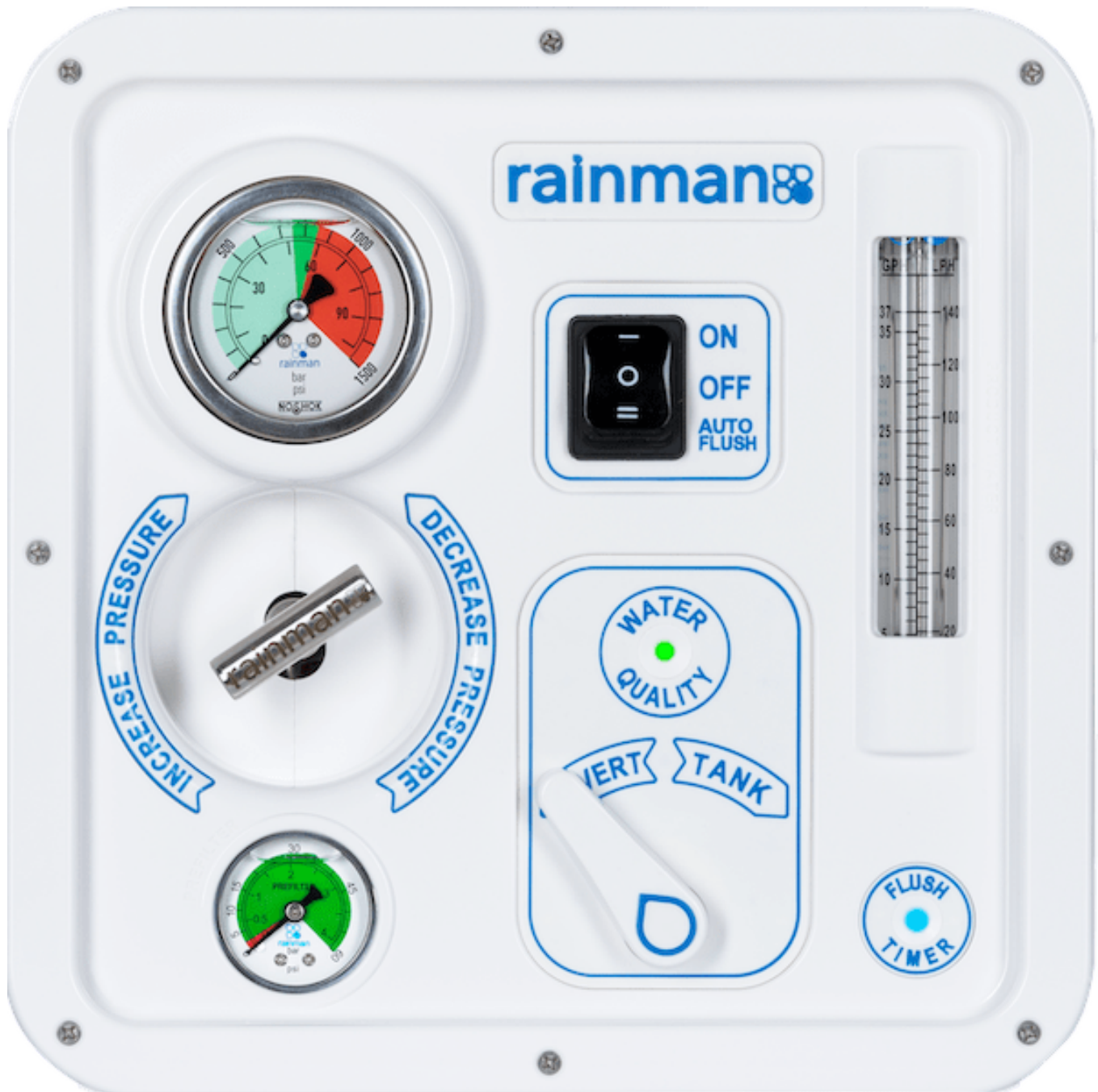
22 November 2025

Introduction

The Rainman control panel provides a remote control capability for any installed AC or DC electric Rainman watermaker. This manual guides the installer through the control panel installation and provides details on how it affects use of the watermaker. It can be used for either brand new Rainman watermaker installations, or for retrofitting the control panel to existing installs.

This guide supplements the general operation, installation and autoflush manuals. It is highly recommended that you study this entire manual before planning and executing your control panel installation.

The panel itself is made of durable injection moulded, UV resistant, ASA acrylic. In addition to a convenient remote control capability, the panel incorporates additional features to enhance the owner experience.



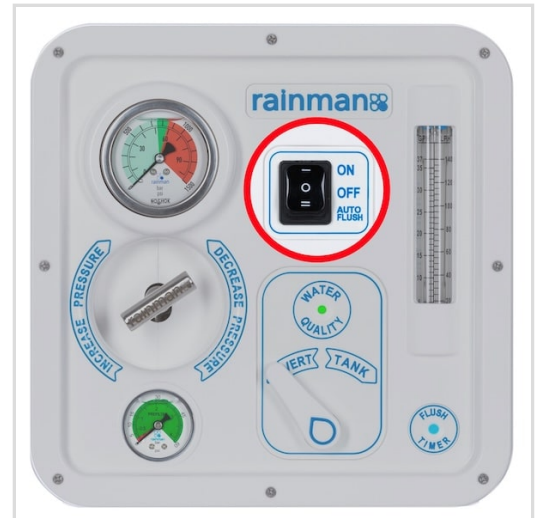
Operating Watermaker With Manual Control Panel

Making Water

Three steps are required to begin making water via the manual control panel.

1. Turn the switch to "ON" position.

The motor and pump will start running, with all water going out the brine waste hose.



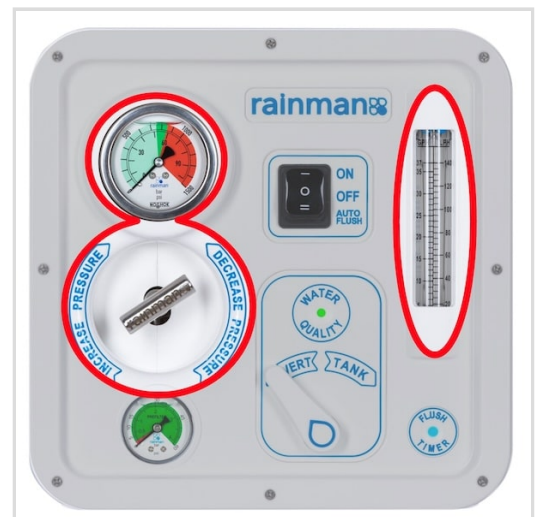
2. Slowly increase pressure by turning the pressure control valve clockwise. Continue building pressure until either

A) The system reached 55 bar (800psi).

or

B) The product water flow rate reaches no more than 10% above the rated flow of your Rainman model. This applies in brackish water.

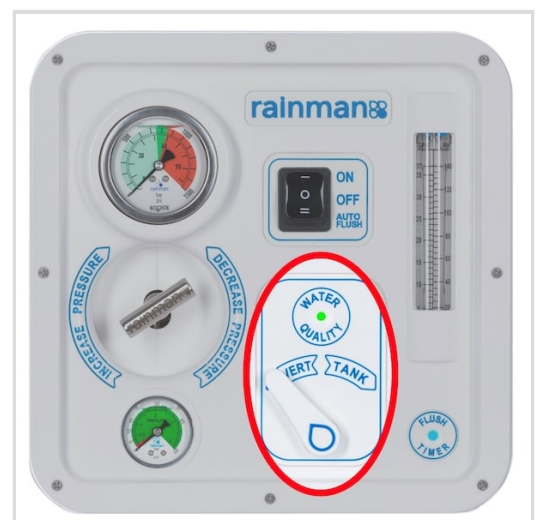
This should be periodically monitored for required adjustments.



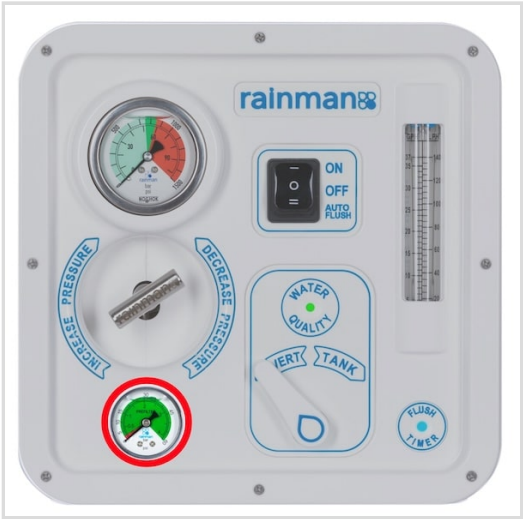
3. When the water quality LED indicates green or amber in colour, switch the diverter valve from "DIVERT" to "TANK".

The "WATER QUALITY" indicator is a tri-colour LED. Upon system startup, the LED should be red. After pressurising the system and the water quality improves, the LED should turn amber or green. This indicates good water quality.

If the LED does not move from red colour, there is an issue suggesting the TDS (total dissolved solids) is high. This usually indicates a reduced total flow rate, but may also suggest a worn membrane.



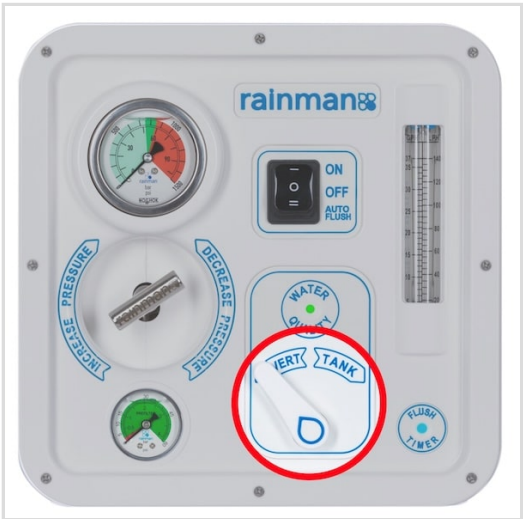
The low pressure gauge indicates the pressure at the prefilter. If the pressure fails to get into green zone of the gauge, a blockage is indicated. Usually this is related to a clogged prefilter that requires changing. However, it may also indicate a worn impeller or blockage upstream from the lift pump.



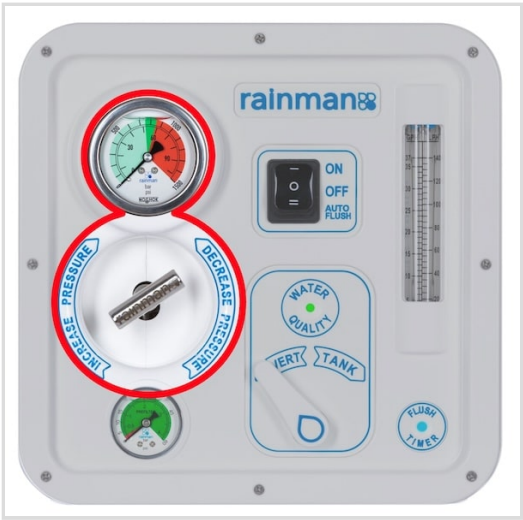
Shutting Down Watermaker

Shutting the watermaker down requires reversing the steps of starting it up.

1. Move diverter valve to "DIVERT".
This stops product water going into your tank, sending it overboard as waste.



2. Slowly decrease pressure by turning pressure control valve anti-clockwise. Stop decreasing pressure when the pressure gets to 0 bar (0 psi). There is no need to completely open the valve.



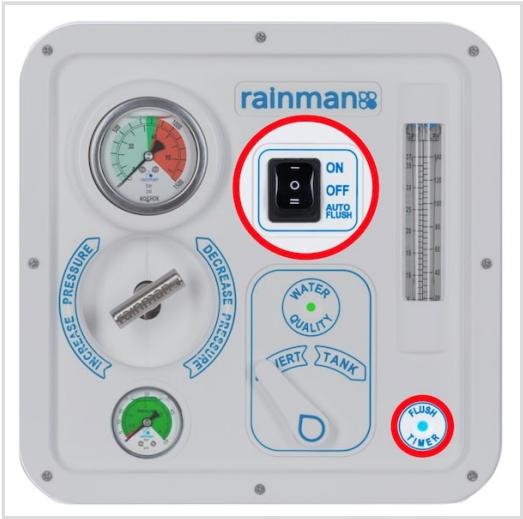
3. Turn the power switch to "AUTOFLUSH" position.

A motor valve will open after fifteen seconds, allowing the

house water pump to flush fresh water through the activated carbon filter and through the membranes. The blue "FLUSH TIMER" LED will be solid blue during this cycle.

After the autoflush cycle completes, the blue "FLUSH TIMER" LED will flash sequences of seven times. This indicates the next autoflush cycle will be in seven days. As the timer counts down, the LED indicator will flash fewer times, once for each day until the next cycle.

If the watermaker is run prior to the next flush, the system will flush upon shutdown and reset the timer.



Quick Reference

After understanding the operation in detail, a quick reference card may be useful.

Manual Control Panel Quick Reference

Make Water

- 1 Switch to "ON"
- 2 Slowly "INCREASE PRESSURE" to A) 800psi or B) Max rated flow
- 3 Wait for "WATER QUALITY" light to turn green
- 4 Shift valve from "DIVERT" to "TANK"

Note: Change prefilter or impeller if "PREFILTER" gauge stays in red

Power Down

- 4 Shift valve from "TANK" to "DIVERT"
- 2 Slowly "DECREASE PRESSURE" to zero
- 1 Switch to "AUTOFLUSH"

Watermaker will then flush system with mains water pump and set seven day autoflush timer

For long term storage, pickle the system and set switch to "OFF". Read operations manual for full details.

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watermakers

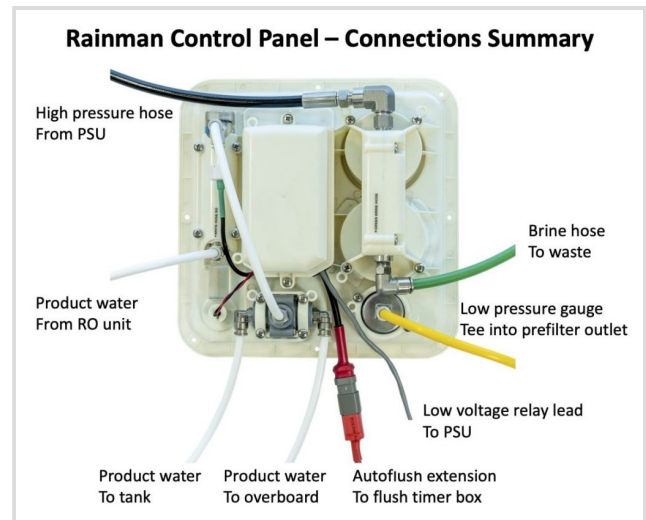
The image shows the Rainman manual control panel with numbered callouts. 1 points to the ON/OFF/AUTO FLUSH switch. 2 points to the pressure gauge. 2A and 2B point to the 'INCREASE PRESSURE' and 'DECREASE PRESSURE' handles respectively. 3 points to the 'WATER QUALITY' indicator. 4 points to the 'VERT/TANK' selector.

Installation Overview

There are three components to installing the Rainman control panel.

1. **Physical installation** – The panel can be flush mounted, used with the included enclosure box as a standalone control unit, or used with our optional hatch mount for external installation.
2. **Plumbing** – Six total plumbing lines are required for the installation. One high pressure hose, a brine waste line, three product water hoses, and a line to the prefilter.
3. **Electrical** – There is one mandatory electrical connection to the PSU (or compatibility box). This provides 12-24VDC power for the panel itself to operate and also controls a relay to switch either the AC or DC electric PSU. If you have the optional autoflush system, there is another electrical connection to power the flush timer.

The diagram shows the plumbing and electrical connections for the control panel.



Types of Installations

New Installation – Modular Configuration

If the Rainman control panel is purchased with the Rainman Modular electric watermaker, the present model systems are designed to work together with minimum effort.

Retrofit Options

✓ [Click here to toggle details of retrofitting to existing modular or portable system](#)

Physical Installation

A few principles apply to any of the three installation options in this section.

1. Don't mount the control panel above any electrical equipment.
2. Although the acrylic control panel is UV resistant, it should not be mounted where it is in regular direct sunlight.
3. The control panel should not be exposed to water spray.
4. Try to position the panel so all plumbing and wiring come from underneath to minimise water ingress.
5. Run all plumbing and cabling lines before doing any cutting.

Flush Mounted

If you intend to flush mount your control panel into a flat surface, you will need the following space available.

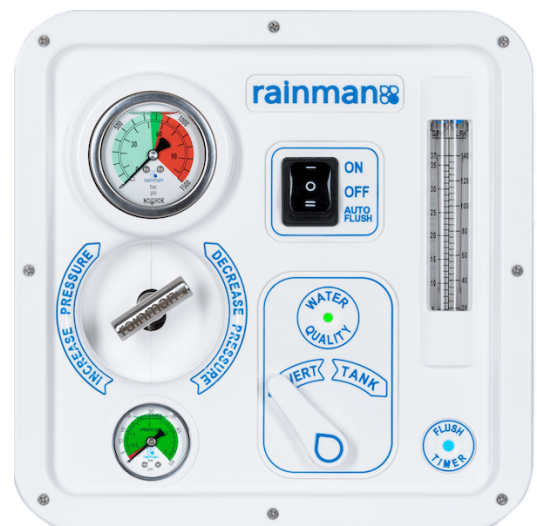
- Panel: 280 x 280mm (11")
- Cutout: 250 x 250mm (9.9")
- Depth behind panel: 155mm (6.1")

The enclosure box is optional for use with the flush mounted panel. It can be used to keep the hoses and cabling tidy, but is not mandatory. If you do wish to use it, you will need physical access to the rear of the surface you are mounting the panel to.

Use the included paper template and a jigsaw to cut the main square hole. Four holes on the paper template should only be used if you are mounting the enclosure box in the rear of the control panel. These holes should be 4.5mm (3/16") countersunk holes.

For the eight mounting holes in the control panel face, it is best to use the panel itself as a template to drill the 3.2mm (1/8") holes.

If using the enclosure box behind the flush mounted control panel, read the Standalone Enclosure Box section as well.



Standalone Enclosure Box

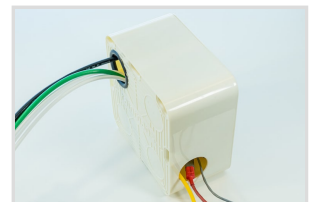
If you do not have sufficient surface area for flush mounting the control panel, it is possible to mount the enclosure box to create a standalone control panel. The enclosure box itself can be rotated to be mounted on the bottom, either side, or top of the control panel. Use the box itself as the drill guide, and supplement the installation with Sikaflex (or similar).



Use a hole saw to cut a hole in a convenient location for routing the plumbing and cabling. Circular guides are provided in the enclosure box mold, but you may drill holes wherever convenient. We recommend approximately 70mm (2 ¾"), but other sizes may suffice. Cut black edge bead to length and install inside drilled hole edge. This will protect the black high pressure hose from rubbing on the edges due to vibration.



If it assists in plumbing and cabling routing, cut multiple holes into the enclosure box.



External Hatch

If you have a need for the control panel to be mounted externally, such as in a cockpit, Rainman offers an optional exterior hatch with an acrylic adapter. The dimensions will be:

- Hatch: 380 x 380mm (15")
- Cutout: 305 x 305mm (12")
- Depth behind panel: 185mm (7.3")

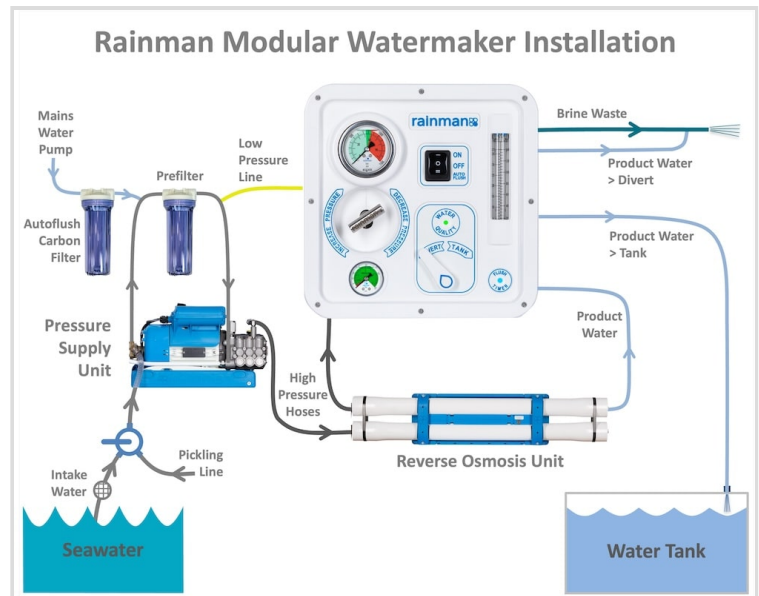
If using the exterior hatch, it is also recommended to install the enclosure box to protect fittings at the rear of the panel. Mounting are pre-drilled to attach the enclosure box to the hatch. The enclosure box fits through the hatch hole, so access to the rear of the mounting surface is not required.



Plumbing Connections

Six plumbing lines are required for the control panel installation. It is highly recommended to run all lines before connecting to the fittings at either end.

1. Black high pressure hose runs from the reverse osmosis (RO) unit.
2. Green brine waste hose runs overboard.
3. Yellow static pressure line tees into the prefilter outlet line, before the black high pressure pump.
4. Three product water hose lines.
 - From RO unit outlet.
 - To fresh water tank
 - To waste overboard



The other major line in an installation is the source water intake and related 3-way valve. This does not affect the control panel operation, so is discussed in the [general installation guide](#).

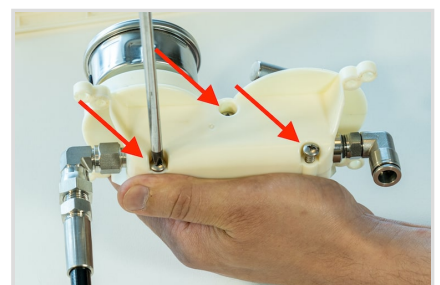
High Pressure Hose and Valve / Gauge Assembly

The valve/gauge assembly secures into the rear of the control panel via a clasp with two halves. This is one of the pieces that must be assembled by the installer.

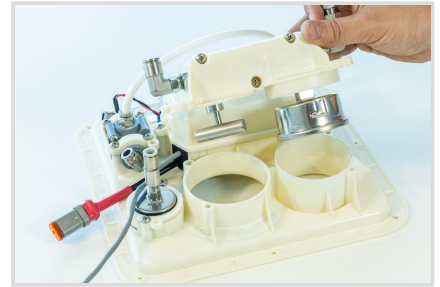
1. Thread the valve/gauge assembly through from the pressure supply unit (PSU) to the control panel. If you need to feed the HP hose through a small hole, see section below about the high pressure fittings.
2. Place the valve/gauge assembly in one side of the clasp.



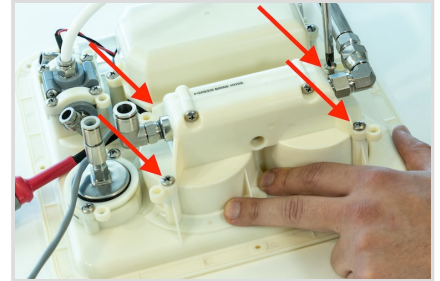
3. Place the other half of clasp and secure with three screws.



4. Insert assembly into rear of control panel, with gauge nearest the corner of the control panel.



5. Secure assembly into the panel with four screws.



High Pressure Hose Fittings

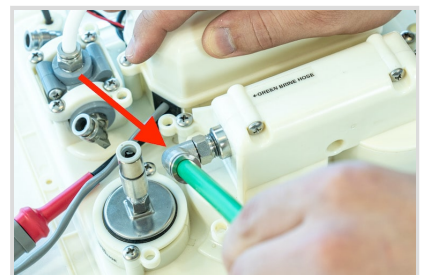
It is unlikely to require changes to high pressure fittings. Three exceptions exist.

1. The high pressure hose needs to be threaded through a narrow opening.
2. The angle of the high pressure hose exiting the enclosure box needs to be changed.
3. The control panel is being retrofitted to an existing installation or cased portable system.

✓ [Click here to toggle details of high pressure fitting adjustments](#)

Brine Waste Hose

Cut the 10mm green brine waste hose to length and attach it to the pushfit fitting.

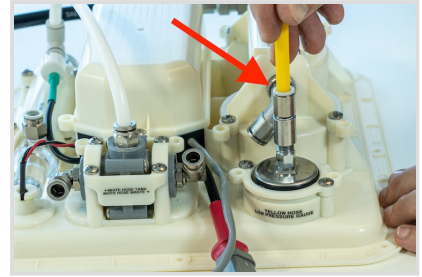


Low Pressure Gauge Hose

The yellow low pressure gauge hose connects at one end to the control panel gauge and the other end gets spliced into the prefilter outlet.

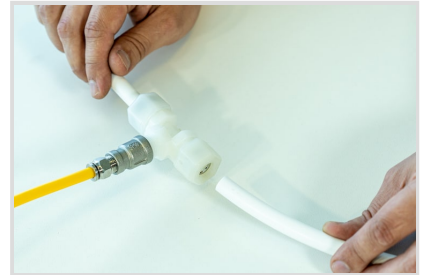
Control panel connection

Cut the 8mm yellow hose to length and attach it to the pushfit fitting.



Prefilter outlet connection

1. Cut the 1/2" white hose between the prefilter and the high pressure pump, closer towards the prefilter.
2. Attach the 8mm yellow line to the pushfit fitting on the tee.
3. Connect both sides of the tee to the cut white prefilter lines. To properly tighten the fittings, loosen nuts on both sides by two turns. Press the hose into the fitting past the initial friction of the o-ring so a solid seat is achieved. Then finger tighten both nuts. There is no need to overtighten this as the seal is created by the o-ring.



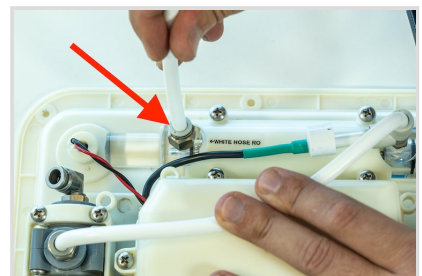
Product Water Hoses

Three product water hoses connect to the control panel. One is from the RO unit and two flow out from the control panel to either the tank or overboard. These are all 8mm white hoses. A white 8mm bridging hose that flows from the top of the flow metre to the product water three way valve is preinstalled.

RO hose

This is the product water input to the control panel that is supplied from the reverse osmosis (RO) unit.

Cut the 8mm white hose to length and attach it to the pushfit fitting at the inlet to the flow metre.



Tank hose

This hose routes water to the tank after the initial operation and water has been measured pure.

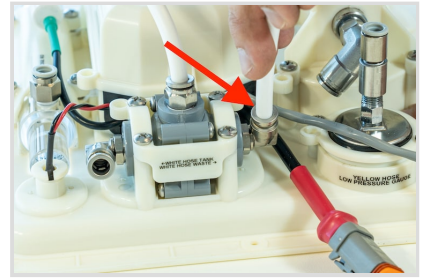
Cut the 8mm white hose to length and attach it to the pushfit fitting on the tank side of the three way valve outlet.



Divert hose

This is the hose to direct the product water out to waste during the initial watermaker operation, until the "old" water or pickle solution is washed out of the system and the water is pure.

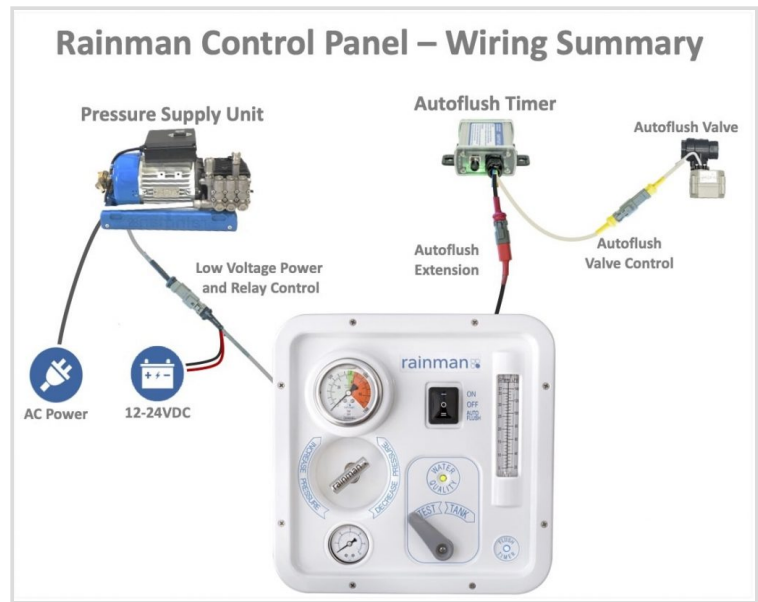
Cut the 8mm white hose to length and attach it to the pushfit fitting on the divert side of the three way valve outlet.



Electrical Connections

The control panel is powered by 12-24VDC, so there is no high voltage wiring, even for AC systems. Each control panel will have only two electrical connections. One is a 12-24VDC powered cable from the pressure supply unit (PSU) that triggers a relay to turn the PSU on. The other is if you have the optional Rainman autoflush system for your watermaker. This lead provides power to the flush timer and provides an extension for the timer LED indicator.

The power relay line will vary depending on the PSU configuration and whether it is a modular or portable system.

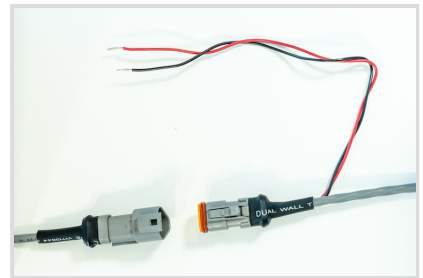


AC System

The control panel has a 5 metre (16') grey cable with black heat shrink and a male triangular Duetsch plug.

The red and black wires should be connected to a 12-24VDC power source. This provides power for the control panel. We recommend using a breaker/fuse rated between 2 and 5 amps.

The Duetsch plug is to be connected to the matching socket on the PSU. This allows the control panel switch to trigger the low voltage relay and power the PSU.



AC System - Portable Configuration or Retrofit

✓ [Click here to toggle details of retrofitting to existing modular or portable system](#)

DC Electric Systems

All DC Electric control panels will include a relay with a triangular socket on one end and red battery cables on the other. Connect the socket to the matching Duetsch plug on the control panel. Connect the red cables in line with one battery wire of the DC electric PSU.

The relay can be physically mounted anywhere that is convenient. On a modular configuration, we recommend that be in the motor cowling.

The red and black wires on the Duetsch plug should be connected to a 12-24VDC battery source. This provides power for the control panel. Using a DC power source that is not directly from a battery may add slight noise and interfere with accuracy of the sensitive salinity sensor.



Autoflush Option

The control panel is compatible with version 1.2 (or later) of the Rainman autoflush timer. Older versions of the autoflush will need to have the flush timer box replaced to be compatible with the control panel. Version 1.2 flush timer has an electrical cable with a square red Duetsch plug on the end. This lead allows the timer to be powered by the control panel and has wiring for an extension of the blue indicator LED.

Plug the male square red Duetsch plug from the flush timer box into the corresponding female side on the control panel.

