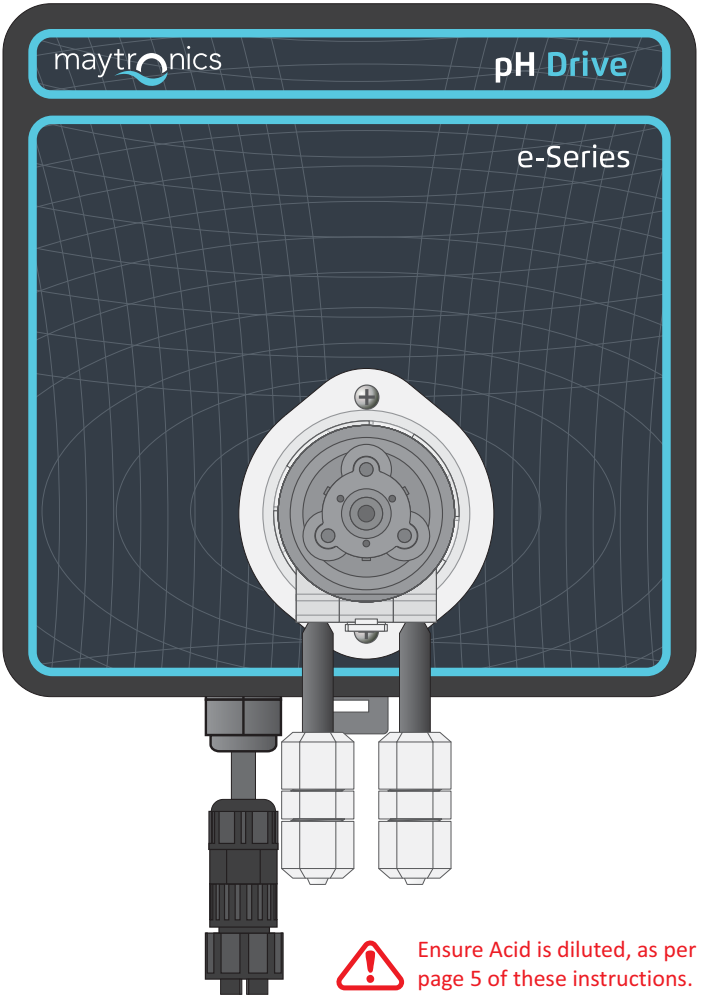
maytronics

pH Drive
e Series
Dosing Pump

Instruction Manual



Ensure Acid is diluted, as per page 5 of these instructions.

Contents

Thank you for purchasing the Maytronics pH Drive.

The **pH Drive** has been designed for maximum reliability and long service life. Please be sure to follow the instructions in this manual to get the best performance and life from your equipment.

The **pH Drive** is quite easy to operate, and this manual will explain each of the steps clearly. Troubleshooting and hints are also included to allow you to get the most from your unit. If you require assistance at any stage, please contact your Maytronics Authorised Dealer.

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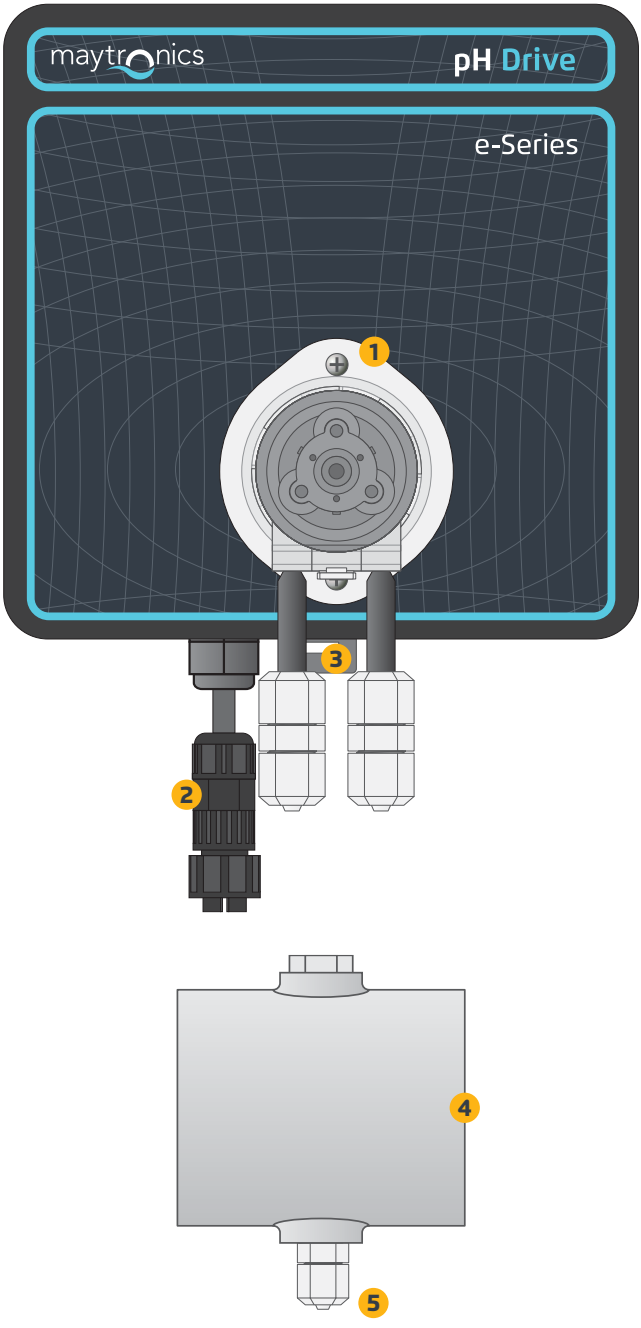
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Cautions & Warnings

- Please read the instructions fully and keep this manual on hand whenever operating or maintaining your **pH Drive**.
- **Always use diluted acid. Concentrated acid will cause damage to the squeeze tube and fittings, which are not covered by the warranty.**

  See page 5 for information on the safe handling and dilution of acid.
- DO NOT add acid into a drum that previously contained liquid chlorine until that drum has been rinsed three times with fresh water. Ensure that the label on the drum indicates that the drum contains acid.
- As for all pool equipment and chemicals, the **pH Drive** should be installed out of reach of children. Children must not have access to operating the **pH Drive** without adult supervision.
- Although the **pH Drive** has a weather resistant design, its service life will be considerably longer if it is not exposed to direct sunlight and rain. Wear and tear from direct exposure to the elements is not covered by the warranty.
- Do not allow grass or weeds to grow around the **pH Drive**, or the tubing and cables to prevent accidental damage from garden trimming equipment.
- Any damaged cables must be replaced immediately to prevent electrical shock.
- Unplug the **pH Drive** power lead before servicing or changing the dosing pump cassette.
- The **pH Drive** must be serviced only by an authorised service agent. Please contact your Maytronics Authorised Dealer for details. Despite being low-voltage powered, opening the unit may still cause an electric shock, which can cause injury or death.

Getting to know your pH Drive



1 DOSING PUMP

High quality, low maintenance peristaltic dosing pump.

2 POWER CONNECTOR

IP65 Waterproof connector plugs into Maytronics Ozone Swim systems that are equipped with the matching outlet.

3 MOUNTING CLIP

Pull the clip downwards when mounting the **pH Drive** to the mounting rail, or to unclip when removing.

4 INJECTION TEE

The Injection Tee holds the non-return injection valve.

5 NON-RETURN VALVE

High quality polypropylene non-return injection valve.

Acid Safety & Dilution

Maytronics recommends using pre-diluted acid purchased from your reputable pool shop or service agent.

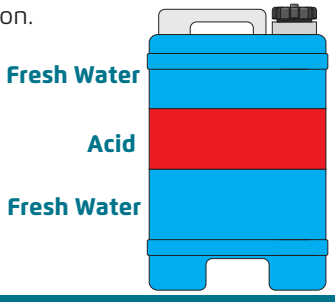
Alternatively, this section provides information on the safe handling and dilution of acid to use with your pH Drive. Please take the time to read and understand this section, to prevent injury or illness due to acid spillage.

Safety Information

- Dilute acid in a well ventilated area, preferably outdoors.
- Have a supply of fresh running water (e.g. a garden hose) readily to hand, in case of spillage.
- Wear protective clothing, safety goggles and gloves when diluting acid.
- Use only a Dangerous Goods certified drum. Your pool store can advise on this.
- If an acid spillage does occur, wash down well with copious amounts of fresh water immediately. **Seek Medical advice if any acid burn has occurred or if breathing is affected.**

Acid Dilution Procedure

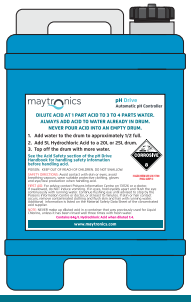
1. DO NOT add acid into a drum that previously contained liquid chlorine, until that drum has been thoroughly rinsed three times with fresh water.
2. Fill a 20 or 25 Litre dangerous goods certified drum to around half way with fresh water.
3. Add 5 Litres of concentrated Hydrochloric, Muriatic or Non-Fuming acid to the drum. Pour slowly to prevent spillage.
4. Top up the drum with more fresh water. Do not overfill.
5. Replace the drum lid and swish around to mix the acid well with the water. Keep this drum lid fitted until the diluted acid drum is in position.



Additional Information

- Always use acid to at least 3 parts water to 1 part acid. Damage from undiluted or insufficiently diluted acid is not covered by the warranty.
- Always add acid to water. Never add water to acid.
- The acid drum must be below the level of the non-return valve in the pH Tee when installed. This prevents acid syphoning into the pipeline.
- Fit the Acid Drum label supplied with your **pH Drive** to your drum of diluted acid. This will identify its contents and shows the dilution instructions.

Fit Acid Drum Label

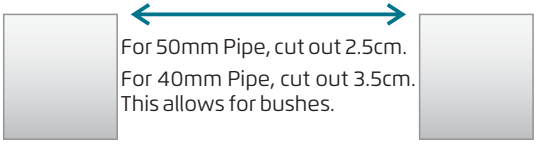


Injection Tee Installation

Install the Injection Tee first, so that the glue can set while you are installing the pH Drive unit itself.

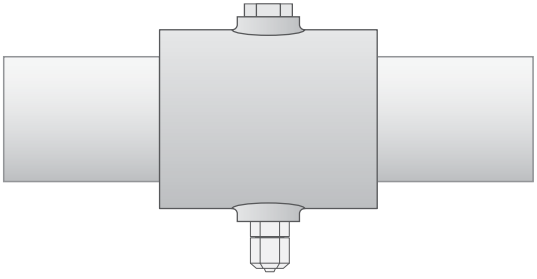
Pre-Installation Checklist

- You will require a saw suitable for cutting PVC pipe, PVC Primer and PVC Glue.
- Install the Injection Tee after the filter, before any sanitation equipment, but after heating equipment.
- The Injection Tee should be installed before an Ozone venturi, Salt Chlorinator cell, Electro Oxidizing Cell or Liquid Chlorine injection point.
- For installations into 40mm Pipe, a pair of 50x40 mm reduction bushes have been supplied. Glue these into the Injection Tee before installing the Tee.



CUT PIPE

The Injection Tee must be fitted to the return to pool pipe, where the water is clean and the pressure is low.



GLUE IN INJECTION TEE

- Use PVC primer on all surfaces to be glued.
- Use suitable PVC pressure glue for joints.
- The Injection Tee can be fitted in any orientation.

HINT: When the Non-Return valve is mounted facing downwards, the PVC supply tube will not bend over, and therefore not likely to form a flow-reducing kink over time.

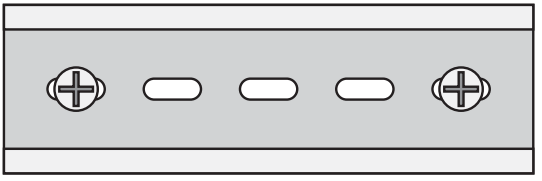
pH Drive Installation

Pre-Installation Checklist

- The **pH Drive** unit MUST be mounted vertically, with the cables at the bottom, in order to be weather resistant. Any water ingress due to the unit being incorrectly mounted is not covered by warranty.
- Check the mounting bracket of the Ozone Swim system with which your **pH Drive** is being installed. If it has an extension for mounting the **pH Drive**, then you do not need to install the mounting rail supplied with the **pH Drive**.
- Choose a position that will allow the dosing pump tubes to reach the chemical drum and the Injection Tee.
- Ensure that the **pH Drive** is protected from direct sunlight and weather. Although the unit has a weather resistant design, damage from long term exposure is not covered by the warranty.
- Do not connect the **pH Drive** power lead to the Ozone Swim outlet until all installation steps are complete.

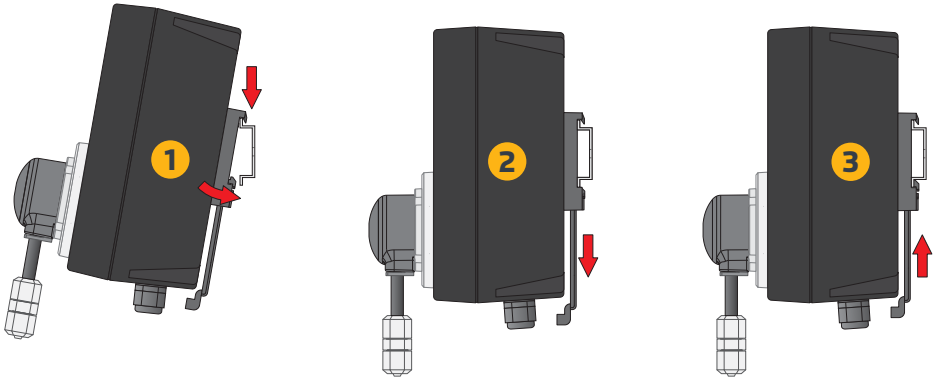
INSTALL MOUNTING PLATE

Install the mounting plate levelly in the desired location. Screws and wall plugs are provided. This step is not required if your Ozone Swim system has an extended bracket for mounting the **pH Drive**.



MOUNT pH DRIVE

1. Hook the **pH Drive** mounting clip onto the top rail of the mounting plate.
2. Pull the mounting clip down pull pushing the **pH Drive** against the bottom rail of the mounting plate.
3. Allow the mounting clip to lock in place behind the bottom rail.



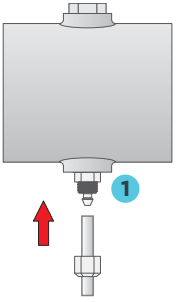
Tube Installation

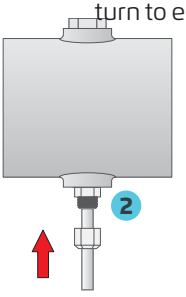
INJECTION TEE TUBE INSTALLATION

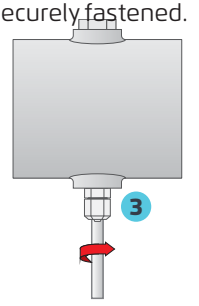
❶ Remove the nut from the non return valve on the Tee piece. Slip the Nut over the tube.

❷ Push the tube firmly onto the tube fitting.

❸ Tighten the nut over the tube. Tighten firmly with fingers. If the tubing can still be easily pulled out, use a tool to tighten an extra 1/2 turn to ensure that it is securely fastened.

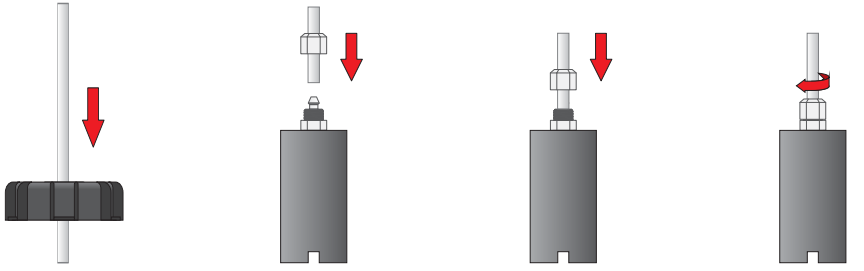






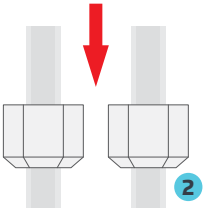
DRUM WEIGHT TUBE INSTALLATION

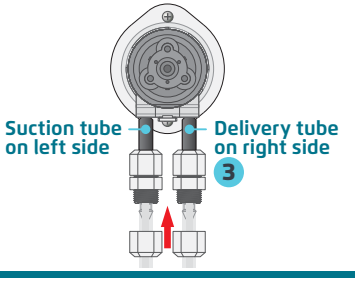
1. Push the end of the drum weight tube through the drum lid that was supplied with the pH Drive.
2. Fit the tube onto the drum weight tube fitting in the same way as described in the Injection Tee Tube Installation section above and illustration below.

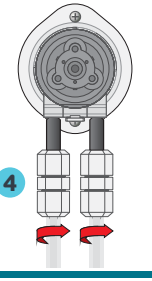


DOSING PUMP TUBE INSTALLATION

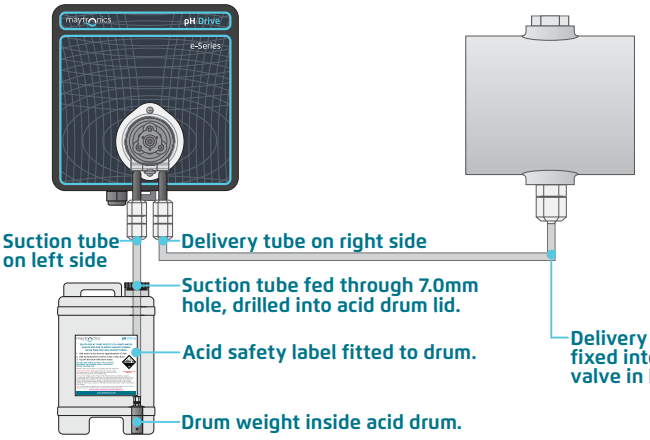
1. Cut Suction and Supply tubes to required length from the single length of clear PVC tube suppled with the pH Drive.
2. Fit compression nuts over the two tubes.
3. Push Suction and Supply tubes onto dosing pump fittings.
4. Tighten the nut over the tube. Tighten firmly with fingers.







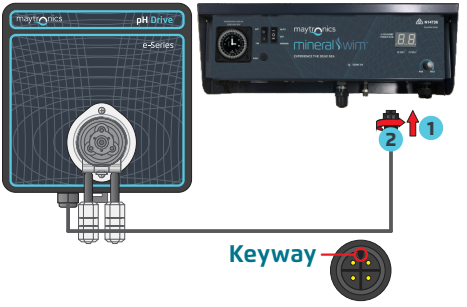
Completed Installation



DO NOT fit suction tube directly into neat acid container. See page 6 for Acid Dilution information.



Connect Power Lead



1. Locate the **pH Drive** power socket on your Maytronics Ozone Swim system. Remove the dust cover. The keyway of the power socket is towards the front of the unit. Align the **pH Drive** plug with the keyway of the socket and push in.
2. Screw the retaining nut of the plug clockwise until finger tight to lock the plug into place to seal.

All installation steps are now complete. It is recommended that you run the Dosing Pump for at least 2 minutes with fresh water to test the system for leaks before using the pH Drive with acid.

Troubleshooting

Symptom	Possible Causes and Remedies
Unit is not adding acid when dosing pump is operating	• Check that the **pH Drive** diluted acid drum is not empty. • Check that all suction and output tubes are fitted correctly, with no leakage. Tighten Acid Pump fittings further or replace fittings. • Leaking or worn squeeze tube and/or rollers. Replace dosing pump cassette as needed (see page 10). WARNING : IF ANY ACID HAS LEAKED OUT OF TUBES, WASH DOWN THE AREA WITH FRESH WATER IMMEDIATELY. TAKE THE LID OFF THE PUMP, REMOVE SQUEEZE TUBE AND WASH OUT WITH FRESH WATER IF SQUEEZE TUBE WAS LEAKING.

IF YOU NEED TO RETURN YOUR **pH DRIVE** FOR SERVICE OR REPAIRS AT ANY TIME, PLEASE RUN THE DOSING PUMP FOR AT LEAST 2 MINUTES WITH FRESH WATER TO FLUSH ALL ACID OUT OF THE SYSTEM BEFORE SENDING BACK. THIS WILL STOP ACID LEAKING FROM THE PUMP DURING TRANSPORT (WHICH WOULD DAMAGE YOUR UNIT OR THE PACKAGING, VOIDING WARRANTY), AND IS ALSO A SAFETY HAZARD FOR OUR TECHNICIANS.

pH Drive Settings

The Acid Dose Rate of the **pH Drive** is controlled by the **Ozone Swim** unit. The **Ozone Swim** will switch the **pH Drive**'s pump on for a short Run Time every two hours according to the Dial Setting on the **Ozone Swim**. To set the Dose Rate:

1. Press the MIN/MAX Control. The Chlorine Production display will change to setting the Dose Rate, showing the current setting, OF (Off) or d1 to d9.
2. Rotate the MIN/MAX control to select any setting from OF (Off) or 1 to 9 for your pool size, as per the Dose Rate table below.
3. Press the MIN/MAX Control to save the new setting, or wait 10 seconds for the unit to save and return to Chlorine Production setting.

The recommended settings should be considered as a starting guide. The pH of your pool should be checked regularly.

If the pool pH is too low, reduce the Dose Rate setting.

If the pool pH test is too high, increase the Dose Rate setting.

The Dose Rate table assumes acid to water dilution of 1 to 3 parts, as per page 5.

Priming Function

To test the operation of the **pH Drive**'s dosing pump, or to prime the tubes with diluted acid after installation, set the Dose Rate past 9 to Pr. This will run the dosing pump for 2 minutes.

The display will show Pr while priming.

To cancel Priming before the 2 minutes has elapsed, rotate the MIN/MAX Control to a new setting from 1 to 9 (or OF to switch acid dosing off). Press the MIN/MAX Control to save the new setting.

NOTE: When Priming times out after the 2 minutes, and no new setting has been selected, the **Ozone Swim** will set the Dose Rate to setting 5.

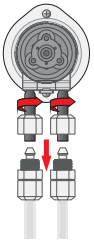


Dial Setting	Run Time (secs/2 Hrs)	Dose Rate (mL/2 Hrs)	mL/Day (8 Hrs)	Neat Acid per Day	Neat Acid per Week	Pool Size (Litres)
OF	This setting switches the acid dosing OFF.					—
1	5	10	40	10	70	20,000
2	10	20	80	20	140	30,000
3	15	30	120	30	210	40,000
4	20	40	160	40	280	50,000
5	25	50	200	50	350	60,000
6	30	60	240	60	420	70,000
7	40	80	320	80	560	85,000
8	55	110	440	110	770	100,000
9	70	140	560	140	980	120,000

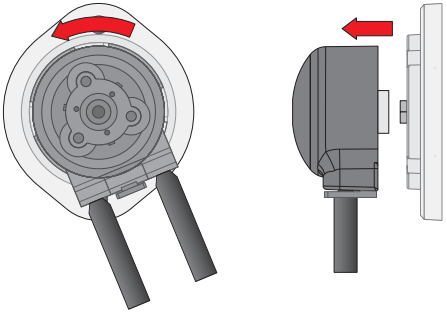
Changing Pump Cassette

The **pH Drive**'s dosing pump squeeze tube requires replacement approximately every 2 years. The squeeze tube is contained in a complete replaceable cassette, so replacing the squeeze tube is a simple matter of replacing the cassette.

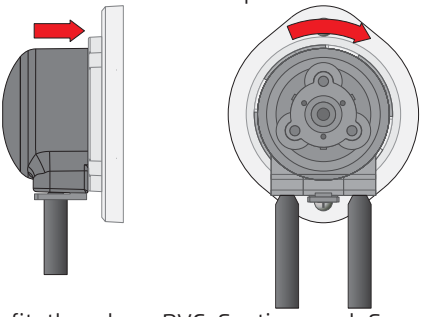
- Operate the pH Drive pump for at least 2 minutes pump fresh water through the system. This will ensure that all acid has been flushed out and will make the unit safe to handle.
- Disconnect the **pH Drive** power cable, and ensure that the pool pump is also off.
- Removing the clear PVC Suction and Supply tubes is a reversal of the tube fitting instructions on Page 9.



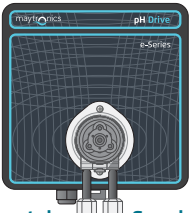
- Turn the pump cassette anti-clockwise around 1/8 of a turn. When you feel it stop, pull the cassette off the base.



- Push the replacement dosing pump cassette onto the pump base. Rotate it a few degrees either way to make the axle in the pump base align with the hole in the back of the cassette. Once it has engaged, push the cassette onto the base at the angle shown at the top, right of this page.
- Turn the cassette clockwise around 1/8 of a turn until it clicks into place.



- Refit the clear PVC Suction and Supply tubes. Suction is on the left and Supply is on the right. Fasten in place with ratchet clamps, as per page 8.



Suction tube on left side (From Drum)

Supply tube on right side (To pH Tee)

- Reconnect the **pH Drive** power cable and return the pool pump to normal operation.

Warranty

Maytronics Australia Pty Ltd ("Maytronics") guarantees the **pH Drive** Controller (including inbuilt peristaltic pump) to be free from defects in material and workmanship when subjected to normal use and service. This is a replacement guarantee, whereby the faulty device is returned to Maytronics, or Authorised Dealer, freight prepaid within two years from the date of purchase. The faulty device will be repaired and returned, free of charge.

The squeeze tube inside the peristaltic pump, valves and fittings are not covered by this guarantee.

Acid must be diluted as instructed. Wear and damage caused by the use of undiluted acid is not covered by this warranty.

There are no expressed or implied warranties which extend beyond the face hereof, and Maytronics is not liable for any incidental or consequential damages arising from the use or misuse of this product. This limited warranty does not apply to any injury, loss, damage, defect or malfunction of the product or failure to function resulting from any failure to operate the product in accordance with the directions contained in the operating instructions, failure to function resulting from any accidents, acts of God, tampering, abuse, acts, omissions, or negligence by anyone other than Maytronics, including but not limited to such damage or injuries resulting from improper installation. Damage from excessive concentration of one or more chemicals is not covered by this warranty.

This limited warranty shall apply only to the Customer as an original purchaser. It is the customer's responsibility to follow safety regulations and laws regarding electrical installation. Shipping damage is not covered by this warranty.

No claims will be recognised without the proof of purchase. This warranty becomes invalid if unauthorised person or persons attempt modifications or repairs.

Any dispute between customer and Maytronics must be conducted in Queensland, Australia.

Contact Us

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