

This quick start guide is designed to get you started using your new VorTech Propeller Pump. This is not intended to provide adequate information on the advanced features and modes of the pump.

For these features, please refer to our full instruction manual at www.ecotechmarine.com.

Before You Start

Preparation

Once you have chosen the location where you wish to install your VorTech pump, clean away any algae, using an aquarium scraper. Use caution when handling an aquarium scraper.

Notes on placement

Take care to place the VorTech in a suitable location where corals are not directly in the line of flow. Place the pump sufficiently high enough above a fine sand bed so that sand is not blown around by the output or undertow created by the VorTech.

Protect the pump from water

The VorTech's motor housing and driver are NOT WATERPROOF. Any water allowed into these components can damage them enough to require replacement. This kind of damage is NOT covered in the VorTech's warranty. Protect these components from splashes, drips or other contact with water.

Break-in

The VorTech pump is engineered to adapt to its aqueous environment. During the first week of use, your pump may run noisy or stall. The noise should quiet dramatically after 24 hours of use and any stall conditions can safely be reset by manually cycling the power to your pump.

Warnings

- The VorTech utilizes very powerful magnets and can cause severe personal injury.
- NEVER connect the two halves of this device without a proper spacer in-between.
- NEVER place either half of this device near magnetically attractive surfaces or sensitive electronics.
- The motor and driver can become HOT. Be cautious around these surfaces.
- Never run the pump dry as the heat buildup may cause damage to its components.
- Do Not Drop Your VorTech Pump - The VorTech is highly engineered to be as small and powerful as possible. As a result the VorTech is fragile. All precautions must be taken to avoid dropping the wet-side and dry-side. After a fall onto the floor, both the wet side and dry side can be permanently damaged. Evidence of this include cracking of the advanced ceramic axle within the wet side (MP10 versions only), or the dry side running loudly. The VorTech pump SHOULD NEVER BE ALLOWED TO FALL to the floor. Damage from dropping will not be covered under warranty.

Maintenance

Cleaning your VorTech

The VorTech may need thorough cleaning of the components periodically to keep it running optimally. This can be accomplished by disassembling the wet side of the pump and gently brushing the components with a soft brush under running water. Soaking these parts in a mild acid solution such as vinegar may be necessary if there is debris buildup. Do not use strong acids as this may damage the components.

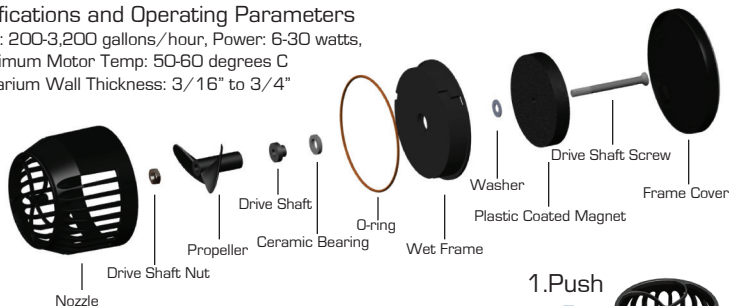
Your VorTech MP40w ES

Specifications and Operating Parameters

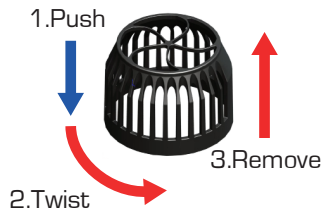
Flow: 200-3,200 gallons/hour, Power: 6-30 watts,

Maximum Motor Temp: 50-60 degrees C

Aquarium Wall Thickness: 3/16" to 3/4"



To remove the nozzle from the wet-frame, remove the entire wet-half of the pump from the aquarium and place it on a non-metallic surface. Gently but firmly press down on the nozzle with your palm and twist counter-clockwise. The nozzle should become free of the wet-frame. It may then be cleaned of any obstructions.



Adjust the Pin Spacer (MP40w ES Only)

The VorTech pump is designed to operate with a constant gap between both halves of the device. The pin spacer is used to ensure the proper spacing for various aquarium wall thicknesses.

- Make sure to measure your aquarium's glass thickness using a ruler or contact the aquarium manufacturer in order to determine the exact thickness.
- To adjust for the proper aquarium thickness, pull the rubber pin spacer from the motor housing. Then align the VorTech's power cord emerging from the motor with your aquarium's wall thickness to achieve the proper offset from your aquarium.

Note: 3/4" thick aquariums do not use the pin spacer at all.

IMPORTANT: When adjusting the pin spacer, be sure not to bend the rubber pins as they are inserted into the holes within the heat sink as this may permanently damage your VorTech. Bent pins **WILL NOT** be covered under warranty.



Attach the MP40w ES

Attach the motor assembly

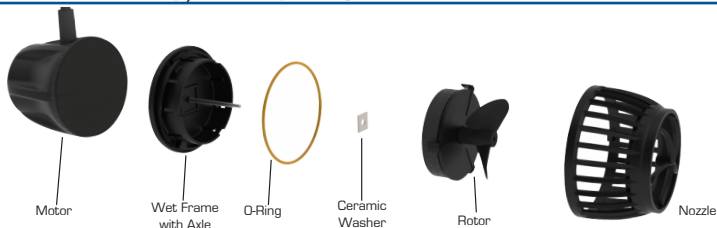
- Apply the rubber gasket at the chosen location for the VorTech pump, on the outside of your aquarium.
- Apply the cord mounting tab approximately 2" above this location. Make sure the glass is clean and free of any grease or dirt prior to applying this tab.
- Place the VorTech motor, with or without the pin spacer attached, upon the black gasket, and secure the cord to the mounting tab using one of the provided wire-ties.
- The cord must be positioned pointing upwards so that if the VorTech were to fall off the aquarium, it does not swing and damage your aquarium or pump. When operating, make sure the gasket is properly recessed within the pin spacer.



Attach the wetside assembly

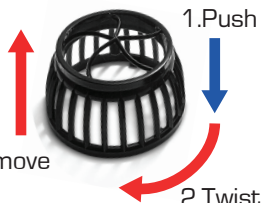
- Place the wet side into the aquarium, making sure to allow ALL air to escape from the propeller housing.
- Carefully connect both halves of the pump together and visually align both halves of the pump.

Your VorTech MP10/MP10w ES



Specifications and Operating Parameters

Flow: 200-1575 gallons/hour, Power: 6-18 watts,
Aquarium Wall Thickness: 1/8" to 3/8"



To remove the nozzle from the wet frame, remove the entire wet half of the pump from the aquarium and place it on a non-metallic surface. Gently but firmly press down on the nozzle with your palm and TWIST CLOCKWISE. The nozzle should become free of the wet frame. It may then be cleaned of any obstructions. Be careful to minimize force when twisting the wet frame.

Attach the MP10/MP10w ES

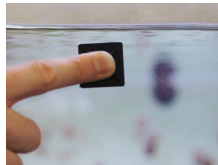
Attach the motor assembly

- Apply the cord mounting tab approximately 2" above the desired location of your VorTech pump. Make sure the glass is clean and free of any grease or dirt prior to applying this tab.
- Place the VorTech motor upon the tank wall in your pre-determined location, and secure the cord to the mounting tab using one of the provided wire-ties.
- The cord must be positioned pointing upwards so that if the VorTech were to fall off the aquarium, it does not swing and damage your aquarium or your pump.

Attach the wet side assembly

- Place the wet side into the aquarium, making sure to allow ALL air to escape from the propeller housing.
- Carefully connect both halves of the pump together and visually align both halves of the pump.

IMPORTANT: For glass thicknesses of 1/8" and 3/16" you must use the included rubber spacer in between the motor and the glass. There is no need to use this spacer on glass thicknesses of 1/4" or 3/8". Failure to use the included rubber spacer on glass thicknesses of 1/8" and 3/16" can damage your pump. Damage of this sort will not be covered under warranty.



Align Your Vortech Pump (All Versions)



- Turn the VorTech pump to constant speed mode (indicated by a green LED) by pressing the mode button which is located on the driver, then set to the maximum speed by using the speed control knob on the driver.
- Plug the power supply into the driver. If vibration or excessive noise is detected, carefully adjust the propeller housing by moving it VERY slightly left, right, up or down, until the noise/vibration is eliminated or minimized as much as possible.
- After alignment has been ensured, adjust to the mode of your choice and turn the speed control knob to achieve the desired flow rate within your aquarium.



IMPORTANT: If the VorTech is not properly aligned, a strong vibration will be heard. If the alignment is not corrected, this can cause increased electrical consumption, excessive wear on the components, excessive heat and excessive noise.

Programming Multiple Pumps

NOTE: When using a single VorTech pump, no wireless configuration is necessary

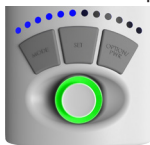
A pump group consists of one master pump and at least one slave pump. There can only be one master pump per group which can include an unlimited number of slave pumps. In order to set a pump as a master or a slave, the aquarist must first enter the VorTech Pump's configuration mode. Within configuration mode one can do one of three different things:

- Reset the pump's memory back to independent mode
- Set the pump as a master
- Set the pump as a slave

Masters and slaves must be set as groups and each group must be programmed separately. You must perform the following steps in the order listed to correctly program your EcoSMART driver. You may setup a maximum of seven separate groups, each having a unique master pump.

EcoSMART Pump Positioning

Master Pump



*Shown here in Constant Speed mode.

Can Operate in Constant Speed, Random, EcoSMART, Short Pulse and Long Pulse Modes.

Slave Pumps (Orange, White, Turquoise)



White

Constant, Random, Short & Long Pulse modes: **Sync**

EcoSMART mode: **Same side as master**



Orange

Random, Short & Long Pulse modes: **Anti-Sync**

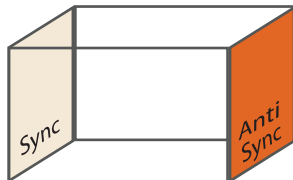
In EcoSMART mode: **Opposite side as master**



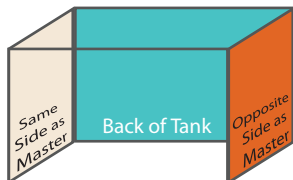
Turquoise (EcoSMART Only)

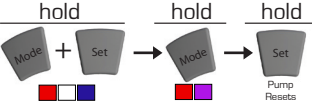
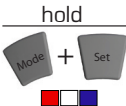



EcoSMART Mode: **Back of the Tank**

Sync/Anti-Sync Pump Setup



EcoSMART Setup



<p>Step 1: Clear Driver Memory</p> <p>The internal memory of each unit must be cleared before setting up a group.</p>	
<p>Step 2: Enter Configuration Mode</p> <p>All pumps in a group must then be set into configuration mode before the assignment of slave or master status. This configuration must be performed with the drivers in close proximity to ensure proper assignment. The drivers will blink red, white and blue in this mode.</p>	
<p>Step 3: Assign the Master</p> <p>Set the master pump by pressing the mode button. The LED will then blink blue and green.</p>	
<p>Step 4: Assign the Slaves</p> <p>Set all the slave pumps by pressing the set button on each driver. The LED will then blink blue and yellow.</p> <p>NOTE: If any slave blinks blue and red, it was too far away from the master driver and could not communicate properly</p>	
<p>Step 5: Reset the Master</p> <p>Hold the mode button on the master pump after completing ALL the master/slave assignments.</p>	
<p>Step 6: Begin Normal Operation</p> <p>Use the controls on the Master Pump to operate all pumps in the group. Slave pumps can only be set to sync or anti-sync modes, or the three options in EcoSMART modes.</p>	
<p>Step 7: Program Subsequent Groups</p> <p>Now that the first group is programmed, repeat steps 1-5 on the next group of pumps, if so desired.</p>	


NOTE: The subsequent pump groups must be programmed near the original group. For example, if running two different groups in separate areas of your house, the second group must be programmed within 5 feet of the first group to ensure proper communication.

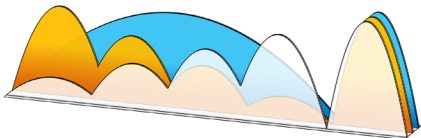
General Operational Modes

Constant Speed Mode


When a pump is in Constant Speed Mode, the dial is used to set the operational speed. If this pump is a master, the associated slave pumps will replicate the master whether in sync or anti-sync mode.

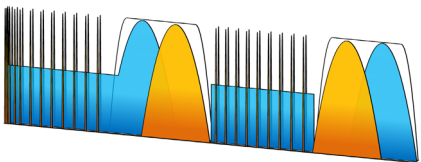
EcoSMART TSM (Tidal Swell Mode)

In this EcoSMART mode water is circulated in  to create a harmonic balance in your aquarium reminiscent of the changing flow conditions that would be found in nature. Over the course of several hours, the flow pattern will go from very chaotic with an emphasis on left to right flow direction to an emphasis on right to left flow direction, all the while experiencing calm period in between and followed by a great surge of flow at the very end of the cycle. Adjusting the dial changes the maximum speed achieved at any time during this mode. Slave pumps should be positioned opposite the master and on the back of the tank to take full advantage of the EcoSMART modes.




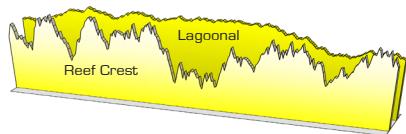
EcoSMART NTM (Nutrient Transport Mode)

In this EcoSMART mode, water is circulated in  a two phase program consisting of wave motion to stir up debris and surging motion to move the debris into your overflow where it can be skimmed out. This effect promotes maximum health and nutrient export, as well as increased growth for sensitive corals such as SPS. Adjusting the dial changes the maximum speed achieved at any time during this mode. Slave pumps should be positioned opposite the master and on the back of the tank to take full advantage of the EcoSMART modes.



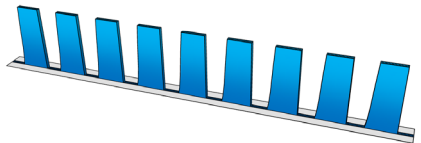
Random Mode

In random mode you can toggle between  two different modes, Reef-Crest and Lagoonal. When a pump is in Lagoonal Random Mode, the dial is used to set the maximum operational speed, and the driver will automatically randomize the pumps output to simulate either a high (Reef-Crest) or low (Lagoonal) energy reef environment. If this pump is a master, the associated slave pumps will replicate the master in sync or anti-sync modes.



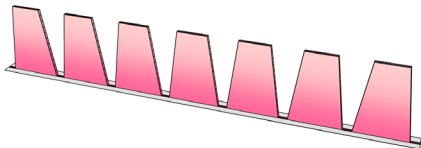
Short Pulse Mode

When a pump is first entered into Pulse Mode, you must set the maximum pump speed by adjusting the dial. When the desired speed is achieved, press the Set button to lock this speed. The LED will now begin to blink. This blinking LED represents the pulsing frequency between 0.2 seconds and two seconds. Now adjust the dial to make the pump pulse faster or slower. To save this wave, press and hold Set until the LED flashes and then breathes blue, indicating that the wave is saved. This saved wave will also be input into EcoSMART NTM.



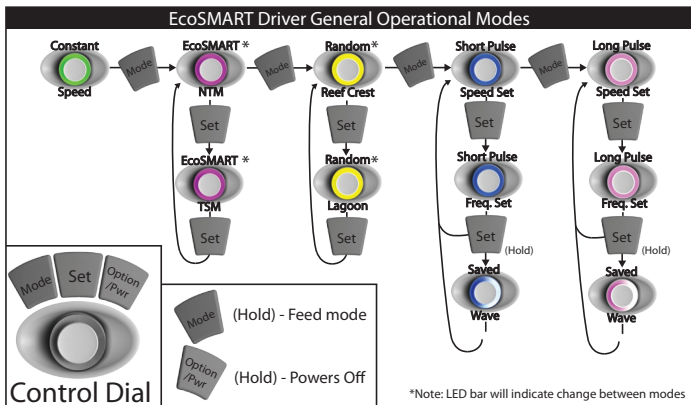
Long Pulse Mode

When the pump is entered into Long Pulse Mode, the maximum speed of the pump is set by adjusting the dial. When the desired speed is achieved, press the Set button to lock this speed. The LED will now begin to blink, the blinking LED represents the pulsing frequency between 10 seconds and one minute. Now adjust the dial to make the frequency increase or decrease. To save this wave, press and hold the Set button until the LED flashes and then breathes pink, indicating that the wave is saved.



Feed Mode

To enter Feed Mode, press and hold the mode button for three seconds. The LED will now blink white indicating that the pumps are in feed mode. Regardless of your system's master/slave pump configuration, all pumps will enter feed mode when that mode is selected on any one pump. The pumps will spin very slowly for ten minutes and then resume their prior operating conditions.



Battery Backup Mode

When a battery backup accessory is added to the VorTech pump, the pump will automatically switch to Battery Backup mode during a power outage. The pumps will run at the minimum speed to maximize their run time during this critical period.

For more description about pump modes, read the full manual at www.ecotechmarine.com

Wave Motion Warning

The generation of waves within your aquarium places additional stress on the aquarium glass and joints. Not all aquarium tanks are designed to withstand this stress, and failure of the glass and/or joints could result. You are encouraged, before generating waves, to consult with your aquarium tank manufacturer to determine if the tank construction is adequate to withstand the additional stress generated by the wave motion. You are also encouraged to assure that your aquarium stand or furniture is adequately stable to withstand the additional stress resulting from wave generation.

EcoTech Marine DISCLAIMS AND WILL NOT BE LIABLE FOR, damage to aquarium tanks or their surroundings, water damage, or any other consequential damages resulting from wave generation. MAKE WAVES AT YOUR OWN RISK.

Error Codes



Over Temperature Condition - In the event of a motor overheating, the pump will automatically shut down for a period to allow for cooling. Once the motor has cooled, the driver will automatically restart and resume normal operation. You may experience an overheating error from a misalignment.



Stall Condition - In the event of a motor stall, the pump may have stopped for a few possible reasons. You should first check that there is not something blocking the propeller from spinning.

For other error codes and troubleshooting, read the full manual at www.ecotechmarine.com

Warranty

EcoTech Marine warrants to the original purchaser only that the VorTech propeller pump will be free from defects in material and workmanship under normal use for a period of (1) year from the date of original purchase if the product is installed and used properly and consistent with the User Manual. The VorTech propeller pump consists of a wet side operating unit that will be fully submerged in the aquarium and a motor and driver that must not be exposed to water at any time. EcoTech Marine's warranty shall not apply: (i) to any damaged VorTech propeller pump that has been subjected to accident, misuse, neglect, alteration, acts of God, improper handling, improper transport, improper storage, improper use or application, improper installation, improper testing or unauthorized repair, (ii) to any VorTech propeller pump where the motor and/or driver have been exposed to water or (iii) to cosmetic problems or defects that result from normal wear and tear under ordinary use, and do not affect the performance or use of the product. EcoTech Marine's warranty applies only to a product that is manufactured by or for EcoTech Marine and identified by the EcoTech Marine trademark, trade name or product identification logo affixed to the product. If you notice a problem with your VorTech propeller pump, do not attempt to repair it yourself. Any attempts at self repair shall void this limited warranty. EcoTech Marine shall not be held liable for damage to any aquarium, aquarium life forms, or other personal objects due to improper use of the device. If the product develops a covered defect within the one-year period, EcoTech Marine will, at its option, either repair or replace the VorTech propeller pump without charge, provided that the VorTech propeller pump is returned during the warranty period.

The VorTech pump operates at high temperatures and produces forces within the aquarium that can cause extreme loading and fatigue. Due to this, caution must be used when installing this device on any aquarium. Because the construction of aquariums varies from each manufacturer and the operating conditions of each individual aquarist is different, there is a possibility that the VorTech propeller pump may cause damage to your aquarium. Please contact your aquarium manufacturer to determine if your aquarium is properly built and recommended for VorTech pumps. If you notice any damage to your aquarium, including but not limited to crazing, cracking, bending, scratching, etc, immediately discontinue the use of the VorTech propeller pump. EcoTech Marine will not be liable for any damage caused to your aquarium resulting from the use of the VorTech propeller pump.

To obtain warranty service or technical support, please contact EcoTech Marine's customer service department at (610) 954-8480. You will receive instructions on how to return the product for repair or replacement. To take advantage of this Limited Warranty you will be required to supply an original point of purchase receipt.

ECOTECH MARINE DISCLAIMS ALL OTHER WARRANTIES WHETHER ORAL OR WRITTEN, EXPRESS OR IMPLIED, TO THE FULLEST EXTENT ALLOWED BY APPLICABLE LAW. NO IMPLIED WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE OR MERCHANTABILITY SHALL APPLY EXCEPT AS REQUIRED BY APPLICABLE LAW. ECOTECH MARINE DOES NOT AUTHORIZE ANY PERSON OR BUSINESS ENTITY, INCLUDING ITS AUTHORIZED DEALERS, TO CREATE FOR IT ANY OBLIGATIONS, LIABILITIES, OR OTHER WARRANTIES IN CONNECTION WITH THIS PRODUCT.

ALL WARRANTIES ARE VOID IF THERE IS DAMAGE TO THE VORTECH PROPELLER PUMP THAT IS NOT A RESULT OF A DEFECT IN THE MATERIALS OR WORKMANSHIP. THE SOLE AND EXCLUSIVE REMEDY FOR ALL CLAIMS THAT YOU MAY HAVE ARISING OUT OF OR IN CONNECTION WITH YOUR USE OF THIS PRODUCT, WHETHER MADE OR SUFFERED BY YOU OR ANOTHER PERSON AND WHETHER BASED IN CONTRACT OR TORT, SHALL BE REPAIR OR REPLACEMENT OF THE PRODUCT. IN NO EVENT WILL ECOTECH MARINE BE LIABLE TO YOU OR ANY OTHER PARTY FOR ANY DIRECT, INDIRECT, GENERAL, SPECIAL, INCIDENTAL, CONSEQUENTIAL, EXEMPLARY OR OTHER DAMAGES ARISING OUT OF THE USE OR INABILITY OF TO USE THE PRODUCT (INCLUDING, WITHOUT LIMITATION, DAMAGES FOR LOSS OF BUSINESS PROFITS, BUSINESS INTERRUPTION, LOSS OF INFORMATION OR ANY OTHER PECUNIARY LOSS, DAMAGE TO YOUR AQUARIUM OR ANY AQUARIUM INHABITANTS), OR FROM ANY BREACH OF WARRANTY, EVEN IF ECOTECH MARINE HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES. IN NO CASE SHALL ECOTECH MARINE'S LIABILITY EXCEED THE AMOUNT YOU PAID FOR THE PRODUCT. IF YOU DISAGREE WITH THESE TERMS AND CONDITIONS DO NOT USE THE VORTECH PROPELLER PUMP.

Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above exclusions may not apply to you. EcoTech Marine's warranty is governed by the laws of the Commonwealth of Pennsylvania, excluding its conflict of laws principles and excluding the provisions of the United Nations Convention on Contracts for the International Sale of Goods. This warranty gives you specific legal rights, and you may also have other rights, which vary from state to state.

FCC and CE Warnings:

- This product carries an ingress protection rating of IPX0 and must not be immersed in water.
- Danger: To avoid possible electrical shock, special care should be taken since water is employed in the use of aquarium equipment. For each of the following situations, do not attempt repairs yourself; return the appliance to the manufacturer for service or discard the appliance.
- DO NOT immerse in water. If the appliance falls into the water, DON'T reach for it! First unplug it and then retrieve it. If electrical components of the appliance get wet, unplug the appliance immediately. (Non-immersible equipment only)
- Carefully examine the appliance after installation. It should not be plugged in if there is water on parts not intended to be wet.
- Do not operate any appliance if it has a damaged cord or plug, or if it is malfunctioning or if it is dropped or damaged in any manner. The power cord of this appliance cannot be replaced: If the cord is damaged, the appliance should be discarded. Never cut the cord.
- To avoid the possibility of the appliance plug or receptacle getting wet, position aquarium stand and tank to one side of a wall mounted receptacle to prevent water from dripping onto the receptacle or plug. The "drip-loop" should be arranged by the user for each cord connecting an aquarium appliance to a receptacle. A "drip-loop" is that part of the cord below the level of the receptacle, or the connector if an extension cord is used, to prevent water traveling along the cord and coming in contact with the receptacle. If the plug or receptacle does get wet, DON'T unplug the cord. Disconnect the fuse or circuit breaker that supplies power to the appliance, then unplug and examine for presence of water in the receptacle.
- Close supervision is necessary when an appliance is used by or near children
- To avoid injury, do not contact moving parts or hot parts such as heaters, reflectors, lamp bulbs, and the like.
- Always unplug an appliance from an outlet and battery backup when not in use, before putting on or taking off parts, and before cleaning.
- Never yank cord to pull plug from outlet. Grasp the plug and pull to disconnect.
- Do not use an appliance for other than intended use. The use of attachments not recommended or sold by the appliance manufacturer may cause an unsafe condition.
- Do not install or store the appliance where it will be exposed to weather or to temperatures below freezing.
- Make sure an appliance mounted on a tank is securely installed before operating it. Read and observe all the important notices on the appliance.
- If an extension cord is necessary, a cord with a proper rating should be used. A cord rated for less amperes or watts than the appliance rating may overheat. Care should be taken to arrange the cord so that it will not be tripped over or pulled.
- Prior to servicing ensure the appliance is unplugged from the mains as well as the battery backup.

RF Module Important Information:

The product you have purchased contains the EcoTech Marine RF Module, part number 10169. This module gives your product the ability to communicate wirelessly to other EcoTech Marine products as well as certain other manufacturer's products that were designed in compliance with the specifications for our RF Module. Use of this module in products not consented by EcoTech Marine is prohibited. This product is for indoor usage only.

FCC Compliance Statement:

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received including interference that may cause undesired operation. Any changes or modifications not expressly approved by EcoTech Marine could void the user's authority to operate the RF module, and/or the product that incorporates the RF Module. The user is cautioned to maintain a 20cm (8 inch) spacing from the product to ensure compliance with FCC regulations.

European Union - Disposal Information:

This symbol means that according to local laws and regulations your product should be disposed of separately from household waste. When this product reaches its end of life, take it to a collection point designated by local authorities. Some collection points accept products for free. The separate collection and recycling of your product at the time of disposal will help conserve natural resources and ensure that it is recycled in a manner that protects human health and the environment.



CE Declaration of Conformity

The equipment complies with the RF exposure Requirement 1999/5/EEC, Council Recommendation on the limitation of exposure of the general public to electromagnetic fields (0-300 GHz). This equipment meets the following conformance standards: EN 300 328, EN 301 489-17

For France:

Français: Cet équipement est prévu uniquement pour un usage à l'intérieur des bâtiments

English: This device is intended for indoor use only.

VorTech Pump can be used in the following countries:

This device contains:
EcoTech Marine's RF Module
Part Number: 10169
FCC ID: VKB271829
IC: 7349A-271829

AT	BG	BE	CY	CZ	DK
EE	FI	FR	DE	GR	HU
IE	IT	LV	LT	LU	MT
NL	PL	PT	RO	SK	SL
ES	SE	GB	IS	LI	NO
CH					

