QUIET**DRIVE**
User Manual

Contents

⚠️ Please read this entire setup guide before using your pump. By purchasing, installing or using this product, The information provided in this manual is subject to change. For the most up to date information visit **ecotechmarine.com/support**

Customer Support

ℹ️ Many of the steps in this guide have corresponding how-to videos. View them on the EcoTech Marine website at http://ecotechmarine.com/support-videos

The EcoTech Marine Community is another tool for users to troubleshoot and learn about our products. For additional information about your VorTech QuietDrive Pump, please visit us at **https://support.ecotechmarine.com/hc/en-us**

UNITED STATES & CANADA

Contact EcoTech Marine directly for all warranty service and returns.
Visit https://support.ecotechmarine.com/hc/en-us

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What is QuietDrive

The VorTech is no less amazing today than when it first revolutionized the aquarium hobby. Three generations of pumps, over a decade of flow production, and tens of thousands of healthy aquariums are a testament to this uniquely designed power head. At the heart of the VorTech's success is its unique, patented, magnetically coupled design and technically advanced motor driver and firmware.

QuietDrive is the latest drive system that increases efficiency and significantly reduces motor noise. This technology is incorporating the QuietDrive driver that comes standard with the MP10, MP40 and MP60 VorTech pump.

QuietDrive and EcoSmart Live

No matter where life takes you, with EcoSmart Live, your tank is right there with you. Paring your VorTech pump with a ReefLink (sold separately), EcoSmart Live enables you to control your VorTech Quiet Drive pumps from anywhere, any time using a compatible web browser or our dedicated Apple iOS app.

Enjoy the peace of mind that your reef and its inhabitants are cared for and safe. EcoSmart Live is cloud-based, so you can access it through a web browser on any computer, tablet with an Internet connection or smartphone so the new features are installed automatically.

Your pumps communicate with your computer or device via our ReefLink which acts as an RF to WiFi bridge.

QuietDrive Driver

Wireless Indicator

SET Button

LED Strip

MODE Button

OPTION/Power Button

Control Dial

Battery Backup Input

Pump Cable Slot

Accessory Port

Power Input

SET Button: Used to set different settings in each operational mode.

MODE Button: Used to select between different operational modes.

Battery Backup Input: Input jack for EcoTech's Battery Backup accessory for protection against power failures.

Wireless Indicator: LED will illuminate when the QuietDrive is communicating wirelessly.

LED Strip: LEDs will illuminate to indicate modes, speed, time, etc.

Option/PWR Button: Used to select different options in certain configuration modes and used to power device on/off.

Control Dial: Used to change speeds, times and other settings.

Pump Cable Slot: Input Slot for the pump cord. Note: Cable comes attached to driver.

Power Input: Input jack for attaching the power supply to the pump.

Basic Setup

Please reference the Quick Start Guide that comes provided with any VorTech pump (ecotechmarine.com/documentation), Follow the instructions to properly mount your VorTech pump. Once the VorTech is mounted per the instructions, connect to outlet power.
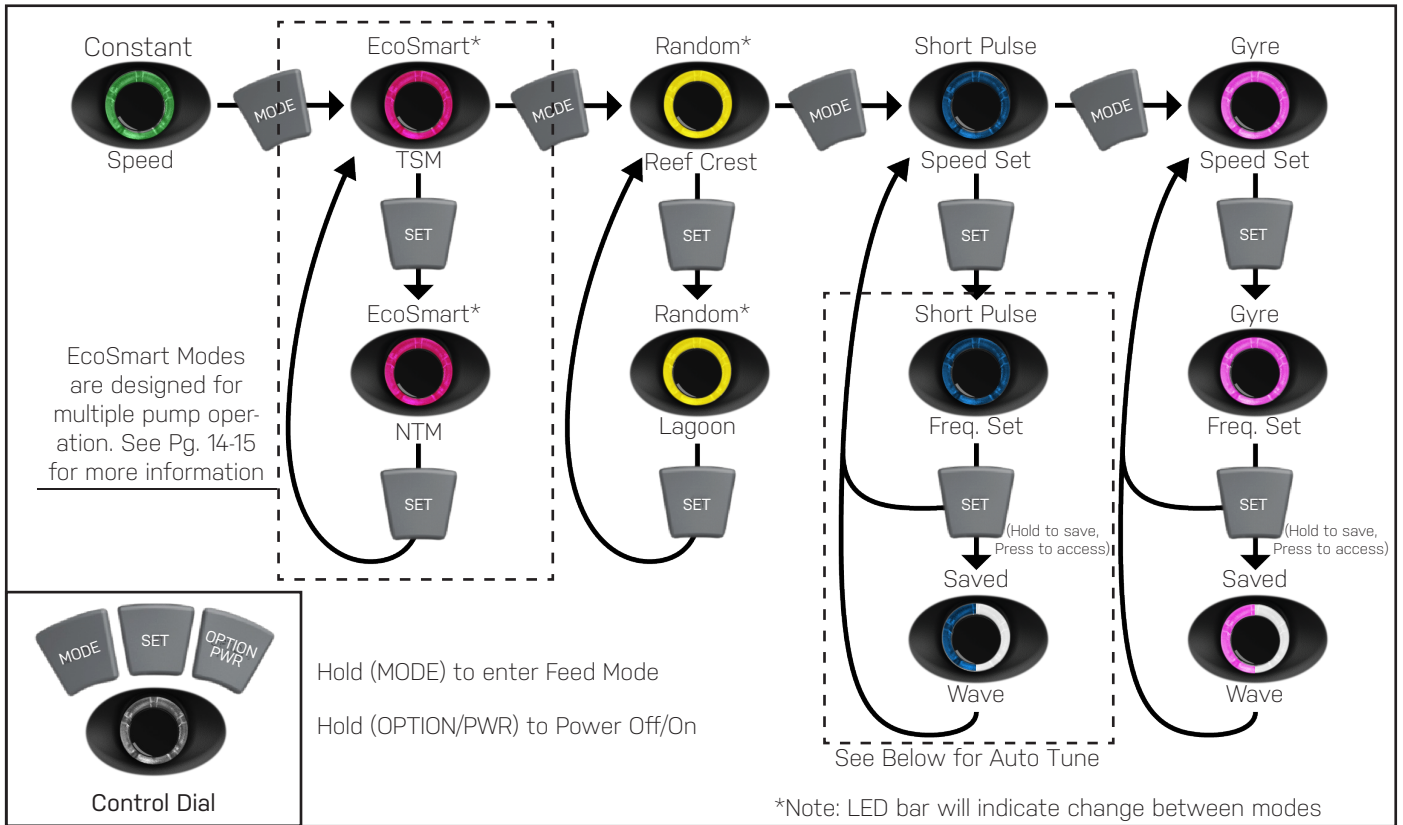
Specifications

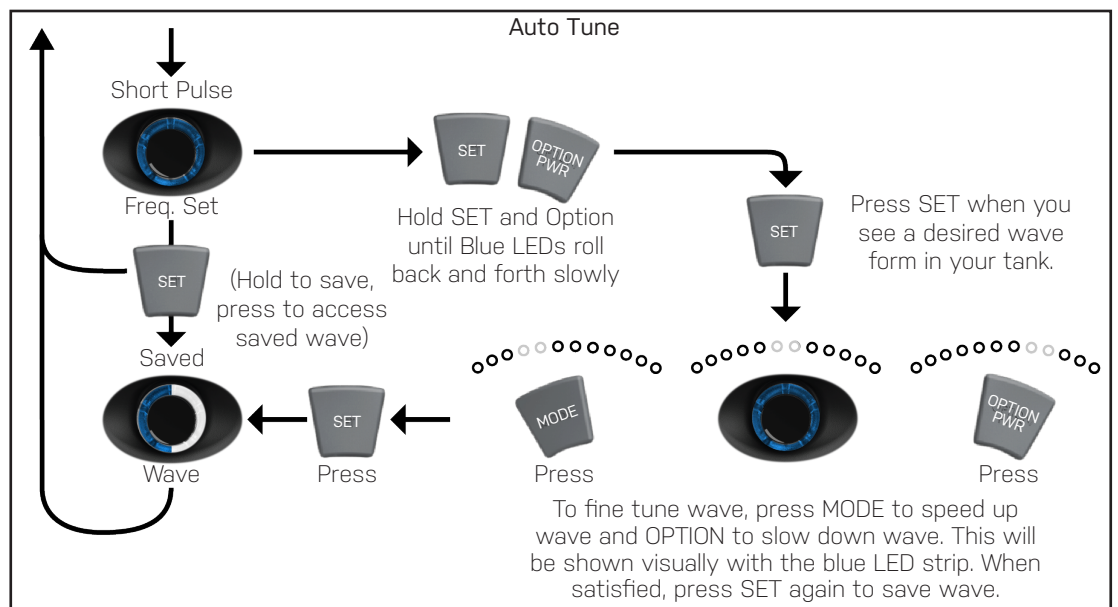|	
Wireless Enabled:	'W' versions only
Dimensions:	Length: 5" (127mm)
	Width: 3.5" (89mm)
	Depth: 1.375" (35mm)
Power Input:	24 volt DC input
Battery Backup Input:	12 volt DC input

Operational Modes

Navigating Between Modes

To navigate between the different modes, use the MODE, SET and OPTION buttons along with the control dial. Modes will be distinguished by the color of the dial and/or the illumination of specific blue LED's on the LED strip. The following will guide you through navigating between each mode. For more information on each specific mode, see the full description of each mode in the next section of the manual.

Constant — Speed

EcoSmart* — TSM

Random* — Reef Crest

Short Pulse — Speed Set

Gyre — Speed Set

EcoSmart* — NTM

Random* — Lagoon

Short Pulse — Freq. Set

Gyre — Freq. Set

(Hold to save, Press to access)

Saved — Wave

Saved — Wave

EcoSmart Modes are designed for multiple pump operation. See Pg. 14-15 for more information

Control Dial

Hold (MODE) to enter Feed Mode

Hold (OPTION/PWR) to Power Off/On

See Below for Auto Tune

*Note: LED bar will indicate change between modes

Note: In Pulse Modes, when you save a wave, the control dial will blink green/white twice to indicate wave is saved. The control dial will then breathe the color corresponding to the mode you were in.

Auto Tune

Short Pulse — Freq. Set

(Hold to save, press to access saved wave)

Saved — Wave

Press

Hold SET and Option until Blue LEDs roll back and forth slowly

Press SET when you see a desired wave form in your tank.

Press

Press

To fine tune wave, press MODE to speed up wave and OPTION to slow down wave. This will be shown visually with the blue LED strip. When satisfied, press SET again to save wave.

Note: You are not able to navigate into Night Mode from regular operation. This mode is automatic after you configure it in Configuration Mode. For instructions on configuring Night Mode see pg. 6

Constant Speed Mode

Constant Speed mode is the default mode of the VorTech, this makes the pump produce flow at a constant speed that is determined by the position of the dial.


% of
User
Set
Speed

Time
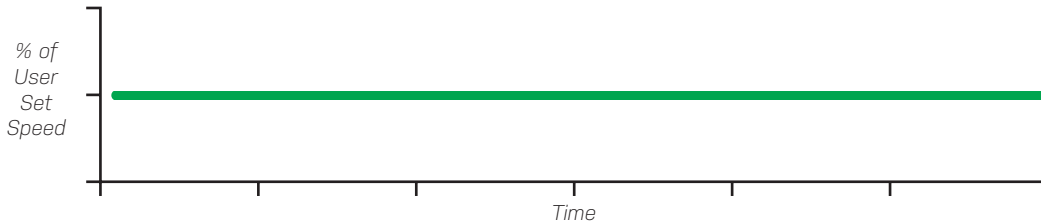
Random Modes

Random mode operates in two different settings, Lagoon and Reef Crest. These random modes are used to simulate natural reef environments. To navigate to each of these modes, press MODE until the control dial turns yellow. Then press set to switch between the two. The specific Random mode you are in will be indicated by a pair of two blue LED lights brightly illuminated. The speed of these modes will be indicated by dim LED lights.

Lagoon

Lagoon mode simulates a low-energy lagoon environment. The speed of the pump is changed slowly to recreate the gentle currents of a lagoon.

% of
User
Set
Speed

Time
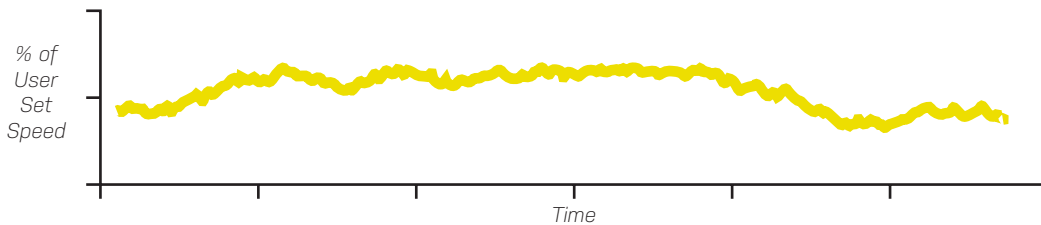
Reef Crest

Reef Crest Random mode simulates a high-energy reef environment. The pump will change speed frequently and drastically to simulate crashing waves and surging tide. This is a favorite of SPS coral.
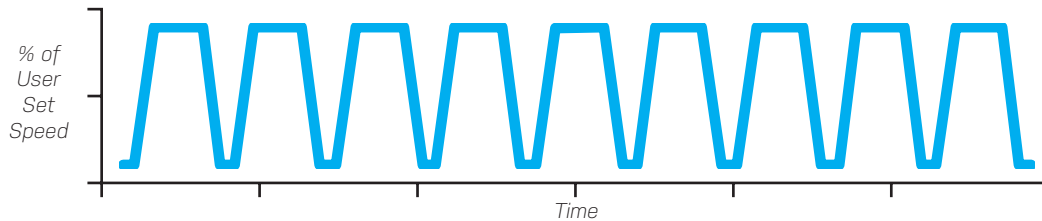

% of
User
Set
Speed

Time
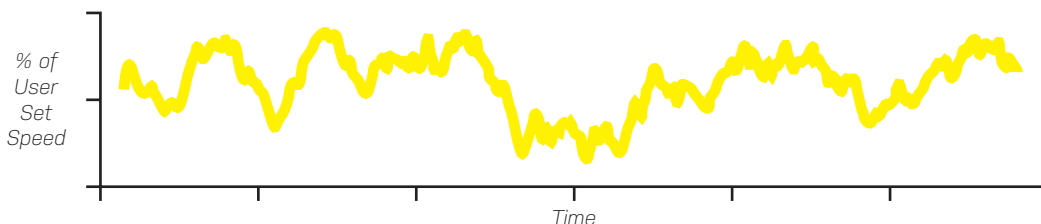
Short Pulse Mode

Short Pulse mode creates a flow pattern consisting of uniform high and low levels pulsing at a selected interval between 0.2 seconds and 2 seconds.

To use Short Pulse Mode, tap MODE until the LED turns blue. Now by adjusting the knob you can change the maximum speed that the pump achieves during Short Pulse Mode. Tap SET to save this maximum speed and to begin tuning the frequency. When you adjust the knob, you will see that the frequency changes corresponding to the pulse frequency in the LED strip.
At this time you have two options, if you are happy with the wave that you have manually created, you can hold SET to save this wave. Your saved wave will be indicated by a breathing blue LED instead of a constant one. The other option is to enter the auto-tune function of the QuietDrive driver.


Gyre Mode

Gyre mode creates a flow pattern consisting of uniform clockwise and *counterclockwise flow levels pulsing at a selected interval between two seconds and two hours.

To use Long Pulse Mode, tap MODE until the LED turns pink. Now by adjusting the knob you can change the maximum speed that the pump achieves during Long Pulse Mode, which will be indicated by the LED strip. Tap SET to save this maximum speed and to begin tuning the frequency. When you adjust the knob, you will see that the frequency changes corresponding to the pulse frequency in the LED strip.
You can now save this patter by holding SET. The LED knob will blink and then start breathing pink, indicating that the pattern has been saved.
The graph below represents the sequence of long pulses that the VorTech pump will make when set to Long Pulse Mode.
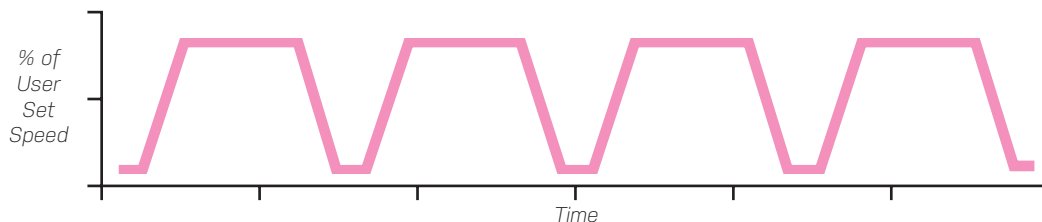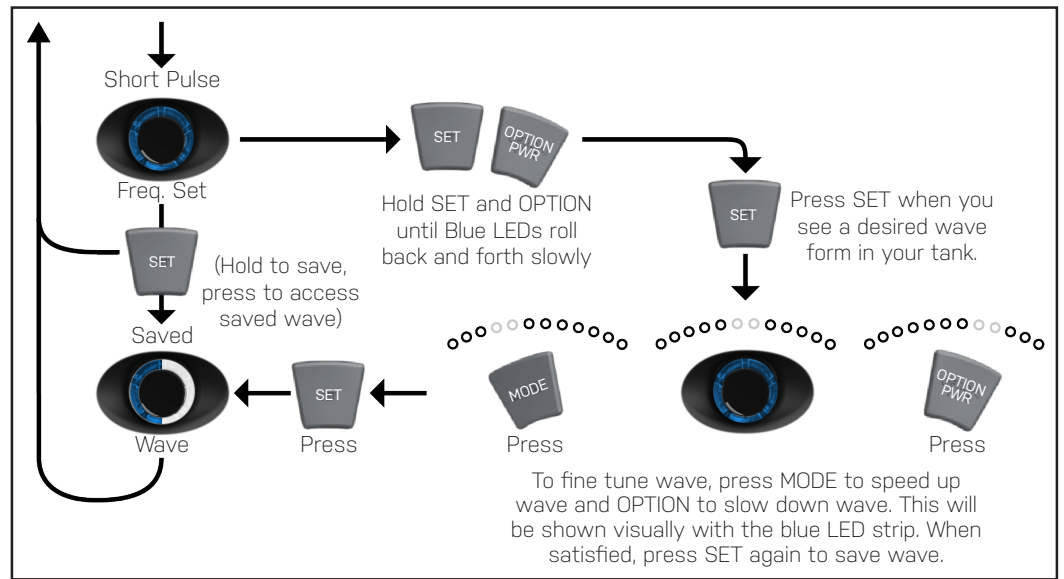
*Alternating directional gyre requires multiple pumps.

Auto-Tune

With the QuietDrive driver, making a wave form in your tank is made easy with Auto-Tune functionality. Follow the sequence outlined in the diagram below to utilize the Auto-Tune function in simulating a wave in your reef tank environment.

Once you have entered into Short Pulse Mode, adjust the speed to your desired intensity then tap SET. Now, typically you would tune the frequency of your pulse but if you would like to enable the Auto-Tune function, hold SET and Option until the LED's roll back and forth. The QuietDrive driver will now start at the highest pulse frequency, then slowly move to slower and slower frequencies. Once

Short Pulse

Freq. Set

SET (Hold to save, press to access saved wave)

Saved

Wave   Press

Hold SET and OPTION until Blue LEDs roll back and forth slowly

Press SET when you see a desired wave form in your tank.

Press   Press   Press

To fine tune wave, press MODE to speed up wave and OPTION to slow down wave. This will be shown visually with the blue LED strip. When satisfied, press SET again to save wave.

you see your desired wave form in your aquarium, tap SET again to stop the Auto-Tune. You will now have the ability to fine-tune your wave form by pressing MODE to go back one step, or OPTION to go forward one step. This will be shown visually on the LED strip. Once you are happy with the wave form that you have created, press SET again to save it. You will know it is saved because the LED knob will breath blue.

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.

Feed Mode

At the touch of the button, all VorTech wirelessly enabled pumps will temporarily pause their current mode and idle allowing food to be added to the tank without being cycled into the overflow and filtration. To enter Feed Mode simply press and hold the MODE button.

Battery Backup Mode

The EcoTech Marine Battery Backup (sold separately) combined with your VorTech pump is a unique accessory which greatly improves your likelihood of emerging from a power outage condition without any loss of livestock. However, no single solution is guaranteed to work for all aquarium sizes and stocking levels. Larger reef tanks with dense stocking levels of fish may require multiple VorTech's and Battery Backups in order to provide sufficient flow to keep fish and corals alive in the absence of power. In the event of a power outage, your VorTech pump will automatically pull power from the Battery Backup accessory and function in Battery Backup Mode. While in Battery Backup Mode, your pump will operate at a reduced speed for as long as the battery is able to provide power, or until power from the wall comes back.

Night Mode

Pumps can be enabled to run a gentler night time program simulating calmer ocean conditions for night time hours. To access Night Mode press and hold the MODE and SET buttons, pause, and then press and hold the MODE and SET buttons. The control dial will breathe white and spin at 50% power for 10hrs (default setting), and then resume its set mode.

Mode Configuration

Configuration Mode is used to define settings for the following: Battery Backup speed, Night Mode speed and time, Feed Mode speed and time and Auto-Dim time. These modes operate automatically depending on the settings that you define.

The Configuration Menu is entered by pressing and holding all three buttons during any normal operational mode. At this point the control dial led will blink orange and white and the first two blue LED lights will illuminate brightly. You are now in the configuration menu and can navigate between the following six different configuration settings:

Battery Backup Speed

Feed Mode Speed

Night Mode Speed

Feed Mode Time
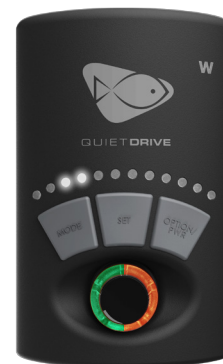
Night Mode Time

Auto-Dim Time

Driver shown in Configuration Mode Main Menu, sitting on Night Mode Speed option.

In the configuration mode main menu, each of the six different settings will be indicated by a corresponding pair of illuminated blue LED lights. Use the mode button to cycle through the different configurable settings. Illustration above shows the driver in the configuration mode main menu sit-ting on Night Mode Speed (3rd and 4th Blue LEDs Illuminated).

Once the mode you want to modify is signaled by the LED bar, you can press the SET button to access that modes values, at this point the control dial will blink a set of colors specific for each mode you are modifying. These colors are:
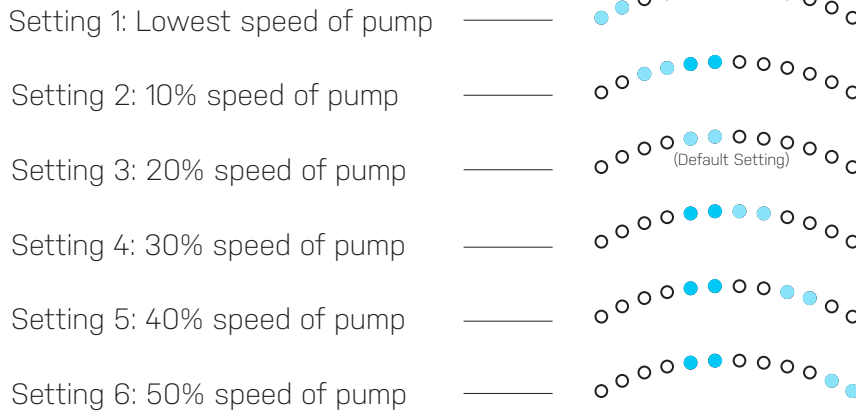
• Battery Backup Speed: Orange and Blue

• Night Mode Speed: Orange and Green

• Night Mode Time: Orange and Purple

• Feed Mode Speed: Orange and Pink

• Feed Mode Time: Orange and Yellow

• Auto-dim functionality: Orange and Turquoise

Driver shown in Night Mode Speed Configuration set to lowest speed and showing default speed is setting 3.
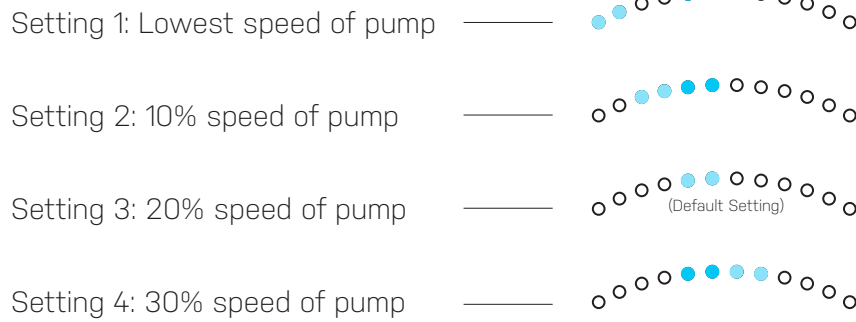
Illustration above shows the driver in the Night Mode Speed configuration setting. It also is showing, by the illuminated LEDs, what setting it is currently set to. The driver will also indicate, by the dim LEDs, what setting is the default. Note: If there is only two brightly illuminated LEDs, that means that you are currently set to the default setting.

Battery Backup Speed:

Setting 1: Lowest speed of pump ————

Setting 2: 10% speed of pump ————

Setting 3: 20% speed of pump ————
(Default Setting)

Setting 4: 30% speed of pump ————

Setting 5: 40% speed of pump ————

Setting 6: 50% speed of pump ————

Driver shown here in Battery Backup Speed Configuration Mode Setting, showing that it is set to the lowest speed of pump and default being 20% speed of pump.

Night Mode Speed:

Setting 1: Lowest speed of pump ————

Setting 2: 10% speed of pump ————

Setting 3: 20% speed of pump ————
(Default Setting)
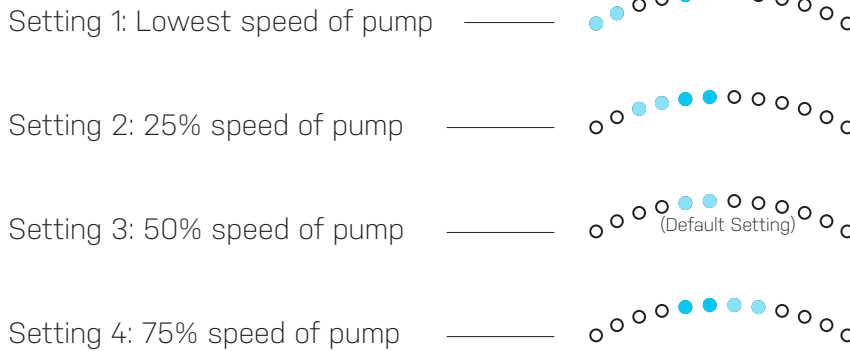
Setting 4: 30% speed of pump ————

Driver shown here in Night Mode Speed Configuration Mode Setting, showing that it is set to the lowest speed of pump and default being 50% speed of pump.

Night Mode Time:

Setting 1: 6 hour night ————

Setting 2: 8 hour night ————

Setting 3: 10 hour night ————
(Default Setting)

Setting 4: 12 hour night ————

Setting 5: 14 hour night ————

Driver shown here in Night Mode Time Configuration Mode Setting, showing that it is set to a 6 hour night and default being a 10 hour night.

Feed Mode Speed:

Setting 1: Lowest speed of pump ——————

Setting 2: 25% speed of pump ——————

Setting 3: 50% speed of pump ——————
(Default Setting)

Setting 4: 75% speed of pump ——————

Driver shown here in Feed Mode Speed Configuration Mode Setting, showing that it is set to barely spinning and default being 50% lower than the lowest speed of pump.

Feed Mode Time:

Setting 1: 6 hour night ——————

Setting 2: 8 hour night ——————

Setting 3: 10 hour night ——————
(Default Setting)

Setting 4: 12 hour night ——————

Setting 5: 14 hour night ——————

Driver shown here in Feed Mode Time Configuration Mode Setting, showing that it is set to the 5 minutes and default being 10 minutes.

Auto-Dim Time:

Setting 1: 6 hour night ——————

Setting 2: 8 hour night ——————

Setting 3: 10 hour night ——————
(Default Setting)

Setting 4: 12 hour night ——————

Setting 5: 14 hour night ——————

Driver shown here in Auto-Dim Time Configuration Mode Setting, showing that it is set to 1 minute and default being disabled.

Multi Pump Overview

Master/Slave/Independent

QuietDrive devices can work together to create an infinite variety of flow conditions. The QuietDrive driver is set by default to Independent mode, the QuietDrive driver does not broadcast wireless signals for other pumps to hear (with the exception of Feed Mode, which all pumps broadcast and all pumps listen for). If running only one VorTech pump this is the ideal mode. When adding additional VorTech pumps, any QuietDrive driver is capable of operating as either a master or a slave pump. A Master pump broadcasts a wireless signal and the slave pump(s) receive the signal. On any aquarium, you can have up to six different master pumps broadcasting on unique frequencies. Each of these master pumps can be synced with an infinite number of slave pumps creating endless flow possibilities.

Independent

Independent in Constant Speed Mode (Green Control Dial)

Master

Master in Constant Speed Mode (Green Control Dial)

Slave

Slave mirrors the mode of master (Orange Control Dial)

Master

Slave

Slave

Slave
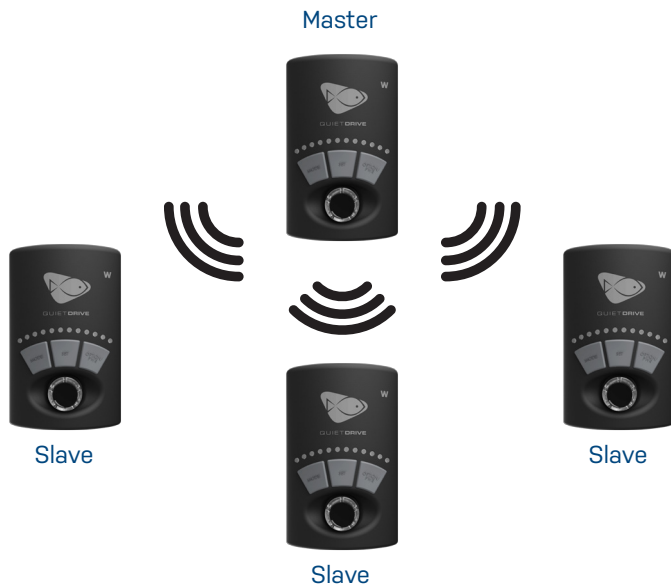
When a master pump is initiated and running in any one of the normal modes (such as Constant Speed, Random, Short Pulse, or Gyre), it sends out a signal telling other pumps what mode it is operating and what speed it is running at. VorTech pumps set to operate as slaves will listen for the master pump's wireless signal and do either the same as the master pump (Sync Mode), or the opposite (Anti-Sync Mode). Slave pumps set in Sync Mode will perform exactly the same as the master pump and will be indicated by a white LED on the QuietDrive driver's knob. Slave pumps set in Anti-Sync Mode will perform exactly the inverse of the master pump and will be indicated by the Control Dial illuminating Orange.

For example, if the master pump is running at 80% speed, a slave pump in sync mode will run at 80% also. If that same slave pump was operating in Anti-Sync Mode, it will run at 20% speed (this is the inverse speed of 80%). As the master pump slows down, a slave pump in Sync Mode will slow down with it and a slave pump in Anti-Sync Mode will speed up.

To select between Sync and Anti-Sync Mode on a slave pump, simply tap the MODE button, the LED will change color to reflect which mode the pump is in.

Assigning Master/Slave Relationship

NOTE: When using a single VorTech pump, no master/slave configuration is necessary

When using two or more VorTech pumps, you will want to establish pump groups to coordinate the operation of multiple pumps. 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 QuietDrive driver. You may setup a maximum of seven separate groups, each having a unique master pump.
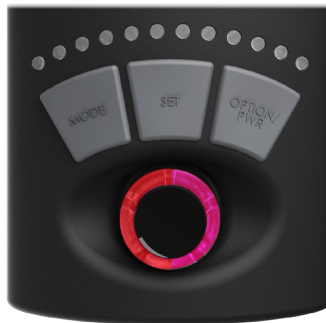
- **Clear Driver Memory** - The internal memory of each unit must be cleared before setting up a group. Hold MODE and SET together until the control dial blinks red/white/blue. Then hold MODE until the dial blinks red/purple. Then hold SET until the pump resets.

HOLD MODE + SET	HOLD MODE	HOLD SET
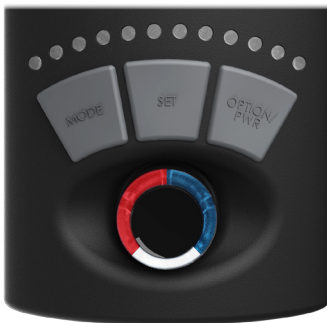
*After you hold MODE and SET the Control Dial will blink red/white/blue.

*After holding MODE the Control Dial will blink red/purple.

*Pump shown reset to consistent Speed Mode (Green Dial).

- **Enter Setup Mode** - 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. Hold MODE and SET together until the drivers blink red/white/blue.
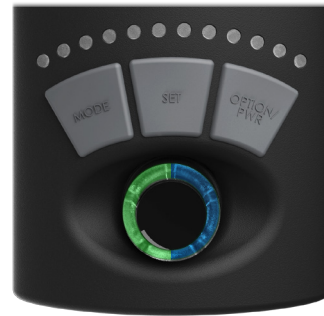
HOLD MODE + SET
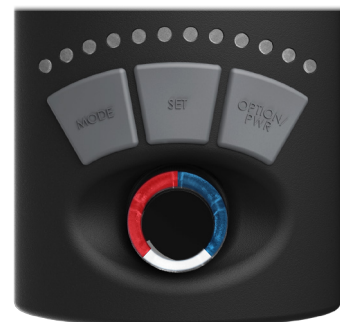
Assigning Master/Slave Relationship (cont.)

Assign the Master - Set the master pump by pressing the MODE button. The control dial will then blink blue and green. You are now ready to assign slave pumps.

Assign the Slaves - Set the slave pump by pressing the SET button on the driver. The control dial will then blink blue and yellow. NOTE: If the slave blinks blue and red, it was too far away from the master driver and could not communicate properly. Repeat this step for all slaves you want to assign the master.

Reset the Master - Hold the MODE button on the master pump after completing ALL the master/slave assignments. The pump will reset and begin operation in the previous mode you had programmed. You can then change modes with the master pump like normal and the slave pumps will operate according to what the master pump defines. Slave pump speeds can be defined by the master or can be locally defined, See Section 2.3: Assigning a Local Max Speed to a Slave.

*Pump shown reset to consistent Speed Mode (Green Dial).

Begin Normal Operation - 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. For more information on operating slave pumps and configuration, see Chapter 5: Pump Configuration for EcoSmart Modes.

Program Subsequent Groups - Now that the first group is programmed, repeat these steps on the next group of pumps, if so desired.

Unassign a Slave Pump - If you would like to unassign a pump as a slave and use it independently, follow instructions for clearing driver memory and perform those steps on the slave pump which you would like to unassign.

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 the first group to ensure proper communication.

Assigning a Local Max Speed to a Slave

While normally you cannot change the speed of a slave pump, because the speed is determined entirely by the master pump, with the EcoSmart driver you now have the ability to control the maximum speed of individual slave pumps independently from the master. This will come in handy if your aquarium setup requires higher flow in most areas but lower flows in other areas such as if a slave pump is used to provide spot flow to a delicate coral, or if it is used on the back of a narrow tank. In the default setting, a slave pump will always do exactly the same thing or the inverse of the master pump (based on whether it is set to Sync or Anti-Sync), and therefore the maximum speed that a slave pump can achieve is governed by the master pump.

- To assign a unique maximum speed setting to an individual slave pump, hold the SET button on the slave until a bright LED shows on the LED strip. This LED represents the locally assigned maxi-mum speed for this slave pump.

- Next, turn the knob to adjust the maximum speed for that particular slave pump, which will be indicated by the LED strip.
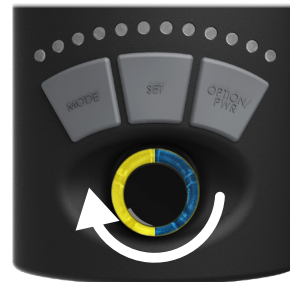
- To increase the maximum speed, turn the knob to the right.
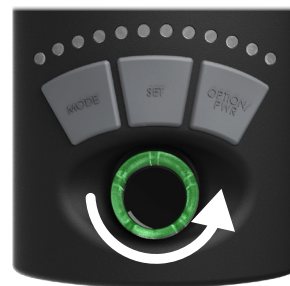
- To decrease the maximum speed, turn the knob to the left.

- If you would like to restore the slave pump's speed setting to match the master pump's speed setting, hold the SET button until the brightly illuminated LED showing the max speed goes dim. It will now revert back to always match the speed input by the master pump.

Overview of Multi-Pump EcoSmart Modes

With QuietDrive, EcoTech Marine has taken the guess-work out of positioning and setting up your pumps and automated the process of creating the best environment for your coral reef. All you need to do is follow our recommendations on pump positioning and then select the EcoSmart mode of your choice; EcoSmart does the rest, orchestrating your pumps to work together, providing the most efficient flow and wave conditions. QuietDrive creates results that you will see in the form of less detritus accumulating within your aquarium and increased coral growth.

Unlike conventional modes (Constant Speed, Random, Short Pulse, and Long Pulse), when a master pump is set to an EcoSmart mode the slave pumps will not have Sync or Anti-Sync Mode options. Instead, they have settings which correspond to the pump's position on the aquarium. There are three EcoSmart slave modes and they are:

White	Orange	Turquoise
(for a slave pump positioned on the same side of the aquarium as the master)	(for a slave pump positioned on the opposite side of the aquarium as the master pump)	(for a slave pump positioned on the back side of the aquarium)

In EcoSmart modes, the master pump will output a wireless signal telling the different slave pumps exactly what to do in order to create ideal flow conditions. This system is more engineered than sync and anti-sync, as pumps placed in various positions in your aquarium will run specific pro-grams to accomplish the goals outlined in the EcoSmart mode's description.

Achieving the benefits of QuietDrive is as easy as setting up your pumps according to the recommendations outlined below and forgetting about them. We have done the research and development for you in order to create the most engineered flow system available.

The most important thing to remember is that when using EcoSmart modes, you assign slave pump modes based specifically on where they are positioned. If a pump is placed opposite the master pump, it goes in the orange mode. If it is placed on the same side as the master, it goes in the white mode. If the pump is placed on the back side of the tank, it goes in the turquoise mode. Master pumps should ideally be placed on the left or right side of the tank. Examples of different aquarium configurations and our recommended pump positioning for QuietDrive modes can be found below.

## Use of QD drivers with an EcoSmart or Wireless Wave Driver (WWD)

Your QuietDrive driver is capable of communicating with a EcoSmart or WWD equipped MP40w. However, the WWD equipped pump will not have the luxury of communicating with your QuietDrive or EcoSmart driver in any of the QuietDrive modes. Therefore, your WWD equipped pump will not run in any of the QuietDrive or EcoSmart slave modes outlined above. If you have a WWD equipped MP40w and wish to achieve the full benefit of using the EcoSmart modes, we recommend that you purchase an QuietDrive upgrade kit for your pump, available through our online store at www.ecotechmarine.com.

However, your WWD and EcoSmart pump are capable of communicating with one another in any of the modes except for EcoSmart modes, such as Constant Speed Mode, Random Modes, Short Pulse Mode, Long Pulse Mode. Your WWD can also be told to go into Feed Mode or Night Mode by an EcoSmart driver.

EcoSmart Modes

Tidal Swell Mode

Tidal Swell mode (TSM) creates a harmonic balance reminiscent of the changing flow conditions found in nature. Over the course of several hours, the flow pattern will go from very chaotic to calm, followed by a detritus-clearing surge at the very end of the cycle. The flow direction will change direction every cycle. In this mode your master driver will be purple and your slave driver will flash white/orange/teal and indicate its speed by the LED strip.
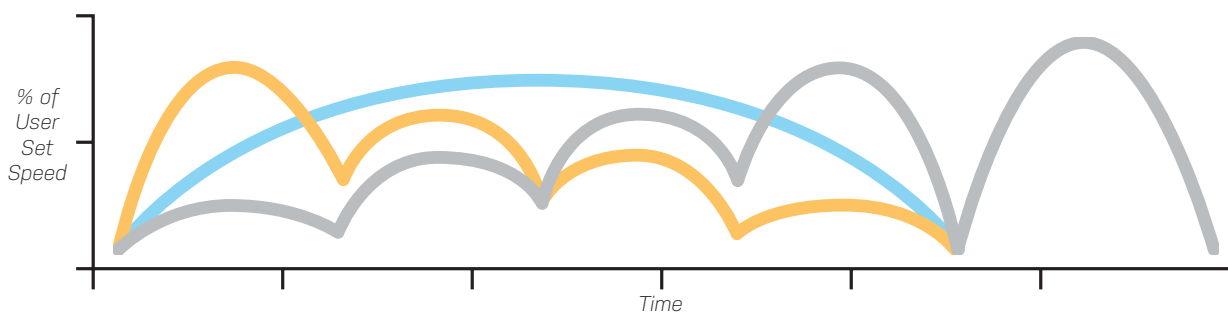
Nutrient Transport Mode

Nutrient Transport mode (NTM) creates circulation in a two-phase program. The first phase uses wave motion to stir up detritus. The second phase follows with a surging motion to move the detritus into the overflow and out of the aquarium. This mode promotes maximum health, nutrient export and increased growth for sensitive corals such as SPS.
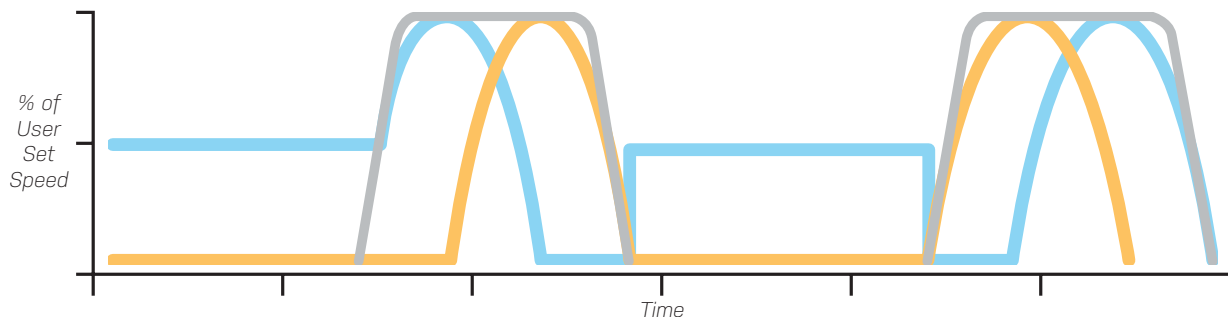
Maintenance

Wireless Driver Firmware Upgrade

Note: QuietDrive drivers only upgrade other QuietDrive drivers. Any QuietDrive driver with newer firmware can upgrade another QuietDrive driver regardless of the model number (i.e. MP10w ES can upgrade a MP40w ES).

EcoTech Marine is continually upgrading and making your QD Pump better. Because of this, your driver may not have the latest firmware. Fortunately, EcoTech makes it easy to upgrade your drivers firmware. To complete this process you will need a driver with the latest firmware along with the driver that you want to upgrade. Follow the instructions and diagram below to upgrade your drivers firmware.

Note: During the firmware upgrade process, turn off all Wireless Wave Drivers, EcoSmart drivers and QD drivers within 100 feet of the two that you will be doing the upgrade process with. Also, move the two drivers that you will be working with to within 3 feet of each other.

Unplug your driver then hold MODE and SET simultaneously while plugging your driver in and continue holding until the control dial has been red for approximately ten seconds. When the LED toggles between blinks red/white, the driver is in Upgrade Mode. Release both the MODE and SET buttons. Repeat this step for second driver.

Powered Off → HOLD MODE + SET → Blinking Red/White

Now that both drivers control dials are blinking red/white, indicating they are in Upgrade Mode, press and hold SET button on either driver until the control dials blink green/blue for driver receiving new firmware and red/green/red/blue for the driver sending firmware. The pumps will automatically detect which is the latest firmware and act accordingly.

Press SET on Either Driver

Sending New Firmware

Receiving New Firmware

Troubleshooting

Error Codes

Flashing Red LED
- Issue: Pump disconnect error
- Resolution: See section 6.0 of the full ES manual: Pump Disconnect Error Protection Available at ecotechmarine.com/downloads

Flashing Red/Orange LED
- Issue: A component in the motor has gone bad
- Resolution: If you are under warranty, contact EcoTech Marine for a replacement motor. If you are outside warranty, visit the parts store at www.ecotechmarine.com to purchase a new motor.

Flashing Red/Yellow LED
- Issue: The pump has over heated
- Resolution: Clean the wetside and check that there are no obstructions blocking the rotation of the wetside or dryside. If the problem persists, contact EcoTech Marine to speak with a service representative.

Flashing Red/Green LED
- Issue: Stall error
- Resolution: Completely disassemble and clean the wetside then check that there are no obstructions blocking the rotation of the wetside or dryside. If the problem persists, contact EcoTech Marine to speak with a service representative.

Flashing Red/White LED
- Issue: Wireless upgrade error
- Resolution: Re-attempt the upgrade process until it completes successfully. Alternatively, you can use a normally functioning pump to re-flash the pump with the red/white error code. If none of this works, contact EcoTech Marine to speak with a service representative.
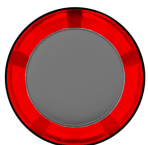
Solid Red LED
- Issue: Upgrade Error
- Resolution: Re-attempt the upgrade process until it completes successfully. Alternatively, you can use a normally functioning pump to re-flash the pump with the red/white error code. If none of this works, contact EcoTech Marine to speak with a service representative.

Very fast flashing red, no LED at all when powered up, or multiple random colors
- Issue: All of the earlier codes represent actual error codes programmed into the driver. The error above however, reflects that some damage to the pump has occurred preventing it from functioning properly.
- Resolution: contact EcoTech Marine to speak with a service representative.