

# AQUA<sup>®</sup> FORTE

User Manual

## DM Vario-S

POND PUMP



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# 1. Introduction

You have purchased a high quality device that is designed to be silent, energy saving, long lasting and easy to use.

This information belongs exclusively to, and is inextricably linked to the AquaForte DM-Vario 10000S/22000S/30000S/40000S/50000S pumps. Without written permission it is not permitted to make any change to the pump or the accompanying documentation.

## 1.1. Purpose of this manual

The purpose of this manual is to help users understand the features and functions of the pond pump, and to provide guidance on how to use it safely and effectively.

The manual includes all relevant information on:


- [Safety \(on page 5\)](#) provides important information on how to use the product safely, including warnings and precautions that users should be aware of.
- [Product specifications \(on page 5\)](#) describes the dimensions, features and other relevant information about the product.
- [Installation guidance \(on page 6\)](#) provides step-by-step instructions on how to install the product, including information on electrical connections, and positioning.
- [Operation \(on page 7\)](#) explains how to use the product, including how to set the temperature, how to turn it on and off, and how to adjust the settings.
- [Maintenance \(on page 9\)](#) provides guidance on how to keep the product in good working order, including information on cleaning and regular maintenance tasks.
- [Troubleshooting \(on page 10\)](#) provides advice on how to identify and fix common problems that may arise with the product.

Overall, the product manual is an essential resource for anyone who owns or operates a pond pump. By following the instructions and guidance provided in the manual, users can ensure that they can get the most out of their investment.

## 1.2. Target audience

A pond pump is an important investment for pond owners who want to keep their ponds clean or introduce a water feature.

## 1.3. Intended and non-intended use

⚠ CAUTION	
	<b>Safety Hazard</b> Make sure that the pond pump is installed according to the procedures described in this manual.

A pond pump is a device that keeps the water in your pond healthy, and it can be used to create different water features. However, it is important to understand both the intended and non-intended uses of a pond pump for this purpose. In all deviating situations, the manufacturer or an authorized dealer must be consulted in advance.

### 1.3.1. Intended Use

A pond pump serves several intended purposes:

- pumping dirty water to a pond filter;
- creating water features such as fountains and waterfalls;
- circulating pond water for better oxygen levels.

### 1.3.2. Non-Intended Use

While a pond pump can be a great way to improve pond water quality, there are also some non-intended uses that should be avoided. For example, a pond pump should not be used in highly polluted water as this will decrease the pump performance.



Additionally, a pond pump should not be used in pools.

Finally, a pond pump should not be used to pump any other liquids than freshwater.

By understanding both the intended and non-intended uses of a pond pump, you can ensure that you are using the device in the most efficient and cost-effective way possible.

## 1.4. Reading guide

This manual contains important warnings and notes that highlight information relevant to the user:

⚠ WARNING	
	<b>This section warns that there is a safety hazard.</b> Indicates a hazardous situation that could result in serious injury or death and/or serious damage to the product or environment if the safety instructions are not followed.
⚠ CAUTION	
	<b>This section warns of a possibly hazardous situation.</b> Indicates a hazardous situation that could result in minor or moderate injury and/or damage to the product or environment if the safety instructions are not followed.



Information that is considered important but is not injury-related (e.g., information related to property damage).



Information that's useful for future use.



Information that is relevant to the context or understanding of the user.



Tips and tricks to make usage easier or more convenient.

## 1.5. Warranty

This product comes with a 24 month general product warranty starting at the date of purchase.

The warranty covers any defects in materials or workmanship under normal use and maintenance. If a defect arises during the warranty period, you should contact your dealer immediately.


To make a warranty claim, you must provide proof of purchase, the defective product and a description of the problem. The warranty does not cover damage caused by improper installation, unintended use, abuse, or neglect. It also does not cover normal wear and tear, or any damage caused by acts of nature such as lightning.



Any damage caused by calcium/limescale is **not** covered by the warranty!





This warranty is the sole and exclusive warranty for this pond pump. We make no other warranties, express or implied, including any warranty of merchantability or fitness for a particular purpose. In no event shall we be liable for any incidental, consequential, or special damages arising out of or in connection with the use or inability to use this product, even if we have been advised of the possibility of such damages.


## 2. Safety

-  This manual does not include site and/or country specific regulations, the installer of the drum filter is responsible for following the local rules and regulations.

We have provided important safety messages in this manual and on your device. Read all safety information and instructions. Failure to observe the safety information and instructions may result in electric shock, fire and serious injury. Keep all safety information and instructions for future reference.

### 2.1. Warnings


 <b>DANGER</b>	
	<b>Electrical hazard</b>
	<ul style="list-style-type: none"><li>• BEFORE cleaning the product, shut off the power!</li><li>• Normal users <b>MUST NEVER</b> attempt to service or open the product cover!</li><li>• If the device is malfunctioning, contact your nearest dealer or service center.</li></ul>
 <b>CAUTION</b>	
	
	<ul style="list-style-type: none"><li>• Packing parts (e.g. plastic bags) may be dangerous. Therefore, store away from children, domestic animals and anyone incapable of understanding the dangers. This device is not a toy.</li><li>• Never leave the device unattended.</li></ul>

-  Service and/or disposal **MUST** be carried out by people with proven expertise.

### 2.2. Safety information

- Repairs may only be carried out by a trained service technician. If repairs are required, please contact the nearest after-sales service centre. Any repairs should be performed in strict accordance with this manual.
- Don't block the product inlet and/or outlet.
- In order to increase efficiency:
  - Do not use the pump in highly polluted water.
- In case of storm/lightning, disconnect the main power supply to prevent any damage caused by lightning.
- Switch off the product during installation of and/or repairs to the product.

## 3. Product specifications

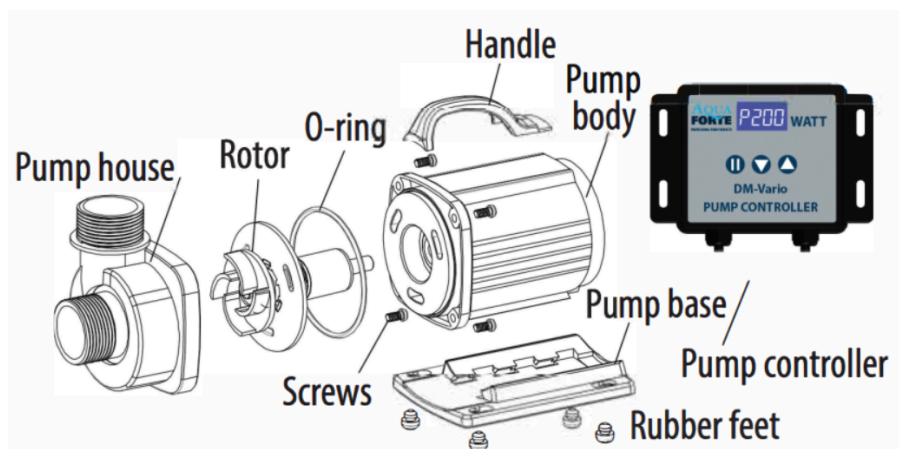
-  This pond pump should not be used in water with a temperature above 35°C.

Model	Voltage	Wattage	Flow	Max. Depth	Max. Head	Fittings
10000S	220-240VAC 50/60Hz	34-85W	6 - 10m <sup>3</sup> /h	1.5m	5.5m	Ø1.5"
22000S	220-240VAC 50/60Hz	70-200W	12 - 22m <sup>3</sup> /h	1.5m	7.5m	Ø2"
30000S	220-240VAC 50/60Hz	130-360W	17 - 30m <sup>3</sup> /h	1.5m	11.0m	Ø2"
40000S	220-240VAC 50/60Hz	105-450W	25 - 40m <sup>3</sup> /h	1.5m	6.6m	
50000S	220-240VAC 50/60Hz	180-600W	30 - 50m <sup>3</sup> /h	1.5m	8.5m	

**!** Related parameters are subject to adjustment periodically for technical improvement without further notice. For more details please refer to the nameplate of the product.

## 3.1. Features

Your DM Vario-S pond pump has the following unique features:



**Figure 1. Features**

- Pump house;
- Rotor;
- O-ring;
- Handle;
- Pump body;
- Pump base;
- Pump controller;
- Rubber feet;
- Screws.

## 4. Installation guidance

### **⚠ WARNING**



#### **Safety hazard**

Do not pump flammable liquids.

### **⚠ CAUTION**





- Do not let the pump run dry: This could cause damage to the motor.
- Do not connect the pump to any other voltage than that shown on the rating label of the pump.
- Do not use the power cord coiled to avoid induction problems.
- Always submerge the pump first and then plug in the power cable.
- The water temperature should not exceed 35°C.
- Do not let the pump freeze in wintertime.

**!** The power socket used for the pump must be equipped with a leakage current protecting device. The leakage current shall not exceed 30 mA.

The pond pump can be installed in a wet or a dry setup.

## 4.1. Wet setup

 Never place the pump in a muddy area or directly on a sandy pond bottom.

 The pump must be fully submerged.

1. Connect your tubing to the pump outlet.
2. Place the pump under water on a small pedestal, such as a stone.
3. Ensure that the pump is fully submerged.

## 4.2. Dry setup

 In a dry setup the pump must be under the water level as it is not self-priming.


1. Remove the external strainer house.
2. Connect your tubing to the pump fittings.
3. Place the pump in the desired location.
4. Ensure that the pump is fully below the water level.

## 5. Operation

### CAUTION



Do not let the pump run when not submerged in water or positioned fully below the water level, as this may damage the pump.

 A clogged or dirty intake screen will greatly reduce performance. If the pump is used on a dirty surface, raise it slightly to reduce the amount of debris contacting the intake.

## 5.1. Starting the pump

1. Check that the pump is placed correctly:
  - For a wet setup, the pump must be fully submerged.
  - For a dry setup, the pump must be placed fully under the water level.
2. Form a drip loop on the power cable and plug it into the outlet.



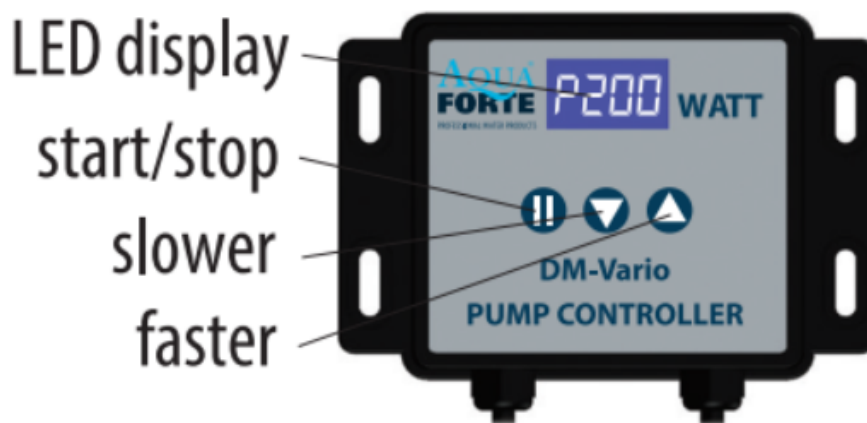
**Figure 2. Drip loop**

3. Press the start/stop button.

If the pump does not start right away, there is probably air inside the pump and the pipe system, which activates the [dry-running protection \(on page 9\)](#). Pull out the power cable and insert it again a few times. The pump will start working normally.

## 5.2. Control panel

The DM Vario-S pumps are equipped with a control panel with an LED display.



**Figure 3. LED Display**

The LED display shows the power the pump is consuming, the start/stop status of the pump and any [error codes \(on page 11\)](#). By default the display will show "PXXX", where P stands for Power and "XXX" stands for the wattage.

Button	Function
Start/stop	Starts and stops the pump.
Slower	Lowers the pump flow.
Faster	Raises the pump flow.

The LED display is equipped with a screen saver mode to conserve power. When the pump is turned on and no button is pressed for 25 seconds, the LED display goes to micro-bright and the controller is in screen saver mode. Press any button to return the display to normal.

Additionally, the control panel has a memory function to make sure the pump goes back to the last selected speed when it is started up.



### 5.2.1. Using the control panel

After connecting the pump to the power outlet, the pump will resume the last selected operation, as shown on the LED display.

1. Press the start/stop button to stop the pump.

➡ The display shows "\_OFF".

2. Press the start/stop button again.

➡ The pump will resume working.

3. Press the up/down arrows to change the speed of the pump from 30% to 100%.

➡ The LED display will show a value between "F030" and "F100", where F stands for Flow. After one second the display shows the wattage that is consumed by the pump in the selected speed ("PXXX").

### 5.2.2. Key lock function

The control panel is equipped with a keylock function to prevent accidental changes in settings.

1. Turn on the power.
2. Press the start/stop button for 3 seconds until the LED light flashes two times.

➡ The control panel is now locked.

3. Press the start/stop button again for 3 seconds until the LED light flashes two times.

➡ The control panel is now unlocked.

## 5.3. Dry-running protection

The pump is equipped with a dry-running protection function.

When the water level is lower than the pump inlet, the pump will automatically stop after 2 minutes. It will try to start again after 30 seconds. If there is still no water, the pump will stop completely. You can reset this by removing the power cable from the power outlet and plugging it back in.

## 6. Maintenance

### ⚠ CAUTION

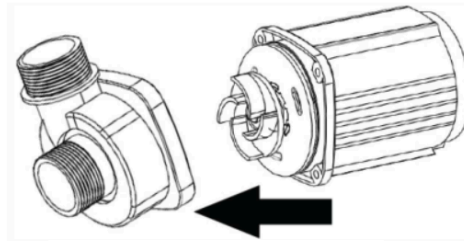
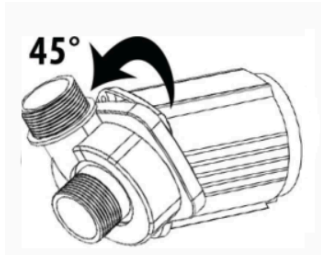


- Always disconnect the power cord from the electrical outlet before handling the pump.
- The pump shaft cannot be removed.

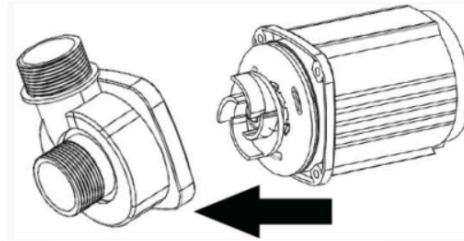
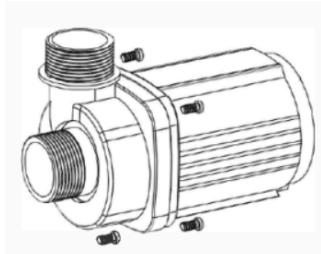
- Monthly maintenance will prolong the pump's life.
- Maintenance should only be carried out by people with proven expertise.

### 6.1. Cleaning

1. Detach the pump house:
  - DM 30000-S only: Turn the pump house  $\pm 45^\circ$  counterclockwise.
  - All other models: Remove the screws.
2. Pull the pump house away from the pump body.

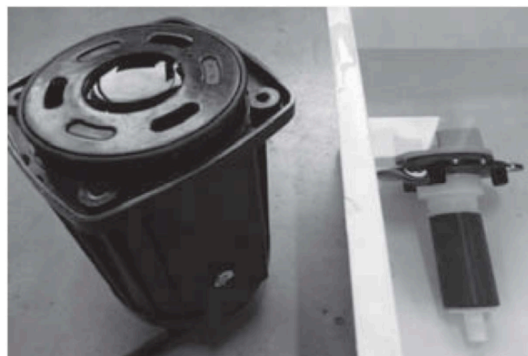


**Figure 4. DM30000S only**



**Figure 5. All other models**

3. Take out the rotor and clean it with a brush and water.
4. Put the pump body in a vertical position and fill it with a mild lime scale remover (such as cleaning vinegar).
5. Immerse the rotor in a plastic container filled with the same lime scale remover.
6. Leave both for 24 hours.



**Figure 6. Lime scale remover**

7. After 24 hours, rinse off the pump body and rotor with water.
8. Reassemble the pump.

## 7. Troubleshooting

If the pump fails to operate, check the following:

- Check the outlet and try another outlet to ensure the pump is getting electrical power.
- Check the pump outlet and tubing for kinks and obstructions. Algae may block them, please flush out the algae with a garden hose.
- Check the inlet to ensure it is not clogged with debris.
- Remove the pump inlet to access the impeller area. Turn the rotor to ensure it is not broken or jammed.

## 7.1. Error codes

The following error codes can start flashing on the LED display to indicate an operation error:

Error Code	Issue
Er01	Abnormal working current
Er02	Controller overheating
Er03	Pump idling
Er04	The impeller stops running
Er05	Abnormal working voltage

## 7.2. Calcium/limescale problems

When you find calcium/limescale deposits inside the motor house this implicates that the pumps become too warm during use. Calcium/limescale expands above temperatures of 55°C. With sufficient flow, the pump is water cooled and cannot reach these temperatures. If, however, the head pressure is too big (too small pipe system, maximum pump head (pressure loss) too big, etc) the flow will be reduced which causes insufficient cooling and by this, calcium deposits. In a worst case scenario the calcium/limescale layer will get so thick that it blocks the rotor and the motor will burn out. You can remove calcium/limescale deposits with commercial de-scaling products or cleaning vinegar.

## 8. Disposal



When disposing of your old device, please do so safely and properly to protect the environment and comply with local regulations.