

AquaPress ¼ hp Pump Instruction Manual

Please read all instructions carefully before installing your new systems.

I. Product

The AquaPress ¼ hp Pump is designed for the pumping of non-aggressive water, or water not containing solid particles.

II. Operating conditions:

1. Ambient temp.: Max. +104°F (40°C)
2. Liquid temp.: +39°F (4°C) ~ +104°F (40°C) Max
3. System pressure: Max. 120 PSI
4. Relative humidity: Max. 85% (RH)

III. Installation

1. The pump foundation should be rigid enough to absorb any vibration from the motor, and the pump should be securely bolted to the foundation.
2. It is recommended that the plumber/installer provides an adequate draining system to avoid damage in case of leakage, particularly when installed indoors. When it is installed outside, it should be covered by a weather-proof housing, well ventilated to allow motor heat to escape.
3. Connect the suction pipe to the side and discharge pipe on the top (See Fig. 1).
4. The hose coming from the tank to the pump is to be connected to the suction inlet on the side of the pump. The outlet on the top of the pump connects to the discharge hose (See Fig. 1).
5. It is required to shut off the pump when the liquid source is unavailable; although it has the dry run cut-off function.
6. Regular maintenance includes removing the cover plate above the suction inlet. Make sure you have shut off the water coming to the pump from the tank before beginning this maintenance. Check the valve for wear. **DO NOT** apply any bonded material (such as silicon, glue etc) to seal the chamber cover (See Fig. 3).

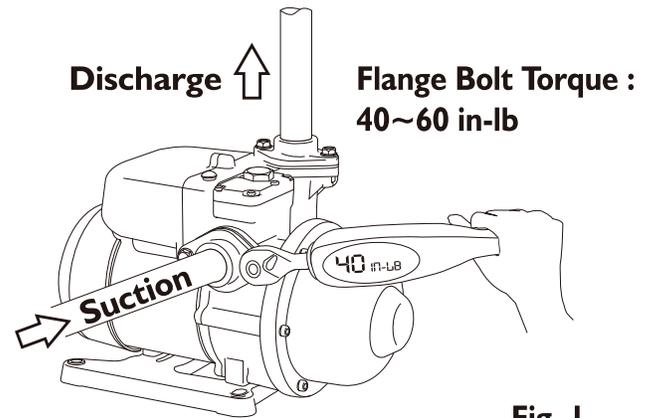
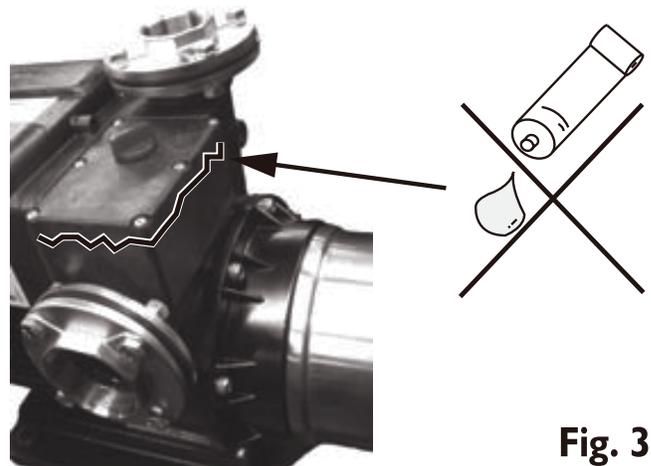


Fig. 1



IV. Piping

1. The suction line should be installed as short and straight as possible, with a minimum of bends. The internal diameter of the suction pipe must be equal to, or greater in size than the ports of the pump.
2. The connection between the suction line and pump must be airtight, and the suction pipe must be positioned so it has an upward slope to the pump (thus avoiding the formation of air pockets).
3. If it is likely the water supply may contain solid particles, such as leaves and sand, a filter should be installed on the suction line.
4. If hose is used as the suction pipe, it must be non-collapsible.
5. To minimize pressure drop, the discharge pipe should be at least the same size as the discharge port of the pump.
6. For long suction pipes or high suction lifts over 13 ft., the suction pipe should be of greater diameter than the suction port.
7. Ensure all connections are completely sealed using thread tape only.

V. Connections to Water Source

1. Flooded Suction—from Well System

With gravity feed to the pump, there are no special adjustments to be made. See Fig. 4 below for recommended layout. Simply make necessary plumbing connections and apply power. The pump is ready to use.

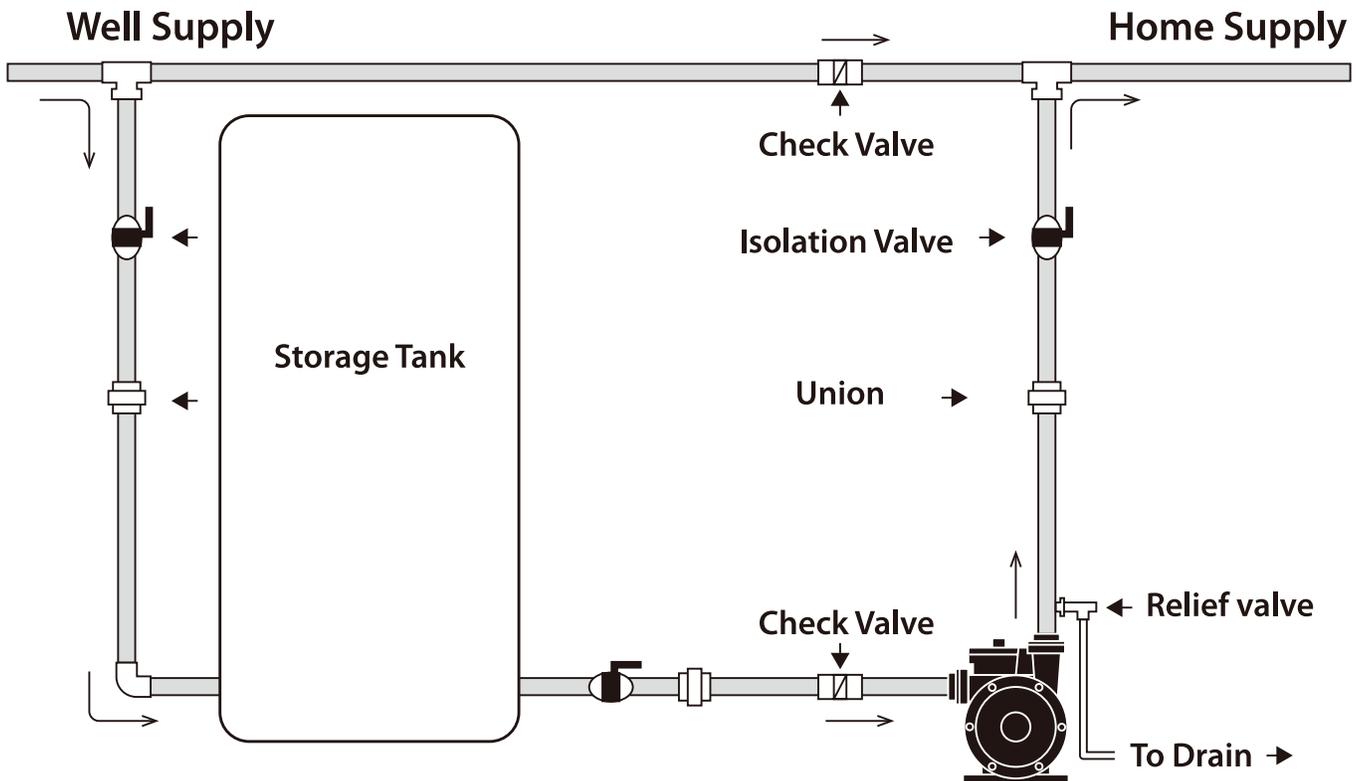


Fig. 4

2. Flooded Suction—From City Water Supply

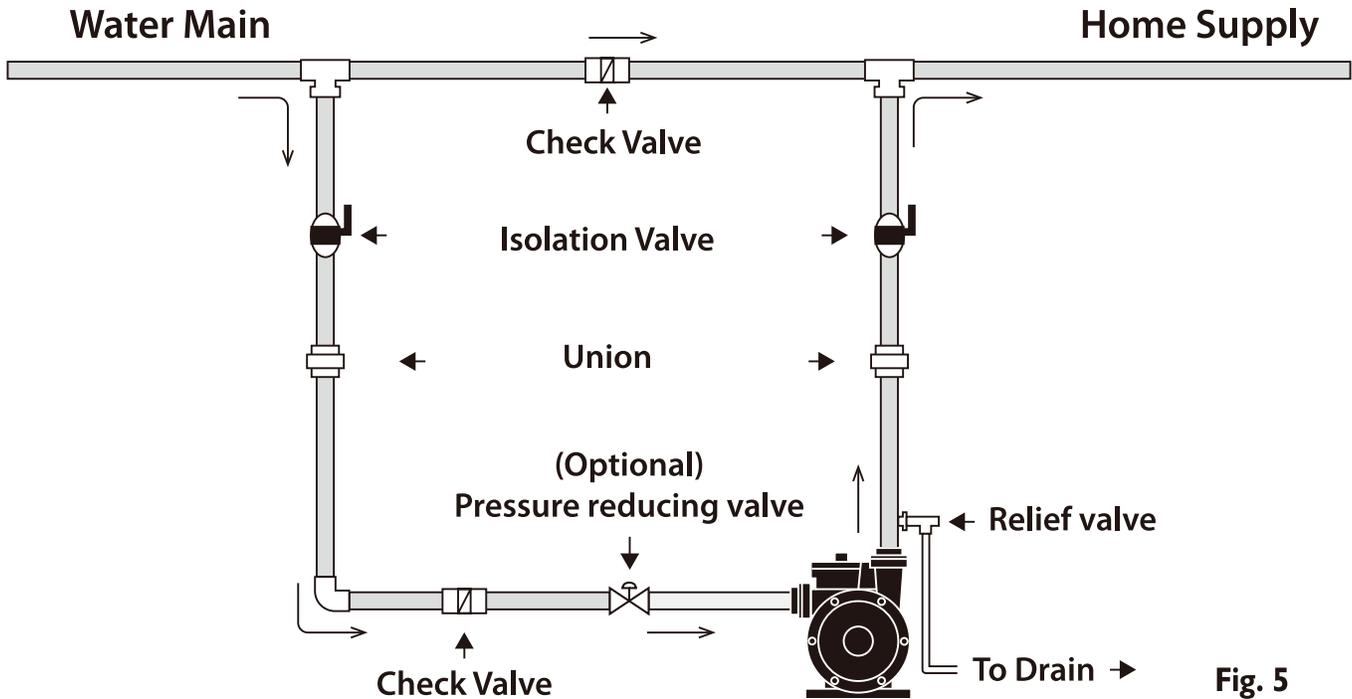


Fig. 5

Directly applied city pressure can exceed pump operating pressure and damage the pump. The max inlet pressure should not exceed 50 psi. Any greater incoming pressure is required to install a pressure reducing valve on the suction side of the pump. In some areas where local codes restrict maximum home pressure, a pressure reducing valve is also required on suction to lower the inlet pressure. The chart below shows the applicable settings for the pressure reducing valve:

Local code limits for home pressure	AquaPress ¼ hp Pump Pressure reducing valve setting (psi)
No limit	50
90 psi	50
80 psi	45

3. Suction Lift—Below Ground Water Sources

This connection does not require any adjustment. Whenever the installation position of the pump is higher than 3 ft. above the lowest water level, a foot valve must be installed on the end of suction pipe.

Warning

The pump is not designed for continuous operation under low discharge flows such as slow closing float valves, slow running taps. Under this application, please install an extra tank (typically 2–3 gallon) to avoid “cycling.” (Fig. 6)

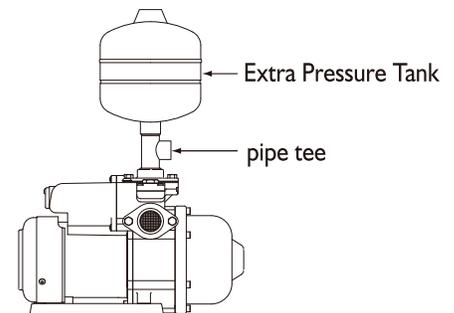


Fig. 6

Please set the extra pressure tank pressure the same as activation pressure. Leaking discharge line and leaking taps will damage the unit by causing the pump to repeatedly start and stop.

Note: Optional external water pressure tank can be used to decrease the on/off cycle rate of the pump system, which can extend the life of the pump.

VI. Electrical connection



This mark located outside the connection box is a warning for an electrical hazard.

1. Ensure the mains voltage is the same as the value shown on the motor plate and that the pump is safely connected to ground/earth.
2. The single phase models are supplied with plug and lead and can be connected directly to the mains supply. The 3 phase models should hook up with a circuit breaker.

VII. Wiring diagram

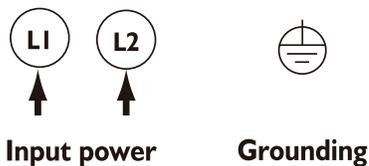
WARNING:

Risk of electric shock—This pump has not been investigated for use in swimming pool or marine areas.

To reduce the risk of electric shock, connect only to a properly grounded, grounding-type receptacle.

Before operation, please ensure the voltage is correct and the circuit breaker and grounding connectors are all connected in accordance with local regulations.

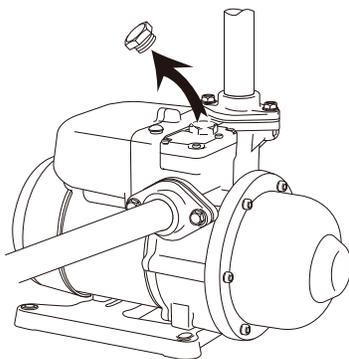
Single-phase power supply



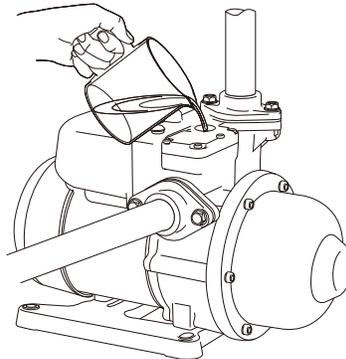
VIII. Starting

1. Before starting, the pump must be primed. For installation with no inlet pressure, please follow the procedure as shown in Fig. 8.

a. Remove the filling plug



b. Fill water in chamber



c. Replace the filling plug

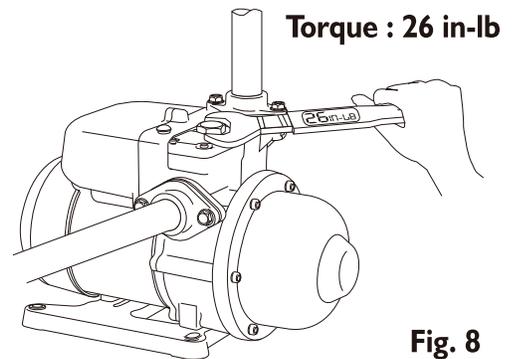


Fig. 8

2. For installation with inlet pressure, remove the priming plug and allow the water to flow into the priming chamber until all air is expelled.
3. The priming procedure should be repeated until all air is expelled and the pump delivers a full stream of water without air bubbles.
4. The pump must always be checked for prime if not used for a prolonged period. It is imperative to fill the pump with liquid before operation as dry running causes irreparable damage to the mechanical seal.

IX. Precautions

1. The pump should be shut down and the trouble corrected if the pump is running at speed and found to have any of the following problems:
 - No liquid discharged—Not enough liquid discharged
 - Excessive vibration—Motor runs hot
2. Do not allow the pump to continually start and stop (cycling) as this will reduce the motor life.
3. Cycling can occur on pressure units when the pressure tank pre-charge drops, or where there is a leak in the discharge plumbing.

X. Operation and maintenance

Under normal operating conditions, the pump does not require any maintenance as long as the following points are observed:

1. Periodically check the condition of the check valve and strainer (if used).
2. If the pump is to be inactive for long periods, it should be rinsed thoroughly with clean water, drained and stored in a dry place. It has to be re-primed before Start-Up.
3. If the pump shaft seizes up after periods of inactivity, please place a screw driver from the motor end to rotate the shaft. It should free the pump shaft (See Fig. 9). If this does not remedy the problem, the unit will need dismantling.
4. Pressure tank air charge should be checked at regular intervals of every 6 months and after the pump has not been used for a prolonged period. To check the Pressure Tank air pressure, turn off power, open a tap on the discharge line to release pressure from the pump, unscrew the black plastic cover and apply an accurate pressure gauge to the valve as shown in Fig. 10. Pressure should be adjusted to the original pre-charge as follows:

- AquaPress ¼ hp Pump: 20 psi (1.4 Kg/cmz)

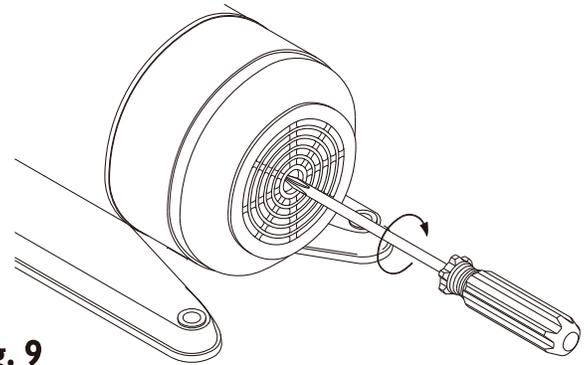


Fig. 9

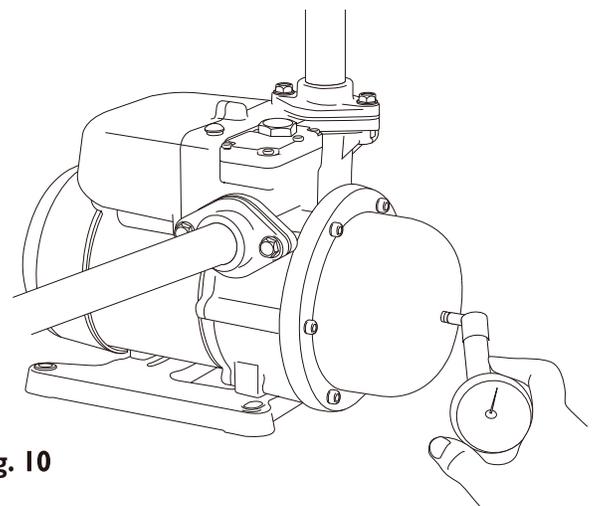


Fig. 10

XI. Flooded Suction Performance Table

AquaPress ¼ hp Pump

Inlet pressure (psi)	Flow rate				
	3 gpm	6 gpm	9 gpm	12 gpm	15 gpm
10	37	32	27	22	15
20	47	42	37	32	25
30	57	52	47	42	35

XII. Frequently asked questions:

5. What causes the AquaPress ¼ hp Pump to start?

The AquaPress ¼ hp Pump has a built-in pressure switch and internal flow switch. Each of these can turn the pump on depending on water consumption. The pump will start when:

- The pressure is BELOW the pressure switch activation point. OR
- The flow rate is greater than 0.7 gpm.

The preset activation point for each model is provided in the pump specifications.

6. What causes the AquaPress ¼ hp Pump to stop?

The flow switch is designed to automatically stop the AquaPress ¼ hp Pump when flow drops to below 0.7 gpm. The pump will shut off in a few seconds after flow stops. The pump is programmed to stop after 8 seconds. In addition, the pump will be turned off in the event of dry-run or over temperature alarm.

7. What is the purpose of the built-in pressure tank?

The pressure tank comes from the factory pressurized at approximately 20–43 psi (with the pump pressure at zero). It is designed to minimize motor startup due to small flow demand or minor leak of the pipeline.

AquaPress ¼ hp Pump—20 psi (1.4 Kg/cmz)

8. How is the dry-run condition determined and the protection provided?

The dry-run is defined as when the motor is running AND the flow rate is less than 0.3 gpm AND when pressure is less than the pressure switch setting. The protection is provided:

When the pump is run dry 2 minutes, it will automatically shut off for 10 minutes and then attempts to restart. When all 3 attempts are failed, the pump will rest for 1 hour and then attempts to restart. This protection mode will be repeated until the water supply is back to normal.

In case the pump is cycling (on-and-off repeatedly) due to small flow (less than 0.3 gpm), air pocket in the system, air loss in the pressure tank or leak in the pipeline, the protection is provided:

The pump will run for 8 seconds and stop for about 3 seconds. When the cycling mode repeat for 15 times consecutively, the pump will be rest for 1 hour. Then it will start over the protection mode until the problem is corrected.

Note: The pump can be reset anytime by removing the power plug.

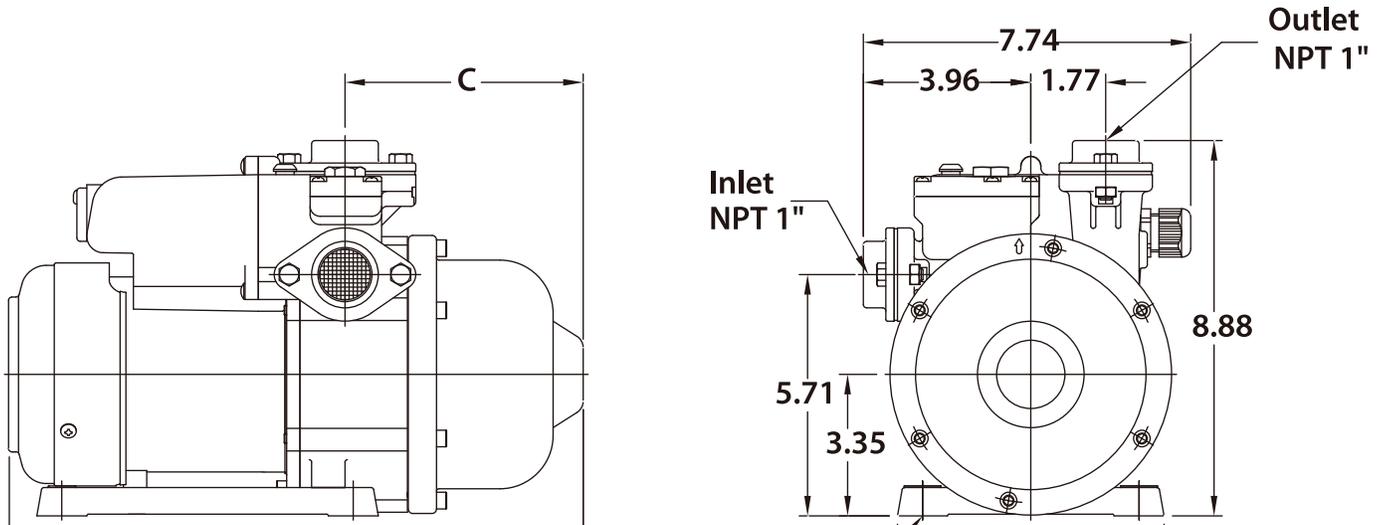
9. What is the maximum inlet pressure allowed in the AquaPress ¼ hp Pump?

The maximum internal system pressure allowed for the AquaPress ¼ hp Pump is 120 psi. The maximum inlet pressure when added to the AquaPress ¼ hp Pump pressure must not exceed 120 psi.

Additionally, if inlet pressures exceed the built-in pressure switch activation point (20-43 psi factory default), the pressure switch will be unable to function, and the ability to turn the AQ Pump on at low flow rates will be lost. In this situation, only the flow switch will be able to turn the AQ Pump on at flow rates above 0.7 gpm.

XIII. Dimensions: (in.)

AquaPress ¼ hp Pump



Model	A (in.)	B (in.)	C (in.)
AquaPress ¼ hp Pump	13.23	5.08	5.28

XIV. Specification: 60Hz

Model	Power (HP)	Phase (Ø)	Voltage (V)	Amp's (A)	Preset activation pressure (psi)	Max discharge pressure (psi)	Q max. (gpm)	N.W. (lbs)
AquaPress ¼ hp Pump	¼	1	115 or 230	4.0 or 2.0	20	31	16.9	16.3

XV. Troubleshooting

⚠ Before starting work on the pump, make sure that the electricity supply has been switched off and that it cannot be accidentally switched on.

Problem	Cause	Remedy
1. Pump does not start	a. No power supply	Connect the electricity supply
	b. Too low/high voltage	Check if supply voltage is within +/- 10%
	c. No water consumption	Open a tap

	d. Seized-up pump	Place a screwdriver against the shaft end of the motor to check if the rotor will spin freely, and contact your pump supplier
2. Pump cuts out during operation	a. Seized-up pump	Same as above
	b. Overloaded motor	Turn off the power supply and restart or contact your pump supplier.
	c. Poor water supply	Check if pump suction inlet is blocked.
	d. The protection for pump dry run or cycling is activated.	Check the detailed information per XII (Frequently asked questions).
3. Pump starts when no water is consumed	a. Existing pipe is leaking	Fix the leakage.
	b. Defective check valve	Clean or replace a new one.
	c. Pipe sucking in air	Check the suction pipe and water supply
4 Pump starts and stops too frequently	a. Leakage in suction pipe or air in the water	Check the suction pipe and water supply.
	b. Discharge flow is too low.	Set your tap on a higher water flow.
5. Electric shock	a. Defective ground connection	Correct the ground connection.
6. Pump does not stop when water is not consumed	a. Poor water supply or air suck in.	1. Turn off the power supply and open the refilling plug to release the air, then restart. 2. In case of long suction pipes, turn off the power and make sure if water supply is adequate.
	b. Defective check valve.	Clean or replace with a new valve.
7. Pump runs normally but with very low discharge flow	a. 3-phase motor runs in wrong rotating direction	Switch any of the 2 wires from motor terminal to correct rotation.
	b. Poor water supply	Check if water supply is adequate and if the suction pipe is blocked.



www.Aquabarrel.com
 23219 Stringtown Rd, #275
 Clarksburg, MD 20871