

## General Safety/Installation Information

1. Connect this pump to a grounded circuit equipped with a ground fault circuit interrupt (GFCI) device. Make sure the outlet is within range of power cord. Do not use extension cords.
2. Before installing this product, have the electrical circuit checked by an electrician to ensure proper grounding.
3. Ensure the water source and piping are clear of sand, dirt, mud and scale. Debris will clog pump and void warranty.
4. Failure to protect pump and piping from freezing could cause severe damage and will void the warranty.
5. Make sure that the pump is accessible and that the indicator lights on the control panel are visible.
6. Make sure there is adequate ventilation for the motor to ensure proper cooling
7. Do not pump dry.

## INSTALLATION

### REPLACING OLD PUMP

Drain and remove piping from old pump. Check in the piping for rust, scale etc. Replace if necessary.

Install the new pump making sure all pipe connections are air and water tight. Use pipe joint compound on Teflon tape on all pipe connections.

**NOTE:** Do not use pipe joint compound on plastic pipe/fittings or electronic control as it can degrade the plastic over time. Only use teflon tape on plastic pipe/fittings or electronic control. Make sure all piping is properly supported and the pump is on a level and supported surface.

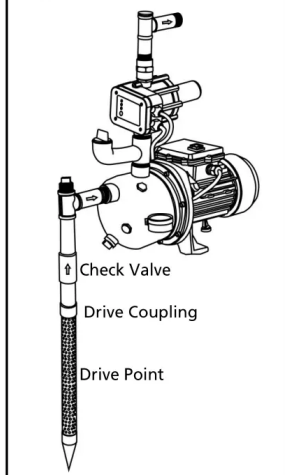
**NOTE:** If the suction pipe can suck air, the pump will not be able to pull water from the source.

### ELECTRONIC PRESSURE CONTROLLER

The automatic pressure controller protects against the following situations

1. Run dry operation
2. Frequent Starts caused by small pressure loss in the system
3. Pressure drop
4. Overheating

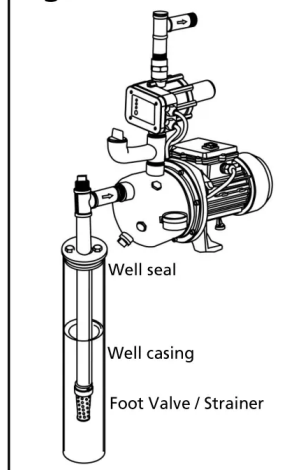
**Figure 1**



### Typical driving well point installation

1. Drive the point using coupling and a drive cap. Do not use regular pipe fittings as the threads may strip out due to the force of driving the point.
2. Position the pump as close as possible to the water source to keep suction lift as low as possible.
3. Install a priming tee with a plug on the suction pipe from the water source as shown in figure 1. An inline check valve should also be installed on the suction line going to the pump. Install a union or other fitting that will allow the pump to be easily disassembled from the piping for easy servicing. Make sure Teflon tape or pipe joint compound is used on all joints.

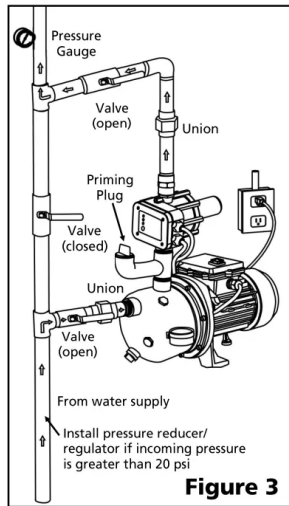
**Figure 2**



### Typical case well installation

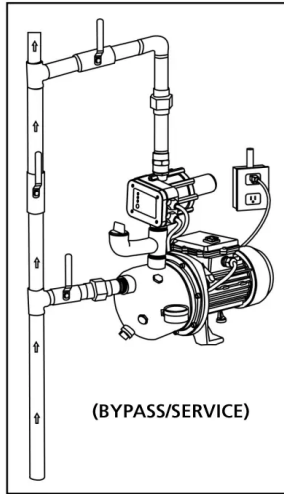
1. Install a foot valve with strainers on the first section of pipe and lower it into the well.
2. Add enough pipe until the foot well is about 10 ft below the water level. Make sure the foot valve does not rest on the bottom of the well.
3. Install a priming tee with a plug on the suction pipe from the water source. Install a union to allow the pump to be easily disassembled from the piping for easy servicing. Make sure Teflon tape or pipe joint compound is used on all joints

4. Install a well seal to prevent debris and other contaminants from entering the well
5. Run piping from the discharge tee on the pump housing to the household water piping



#### Pressure boost installation

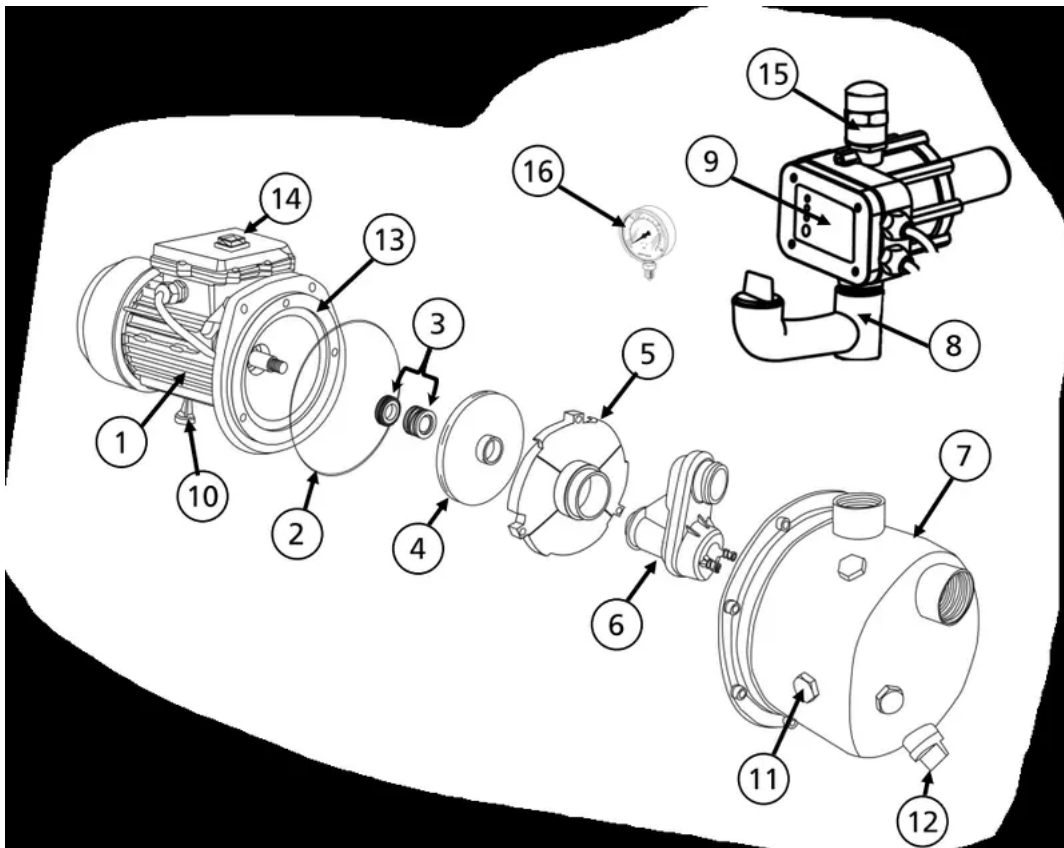
1. For a pressure boost application it is recommended to plumb the pump as per the diagram of figure 3. This will allow for easy servicing or bypass of the pump. **NOTE:** The suction and discharge ports on the pump are 1" FNPT. Depending on the size of the incoming pipe you may need to use adapters on the ports to accommodate the size.
2. Install a pressure gauge as shown to monitor the pressure in the piping.
3. **NOTE:** if the incoming pressure is greater than 20 psi install a pressure reducer/regulator (not shown) on the left side of the piping before the valve. Adjust the reducer/regulator to 20 psi to prevent excess pressure on the piping.



### Bypassing the pump/service

1. To bypass the pump for service, close the valves going into the suction part on the pump and the valve on the discharge line.
2. The pump can be easily drained and removed at this time without interrupting water service to the system.

## REPLACEMENT PARTS



Ref#	Description	Part #
1	Motor	*
2	O-ring	99611
3	Shaft Seal (Includes snap ring, washer & shaft key)	99604
4	Impeller (Includes nut & washer)	99609
5	Diffuser	99606
6	Venturi/Nozzle	99603
7	Pump Housing	99607
8	Priming Tee	99063
9	Electronic Controller	99248
10	Motor support foot	99614
11	Plug with O-ring	99610
12	Drain Plug with O-ring	99608
13	Seal Plate	99612
14	Switch	99613
15	Coupling	99602
16	Pressure Gauge	99201

\*If motor fails, replace entire pump.

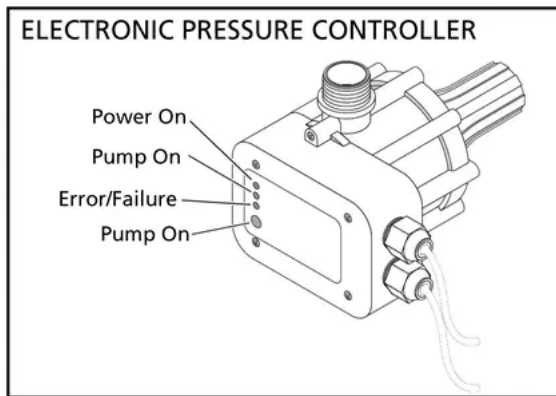
## OPERATION

### PRIMING

1. Remove the priming plug on the tee fitting between the pump and the electronic controller.
2. Fill the housing/piping with clean water until water can be seen at the top of the fitting. Secure priming plug to the tee fitting.

### ELECTRICAL CONNECTIONS

- 1 Plug the power cord into a grounded receptacle. The use of a GFCI is highly recommended and maybe required by local codes.
- 2 Once connected to the receptacle, the on-off switch and the indicator lights will illuminate on the electronic controller.



**POWER ON** - Indicates the pump is connected to the power supply and ready to operate.

**PUMP ON** - Indicates that the pump is running and pumping water

**FAILURE** - Indicates that there is no water coming into the pump.

**RESTART** - Resets any errors/failures of the controller and allows the pump to restart.

3 Turn the switch on the pump motor to the on position. The pump should turn on and start to pump water

**NOTE:** on initial startup after priming, it may take 10 to 30 seconds depending on amount of air in the piping for water to stop flowing. After initial start up/priming the pump will deliver water immediately after it's turned on. If the pump does not start, press the **restart** button on the electronic controller. Open a faucet or valve to bleed any air that may be trapped in the piping

4 The pump should shut off approximately 10 seconds after the valve/faucet etc is shut off/closed. It is normal to the pump to run for this amount of time after water flow stops. This delay prevents the pump from rapid cycling when faucets are being turned on and off quickly.

## MAINTENANCE

1 Maintain adequate ventilation for the pump motor.

2 The motor bearings are permanently lubricated at the factory. Additional lubrication is not required.

3 Always protect pump and piping against freezing temperatures. If there is any danger of freezing, drain the system.

- a. Disconnect suction and discharge lines from pump.
- b. Remove plug from lower front face of pump.
- c. Drain a piping below the frost line or store piping indoors.
- d. Store pump indoors

4 The motor has no Auto reset thermal overload protector that protects the motor from damage in an overheat situation. The projector will Auto reset when motor cools. If the overload protector repeatedly trips, check the pump for possible causes (low voltage, clogged impeller, etc.).

# TROUBLESHOOTING



<b>PROBLEM</b>	<b>POSSIBLE CAUSES</b>	<b>HOW TO CORRECT</b>
If the pump does not start or run	Pump is not plugged in, switch/ breaker is off	Plug pump in or turn on switch/ breaker
	Check for blown fuses or tripped circuit breakers or tripped GFCI outlets	Replace fuse, reset breaker, reset GFCI
	Wire connections are loose or wired incorrectly	Tighten connections or re-wire following wiring diagram
Motor runs hot and thermal overload protector turns pump off	Motor is not properly vented	Make sure there is adequate room for air to circulate around the pump
	Line voltage is too low	Check voltage at receptacle, increase wire gauge if necessary.
If the pump runs but moves little or no water	Loss of prime	Re-prime if necessary.
	Air lock in suction line	Make sure horizontal piping between the pump and the well pitches upward towards the pump. Otherwise an airlock may form
	Leak in suction line	Check all connections for leaks. Make sure all connections are air tight.
	Discharge or suction pipes may be clogged or corroded	Remove clog or replace pipes if necessary



PROBLEM	POSSIBLE CAUSES	HOW TO CORRECT
	Vertical distance from the pump to the water is greater than 25 feet	Move pump closer to water source or shorten length of hose
	Intake screen/foot valve is obstructed	Clean or replace if necessary
	Foot valve or check valve is stuck in the closed position	Inspect, repair or replace if necessary
	Foot valve or check valve is installed backwards	Make sure valve is installed in the correct direction of flow
	Worn, damaged or clogged pump parts (Injector, impeller, diffuser, seal, etc.)	Inspect for wear, damage or clog and clean or replace if necessary
	Foot valve is buried in sand or mud	Raise above surface bottom
	Water level source is too low	Move suction hose
	Pipes are frozen	Thaw pipes, heat pump house or bury pipes below frost line

### Warning

This content is compiled from multiple sources and is provided for reference purposes only. It may not be complete or fully applicable to all situations. If you are unable to resolve your issue, please contact the product manufacturer or an authorized service provider for official support.

