





READ AND FOLLOW SAFETY INSTRUCTIONS!

 **This is the safety alert symbol.** When you see this symbol on your pump or in this manual, look for one of the following signal words and be alert to the potential for personal injury.

 **DANGER** warns about hazards that **will** cause serious personal injury, death or major property damage if ignored.

 **WARNING** warns about hazards that **can** cause serious personal injury, death or major property damage if ignored.

 **CAUTION** warns about hazards that **will** or **can** cause minor personal injury or property damage if ignored.

The label **NOTICE** indicates special instructions which are important but not related to hazards.


Carefully read and follow all safety instructions in this manual and on pump.




Keep safety labels in good condition.

Replace missing or damaged safety labels.


Make workshops childproof; use padlocks and master switches; remove starter keys.


GENERAL SAFETY


1. To avoid risk of serious bodily injury and property damage, read the safety instructions carefully before installing this pump.
2. Follow local and/or national plumbing, building and electrical codes when installing the pump. Use rigid pipe when installing this pump.
3.  **WARNING** **Hazardous Pressure. The pump body may explode if used to boost pressure above 100 psi (690 kPa).** Do not use this pump with inlet pressure greater than 50 psi (345 kPa). If not already in the plumbing system, install a pressure relief valve in the pump discharge line capable of passing the full pump flow at 100 psi (689 kPa). If local code requires installation of a pressure relief valve capable of handling the full pump flow at a pressure less than 100 psi (689 kPa), follow the code requirements.
4. A low pressure safety cutoff switch is recommended to shut off power to the pump in case of low discharge pressure due to interruption of the incoming water supply, broken pipe, etc.
5. **Never run the pump dry.** To do so can damage internal parts, overheat pump (which can cause burns to people handling or servicing pump), and will void warranty.


6.  **WARNING** **Risk of fire or explosion.** To avoid risk of fire and explosion, **Pump Water Only** with this pump. Do not pump flammable liquids or chemicals. Do not use the pump near gas pilot lights or where chemical or gas fumes are present. Use of an electric pump with liquids other than water or in an atmosphere containing chemical or gas fumes may ignite those liquids or gases and cause injury or death due to an explosion and/or fire.
7.  **WARNING** **Burn Hazard.** If water is trapped in the pump during operation it may turn to steam. Trapped steam can lead to an explosion and burns. Never run the pump with the outlet closed or obstructed.
8.  **CAUTION** **Do not touch an operating motor.** Modern motors can operate at high temperatures. To avoid burns when servicing the pump, allow it to cool for 20 minutes after shut-down before handling.


ELECTRICAL SAFETY

 **The pump is supplied with a 3-conductor grounding type cord. Connect only to a properly grounded, GFCI protected outlet. Do not lift the pump by the electrical cord.**

 **WARNING** **Hazardous voltage. Can shock, burn or cause death.** Ground the pump before connecting to a power supply. Disconnect the power before working on the pump, motor or tank.

 **The pump and controller are non-submersible. Keep the motor dry at all times. Do not wash the motor. Do not immerse. Protect the motor from wet weather.**

 **If using an extension cord, use only an approved indoor/outdoor, 3-wire, grounding type cord. Do not allow any part of the cord or the receptacle ends to sit in water or in damp locations.**

 **Unplug the pump before servicing.** To avoid fatal shock, proceed as follows if the pump needs servicing.

- A. **Disconnect the power to the pump outlet box before unplugging the pump.** After the plug is pulled, let the pump cool for 20 minutes before attempting to work on it.
- B. **Take extreme care when changing fuses.** To reduce the chance of fatal electrical shock, DO NOT stand in water or put your finger in the fuse socket.
- C. **Ground** the electrical outlet box.
- D. **Plug the pump and the controller into a Ground Fault Circuit Interrupter (GFCI) protected grounded outlet only.**

Thank you for purchasing a top quality, factory tested pump.

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ATTACH ORIGINAL RECEIPT HERE FOR WARRANTY CONSIDERATION.

Flotec Limited Warranty

FLOTEC warrants to the original consumer purchaser ("Purchaser") of its products that they are free from defects in material or workmanship.

If within twelve (12) months from the date of the original consumer purchase any such product shall prove to be defective, it shall be repaired or replaced at FLOTEC's option, subject to the terms and conditions set forth below. Your original receipt of purchase is required to determine warranty eligibility.

Exceptions to the Twelve (12) Month Warranty

Ninety (90) Day Warranty:

If within ninety (90) days from original consumer purchase any Drill Pump, Pitcher Pump, or In-Line Water Filter Cartridge shall prove to be defective, it shall be replaced, subject to the terms set forth below.

Two (2) Year Warranty:

If within two (2) years from original consumer purchase any 1/3 HP Submersible Sump Pump or Model FP2800DCC shall prove to be defective, it shall be repaired or replaced at FLOTEC's option, subject to the terms and conditions set forth below.

Three (3) Year Warranty:

If within three (3) years from original consumer purchase any 4" Submersible Well Pump, PressureMate, or 1/2 HP Submersible Sump Pump, shall prove to be defective, it shall be repaired or replaced at FLOTEC's option, subject to the terms and conditions set forth below.

Five (5) Year Warranty:

If within five (5) years from original consumer purchase any Pre-Charge water system tank shall prove to be defective, it shall be repaired or replaced at FLOTEC's option, subject to the terms and conditions set forth below.

General Terms and Conditions

Purchaser must pay all labor and shipping charges necessary to replace product covered by this warranty. This warranty shall not apply to acts of God, nor shall it apply to products which, in the sole judgement of FLOTEC, have been subject to negligence, abuse, accident, misapplication, tampering, alteration; nor due to improper installation, operation, maintenance or storage; nor to other than normal application, use or service, including but not limited to, operational failures caused by corrosion, rust or other foreign materials in the system, or operation at pressures in excess of recommended maximums.

Requests for service under this warranty shall be made by returning the defective product to the Retail outlet or to FLOTEC as soon as possible after the discovery of any alleged defect. FLOTEC will subsequently take corrective action as promptly as reasonably possible. No requests for service under this warranty will be accepted if received more than 30 days after the term of the warranty.

This warranty sets forth FLOTEC's sole obligation and purchaser's exclusive remedy for defective products.

FLOTEC SHALL NOT BE LIABLE FOR ANY CONSEQUENTIAL, INCIDENTAL, OR CONTINGENT DAMAGES WHATSOEVER.

THE FOREGOING WARRANTIES ARE EXCLUSIVE AND IN LIEU OF ALL OTHER EXPRESS WARRANTIES. IMPLIED WARRANTIES, INCLUDING BUT NOT LIMITED TO THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, SHALL NOT EXTEND BEYOND THE DURATION OF THE APPLICABLE EXPRESS WARRANTIES PROVIDED HEREIN.

Some states do not allow the exclusion or limitation of incidental or consequential damages or limitations on how long an implied warranty lasts, so the above limitations or exclusions may not apply to you. This warranty gives you specific legal rights and you may also have other rights which vary from state to state.

FLOTEC • P.O. Box 342 • Delavan, WI U.S.A. 53115

Phone: 1-800-365-6832 • Fax: 1-800-526-3757

E-Mail: info@flotecwater.com • Web Site: <http://www.flotecwater.com>

Use the PressureMate® to boost city water pressure. Plumbing connections are described in this manual.

GENERAL INFORMATION

- Pump only clean water with your PressureMate. To avoid clogging the pump and damaging the shaft seal, do not pump water containing solids, foreign material, sand, silt, or abrasives.
- If you are boosting the pressure from a well pump, be sure that the system check valves are tight. If the system pressure drops when the well pump is not running, the PressureMate may start and cycle. Excessive or rapid cycling may damage the motor and will void the warranty.
- Do not use pipe joint compound on pump ports; use only teflon tape to seal the threads. Pipe joint compound will damage the controller materials.
NOTE: The priming plug has an O-ring already installed and does not require sealing.
- Tighten all the piping joints to the pump hand tight plus 1-1/2 turns (not more).
Overtightening may break the pump and will void the warranty.
- Pipe and fittings to the pump should be at least nominal 1" diameter. Pipe or fittings less than 1" in diameter will reduce performance and may damage the pump through cavitation.
- Make sure that there are no air leaks or air pockets in the suction pipe. An air leak in the suction pipe may draw air in, although no water leaks out. Air leaks and air pockets will prevent the pump from priming properly, and can substantially reduce its performance.
- The pump mount should be level, solid, as near as possible to the water source, and protected against excess moisture and flooding.
- Use the shortest possible run for piping and the smallest possible number of fittings. Long pipe runs and numerous fittings increase friction and reduce the flow of water.
- Support the weight of the piping and pump.
- Do not allow the pump, pressure controller, or any system components to freeze. Freezing will damage the pump and void the warranty.
- Periodically inspect the pump, pressure controller, and system components.

NOTE: Local code may require a pressure relief valve or pressure regulator.

⚠ CAUTION Risk of leaks and flooding. Do not use this pump with inlet pressure greater than 50 psi (345 kPa).

⚠ WARNING Pressure hazard and risk of explosion. This pump can develop high pressure when operated with the discharge shut off or obstructed. For safe operation, we recommend the following:

If not already in the plumbing system, install a pressure relief valve in the pump discharge line capable of pass-

ing the full pump flow at 100 psi (689 kPa) (See Figure 2). If local code requires installation of a pressure relief valve capable of handling the full pump flow at a pressure less than 100 psi (689 kPa), follow the code requirements. Run the relief valve discharge to a floor drain or other drain that will give adequate runoff.

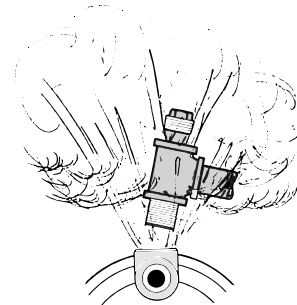


Figure 1 – Do Not Run the Pump With Inlet Shut Off

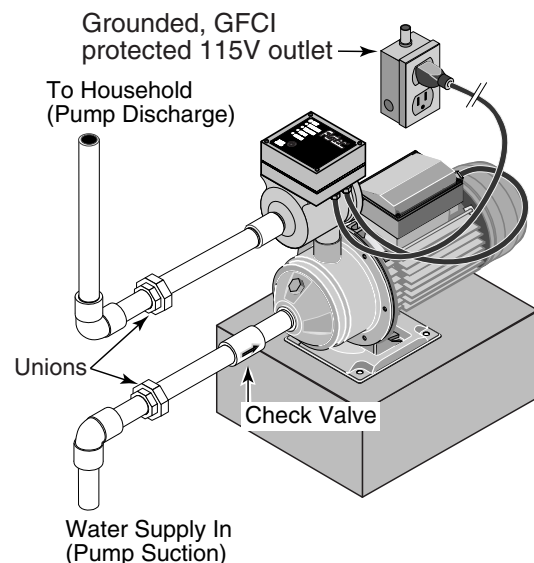


Figure 2: Typical household booster installation. Purchase plumbing fittings separately. Consult code for relief valve/pressure regulator requirements.

INSTALLATION

⚠ CAUTION Risk of flooding. Be sure that all plumbing and fittings are rated to withstand the system pressure which you expect the pump to generate.

1. Decide what's the best place to install the pump. Think about these things:

- it must be near the main water supply line
- the pump must be accessible
- the power cord must reach a power outlet
- the controller's LED lights must be visible
- ease of plumbing
- space saving

NOTE: Installation of a low pressure safety cutoff switch on the pump discharge is recommended (and may be required by your local code) to shut off the power in case of low discharge pressure (caused by broken pipe, etc.).

2. Mount the pump on a solid base in the location you have decided on.
3. Choose a time that will allow you to shut off the water to the household while you install the PressureMate.
4. Shutoff the main water supply valve to the household.
5. Open any faucet to relieve water pressure in the plumbing. Once the water pressure is relieved, close the faucet.

6. **READ STEP 6 COMPLETELY BEFORE STARTING TO WORK ON IT.** You must remove a length of pipe from the main water supply line to allow installation of elbows for the PressureMate. The locations of the cuts must take into consideration the size of the elbows being used, the length of the threads in threaded joints or the overlap in glued or soldered joints, etc.. Position the elbows in line with the pump suction and discharge threads. There may be slight water leakage while cutting the pipe. Remove any burrs or shavings caused by the cutting tool.

NOTE: Galvanized pipe may not need to be cut. If there is a union close to the pump location, disassemble the union and remove (unscrew) pipe back past the pump location. Have new lengths of pipe cut and threaded to allow for the pump installation.

NOTE: Both female suction and male discharge ports have 1" NPT threads. Depending on your type of connection and the size of your home's piping, you may need to install adapters on the ports.

7. Once the short piece of pipe is removed, the piping above the cut can be drained to prevent water mess. Place a pail under the opening going to the household. Open the highest faucet in the system to let in air so the water can fall out of the pipes into the pail. Once it's drained, close the faucet.
8. Install the elbows in the main water supply line. Point them toward the pump.

⚠ WARNING Risk of burst hose and flooding. Do not install with flexible hoses. Use only rigid piping that meets code.

9. Install piping from elbows to pump including a union in each line and a check valve in the pump suction line. The arrow on the check valve must point to the pump suction (see Figure 2). If not already in the plumbing system, install a pressure relief valve in the pump discharge line capable of passing the full pump flow at 100 psi (689 kPa). If local code requires installation of a pressure relief valve capable of handling the full pump flow at a pressure less than 100 psi (689 kPa), follow the code requirements. A low pressure safety cutoff switch should also be installed in the discharge line, and may be required by your local codes.

10. With all pipe and fittings installed and sealed, turn on the main water supply slowly to pressurize the system and check for leaks. If any leaks appear, turn the main valve off, open a faucet to relieve the pressure, and repair the leak. Repeat this step until there are no leaks in the system.
11. Open a faucet to release the air from the pipes and allow water to flow. When a steady stream of water flows out of the faucet, the pump is full of water and fully primed. Close the faucet.
12. Turn the controller knob to the desired pressure for the pump to turn on. The PressureMate comes factory preset at 30 psi (207 kPa), and we recommend starting there and adjusting it later according to your experience with the system.
13. Before continuing with the installation, see the sections of this manual titled "Electrical Connections", "Automatic Pressure Controller", "Normal Operation", and "When Does The Pump Stop Operating" for detailed information on how the system functions.
14. At this point, you can plug in the pump for the first time. When you plug in the power cord, the pump will start and run for 15 seconds regardless of the controller setting. If the inlet pressure is above the set point, the pump will stop after 15 seconds.
15. When the pump is running and after it shuts off automatically, the system is at the boosted pressures. Inspect the pipe and fittings again for water leaks. If any leaks appear, unplug the pump, turn the water main valve off, open a faucet to relieve the pressure and repair the leak. Repeat this step until there are no leaks in the system.

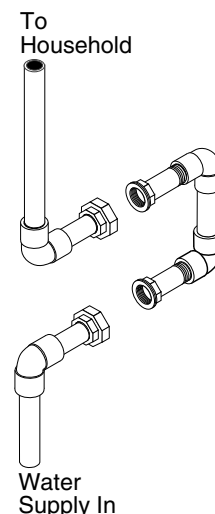


Figure 3: Typical bypass piping needed to allow removal of pump for repair without shutting down household water system.

ELECTRICAL CONNECTION

⚠ WARNING Hazardous voltage. Risk of dangerous or fatal electric shock. Plug the pump into a 115 Volt, 60 Cycle, Ground Fault Circuit Interrupter (GFCI) protected grounded outlet only. The pump is equipped with a 3-wire grounded cord and plug. Do not modify or remove the plug. Make sure the outlet meets the National Electric Code or the Canadian Electrical Code, as applicable. To avoid dangerous electrical shock hazard, keep the cord dry at all times. See Figure 2.

AUTOMATIC PRESSURE CONTROLLER

The Automatic Pressure Controller mounts on the pump. It protects against:

- Run-dry operation;
- Overheating;
- Frequent starts caused by small water losses in the system;
- Pressure drop.

The Automatic Pressure Controller features the following LEDs and controls:

“POWER ON” LED: indicates that the unit is electrically connected and that voltage is present. The pump is ready to operate.

“PUMP ON” LED: indicates that the pump is running and actually pumping water.

“WATER FAILURE” LED: indicates that no water is detected coming into the pump.

“TEMPERATURE FAILURE” LED: indicates that the temperature inside the pump has reached 158°F (70°C).

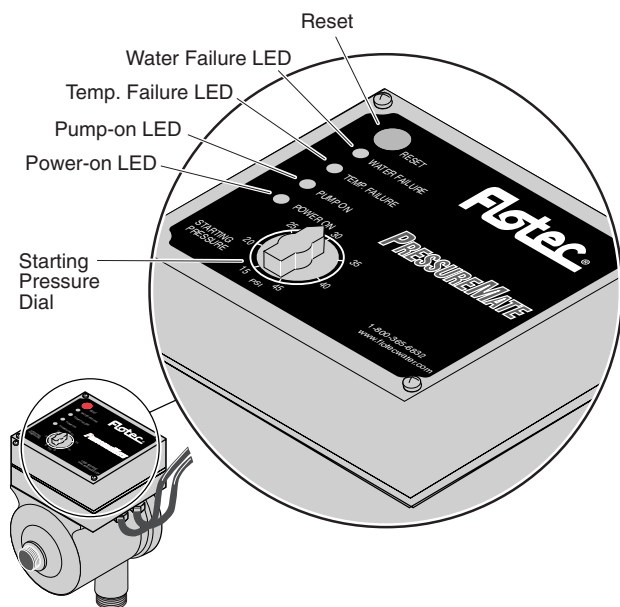


Figure 4 - PressureMate Control Panel

“Starting Pressure” dial: allows you to set the system pressure at 15 to 45 psi (103 to 310 kPa). The pump will start automatically when the system pressure drops below the pressure point which you have set on the “Starting Pressure” dial.

“Reset” button: resets any safeties which have tripped and allows the pump to restart.

NOTE: The unit will not respond if the ‘RESET’ button is held down. It must be pressed and released to activate the reset function.

NORMAL OPERATION OF THE PRESSUREMATE

⚠ CAUTION Burn Hazard. NEVER run the pump dry. Running the pump without water may cause pump to overheat and cause burns to persons handling the pump. It may also damage the impeller and may damage the seal, causing leaking or flooding, and will void the warranty. Fill the pump with water before starting it.

Make sure that the PressureMate has been properly installed, primed (see page 4), and that the suction pipe is unobstructed and open.

Turn the ‘STARTING PRESSURE’ dial to the minimum desired system pressure.

Plug in the pump. The ‘POWER ON’ and ‘PUMP ON’ lights will come on indicating, respectively, that voltage is present and that the pump is ready to operate.

The pump will start and will continue to operate until 15 seconds after the system pressure has risen past the set-point on the “STARTING PRESSURE” dial and flow has stopped.

WHEN DOES THE PUMP STOP OPERATING?

Pressure Set-Point/No Flow: The pump will stop operating and the ‘PUMP ON’ LED will go off 15 seconds after:

- The system pressure is above the point set by the STARTING PRESSURE dial, and
- The flow has stopped.

This is normal operation.

Restart: A water flow in the system greater than 1 GPM or a drop in pressure below the STARTING PRESSURE set-point will cause the pump to restart and the ‘PUMP ON’ LED to light up. The pump will continue to operate until 15 seconds after:

- It reaches the set pressure, and
- The flow stops.

NOTE: The 15-second delay in shutting off the pump prevents rapid cycling when water faucets are being turned on and off quickly (for example, when brushing teeth, etc.).

Pressure Drop/No Flow: Normally, when the pump starts, it will very quickly generate pressure and sense flow. If there is no flow and the pressure does not rise, it senses a “no water” condition. It can also sense this during operation if the water supply to the pump fails. To protect the pump from running dry:

- 15 seconds after it detects “no water”, the pump will stop operating,
- The ‘PUMP ON’ LED will go out, and
- The ‘WATER FAILURE’ LED will begin flashing.

Restart: Make sure that the suction line is not obstructed, and that it is connected to a water source.

- Press and release the ‘RESET’ button.
- The ‘PUMP ON’ LED should light up, and
- The ‘WATER FAILURE’ LED should stop flashing.

If flow is adequate, the pump will operate until 15 seconds after it reaches the set-point pressure and the flow stops.

High Temperature: When the water temperature inside the pump reaches 158°F (70°C),

- The pump will stop operating,
- The ‘PUMP ON’ LED will go out, and
- The ‘TEMPERATURE FAILURE’ LED will begin flashing.

Restart: Wait 20 minutes to let the water temperature drop below 104°F (40°C):

- Make sure that the pump is supplied with water and that the flow is unobstructed.

- Press and release the ‘RESET’ button.
- The ‘PUMP ON’ LED should light up, and
- The ‘TEMPERATURE FAILURE’ LED should stop flashing.
- If not, let it cool some more and retry

NOTE: If the pump continues to run hot, shut it off and call Flotec Customer Service at 1-800-365-6832.

LUBRICATION

The motor is lubricated at the factory for the life of the bearings. The pump seal is water cooled and self lubricating.

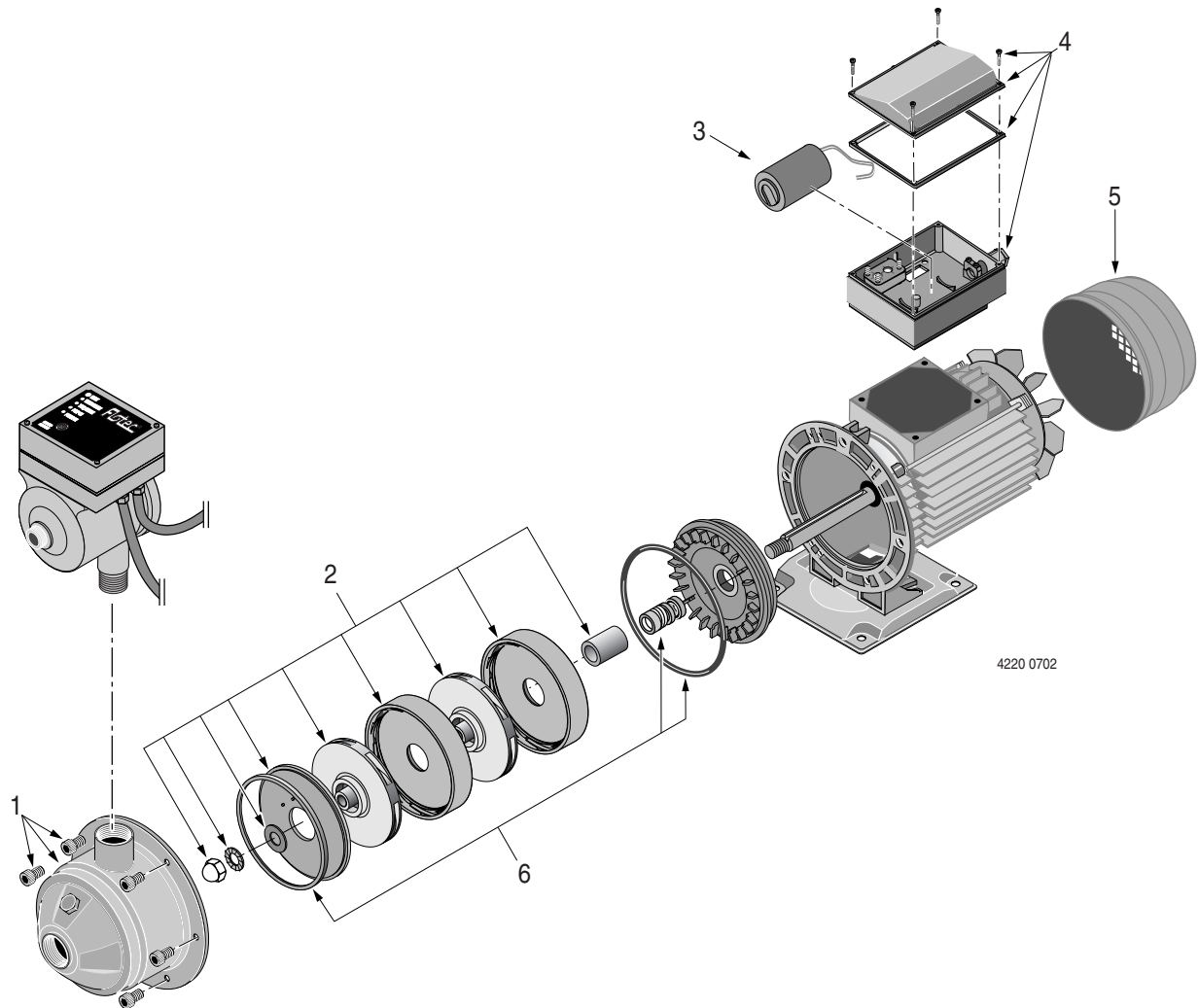
PUMP SERVICE

⚠ WARNING Hazardous voltage. Can shock, burn, or cause death. Unplug the pump and controller before servicing them. Do not handle the pump or controller or attempt to work on the pump with wet hands or while standing on a wet or damp floor.

The motor has an auto-reset thermal overload protector. If the motor overheats, the overload will cut off the power to prevent damage and will reset after the motor cools. If the overload trips repeatedly, check the pump for the cause (low voltage, a clogged impeller, etc.).

TROUBLESHOOTING

SYMPTOM	POSSIBLE CAUSE(S)	CORRECTIVE ACTION
Motor will not run	Fuse is blown or circuit breaker tripped Power cord not plugged in	DISCONNECT POWER; Replace fuse or reset circuit breaker. Plug into 115 Volt grounded outlet.
Motor runs hot and overload kicks off or motor does not run and only hums	Voltage is too low Impeller not moving freely	Check voltage being supplied to pump. Check that impeller moves freely and is not clogged.
Motor runs but no water is delivered* * (Note: <i>Unplug pump</i> ; then open faucets and see if water is flowing through system).	Improper priming Clogged water filter Discharge valve closed Pipe size too small Impeller is plugged Pipes are frozen	Re-prime according to instructions. Stop pump, shut off water, and change filter cartridge. Filter should be installed on discharge side of pump. Open valve. Re-pipe using pipe of the same size as suction and discharge ports on pump. Clean impeller. Thaw pipes.
*Pump does not deliver water to full capacity	Corroded pipes Piping is too small in size Pump not being supplied with enough water Low voltage	Replace with plastic or new steel pipe. Re-pipe using pipe the same size as suction and discharge ports on pump. Enlarge inlet pipe; check well pump system. Make sure outlet is at 115 Volts.



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Model FP4815

Key No.	Part Description	No. Used	FP4815 1/2 HP
1	Pump Body Kit (includes Bolts)	1	FPP1801
2	Internal Parts Kit	1	FPP1870
3	Capacitor	1	171P5750
4	Wiring Box/Cover/Gasket Kit	1	FPP1802
5	Fan Guard	1	721S1090
6	Shaft Seal and O-Ring Kit	1	FPP1850