



Water is Our Business®

293 Wright Street, Delavan, WI 53115

Phone: 800-365-6832

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www.flotecwater.com

OWNER'S MANUAL

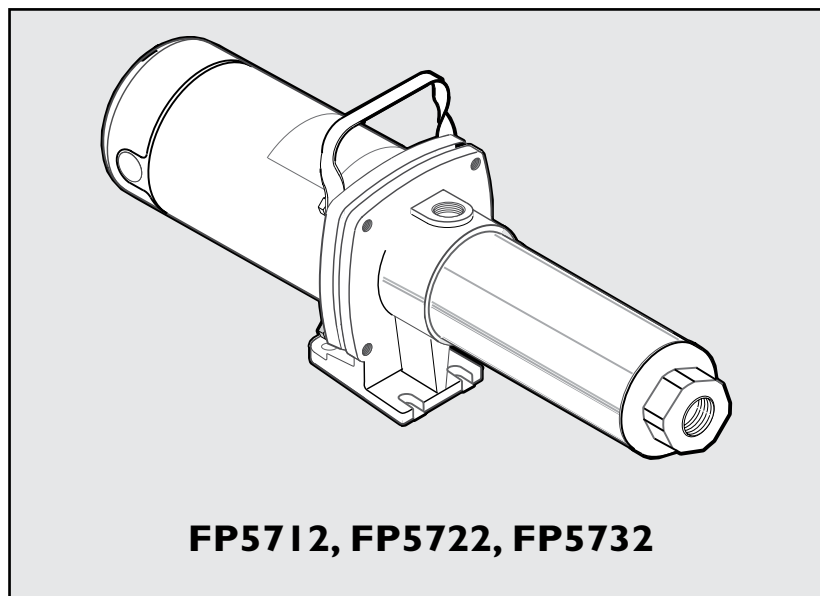
Multi-Stage Booster Pump

NOTICE D'UTILISATION

Pompe de surpression multicellulaire

MANUAL DEL USUARIO

Bomba de refuerzo de varias etapas



FP5712, FP5722, FP5732

Installation/Operation/Parts

For further operating, installation, or maintenance assistance:

Call 800-365-6832

English. Pages 2-10

Installation/Fonctionnement/Pièces

Pour plus de renseignements concernant l'utilisation, l'installation ou l'entretien,

Composer le (800) 365-6832

Français Pages 11-19

Instalación/Operación/Piezas

Para mayor información sobre el funcionamiento, instalación o mantenimiento de la bomba:

Llame al 800-365-6832

Español Páginas 20-28

Important Safety Instructions

SAVE THESE INSTRUCTIONS - This manual contains important instructions that should be followed during installation, operation, and maintenance of the product.

▲ 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 indicates a hazard which, if not avoided, *will* result in death or serious injury.

▲ WARNING indicates a hazard which, if not avoided, *could* result in death or serious injury.

▲ CAUTION indicates a hazard which, if not avoided, *could* result in minor or moderate injury.

NOTICE addresses practices not related to personal injury.

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.

California Proposition 65 Warning

▲ WARNING This product and related accessories contain chemicals known to the State of California to cause cancer, birth defects or other reproductive harm.

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.
3. **▲ WARNING Risk of explosion.** Do not ground to a gas supply line.
 - Use high pressure reinforced type discharge hose ONLY. See parts list for available hose, nozzle and fittings. A high pressure relief valve is recommended.
 - DO NOT use garden hose with High Pressure Booster pump. Garden hose will not stand the discharge pressure produced and will fail.
 - High pressure discharge stream is dangerous. To avoid injury, DO NOT aim the discharge stream at any person or animal.
 - BE SURE that the pump suction pipe pressure plus the pump discharge pressure does not exceed the pressure rating of hose and fittings. See Table I for pump discharge pressure ratings.
4. **▲ WARNING Risk of fire and explosion.** Can cause severe injury, property damage or death. 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.

5. **▲ CAUTION Risk of burns.** 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.
 - 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.
 - 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

▲ WARNING Risk of electric shock. Can shock, burn or kill. Ground the pump before connecting to a power supply. Disconnect the power before working on the pump, motor or tank.

- The pump is non-submersible. Keep the motor dry at all times. Do not wash the motor. Do not immerse. Protect the motor from wet weather.
- Disconnect power to the pump before servicing.
- Disconnect the power to the pump before servicing the pump. After the power is disconnected, let the pump cool for 20 minutes before attempting to work on it.
- 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.
- Ground the electrical outlet box.

Retain Original Receipt for Warranty Eligibility**Limited Warranty**

This Limited Warranty is effective June 1, 2011 and replaces all undated warranties and warranties dated before June 1, 2011.

FLOTEC warrants to the original consumer purchaser ("Purchaser" or "You") that its products are free from defects in material and workmanship for a period of twelve (12) months from the date of the original consumer purchase. If, within twelve (12) months from 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 herein. Note that this limited warranty applies to manufacturing defects only and not to ordinary wear and tear. All mechanical devices need periodic parts and service to perform well. This limited warranty does not cover repair when normal use has exhausted the life of a part or the equipment.

The original purchase receipt and product warranty information label are required to determine warranty eligibility. Eligibility is based on purchase date of original product – not the date of replacement under warranty. The warranty is limited to repair or replacement of original purchased product only, not replacement product (i.e. one warranty replacement allowed per purchase). Purchaser pays all removal, installation, labor, shipping, and incidental charges.

For parts or troubleshooting assistance, DO NOT return product to your retail store - contact FLOTEC Customer Service at 800-365-6832.

Claims made under this warranty shall be made by returning the product (except sewage pumps, see below) to the retail outlet where it was purchased or to the factory immediately after the discovery of any alleged defect. FLOTEC will subsequently take corrective action as promptly as reasonably possible. No requests for service will be accepted if received more than 30 days after the warranty expires. Warranty is not transferable and does not apply to products used in commercial/rental applications.

Sewage Pumps

DO NOT return a sewage pump (that has been installed) to your retail store. Contact FLOTEC Customer Service. Sewage pumps that have seen service and been removed carry a contamination hazard with them.

If your sewage pump has failed:

- Wear rubber gloves when handling the pump;
- For warranty purposes, return the pump's cord tag and original receipt of purchase to the retail store;
- Dispose of the pump according to local disposal ordinances.

Exceptions to the Twelve (12) Month Limited Warranty

Product	Warranty Period
FP0F360AC, FP0FDC	90 days
FP0S1775A, FP0S1790PCA, FP0S2400A, FP0S2450A, FP0S4100X, FP2800DCC, FPCP-20ULST, FPPSS3000, FPSC2150A, FPSC3150A, FPSC3350A	2 Years
4" Submersible Well Pumps, FP0S3200A, FP0S3250A, FP0S6000A, FPSC1725X, FPSC2200A, FPSC2250A, FPSE3601A, FPPSS5000	3 Years
FP7100 Series Pressure Tanks, E100ELT, E3305TLT, E3375TLT, E5005TLTT, E50TLT, E50VLT, E75STVT, E75VLT, FPSC3200A, FPSC3250A, FPSC4550A	5 Years

General Terms and Conditions; Limitation of Remedies

You must pay all labor and shipping charges necessary to replace product covered by this warranty. This warranty does not apply to the following: (1) acts of God; (2) products which, in FLOTEC's sole judgment, have been subject to negligence, abuse, accident, misapplication, tampering, or alteration; (3) failures due to improper installation, operation, maintenance or storage; (4) atypical or unapproved application, use or service; (5) failures caused by corrosion, rust or other foreign materials in the system, or operation at pressures in excess of recommended maximums.

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 LIMITED WARRANTIES ARE EXCLUSIVE AND IN LIEU OF ALL OTHER EXPRESS AND IMPLIED WARRANTIES, INCLUDING BUT NOT LIMITED TO IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE FOREGOING LIMITED WARRANTIES SHALL NOT EXTEND BEYOND THE DURATION 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 • 293 Wright Street • Delavan, WI U.S.A. 53115
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Installation

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Product Inspection

The high pressure booster pump has been carefully inspected and packaged to assure safe delivery. Inspect the pump and fittings and report to the carrier any items which are damaged or missing.

TABLE I - DISCHARGE PRESSURE

GPM	HP	No. of Stages	Discharge Pressure PSI at Rated Flow*	Discharge Pressure PSI at No Flow*
10	1/2	6	74	113
10	3/4	8	97	147
10	1	10	134	188

*For total discharge pressure, add this pressure to suction pipe pressure. For example, a 1 HP pump taking suction from an 80 psi water service line will produce $188 + 80 = 268$ psi total discharge pressure at 0 GPM flow. If suction pressure drops to 50 psi, discharge pressure will drop to 238 psi at 0 GPM flow.

Installation

The pump is designed to boost city water pressure or water pressure from a private water system. Use this high pressure stream to wash down milk parlors, barns, garages and driveways, or for fire protection.

The pump is portable with a convenient carrying handle. If an existing pressure water system is to be used as a water supply, it can be connected with available fittings and 3/4" or 1" high pressure hose to the pump inlet. If pump is permanently mounted on wall, use a 3/4" or 1" pipe or heavy-duty hose for suction line.

⚠ WARNING Risk of explosion. Do not ground to a gas supply line. Pump body may explode if pressure exceeds rated limits. Maximum inlet pressure is 80 PSI. Maximum discharge pressure is 315 PSI. Warranty is void if these pressure limits are exceeded.

High Pressure Booster Pump Installation Instructions

These instructions cover high pressure booster pump installations as shown below:

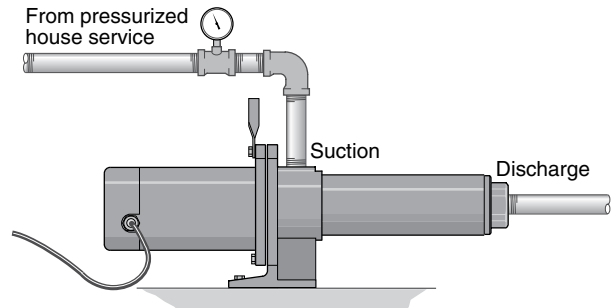


Figure 1 – Connection to house service.

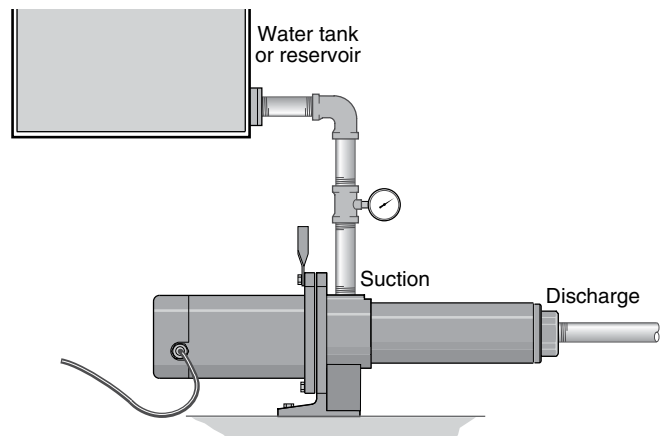


Figure 2 – Connection to water reservoir.

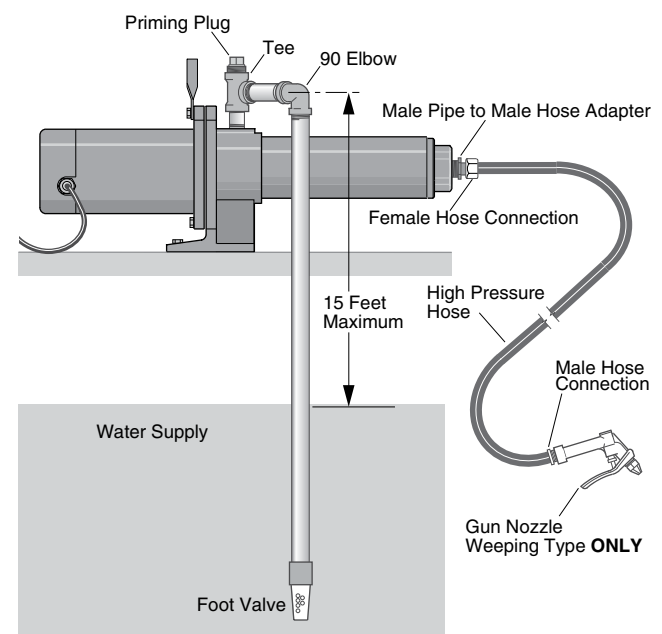
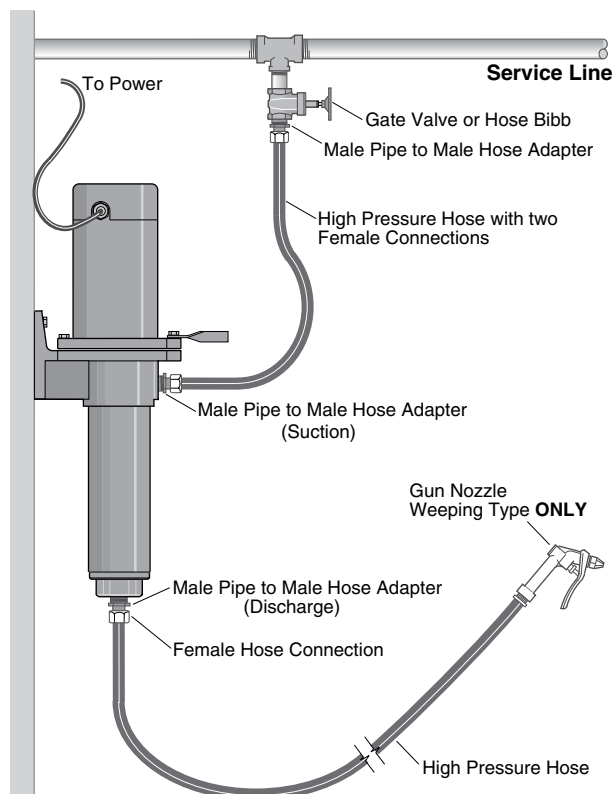


Figure 3 – Cistern or shallow well installation.

Installation / Operation

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To reduce friction losses to a minimum, inlet (suction) line should be **short** and have as few elbows as possible.

Figure 4 – Wall mounted to pressurized service line.

Size the inlet according to the chart below:

Ave. GPM	Threaded Inlet Size	Recommended Inlet Line Size	Recommended Discharge Line Size
10	3/4" NPT	1"	1"

An inlet strainer will prevent suspended debris from clogging pump.

The internal running surfaces of the pump and seals require water lubrication for good, consistent operation. Allowing pump to run dry or with no flow will severely damage pump and seals.

Install a pressure gauge in pump inlet line. Keep at least two pounds per square inch pressure (2 PSI) in inlet line whenever pump is operating. If this is not possible, consult customer service representative.

Lubrication

It is not necessary to lubricate pump or motor. The motor is equipped with sealed ball bearings, lubricated for the life of the bearing. The mechanical shaft seal in the pump is self-lubricating and requires no adjustment. Disassemble pump to replace seal, see *Maintenance*.

Operation

NOTICE Observe the following precautions when operating the pump:

1. Keep the motor dry! Do not direct stream from pump discharge onto the motor!
2. **⚠ WARNING Risk of explosion.** Do not ground to a gas supply line. Do not run the pump with discharge shutoff, as hose may burst or pump may be damaged due to high temperatures.
3. Do not use a standard trigger gun with this pump. Use only trigger guns with an automatic weeping feature.
4. Do not run pump dry; to do so may damage the seal.
5. To avoid internal damage to pump, do not operate with water temperature above 175 degrees F.

Electrical

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⚠ WARNING Risk of electric shock. Can shock, burn or kill. Disconnect power before working on pump, motor, pressure switch, or wiring.

Motor Switch Settings

Dual-voltage motors (motors that can operate at either 115 or 230 volts), are set at the factory to 230 volts. Do not change motor voltage setting if line voltage is 230 volts, or if you have a single voltage motor.

NOTICE Never wire a 115 volt motor to a 230 volt line.

Remove Motor End Cover

If you have a dual-voltage motor, and will connect it to 115 volts, follow the procedure below.

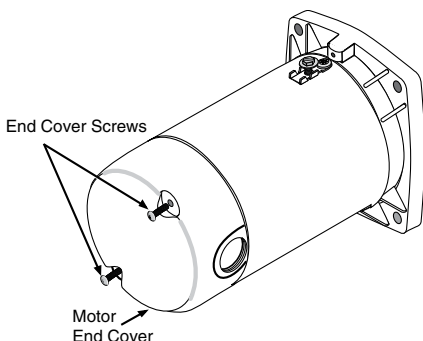


Figure 5 – Removing Motor End Cover.

You will need to remove the motor end cover to change the voltage setting.

Your motor terminal board (located under the motor end cover) should look like one of those below.

Plug Type Voltage Selector

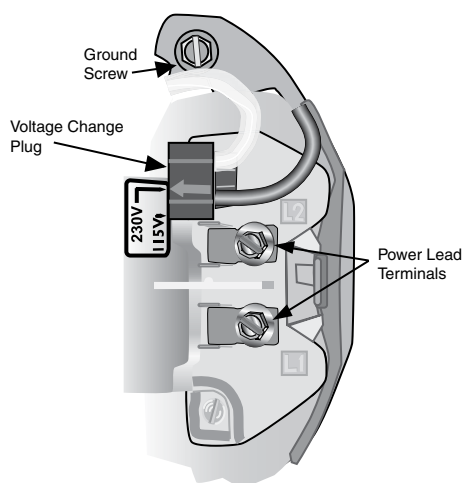


Figure 6 – Voltage set to 230 volts, Plug Type.

To change to 115 volts:

1. Make sure power is off.
2. Pull the plug straight up.
3. Move and attach the plug at the 115 volt position. The plug will now cover two metal tabs. The arrow on the plug will point to 115V.
4. Attach the power lead wires to the power lead terminals. Make sure the wires are secure.
5. Attach the ground wire to the green ground screw
6. Reinstall the Motor end cover

Go to *Wiring Connections*.

Dial Type Voltage Selector

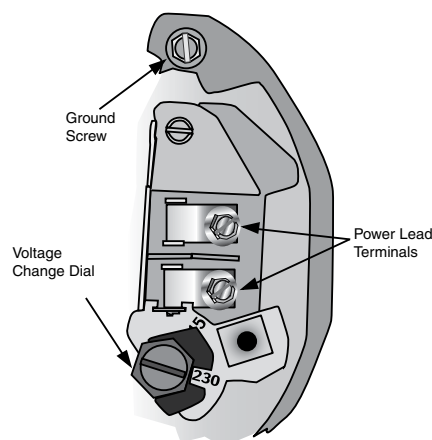


Figure 7 – Voltage set to 230 volts, Dial Type.

To change to 115 volts:

1. Make sure power is off.
2. Turn the dial counter-clockwise until 115 shows in the dial window.
3. Attach the power lead wires to the power lead terminals. Make sure the wires are secure.
4. Attach the ground wire to the green ground screw
5. Reinstall the Motor end cover

Go to *Wiring Connections*.

Electrical

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⚠ WARNING Risk of electric shock. Can shock, burn or kill.

- Ground motor before connecting to electrical power supply.
- Failure to ground motor can cause severe or fatal electrical shock hazard.
- Explosion hazard. Do not ground to a gas supply line.
- To avoid dangerous or fatal electrical shock, turn OFF power to motor before working on electrical connections.
- Supply voltage must be within $\pm 10\%$ of nameplate voltage. Incorrect voltage can cause fire or serious damage to motor and voids warranty. If in doubt consult a licensed electrician.
- Use wire size specified in Table II. If possible, connect pump to a separate branch circuit with no other appliances on it.
- Wire motor according to diagram on motor nameplate. If nameplate diagram differs from diagrams above, follow nameplate diagram.

Wiring Connections

1. Install, ground, wire and maintain this pump in compliance with the National Electrical Code (NEC) or the Canadian Electrical Code (CEC) and with all local codes and ordinances that apply. Consult your local building inspector for local code information.
2. Make sure that the voltage, frequency and phase (single phase) of the power supply agree with that stamped on the motor nameplate. If in doubt, check with the power company.

NOTICE Dual voltage motors are factory wired for 230 volts. If necessary, reconnect the motor for 115 volts, as shown. Do not alter the wiring in single voltage motors. Install, ground, wire, and maintain your pump in compliance with the National Electrical Code (NEC) or the Canadian Electrical Code (CEC), as applicable, and with all local codes and ordinances that apply. Consult your local building inspector for local code information.

NOTICE Clamp the power cable to prevent strain on the terminal screws.

NOTICE Voltage setting (under the motor end cover) options are shown in Figure 6 and 7. Do not change motor wiring if line voltage is 230 volts. Connect power supply as shown for your supply voltage.

Grounding the Motor

Ground the pump permanently using a wire of size and type specified by local or National Electrical Code.

1. Connect ground wire first. Connect the ground first, then to green grounding terminal provided under motor canopy (see Figure 6) identified as GRD. Make ground connection to this terminal. Do not connect motor to electrical power supply until unit is permanently grounded; otherwise serious or fatal electrical shock hazard may be caused.
2. For best ground connection, connect to a grounded lead in the service panel or to a metal underground water pipe or well casing at least 10 ft. long. If plastic pipe or insulated fittings are used, run ground wire directly to the metal well casing or use ground electrode furnished by the power company.

Table II - Recommended Fusing and Wiring

Motor HP	Volts/Phase	Max. Load Amps	Branch Fuse Rating Amps	Wire Length			
				0'-50'	51-100'	101-200'	201-300'
				AWG Wire Size			
1/2	115/230/1	12.4/6.2	20/15	12/14	12/14	10/14	8/14
3/4	115/230/1	14.8/7.4	20/15	12/14	12/14	8/14	6/14
1	115/230/1	19.2/9.6	25/15	10/14	10/14	8/14	6/12

Maintenance

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Pump Disassembly

⚠ WARNING Risk of electric shock. Can shock, burn or kill. Disconnect power to pump before servicing.

Tools required:

1. 7/16" open end wrench (2 required).
2. Flat blade screwdriver with insulated handle.
3. Work bench with vise recommended.
4. Pliers or similar tool.
5. Pipe wrench.

Impeller Stack Replacement

Remove pump from service and mount vertically in vise (if available), motor side down. See Figure 8. Clamp motor at center. It may be desirable to wrap motor with a shop rag to protect outside surface.

Proceed as follows:

1. Attach pipe wrench to flats on discharge connection and turn clockwise to remove (left hand threads).
2. Remove screws holding motor canopy and remove canopy. Pull canopy straight off as shown.

- ⚠ WARNING Risk of electric shock.** Can shock, burn or kill. Capacitor voltage may be hazardous. To discharge capacitor, hold insulated handle screwdriver by the handle and short capacitor terminals together. Do not touch metal screwdriver blade or capacitor terminals.
3. Unscrew overload and set it aside. Do not disconnect wires. Slide 7/16" open end wrench in behind spring loaded centrifugal switch as shown. Place on motor shaft flats to hold shaft stationary.
 4. With one 7/16" wrench in place on motor shaft, place second wrench on shaft hex at pump end and unscrew impeller stack by turning counter-clockwise.
 5. Once loose from motor shaft, hold shaft by snap ring using a pliers or similar tool, and pull stack from shell. You may have to apply a back and forth motion to break stack loose from shell.

To assemble with replacement impeller stack, keep pump in the vertical position, motor down, and reverse instructions 1 through 5.

Assembly hints:

- A. Apply a soapy water solution to suction and discharge O-rings to ease seating of shell.
- B. Make sure mechanical shaft seal spring is in proper position on motor shaft.

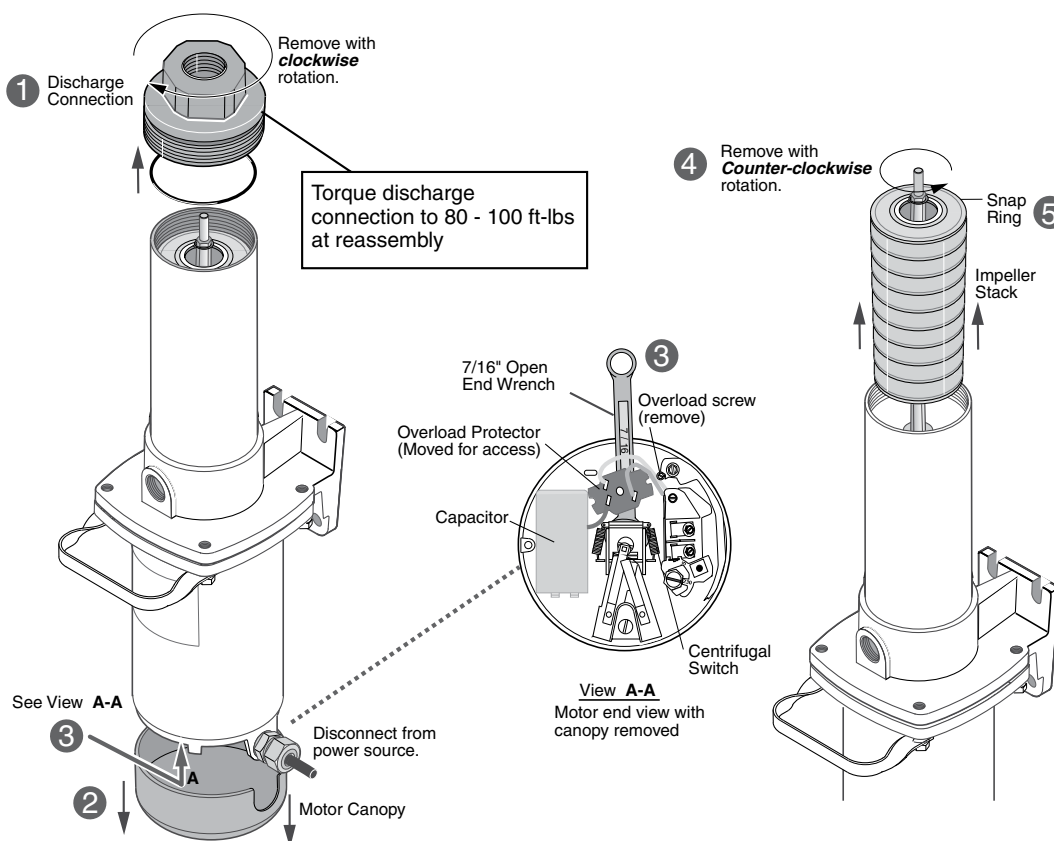


Figure 8 – Impeller stack replacement.

Mechanical Seal Replacement

This procedure is best completed with the pump held in a vertical position, motor down.

First complete *Disassembly* instructions 1 through 5 under *Impeller Stack Replacement*. See Figure 8.

6. Remove four capscrews holding pump body to motor. Pump handle will come off with top capscrews.
7. Unscrew pump shell from pump body, turning clockwise (left hand threads).
8. Remove mechanical shaft seal spring and rotating half from motor shaft. Use care not to scratch motor shaft when removing rotating half.
9. Remove pump body from motor and place on flat surface, face down. Again, use care not to scratch motor shaft.
10. Use a screwdriver to push ceramic seat out from seal cavity as shown.
11. Installation of ceramic seat:
 - A. Turn pump body over so seal cavity is up; clean cavity thoroughly.
 - B. Clean polished surface of ceramic seat with a clean cloth.
 - C. Lubricate outside rubber surface of seat with soapy water. Place cardboard washer over polished face of seat and press into seal cavity using a 3/4" socket or

a piece of 3/4" standard pipe.

- D. Be sure polished surface of seat is free of dirt and has not been damaged by insertion. Remove excess soapy water. Dispose of cardboard washer.
12. Installation of rotating half and spring:
 - A. Reinstall pump body on motor using extreme caution not to hit ceramic portion of seal on motor shaft. Reattach pump body to motor using capscrews. Be sure to reinstall pump handle at this time.
 - B. Inspect shaft to make sure that it is clean.
 - C. Clean face of rotating half of seal with a clean cloth.
 - D. Lubricate inside diameter of rotating half with soapy water and slide onto motor shaft (sealing face first).
 - E. Place spring over motor shaft so it rests on rotating half.
13. To complete reassembly from this point, reverse instructions 1 through 5 under *Impeller Stack Replacement*.

NOTICE Lubricate suction and discharge O-rings with soapy water for easier installation of shell.

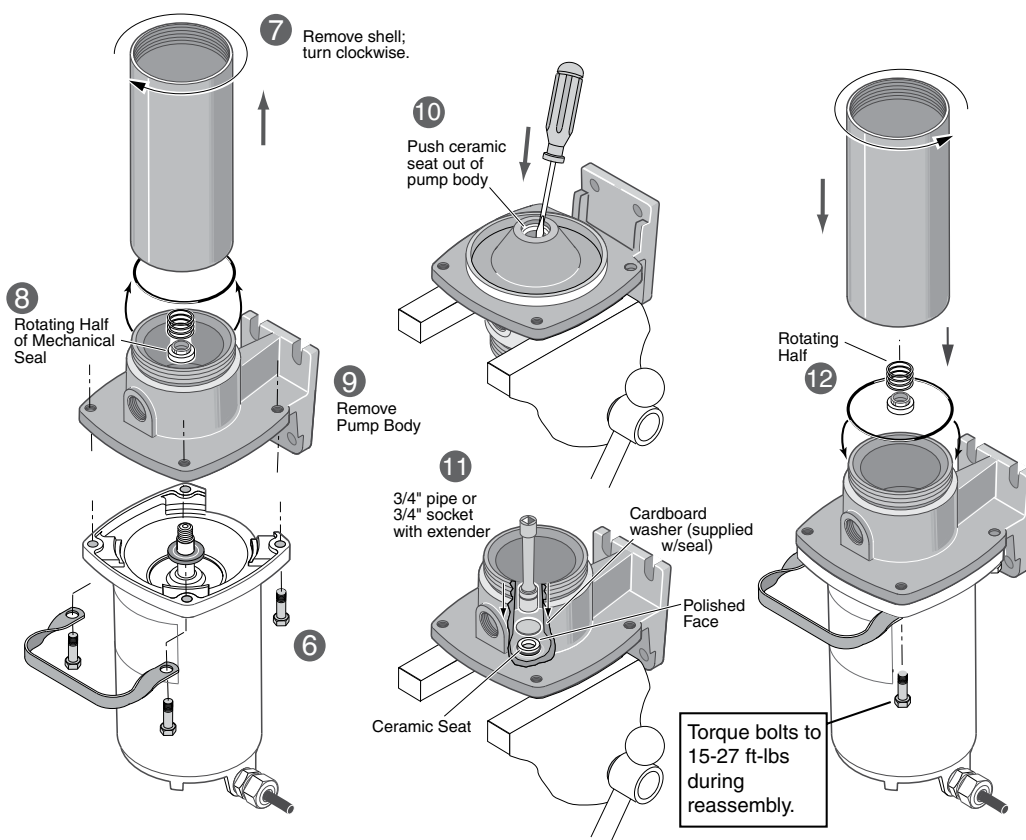
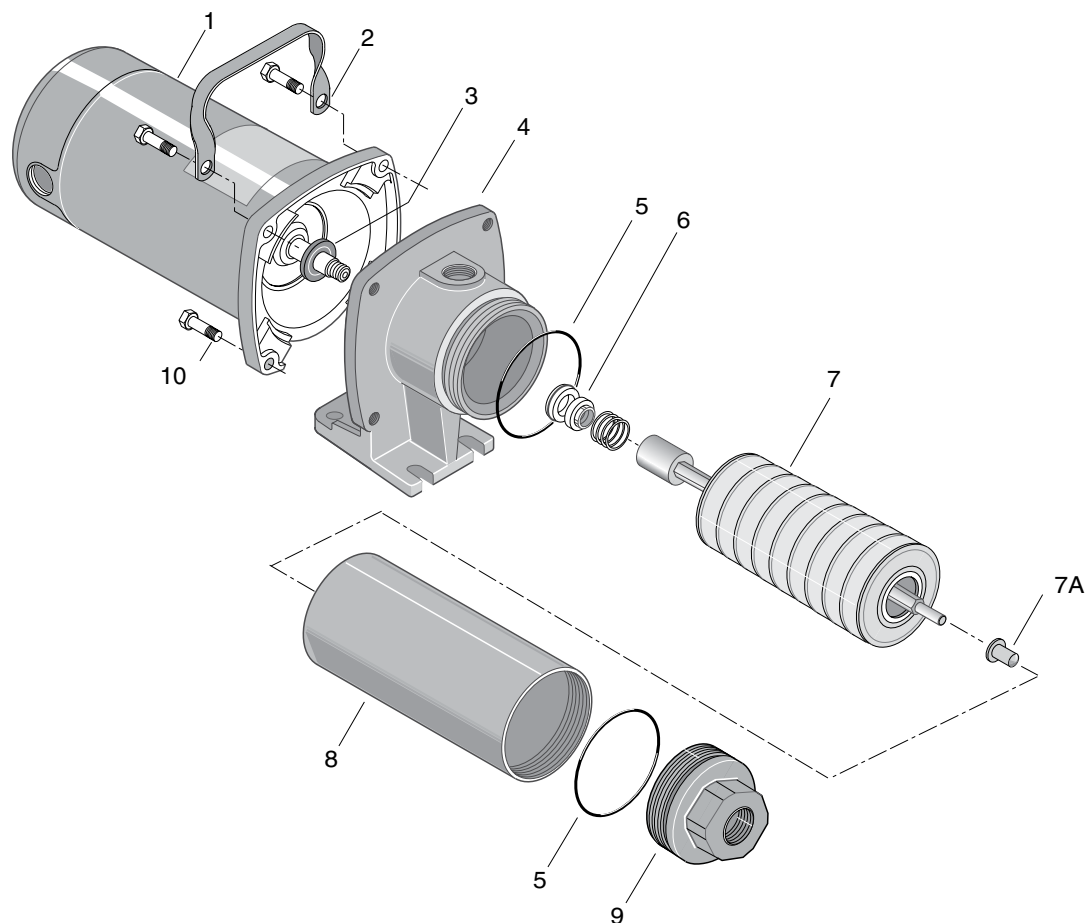


Figure 9 – Mechanical seal replacement.

Repair Parts

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Ref	Description	Qty	FP5712 1/2 HP	FP5722 3/4 HP	FP5732 1 HP
1	Motor - 115/230 Volt, 1 Phase	1	J218-590PKG	J218-596PKG	J218-601PKG
2	Handle	1	C54-21	C54-21	C54-21
3	Water Slinger	1	17351-0009	17351-0009	17351-0009
4	Pump Body	1	C2-85	C2-85	C2-85
5	O-Ring	2	U9-430	U9-430	U9-430
6	Shaft Seal Assembly	1	U109-118	U109-118	U109-118
7	Pump Stack	1	P325-425	P325-426	P325-439
7A	Nylatron Bearing (included with Key 8)	1	W31112	W31112	W31112
8	Pump Shell	1	P56-460SSL	P56-461SSL	PS6-461SSL
9	Discharge Assembly	1	C15203	C15203	C15203
10	Capscrew - 3/8 x 16 x 1-1/2"		U30-982ZP	U30-982ZP	U30-982ZP