

INSTALLATION, SERVICE & PARTS MANUAL

PF Dewatering Series Submersible Dewatering Pumps



PowerPROseries
by Power-Flo Pumps & Systems



Power-Flo Pumps & Systems

a Power-Flo Technologies company

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Pump Component Drawings for Series:

- PF01000 Series - 3/4 hp models
- PF01300 Series - 1 hp models
- PF20000 Series - 2 hp models
- PF25000 Series - 2-1/2 hp models
- PF27000 Series - 2-3/4 hp models
- PF35000 Series - 3-1/2 hp models
- PF50000 Series - 5 hp models
- PF60000 Series - 6 hp models
- PF81000 Series - 10 hp models
- PF81500 Series - 15 hp models
- PF82500 Series - 25 hp models
- PF85000 Series - 50 hp models

Control Box Component Drawings:

Control Wiring Diagram Page 33 - 35

Typical Name Plate

| | | |
|---------------------------------------|---------|-----------|
| POWER-FLO Pumps & Systems | | |
| Model Number | PF50112 | |
| MFG Date | MC | |
| Voltage | 230v | Phase 1.0 |
| 60 Hz | HP | 5.0 |
| 877-24 PUMPS www.powerflopumps.com | | |

Pump Model Number: _____

Serial Number or MFG Date: _____

Date of Purchase: _____

Installation Date: _____

Voltage and Current Readings at Startup:

1-Phase Models:

3-Phase Models:

Amps _____ Amps L1-2 _____ Volts L1-2 _____

Volts _____ Amps L2-3 _____ Volts L2-3 _____

Amps L3-1 _____ Volts L3-1 _____

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General Safety Instructions

THOROUGHLY REVIEW ALL INSTRUCTIONS BEFORE INSTALLING, OPERATING OR PERFORMING ANY WORK ON THIS PUMP.

FOR YOUR SAFETY AND THE SAFETY OF OTHERS -This manual is intended to assist in the installation and operation of the pump and should be kept for easy reference at all times. Please pay particular attention to the **SAFETY ALERT** messages throughout this manual.

IMPORTANT! Information or directions related to assembly, installation, operation, or maintenance which could result in personal injury or damage to the pump or system if ignored.

WARNING! Warns of hazards that CAN or WILL cause serious personal injury, death, or major property damage if ignored.



WARNING! Only qualified personnel should install, operate and repair pump. All electrical work must be performed by a qualified electrician. To reduce the risk of electrical shock, all wiring, junction connections

and control panels must be properly wired and grounded in accordance with the National Electric Code (NEC) or the Canadian Electrical Code (CEC) and all applicable state, province, local codes and ordinances. Failure to follow these codes may result in personal injury or equipment damage and will void the warranty.

WARNING! This pump is NOT intended for use in swimming pools. When used in a decorative fountain application the pump MUST be protected by a Ground Fault Interrupter.

WARNING! This pump is NOT intended for applications including hazardous materials or where flammable gases exist. Only pumps specifically Listed for Class 1, Division 1 are allowable where hazardous liquids or flammable gases may exist.

IMPORTANT! Failure to follow the instructions in this manual may lead to serious injury or even death! The following safety guidelines should be followed when operating any submersible pump.

- **NEVER** operate the pump without proper protective safety glasses, steel-toed boots and/or other protective devices required for the job.
- **ALWAYS** disconnect the pump from the power source before handling or servicing. Lock out and tag the power supply to reduce risk of electrical shock.
- **ALWAYS** make sure the pump is grounded properly. Improper grounding may void the warranty.
- **NEVER** operate a pump with a plug-in type power cord without a ground fault interrupter.
- **NEVER** plug in the pump while standing in water.

- **ALWAYS** protect the power cable to avoid punctures, cut, bruises and abrasions - inspect frequently.
- **ALWAYS** make sure that the voltage supplied to the pump is correct. Check the pump name plate to verify the required voltage.
- **CAUTION!** The pump may build up heat and pressure during operation. Allow time for the pump to cool before handling or servicing.
- **DO NOT** lift the pump by the power cord. The use of an adequate rope or lifting chain should be attached to the lifting handles. Make sure that the lifting handles are securely fastened each time before lifting
- **DO NOT** wear loose clothing that may become entangled in the impeller or other moving parts.
- **DO NOT** insert fingers into the pump while power is connected and the pump is running.
- **DO NOT** exceed manufacturers recommendation for maximum performance or temperature, as this could cause the motor to overheat or damage to the unit.



WARNING! Products returned must be cleaned, sanitized, or decontaminated as necessary prior to shipment, to insure that employees will not be exposed to health hazards in handling said material. Return of merchandise requires "RMA" (Return Merchandise Authorization). Contact factory or pump supplier for authorization. All applicable laws and regulations shall apply.



Bronze/brass and bronze/brass fitted pumps may contain lead levels higher than considered safe for potable water systems.

Lead is known to cause cancer and birth defects or other reproductive harm. Various government agencies have determined that leaded copper alloys should not be used in potable water applications. For non-leaded copper alloy materials of construction, please contact factory.



WARNING:
CANCER AND REPRODUCTIVE HARM-
WWW.P65WARNINGS.CA.GOV

IMPORTANT! Power-Flo Pumps & Systems is not responsible for losses, injury, or death resulting from a failure to observe these safety precautions, misuse or abuse of pumps or equipment.



Pump Specifications

| Model | Motor HP | RPM | Volt/Phase | Shut Off Head | Max Flow GPM | Dischg | Full Load Amps | Locked Rotor Amps | Cord Size | Cord O.D. | Winding Resistance W,B--R,B--R,W |
|-------------|----------|------|------------|---------------|--------------|---------|----------------|-------------------|-----------|-----------|----------------------------------|
| PF01011 | 3/4 | 3450 | 115/1 | 41' | 100 | 2" | 11.0 | 36.2 | 14/4 | 0.570 | 1.5-6.2-4.7 |
| PF01034 | 3/4 | 3450 | 460/3 | 41' | 100 | 2" | 1.8 | 7.5 | 14/4 | 0.570 | 34.2-34.2-34.2 |
| PF01012 | 3/4 | 3450 | 230/1 | 41' | 100 | 2" | 5.8 | 18.1 | 14/4 | 0.570 | 6.0-7.6-7.6 |
| PF01032 | 3/4 | 3450 | 230/3 | 41' | 100 | 2" | 3.6 | 15.0 | 14/4 | 0.570 | 8.5-8.5-8.5 |
| PF01311 ‡ | 1 | 3450 | 115/1 | 43' | 120 | 2" | 12.0 | 36.2 | 14/4 | 0.570 | 1.5-6.2-4.7 |
| PF01311A | 1 | 3450 | 115/1 | 46' | 120 | 2" | 12.0 | 36.2 | 14/4 | 0.570 | 1.5-6.2-4.7 |
| PF01311SCV | 1 | 3450 | 115/1 | 46' | 120 | 2" | 12.0 | 36.0 | 14/3 | 0.570 | 1.5-6.2-4.7 |
| PF01312 ‡ | 1 | 3450 | 230/1 | 43' | 120 | 2" | 7.5 | 18.0 | 14/4 | 0.570 | 6.0-7.6-7.6 |
| PF01332 ‡ | 1 | 3450 | 230/3 | 43' | 120 | 2" | 3.8 | 15.0 | 14/4 | 0.570 | 8.5-8.5-8.5 |
| PF01334 ‡ | 1 | 3450 | 460/3 | 43' | 120 | 2" | 1.9 | 7.5 | 14/4 | 0.570 | 34.2-34.2-34.2 |
| PF20111 | 2 | 3450 | 115/1 | 76' | 175 | 2" & 3" | 23.3 | 92.4 | 12/4 | 0.650 | 0.4-1.5-1.1 |
| PF20112 | 2 | 3450 | 230/1 | 76' | 175 | 2" & 3" | 11.7 | 51.1 | 12/4 | 0.650 | 1.6-5.8-4.2 |
| PF25132HH | 2-1/2 | 3450 | 230/3 | 89' | 152 | 2" & 3" | 6.8 | 49.2 | 12/4 | 0.650 | 2.0-2.0-2.0 |
| PF25132HV | 2-1/2 | 3450 | 230/3 | 50' | 300 | 2" & 3" | 7.8 | 49.2 | 12/4 | 0.650 | 2.0-2.0-2.0 |
| PF25134HH | 2-1/2 | 3450 | 460/3 | 89' | 152 | 2" & 3" | 3.4 | 24.6 | 12/4 | 0.650 | 8.0-8.0-8.0 |
| PF25134HV | 2-1/2 | 3450 | 460/3 | 50' | 300 | 2" & 3" | 3.9 | 24.6 | 12/4 | 0.650 | 8.0-8.0-8.0 |
| PF27112 | 2-3/4 | 3450 | 230/1 | 50' | 300 | 2" & 3" | 12.5 | 52.6 | 12/4 | 0.650 | 1.60-5.80-4.20 |
| PF35112 | 3-1/2 | 3450 | 230/1 | 78' | 250 | 2" & 3" | 18.5 | 84.1 | 12/4 | 0.650 | 0.86-2.2-2.2 |
| PF50112 | 5 | 3450 | 230/1 | 91' | 300 | 2" & 3" | 27.0 | 94.0 | 12/4 | 0.650 | 0.7-2.7-2.0 |
| PF50132HV | 5 | 3450 | 230/3 | 91' | 300 | 2" & 3" | 15.5 | 87.8 | 12/4 | 0.650 | 0.85-0.85-0.85 |
| PF50134HV | 5 | 3450 | 460/3 | 91' | 300 | 2" & 3" | 7.8 | 43.9 | 12/4 | 0.650 | 3.60-3.60-3.60 |
| PF500135HV | 5 | 3450 | 575/3 | 91' | 300 | 2" & 3" | 6.1 | 35.1 | 12/4 | 0.650 | 5.2-5.2-5.2 |
| PF50132-2ST | 5 | 3450 | 230/3 | 175' | 185 | 2" & 3" | 17.3 | 98.0 | 12/4 | 0.650 | 0.85-0.85-0.85 |
| PF50134-2ST | 5 | 3450 | 460/3 | 175' | 185 | 2" & 3" | 8.7 | 48.0 | 12/4 | 0.650 | 3.60-3.60-3.60 |
| PF60112 | 6 | 3450 | 230/1 | 80' | 450 | 4" | 34.0 | 145.0 | 6/4 | 1.100 | 0.43-1.8-1.37 |
| PF81032HH | 10 | 3450 | 230/3 | 165' | 450 | 4" | 30.0 | 208.0 | 6/4 | 1.100 | 0.30-0.30-0.30 |
| PF81032HV | 10 | 3450 | 230/3 | 104' | 605 | 4" | 30.0 | 208.0 | 6/4 | 1.100 | 0.30-0.30-0.30 |
| PF81034HH | 10 | 3450 | 460/3 | 165' | 450 | 4" | 15.0 | 104.0 | 12/4 | 0.650 | 1.14-1.14-1.14 |
| PF81034HV | 10 | 3450 | 460/3 | 104' | 605 | 4" | 15.0 | 104.0 | 12/4 | 0.650 | 1.14-1.14-1.14 |
| PF81532HH | 15 | 3450 | 230/3 | 200' | 600 | 4" | 39.5 | 288.0 | 6/4 | 1.100 | 0.21-0.21-0.21 |
| PF81532HV | 15 | 3450 | 230/3 | 130' | 800 | 4" | 39.5 | 288.0 | 6/4 | 1.100 | 0.21-0.21-0.21 |
| PF81534HH | 15 | 3450 | 460/3 | 200' | 600 | 4" | 19.7 | 144.0 | 12/4 | 0.650 | 0.75-0.75-0.75 |
| PF81534HV | 15 | 3450 | 460/3 | 130' | 800 | 4" | 19.7 | 144.0 | 12/4 | 0.650 | 0.75-0.75-0.75 |
| PF82532HH | 25 | 3450 | 230/3 | 230' | 800 | 6" | 65.8 | 464.0 | 4/4 | 1.286 | 0.37-0.37-0.37 |
| PF82532HV | 25 | 3450 | 230/3 | 160' | 1000 | 6" | 65.8 | 464.0 | 4/4 | 1.286 | 0.37-0.37-0.37 |
| PF82534HH | 25 | 3450 | 460/3 | 230' | 800 | 6" | 32.9 | 232.0 | 4/4 | 1.286 | 0.10-0.10-0.10 |
| PF82534HV | 25 | 3450 | 460/3 | 160' | 1000 | 6" | 32.9 | 232.0 | 4/4 | 1.286 | 0.10-0.10-0.10 |
| PF85034HH | 50 | 3450 | 460/3 | 245' | 1025 | 6" | 56.0 | 360.0 | 4/4 | 1.286 | 0.19-0.19-0.19 |
| PF85034HV | 50 | 3450 | 460/3 | 190' | 1425 | 6" | 56.0 | 360.0 | 4/4 | 1.286 | 0.19-0.19-0.19 |

Winding Resistance ± 5%. LC = Less Control Box. (‡) 1Hp pumps prior to Dec. 2009 (Mfg Date: MC) had a shut off head of 46Ft., After Dec. 2009 they will be 43Ft.

Pump Specifications

| | | |
|---------------------------|----------------------------------|---|
| LIQUID TEMPERATURE | | 140°F (60°C) |
| DISCHARGE CASE | | Aluminum, Hard Anodized |
| DIFFUSER | | Aluminum, Hard Anodized |
| SUCTION CASE | | Aluminum, Hard Anodized, with wear resistant polyurethane liner |
| FRAME | | Aluminum, Hard Anodized |
| OUTER CASE | | Aluminum, Hard Anodized |
| WEAR PLATE* | | Polyurethane |
| PUMP SHAFT | | Stainless Steel |
| IMPELLER | | Polyurethane (3/4hp & 1hp only) Stainless Steel (2hp - 50hp models) |
| HARDWARE | | Stainless Steel |
| O-RING MATERIAL | | Buna-N |
| SEAL | Design | Tandem, Oil Lubricated |
| INBOARD | Material | Rotating Face - Carbon Stationary Face - Ceramic Elastomer - Buna-N Hardware - 300 Series Stainless |
| OUTBOARD | Material | Rotating Face - Silicon Carbide Stationary Face - Silicon Carbide Elastomer - Buna-N Hardware - 300 Series Stainless |
| STRAINER | | Stainless steel, 3/16" Holes on 3/4 & 1HP, 1/4" Holes on Rest Anti-Sludge, Stainless Steel, 3/16" Holes on PF01311SCV, (Optional) |
| UPPER BEARING | Design | Single Row, Ball |
| | Lubrication | Prelubricated high-temperature grease |
| | Load | Radial |
| LOWER BEARING | Design (.75hp-5hp) | Single Row, Ball |
| | Design (6, 10 & 15hp) | Single Row, Ball, Shielded |
| | Design (25hp-50hp) | Double Row, Shielded, Ball, Angular contact |
| | Lubrication (all models) | Prelubricated high-temperature grease |
| | Load (all models) | Radial & Thrust |
| POWER CABLE | | 25 & 50Ft., with Strain Relief and Pressure Grommet for Sealing |
| POWER CABLE | PF01311SCV - Only | 65Ft. , with Strain Relief and Pressure Grommet for Sealing, & 115 volt plug |
| MOTOR | | Insulation: Class H ~ VPI (vacuum Pressure Impregnation) |
| MOTOR | PF01311SCV - Only | Insulation: Class H ~ VPI, Overload protection included in motor. Internal start & run capacitors |
| CONTROL | Single Phase | Watertight. Provides overload and short circuit protection. Start & Run Capacitors, ON-OFF Switch |
| | Three Phase | Watertight. Provides Circuit Breaker for overload and short circuit protection |

(*) Not used on 3/4 and 1HP units.

WARRANTY INVALID IF CORRECT POWER-FLO CONTROL IS NOT USED AT ALL TIMES



Pump Dimensions - 3/4HP & 1HP

3/4HP - PF01011, 01012, 01032, 01034

1HP - PF01311, 01312, 01332, 01334,

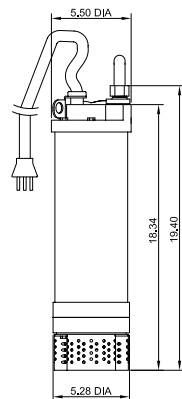
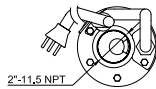
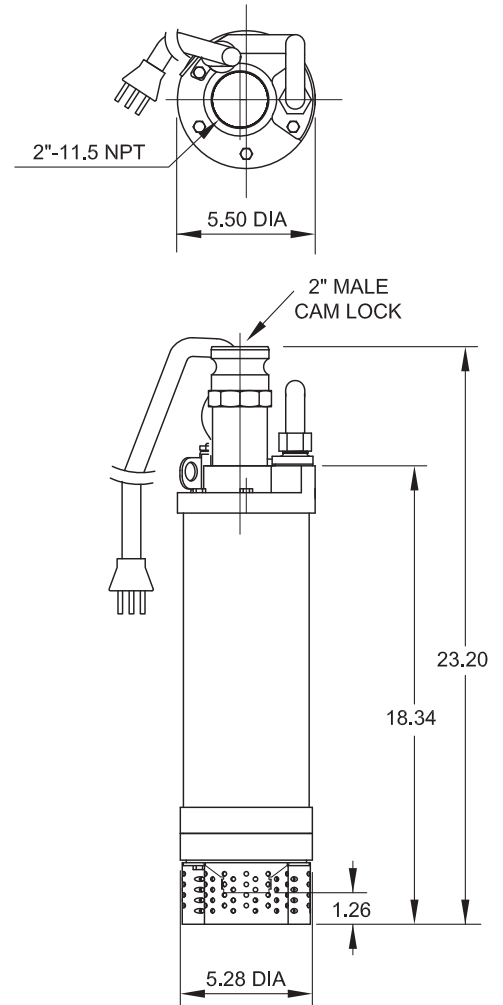
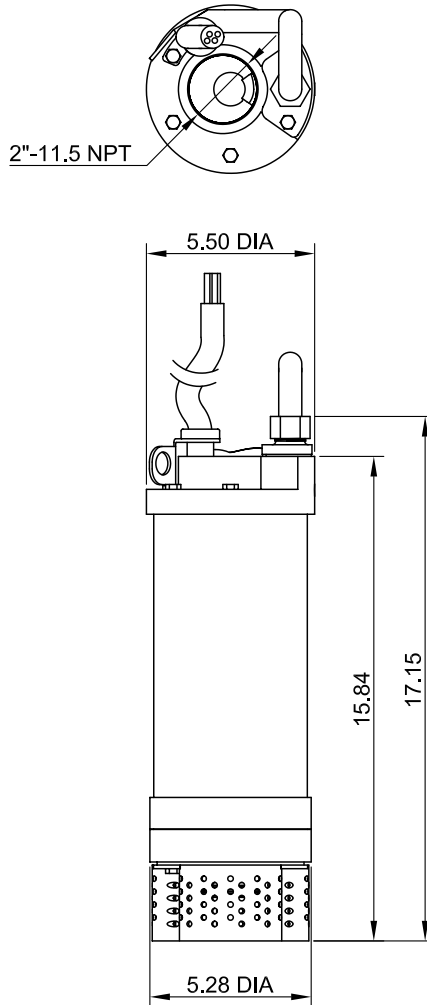
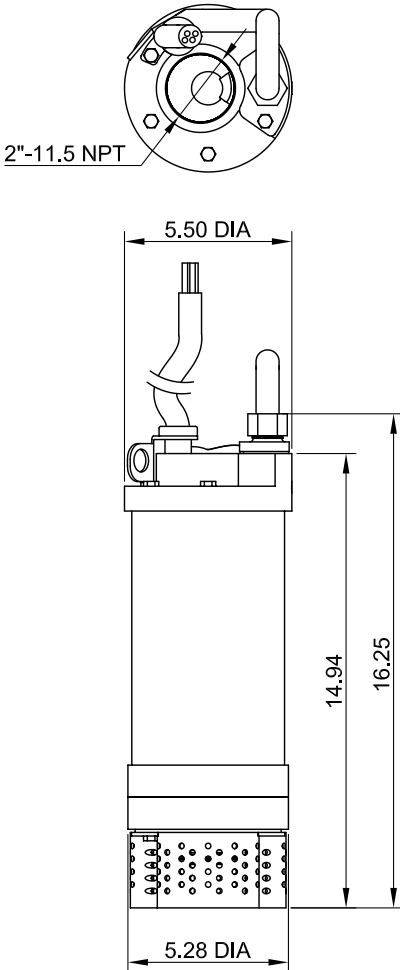
1 Hp **AFTER** Dec 2009 will be of this design

1HP - PF01311A,

Any PF01311 01312, 01332, 01334 pump Dated **BEFORE** Dec. 2009 will be of this design.

1HP - PF01311SCV,

Replaces PF01311SC as of Oct. 2010

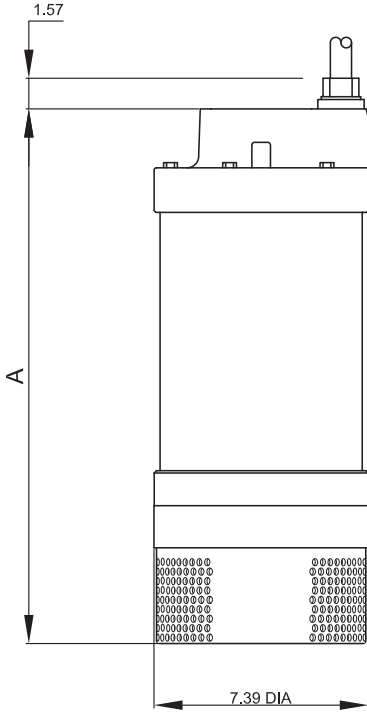


PF01311SCV includes; 2" Cam Lock, 2" pipe nipple, 65Ft cord w/115volt plug, 30Ft Nylon rope, Start & Run Capacitors.

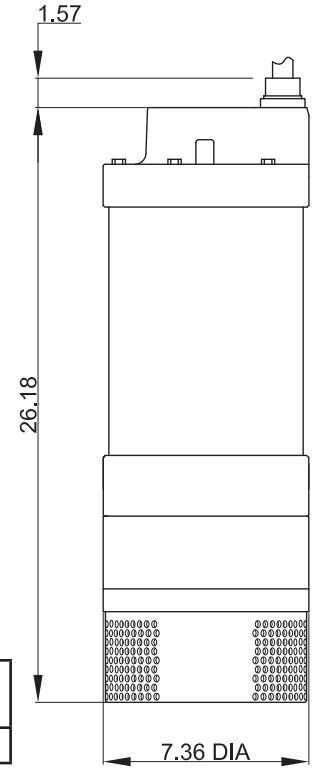
1HP - PF01311SC; Replaced by PF01311SCV Oct. .2010



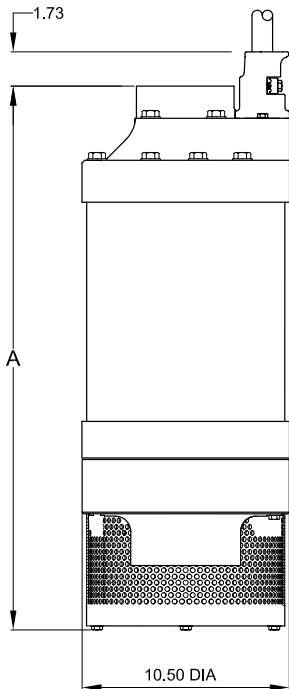
Pump Dimensions



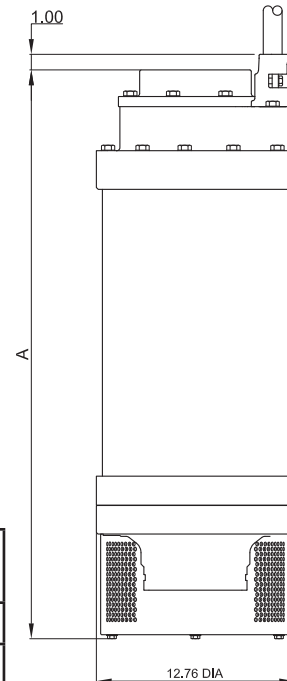
| PUMP SERIES | HP | DIM "A" (inches) | NPT Discharge |
|-------------|-------|------------------|---------------|
| PF20000 | 2 | 18.00 | 2" & 3" |
| PF25000 | 2-1/2 | 21.44 | 2" & 3" |
| PF27000 | 2-3/4 | 18.00 | 2" & 3" |
| PF35000 | 3-1/2 | 21.44 | 2" & 3" |
| PF50000 | 5 | 21.44 | 2" & 3" |



| PUMP SERIES | HP | NPT Discharge |
|-------------|----|---------------|
| PF50000-2ST | 5 | 2" & 3" |



| PUMP SERIES | HP | DIM "A" (inches) |
|-------------|----|------------------|
| PF60112 | 6 | 27.38 |
| PF81000 | 10 | 27.38 |
| PF81500 | 15 | 29.12 |



| PUMP SERIES | HP | DIM "A" inches |
|-------------|----|----------------|
| PF82500 | 25 | 33.31 |
| PF85000 | 50 | 36.61 |

General Information

Receiving Inspection

ALWAYS inspect pumps upon receipt and prior to use for possible shipping damage or shortages. If damage is evident, file a freight delivery claim with the delivering carrier immediately.

Returned Goods Authorization:

For the location of the nearest repair facilities contact Power-Flo Pumps & Systems.

Storage

Store the pump in a dry area. For periods exceeding six (6) months, store the pump in a temperature controlled (+40F to +120F) area that provides protection from wet, freezing weather and excessive dust. It is recommended that prior to initial start up, without power connected, rotate the impeller by hand to assure the mechanical seal and impeller rotate freely.

Location:

The Power-Flo Series dewatering pumps are designed to pump water and are used for dewatering of building sites, pipelines, coffer dams, tunnels, utility and telecommunication manholes and transformer vaults, construction sites, emergency services aboard ship, marine cargo holds, ballast tanks and for general use in shipyards and dry-docks.



IMPORTANT! - Consult the factory prior to pumping any liquid other than water or in excess of 140°F at a specific gravity 1.0.

These pumps are designed to run dry for a reasonable time in a non-submerged condition without damage. This is accomplished by the pump design allowing air to flow from the suction of the pump, past the motor, and out the discharge, removing the heat generated by the motor. The internal water channel of the pump must not be blocked by any foreign object.



IMPORTANT! - A strainer should be installed on pump at all times. Inspect and clean strainer periodically to maintain pump efficiency.

Overload Protection:

Single Phase pumps are provided with fuses in the control box for protection against motor damage due to locked rotor conditions and short circuits.

A switch is provided for manual "ON - OFF" control. Before starting/restarting the pump, check for correct voltage and phase. Also check for short circuits, cuts or breaks in cable and that all connections are tight. Do not let the pump cycle or run if an overload condition exists.

Three Phase pumps are provided with a circuit breaker in the control box for protection against motor damage due to locked rotor conditions and short circuits. Disconnect the power to the pump if any of these conditions occur. Before starting or restarting the pump, check for correct voltage and phase. Also check for short circuits, cuts or breaks in cable and that all connections are tight. Do not let the pump cycle or run if an overload condition exists.

Pump Rotation:

ALWAYS check the motor rotation prior to installing and starting up three phase pumps. Improper motor rotation can result in poor pump performance and can damage to the pump and/or the motor. To check the rotation, suspend the pump freely, momentarily apply power and observe the "Kick".

"Kick" should always be in a clockwise direction as viewed from the top of the pump motor housing. Pump "Kick" is the opposite direction of pump rotation. Correct motor rotation is counter clockwise. In the event that the rotation is incorrect for a three-phase unit, interchange any two power cable leads at the control box. DO NOT change leads in the cable housing in the motor. Recheck the "Kick" rotation again by momentarily applying power.

Installation:

ALWAYS install the pump in an upright position on its strainer base. A discharge hose (not supplied) should be connected to the discharge port. A discharge pipe can also be used. The discharge hose or pipe should be properly supported to avoid placing any stress on the pump.

ALWAYS mount the control box above the ground to minimize dirt and/or water exposure.

Install the pump directly into an area where there is a heavy buildup of mud, grit, silt or debris. If this condition is present install the pump on a platform.

ALWAYS lower the pump without dropping the pump. Avoid impact landings.



Pump Installation & Operation

DO NOT lift the pump by the power cord. The use of an adequate rope or lifting chain should be attached to the lifting handles. Make sure that the lifting handles are securely fastened each time before lifting. The pumps should be lowered into position carefully without dropping. Avoid impact landings.

DO NOT modify the power cord assembly in any way except for shortening for a specific application. Any splice between the pump and the control panel must be made in accordance with the National Electric Codes. Cable should be protected at all times to avoid punctures which penetrate the outer cover.

ALWAYS Install proper safety ground connection to the green conductor to insure the motor, pump and control remains properly grounded at all times, independent of the power supply. A metal well casing is one of the best grounds available.

Transmission of power from source to pump control should be accomplished with properly sized 4 conductor cable of heavy duty type to prevent excessive voltage drop during full load conditions.

Voltage supplied to the pump must not vary more than plus or minus 10% of rated pump voltage, measured at the motor terminal. Voltage must also be balanced phase to phase within 5%. See specification on page 4.

Operation:

Power-Flo dewatering pumps are provided with a control box including an "ON-OFF" switch for manual operation of the pump. As an option the pumps can be set up to operate with a float switch for automatic operation. For more information regarding automatic operation contact Power-Flo Pumps & Systems.

Do not attempt to start a frozen pump. It is recommended that the pump be submerged in water for twenty-five (25) minutes before starting. Do not thaw a frozen pump with a torch.

Do not operate pump running the motor in the reverse direction. This may cause damage to the pump and/or motor. See Installation instructions for checking direction of rotation.



WARNING! Always avoid repeated attempts to start the motor. If the motor fails to start after two attempts, remove the pump from service and schedule maintenance.

WARNING! Do not let the pump cycle or run if an overload condition occurs.

When starting pumps in series, start one pump at a time to avoid excessive current draw on the power supply. Always start the bottom pump first, then the next to the bottom, etc. When shutting down, turn off the top pump first and continue downward after allowing sufficient time for the water column to drain down to the next lower pump. This process reduces the chance of over-pressuring the lower seals.

IMPORTANT! Pressure inside 3" discharge pumps or smaller should not exceed 100 PSI (231 ft of Head). Pressure inside 4" discharge pumps or larger should not exceed 200 PSI (462 ft. of Head).

Preventative Maintenance:

Frequent inspection shall be made. All electrical parts, including the cable and wiring, shall be kept in a safe condition.

- **PERIODICALLY** check that the power cable gland compression nut is tight.
- **PERIODICALLY** check that all bolts, nuts, screws and other means of fasteners, are in place, properly tightened and secured.
- **PERIODICALLY** check the power cable for any damage or misuse. Special care shall be taken to protect the heavy usage, type SOOW submersible cable from wear or damage.

WARNING! Only qualified personnel should install, operate and repair pump. All electrical work must be performed by a qualified electrician. To reduce the risk of electrical shock, all wiring, junction connections and control panel must be properly wired and grounded in accordance with the National Electric Code (NEC) or the Canadian Electrical Code (CEC) and all applicable state, province, local codes and ordinances. Failure to follow these codes may result in personal injury or equipment damage and will void the warranty

- **ALWAYS** ensure that the pump frame is effectively grounded. The power wires shall not be used as a source for grounding.
- **PERIODICALLY** check the amperage draw on the motor. The amperage readings should not exceed the limits as indicated in the pump manual.
- **VERIFY** that the operating voltage matches the voltage rating of the motor(s) as indicated on the pump name plate.



Service & Repair

IMPORTANT! If a generator is the power source for this equipment, check daily for variations of voltage and cycles. Variations of voltage and cycles could cause damage to the motor.

- **ALWAYS** use original OEM replacement parts furnished by the manufacturer whenever servicing the unit.
- **PERIODICALLY** inspect the mechanical seals for wear. It is recommended that the mechanical seals be inspected every 1700 hours of operation (more often if abrasives are present in the pumpage). A quick check of the seals condition is accomplished by draining and inspecting the oil in the seal chamber. If water and/or abrasives are found in the oil the seals need to be replaced.
- **ALWAYS** drain the oil from the seal chamber (a must if exposed to freezing weather) before storing the unit for an extended period of time. If water and/or abrasives are found in the oil replace the seals, bearings and o-rings before refilling the oil and starting the pump.

The following information is provided to assist in the disassembly and reassembly steps required to properly service and repair the Power-Flo dewatering pump series.

Electrical Inspection: Prior to disassembly, perform an electrical inspection of the cable, control box and motor utilizing a megger and an ohmmeter.

Insulation Resistance - Cable & Control: The insulation resistance of the cable and control can be measured by attaching the megger probes to the pump lead side of the circuit breaker in the control box, one probe to the ground lead and one probe to a pump power lead. Insulation resistance values are acceptable if they are 10 megohms or greater. If the readings are below 10 megohms the motor leads should be disconnected from the cable assembly so that the cable can be tested separately from the motor.

Should the cable show insulation resistance of less than 10 megohms, disconnect the cable from control box and attach megger probes to the individual leads within the cable. Values below 10 megohms of insulation resistance indicate damage or moisture inside the cable jacket. It is then recommended that the cable be replaced. Low values of insulation resistance below 10 megohms for the circuitry within the control box also indicate damage or moisture.

Insulation Resistance - Motor: The insulation resistance of the motor stator can be measured by attaching one probe of the megger to the motor power leads and the other probe to the motor ground lead or to bare metal of the pump frame.

Insulation resistance values under 10 megohms indicate damaged leads or the presence of excessive moisture within the stator winding. Moisture can be removed from the stator by placing the stator and frame assembly in an oven and baking the assembly at 250°- 275°F for two to three hours. This must be performed by a certified motor WASSA facility. After baking, verify that insulation resistance to be 10 megohms or greater. If less than 10 megohms replace the stator.

Stator should be replaced if the insulation resistance is low due to other modes of failure, such as damaged leads, deformed ends turns, etc. Stator should also be replaced if the resistance of the stator windings is greater than those specified on page 4, buy measuring the resistance with an ohmmeter between the leads of the stator.

Lubrication:

Checking Seal Chamber Oil: To check the seal chamber oil, remove pipe plug from diffuser. With a light, visually inspect the oil in the seal cavity to make sure it is clean and clear, light amber in color and free from suspended particles. Milky white oil indicates the presence of water. Pour the oil out of the oil chamber, replace mechanical shaft seals and refill the seal chamber with new oil.

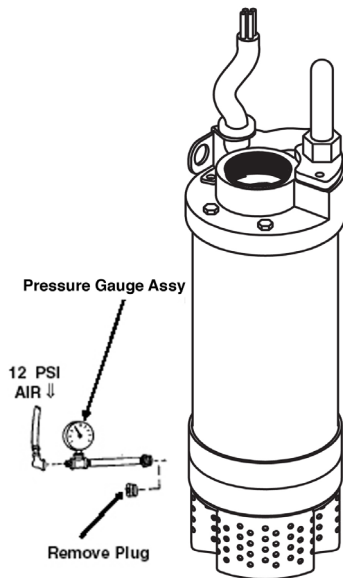
Replacing Seal Chamber Oil: To replace the seal chamber oil, remove pipe plug from diffuser, and drain oil from seal chamber and dispose of properly. Flush inside seal chamber of diffuser thoroughly to be sure it is clean and free of abrasives. Refill oil chamber with 5 oz (150 ml), or about half full, of a 20W non-detergent turbine oil (See Table). After replacing oil, replace pipe plug using a sealant.

| OIL VOLUME | |
|---------------------|----------|
| MODEL | OIL |
| 3/4 HP - 1.0 HP | 2.6 oz. |
| 2.0 HP - 5.0 HP | 4.6 oz. |
| 6 HP, 10 HP & 15 HP | 25.0 oz. |
| 25 HP & 50 HP | 32.0 oz. |



| Supplier | Grade |
|----------|-------------------------|
| Gulf | Harmony 68 |
| Texaco | URSA-P-68 or Equivalent |

Seal Cavity Pressure Test: To check the seal cavity pressure, remove pipe plug from diffuser and verify correct amount of oil. As illustrated, tighten a pressure gauge assembly into hole in Intermediate diffuser. Pressurize seal chamber to 12 PSI and maintain for 5 minutes checking for leaks.



DO NOT EXCEED 12 PSI - this will damage the seal. If no leaks are observed, and pressure held constant, slowly bleed the pressure and remove the gauge assembly. Replace the pipe plug using a sealant. If the pressure does not hold, then the leak must be located and repaired.

Impeller Service (Single Stage Pumps):

Disassembly: To inspect or replace impeller and impeller o-ring, remove screws and remove strainer. Remove cap screws, flat washers and brackets. Remove suction case. Check the suction case lining for wear, cuts, or defects and replace if necessary. Remove locknuts and washer from shaft. The impeller should slip off the shaft, if not, remove the o-ring from the impeller groove and use a bearing puller. Inspect the impeller for wear or damage. Replace shims if necessary. **NOTE:** Seal spring relaxes when impeller is removed and may cause oil to leak through.

Reassembly: To reassemble, slide shims onto shaft. Apply an anti-seize compound on the shaft area where the impeller fits. Insert o-ring into groove on impeller and slide the impeller onto the shaft. Insert washer and two locknuts onto shaft and tighten to 37 ft. lbs. Replace suction case on diffuser and brackets, lining up holes and inserting cap screws with flat washers tightening to 5 ft. lbs.

Impeller Service (2-Stage Pumps):

Disassembly: To inspect or replace impellers and impeller o-rings, remove screws and strainer. Remove cap screws, flat washers and brackets. Remove suction case and o-ring. Check suction case lining for wear, cuts, or defects and replace if necessary. Remove locknut and washer from shaft. The outer impeller should slip off the shaft, if not, remove the o-ring from the impeller groove and use a bearing puller. Inspect the impeller for wear or damage. Remove shims, spacer, lower diffuser and o-ring, replace if necessary. The inner impeller should slip off the shaft, if not, remove the o-ring from the impeller groove and use a bearing puller. Inspect the impeller for wear or damage, remove shims. **NOTE:** Seal spring relaxes when impeller is removed and may cause oil to leak.

Reassembly: To reassemble, slide inner shims onto shaft. Apply an anti-seize compound on the shaft area where the impeller fits. Insert o-ring into groove on inner impeller and slide the impeller onto the shaft. Apply silicon grease to o-rings and place on lower diffuser. Place lower diffuser assembly onto upper diffuser. Slide spacer and outer shims onto shaft. Apply an anti-seize compound on the shaft area where the outer impeller fits. Insert o-ring into groove on outer impeller and slide the impeller onto the shaft. Replace washer and locknut onto shaft and tighten to specified ft. lbs (see chart on page 15). Replace suction case onto diffuser and brackets, lining up holes and inserting cap screws with flat washers tightening to the specified ft. lbs. (See chart on page 13).

Checking Impeller Clearance:

After assembly, check that the impeller rotates smoothly. You will feel a slight drag due to bearing and rotary seal friction. If the impeller turns roughly, the bearings should be replaced, If impeller hangs up or is hard to turn, the gap between the impeller and suction case should be checked. To check the gap, a feeler gauge should be used. Check the gap between the suction case liner and the impeller vanes as shown in (Diagram 7). Determine the proper gap setting from the table below and adjust by adding or removing shims behind the impeller. Inspect and clean strainer. Ensure holes are not clogged. Position strainer onto suction case. Insert three screws and tighten.

Service & Repair

Impeller Gap Chart:

| Model | HP | Impeller Gap |
|--------------------|-------|---------------|
| PF01011 | 3/4 | .020" - .030" |
| PF01012 | 3/4 | .020" - .030" |
| PF01032 | 3/4 | .020" - .030" |
| PF01034 | 3/4 | .020" - .030" |
| PF01311 & PF01311A | 1 | .020" - .030" |
| PF01311SC | 1 | .020" - .030" |
| PF01312 | 1 | .020" - .030" |
| PF01332 | 1 | .020" - .030" |
| PF01334 | 1 | .020" - .030" |
| PF20111 | 2 | .020" - .030" |
| PF20112 | 2 | .020" - .030" |
| PF25132HH | 2-1/2 | .020" - .030" |
| PF25132HV | 2-1/2 | .020" - .030" |
| PF25134HH | 2-1/2 | .020" - .030" |
| PF25134HV | 2-1/2 | .020" - .030" |
| PF25112C | 2 | .020" - .030" |
| PF27112 | 2-3/4 | .020" - .030" |
| PF35112 | 3-1/2 | .020" - .030" |
| PF50112 | 5 | .020" - .030" |

| Model | HP | Impeller Gap |
|------------|----|---------------|
| PF50132HV | 5 | .020" - .030" |
| PF50134HV | 5 | .020" - .030" |
| PF50135HV | 5 | .020" - .030" |
| PF501322ST | 5 | .020" - .030" |
| PF501342ST | 5 | .020" - .030" |
| PF60112 | 6 | .020" - .030" |
| PF81032HH | 10 | .020" - .030" |
| PF81032HV | 10 | .020" - .030" |
| PF81034HH | 10 | .020" - .030" |
| PF81034HV | 10 | .020" - .030" |
| PF81532HH | 15 | .020" - .030" |
| PF81532HV | 15 | .020" - .030" |
| PF81534HH | 15 | .020" - .030" |
| PF81534HV | 15 | .020" - .030" |
| PF82532HH | 25 | .030" - .040" |
| PF82532HV | 25 | .030" - .040" |
| PF82534HH | 25 | .030" - .040" |
| PF82534HV | 25 | .030" - .040" |
| PF85034HH | 50 | .030" - .040" |
| PF85034HV | 50 | .030" - .040" |

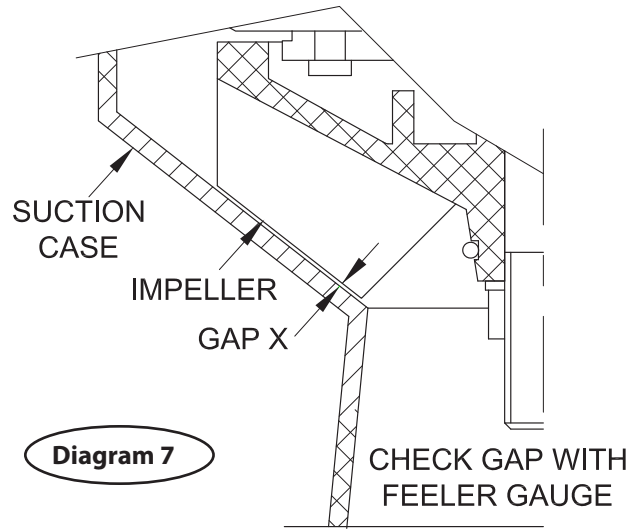


Diagram 7

Discharge & Cable Service:

Disassembly: While disassembling, check for indications of water leaks. Remove capscrews and washers, cable gland assembly and o-rings from discharge head. Power-Flo's Epoxy seal will minimize or eliminate water wicking into the motor due to a damaged power cable. Disconnect cable wires from stator leads by removing connectors, being sure that the stator's wires are identified before disconnecting. Check wires for breaks or cuts. If water is present, there may be leakage past the cable gasket hardware or the shaft seals. Check all items and replace if needed. Remove ground screw and washer from discharge head.

Remove capscrews, flat washers, lockwashers and quad rings from discharge head. Carefully, using a plastic hammer, tap the discharge head free from the frame assembly and remove while feeding the stator wires through the terminal cavity and stator dam in the discharge head. Now remove o-rings, replace o-rings showing any nicks, cuts, cracks, or deformation.

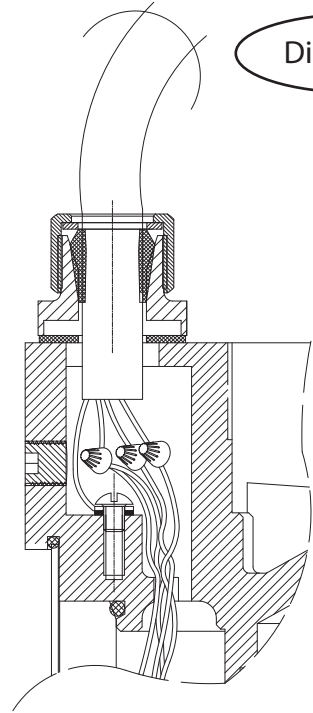
Reassembly: To assemble discharge head to stator/frame assembly, set the assembly in the upright position. Make sure all stator leads are properly identified for Dual Phase/Voltage). Each lead should be color coded or numbered for identification. Apply grease to o-rings and place on discharge case. Set the discharge case onto the stator/frame assembly with the terminal cavity directly over the stator leads and insert the leads through the stator dam into cavity opening, being careful not to lose the lead identification numbers or damage the o-rings. Be sure that load spring is sitting properly in bearing bore of discharge case. Line up the holes and insert capscrews with flatwashers, lockwashers and quad rings into holes and torque to 75 in lbs.



| MODEL | WHERE USED | TYPE | TORQUE (ft. lbs.) |
|-------------------------------|---------------------|--------------|-------------------|
| 3/4 & 1 HP | DISCHARGE HEAD | 1/4"-20 UNC | 6.00 |
| | SUCTION CASE/BOTTOM | 1/4"-20 UNC | 6.00 |
| | SEAL PLATE | #6 | 0.80 |
| | GROUND WIRE | #10 | 15.0 |
| | AIR PLUG (UPPER) | 1/8 NPT | 3.00 |
| | OIL PLUG (LOWER) | 1/8 NPT | 3.00 |
| | IMPELLER NUT | 3/8"-24 UNF | 30.00 |
| 2, 2-1/2, 2-3/4, 3-1/2, & 5hp | DISCHARGE HEAD | 5/16"-18 UNC | 12.00 |
| | SUCTION CASE/BOTTOM | 5/16"-18 UNC | 12.00 |
| | CORD CAP | 1/4"-20 UNC | 6.00 |
| | AIR PLUG (UPPER) | 1/4 NPT | 8.00 |
| | OIL PLUG (LOWER) | 1/8 NPT | 3.00 |
| | IMPELLER NUT | 1/2"-20 UNF | 50.00 |
| 6, 10 & 15HP | STRAINER | 5/16"-18 UNC | 12.00 |
| | SUCTION CASE | 3/8"-16 | 20.00 |
| | BOLTS/STRAINER | 3/8"-16 | 20.00 |
| | DISCHARGE HEAD | 3/8"-16 | 20.00 |
| | CORD CAP | 5/16"-18 UNC | 12.00 |
| | DISCHARGE ADAPTER | 3/8"-16 | 20.00 |
| | AIR PLUG (UPPER) | 1/2"-13 UNC | 12.00 |
| | OIL PLUG (LOWER) | 1/2 NPT | 12.00 |
| | IMPELLER NUT | 1/2"-20 UNF | 50.00 |
| 25 & 50HP | STRAINER | 5/16"-18 UNC | 12.00 |
| | CORD CAP | 5/16"-18 UNC | 12.00 |
| | DISCHARGE ADAPTER | 1/2"-13 UNC | 40.00 |
| | SUCTION CASE | 1/2"-13 UNC | 40.00 |
| | DISCHARGE HEAD | 1/2"-13 UNC | 40.00 |
| | BOLTS/STRAINER | 1/2"-13 UNC | 40.00 |
| | AIR PLUG (UPPER) | 1/2"-20 UNF | 12.00 |
| | OIL PLUG (LOWER) | 1/2 NPT | 12.00 |
| | IMPELLER NUT | 5/8"-18 UNF | 60.00 |
| | IMPELLER NUT | 1-12 UNF | 60.00 |

Slide cable grip nut, cable grip, bushing and cable gland with o-rings onto cable, and expose approximately 3" of wire at the end of the cable. Attach ground screw and washer with ground wire (Green) to the inside of terminal cavity in discharge case. Make wire connections in accordance to Diagram 9 using connectors and then tape each connector individually with electrical tape.

Fold and insert the connectors and wires into the terminal box cavity. Insert capscrews with washers and tighten to 5 ft. lbs. Move Bushing, cable grip and gland nut into place and tighten to 22 ft. lbs. After assembly, an insulation test (or MEGGER) should be performed.



Motor and Bearing Service:

Disassembly: To service or replace motor and/or bearings, first remove discharge head then lower pump end. Remove rotor from stator then bearings, retaining rings, bearing ring and loading spring from rotor shaft. Use a bearing puller if needed. Bearings that feel rough, show wear or rust should be replaced. If stator needs replacement, replace stator and frame assembly.

Reassembly: Set the stator/frame assembly and the discharge case in a vertical position with the discharge case down. Slip the outer case over the frame. Press bearing onto discharge end of rotor shaft. Place retaining ring onto shaft and press bearing with bearing ring onto suction end of rotor shaft. Now assemble rotor assembly into stator/frame assembly. On 2-stage models, place retaining ring into diffuser. Place o-rings and bearing spring onto discharge head onto motor/frame assembly and pump lower end. An electrical inspection should be performed after reassembly.

Motor Chamber Pressure Test:

After final assembly, pressure test the motor chamber by removing pipe plug from discharge case and connect an air hose fitting into the pipe thread. Submerge the pump completely and apply 12 PSI air pressure. (See Diagram 10).



Service & Repair

WARNING! DO NOT exceed 12 psi air pressure. Pump must not show any leakage, if leakage occurs, determine location and replace defective or damaged parts, then retest pump. After pump has been tested and no leaks have been found, remove air hose connection and replace pipe plug using a sealant, into discharge case.

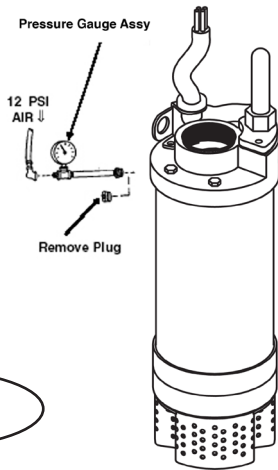


Diagram 10

Model Number:

This designation consists of numbers which represent, Pump type, Horsepower, Motor Phase and Voltage. This number should always be referenced when ordering and obtaining information.

MODEL NUMBER DESTINATION:

| Size | 3/4 hp & 1.0 hp | | | |
|-----------------|----------------------|-------------------------|-------------------------------|---|
| Brand | HP | Phase | Voltage | |
| PF Power-Flo | 0 | XX | X | X |
| | 10 = .75 13 = 1.0 | 1 = Single 3 = Three | 1 = 115 2 = 230 4 = 460 | |

Example: PF01211 (1hp ~ 1 Phase ~ 115 Volt)

| Size | 2.0 hp to 5.0 hp | | | |
|-----------------|---|-------------------------|--|---|
| Brand | HP | Phase | Voltage | |
| PF Power-Flo | XX | 1 | X | X |
| | 25 = 2.5 27 = 2.7 50 = 5.0 55 = 5.0 (2 Stage) 60 = 6.0 | 1 = Single 3 = Three | 1 = 115 2 = 230 4 = 460 5 = 575 | |

Example: PF25134 (2.5hp ~ 3 Phase ~ 460 Volt)

| Size | 10.0 hp & 50.0 hp | | | |
|-----------------|-------------------|--|-------------------------|-------------------------------|
| Brand | HP | Phase | Voltage | |
| PF Power-Flo | 0/8 | XX | X | X |
| | 0 8 8 8 | 10 = 10 15 = 15 25 = 25 50 = 50 | 1 = Single 3 = Three | 1 = 115 2 = 230 4 = 460 |

Example: PF81034 (10hp ~ 3 Phase ~ 460 Volt)

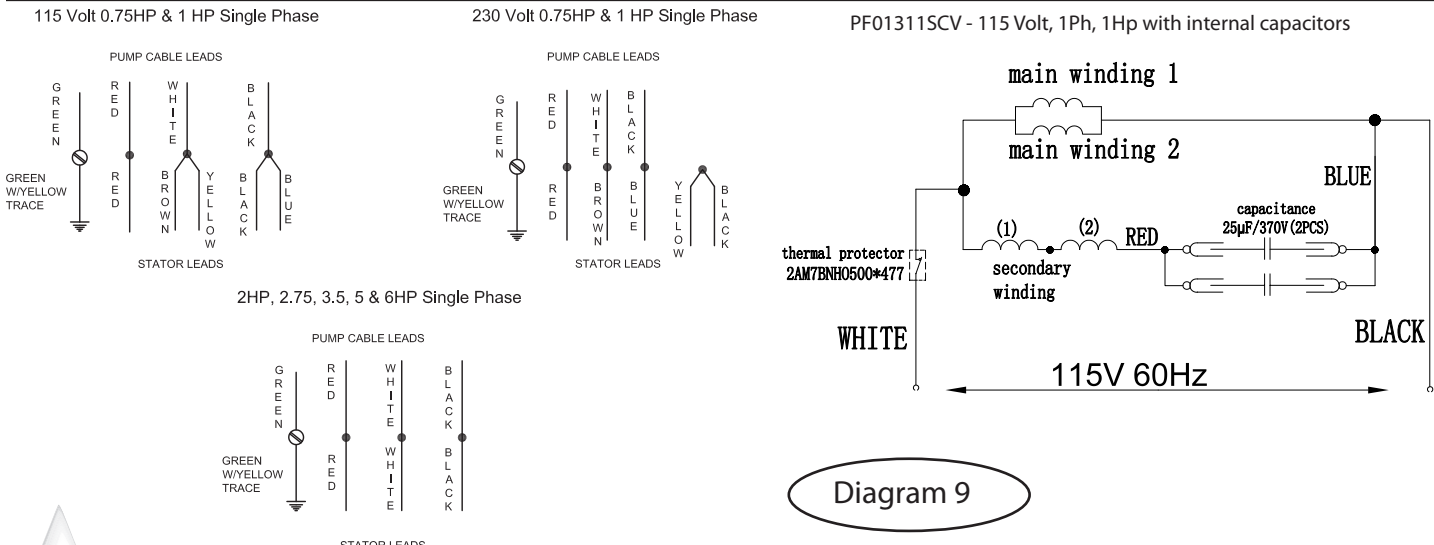
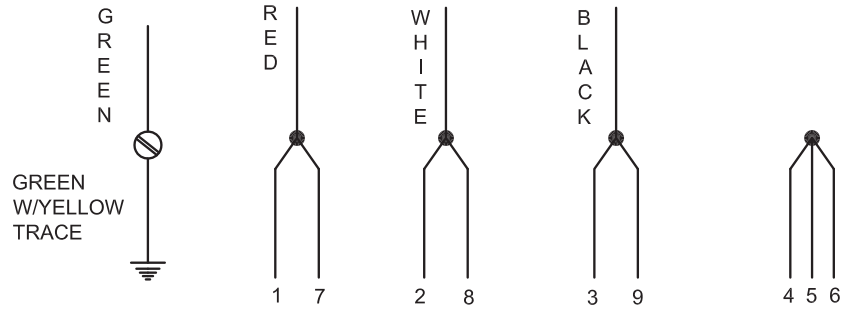


Diagram 9

230 Volt 0.75HP thru 25HP Three Phase

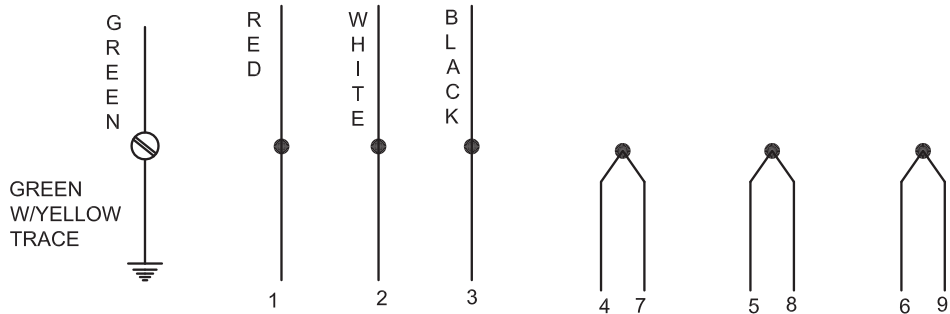
PUMP CABLE LEADS



STATOR LEADS

460 Volt 0.75HP thru 25HP Three Phase

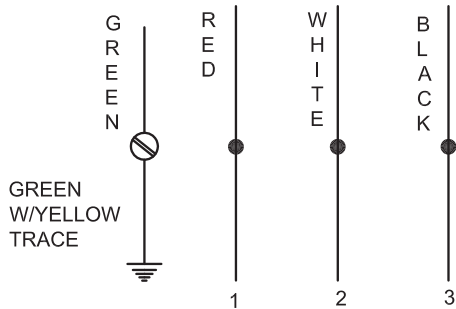
PUMP CABLE LEADS



STATOR LEADS

460 Volt 50HP Three Phase

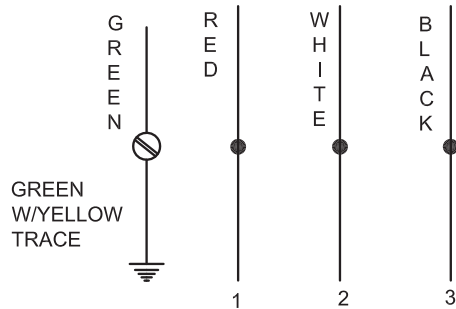
PUMP CABLE LEADS



STATOR LEADS

575 Volt Three Phase

PUMP CABLE LEADS



STATOR LEADS

Diagram 9

Trouble Shooting

CAUTION ! Always disconnect the pump from the electrical power source before handling. If the system fails to operate properly, carefully read instructions and perform maintenance recommendations. If operating problems persist, the following chart may be of assistance in identifying and correcting them:
MATCH "CAUSE" NUMBER WITH CORRELATING "CORRECTION" NUMBER.

NOTE: Not all problems and correction will apply to each pump model.

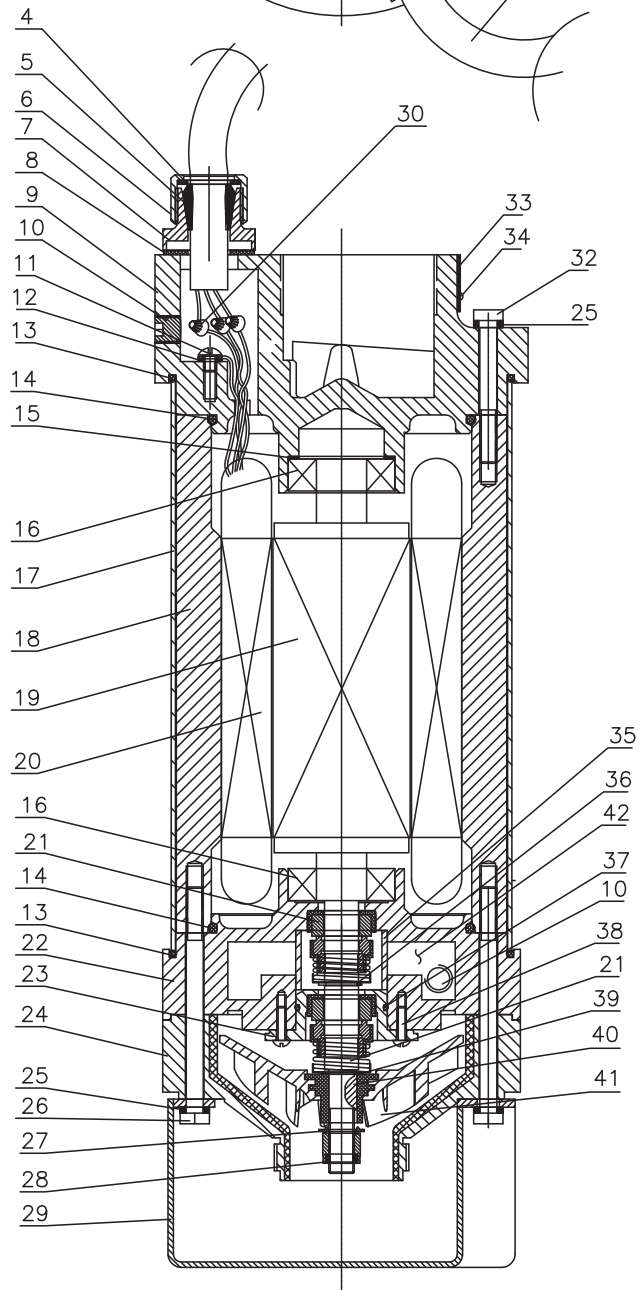
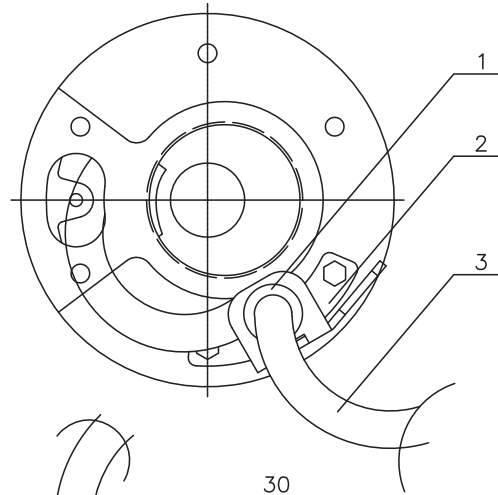
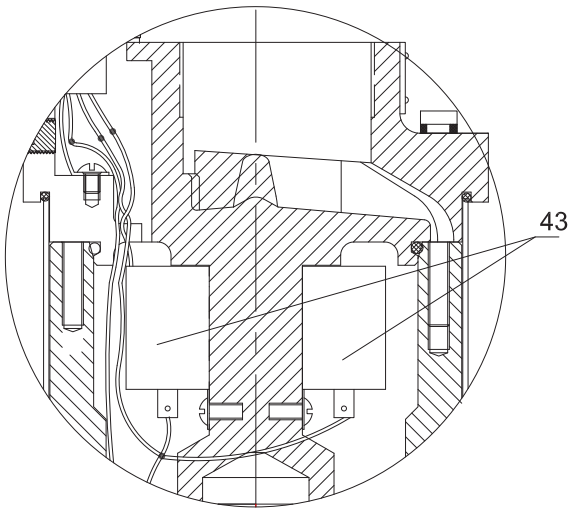
| PROBLEM | CAUSE | CORRECTION |
|--|---|--|
| Pump will not run. | 1. Poor electrical connection, blown fuse, tripped breaker or other interruption of power; improper power supply. 2. Motor or switch inoperative (to isolate cause, go to manual operation of pump). 2a. Level control movement restricted. 2b. Level control will not activate pump or is defective when applicable. 2c. Defective motor. 3. Insufficient liquid level. | 1. Check all electrical connections for security. Have electrician measure current in motor leads, if current is within $\pm 20\%$ of locked rotor Amps, impeller is probably locked. If current is 0, overload may be tripped. Remove power, allow pump to cool, then recheck current. 2a. Reposition pump or clean basin as required to provide adequate clearance for level control float. |
| Pump will not turn off. | 2a. Level control movement restricted. 2b. Switch will not activate pump or is defective when applicable. 4. Excessive inflow or pump not properly sized for application. 9. Pump may be airlocked. | 2b. Disconnect level control . Set ohmmeter for a low range, such as 100 ohms full scale and connect to level control leads. Actuate level control manually and check to see that ohmmeter shows zero ohms for closed switch and full scale for open switch. (Float Switch). |
| Pump hums but doesn't run. | 1. Incorrect voltage. 8. Impeller jammed or loose on shaft, worn or damaged, impeller cavity or inlet plugged. | 2c. Check winding insulation (MeggerTest) and winding resistance. If check is outside range, dry and recheck. If still defective, replace per service instructions. |
| Pump delivers insufficient capacity. | 1. Incorrect voltage. 4. Excessive inflow or pump not properly sized for application. 5. Discharge restricted. 6. Check valve stuck closed or installed backwards. 7. Shut-off valve closed. 8. Impeller jammed or loose on shaft, worn or damaged, impeller cavity or inlet plugged. 9. Pump may be airlocked. 10. Pump running backwards. | 3. Make sure liquid level is adequate suction level. 4. Recheck all sizing calculations to determine proper pump size. 5. Check discharge line for restrictions, including ice if line passes through or into cold areas. 6. Remove and examine check valve for proper installation and freedom of operation. 7. Open valve. |
| Pump cycles too frequently (with use of level control) or runs excessively. | 6. Check valve stuck closed or installed backwards. 11. Fixtures are leaking. | 8. Check impeller for freedom of operation, security and condition. Clean impeller cavity and inlet of any obstruction. |
| Pump shuts off (trips thermal overload protector). CAUTION! Pump may start unexpectedly. Disconnect power supply. NOTE: Some pumps DO NOT have thermal overload protection on the motor. Check pump specifications to determine. | 1. Incorrect voltage. 8. Impeller jammed, loose on shaft, worn or damaged, impeller cavity or inlet plugged. 12. Excessive water temperature (internal protection only). | 9. Loosen pipe union slightly to allow trapped air to escape. Verify water level is set so that impeller cavity is always flooded. 10. Check rotation. If power supply is three phase, reverse any two of three power supply leads to ensure proper impeller rotation. |
| Pump operates noisily or vibrates excessively. | 2c. Worn bearings, motor shaft bent. 8. Debris in impeller cavity or broken impeller. 10. Pump running backwards. 13. Piping attachments to building structure too rigid or too loose. | 11. Repair fixtures as required to eliminate excessive leakage into dewatering site. 12. Check pump temperature limits & fluid temperature. 13. Replace portion of discharge pipe with flexible connector. |



For Repair Part Please supply: Model Number and MFG Date as shown on Name Plate, and Part Description and Part Number as shown on Parts List.

Repair Parts - 3/4HP & 1HP

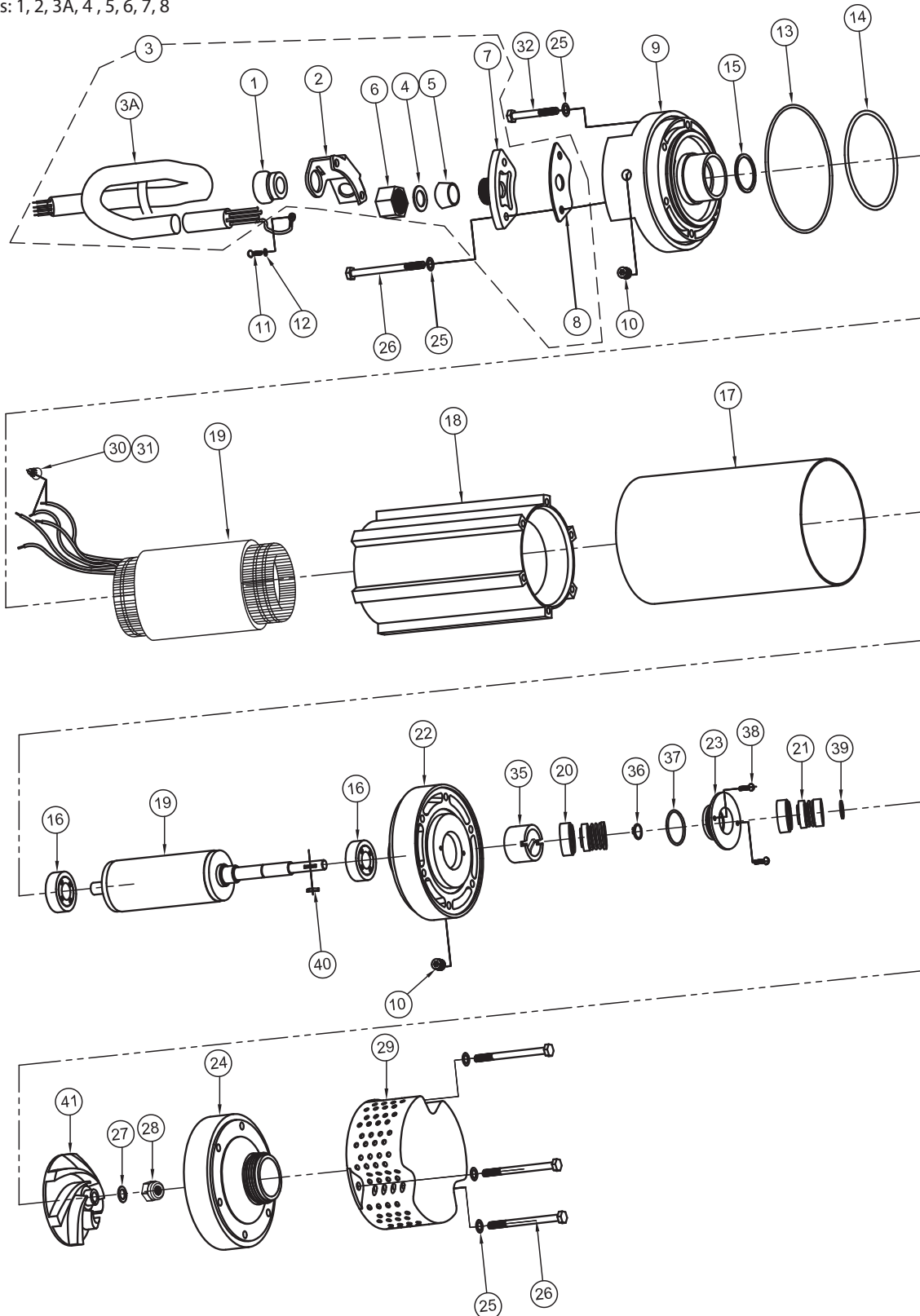
Capacitors For 01311 Self-Contained



Repair Parts - 3/4HP & 1HP

For Repair Part Please supply: Model Number and MFG Date as shown on Name Plate, and Part Description and Part Number as shown on Parts List.

Item 3 Includes: 1, 2, 3A, 4, 5, 6, 7, 8



PF01011, PF01311, PF01311SCV

Submersible Dewatering Pumps

For Repair Part Please supply: Model Number and MFG Date as shown on Name Plate, and Part Description and Part Number as shown on Parts List.

Parts List - 3/4HP & 1HP

| NO. | QTY. | PART NO. | DESCRIPTION |
|-----|------|---------------|---|
| 1 | 1 | V28003-2 | Bushing, Strain Relief |
| 2 | 1 | V112560 | Bracket, Cable Support |
| 3 | 1 | V100723-14 | Assembly, Cable & Gland 115v 25' 14/4 SOOW |
| | | V100723-18 | Assembly, Cable & Gland 230/460v 25' 14/4 SOOW |
| | | V100723-14A | Assembly, Cable & Gland, 25Ft, 115 w/plug 14/3 for, PF01311SCV |
| | | V100723-65 | Assembly, Cable & Gland, 65Ft, 115 w/plug 14/3 for, PF01311SCV |
| 3a | 1 | V100958-5 | Cable 25 ft 3/4hp & 1hp 115v 14/4 SOOW |
| | | V100892-25 | Cable 25 ft 3/4hp & 1hp 230v & 460v 14/4 SOOW |
| | | V100958-65 | Cable 65 ft, 115v w/ plug 14/3, 1hp self contained model PF01311SCV |
| 4 | 1 | V21004-4 | Washer, Cable Grip |
| 5 | 1 | V12022-1 | Bushing, 14/4 |
| | | V12022-3 | Bushing, 14/3 (PF01311SCV) |
| 6 | 1 | V12061-1 | Nut, Cable Grip |
| 7 | 1 | V001900-2 | Gland, Cable |
| 8 | 1 | V001902 | Gasket, Terminal Box |
| 9 | 1 | V100700-2 | Discharge Head 3/4hp & 1hp (Not for PF01311SCV model) |
| | | V100700-3 | Discharge Head 1hp self contained model PF01311SCV |
| 10 | 2 | 312000 | Plug, Pipe 1/8 NPT |
| 11 | 1 | 303002 | Screw, Rd. Hd. 10-32 x 1.25" Lg |
| 12 | 1 | 331004 | Lockwasher #10 |
| 13 | 2 | V31003-158 | O-Ring, 129mm OD, 2.7mm CS |
| 14 | 2 | V31003-239 | O-Ring, 100mm OD, 3.5mm CS |
| 15 | 1 | V30001 | Spring, Bearing Load |
| 16 | 2 | V112543 | Bearing 6203-2Z |
| 17 | 1 | V615017-001 * | Outer Shell - 1 HP, PF01311A |
| | | V615017-002 ⇨ | Outer Shell - 3/4 HP & 1HP |
| | | V615017-003 | Outer Shell - 1HP self contained model PF01311SCV |
| 18 | 1 | V615016-001 * | Frame 1 hp, PF01311A |
| | | V615016-002 ⇨ | Frame 3/4 hp & 1hp |
| | | V615016-003 | Frame 1hp self contained model PF01311SCV |
| 19 | 1 | V088853 * | Motor 1hp 115v/230v 1ph (rotor "B" & stator "A") |
| | | V088853-1SC | Motor 1hp 115/230v 1ph, self contained model PF01311SCV |

| NO. | QTY. | PART NO. | DESCRIPTION |
|--------------------|-------|------------------|--|
| 19 | 1 | V088854 * | Motor 1hp 230/460v 3ph (rotor "B" & stator "A") |
| | | V088856 ⇨ | Motor 3/4hp & 1hp, 115/230v 1ph (rotor & stator) |
| | | V088857 ⇨ | Motor 3/4hp & 1hp, 230/460v 3ph (rotor & stator) |
| 20 | 1 | V31036 | Seal, shaft inboard, C/C/B |
| 21 | 1 | V31036C | Seal, shaft outboard, S/S/B |
| 22 | 1 | V615171-2FK | Diffuser 3/4 & 1hp |
| 23 | 1 | V615172 | Retainer, Seal |
| 24 | 1 | V615170 ⇨ | Suction Case 3/4hp & 1hp |
| | | V615170A * | Suction Case 1hp "A" & "SC" |
| 25 | 13 | 330001 | Washer, Flat, 1/4" SS |
| 26 | 8 | 300003 | Screw, Cap, 1/4-20 x 3.25" Lg |
| 27 | 1 | V331005 | Lockwasher, Impeller |
| 28 | 1 | V12015-2 | Lock Nut, Impeller |
| | | V100000-4 | Strainer |
| 29 | 1 | V100000 | Anti-Sludge Strainer, For PF01311SCV - OPTIONAL |
| | | V12014-1 | Connector |
| 30 | 2 | V12014-1 | Connector |
| 31 | 1 | V625-00163 | Connector |
| 32 | 4 | 300002 | Screw, Cap, 1/4-20 x 2" Lg |
| 33 | 1 | V33241 | Nameplate |
| 34 | 2 | V28002-1 | Rivet |
| 35 | 1 | V2427493 | Spiral Lubricator |
| 36 | 1 | V27002-50 | Snap Rings |
| 37 | 1 | V31003-026 | O-ring, 35mm OD, 1.7mm CS |
| 38 | 2 | 303003 | Screw, Rd. Hd, 6-31 x 1/2" |
| 39 | 1 | V21002-64 | Shim .016", 1 set of 3 |
| | | V21002-65 | Shim .032", 1 set of 3 |
| 40 | 1 | V353308-2 | Key |
| 41 | 1 | V100200-2 | Impeller 3/4hp - 3.58" OD, .48" |
| | | V100200-3 ⇨ | Impeller 1hp - 3.58" OD, .55" |
| | | V100200-4 * | Impeller 1hp "A" & "SCV" 3.58" OD, .78" |
| 42 | 2.6oz | Purchase Locally | #10, Non-Detergent Turbine, Seal Chamber Oil |
| 43 | 2 | V450001SC | Capacitor, 25mfd 300v, 1hp for PF01311SCV |
| 44 | 1 | V64VP1001 | 2" CamLock Fitting for PF01311SCV |
| 45 | 1 | V62VP1001 | 2" Pipe Nipple for PF01311SCV |
| 46 | 1 | V90ROPE001 | Rope, 30Ft, 1/4" Nylon for PF01311SCV |
| REPAIR KITS | | | |
| | | V01000-OHK | Overhaul Kit - 5, 8, 13, 14, 15, 16, 20, 21, 27, 28, 30, 31, 36, 37, 39, 40 |

Note: O-ring & snap ring sizes are Milimeters.

IMPORTANT! - 1Hp, Pump Models PF01311, PF01312, PF01332 & PF01334, Dated **BEFORE December 2009 (Mfg Date on name plate "MC")**, will use the parts indicated with (*). These items include #17, #18, #19, #24 & #41. These pumps Dated **AFTER December 2009 ("AD")**, will be labeled as Model Numbers PF01311A, PF01312A, PF01332A & PF01334A and will use the parts indicated with (*). Pump Models PF01311, PF01312, PF01332 & PF01334 Dated **AFTER December 2009 ("AD")**, will use the parts indicated with (⇨).

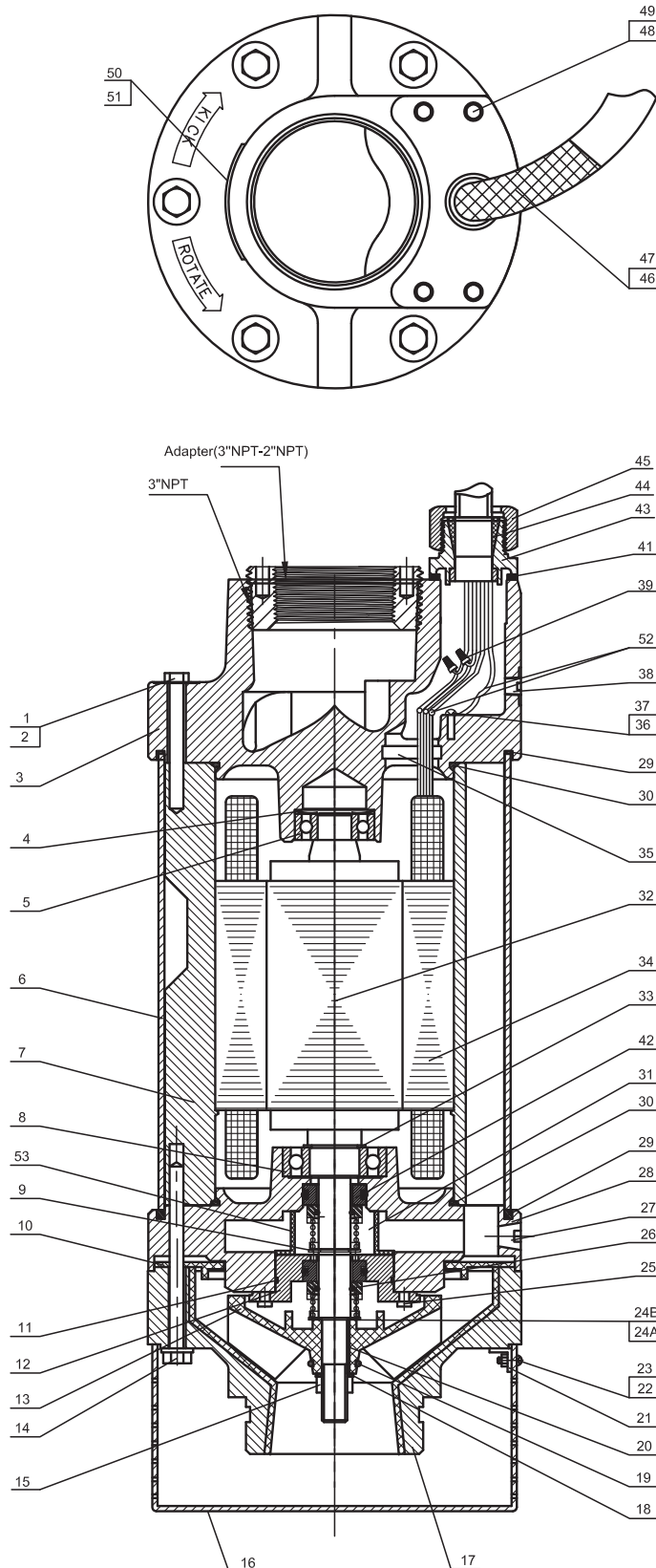


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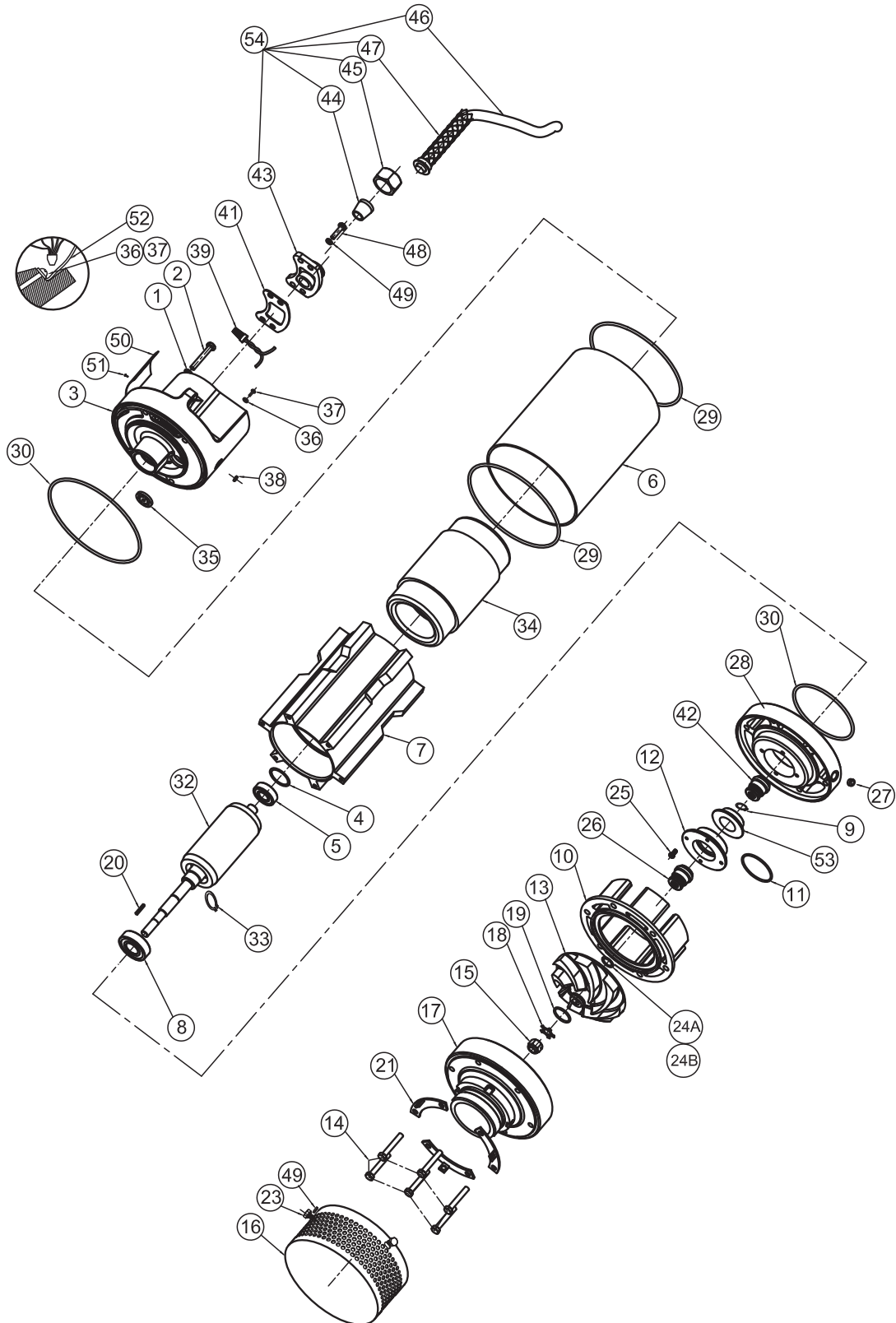
Repair Parts - 2, 2-1/2, 2-3/4, 3-1/2 & 5HP

For Repair Part Please supply: Model Number and MFG Date as shown on Name Plate, and Part Description and Part Number as shown on Parts List.



For Repair Part Please supply: Model Number and MFG Date as shown on Name Plate, and Part Description and Part Number as shown on Parts List.

Repair Parts - 2, 2-1/2, 2-3/4, 3-1/2 & 5HP



Parts List - 2, 2-1/2, 2-3/4, 3-1/2 & 5HP

For Repair Part Please supply: Model Number and MFG Date as shown on Name Plate, and Part Description and Part Number as shown on Parts List.

| NO. | QTY. | PART NO. | DESCRIPTION |
|-----|------|------------|--|
| 1 | 11 | 330002 | Washer, Flat |
| 2 | 5 | 301003 | Screw, Hex Hd |
| 3 | 1 | V250700 | Discharge Head 3" NPT w/ 2" NPT Adaptor V25009 |
| 4 | 2 | V30001 | Spring, Bearing Load |
| 5 | 1 | V112543 | Bearing 6203-2Z |
| 6 | 1 | V250555 | Outer Shell 2hp, 2-1/2hp & 2-3/4hp |
| | 1 | V500555 | Outer Shell 3-1/2hp & 5hp |
| | 1 | V511555 | Outer Shell 5hp 230 1ph |
| 7 | 1 | V250500 | Frame 2hp, 2-1/2hp & 2-3/4hp |
| | 1 | V500500 | Frame 3-1/2hp & 5hp |
| | 1 | V511500 | Frame 5hp 230 1ph |
| 8 | 1 | V112544 | Bearing 6205-2Z |
| 9 | 1 | V27004-59 | Snap Ring |
| 10 | 1 | V501305 | Wear Plate |
| 11 | 1 | V31003-035 | O-Ring, 56mm ID, 1.8mm CS |
| 12 | 1 | V500311 | Retainer, Seal |
| 13 | 1 | V200200-6 | Impeller 2hp 5.315" |
| | 1 | V250200-6 | Impeller 2-1/2hp HH 5.315" |
| | 1 | V275200-2 | Impeller 2-1/2hp HV & 2-3/4hp 4.217" |
| | 1 | V350200-7 | Impeller 3-1/2hp 5.220" |
| | 1 | V500200-6 | Impeller 5hp 5.315" |
| 14 | 6 | 301000 | Screw, Hex Hd |
| 15 | 2 | V20002-38 | Lock Nut, Impeller |
| 16 | 1 | V500000-1 | Strainer |
| 17 | 1 | V250100-1 | Suction Case 2hp, 2-1/2hp-HH |
| | 1 | V500100-1 | Suction Case 2-1/2hp-HV, 2-3/4hp & 5hp |
| | 1 | V350100-1 | Suction Case 3-1/2hp |
| 18 | 1 | V500210 | Lockwasher, Impeller |
| 19 | 1 | V31003-117 | O-Ring, 20.5mm ID, 2.6mm CS |
| 20 | 1 | V500407 | Key, .093 x .13 x .688 Lg |
| 21 | 3 | V500003 | Bracket |
| 22 | 1 | 330003 | Lockwasher |
| 23 | 3 | 302000 | Screw, Pan Hd |
| 24a | 1 | V21010-2 | Shim .032", 1 set of 4 |
| 24b | 1 | V21010-1 | Shim .016", 1 set of 4 |
| 25 | 4 | 303001 | Screw, Rd. Hd |
| 26 | 1 | V500350 | Seal, Outboard Shaft |
| 27 | 1 | 312001 | Plug, Pipe NPT |
| 28 | 1 | V500300-2 | Diffuser |
| 29 | 2 | V31003-260 | O-Ring, 175mm OD, 3.5mm CS |
| 30 | 2 | V31003-246 | O-Ring, 113.9mm ID, 3.5mm CS |

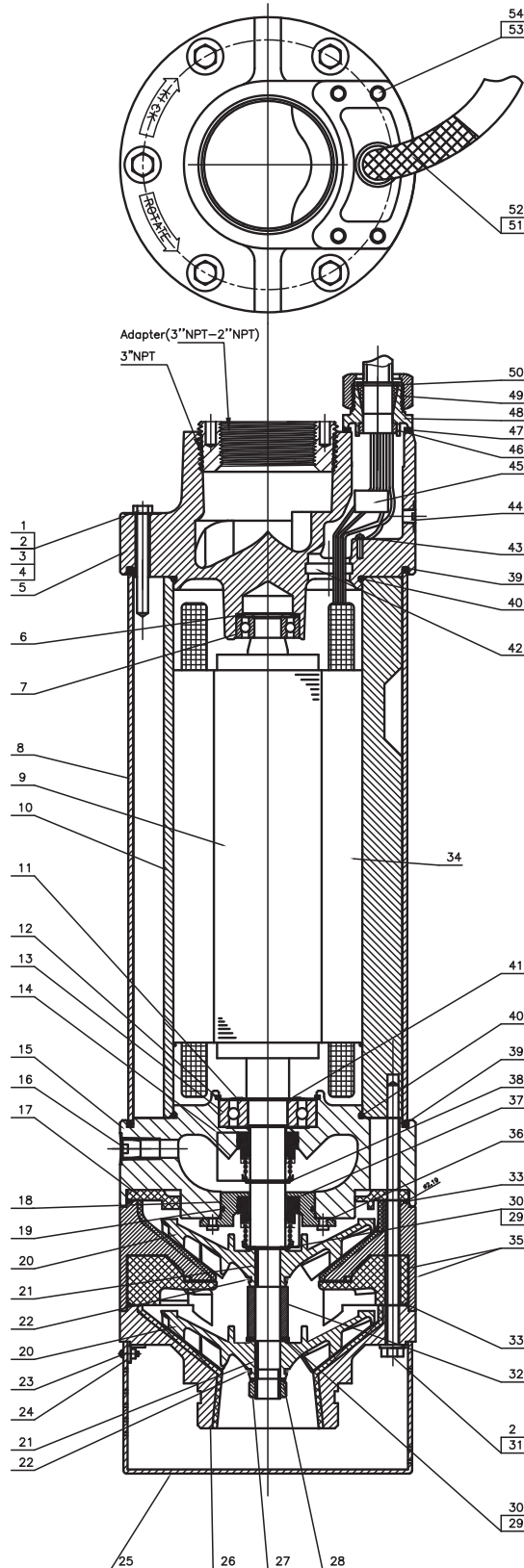
| NO. | QTY. | PART NO. | DESCRIPTION |
|-----|--------|------------------|--|
| 31 | 4.6 oz | Purchase Locally | #10 Oil, Non-Detergent Turbine, Seal Chamber |
| 32 | 1 | V250400 | Rotor-2hp 115/230v 1Ph, 2-1/2 & 2-3/4hp 230/460v 3Ph |
| | 1 | V500400 | Rotor-3-1/2hp 230v 1Ph 5hp 230/460/575v 3Ph |
| | 1 | V511400 | Rotor 5hp 230v 1ph |
| 33 | 1 | V27004-98 | Retaining Ring |
| 34 | 1 | V250600 | Stator-2-1/2hp, 230v/460v 3Ph |
| | 1 | V500600 | Stator - 5hp 230/460v 3Ph |
| | 1 | V500635 | Stator - 5hp 575v 3ph |
| | 1 | V200600 | Stator 2hp 230v 1Ph |
| | 1 | V200600-15 | Stator 2hp 115v 1Ph |
| | 1 | V200600-34 | Stator 2-3/4hp 230v 1Ph |
| | 1 | V350612 | Stator 3-1/2hp 230v 1Ph |
| | 1 | V511600 | Stator 5hp 230v 1ph |
| 35 | 1 | V500750 | Stator Dam 2-1/2hp 230/460v 3Ph, 5hp 230/460/575v 3Ph |
| 35 | 1 | V500750-2 | Stator Dam 2hp 115v 1Ph, 2hp 230v 1Ph, 2-3/4hp & 3-1/2hp 230v 1Ph |
| 36 | 1 | 303002 | Screw, Rd. Hd |
| 37 | 1 | 331004 | Lockwasher |
| 38 | 1 | 312000 | Plug, Pipe NPT |
| 39 | 2 | V12026-1 | Connector, 1 Phase |
| | 6 | V12026-2 | Connector, 3 Phase |
| 41 | 1 | V2-31003-0025 | Gasket |
| 42 | 1 | V31001 | Seal, Inboard Shaft |
| 43 | 1 | V500711-1 | Gland, Cable |
| 44 | 1 | V12022-2 | Bushing |
| 45 | 1 | V12062 | Nut, Cable Grip |
| 46 | 1 | V350887-50 | Cable - 50ft 12/4 SOOW |
| 47 | 1 | V12020-2A | Grip, Cable |
| 48 | 4 | 301001 | Screw, Hex Hd. |
| 49 | 4 | 330001 | Washer, Flat |
| 50 | 1 | V33241 | Nameplate |
| 51 | 4 | V28002-3 | Rivet |
| 52 | 1 | V33012 | Tag, Ground-Lead |
| 53 | 1 | V2427494 | Spiral Lubricator |
| 54 | 1 | V500710-2 | Assembly Cable & Gland 50ft, SOOW Includes Item #'s 43, 44, 45, 46, 47 |
| | | V22527355-OHK | Overhaul Kit - 4, 5, 8, 9, 11, 15, 18, 19, 20, 24a, 24b, 26, 29, 30, 35, 39, 41, 42, 44 |

Note: O-ring & snap ring sizes are Milimeters.



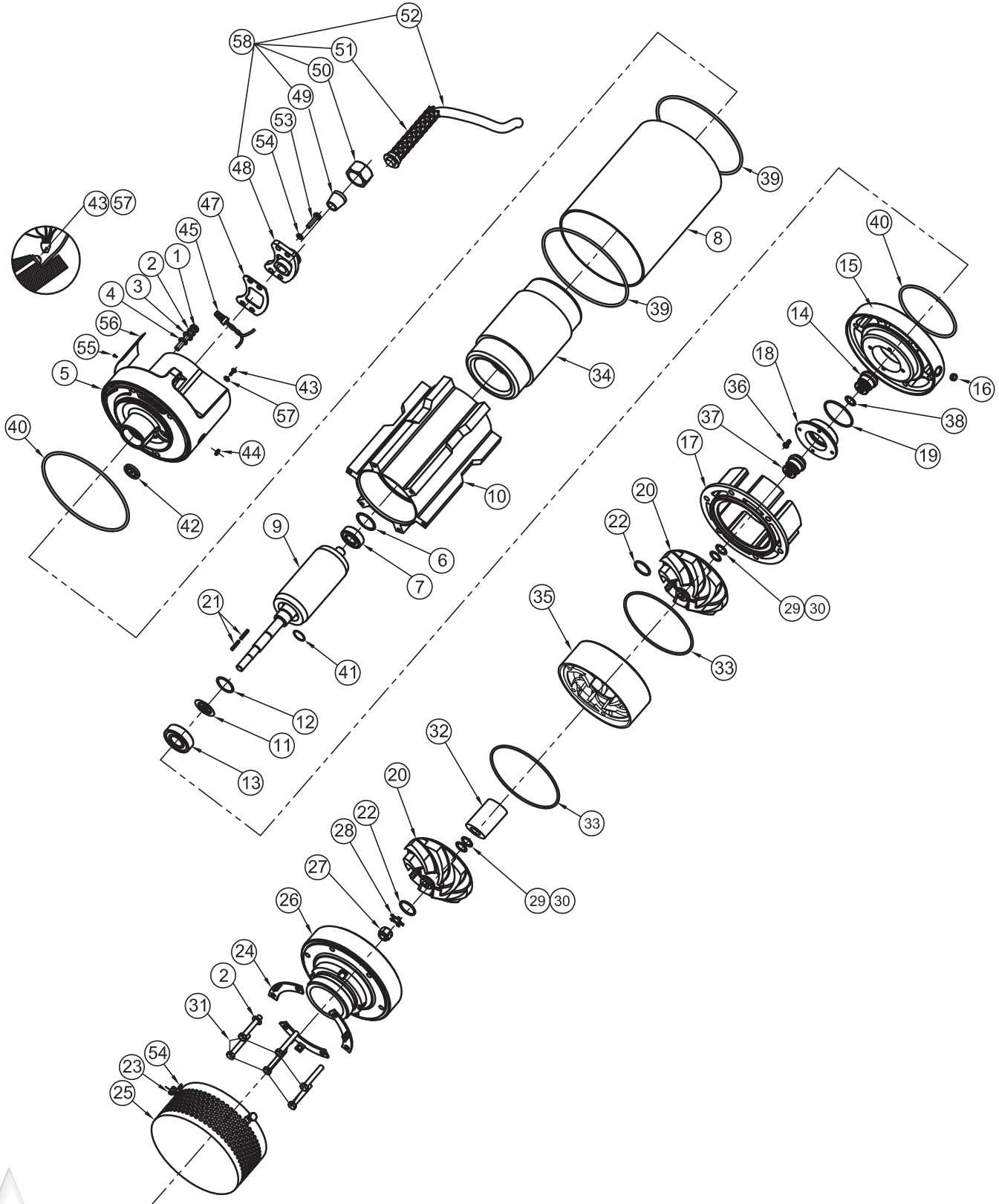
For Repair Part Please supply: Model Number and MFG Date as shown on Name Plate, and Part Description and Part Number as shown on Parts List.

Repair Parts - 5HP, 2 Stage



Repair Parts - 5HP, 2 Stage

For Repair Part Please supply: Model Number and MFG Date as shown on Name Plate, and Part Description and Part Number as shown on Parts List.



For Repair Part Please supply: Model Number and MFG Date as shown on Name Plate, and Part Description and Part Number as shown on Parts List.

Repair Parts - 5HP, 2 Stage

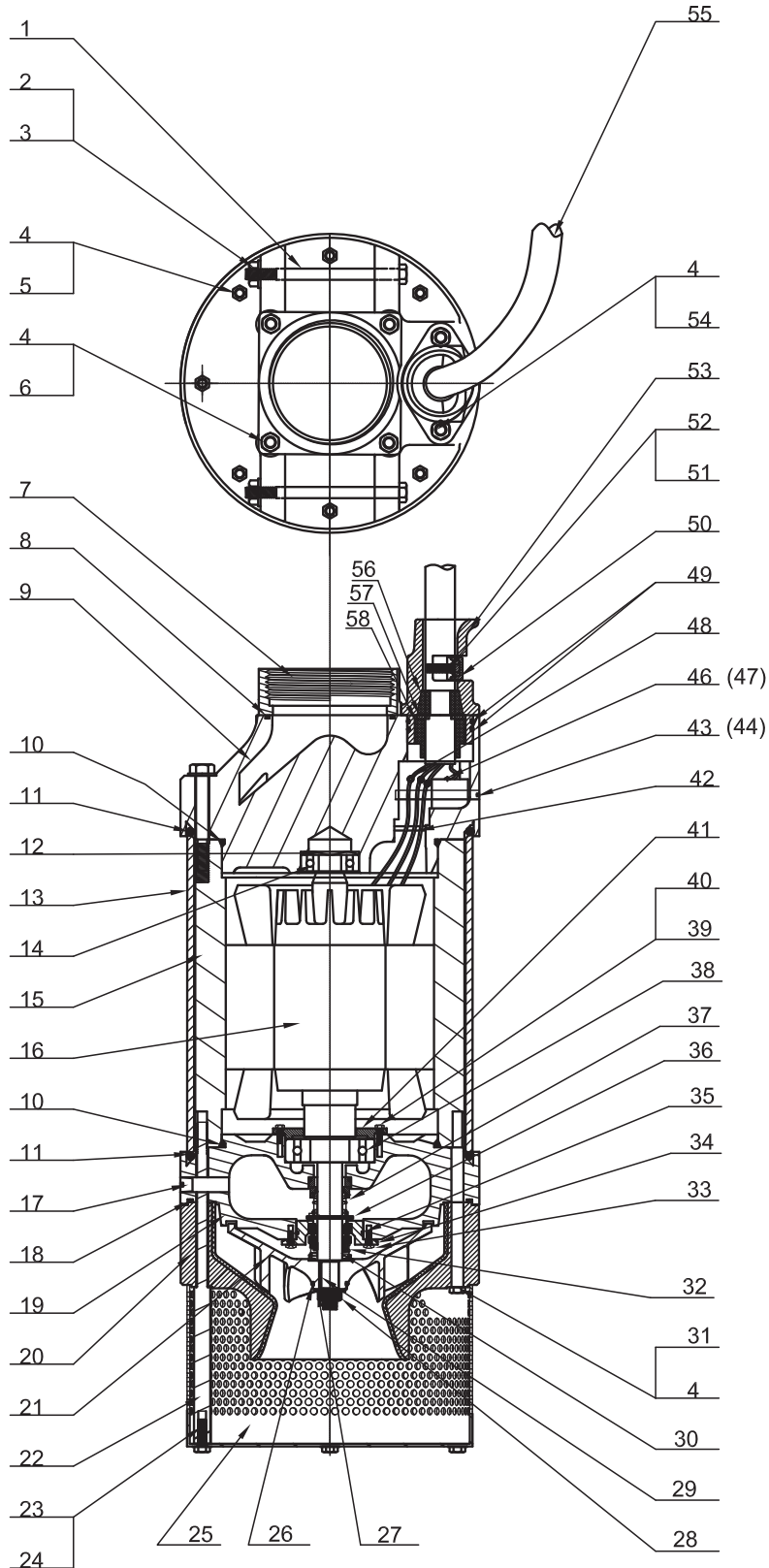
| NO. | QTY. | PART NO. | DESCRIPTION |
|-----|------|------------|---|
| 1 | 5 | 300009 | Capscrew 5/16-18 x 2.5lg |
| 2 | 11 | 330005 | Flat washer 5/16 |
| 3 | 1 | V605012 | Lockwasher |
| 4 | 5 | V31009-011 | Quad Ring |
| 5 | 1 | V250700 | Discharge Head 3" NPT w/2" NPT Adaptor V25009 |
| 6 | 1 | V30002-6 | Bearing Loading Spring |
| 7 | 1 | V112543 | Bearing 6203-2Z |
| 8 | 1 | V500555 | Outer Shell |
| 9 | 1 | V550400 | Rotor 5hp, 230v, 3ph |
| 9 | 1 | V550400 | Rotor 5hp, 460v, 3ph |
| 9 | 1 | V550400 | Rotor 5hp, 575v, 3ph |
| 10 | 1 | V500500 | Frame |
| 11 | 1 | V30009-4 | Nilos Bearing Ring |
| 12 | 1 | V27006-244 | Snap ring |
| 13 | 1 | 112546 | Bearing, Ball 6305-2Z |
| 14 | 1 | V31006 | Shaft Seal, Inboard |
| 15 | 1 | V550300-2 | Upper Diffuser |
| 16 | 1 | 312001 | Pipe Plug, 1/4" |
| 17 | 1 | V501305 | Wear Plate, Poly |
| 18 | 1 | V815310 | Seal Retainer |
| 19 | 1 | V31003-035 | O-ring, 56 ID, 1.8 CS |
| 20 | 2 | V550200-2 | Impeller, Stainless Upper and Lower 5.315" |
| 21 | 2 | V500407 | Key, .093 x .13 x .688 lg |
| 22 | 2 | V31003-117 | O-Ring, 20.5 ID, 2.6 CS |
| 23 | 3 | 302000 | Pan Hd Screw |
| 24 | 3 | V500003 | Bracket |
| 25 | 1 | V500000-1 | Strainer |
| 26 | 1 | V550100 | Suction Case |
| 27 | 1 | V20002-43 | Lock Nut, Impeller |
| 28 | 1 | V550211 | Lockwasher, Impeller |
| 29 | 2 | V815210-1 | Shim, 0.16", 1 set of 10 |
| 30 | 2 | V815210-2 | Shim, .032", 1 set of 10 |
| 31 | 6 | 300010 | Capscrew, 5/16-18 x6.5 |
| 32 | 1 | V550209 | Spacer |
| 33 | 2 | V31003-166 | O-Ring, 171.12 ID, 2.6 CS |
| 34 | 1 | V500600 | Stator 5hp, 230v, 3ph |
| 34 | 1 | V500600 | Stator 5hp, 460v, 3ph |
| 34 | 1 | V500635 | Stator 5hp, 575v, 3ph |

| NO. | QTY. | PART NO. | DESCRIPTION |
|-------------------|--------|------------------|--|
| 35 | 1 | V550303 | Lower Diffuser Assy Includes, Alum. Ring & Plastic Liner |
| 36 | 4 | 303001 | Rh. Hd Screw |
| 37 | 1 | V815350 | Shaft Seal, Outboard, s/s/B |
| 38 | 1 | V27002-87 | Retaining Ring |
| 39 | 2 | V31003-260 | O-ring, 175 OD, 3.5 CS |
| 40 | 2 | V31003-246 | O-ring, 113.9 ID, 3.5 CS |
| 41 | 1 | V27004-98 | Snap ring |
| 42 | 1 | V500750 | Stator dam 230/460 v |
| | | V500750-1 | Stator dam 575v |
| 43 | 1 | 300002 | Rd hd Screw |
| 44 | 1 | 312000 | Pipe Plug |
| 45 | 2 | V12026-1 | Connector, 1 Phase |
| | 6 | V12026-2 | Connector, 3 Phase |
| 46 | A/R | Purchase Locally | Epoxy |
| 47 | 1 | V2-31003-0025 | Gasket |
| 48 | 1 | V500711-1 | Gland, cable |
| 49 | 1 | V12022-2 | Bushing |
| 50 | 1 | V12062 | Cable Grip Nut |
| 51 | 1 | V12020-2A | Cable Grip |
| 52 | 1 | V350887-50 | Cable 50 ft 12/4 SOOW |
| 53 | 2 | 300008 | Capscrew |
| 54 | 3 | 330001 | Lockwasher |
| 55 | 4 | V28002-1 | Rivet |
| 56 | 1 | V33241 | Nameplate |
| 57 | 1 | 331004 | Lockwasher |
| 58 | 1 | V500710-2 | Cable & Gland Assy Includes Item #'s 48, 49, 50, 51, 52 |
| | 4.6 oz | Purchase Locally | #10 Oil, Non-Detergent Turbine, Seal Chamber |
| REPAIR KIT | | | |
| | | V500002ST-OHK | Overhaul Kit - 6, 7, 12, 13, 14, 19, 21, 22, 27, 28, 29, 30, 33, 37, 39, 40, 42, 45, 47, 49 |

(*) - Item 58 includes: 48, 49, 50, 51, 52.
Note: O-ring & snap ring sizes are Milimeters.

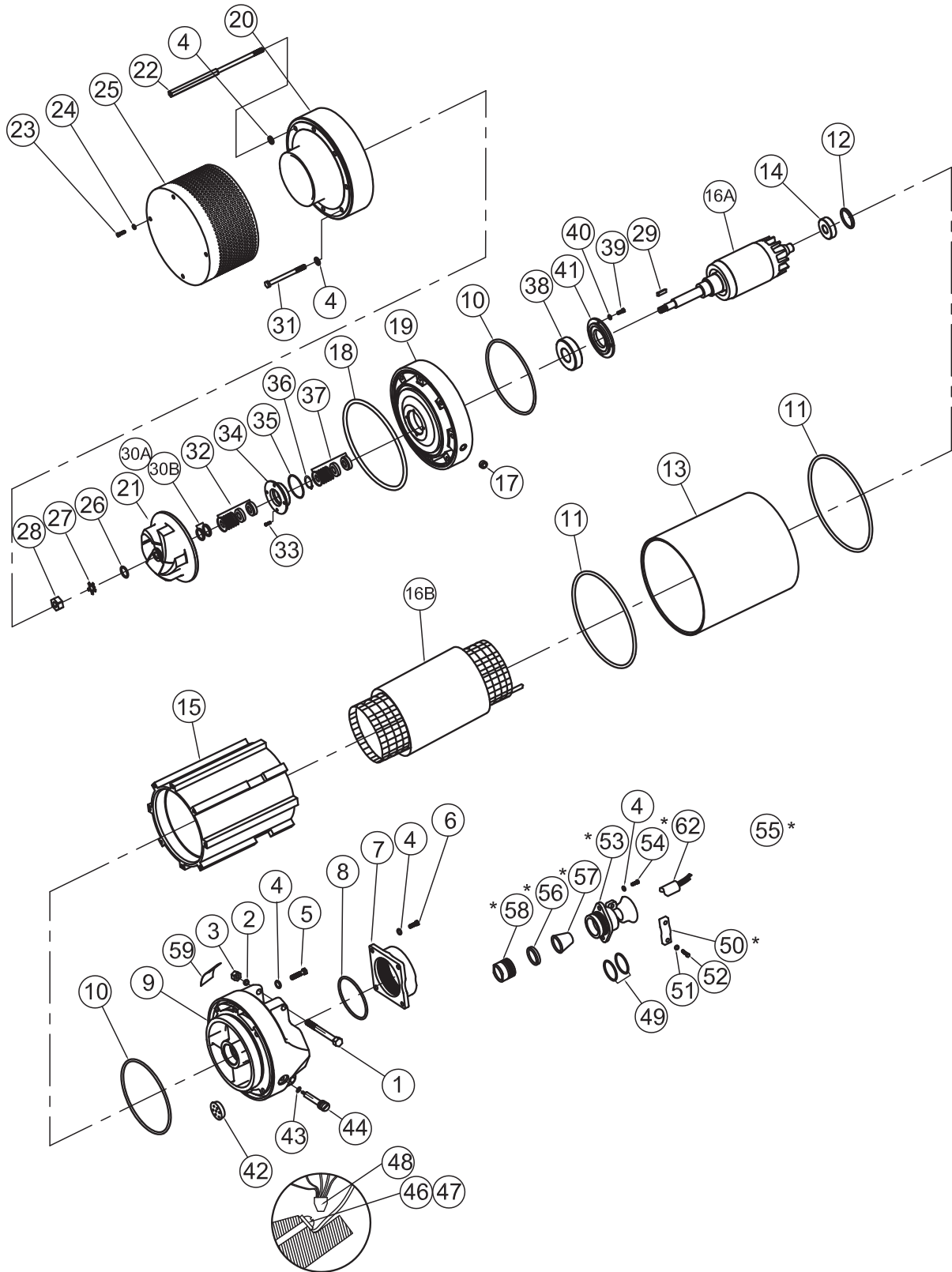
Repair Parts - 6HP, 10HP, 15HP

For Repair Part Please supply: Model Number and MFG Date as shown on Name Plate, and Part Description and Part Number as shown on Parts List.



For Repair Part Please supply: Model Number and MFG Date as shown on Name Plate, and Part Description and Part Number as shown on Parts List.

Repair Parts - 6HP, 10HP, 15HP



Repair Parts - 6HP, 10HP, 15HP

For Repair Part Please supply: Model Number and MFG Date as shown on Name Plate, and Part Description and Part Number as shown on Parts List.

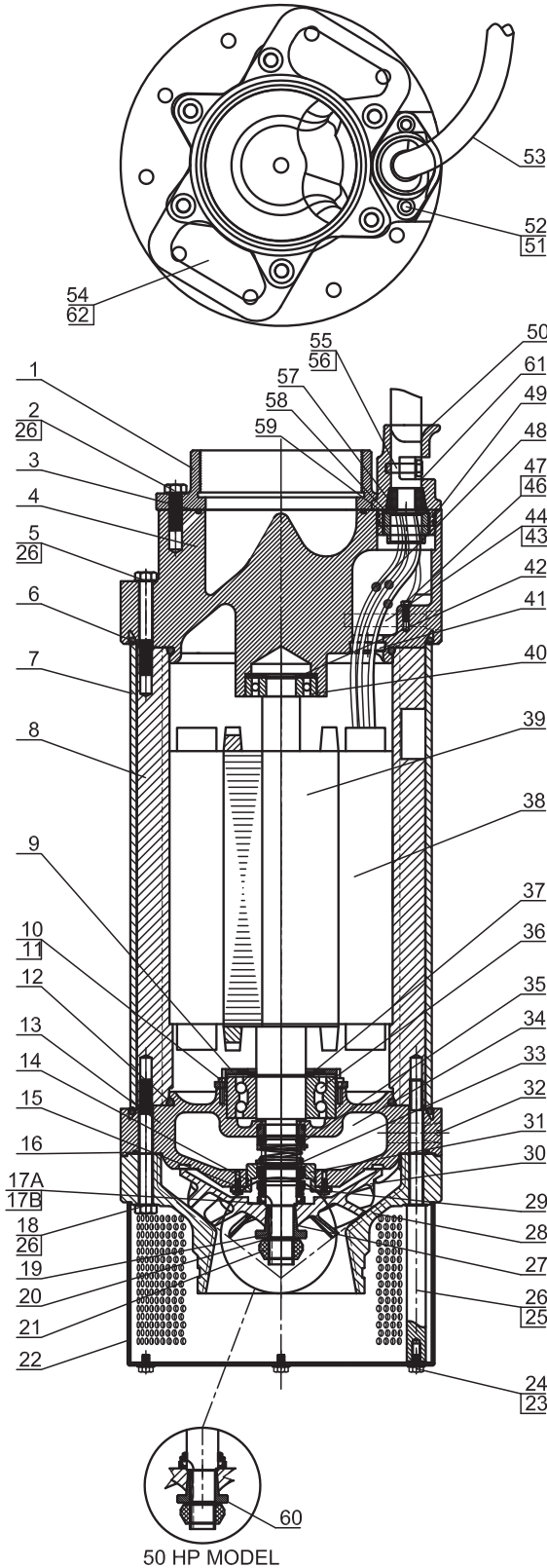
| NO. | QTY. | | PART NO. | DESCRIPTION |
|-----|------|----|------------|-----------------------------|
| 1 | 2 | | 301004 | Screw, Hex hd |
| 2 | 2 | | 331002 | Lock Washer |
| 3 | 2 | | 310000 | Nut, Hex |
| 4* | 21 | | 330004 | Washer, Flat |
| 5 | 7 | | 300005 | Screw, Cap |
| 6 | 4 | | 301007 | Screw, Hex Hd |
| 7 | 1 | | V815720 | Adapter, Discharge |
| 8 | 1 | ◆+ | V31003-244 | O-Ring, 115 OD, 3.5 CS |
| 9 | 1 | | V615700 | Discharge Head |
| 10 | 2 | ◆+ | V31003-366 | O-Ring, 197 OD, 5.3 CS |
| 11 | 2 | ◆+ | V31003-448 | O-Ring, 254 OD, 7 CS |
| 12 | 2 | | V30002-3 | Spring, Bearing Load |
| 13 | 1 | | V810555 | Shell, Outer- 6 & 10hp |
| | 1 | | V815555 | Shell, Outer- 15hp |
| 14 | 1 | ◆+ | V34007 | Bearing 6304-2Z |
| 15 | 1 | | V610500-1 | Frame - 6 & 10hp |
| | 1 | | V615500-2 | Frame - 15hp |
| 16A | 1 | | V610400 | Rotor - 6 & 10hp, 460v/230v |
| 16A | 1 | | V615400 | Rotor - 15hp , 230v/460v |
| 16B | 1 | | V600600 | Stator - 6hp 230v, 1Ph |
| 16B | 1 | | V810630 | Stator - 10hp 460v/230v |
| 16B | 1 | | V815630 | Stator - 15hp 230v/460v |
| 17 | 1 | | 312002 | Plug, pipe 1/2" NPT |
| 18 | 1 | ◆+ | V31003-273 | O-Ring, 251.8 OD, 3.6 CS |
| 19 | 1 | | V815300 | Diffuser |
| 20 | 1 | | V810105 | Suction Case 10hp-HH |
| | 1 | | V815100 | Suction Case 10hp & 15hp HV |
| | 1 | | V815105 | Suction Case 6 & 15hp-HH |
| 21 | 1 | | V600200-6 | Impeller 6hp, 7.154" |
| | 1 | | V810203-3 | Impeller 10hp-HH 7.795" |
| | 1 | | V810200-2 | Impeller 10hp-HV 7.154" |
| | 1 | | V815203-2 | Impeller 15hp-HH 7.795" |
| | 1 | | V815200-2 | Impeller 15hp-HV 7.146" |
| 22 | 4 | | V815010 | Bolt, Strainer |
| 23 | 4 | | 301002 | Screw, Hex hd |
| 24 | 4 | | 330005 | Washer, Flat |
| 25 | 1 | | V815000-1 | Strainer |
| 26 | 1 | ◆+ | V31003-122 | O-Ring, 34 OD, 3.1 CS |
| 27 | 1 | ◆+ | V815211 | Lockwasher, impeller |
| 28 | 1 | ◆+ | V20002-38 | Lock Nut, impeller |
| 29 | 1 | ◆+ | V815410 | Key, .124 sq x .878 lg |
| 30A | 1 | ◆+ | V815210-1 | Shim .016", 1 set of 10 |
| 30B | 1 | ◆+ | V815210-2 | Shim .032", 1 set of 10 |
| 31 | 4 | | 300006 | Screw, Cap HH |
| | 4 | | 300007 | Screw, Cap HV & 6hp |

| NO. | QTY. | | PART NO. | DESCRIPTION |
|--------------------|---------|----|------------------|---|
| 32 | 1 | ◆+ | V815350 | Shaft Seal, Outboard |
| 33 | 4 | | 303001 | Screw, Rd. Hd -4 per bag |
| 34 | 1 | | V815310 | Retainer, Seal |
| 35 | 1 | ◆+ | V31003-035 | O-Ring, 56 ID, 1.8 CS |
| 36 | 1 | ◆+ | V27002-87 | Snap Ring, 20.5 ID, 1 Thk |
| 37 | 1 | ◆+ | V31006 | Shaft Seal, Inboard |
| 38 | 1 | ◆+ | V34004 | Bearing, 6307 |
| 39 | 4 | | 301005 | Screw, Hex Hd. Cap |
| 40 | 4 | | 331000 | Lock Washer |
| 41 | 1 | | V815311 | Retainer, Bearing |
| 42 | 1 | ◆+ | V840752 | Stator Dam |
| 43 | 1 | ◆+ | V31003-015 | O-Ring, 13.2 ID, 1.9 CS |
| 44 | 1 | | V615758 | Plug Assembly |
| 46 | 1 | | 303000 | Screw, Rd. Hd. |
| 47 | 1 | | 331003 | Lockwasher |
| 48 | 3 | ◆ | V12029 | Connector, 1 Phase |
| | 4 | + | V12029-1 | Connector, 230V, 3 Ph |
| | 6 | + | V12029-2 | Connector, 460V, 3 Ph |
| 49* | 2 | ◆+ | V31003-138 | O-Ring, 53.6 ID, 2.6 CS |
| 50* | 1 | | V840760-4 | Clamp, Cable |
| 51* | 2 | | 330005 | Washer, Flat |
| 52* | 2 | | 301009 | Screw, Hex Hd. |
| 53* | 1 | | V840711 | Gland, Cable |
| 54* | 2 | | 300004 | Screw, Cap |
| 55 | 1 | | V600710 | Assembly, cable & gland, 6HP, 230V, 1Ph, 6/4 |
| | 1 | | V840710-44 | Assembly, cable & gland, 10 & 15HP, 230V, 6/4 |
| | 1 | | V840710-5 | Assembly, cable & gland, 10 & 15HP, 460V, 12/4 |
| 56* | 1 | | V840759-1 | Grip, Cable Washer 230v |
| | 1 | | V840759-2 | Grip, Cable Washer 460v |
| 57* | 1 | ◆+ | V840751-3 | Bushing 230v |
| | 1 | + | V840751-6 | Bushing 460v |
| 58* | 1 | | V840755 | Nut, Cable Grip |
| 62* | 1 | | V600112-50 | Cable -50ft 230/1, 6/4 SOOW |
| | 1 | | V810893-50 | Cable - 50ft 230v 6/4 SOOW |
| | 1 | | V350887-50 | Cable - 50ft 460v 12/4 SOOW |
| | 25.0 oz | | Purchase Locally | #10 Oil, Non-Detergent Turbine, Seal Chamber |
| REPAIR KITS | | | | |
| ◆ | | | V60112-OHK | Overhaul Kit - 8, 10, 11, 12, 14, 18, 26, 27, 28, 29, 30A, 30B, 32, 35, 36, 37, 38, 42, 43, 48, 49, 57 |
| + | | | V81000-OHK | |

(*) - Item 55 includes: 4 (Qty 2), 49, 50, 51, 52, 53, 54, 56, 57, 58, 62.
 Note: O-ring & snap ring sizes are Millimeters.

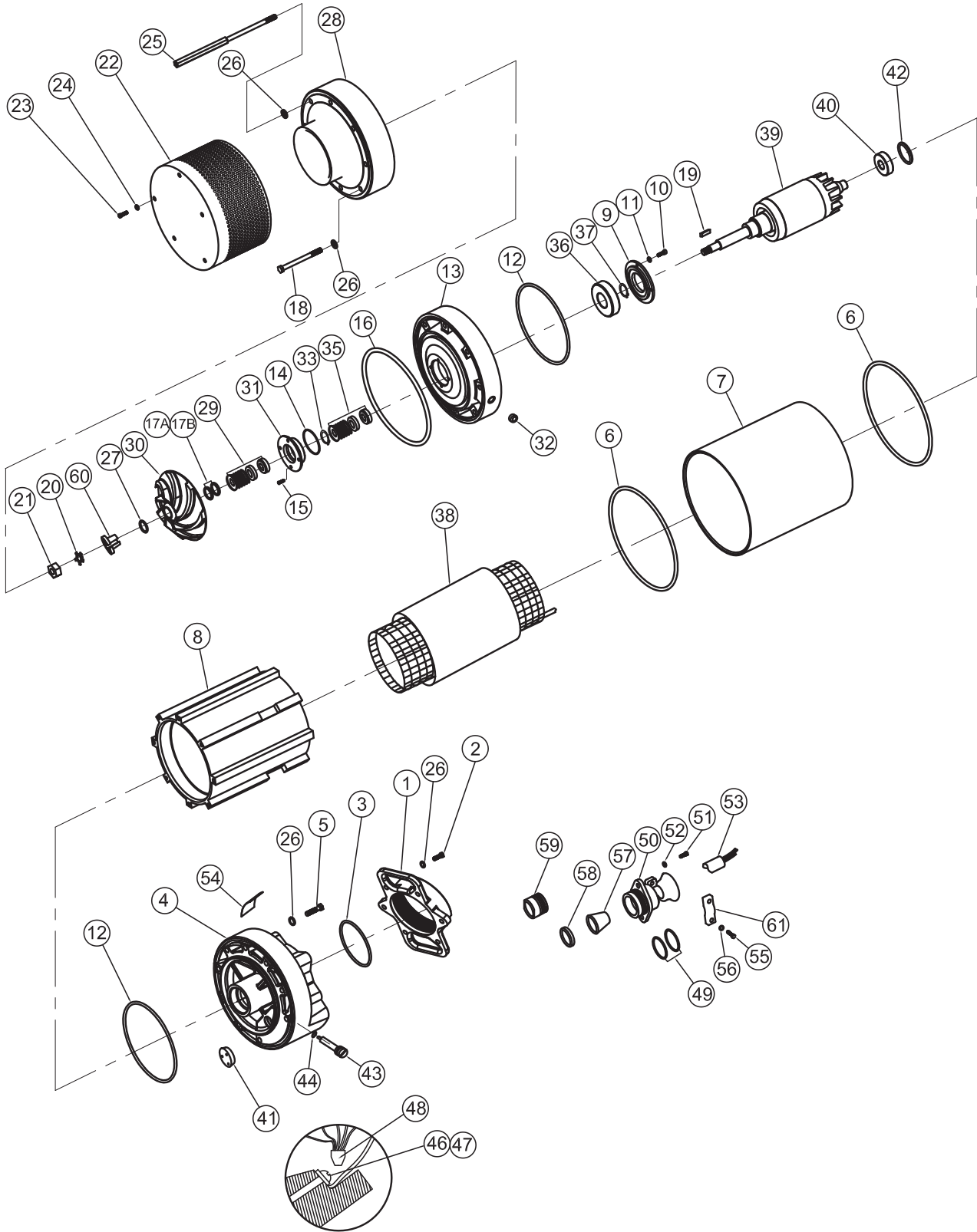
For Repair Part Please supply: Model Number and MFG Date as shown on Name Plate, and Part Description and Part Number as shown on Parts List.

Repair Parts - 25HP & 50HP



Repair Parts - 25HP & 50HP

For Repair Part Please supply: Model Number and MFG Date as shown on Name Plate, and Part Description and Part Number as shown on Parts List.



PF82500, PF85000 Series

Submersible Dewatering Pumps

For Repair Part Please supply: Model Number and MFG Date as shown on Name Plate, and Part Description and Part Number as shown on Parts List.

Parts List - 25HP & 50HP

| NO. | QTY. | PART NO. | DESCRIPTION |
|-------|----------|------------|--|
| 1 | 1 | V840732 | Adapter, Discharge |
| 2 | 6 | 301007 | Screw, Hex Hd. |
| 3 ♦† | 1 | V31003-260 | O-Ring, 163 ID, 3.5 CS |
| 4 | 1 | V840700 | Discharge Head |
| 5 | 9 | 300000 | Screw, Cap |
| 6 ♦† | 2 | V6458 | O-Ring, 293.5 ID, 7 CS |
| 7 | 1 | V840555-1 | Shell, Outer 25hp |
| 7 | 1 | V850555 | Shell, Outer 50hp |
| 8 | 1 | V840500 | Frame 25hp |
| | 1 | V850500 | Frame 50hp |
| 9 | 1 | V840313 | Retainer, Bearing |
| 10 | 4 | 301006 | Screw, Hex Hd. Cap |
| 11 | 4 | 331001 | Lockwasher |
| 12 ♦† | 2 | V31003-446 | O-Ring, 218 ID, 7 CS |
| 13 | 1 | V840300 | Diffuser |
| 14 ♦† | 1 | V31003-038 | O-Ring, 66.6 ID, 1.8 CS |
| 15 | 4 | 303001 | Screw, Rd. Hd |
| 16 ♦† | 1 | V31003-277 | O-Ring, 292.2 ID, 3 CS |
| 17A ♦ | 1 set 10 | V840210-2 | Shim .010" x .79" ID, 25hp |
| 17B ♦ | 1 set 10 | V840210-3 | Shim .020" x .79" ID, 25hp |
| 17A † | 1 set 4 | V21003-43 | Shim .020" x 1.043 ID, 50hp |
| 17B † | 1 set 4 | V21003-44 | Shim .010" x 1.043" ID, 50hp |
| 18 | 4 | 300001 | Screw, Cap HH |
| | 4 | 300007 | Screw, Hd HV |
| 19 | 1 ♦ | V840410 | Key .15" sq x .80" lg, 25hp |
| | 1 † | V850410 | Key .25" sq x 1" lg, 50hp |
| 20 | 1 ♦ | V840211 | Lockwasher, Impeller 25hp |
| | 1 † | V21016 | Lockwasher, Impeller 50hp |
| 21 | 2 ♦ | V20002-43 | Lock Nut, Impeller 25hp |
| | 1 | V850209 | Lock Nut, Impeller 50hp |
| 22 | 1 | V825000-1 | Strainer |
| 23 | 5 | 301002 | Screw, Hex Hd |
| 24 | 5 | 330005 | Washer, Flat |
| 25 | 5 | V825010 | Bolt, Strainer |
| 26 | 25 | 330003 | Washer, Flat |
| 27 ♦ | 1 | V31003-122 | O-Ring, 34 OD, 3.1 CS, 25hp (for 25hp impeller only) |
| 28 | 1 | V840100-4 | Suction Case 25hp & 50hp - HH |
| | 1 | V840100 | Suction Case 25hp - HV |
| | 1 | V840100-8 | Suction Case 50hp - HV |
| 29 ♦† | 1 | V840350 | Seal, Outboard 25HP & 50HP |
| 30 | 1 | V825203-1 | Impeller 25hp HH 8.65" |
| 30 | 1 | V825200-2 | Impeller 25hp HV 8.02" |
| 30 | 1 | V850203-2 | Impeller 50hp HH 8.46" |
| 30 | 1 | V850200-2 | Impeller 50hp HV 8.02" |

| NO. | QTY. | PART NO. | DESCRIPTION |
|-------------|------|------------------|--|
| 31 | 1 | V840310 | Retainer, Seal |
| 32 | 1 | 312002 | Plug, Pipe NPT |
| 33 ♦† | 1 | V27002-125 | Snap Ring, 29.6 ID, 1.2 Thk |
| 34 | 32oz | Purchase Locally | #10 Oil Non-Detergent Turbine, Seal Chamber |
| 35 ♦† | 1 | V31020 | Shaft Seal, Inboard |
| 36 ♦† | 1 | V34016 | Bearing, Angular 5310A-2Z |
| 37 ♦† | 1 | V27002-200 | Snap Ring, 45.8 id, 2 CS |
| 38 | 1 | V825630 | Stator 25hp, 230v |
| 38 | 1 | V850634 | Stator 50hp, 460v |
| 39 | 1 | V825408 | Rotor 25hp, 230v, 460v, 575v |
| 39 | 1 | V850400 | Rotor 50hp, 460v |
| 40 ♦† | 1 | V34013 | Bearing 6306-2Z |
| 41 | 1 ♦ | V840750 | Stator Dam 25 Hp |
| | 1 † | V840750-1 | Stator Dam 50 hp |
| 42 ♦† | 1 | V30002-5 | Spring, Bearing Load |
| 43 ♦† | 1 | V840758 | Plug Assembly |
| 44 ♦† | 1 | V31003-015 | O-Ring, 13.2 ID, 1.9 CS (for air plug 25hp & 50hp) |
| 46 | 1 | 303000 | Screw, Rd Hd |
| 47 | 1 | 331003 | Lockwasher |
| 48 ♦† | 4 | V12026-1 | Connector, 230V, 3 Ph |
| | 6 | V12026-2 | Connector, 460V, 3 Ph |
| 49* ♦† | 2 | V31003-138 | O-Ring, 53.6 ID, 2.6 CS |
| 50* | 1 | V840715 | Gland, Cable |
| 51* | 2 | 301008 | Screw, Hec Hd. |
| 52* | 2 | 330005 | Washer, Flat |
| 53* | 1 | V825907-50 | Cable - 50ft 4/4 SOOW |
| 54 | 1 | Contact Factory | Nameplate |
| 55* | 2 | 300004 | Screw, Cap |
| 56* | 2 | 330004 | Washer, Flat |
| 57* ♦† | 1 | V840749-2 | Bushing |
| 58* | 1 | V840759-2 | Grip, Cable Washer |
| 59* | 1 | V840748 | Cable Grip Nut |
| 60 | 1 | V850208-1 | Bushing, taper lock 50hp |
| 61* | 1 | V840760-4 | Clamp, Cable |
| 62 | 4 | Contact Factory | Rivets |
| 63 | 1 | V840710-10 | Assembly, Cable & Gland * |
| REPAIR KITS | | | |
| ♦ | | V82500-OHK | Overhaul Kit - 3, 6, 12, 14, 16, 17a, 17b, 19, 20, 21, 27, 29, 33, 35, 36, 37, 40, 41, 42, 43, 44, 48, 49, 57 |
| † | | V85000-OHK | |

(*) - Item 63 includes: 49, 50, 51, 52, 53, 55, 56, 57, 58, 59, 61.

Note: O-ring & snap ring sizes are Milimeters.



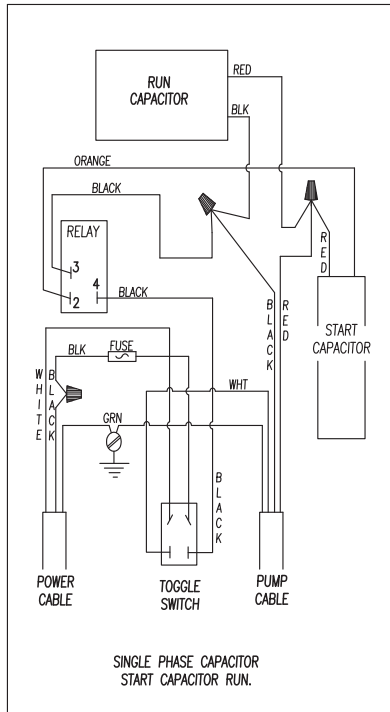
Hardware Parts List

| PART NO. | DESCRIPTION | SIZE | MATERIAL |
|----------|----------------------|--------------------|-----------------|
| 300000 | Screw, Cap | 1/2-13 x 3.75" lg | Stainless Steel |
| 300001 | Screw, Cap | 1/2-13 x 5.00" lg | Stainless Steel |
| 300002 | Screw, Cap | 1/4-20 x 2.00" lg | Stainless Steel |
| 300003 | Screw, Cap | 1/4-20 x 3.25" lg | Stainless Steel |
| 300004 | Screw, Cap | 3/8-16 x 1.00" lg | Stainless Steel |
| 300005 | Screw, Cap | 3/8-16 x 3.25" lg | Stainless Steel |
| 300006 | Screw, Cap | 3/8-16 x 5.00 lg | Stainless Steel |
| 300007 | Screw, Cap | 3/8-16 x 5.50 lg | Stainless Steel |
| 300008 | Screw, Cap | 1/4-20 x .875" lg | Stainless Steel |
| 300009 | Screw, Cap | 5/16-18 x 2.50" lg | Stainless Steel |
| 300010 | Screw, Cap | 5/16-18 x 6.50" lg | Stainless Steel |
| 301000 | Screw, Hex Hd. | 5/16-18 x 3.50" lg | Stainless Steel |
| 301001 | Screw, Hex Hd. | .25-20 x .875" lg | Stainless Steel |
| 301002 | Screw, Hex Hd. | 5/16-18 x .50 lg | Stainless Steel |
| 301003 | Screw, Hex Hd. | 5/16-18 x 2.25" lg | Stainless Steel |
| 301004 | Screw, Hex Hd. Cap | 1/2-13 x 5.50" lg | Stainless Steel |
| 301005 | Screw, Hex Hd. Cap | 10-24 x .625" lg | Zinc Plated |
| 301006 | Screw, Hex Hd. Cap | 10-24 x .625" lg | Stainless Steel |
| 301007 | Screw, Hex Hd. Cap | 3/8-16 x 1.125" lg | Stainless Steel |
| 301008 | Screw, Hex Hd. Cap | 5/16-18 x 1.25 lg | Stainless Steel |
| 301009 | Screw, Hex Hd. Cap | 5/16-18 x 1.50 lg | Stainless Steel |
| 302000 | Screw, Pan Hd. | 1/2-20 x .50" lg | Stainless Steel |
| 303000 | Screw, Rd. Hd. | 1/4-20 x .375" lg | Bronze |
| 303001 | Screw, Rd. Hd. | 10-24 x .50" lg | Stainless Steel |
| 303002 | Screw, Rd. Hd. | 10-32 x .25" lg | Bronze |
| 303003 | Screw, Rd. Hd. | 6-31 x .50" lg | Stainless Steel |
| 310000 | Nut, Hex | 1/2"-13 | Stainless Steel |
| 312000 | Plug, Pipe NPT | .125 | Stainless Steel |
| 312001 | Plug, Pipe NPT | .25 | Stainless Steel |
| 312002 | Plug, Pipe NPT | 1/2" | Stainless Steel |
| 330001 | Washer, Flat | .25 | Stainless Steel |
| 330002 | Washer, Flat | .32 | Stainless Steel |
| 330003 | Washer, Flat | 1/2" | Stainless Steel |
| 330004 | Washer, Flat | 3/8" | Stainless Steel |
| 330005 | Washer, Flat | 5/16" | Stainless Steel |
| 330006 | Washer, Flat | .25 | Zinc Plated |
| 331000 | Lockwasher | #10 | Cad Plated |
| 331001 | Lockwasher | #10 | Stainless Steel |
| 331002 | Lockwasher | 1/2" | Stainless Steel |
| 331003 | Lockwasher | 1/4" | Cad Plated |
| 331004 | Lockwasher | 10 | Steel |
| 331005 | Lockwasher, Impeller | 3/8" | Stainless Steel |

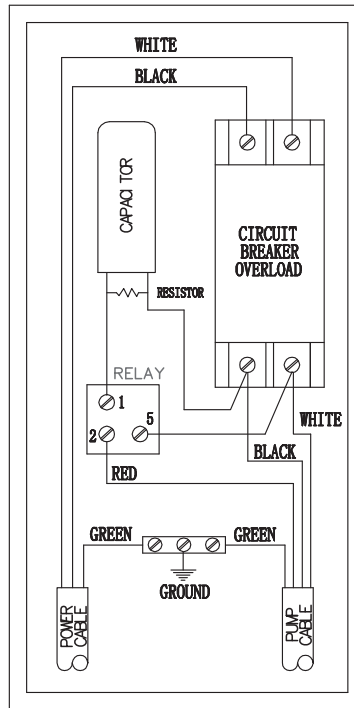


Control Box Schematics

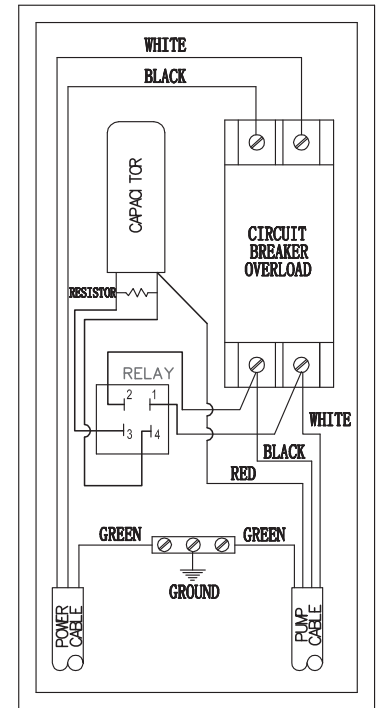
0.75hp-1hp (115 & 230 Volt) Single Phase



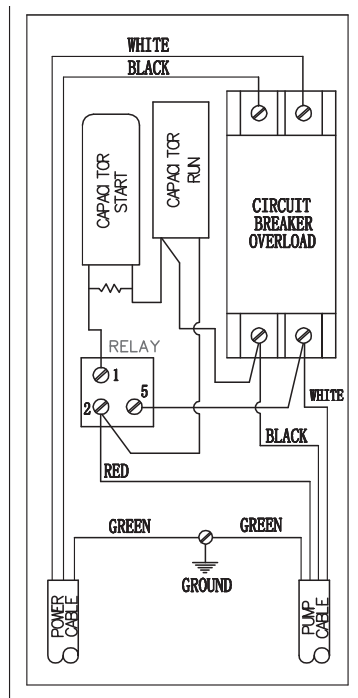
2HP 230 Volt Single Phase



2HP 115 Volt Single Phase



2.75, 3.5, 5 & 6HP Single Phase (ONLY)



230,460 & 575 Volts Three Phase

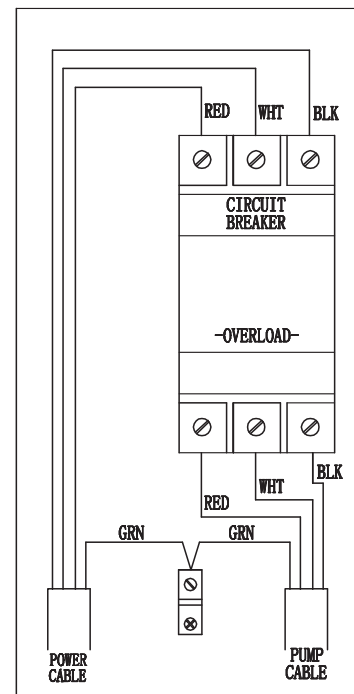
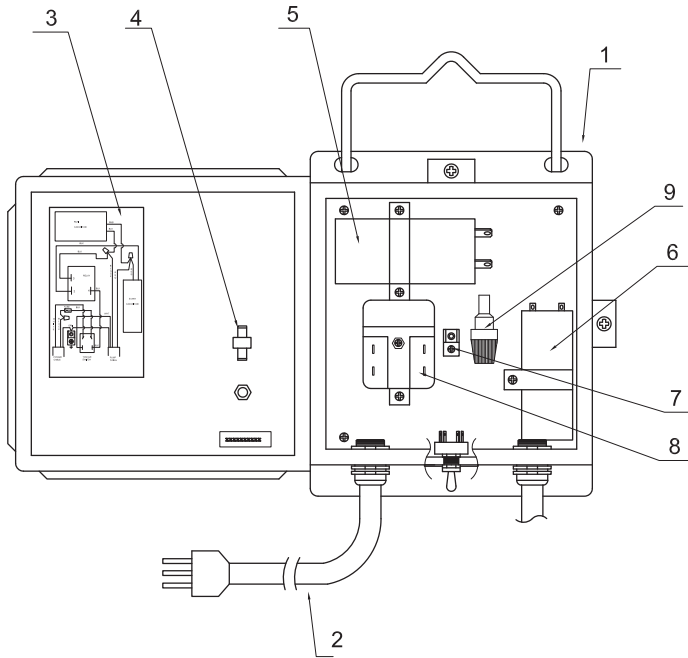


Diagram 20



Control Box Components

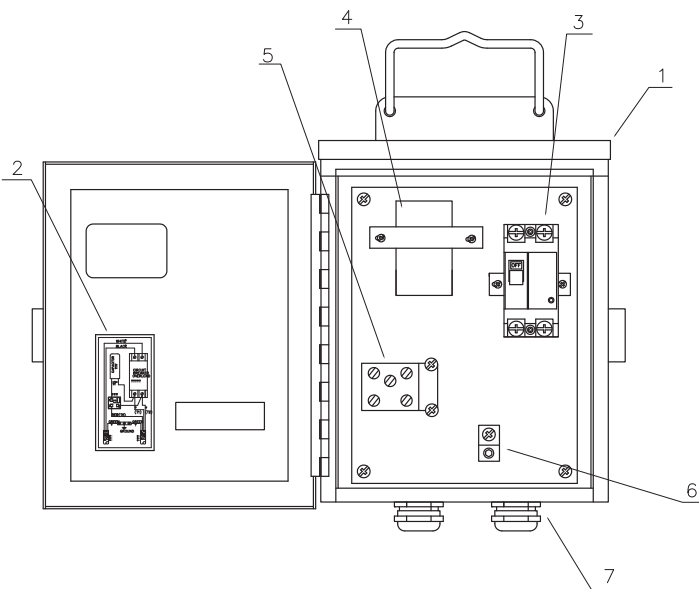
0.75 - 1HP 1Phase Control



| Item No. | Name | Description | Part No. |
|----------|------------------------------------|--------------|-------------|
| 1 | Enclosure 7.59W x 8.66H x 4.80D | NEMA 3R | V4500500ENC |
| 2 | Cable w/ Plug | 14/4 | V4500404CA |
| 3 | Connection Diagram | See Page 33 | ---- |
| 4 | Fuse, 115v/0.75hp | 12A | V4500200F |
| | Fuse, 115v/1hp | 15A | V4500201F |
| | Fuse, 230v/0.75-1hp | 8A | V4500202F |
| 5 | Run Capacitor | 370V, 35MFD | V4500002C |
| 6 | Start Capacitor | 250V, 64MFD | V4500003C |
| 7 | Ground Lug | | V4500400LUG |
| 8 | Relay, 115v | TI 4CR-1-758 | V4500100R |
| | Relay, 230v | TI 4CR-1-705 | V4500101R |
| 9 | Fuse Clamp | | V4500401CLP |

Control Box, 3/4 & 1HP, 115V P/N: V101811
 Control Box, 3/4 & 1HP, 230V P/N: V101812

2HP 1Phase Control

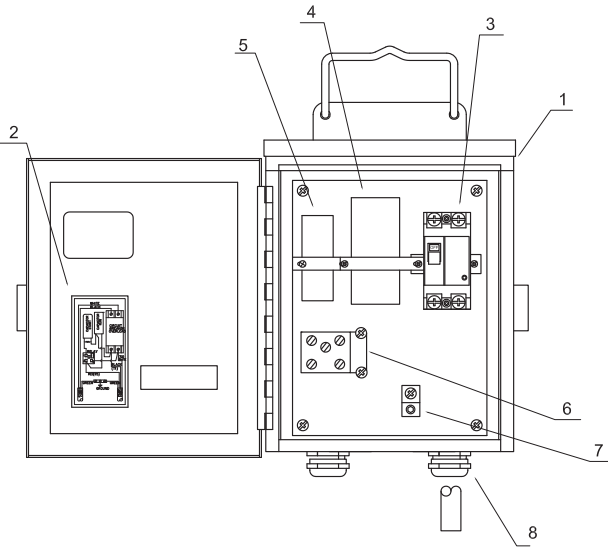


| Item No. | Name | Description | Part No. |
|----------|-------------------------------------|-------------------|-------------|
| 1 | Enclosure 8.08W x 10.12H x 4.47D | NEMA 3R | V4500501ENC |
| 2 | Connection Diagram | See Page 33 | ---- |
| 3 | Circuit Breaker 115v | 240V, 32A | V4500300B |
| | Circuit Breaker 230v | 240V, 15A | V4500301B |
| 4 | Start Capacitor 115v | 800MFD/125V | V4500004C |
| | Start Capacitor 230v | 200MFD/250V | V4500005C |
| 5 | Relay 115v | HY-D2-165/40-11CU | V4500102R |
| | Relay 230v | MARS 169 #19169 | V4500103R |
| 6 | Ground Lug | | V4500400LUG |
| 7 | Connector | | V4500402CON |

Control Box, 2HP, 115V P/N: V200811
 Control Box, 2HP, 230V P/N: V200812

Control Box Components

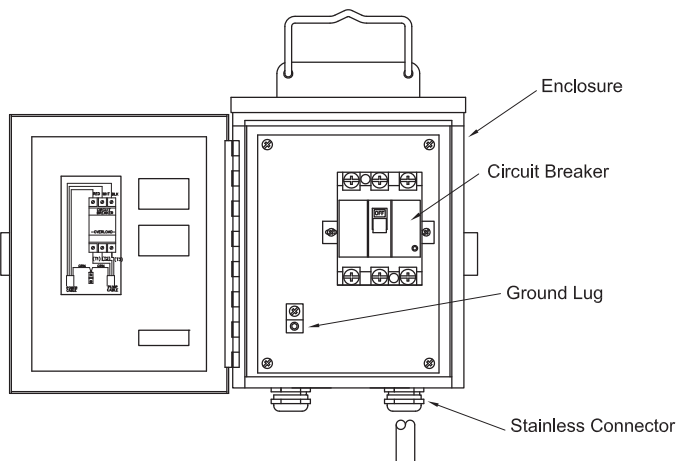
2.75, 3.5, 5 & 6HP 1Phase Control



| Item No. | Name | Description | Part No. |
|----------|-------------------------------------|-------------------|-------------|
| 1 | Enclosure 8.08W x 10.12H x 4.47D | NEMA 3R | V4500501ENC |
| 2 | Connection Diagram | See Page 33 | ---- |
| 3 | Circuit Breaker 2.75Hp | 240V, 15A | V4500301B |
| | Circuit Breaker 3.5Hp | 240V, 20A | V4500302B |
| | Circuit Breaker 5Hp | 240V, 30A | V4500300B |
| | Circuit Breaker 6Hp | 240V, 40A | V4500304B |
| 4 | Run Capacitor 2.75Hp | 25MFD/370V | V4500006C |
| | Run Capacitor 3.5, 5 & 6Hp | 45MFD/450V | V4500007C |
| 5 | Start Capacitor 2.75Hp | 200MFD/250V | V4500005C |
| | Start Capacitor 3.5, 5 & 6Hp | 300MFD/350V | V4500008C |
| 6 | Relay | MARS 169 p/n19169 | V4500103R |
| 7 | Ground Lug | | V4500400LUG |
| 8 | Connector | | V4500403CON |

Control Box, 2-3/4 HP, 230V P/N: V270812
 Control Box, 3-1/2 HP, 230V P/N: V350812
 Control Box, 5 HP, 230V P/N: V500812
 Control Box, 6 HP, 230V P/N: V600812

0.75 - 50HP 3Phase Control



| Control Box OEM Circuit Breakers | | | | |
|----------------------------------|---------------|-----------------|-----------------------------|-------------|
| Pump Model | HP, Volts, Ph | Control Box No. | Circuit Breaker Part Number | Description |
| PF01032 | .75Hp 230/3 | V250834* | V250850-036 | 480V/5A |
| PF01034 | .75Hp 460/3 | V100834 | V100850-034 | 480V/3A |
| PF01332 | 1Hp 230/3 | V100832 | V250850-036 | 480V, 5A |
| PF01334 | 1Hp 460/3 | V100834 | V100850-034 | 480V, 3A |
| PF25132HV | 2.5Hp 230/3 | V500834 | V500850-134 | 480V, 10A |
| PF25134HV | 2.5Hp 460/3 | V250834 | V250850-036 | 480V, 5A |
| PF50132HV | 5Hp 230/3 | V810834 | V815850-136 | 480V, 20A |
| PF50134HV | 5Hp 460/3 | V500834 | V500850-134 | 480V, 10A |
| PF50135HV | 5Hp 575/3 | V500835 | V500850-036 | 600V, 7.2A |
| PF501322ST | 5Hp 230/3 | V810834 | V815850-136 | 480V, 20A |
| PF501342ST | 5Hp 460/3 | V500834 | V500850-134 | 480V, 10A |
| PF81032HV/HH | 10Hp 230/3 | V810832 | V810850-032 | 480V, 40A |
| PF81034HV/HH | 10Hp 460/3 | V810834 | V815850-136 | 480V, 20A |
| PF81532HV/HH | 15Hp 230/3 | V815832 | V840850-036 | 480V, 50A |
| PF81534HV/HH | 15Hp 460/3 | V815834 | V815850-034 | 480V, 30A |
| PF82532HV/HH | 25Hp 230/3 | V825832 | V825850-032 | 480V, 75A |
| PF82534HV/HH | 25Hp 460/3 | V825834 | V810850-032 | 480V, 40A |
| PF85034HV/HH | 50Hp 460/3 | V850834 | V850850-034 | 480V, 60A |

* = V250834 control panel replaces V075832.

LIMITED WARRANTY

Manufacturer warrants, to the immediate purchaser and subsequent initial owner during the warranty period, every new pump to be free from defects in material and workmanship under normal use and service, when properly used and maintained, for a period of eighteen (18) months from date of manufacture or twelve (12) months from date of installation (whichever ever comes first). Failure due to wear due to excessive abrasives is not covered. The initial owner is the purchaser who first uses the pump after its initial installation, or for non-permanent installation, the first owner who uses the pump. The date of installation shall be determined by a dated sales receipt noting the model and serial number of the pump. The dated sales receipt must accompany the returned pump. Product will be repaired, replaced or remanufactured at Manufacturer's option. No allowance will be made for shipping charges, damages, labor or other charges that may occur due to product failure, repair or replacement. This warranty does not apply to and there shall be no warranty for any material or product that has been disassembled without prior approval of Manufacturer, subjected to misuse, misapplication, neglect, alteration, accident or act of God; that has not been installed, operated or maintained in accordance with Manufacturer's installation instructions; that has been exposed to outside substances including but not limited to the following: sand, gravel, cement, mud, tar, hydrocarbons, hydrocarbon derivatives (oil, gasoline, solvents, etc.), or other abrasive or corrosive substances, wash towels or feminine sanitary products, etc. in all pumping applications. The warranty set out in the paragraph above is in lieu of all other warranties expressed or implied; and we do not authorize any representative or other person to assume for us any other liability in connection with our products. Contact Manufacturer at: 1-877-24PUMPS or www.powerflopumps.com, Attention: Customer Service Department, to obtain any needed repair or replacement of part(s) or additional information pertaining to our warranty.

MANUFACTURER EXPRESSLY DISCLAIMS LIABILITY FOR SPECIAL, CONSEQUENTIAL OR INCIDENTAL DAMAGES OR BREACH OF EXPRESSED OR IMPLIED WARRANTY; AND ANY IMPLIED WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE AND OF MERCHANTABILITY SHALL BE LIMITED TO THE DURATION OF THE EXPRESSED WARRANTY.

Some states do not allow limitations on the duration of an implied warranty, so the above limitation may not apply to you. Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation or exclusion 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.

