



## INSTALLATION, OPERATION & MAINTENANCE MANUAL

### PSP200SVX / PSP300SVX



#### SIDE DISCHARGE Electric Submersible Pumps

Single Phase  
115V



Read this manual carefully before installing, operating or servicing these pump models. Observe all safety information. Failure to comply with instructions may result in personal injury and/or property damage. Please retain these instructions.

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## INTRODUCTION

This Installation, Operation and Maintenance manual provides important information on safety and the proper inspection, disassembly, assembly and testing of the Kodiak Power submersible pump. This manual also contains information to optimize performance and longevity of your **Kodiak Power** submersible pump.

**The submersible PSP Series pumps are designed to pump water. The PSP Series pumps are not explosion-proof. They are not designed to pump volatile or flammable liquids.**

**Note: Consult chemical resistance chart for compatibility between pump materials and liquid before operating pump.**

If you have any questions regarding the inspection, disassembly, assembly or testing please contact your Kodiak Power distributor, or John Brooks Company Limited.

John Brooks Company Limited  
2625 Meadowpine Blvd.  
Mississauga, ON, L5N 7K5

East Phone: 888-881-6667  
West Phone: 800-527-8592

Information is also available on our web site: [www.kodiakpower.ca](http://www.kodiakpower.ca)

For assistance with your electric power source, please contact a certified electrician.

Please pay attention to the following alert notifications. They are used to notify operators and maintenance personnel to pay special attention to procedures, to avoid causing damage to the equipment, and to avoid situations that could be dangerous to personnel.

***NOTE: Instructions to aid in installation, operation, and maintenance or which clarify a procedure.***

** DANGER** Immediate hazards that WILL result in severe personal injury or death. These instructions describe the procedure required and the injury which will result from failure to follow the procedure.

** WARNING** Hazards or unsafe practices that COULD result in severe personal injury or death. These instructions describe the procedure required, and the injury which could result from failure to follow the procedure.

** CAUTION** Hazards or unsafe practices which COULD result in personal injury or product or property damage. These instructions describe the procedure required and the possible damage which could result from failure to follow the procedure.

## SAFETY

Pump installations are seldom identical. Each installation and application can vary due to many different factors. It is the owner/service mechanics responsibility to repair, service, and test to ensure that the pump integrity is not compromised according to this manual.

**⚠ WARNING** Risk of electric shock – this pump has not been investigated for use in swimming pool areas.

**⚠ DANGER** Do not pump flammable, inflammable or volatile liquids. Death or serious injury will result.

**⚠ WARNING** Before attempting to open or service the pump:

- 1) Familiarize yourself with this manual.
- 2) Unplug or disconnect the pump power cable to ensure that the pump will remain inoperative.
- 3) Allow the pump to cool if overheated.

**⚠ WARNING** Do not operate the pump with a worn or damaged electric power cable. Death or serious injury could occur.

**⚠ WARNING** Never attempt to alter the length or repair any power cable with a splice. The pump motor and pump motor and cable must be completely waterproof. Damage to the pump or personal injury may result from alterations.

**⚠ WARNING** After the pump has been installed, make sure that the pump and all piping are secure before operation.

**⚠ WARNING** Do not lift the pump by the power cable piping or discharge hose. Attach proper lifting equipment to the lifting handle (or lifting rings) fitted to the pump. Do not suspend the pump by the power cable.

**⚠ WARNING** Obtain the services of a qualified electrician to troubleshoot, test and/or service the electrical components of this pump.

**⚠ CAUTION** Pumps and related equipment must be installed and operated according to all national, local and industry standards.

## INSPECTION

### Review all safety information before servicing pump.

The following are recommended installation practices/procedures for the pump. If there are questions in regards to your specific application, contact your local Kodiak Power distributor, or John Brooks Company Limited.

### PRE-INSTALLATION INSPECTION

- 1) Check the pump for damage that may have occurred during shipment.
- 2) Inspect the pump for any cracks, dents, damaged threads, etc.
- 3) Check power cord for any cuts or damage.
- 4) Check for, and tighten any hardware that appears loose.
- 5) Carefully read all tags, decals and markings on the pump.

If anything appears to be abnormal, contact your Kodiak Power distributor, or John Brooks Company Limited. If damaged, the pump may need to be repaired before use. Do not install or use the pump until appropriate action has been taken.

### Lubrication:

No additional lubrication is necessary. The shaft seal and bearings are fully lubricated from the factory. Seal oil should be checked once per year. See table below.

### OIL FILL QUANTITY/TYPE

Pump Models	Qty. oil in seal chamber		Type of oil
	(U.S. fl. oz.)	Metric C.C.	
PSP200SVX	5.1	150	ISO 32 NSF Food Grade Oil
PSP300SVX	9.3	275	ISO 32 NSF Food Grade Oil

## PUMP INSTALLATION

PSP Series pumps have been evaluated for use with water or water based solutions. Please contact the manufacturer for additional information.

### **WARNING**

**Risk of electric shock.** Pump models; PSP200SVX, PSP300SVX (115v) are supplied with a grounding conductor and grounding-type attachment plug. To reduce the risk of electric shock, be certain that it is connected only to a properly grounded, grounding-type receptacle.

### **Lifting:**

Attach a rope or lifting chain (not included) to the handle (or lifting rings) on the top of the pump.

### **CAUTION**

Do not lift the pump by the power cable or discharge hose/piping. Proper lifting equipment (rope/chain) must be used.

## POSITIONING THE PUMP

**Kodiak Power**, PSP Series pumps are designed to operate fully or partially submerged. Avoid running the pump dry for extended periods of time. Refer to data sheet for minimum submersion depth for your particular model. As a general rule, PSP Series side discharge pumps can pump down to a level above the suction cover. Pumping lower than the cover will permit air to enter the pump and cavitate, lose prime or become air bound.

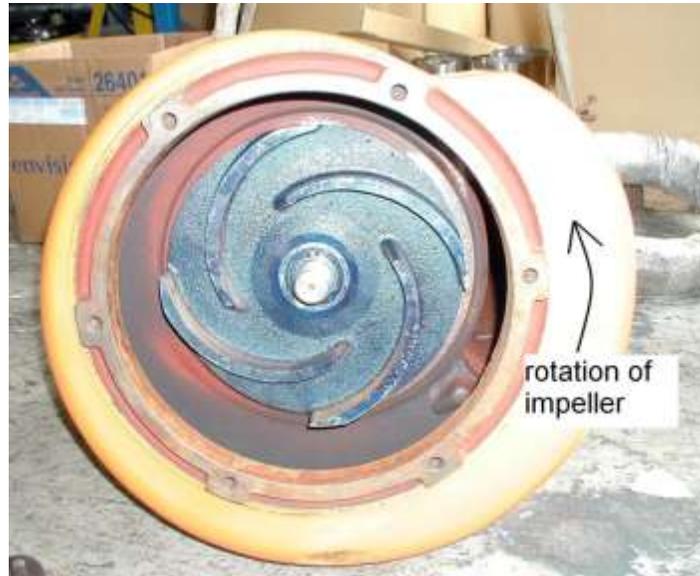
### **CAUTION**

- Do not run pump dry.
- Pump liquid should not exceed a maximum temperature of 104°F. (40°C)
- Never place the pump on loose or soft ground. The pump may sink, preventing water from reaching the impeller. Place on a solid surface or suspend the pump with a lifting rope/chain. The PSP Series pumps are provided with a suction strainer to prevent large solids from clogging the impeller. Any spherical solids which pass through the strainer should pass through the pump.
- For maximum pumping capacity, use the proper size non-collapsible hose or rigid piping. A check valve may be installed after the discharge to prevent back flow when the pump is shut off.

## PUMP ROTATION

Two ways to check the correct pump rotation:

1. By looking at the impeller; the rotation of the impeller should be counter clockwise as shown in the picture below.



2. By looking from the top of the pump. Since the impeller cannot be seen, the best way to check the rotation is to check the kick back motion of the pump when the pump just starts. The kick back motion of the pump should be counter clockwise as shown in the picture below.



## PUMP OPERATION

### **WARNING**

This pump is designed to handle dirty water that contains some solids. It is not designed to pump volatile or flammable liquids. Do not attempt to pump any liquids which may damage the pump or endanger personnel as a result of pump failure.

### **DANGER**

**Do not operate this pump where explosive vapors or flammable material exist. Death or Serious injury will result.**

## TYPICAL MANUAL DEWATERING INSTALLATION

**NOTE: Maximum recommended starts should not exceed 10 times per hour.**

Models PSP200SVX, PSP300SVX are provided with a 33' (10 m) power cord. NEVER splice the power cable due to safety and warranty considerations. Always keep the plug end dry.

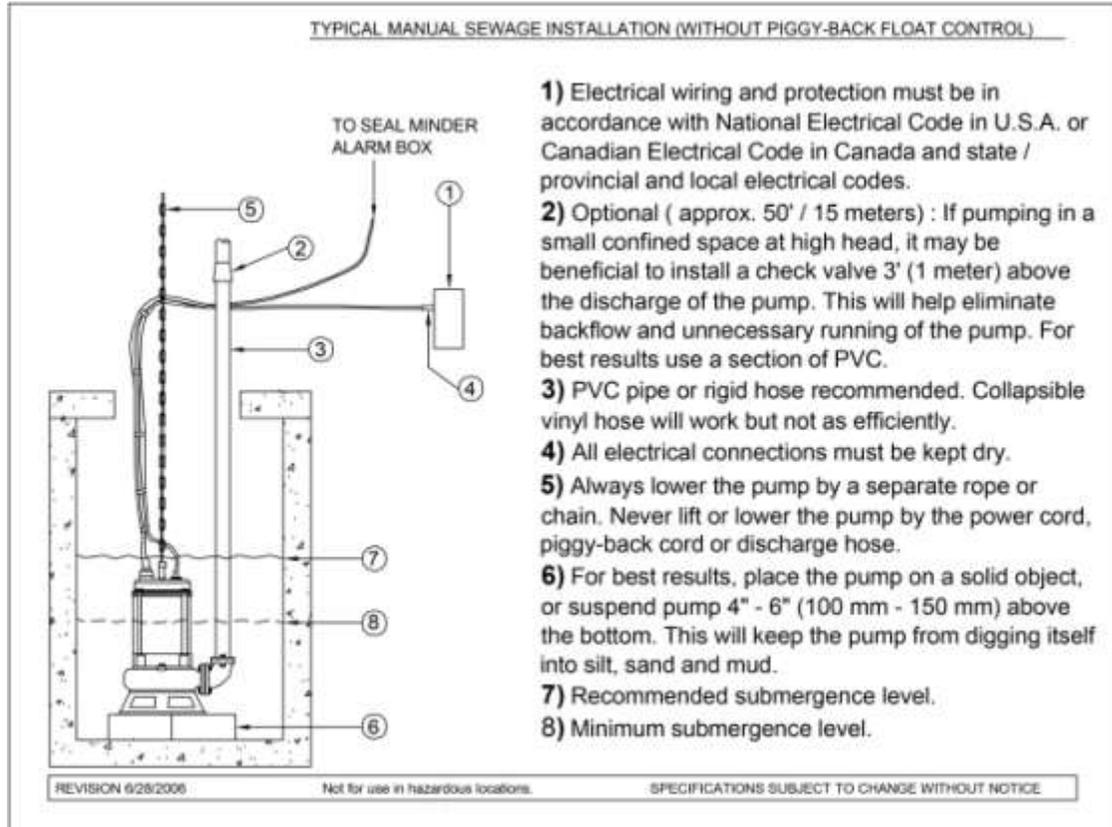
### **WARNING**

Do not alter the length or repair any power cable with a splice. The pump motor and cable must be completely waterproof. Damage to the pump or personal injury may result from alterations.

For manual operation: 115 volt: plug the power cable into any 115 volt grounded receptacle. It is recommended that a Ground Fault Interrupter (GFI) type receptacle (or equivalent) be used.

### **WARNING**

Single phase pumps always use a three-prong grounded receptacle. It is recommended that a Ground Fault Interrupter (GFI) type receptacle (or equivalent) be used.



### STOPPING

To stop the pump (manual and automatic mode), unplug it from the power source, turn off the breaker, or turn the power source off (generator).

### TYPICAL AUTOMATIC DEWATERING INSTALLATION

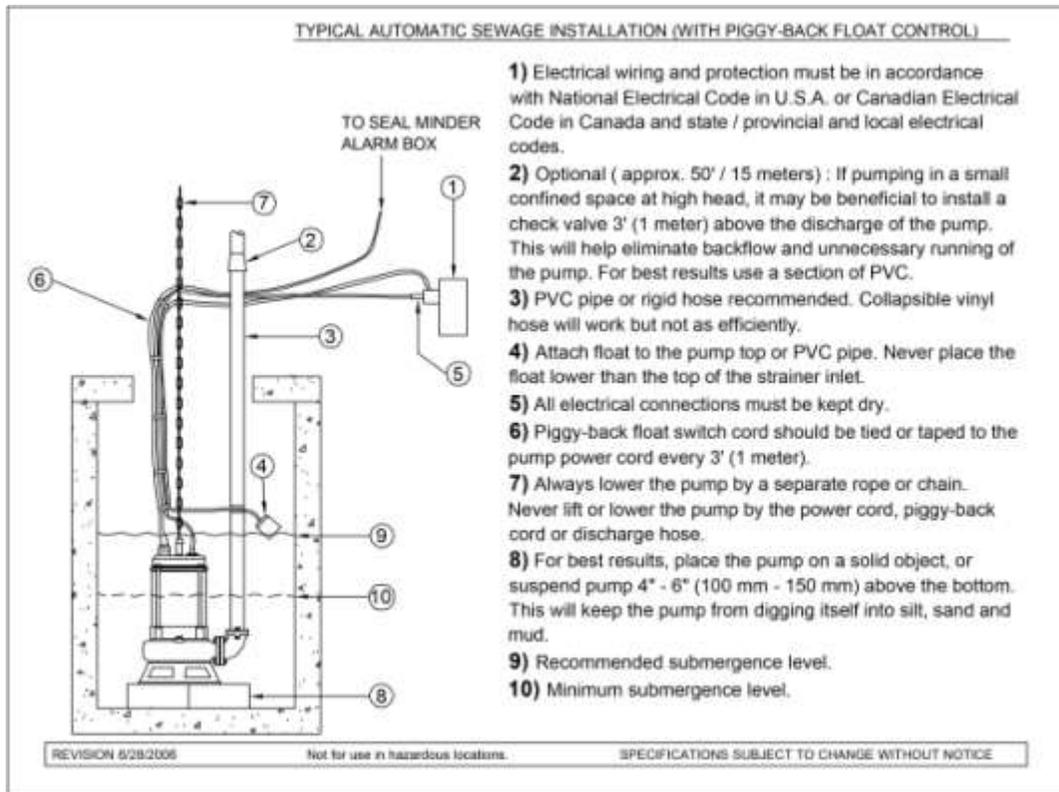
**NOTE: Maximum recommended starts should not exceed 10 times per hour.**

### AUTOMATIC OPERATION

Float switches (wired into the pump motor or piggy-back style) are available from the factory as an option.

### STOPPING

To stop the pump (manual and automatic mode), unplug it from the power source, turn off the breaker, or turn the power source off (generator).



## INTENDED METHODS OF CONNECTION



**CAUTION** Use with approved motor control that matches motor input in full load amperes. "UTILISER UN DÉMARREUR APPROUVÉ CONVARIANT AU COURANT À PLEINE CHARGE DU MOTEUR."

**Kodiak Power** has been evaluated for use with water or water based solutions. Please contact the manufacturer for additional information.

## SINGLE PHASE WIRING INSTRUCTIONS



**WARNING** **FOR YOUR PROTECTION, ALWAYS DISCONNECT PUMP FROM ITS POWER SOURCE BEFORE HANDLING.** Single phase pumps are supplied with a three prong grounded plug to help protect you against the possibility of electrical

shock. **DO NOT UNDER ANY CIRCUMSTANCES REMOVE THE GROUND PIN.** The three prong plug **must** be inserted into a mating three prong grounded receptacle. **IF** the installation does not have such a receptacle it must be changed to the proper type, wired and grounded in accordance with the National Electrical Code and all applicable local codes and ordinances.



**WARNING** “Risk of electrical shock” Do not remove power supply cord and strain relief or connect conduit directly to the pump.



**WARNING** Installation and checking of electrical circuits and hardware should be performed by a qualified licensed electrician.

## TROUBLE SHOOTING



Disconnect the power source to the pump **BEFORE** attempting any type of trouble shooting, service or repair.

### PUMP WILL NOT RUN

1. Check power supply (fuses, breaker). Reset power.
2. Blocked impeller. Remove strainer, check and clean.
3. Defective cable or incorrect wiring.
4. Strainer clogged. Check and clean as necessary.
5. Float switch tangled/obstructed. Clean and free float switch from obstruction.
6. Float switch defective. Replace float switch.
7. Pump overheated or temperature of liquid exceeds pump operating temperature.

**Warning: Pump will restart automatically when motor over-heat protection switch cools.**

### PUMP RUNS BUT DOES NOT DELIVER RATED CAPACITY

1. Discharge line clogged, restricted or hose kinked. Check discharge hose/pipe.
2. Worn impeller and/or suction cover. Inspect and replace as necessary.
3. Pump overloaded due to liquid pumped being too thick.
4. Pumping air. Check liquid level and position of pump.
5. Excessive voltage drops due to long cables.
6. Three phase only; pump running backwards, check rotation.

## SERVICING YOUR SUBMERSIBLE PUMP

Pump should be disconnected from the electric power supply before proceeding to do any service or maintenance.

To service or repair your pump, please contact your local Kodiak Power distributor. Service should only be performed by a qualified electrician.

## MAINTAINING YOUR PUMP

- Pump should be disconnected from the electric power supply before proceeding to do any service or maintenance.
- Pump should be inspected at regular intervals.
- More frequent inspections are required if the pump is used in a harsh environment.
- Preventative maintenance should be performed to reduce the chance of premature failure.
- Worn impellers and lip seals should be replaced.
- Cut or cracked power cords must be replaced. **(Never operate a pump with a cut, cracked or damaged power cord.)**
- Seal oil should be checked once per year.
- Maintenance should always be done when taking a pump out of service before storage.
  - 1) Clean pump of dirt and other build up.
  - 2) Check condition of oil around the shaft seals.
  - 3) Check hydraulic parts: check for wear.
  - 4) Inspect power cable. Make sure that it is free of nicks or cuts.

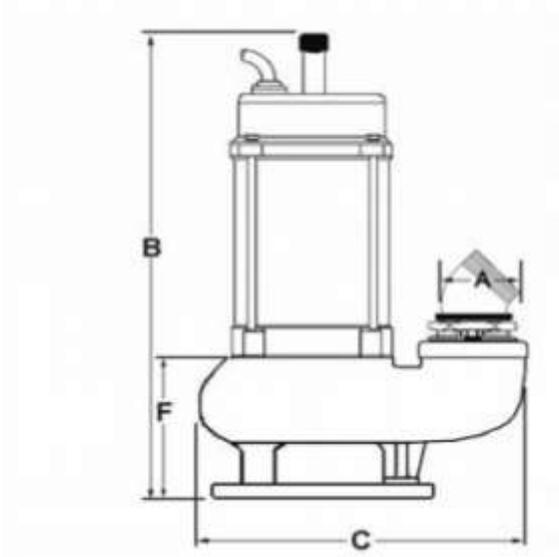
## CHANGING SEAL OIL

Changing the seal oil in the PSP series pumps is very easy.

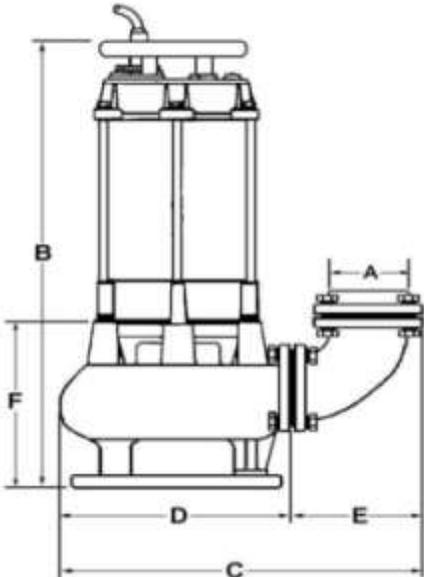
- 1) Make sure that the pump cable is disconnected from the power source.
- 2) Lay the pump down on its side.
- 3) Remove the screws that hold the bottom plate in place.
- 4) Remove bottom plate.
- 5) Remove screws holding the suction cover.
- 6) Remove the suction cover.
- 7) Remove the impeller.
- 8) Remove the inspection screw for the oil chamber (pos#50-08). Pour out a small sample of the oil. If it is milky white, or contains water, then the oil and possible, the mechanical seal, should be changed. If an oil change is needed:
- 9) Remove the screws that hold the oil chamber cover in place & remove the oil.
- 10) Replace the mechanical seal if necessary.
- 11) Replace the oil.
- 12) Assemble the pump.

**DIMENSIONAL DRAWINGS**

**PSP200SVX**

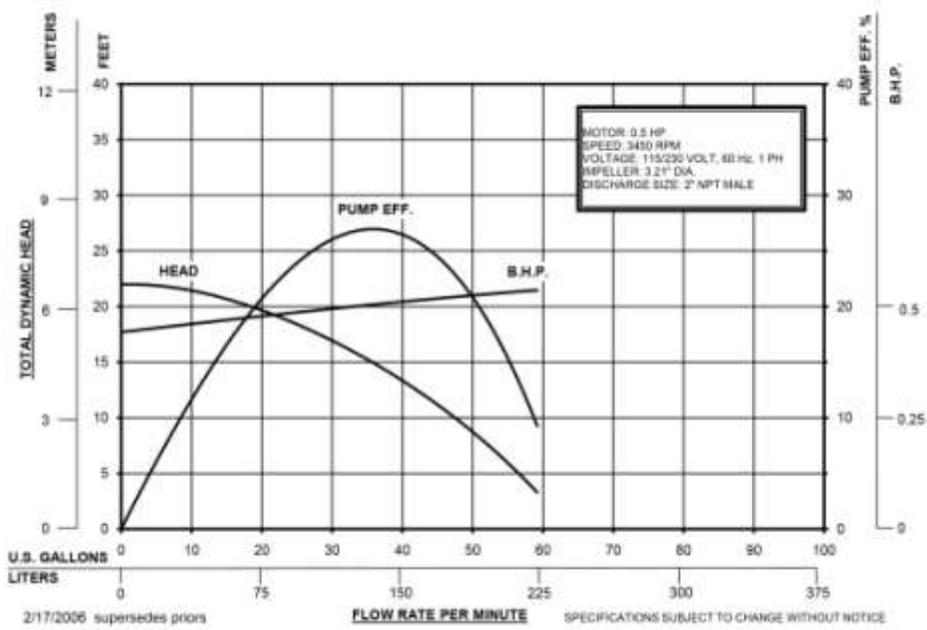


**PSP300SVX**

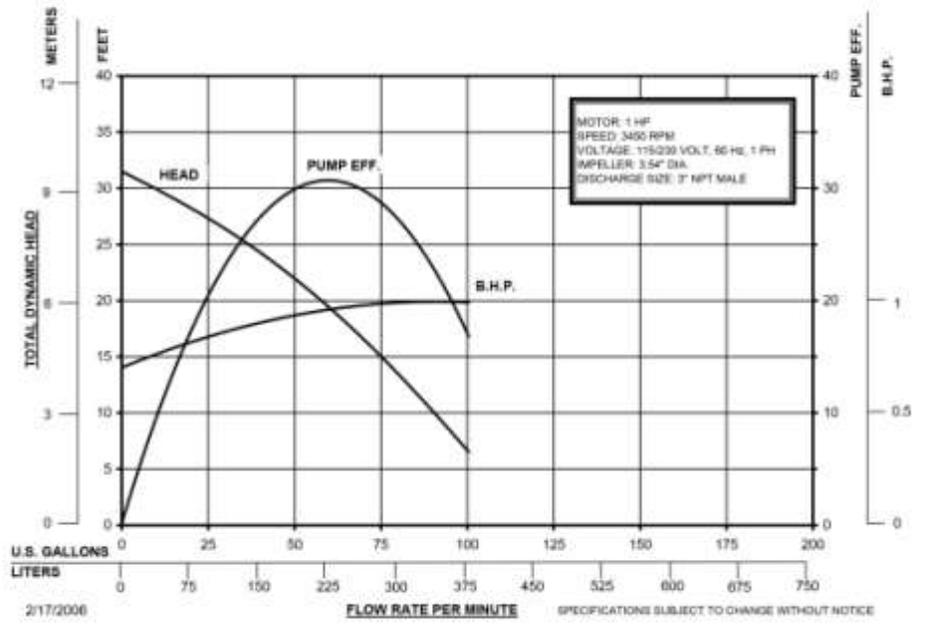


Model	A	B	C	D	E	F
PSP200SVX	2.0"	18.4"	8.5"	-	-	5.0"
PSP300SVX	3.0"	20.8"	13.8"	8.5"	5.2"	5.6"

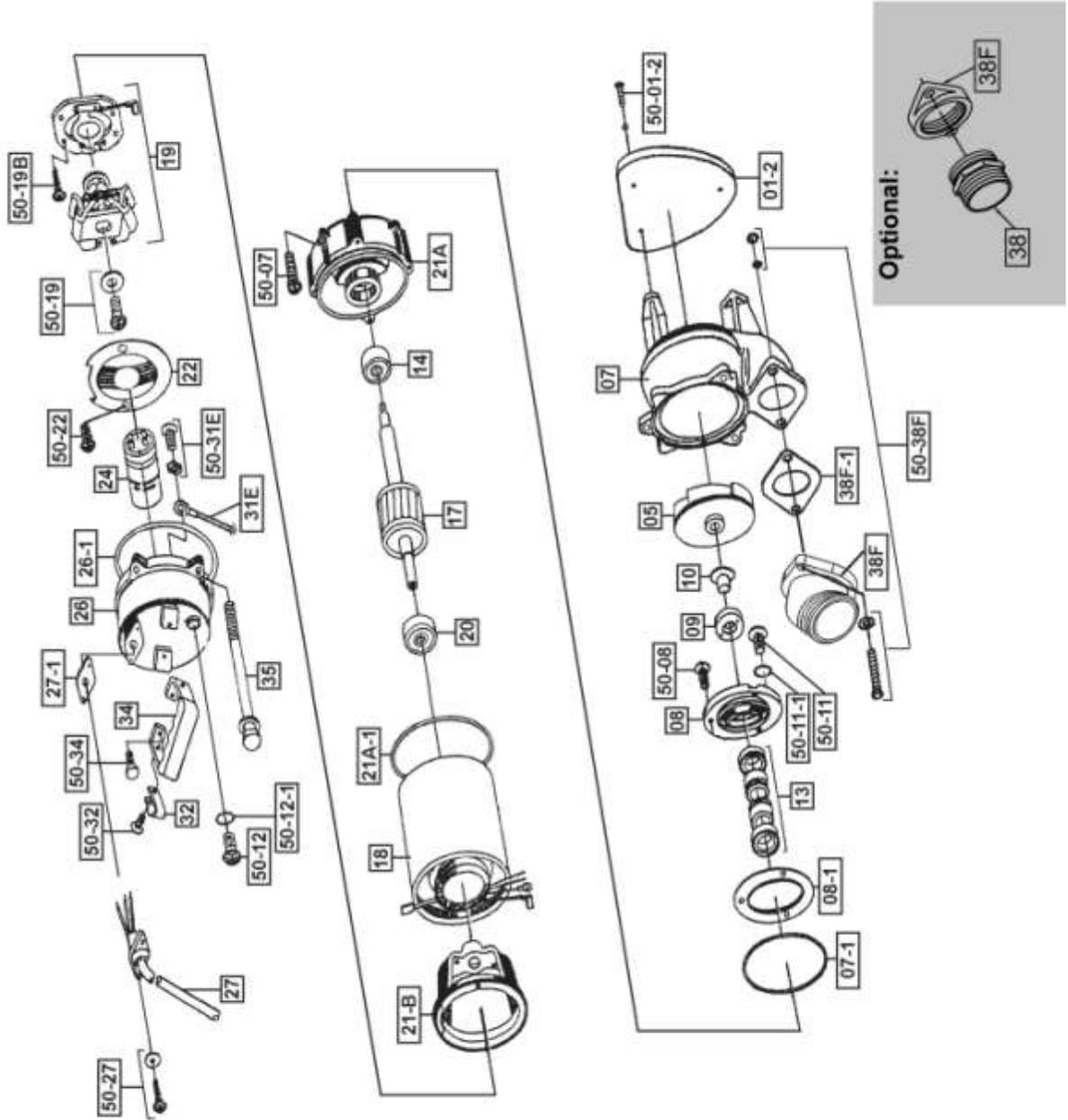
### MODEL: PSP200SVX CURVE



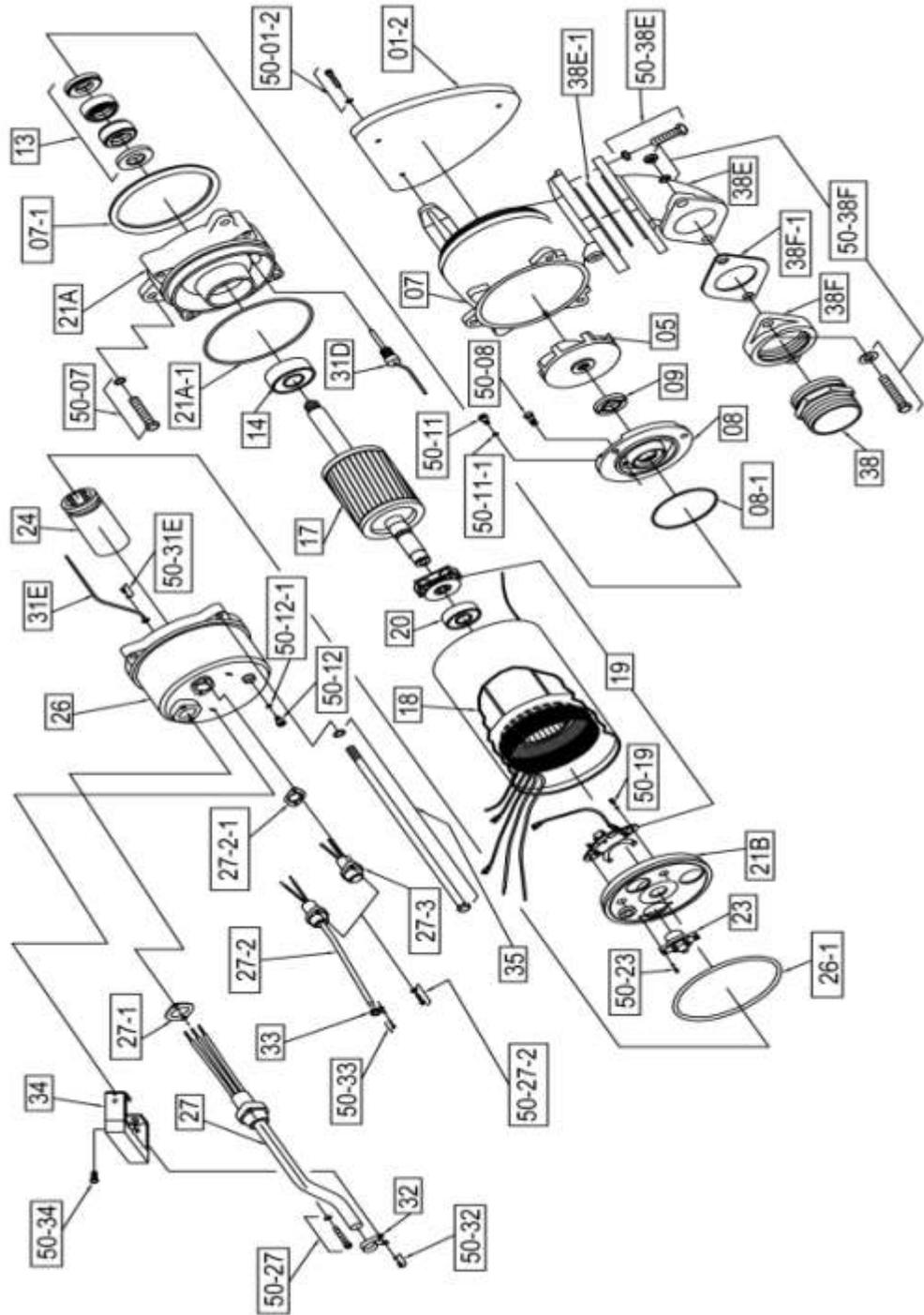
### MODEL: PSP300SVX CURVE



# EXPLODED VIEW OF PSP200SVX



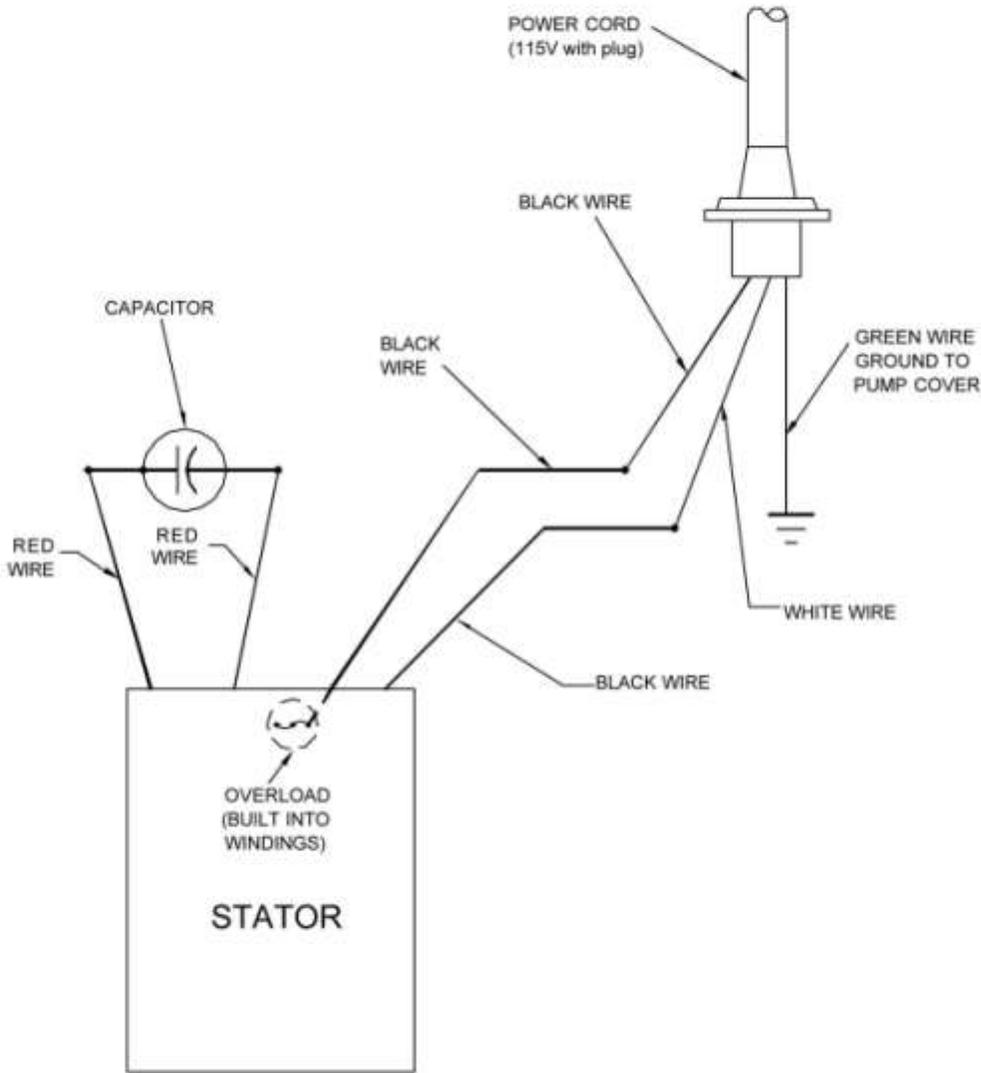
# EXPLODED VIEW OF PSP300SVX



## PSP SERIES PARTS LIST

Pos. No.	Pump Model	PSP200SVX	PSP300SVX
	Part Description	Item #	Item #
01-2	Bottom Plate	202868	202037
05	Impeller, Vortex	202114	202115
07	Pump Housing	202185	203016
07-1	O-Ring (Kit Only)	Kit	Kit
08	Oil Chamber Cover	202207	203045
08-1	O-Ring (Kit Only)	Kit	Kit
09	Lip Seal Buna-N	202229	202231
10	Shaft Sleeve	202258	-
13	Mechanical Seal Buna-N	202259	202270
14	Lower Ball Bearing	200493	200958
17	Rotor w/Shaft 115V, 1 PH	202302	203086
18	Stator Coil w/Casing 115V, 1 PH	200509	200511
19	Governor Switch w/Switch Plate	202359	202360
20	Upper Ball Bearing	200957	200967
21A	Oil Chamber Housing	200498	203018
21A-1	O-Ring (Kit Only)	Kit	Kit
21B	Motor Cover (Upper)	202365	202368
22	Motor Cover Plate	202380	-
23	Overload Protector 115V, 1 PH	-	202383
24	Capacitor 115V	202415	202417
26	Pump Top Cover	203120	202433
26-1	O-Ring (Kit Only)	Kit	Kit
27	Power Cable w/Gland, 115V, 1 PH	204257	204258
27-1	O-Ring (Kit Only)	Kit	Kit
27-2	Oil Sensor Cable (Optional)	-	202763
27-2-1	O-Ring (Kit Only)	-	Kit
27-3	Oil Sensor Cap	-	203139
31D	Oil Sensor w/wire	-	202409
31E	Ground Wire w/Ring Terminal	203145	203145
32	Power Cable Line Clip	203161	203161
33	Oil Sensor Cable Line Clip (Opt)		
34	Handle	202517	202517
35	Rod Bolts	202665	202666
38	Discharge Nipple 3"	-	202534
38E	Discharge Elbow	-	202558
38E-1	Gasket, Discharge Elbow, Buna-N	-	203208
38F	Discharge, 2" NPT-M, 45 deg elbow	202569	-
38F	Discharge Flange 3"	-	202545
38F-1	Gasket, Discharge Flange, Buna-N	203206	202659
50-01-2	Screw for Bottom Plate	203216	203216
50-07	Screw for Pump Housing	203238	203238
50-08	Screw for Oil Chamber Cover	203215	203219
50-11	Screw for Oil Fill	203218	203218
50-11-1	O-Ring (Kit Only)	Kit	Kit
50-12	Screw for Pressure Check	203218	203218
50-12-1	O-Ring (Kit Only)	Kit	Kit
50-19	Screw for Governor Switch	202693	202693
50-19B	Screw for Gov. Switch Plate	203215	-
50-22	Screw for Cover Plate	203214	-
50-23	Screw for Overload	-	202700
50-27	Screw for Power Cable	203232	203216
50-27-2	Screw for Oil Sensor Cap	-	203216
50-31E	Screw for Ground Wire	202692	202692
50-32	Screw for Line Clip (power cable)	203214	203214
50-33	Screw for Line Clip (oil sens cable) (Opt)	-	203214
50-34	Bolt for Handle	203219	203219
50-38E	Bolt for Discharge Elbow	-	203267
50-38F	Bolt for Discharge Flange	203230	203253
	<b>O-Ring Kit - Buna N</b>	203191	202634

**SINGLE PHASE WIRING DIAGRAM 115V (PSP200SVX / PSP300SVX)**



NOTES: 1) SINGLE PHASE STATORS ARE NOT DUAL VOLTAGE.

## **WARRANTY AND LIMITATION OF LIABILITY**

Unless otherwise expressly authorized in writing, specifying a longer or shorter period, John Brooks Company Limited warrants for a period of one (1) year, that all products or parts thereof furnished by John Brooks Company Limited under the brand name Kodiak Power, hereinafter referred to as the "Product" are free from defects in materials and workmanship and conform to the applicable specification.

To make a warranty claim within the time period, please return this product to the dealer from whom it was purchased. The dealer will advise the validity and procedure of the claim. Once the claim has been accepted by John Brooks Company Limited, the unit and parts should be shipped to John Brooks Company Limited or the specified authorized service centre at customer's expense. All approved repairs under warranty will be returned by John Brooks Company Limited free of charge.

Warranties expressed in this document are void if repairs are attempted by anyone other than an authorized service centre or John Brooks Company Limited or if the unit has been modified from original factory design in anyway. This warranty is expressly conditioned upon customer's compliance with all precautions and instructions contained in this manual and excludes any claims made as a result of abuse, neglect, accident, normal wear and tear and misuse. This warranty is nontransferable.

John Brooks Company Limited liability under warranty is limited to repair of the product and /or replacement of parts and is given to the purchaser in lieu of all other remedies including incidental and consequential charges. There are no expressed warranties other than those specified herein. For the nearest authorized service centre, please contact:



**Customer Service Hotline:**  
**East Phone: 888-881-6667**  
**West Phone: 800-527-8592**

