



## INSTALLATION, OPERATION & MAINTENANCE MANUAL

### SK & SKX SERIES SHREDDER PUMPS Electric Submersible Pumps

Single Phase  
115V & 230V  
Three Phase  
208V, 230V, 460V & 575V

#### CAST IRON

##### SINGLE PHASE

SK750C  
SK1500C

##### THREE PHASE

SK08C SK55C  
SK15C SK75C  
SK22C SK110C  
SK37C SK150C

#### 316 STAINLESS STEEL

##### SINGLE PHASE

SKX750CSS  
SKX1500CSS

##### THREE PHASE

SKX08CSS SKX55CSS  
SKX15CSS SKX75CSS  
SKX22CSS SKX110CSS  
SKX37CSS SKX150CSS

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 BJM



Pumps® SK & SKX Series submersible pump. This manual also contains information to optimize performance and longevity of your **BJM Pumps** submersible pump.

**The submersible SK Series pumps are designed to pump wastewater and industrial wastewater that includes up to 10% by volume of solids. The SKX Series pumps are designed to pump corrosive liquids along with some solids in concentrations chemically compatible with 316SS and FKM. The SK & SKX 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, and assembly or testing please contact your **BJM Pumps** distributor, or BJM Pumps, LLC.

BJM Pumps, LLC  
123 Spencer Plain Rd.  
Old Saybrook, CT 06475, USA

Phone: 877-256-7867  
Phone: 860-399-5937  
Fax: 860-399-7784

Information, including pump data sheets and performance curves, is also available on our web site: [www.bjmpumps.com](http://www.bjmpumps.com)

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 **BJM Pumps** distributor or BJM Pumps, LLC.

### 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 (and Seal Minder® cord, if installed) 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.
- 6) Important: Always verify that the pump nameplate amps, voltage, phase, and HP ratings match your control panel and power supply.

Warranty does not cover damage caused by connecting pumps and controls to an incorrect power source (voltage/phase supply).

Record the model numbers and serial numbers from the pumps and control panel on the front of this instruction manual for future reference. Give it to the owner or affix it to the control panel when finished with the installation.

If anything appears to be abnormal, contact your **BJM Pumps** distributor or BJM Pumps, LLC. If damaged, the pump may need to be repaired before use. Do not install or use the pump until appropriate action has been taken.

### BJM Pumps Recommended Storage Procedures

#### Storage Environment

- The storage environment must be between 40°F - 120°F. DO NOT allow the pump to freeze.
- The pump must be stored in a dry location
- Avoid storing the pump in direct sunlight

#### For Storage Periods of 3 Years or Less

- Rotate the impeller shaft by hand every 6 months and again prior to start up
  - Keeps seal faces from sticking
  - Keeps bearing grease from settling
- Check the oil in seal chambers prior to startup to ensure oil is moisture free and has not broken down.
- Megger the motor prior to startup. The reading should be above 100 MΩ.



- Remove the air check screw on the motor housing. Using an air compressor, pressurize the motor chamber to 13 psi and check for leaks using a spray bottle. Repeat this procedure to check the seal chamber for leaks.
- Inspect the power cable for any damage.

#### **For Storage Periods longer than 3 Years**

- Disassemble the pump and replace all of the O-rings, the Mechanical Seal, Seal Chamber Oil, and the Lip Seal. Repack the Bearings.
- Remove the air check screw on the motor housing. Using an air compressor, pressurize the motor chamber to 13 psi and check for leaks using a spray bottle. Repeat this procedure to check the seal chamber for leaks.
- Rotate the impeller shaft by hand prior to startup.

#### **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: Oil Fill Quantity / Type.



### OIL FILL QUANTITY/TYPE

MODEL	OIL IN SEAL CHAMBER		
	U.S. FL. OZ.	CC.	TYPE OF OIL
SK750C	7.8	230	ISO 32 NSF Food Grade Mineral Oil
SK750C-3	7.8	230	ISO 32 NSF Food Grade Mineral Oil
SK1500C	7.8	230	ISO 32 NSF Food Grade Mineral Oil
SK08C	7.8	230	ISO 32 NSF Food Grade Mineral Oil
SK08C-3	7.8	230	ISO 32 NSF Food Grade Mineral Oil
SK15C	7.8	230	ISO 32 NSF Food Grade Mineral Oil
SK22C	11.8	350	ISO 32 NSF Food Grade Mineral Oil
SK37C	11.8	350	ISO 32 NSF Food Grade Mineral Oil
SK55C	84.5	2500	ISO 32 NSF Food Grade Mineral Oil
SK75C	84.5	2500	ISO 32 NSF Food Grade Mineral Oil
SK110C	87.9	2600	ISO 32 NSF Food Grade Mineral Oil
SK150C	87.9	2600	ISO 32 NSF Food Grade Mineral Oil

MODEL	OIL IN SEAL CHAMBER		
	U.S. FL. OZ.	CC.	TYPE OF OIL
SKX750CSS	10.1	300	ISO 32 NSF Food Grade Mineral Oil
SKX750CSS-3	10.1	300	ISO 32 NSF Food Grade Mineral Oil
SKX1500CSS	10.1	300	ISO 32 NSF Food Grade Mineral Oil
SKX08CSS	10.1	300	ISO 32 NSF Food Grade Mineral Oil
SKX08CSS-3	10.1	300	ISO 32 NSF Food Grade Mineral Oil
SKX15CSS	10.1	300	ISO 32 NSF Food Grade Mineral Oil
SKX22CSS	13.5	400	ISO 32 NSF Food Grade Mineral Oil
SKX37CSS	13.5	400	ISO 32 NSF Food Grade Mineral Oil
SKX55CSS	84.5	2500	ISO 32 NSF Food Grade Mineral Oil
SKX75CSS	84.5	2500	ISO 32 NSF Food Grade Mineral Oil
SKX110CSS	87.9	2600	ISO 32 NSF Food Grade Mineral Oil
SKX150CSS	87.9	2600	ISO 32 NSF Food Grade Mineral Oil

**Note: EPDM seals will use Propylene glycol instead of Shell FM32 oil**

### PUMP INSTALLATION

SK & SKX Series pumps have been evaluated for use with water or water based solutions with some solids. Please contact the manufacturer for additional information.

The Shredder pumps (1 and 2 HP) are not designed to pump unscreened solids which could contain matter such as bunched paper towels, feminine napkins, tampon applicators, etc. This type of debris can clog the pump & prevent it from operating properly. The **BJM Pumps** Shredder Pumps (7.5 HP and larger) are designed to handle unscreened sewage.





**⚠ WARNING**

**Risk of electric shock.** Pump models; SK750C, SK750C-3, SKX750CSS & SK750CSS-3 (115v) are supplied with a grounding conductor and grounding-type attachment plug. All 230V single phase pumps and all three phase pumps do not come with electric plug connectors. 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**

**BJM Pumps**, SK & SKX 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. Data sheets can be obtained online at [www.bjimpumps.com](http://www.bjimpumps.com) or by calling BJM Pumps, LLC at 860-399-5937. As a general rule, SK and SKX Series SIDE discharge pumps can pump down to a level above the suction screen. Pumping lower than screen will permit air to enter the pump and cavitate, lose prime or become air bound.

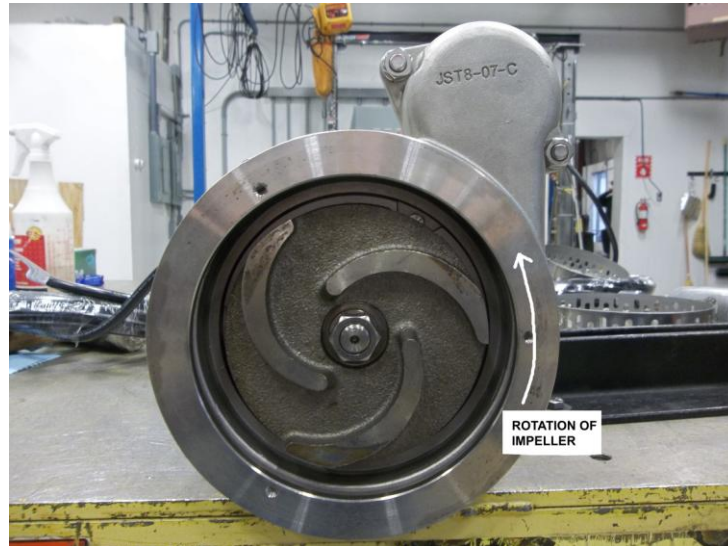
**⚠ CAUTION**

- Do not run pump dry.
- Pump liquid should not exceed a maximum temperature of 104°F.
- 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 SK & SKX 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.
- Take stand off of pump when using slide rail. Keep stand and reattach when transporting or handling the pump.

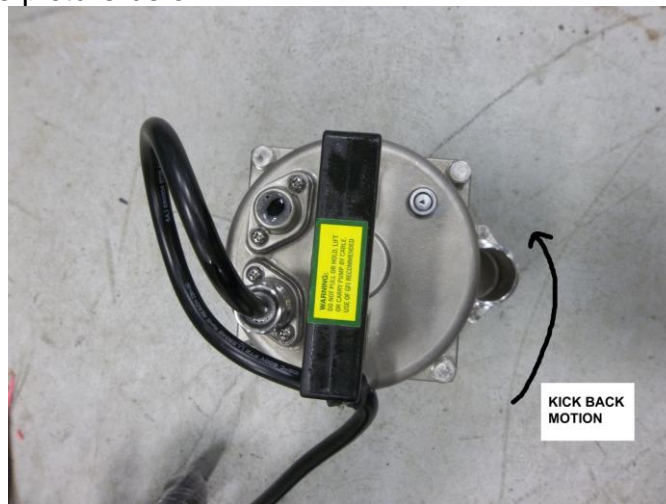
## PUMP ROTATION

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 MUNICIPAL AND INDUSTRIAL WASTEWATER INTALLATION

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

## MANUAL OPERATION

All SK & SKX Models 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.

**Note:** 230V, single phase and 208V, 230V, 460V & 575V three phase units do not have a plug and have to be provided separately.

**⚠ WARNING**

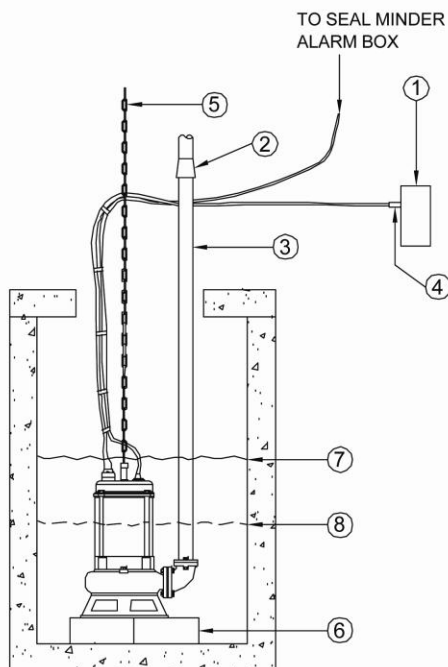
Do not alter the length or repair any power cable with a splice. The pump motor and cable must be completely waterproof. Damage to the pump or personal injury may result from alterations.

For manual operation: 115 volt: plug the power cable into any 115 volt grounded receptacle. 208, 230, 460 & 575 volt: Attach the proper plug, connect directly to the power source or control box. Check the direction of the rotation. Tilt the pump and start it. It should twist in the opposite direction of the arrow (on pump). 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.

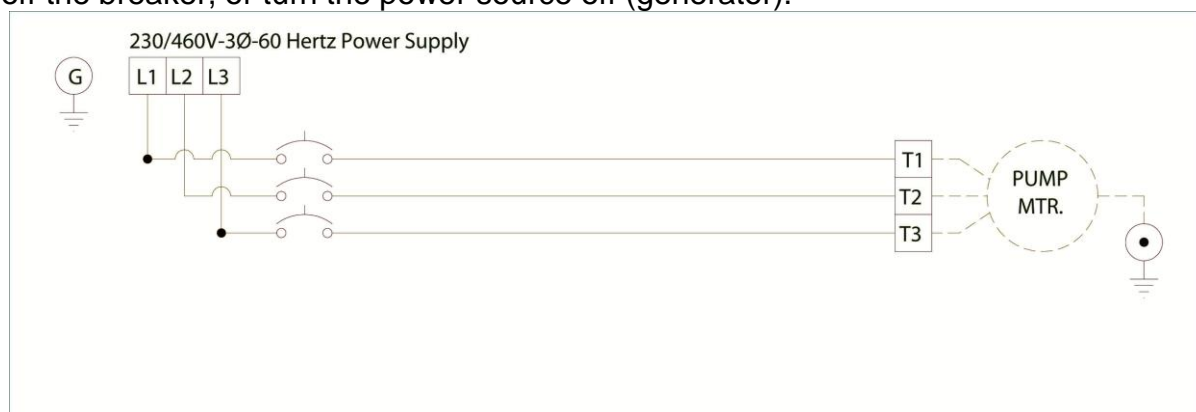
## TYPICAL MANUAL SEWAGE INSTALLATION (WITHOUT PIGGY-BACK FLOAT CONTROL)



- 1) Electrical wiring and protection must be in accordance with National Electrical Code in U.S.A. or Canadian Electrical Code in Canada and state / provincial and local electrical codes.
- 2) Optional ( approx. 50' / 15 meters ) : If pumping in a small confined space at high head, it may be beneficial to install a check valve 3' ( 1 meter ) above the discharge of the pump. This will help eliminate backflow and unnecessary running of the pump. For best results use a section of PVC.
- 3) PVC pipe or rigid hose recommended. Collapsible vinyl hose will work but not as efficient.
- 4) All electrical connections must be kept dry.
- 5) Always lower the pump by a separate rope or chain. Never lift or lower the pump by the power cord, piggy-back cord or discharge hose.
- 6) For best results, place the pump on a solid object, or suspend pump 4" - 6" ( 100 mm - 150 mm ) above the bottom. This will keep the pump from digging itself into silt, sand and mud.
- 7) Recommended submergence level.
- 8) Minimum submergence level.

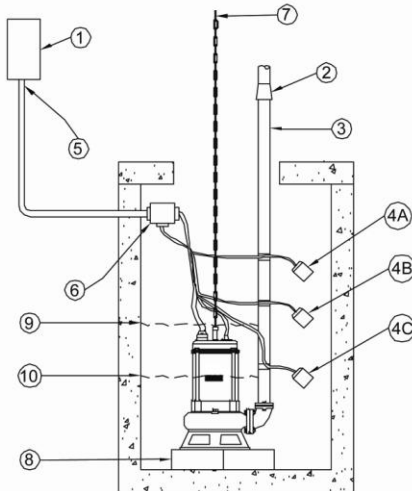
## STOPPING

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).



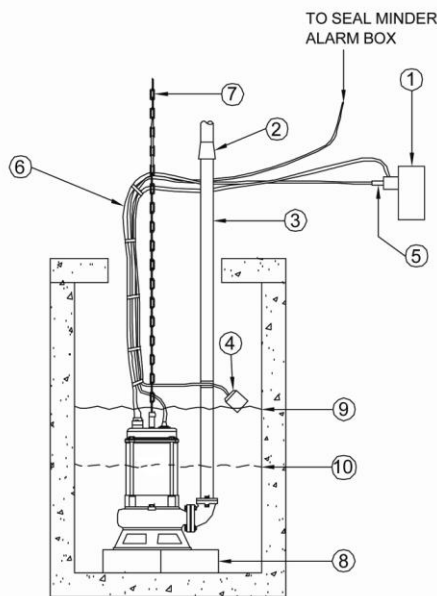
Typical 3 phase manual control 1

## **TYPICAL SIMPLEX SEWAGE INSTALLATION WITH CONTROL PANEL AND 3 FLOATS**



- 1)** Electrical wiring and protection must be in accordance with National Electrical Code in U.S.A. or Canadian Electrical Code in Canada and state / provincial and local electrical codes.
- 2)** Optional ( approx. 50' / 15 meters ) : If pumping in a small confined space at high head, it may be beneficial to install a check valve 3' (1 meter) above the discharge of the pump. This will help eliminate backflow and unnecessary running of the pump. For best results use a section of PVC.
- 3)** PVC pipe or rigid hose recommended. Collapsible vinyl hose will work but not as efficiently.
- 4)** Attach float to the pump top or PVC pipe. Never place the float lower than the top of the strainer inlet.
  - 4A** - alarm float.
  - 4B** - turn on.
  - 4C** - turn off.
- 5)** All electrical connections must be kept dry.
- 6)** Wire pump and floats to control panel through a watertight junction box.
- 7)** Always lower the pump by a separate rope or chain. Never lift or lower the pump by the power cord, piggy-back cord or discharge hose.
- 8)** For best results, place the pump on a solid object, or suspend pump 4" - 6" (100 mm - 150 mm) above the bottom. This will keep the pump from digging itself into silt, sand and mud.
- 9)** Recommended submergence level.
- 10)** Minimum submergence level.

## **TYPICAL AUTOMATIC SEWAGE INSTALLATION (WITH PIGGY-BACK FLOAT CONTROL)**



- 1)** Electrical wiring and protection must be in accordance with National Electrical Code in U.S.A. or Canadian Electrical Code in Canada and state / provincial and local electrical codes.
- 2)** Optional ( approx. 50' / 15 meters ) : If pumping in a small confined space at high head, it may be beneficial to install a check valve 3' (1 meter) above the discharge of the pump. This will help eliminate backflow and unnecessary running of the pump. For best results use a section of PVC.
- 3)** PVC pipe or rigid hose recommended. Collapsible vinyl hose will work but not as efficiently.
- 4)** Attach float to the pump top or PVC pipe. Never place the float lower than the top of the strainer inlet.
- 5)** All electrical connections must be kept dry.
- 6)** Piggy-back float switch cord should be tied or taped to the pump power cord every 3' (1 meter).
- 7)** Always lower the pump by a separate rope or chain. Never lift or lower the pump by the power cord, piggy-back cord or discharge hose.
- 8)** For best results, place the pump on a solid object, or suspend pump 4" - 6" (100 mm - 150 mm) above the bottom. This will keep the pump from digging itself into silt, sand and mud.
- 9)** Recommended submergence level.
- 10)** Minimum submergence level.

## TYPICAL MUNICIPAL OR INDUSTRIAL WASTEWATER INSTALLATION

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

### AUTOMATIC OPERATION

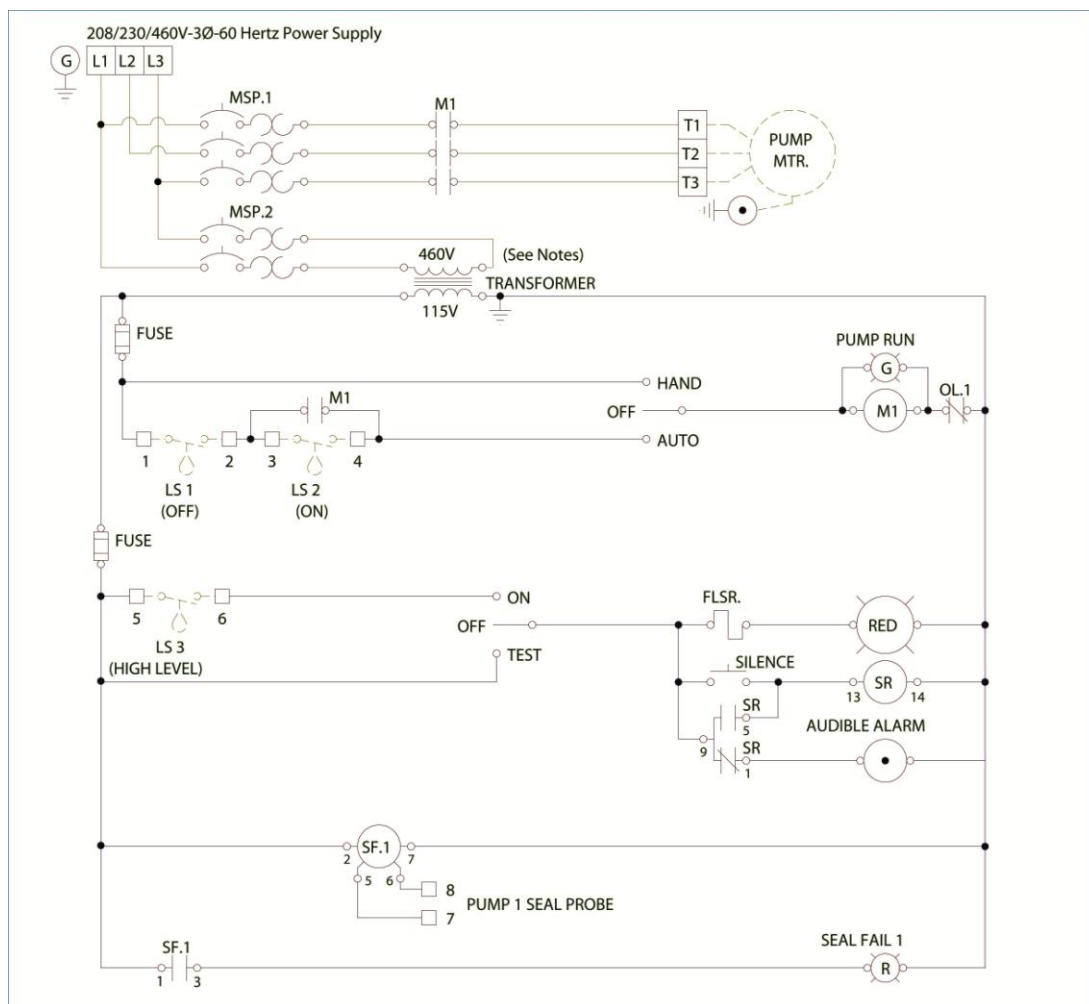
Float switches (wired into the pump motor or piggy-back style) are available from the factory as an option.

**Note:** 208V, 230V, 460V & 575V pumps do not have a plug installed.

Three phase pumps need a separate control box with float(s) for automatic operation.

### 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 3 phase Auto Control 1**



## INTENDED METHODS OF CONNECTION

### **⚠ CAUTION**

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

**BJM Pumps** 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.

### **⚠ CAUTION**

**"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.

## THREE PHASE WIRING INSTRUCTIONS

### **⚠ WARNING**

**FOR YOUR PROTECTION, ALWAYS DISCONNECT PUMP FROM ITS POWER SOURCE BEFORE HANDLING.**

### **⚠ CAUTION**

**"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.

To automatically operate a non-automatic three phase pump, a control panel is required. Follow the instructions provided with the panel to wire the system. For automatic three phase pumps see automatic three phase wiring diagram.

Before installing a pump, check the pump rotation to insure that wiring has been connected properly to power source, and that the green lead of power cord (See wiring diagram), is connected to a valid ground, momentarily energize the pump, observing the



directions of kick back due to starting torque. Rotation is correct if kick back is in the opposite direction of rotation arrow on the pump casing. If rotation is not correct, switching of any two power leads other than ground will provide the proper rotation.

**⚠ DANGER**      **DO NOT PLACE HANDS IN PUMP SUCTION WHILE CHECKING MOTOR ROTATION. TO DO SO WILL CAUSE SEVERE PERSONAL INJURY.**

Three phase pumps have integral motor overload protection. It is recommended that all three phase pumps using a motor starting device also incorporate motor overload protection. Pumps **must** be installed in accordance with the National Electrical Code and all applicable local codes and ordinances. Pumps are not to be installed in locations classified as hazardous in accordance with National Electrical Code, ANSI/NFPA 70.

Connect pump to a junction box, outlet box, control box, enclosure with a wiring compartment that meets NEC and local codes. The provision for supply connection shall reduce the risk of water entry during temporary, limited submersion and shall comply with the applicable requirements of the Standard for Enclosures for Electrical Equipment, UL 50, or the standard for Metallic Outlet Boxes, UL 514A, and the standard for Motor-Operated Water Pumps. UL 778.

## **TROUBLE SHOOTING**

**⚠ WARNING**      **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 **BJM Pumps** 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.
  - The impeller to suction cover clearance should be adjusted to between 0.01" to 0.02" for optimal pumping performance. Shim kits are available if adjustment is required.
- 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.



## **BJM Pump Impeller Shimming**

To optimize the shredding performance of the SK/SKX/SKG BJM model shredding pumps, and to optimize the hydraulic performance of the S/SX/J/JX/R/RX/KZN/KB/KZE model pumps, BJM Pumps offers an impeller shim kit. The shims are designed to go on the shaft behind the impeller to adjust the clearance between the impeller vane and the suction cover to the target specification of the 0.010 inch to 0.020 inch. Note that given the vortex design, the SV model vortex pumps do not require shimming of the impeller to gain optimal performance.

### **Impeller Shimming Procedure**

1. Install the impeller on the shaft and snug the retaining nut to keep the impeller in location with any axial movement on the shaft. Note that some single phase pumps have impellers that thread onto the shaft.
2. Using a prying bar, make sure the impeller is pulled completely down and that the bearings or mechanical seals are not pulling the shaft upwards (toward the motor top cover).
3. Install the suction cover and snug the retaining fasteners.
4. Using an angled set of feeler gauges, measure the clearance between the impeller and the suction cover. Perform this measurement in various locations and find the smallest clearance. This will be your minimum starting clearance.
5. Remove the suction cover and the impeller of the pump.
6. Subtract 0.010 inch and 0.020 inch from the minimum starting clearance to gain your recommended shim height.
7. Select a set of shims that will give you a measurement that fits between your minimum and maximum calculated shim height. Note that the closer the clearance is to 0.010 inch, the better the shredding and hydraulic performance of the pump.
8. Install the selected shims onto the pump shaft. Then, replace the drive key and the impeller. Install the locking washer and the impeller nut, tightening the nut to the proper torque.
9. Install the suction cover applying the proper torque to the remaining fasteners.
10. Using the angled set of feeler gauges, recheck the impeller clearance in various locations. The measurement should fall between the 0.010 inch and 0.020 inch specification. Caution, to not allow the clearance to be less than 0.010 inch since this may cause undesirable rubbing of the impeller on the suction cover.
11. Repeat these steps as necessary to gain a clearance between the impeller and the suction cover to 0.010 inch to 0.020 inch.

## **CHANGING SEAL OIL**

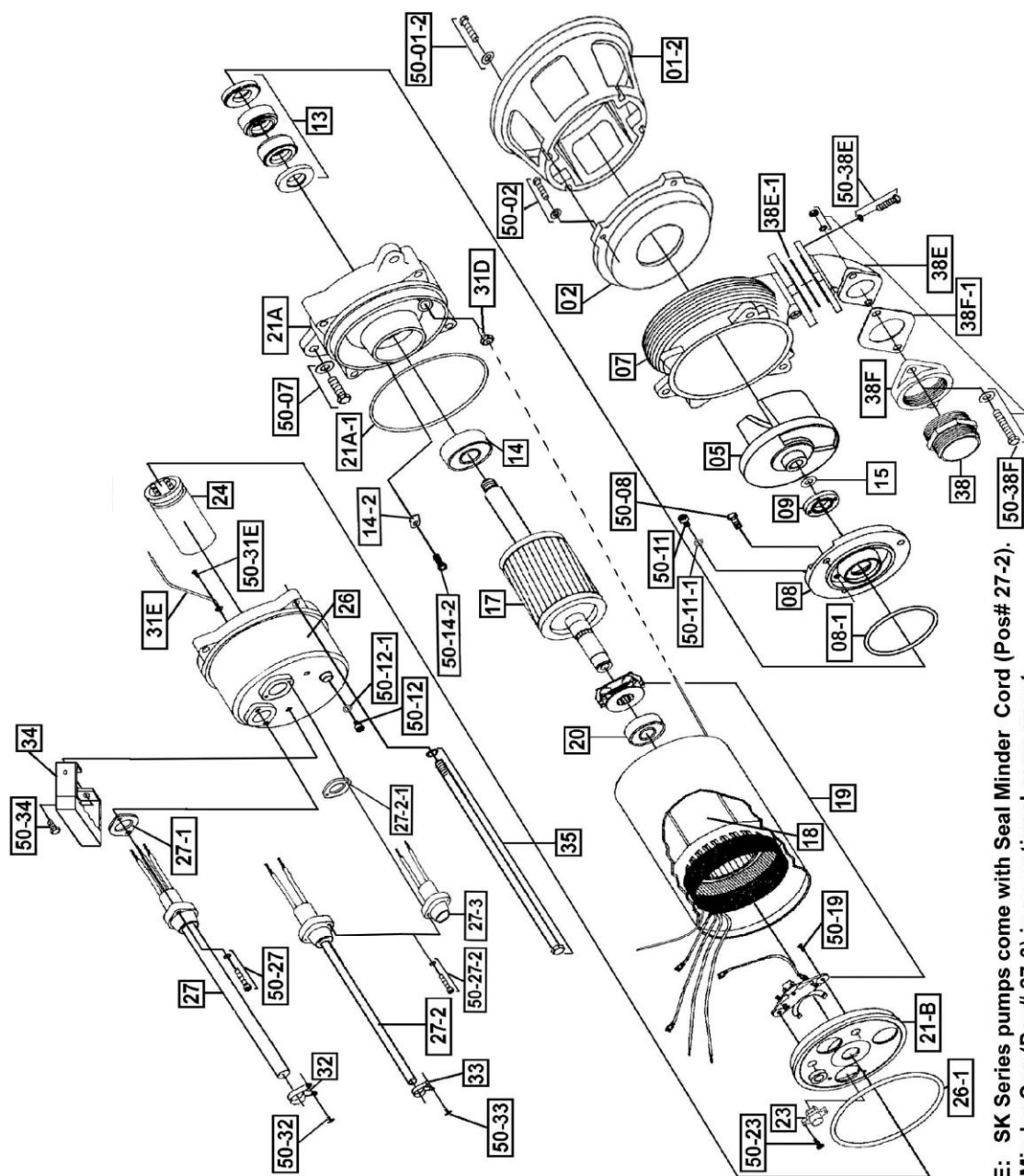
Changing the seal oil in the SK & SKX series pumps is very easy.

- 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.

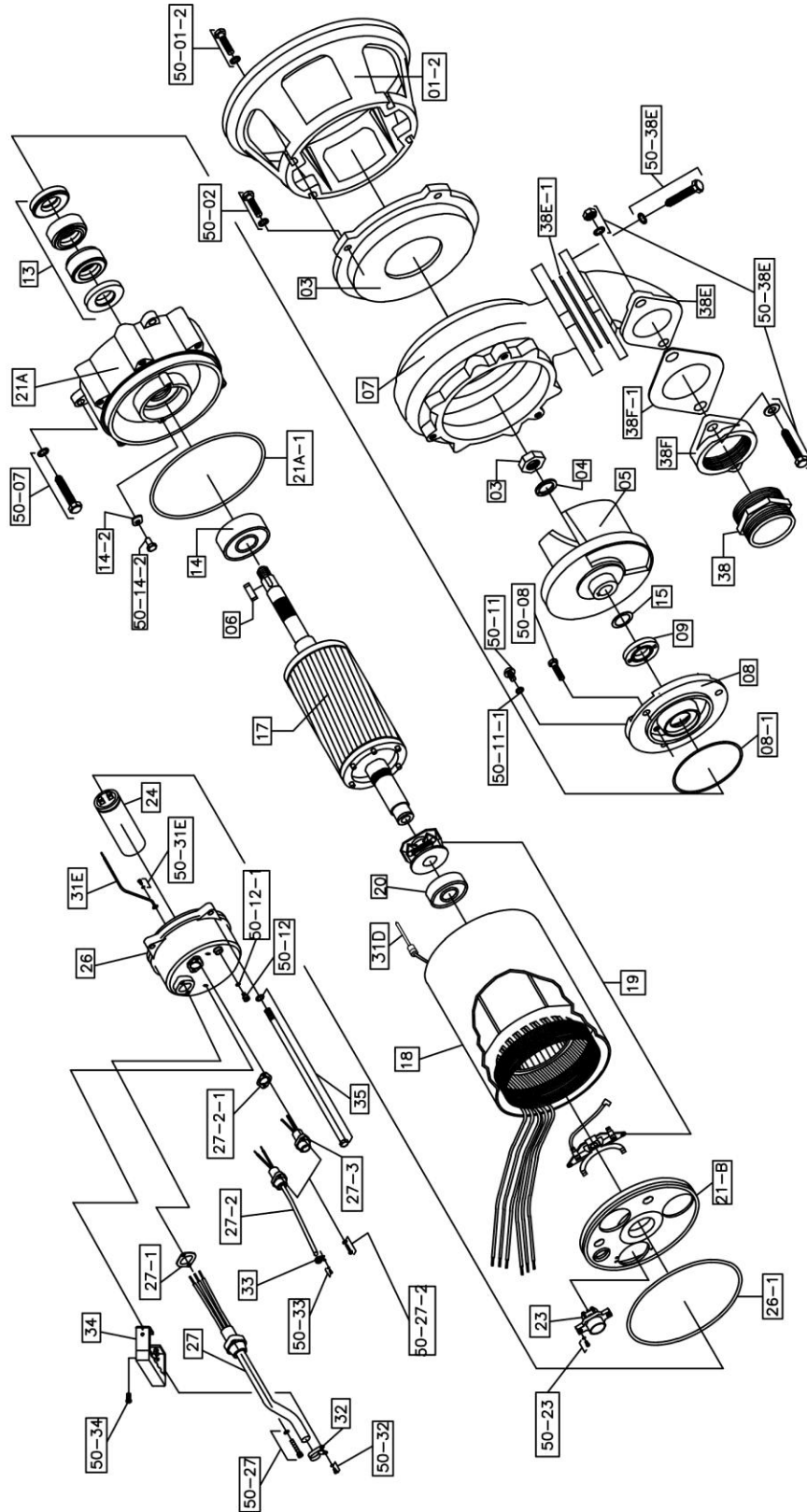
## EXPLODED VIEW OF SK750C, SKX750CSS



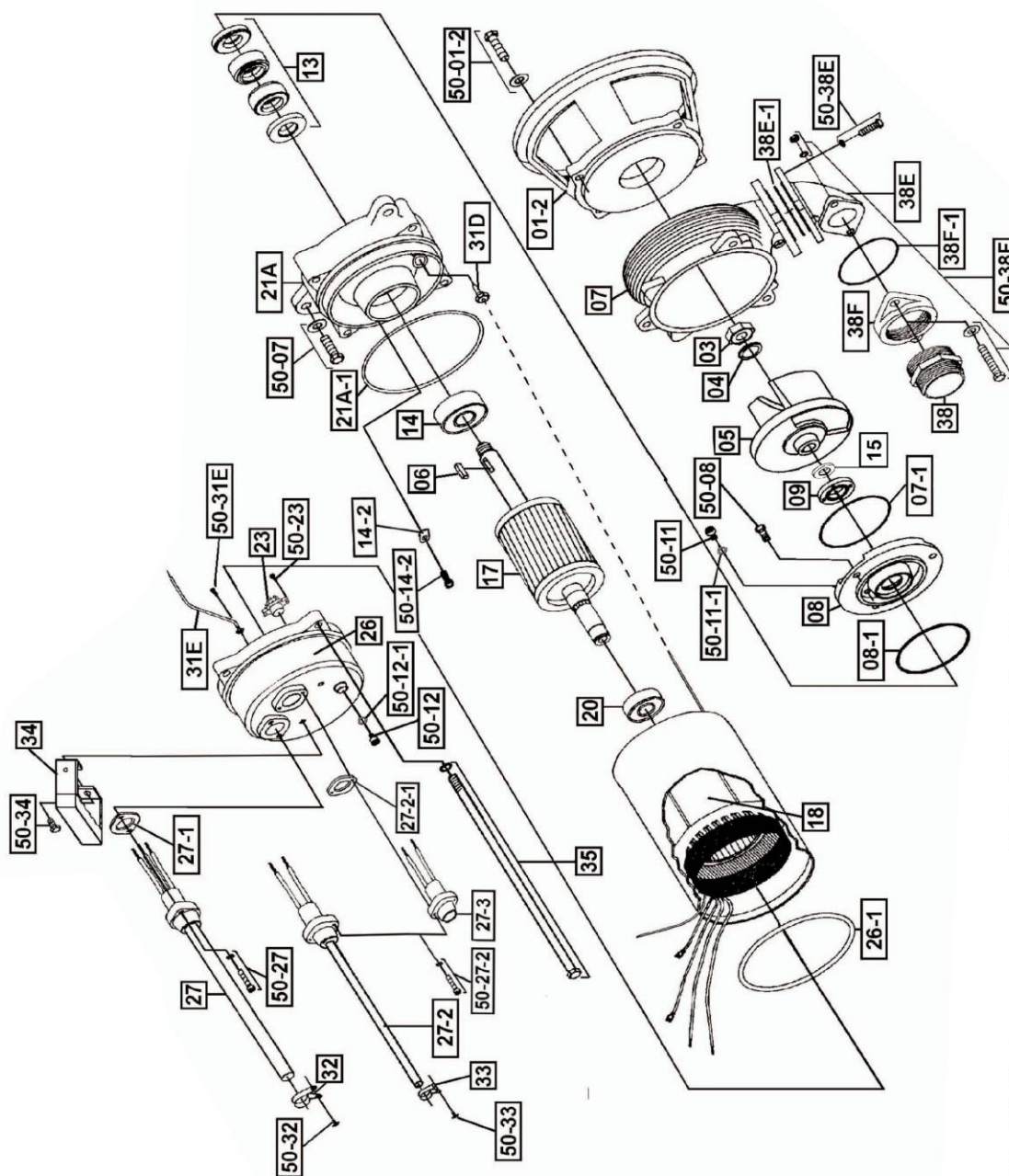
NOTE: SK Series pumps come with Seal Minder Cord (Pos# 27-2).  
Seal Minder Cap (Pos# 27-3) is an optional component.

09-09-14

## EXPLODED VIEW OF SK 1500C, SKX1500CSS



## EXPLODED VIEW OF SK08C, SK15C, SKX08CSS, SKX15CSS

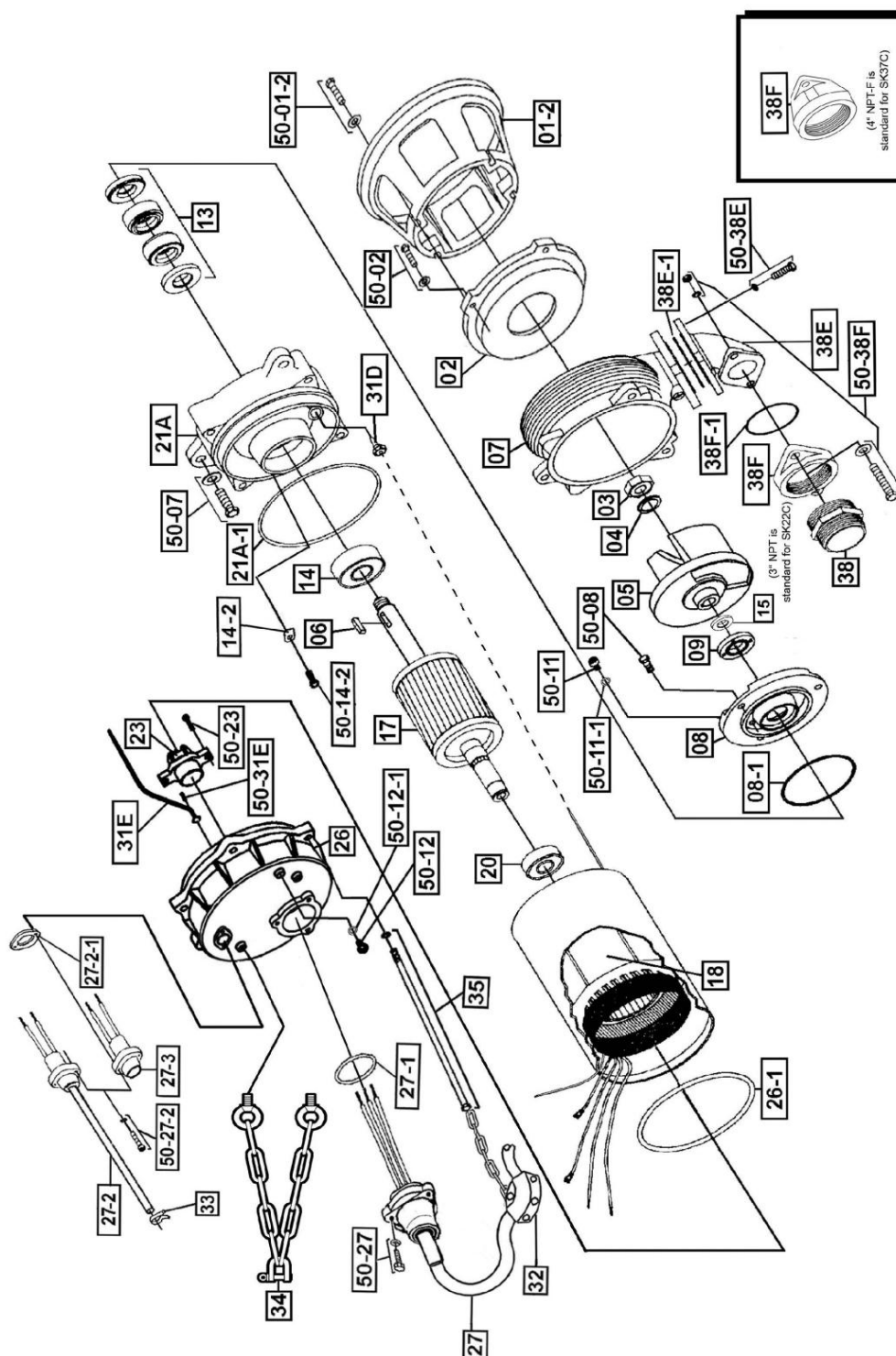


NOTE: SKX Series pumps come with Seal Minder Cord (Pos# 27-2).  
Seal Minder Cap (Pos# 27-3) is an optional component.

SK08C-SK15C  
CAT ID# XVIEW SKX08CSS-SKX15CSS

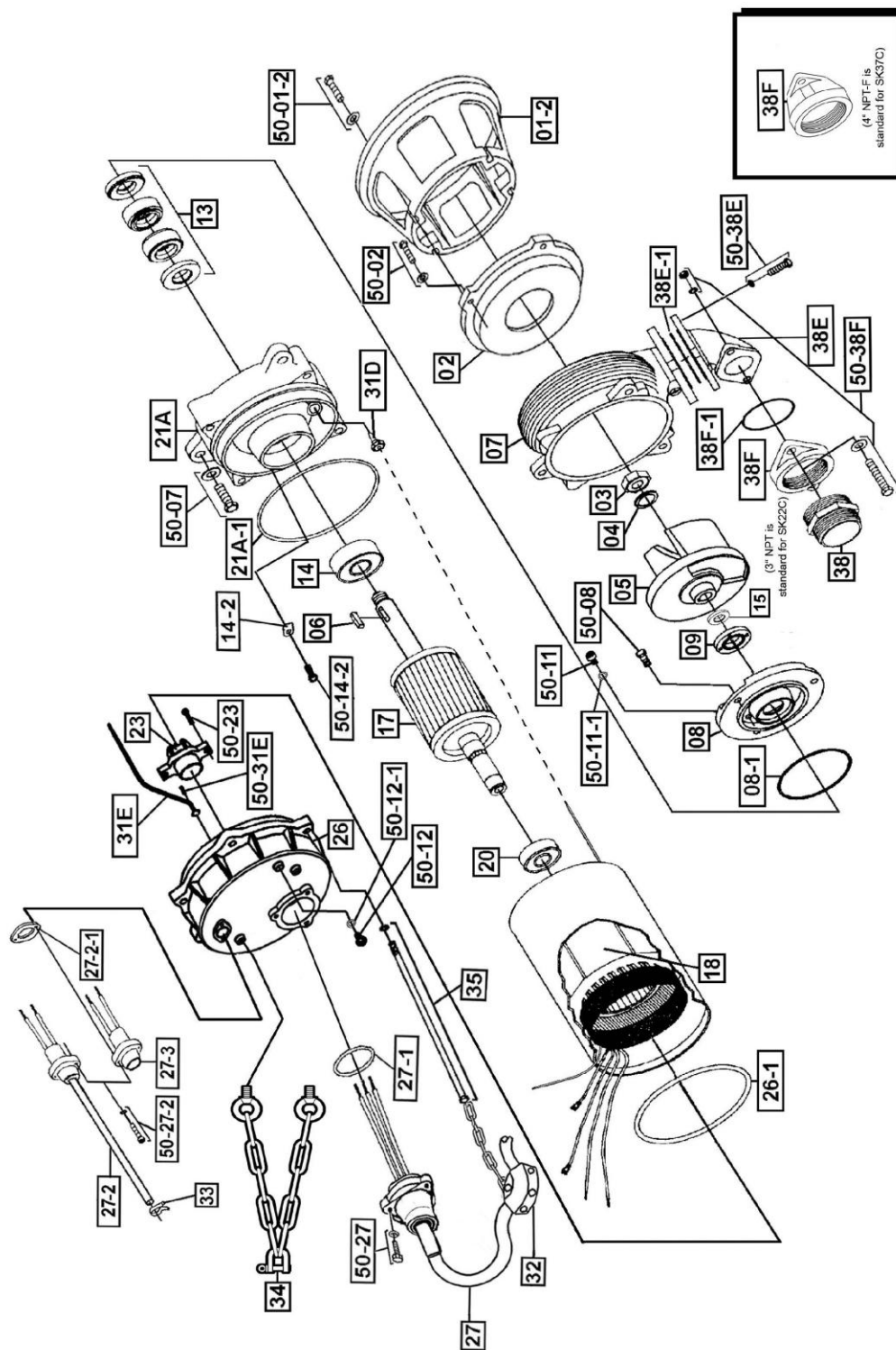
09-09-14

## EXPLODED VIEW OF SK22C, SK37C



NOTE: SK Series pumps come with Seal Minder Cord (Pos# 27-2). Seal Minder Cap (Pos# 27-3) is an optional component.  
 09-09-14  
 CAT ID# XVIEW SK22C-SK37C

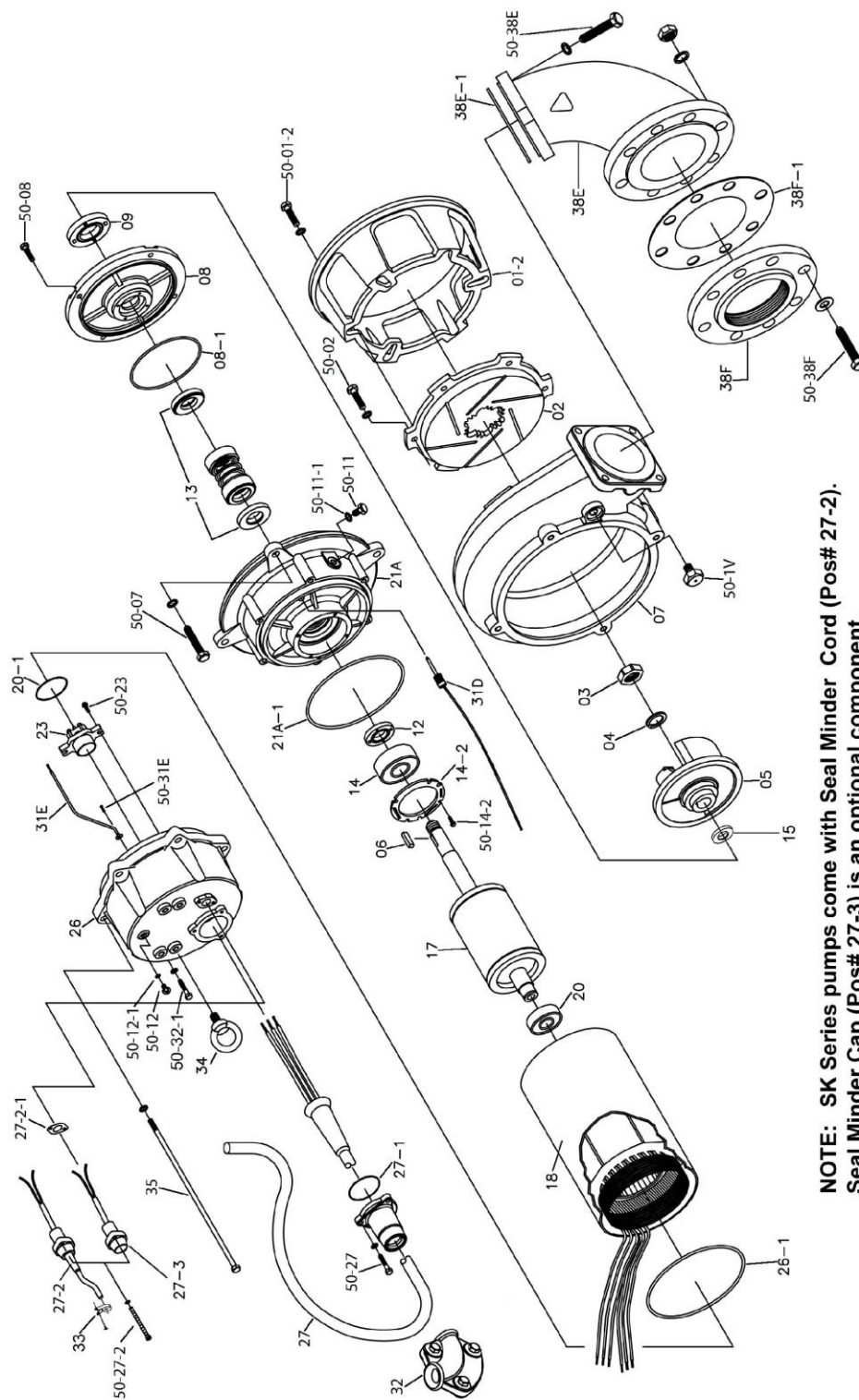
## EXPLODED VIEW OF SKX22CSS, SKX37CSS



**NOTE:** SK Series pumps come with Seal Minder Cord (Pos# 27-2). Seal Minder Cap (Pos# 27-3) is an optional component.  
 09-09-14  
 CAT ID# XVIEW SK22C-SK37C



## EXPLODED VIEW OF SK55C, SKX55CSS, SK75C, SKX75CSS

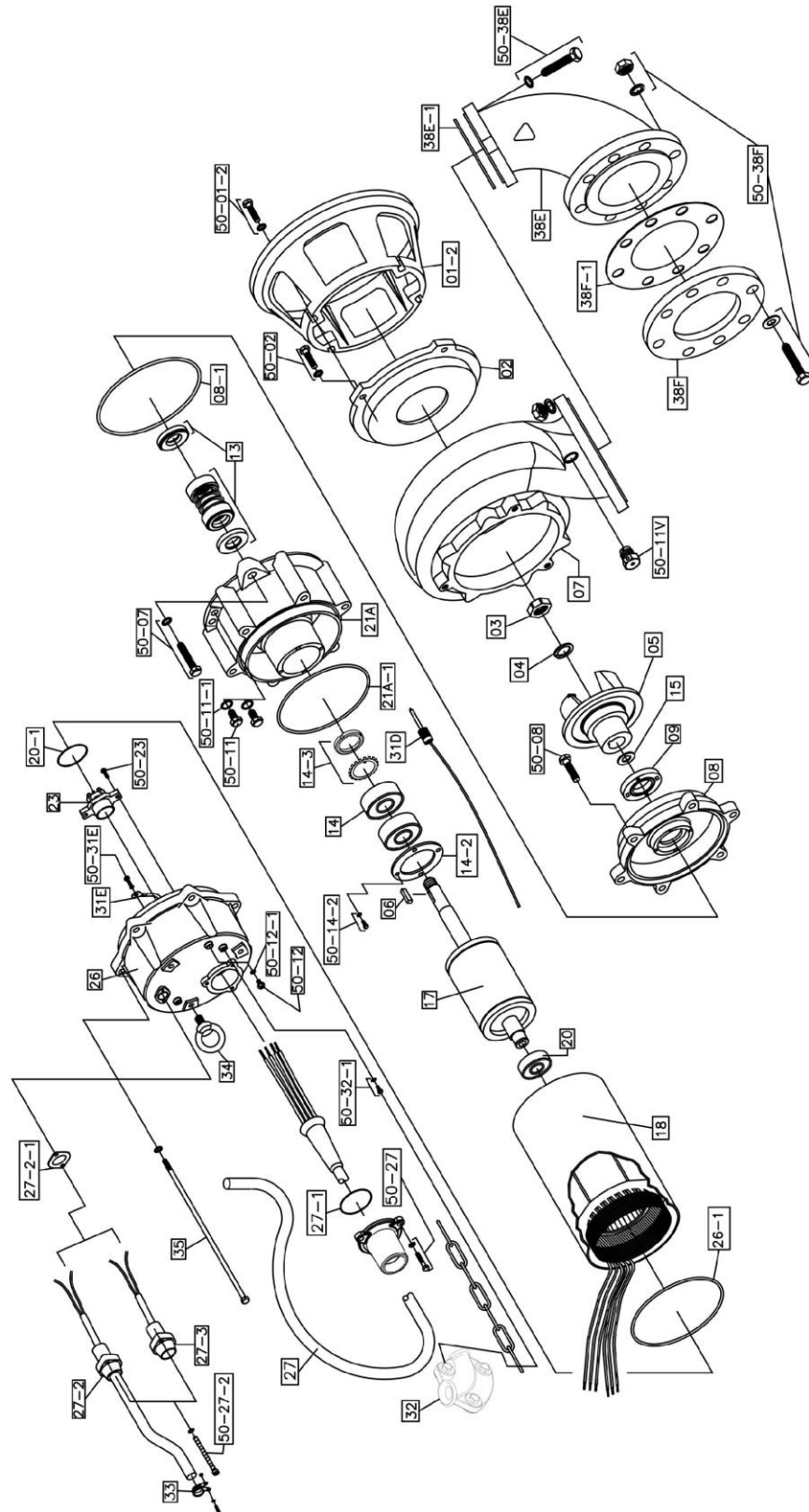


NOTE: SK Series pumps come with Seal Minder Cord (Pos# 27-2).  
Seal Minder Cap (Pos# 27-3) is an optional component.

CAT ID# XVIEW SK55C-SK75C

12-29-14

## EXPLODED VIEW OF SK110C, SKX110CSS, SK150C, SKX150CSS



NOTE: SK Series pumps come with Seal Minder Cord (Pos# 27-2). Seal Minder Cap (Pos# 27-3) is an optional component.

CAT ID# XVIEW SK110C-SK150C

6-18-2015

## SK SERIES PARTS LIST

	Pump Model	SK750C	SK1500C	SK08C	SK15C	SK22C	SK37C	SK55C	SK75C	SK110C	SK150C
Pos. No.	Part Description	Item #	Item #	Item #	Item #	Item #	Item #	Item #	Item #	Item #	Item #
01-2	Stand Only	202847	202858	202847	202858	202850	202855	201998	201998	202000	202000
02	Suction Cover, Cast Iron	-	-	-	-	-	-	202880	202880	202882	202882
02	Suction Cover, Hi-Chrome	202045	202046	202045	202046	202047	202048	-	-	-	-
03	Impeller Nut	-	202894	202894	202894	202894	202894	202897	202897	202897	202897
04	Impeller Washer	-	202907	202907	202907	202907	202907	202917	202917	202917	202917
05	Impeller, Heat Treated DI*	202122	204565	202126	204565	204566	204567	204569	204571	202945	202947
06	Impeller Key	-	202140	202140	202140	202140	202140	202146	202146	202146	202987
07	Pump Housing	202173	203008	202173	203008	203011	203014	203024	203024	203027	203027
08	Oil Chamber Cover	202213	202213	202213	202213	202218	202218	202221	202221	202223	202223
08-1	O-Ring (Kit Only)	Kit	Kit	Kit	Kit	Kit	Kit	Kit	Kit	Kit	Kit
09	Lip Seal Buna-N	203051	203051	203051	203051	202234	202234	202238	202238	202238	202238
09	Lip Seal FKM (Optional)	202232	202232	202232	202232	202235	202235	202241	202241	202241	202241
09	Lip Seal EPDM (Optional)	203052	203052	203052	203052	203054	203054	203061	203061	203061	203061
12	Lip Seal for Lower Bearing	-	-	-	-	-	-	203055	203055	-	-
13	Mechanical Seal Buna-N	200501	200501	200501	200501	200302	200302	200308	200308	200308	200308
13	Mechanical Seal FKM**	200500	200500	200500	200500	200301	200301	200307	200307	200307	200307
14	Lower Ball Bearing ( * =Qty 2 Needed)	200958	200958	200958	200958	200959	200959	200962	200962	200962*	200962*
14-2	Lower Bearing Retainer	202279	202279	202279	202279	202279	202279	203075	203075	203076	203076
14-3	Lock Nut & Lock Washer									200424	200424
15	Impeller Shim Kit (Required)	200481	200481	200480	200480	200480	200480	200478	200478	200478	200478
17	Rotor w/ Shaft 115/230V, 1PH	203088	204604	-	-	-	-	-	-	-	-
17	Rotor w/ Shaft, 3PH	-	-	202307	202311	202315	202319	202333	202335	202337	202339
18	Stator w/ Casing 115V, 1PH	200511	-	-	-	-	-	-	-	-	-
18	Stator w/ Casing 230V, 1PH	200570	200514	-	-	-	-	-	-	-	-
18	Stator w/ Casing 208V, 3PH	-	-	200524	200528	200532	200536	200669	-	-	-
18	Stator w/ Casing 230/460V, 3PH	-	-	200546	200550	200554	200558	200572	200576	200580	-
18	Stator w/ Casing 460V, 3PH	-	-	-	-	-	-	-	-	-	200584
18	Stator w/ Casing 575V, 3PH	-	-	200588	200592	200596	200600	200616	200622	200629	200636
19	Governor Switch w/Switch Plate	202360	202360	-	-	-	-	-	-	-	-
20	Upper Ball Bearing	200967	200967	200967	200967	200958	200958	200968	200968	200968	200968
20-1	O-Ring (Kit Only)	-	-	-	-	-	-	Kit	Kit	Kit	Kit
21A	Oil Chamber/Motor Housing	202196	202196	202196	202196	203030	203030	202199	202199	203032	203032
21A-1	O-Ring (Kit Only)	Kit	Kit	Kit	Kit	Kit	Kit	Kit	Kit	Kit	Kit
21B	Motor Cover Upper	202368	202368	-	-	-	-	-	-	-	-
23	Overload Protector 115V, 1PH	202383	-	-	-	-	-	-	-	-	-
23	Overload Protector 230V, 1PH	202395	202383	-	-	-	-	-	-	-	-
23	Overload Protector 208V, 3PH	-	-	202385	202388	202390	202392	202394	-	-	-
23	Overload Protector 230V, 3PH	-	-	202385	202388	202390	202392	202394	-	-	-
23	Overload Protector 460V, 3PH	-	-	202387	202386	202389	202391	202393	202394	202398	202397
23	Overload Protector 575V, 3PH	-	-	202399	202387	202386	202389	202391	202393	202394	202398
24	Capacitor 115V	202417	-	-	-	-	-	-	-	-	-
24	Capacitor 230V	202418	202420	-	-	202818	-	-	-	-	-
26	Pump Top Cover (w/ Sensor Opening)	202433	202433	202435	202435	202437	202437	203129	203129	203132	203132
26-1	O-Ring Kit Only	Kit	Kit	Kit	Kit	Kit	Kit	Kit	Kit	Kit	Kit
27	Power Cable w/ Gland-115V, 1PH	204258	-	-	-	-	-	-	-	-	-
27	Power Cable w/ Gland- 230V,1PH, No Plug	201694	201694	-	-	-	-	-	-	-	-

27	Power Cable w/ Gland- 3PH	-	-	201701	201701	203442	203444	203446	203446	203448	203448
27-1	O-Ring Kit Only	Kit	Kit	Kit	Kit	Kit	Kit	Kit	Kit	Kit	Kit
27-2	Seal Minder Cable	202763	202763	202763	202763	202763	202763	202763	202763	202763	202763
27-2-1	O-Ring Kit Only	Kit	Kit	Kit	Kit	Kit	Kit	Kit	Kit	Kit	Kit
27-3	Seal Minder Cap	203139	203139	203139	203139	203139	203139	203139	203139	203139	203139
31D	Seal Minder Probe	202408	202408	202408	202408	202410	202410	204001	204001	204001	204001
31E	Ground Wire w/Ring Term.	203145	203145	203145	203145	203145	203145	203145	203145	203145	203145
32	Power Cord Line Clip / Strain Relief	203161	203161	203161	203161	204161	202497	202497	202497	202500	202500
33	Seal Minder Cable Line Clip	203163	203163	203163	203163	203163	203163	203163	203163	203163	203163
34	Handle / Chain Handle	202517	202517	202517	202517	202509	202509	-	-	-	-
34	Lifting Ring	-	-	-	-	-	-	203172	203172	203172	203172
35	Rod Bolts	202666	202668	202669	202670	202671	202672	202676	202677	202678	202679
38	Discharge Nipple 2"	202531	-	202531	-	-	-	-	-	-	-
38	Discharge Nipple 3"	-	202534	-	202534	202534	202534	-	-	-	-
38E	Discharge Elbow	202570	202558	202570	202558	202558	202558	202572	202572	203187	203187
38E-1	Gasket, Discharge Elbow Buna-N	203212	203208	203212	203208	203208	203208	203210	203210	202663	202663
38E-1	Gasket, Disch. Elbow FKM (Optional)	203213	203209	203213	203209	203209	203209	203211	203211	202664	202664
38F	Discharge Flange 2"	202562	-	202562	-	-	-	-	-	-	-
38F	Discharge Flange 3"	-	202545	-	202545	202545	202545	-	-	-	-
38F	Discharge Flange 4"	-	-	-	-	202552	202552	202575	202575	-	-
38F	Discharge Flange 6" ANSI Slip Weld	-	-	-	-	-	-	-	-	202548	202548
38F-1	Gasket, Discharge Flange Buna-N	203206	202659	203206	202659	202659	202659	202661	202661	202663	202663
38F-1	Gasket, Disch. Flange FKM (Optional)	203207	202660	203207	202660	202660	202660	202662	202662	202664	202664
50-01-2	Bolt for Strainer/Stand	203228	203228	203228	203228	203228	203228	203236	203236	203279	203279
50-02	Bolt for Suction Cover	203228	203228	203228	203228	203228	203228	203236	203236	203279	203279
50-07	Screw for Oil Chamber/Motor Housing	203228	203228	203228	203228	203228	203228	203271	203271	203280	203280
50-08	Screw for Oil Chamber Cover	203219	203219	203219	203219	203219	203219	203246	203246	203281	203281
50-11	Screw for Oil Fill	203218	203218	203218	203218	203218	203218	203261	203261	203282	203282
50-11-1	O-Ring (Kit Only)	Kit	Kit	Kit	Kit	Kit	Kit	Kit	Kit	Kit	Kit
50-11V	Air Release Valve	-	-	-	-	-	-	202707	202707	202707	202707
50-12	Screw for Pressure Check	203218	203218	203218	203218	203218	203218	203218	203218	203218	203218
50-12-1	O-Ring (Kit Only)	Kit	Kit	Kit	Kit	Kit	Kit	Kit	Kit	Kit	Kit
50-14-2	Screw for Brg. Retainer	203219	203219	203219	203219	203219	203219	203220	203220	203220	203220
50-19	Screw for Gov. Switch Plate	202693	202693	-	-	-	-	-	-	-	-
50-23	Screw for Overload	202700	202700	202700	202700	202700	202700	202700	202700	202700	203285
50-27	Screw for Power Cord	203216	203216	203216	203216	203246	203246	203246	203246	203246	203246
50-27-2	Screw for Seal Minder Cable	203216	203216	203216	203216	203216	203216	203216	203216	203216	203216
50-31E	Screw for Ground Wire	202692	202692	202692	202692	202692	202692	202692	202692	202692	202692
50-32/50-33	Screw for Line Clip	203214	203214	203214	203214	-	-	-	-	-	-
50-32-1	Bolt for Power Cord Chain	-	-	-	-	-	-	203284	203284	203284	203284
50-34	Screw for Handle	203219	203219	203219	203219	-	-	-	-	-	-
50-38E	Bolt for Discharge Elbow	203253	203255	203253	203255	203255	203255	203276	203276	203278	203278
50-38F	Bolt for Discharge Flange	203289	203289	203289	203289	203289	203253	203277	203277	203278	203278
O-Ring Kit - Buna N		202629	202629	202636	202636	202638	202638	202651	202651	203201	203201
O-Ring Kit - FKM (Optional)		203197	203197	202646	202646	202641	202641	202652	202652	203202	203202
* New Rotor With Shaft Required When Upgrading From 202953 to 204565.											

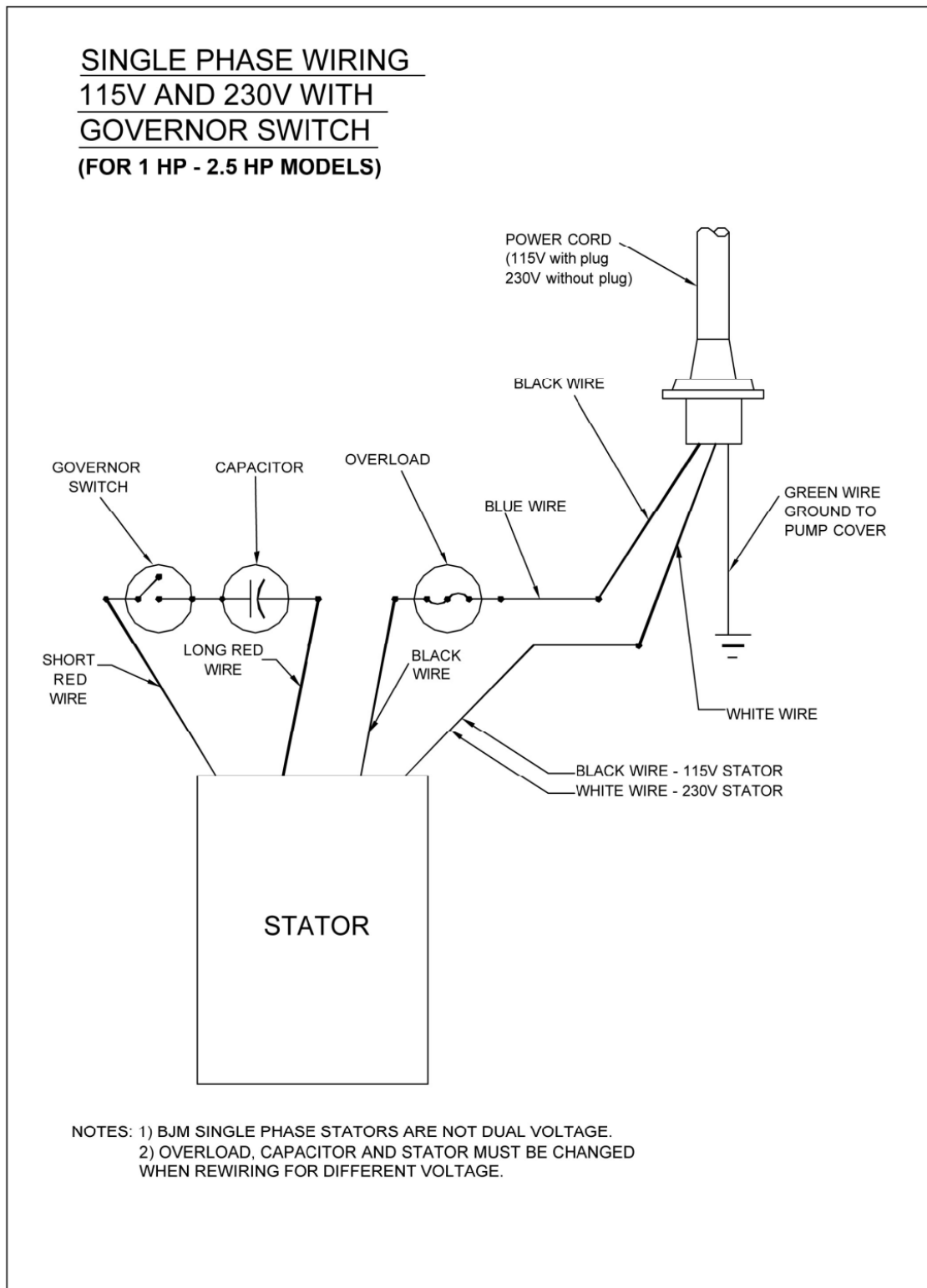
## SKX SERIES PARTS LIST

	Pump Model	SKX750CSS	SKX1500CSS	SKX08CSS	SKX15CSS	SKX22CSS	SKX37CSS	SKX55CSS	SKX75CSS	SKX110CSS	SKX150CSS
Pos. No.	Part Description	Item #	Item #	Item #	Item #	Item #	Item #	Item #	Item #	Item #	Item #
01-2	Stand Only	201988	201995	201988	201995	201989	201994	201999	201999	202001	202001
02	Suction Cover	-	-	-	-	-	-	202881	202881	202040	202040
03	Impeller Nut	-	202894	202894	202894	202894	202894	202897	202897	202897	202897
04	Impeller Washer	-	202907	202907	202907	202907	202907	202917	202917	202917	202917
05	Impeller	202951	204628	202958	204628	204629	204630	204568	204570	202946	202948
06	Impeller Key	-	202140	202140	202140	202140	202140	202146	202146	202146	202987
07	Pump Housing	202176	202172	202176	202172	202177	202181	202190	202190	202194	202194
07-1	O-Ring (Kit Only)	Kit	Kit	Kit	Kit	Kit	Kit	-	-	-	-
08	Oil Chamber Cover	202214	202214	202214	202214	202219	202219	202222	202222	202224	202224
08-1	O-Ring (Kit Only)	Kit	Kit	Kit	Kit	Kit	Kit	Kit	Kit	Kit	Kit
09	Lip Seal FKM	202232	202232	202232	202232	202235	202235	202241	202241	202241	202241
09	Lip Seal Buna-N (Optional)	203051	203051	203051	203051	202234	202234	202238	202238	202238	202238
09	Lip Seal EPDM (Optional)	203052	203052	203052	203052	203054	203054	203061	203061	203061	203061
12	Lip Seal for Lower Bearing	-	-	-	-	-	-	203055	203055	-	-
13	Mechanical Seal FKM**	204240	204240	204240	204240	204243	204243	200307	200307	200307	200307
13	Mechanical Seal Buna-N (Optional)	200501	200501	200501	200501	200302	200302	200308	200308	200308	200308
14	Lower Ball Bearing (*=qty 2 Needed)	200958	200958	200958	200958	200959	200959	200962	200962	200962*	200962*
14-2	Lower Bearing Retainer	202279	202279	202279	202279	202279	202279	203075	203075	203076	203076
14-3	Lock Nut & Lock Washer									200424	200424
15	Impeller Shim Kit (Required)	200481	200481	200480	200480	200480	200480	200478	200478	200478	200478
17	Rotor w/ Shaft 115/230V, 1PH	203089	-	-	-	-	-	-	-	-	-
17	Rotor w/ Shaft 2PH	-	204716	-	-	-	-	-	-	-	-
17	Rotor w/ Shaft, 3PH	-	-	202308	202312	202316	202320	202334	202336	202338	202340
18	Stator w/ Casing 115V, 1PH	200513	-	-	-	-	-	-	-	-	-
18	Stator w/ Casing 230V, 1PH	200571	200516	-	-	-	-	-	-	-	-
18	Stator w/ Casing 208V, 3PH	-	-	200526	200530	200534	200538	200671	-	-	-
18	Stator w/ Casing 230/460V, 3PH	-	-	200548	200552	200556	200560	200574	200578	200582	-
18	Stator w/ Casing 460V, 3PH	-	-	-	-	-	-	-	-	-	200586
18	Stator w/ Casing 575V, 3PH	-	-	200590	200594	200598	200602	200618	200624	200631	200638
19	Governor Switch w/Switch Plate	202360	202360	-	-	-	-	-	-	-	-
20	Upper Ball Bearing	200967	200967	200967	200967	200958	200958	200968	200968	200968	200968
20-1	O-Ring (Kit Only)	-	-	-	-	-	-	Kit	Kit	Kit	Kit
21A	Oil Chamber/Motor Housing	202197	202197	202197	202197	202198	202198	202200	202200	202201	202201
21A-1	O-Ring (Kit Only)	Kit	Kit	Kit	Kit	Kit	Kit	Kit	Kit	Kit	Kit
21B	Motor Cover Upper	202368	202368	-	-	-	-	-	-	-	-
23	Overload Protector 115V, 1PH	202383	-	-	-	-	-	-	-	-	-
23	Overload Protector 230V, 1PH	202395	202383	-	-	-	-	-	-	-	-
23	Overload Protector 208V, 3PH	-	-	202385	202388	202390	202392	202394	-	-	-
23	Overload Protector 230V, 3PH	-	-	202385	202388	202390	202392	202394	-	-	-
23	Overload Protector 460V, 3PH	-	-	202387	202386	202389	202391	202393	202394	202398	202397
23	Overload Protector 575V, 3PH	-	-	202399	202387	202386	202389	202391	202393	202394	202398
24	Capacitor 115V	202417	-	-	-	-	-	-	-	-	-
24	Capacitor 230V	202418	202420	-	-	-	-	-	-	-	-
26	Pump Top Cover (w/ Sensor opening)	202434	202434	202436	202436	202438	202438	203130	203130	202444	202444
26-1	O-Ring (Kit Only)	Kit	Kit	Kit	Kit	Kit	Kit	Kit	Kit	Kit	Kit
27	Power Cable w/ Gland- 115V, 1PH	204262	-	-	-	-	-	-	-	-	-
27	Power Cable w/ Gland- 230V, 1 PH, No Plug	201695	201695	-	-	-	-	-	-	-	-
27	Power Cable w/ Gland- 3PH	-	-	201702	201702	203443	203445	203447	203447	203449	203449

27-1	O-Ring (Kit Only)	Kit	Kit	Kit	Kit	Kit	Kit	Kit	Kit	Kit	Kit
27-2	Seal Minder Cable	201713	201713	201713	201713	201713	201713	201713	201713	201713	201713
27-2-1	O-Ring Kit Only	Kit	Kit	Kit	Kit	Kit	Kit	Kit	Kit	Kit	Kit
27-3	Seal Minder Cap	201718	201718	201718	201718	201718	201718	201718	201718	201718	201718
31D	Seal Minder Probe	202408	202408	202408	202408	202410	202410	204001	204001	204001	204001
31E	Ground Wire w/Ring Term.	203145	203145	203145	203145	203145	203145	203145	203145	203145	203145
32	Power Cord Line Clip / Strain Relief	203166	203166	203161	203161	202504	202499	202499	202499	202500	202500
33	Seal Minder Cable Line Clip	203163	203163	203163	203163	203163	203163	203163	203163	203163	203163
34	Handle / Chain Handle	202517	202517	202517	202517	202510	202510	-	-	-	-
34	Lifting Ring	-	-	-	-	-	-	202520	202520	202520	202520
35	Rod Bolts	202682	202683	202684	202685	202686	202687	202676	202677	202678	202679
38	Discharge Nipple 2"	202532	-	202532	-	-	-	-	-	-	-
38	Discharge Nipple 3"	-	202535	-	202535	202535	202535	-	-	-	-
38E	Discharge Elbow	202571	202559	202571	202559	202559	202559	202573	202573	202574	202574
38E-1	O-Ring, Discharge Elbow FKM	203326	203327	203326	203327	203327	203327	-	-	-	-
38E-1	Gasket, Discharge Elbow FKM	-	-	-	-	-	-	203211	203211	202664	202664
38E-1	Gasket, Disch. Elbow Buna-N (Optional)	-	-	-	-	-	-	203210	203210	202663	202663
38F	Discharge Flange 2"	202563	-	202563	-	-	-	-	-	-	-
38F	Discharge Flange 3"	-	202546	-	202546	202546	202546	-	-	-	-
38F	Discharge flange 4"	-	-	-	-	202553	202553	202576	202576	-	-
38F	Discharge flange 6" ANSI Slip Weld	-	-	-	-	-	-	-	-	202549	202549
38F-1	O-Ring 2" Discharge Flange FKM	202723	-	202723	-	-	-	-	-	-	-
38F-1	O-Ring, 3" Discharge Flange FKM	-	202724	-	202724	202724	202724	-	-	-	-
38F-1	O-Ring, 4" Discharge Flange FKM	-	-	-	-	203328	203328	-	-	-	-
38F-1	Gasket, 4" Discharge Flange FKM	-	-	-	-	-	-	202662	202662	-	-
38F-1	Gasket, 6" Discharge Flange FKM	-	-	-	-	-	-	-	-	202664	202664
38F-1	Gasket, 4" Disch. Flange Buna-N (Optional)	-	-	-	-	-	-	202661	202661	-	-
38F-1	Gasket, 6" Disch. Flange Buna-N (Optional)	-	-	-	-	-	-	-	-	202663	202663
50-01-2	Bolt for Strainer/Stand	203228	203228	203228	203228	203228	203228	203236	203236	203279	203279
50-02	Bolt for Suction Cover	-	-	-	-	-	-	203236	203236	203279	203279
50-07	Screw for Oil Chamber/Motor Housing	203296	203296	203296	203296	203296	203296	203271	203271	203280	203280
50-08	Screw for Oil Chamber Cover	203219	203219	203219	203219	203219	203219	203246	203246	203281	203281
50-11	Screw for Oil Fill	203218	203218	203218	203218	203218	203218	203261	203261	203282	203282
50-11-1	O-Ring (Kit Only)	Kit	Kit	Kit	Kit	Kit	Kit	Kit	Kit	Kit	Kit
50-11V	Air Release Valve	-	-	-	-	-	-	202707	202707	202707	202707
50-12	Screw for Pressure Check	203218	203218	203218	203218	203218	203218	203218	203218	203218	203218
50-12-1	O-Ring (Kit Only)	Kit	Kit	Kit	Kit	Kit	Kit	Kit	Kit	Kit	Kit
50-14-2	Screw for Bearing Retainer Plate	203219	203219	203219	203219	203219	203219	203220	203220	203220	203220
50-19	Screw for Gov. Switch Plate	202693	202693	-	-	-	-	-	-	-	-
50-23	Screw for Overload	202700	202700	202700	202700	202700	202700	202700	202700	202700	203285
50-27	Screw for Power Cord	203295	203295	203295	203295	203246	203246	203246	203246	203246	203246
50-27-2	Screw for Seal Minder Cable	203295	203295	203295	203295	203295	203295	203295	203295	203295	203295
50-31E	Screw for Ground Wire	202692	202692	202692	202692	202692	202692	202692	202692	202692	202692
50-32/50-33	Screw for Line Clip	203214	203214	203214	203214	-	-	-	-	-	-
50-32-1	Bolt for Power Cord Strain Relief Chain	-	-	-	-	-	-	203284	203284	203284	203284
50-34	Screw for Handle	203219	203219	203219	203219	-	-	-	-	-	-
50-38E	Bolt for Discharge Elbow	203294	203271	203294	203271	203271	203271	203276	203276	203278	203278
50-38F	Bolt for Discharge Flange	203229	203294	203229	203294	203294	203294	203277	203277	203278	203278
O-Ring Kit - FKM		202630	202630	202647	202647	202642	202642	202652	202652	203202	203202
O-Ring Kit - Buna-N (Optional)		-	-	-	-	-	-	202651	202651	203201	203201

\* New Rotor With Shaft Required When Upgrading From 202125 to 204628.

## SINGLE PHASE WIRING DIAGRAM 115V & 230V W/GOVERNOR SWITCH

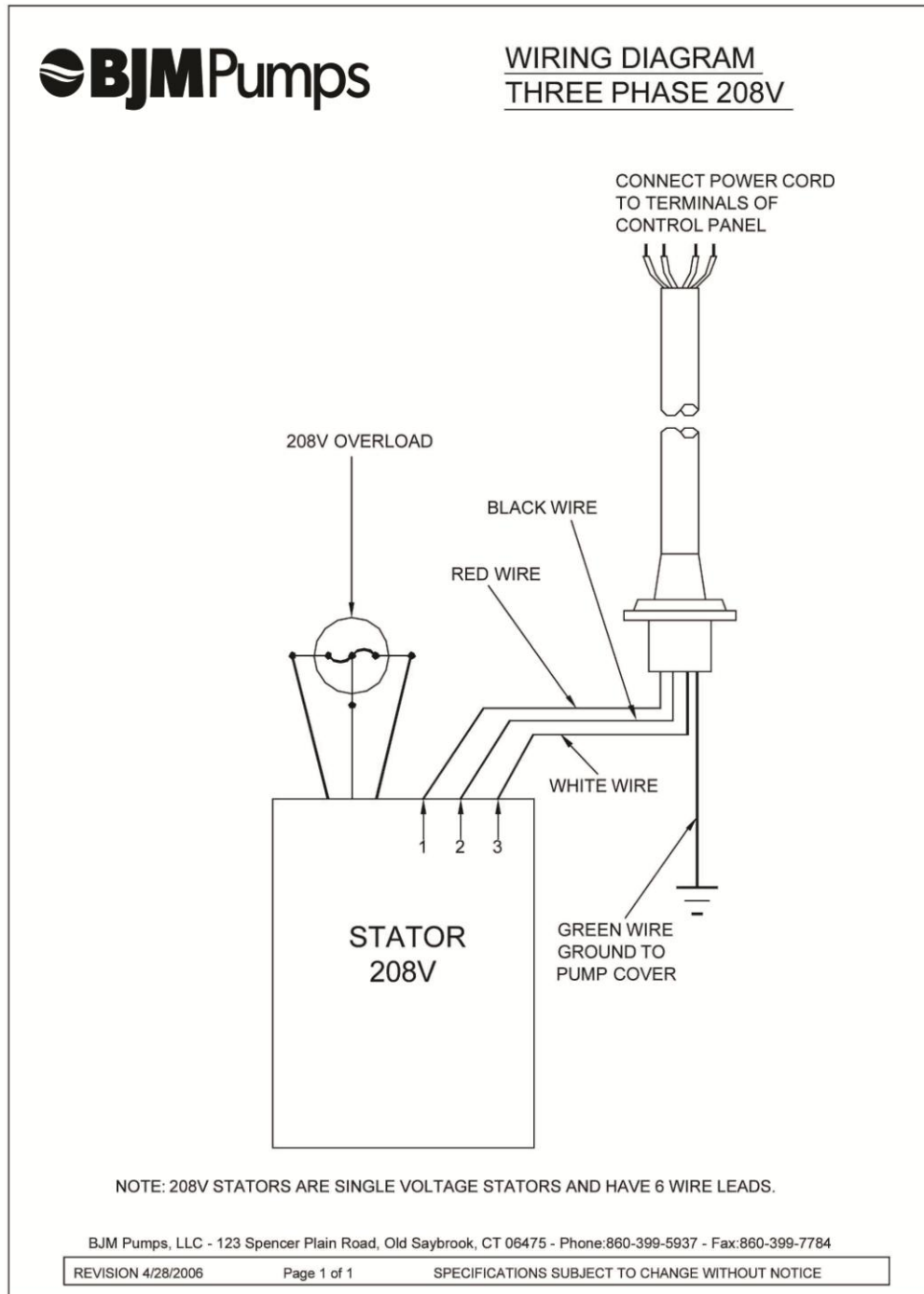


MODELS SK750C, SKX750CSS, SK1500C, SKX1500C



## THREE PHASE WIRING DIAGRAMS

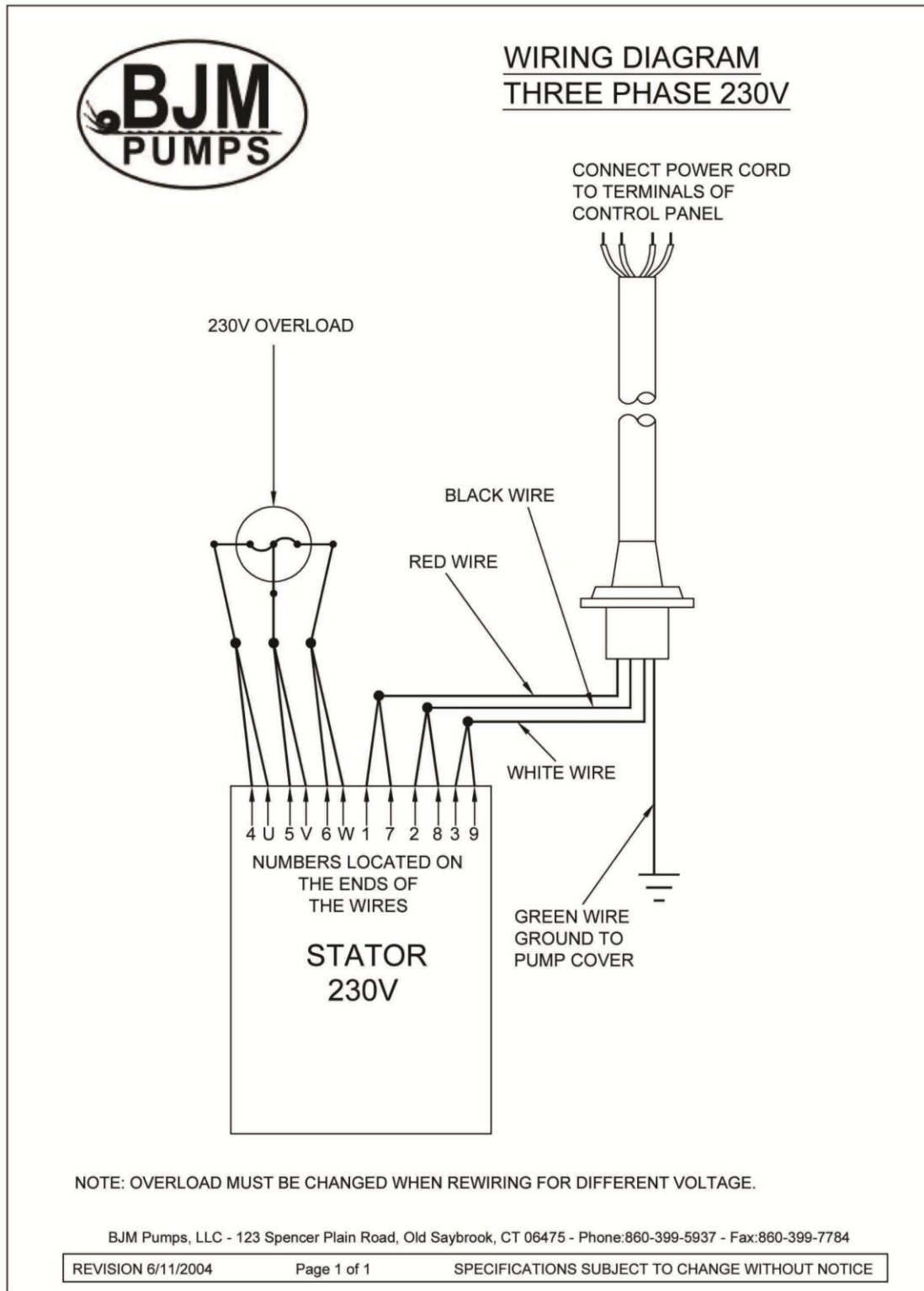
208V



MODELS SK08C, SKX08CSS, SK15C, SKX15CSS, SK22C, SKX22CSS, SK37C,  
SKX37CSS, SK55C, SKX55CSS,

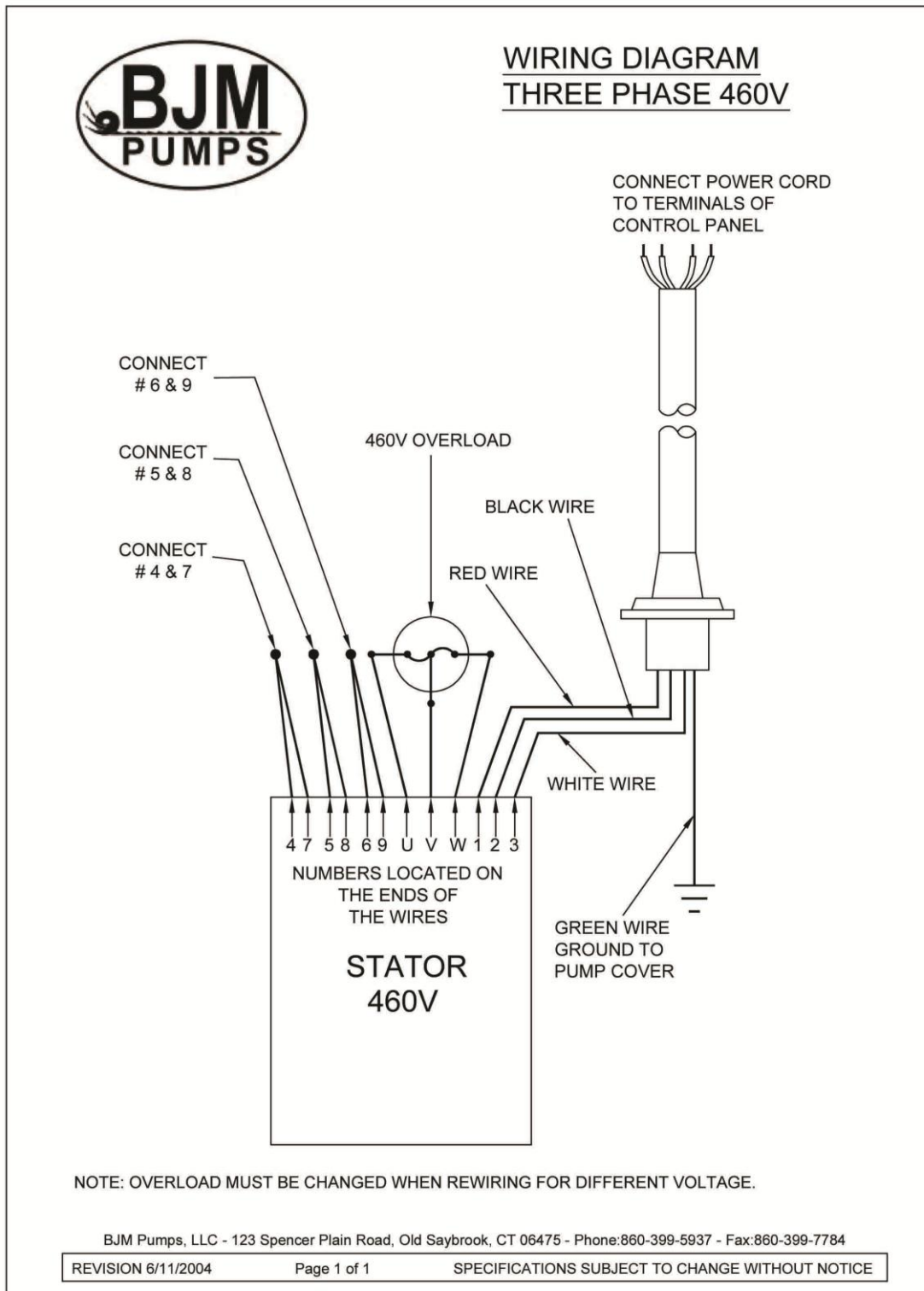


## 230V



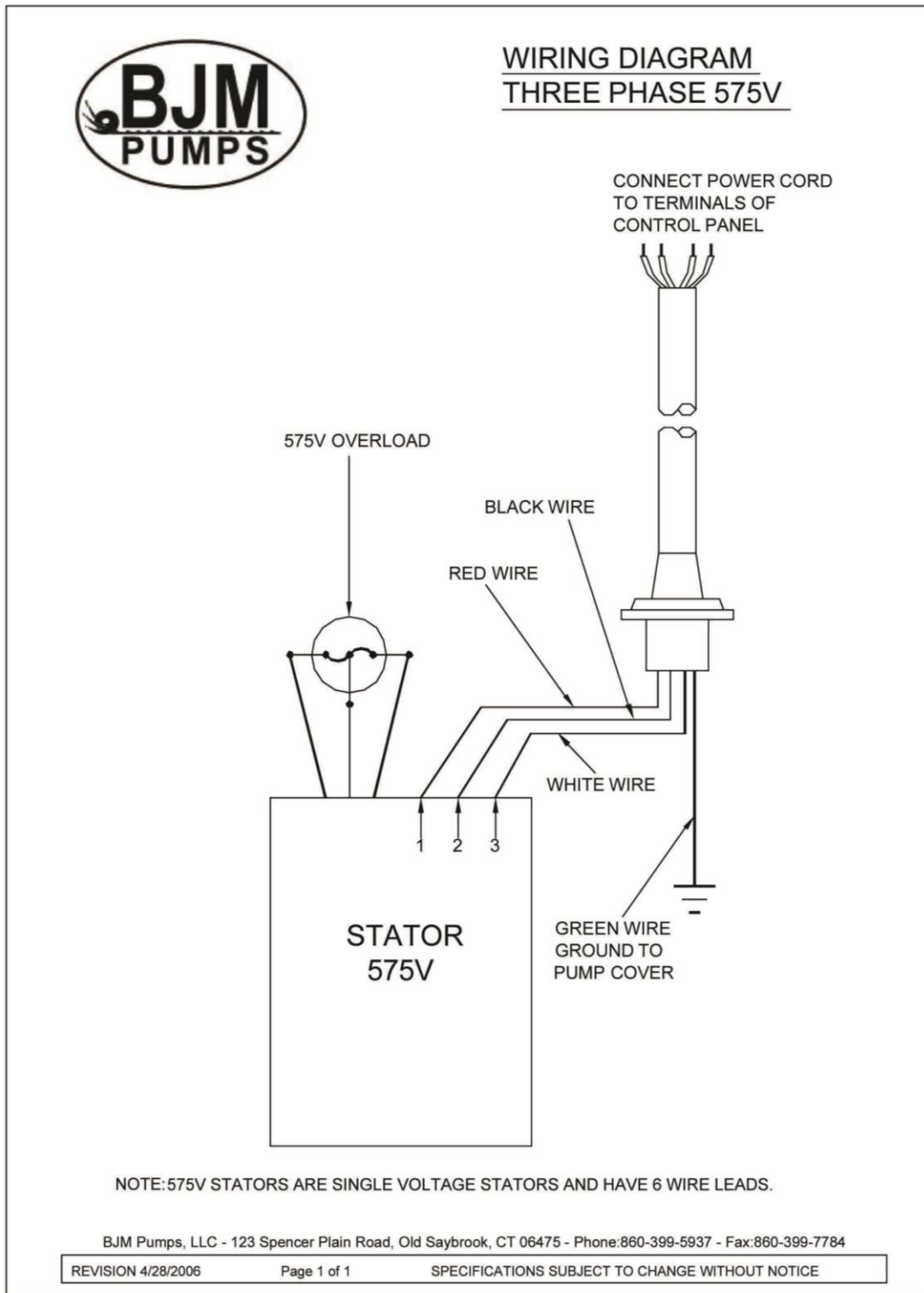
MODELS SK08C, SKX08CSS, SK15C, SKX15CSS, SK22C, SKX22CSS, SK37C, SKX37CSS, SK55C, SKX55CSS, SKX75C, SKX75CSS, SK110C, SKX110CSS

## 460V



MODELS SK08C, SKX08CSS, SK15C, SKX15CSS, SK22C, SKX22CSS, SK37C, SKX37CSS, SK55C, SKX55CSS, SKX75C, SKX75CSS, SK110C, SKX110CSS, SK150C, SKX150CSS

## 575V



MODELS SK08C, SKX08CSS, SK15C, SKX15CSS, SK22C, SKX22CSS, SK37C, SKX37CSS, SK55C, SKX55CSS, SKX75C, SKX75CSS, SK110C, SKX110CSS, SK150C, SKX150CSS



## Seal Minder® INFORMATION

### **Seal Minder:**

Also known as a seal failure circuit (or moisture detection circuit) is designed to inform the pump operator that there is moisture within the oil chamber. This early warning can allow the operator to schedule repair & inspection on the pump. The **Seal Minder** is a sensor probe inside the oil chamber. (The oil chamber houses the mechanical seals that are cooled & lubricated by oil). The **Seal Minder**, when properly connected to a control panel, can help indicate seal failure. The **Seal Minder** cord requires a seal fail circuit in control panel for warning signal.

The open end of the **Seal Minder** circuit cord should be connected to a control panel with an optional seal failure alarm relay circuit or a standalone **Seal Minder** Panel manufacturers can incorporate the **Seal Minder** cord option. BJM Pumps, LLC has a stand alone, **Seal Minder** panel for both simplex (P/N MSP8350A) and duplex (P/N MSP8350B) systems. For more information contact BJM Pumps, LLC or visit us online at [www.bjmpumps.com](http://www.bjmpumps.com)

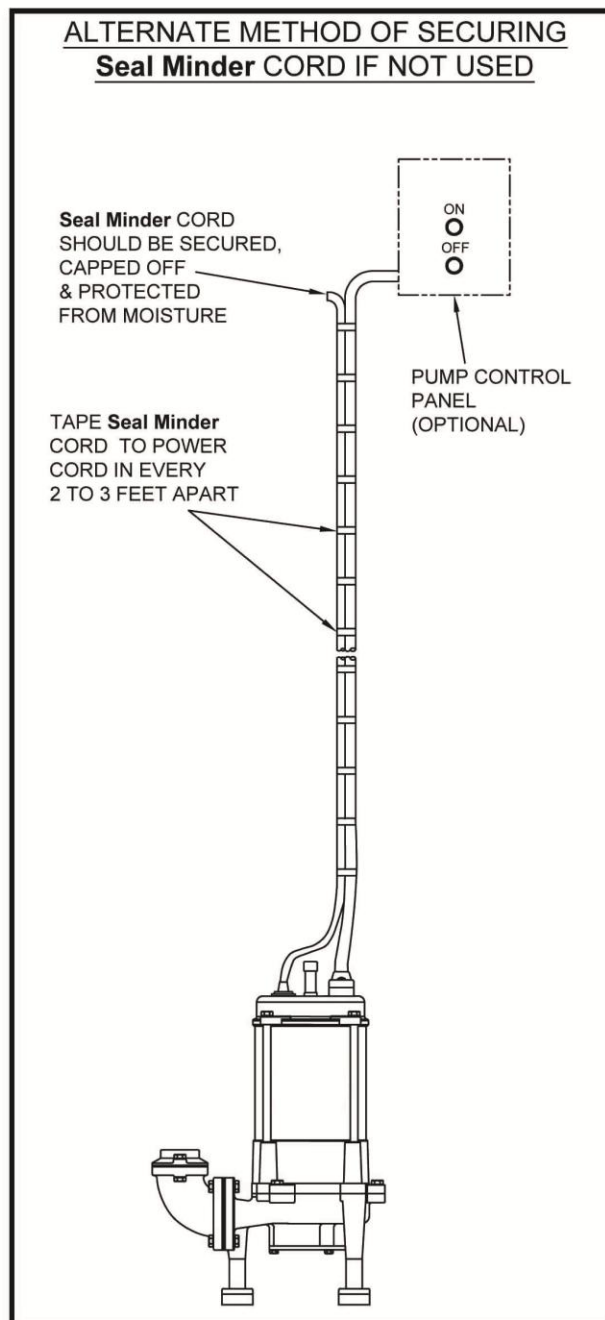
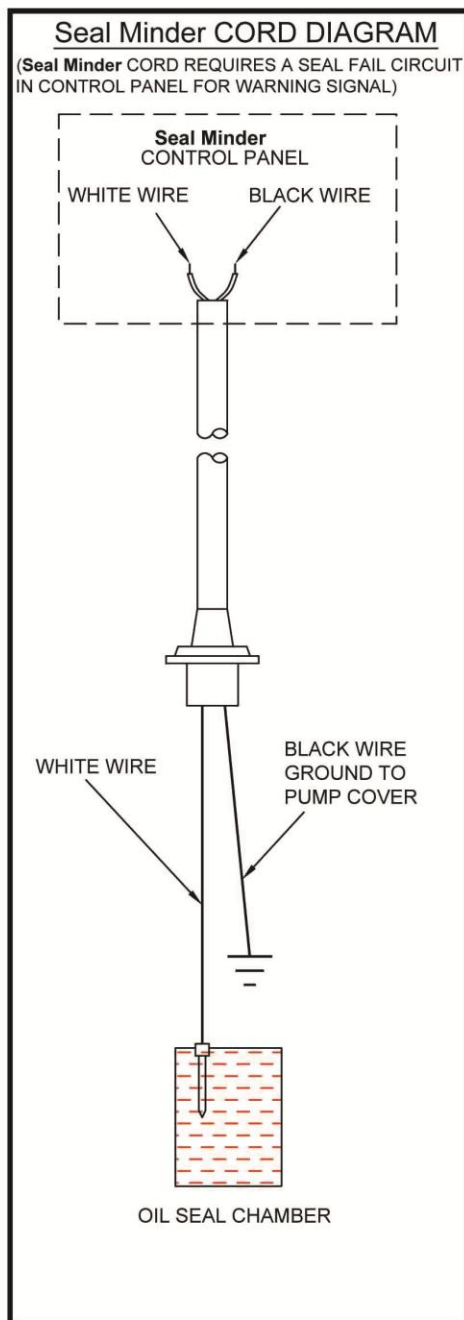
The **Seal Minder** cord has two leads, black and white. Note that the power cable is much larger and has 3 to five leads, depending on the model. Inside the pump, the black lead is connected to the casing ground, and the white lead is connected to the seal probe that is suspended into the oil chamber fluid. These leads need to be properly connected to the seal failure alarm relay circuit. Most controls that have provided for this option have a connection terminal point that is clearly marked for these connections. Consult the control panel manual for proper connection instructions.

Although highly recommended, the pump does not need a control box with seal fail relay or stand alone seal panel to operate.

### **If the operator does not use the Seal Minder:**

1. The recommended procedure is to take the **Seal Minder** cord off the pump and seal with a **Seal Minder** cap (P/N M02738) and gasket (P/N M05121 for Buna, P/N M05121V for FKM). This should be done by an authorized BJM Pumps service center or distributor as not to void warranty Detailed instruction sheet available for this procedure.
2. Alternate method of securing **Seal Minder** cable if not being used: Tape the **Seal Minder** cord to the power cord. Make sure that the cords are taped together in an even run, at about 2' to 3' apart. Use electrical tape to tape off the end of the **Seal Minder** cable (Do not connect to power source). The taped leads should be kept dry and out of the liquid. (See next page for detailed drawing).

Seal Minder is a registered trademark of BJM Pumps, LLC



SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE.

BJM Pumps, LLC - 123 SPENCER PLAIN ROAD, OLD SAYBROOK, CT 06475 - PHONE: 860-399-5937 - FAX: 860-399-7784  
BJM Pumps® & Seal Minder® is a registered trademark of BJM Pumps, LLC. Copyright 2006-2009. All rights reserved.

BJM PUMPS, LLC  
123 Spencer Plain Road  
Old Saybrook, CT 06475, U.S.A.

## WARRANTY AND LIMITATION OF LIABILITY

Unless otherwise expressly authorized in writing, specifying a longer or shorter period, BJM Pumps,LLC warrants for a period of eighteen (18) months from the date of shipment from the Point of Shipment, or one (1) year from the date of installation, whichever occurs first, that all products or parts thereof furnished by BJM Pumps,LLC under the brand name **BJM Pumps**, hereinafter referred to as the "Product" are free from defects in materials and workmanship and conform to the applicable specification.

BJM Pumps,LLC's liability for any breach of this warranty shall be limited solely to replacement or repair, at the sole option of BJM Pumps,LLC, of any part or parts of the Product found to be defective during the warranty period, provided the Product is properly installed and is being used as originally intended. Any breach of this warranty must be reported to BJM Pumps,LLC or BJM Pumps,LLC's authorized service representative within the aforementioned warranty period, and defective Product or parts thereof must be shipped to BJM Pumps,LLC or BJM Pumps,LLC's authorized representative, transportation charges prepaid. Any cost associated with removal or installation of a defective Product or part is excluded.

IT IS EXPRESSLY AGREED THAT THIS SHALL BE THE SOLE AND EXCLUSIVE REMEDY OF BJM PUMPS, LLC'S DISTRIBUTORS AND CUSTOMERS. UNDER NO CIRCUMSTANCES SHALL BJM PUMPS, LLC BE LIABLE FOR ANY COSTS, LOSS, EXPENSE, DAMAGES, SPECIAL DAMAGES, INCIDENTAL DAMAGES OR CONSEQUENTIAL DAMAGES ARISING DIRECTLY OR INDIRECTLY FROM THE DESIGN, MANUFACTURE, SALE, USE OR REPAIR OF THE PRODUCT, WHETHER BASED ON WARRANTY, CONTRACT, NEGLIGENCE, OR STRICT LIABILITY. IN NO EVENT WILL LIABILITY EXCEED THE PURCHASE PRICE OF THE PRODUCT.

THE WARRANTY AND LIMITS OF LIABILITY CONTAINED HEREIN ARE IN LIEU OF ALL OTHER WARRANTIES AND LIABILITIES, EXPRESSED OR IMPLIED. ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE HEREBY DISCLAIMED BY BJM PUMPS, LLC AND EXCLUDED FROM THIS WARRANTY.

BJM Pumps,LLC neither assumes, nor authorizes any person to assume for it, any other warranty obligation in connection with the sale of the Product. This warranty shall not apply to any Product or parts of Product which have (a) been repaired or altered outside of BJM Pumps,LLC's facilities unless such repair was authorized in advance by BJM Pumps,LLC or by its authorized representative; or (b) have been subject to misuse, negligence or accident; or (c) have been used in a manner contrary to BJM Pumps,LLC's instruction.

In any case of products not manufactured and sold under the BJM Pumps,LLC brand name, there is no warranty from BJM Pumps,LLC; however BJM Pumps,LLC will extend any warranty received from BJM Pumps,LLC's supplier of such products.

**START-UP REPORT FORM****START-UP REPORT FORM**

This form is designed to record the initial installation, and to serve as a guide for troubleshooting at a later date (if needed).

BJM Pumps, LLC  
123 Spencer Plain Road  
Old Saybrook, CT. 06475

Pump Owner's Name			
Location of Installation		Date of Installation:	
Dealer		Dealer Phone ( )	
Date of Purchase			
Model		Serial No	
Voltage	Phase	Hertz	HP
Does impeller turn freely by hand?		<input type="checkbox"/> Yes	<input type="checkbox"/> No
Condition of Equipment		<input type="checkbox"/> New	<input type="checkbox"/> Good <input type="checkbox"/> Fair <input type="checkbox"/> Poor
Condition of Cable Jacket		<input type="checkbox"/> New	<input type="checkbox"/> Good <input type="checkbox"/> Fair <input type="checkbox"/> Poor
Rotation: Direction of Impeller Rotation (viewed from bottom) (Use C/W for clockwise, CC/W for counterclockwise): _____			
Resistance of cable and Pump Motor (measured at pump control)			
Red-Black_____ohms      Red-White_____ohms      White-Black_____ohms			
Resistance of ground circuit between control panel and outside of pumps _____ Ohms			
<b>MEG OHM CHECK OF INSULATION</b>			
Red to ground_____ White to ground_____ Black to ground_____			
Condition of location at start-up		<input type="checkbox"/> Dry	<input type="checkbox"/> Wet <input type="checkbox"/> Muddy
Was equipment stored		<input type="checkbox"/> Yes	<input type="checkbox"/> No.
If YES, length of storage:			
Liquid being pump			
Debris in bottom of station?		<input type="checkbox"/> Yes	<input type="checkbox"/> No



# START-UP REPORT FORM

Are guide rails vertical?	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Is base elbow installed level?	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Liquid level controls: Model _____		
Is control installed away from turbulence?	<input type="checkbox"/> Yes	<input type="checkbox"/> No
<b>Float Operation Check</b>		
Tip lowest float (stop float), all pumps should remain off. Tip second float (and stop float), one pump comes on. Tip third float (and stop float), both pumps on (alarm on simplex). Tip fourth float (and stop float), high level alarm on (omit on simplex).		
<input type="checkbox"/> Check here if using manual on/off only.		
Does liquid level ever drop below volute top?	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Control Panel MFG & model no.		
Number of pumps operated by control panel		
<b>NOTE: At no time should hole be made in top of control panel, unless proper sealing devices are utilized.</b>		
Short Circuit protection:	Type:	
Number and size of short circuit device(s)	Amp rating:	
Overload type:	Size:	Amp rating:
Do protective devices comply with pump motor amp rating?	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Are all pump connections tight?	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Is the interior of the panel dry?	<input type="checkbox"/> Yes	<input type="checkbox"/> No If No, correct moisture problem.
Electrical readings		
<b>SINGLE PHASE</b>		
Voltage supply at panel line connection, pump off	L1	L2
Voltage supply at panel line connection, pump on	L1	L2
Amperage load connection, pump on	L1	L2
<b>THREE PHASE</b>		
Voltage supply at panel line connection, pump off		
L1-L2	L2-L3	L3-L1
Voltage supply at panel line connection, pump on		



## START-UP REPORT FORM

L1-L2	L2-L3	L3-L1
Amperage load connection, pump on		
L1	L2	L3
<b>FINAL CHECK</b>		
Is pump secured properly?	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Was pump checked for leaks?	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Do check valves operate properly?	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Flow: Do pumps appear to operate at proper rate?	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Noise level:	Acceptable <input type="checkbox"/>	Unacceptable <input type="checkbox"/>
Comments:		
Installed by:		
Company:		
Person:		
Date:		

[illegible]

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