



INSTALLATION, OPERATION & MAINTENANCE MANUAL

FARHENHEIT™

SK-F & SKX-F SERIES SHREDDER PUMPS

Electric Submersible Pumps

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

CAST IRON THREE PHASE

SK08C-F SK55C-F
SK15C-F SK75C-F
SK22C-F SK110C-F
SK37C-F SK150C-F

316 STAINLESS STEEL THREE PHASE

SKX08CSS-F SKX55CSS-F
SKX15CSS-F SKX75CSS-F
SKX22CSS-F SKX110CSS-F
SKX37CSS-F SKX150CSS-F

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-F & SKX-F Series submersible pump. This manual also contains information to optimize performance and longevity of your **BJM Pumps** submersible pump. The F-Series **FAHRENHEIT**™ pumps are engineered to pump water based liquids up to 200° Fahrenheit (93°C).

The submersible **SK-F Series pumps** are designed to pump water, wastewater, and industrial wastewater that includes up to 10% by volume of solids. The **SKX-F Series pumps** are designed to pump corrosive liquids along with some solids in concentrations chemically compatible with 316SS and FKM. The **SK-F & SKX-F 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. Consult BJM engineering if there is a question on chemical compatibility.

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

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 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.



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 sensor cable 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.



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

OIL IN SEAL CHAMBER			
MODEL	U.S. FL. OZ.	CC.	TYPE OF OIL
SK08C-F	7.8	230	ISO 32 NSF Food Grade Mineral Oil
SK15C-F	7.8	230	ISO 32 NSF Food Grade Mineral Oil
SK22C-F	10	296	ISO 32 NSF Food Grade Mineral Oil
SK37C-F	10	296	ISO 32 NSF Food Grade Mineral Oil
SK55C-F	84.5	2500	ISO 32 NSF Food Grade Mineral Oil
SK75C-F	84.5	2500	ISO 32 NSF Food Grade Mineral Oil
SK110C-F	87.9	2600	ISO 32 NSF Food Grade Mineral Oil
SK150C-F	87.9	2600	ISO 32 NSF Food Grade Mineral Oil

OIL IN SEAL CHAMBER			
MODEL	U.S. FL. OZ.	CC.	TYPE OF OIL
SKX08CSS-F	6.75	200	ISO 32 NSF Food Grade Mineral Oil
SKX15CSS-F	6.75	200	ISO 32 NSF Food Grade Mineral Oil
SKX22CSS-F	12	355	ISO 32 NSF Food Grade Mineral Oil
SKX37CSS-F	12	355	ISO 32 NSF Food Grade Mineral Oil
SKX55CSS-F	84.5	2500	ISO 32 NSF Food Grade Mineral Oil
SKX75CSS-F	84.5	2500	ISO 32 NSF Food Grade Mineral Oil
SKX110CSS-F	87.9	2600	ISO 32 NSF Food Grade Mineral Oil
SKX150CSS-F	87.9	2600	ISO 32 NSF Food Grade Mineral Oil

NOTE: The stator on this model is oil filled. This needs to be changed annually when the seal oil is changed. With the power cable entry removed, fill the motor chamber with oil to a level that insures the oil is covering the motor windings by 1/2", and that will be above the upper bearing. Do not overfill, an air gap of 10-15% must be maintained for heat expansion.

PUMP INSTALLATION

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

The **BJM Pumps** Shredder Pumps (7.5 HP and larger) are designed to handle unscreened sewage.



⚠ WARNING

Risk of electric shock. Pump models; 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-F & SKX-F Series pumps are designed to operate fully submerged. Data sheets can be obtained online at www.bjmpumps.com or by calling BJM Pumps, LLC at 860-399-5937.

⚠ CAUTION

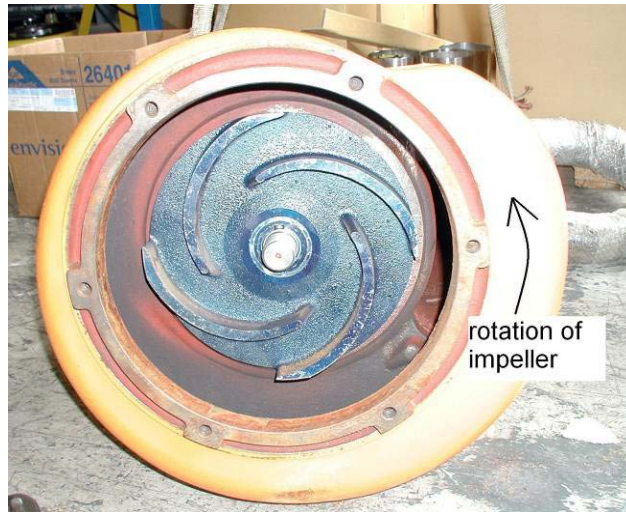
- Do not run pump dry.
- Pump liquid should not exceed a maximum temperature of 200°F (93°C).
- Never place the pump on loose or soft ground. The pump may sink, preventing water from reaching the impeller. Place on a solid surface or suspend the pump with a lifting rope/chain. The SK-F & SKX-F Series 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 MANUAL WASTEWATERING INSTALLATION

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

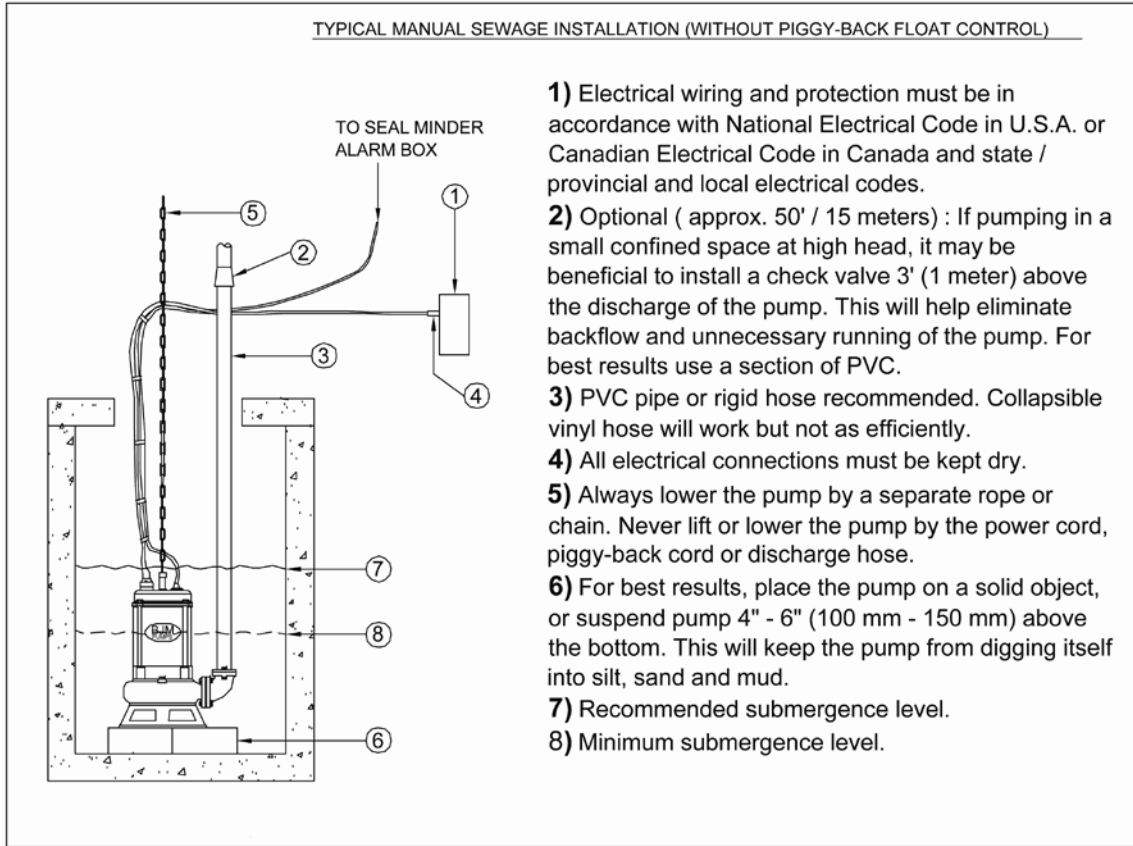
All SK-F & SKX-F Models are provided with a 33' (10 m) power cord. NEVER splice the power cable due to safety and warranty considerations. Always keep the lead end dry.

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

⚠ WARNING

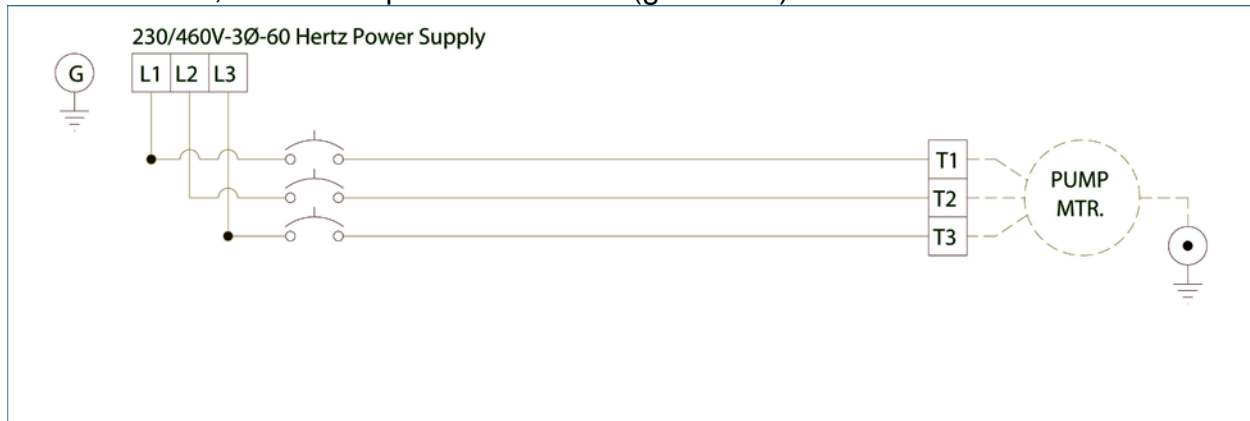
Do not alter the length or repair any power cable with a splice. The pump motor and cable must be completely waterproof. Damage to the pump or personal injury may result from alterations.

For manual operation: 208, 230, 460 & 575 volt: 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).



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).



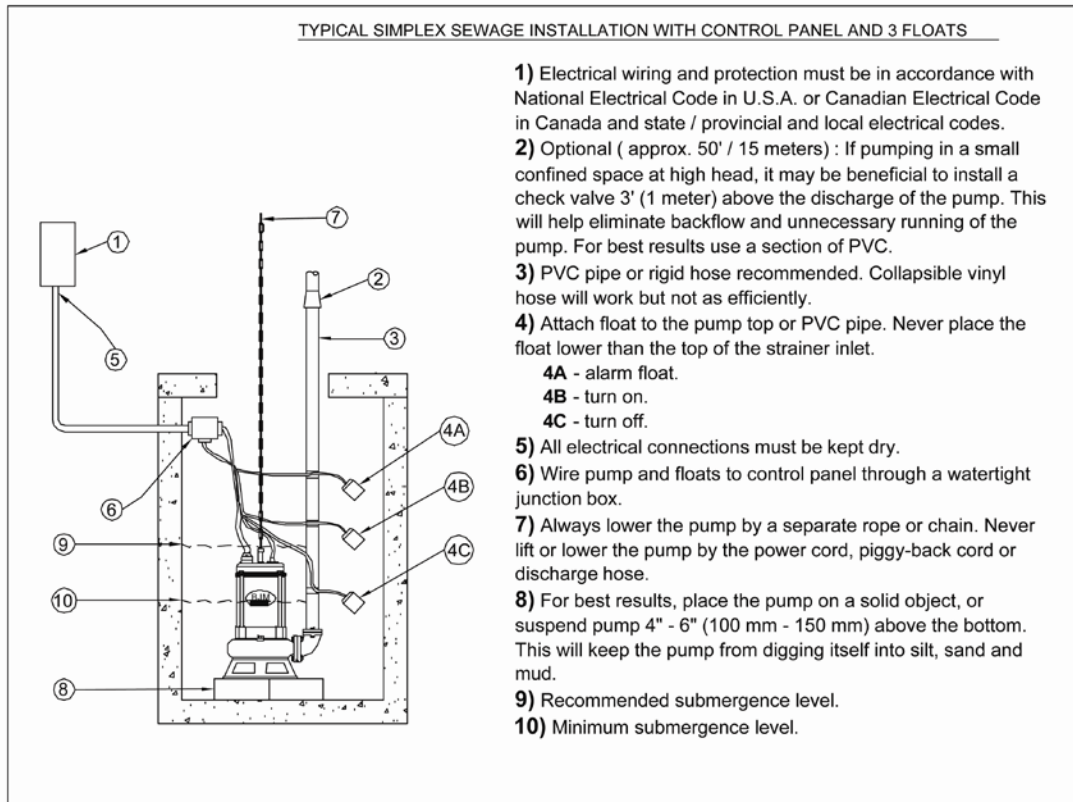
Typical 3 phase manual control 1

TYPICAL AUTOMATIC WASTEWATERING INSTALLATION

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



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



STOPPING

To stop the pump (manual and automatic mode), 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."

BJM Pumps has been evaluated for use with water or water based solutions. Please contact the manufacturer for additional information.



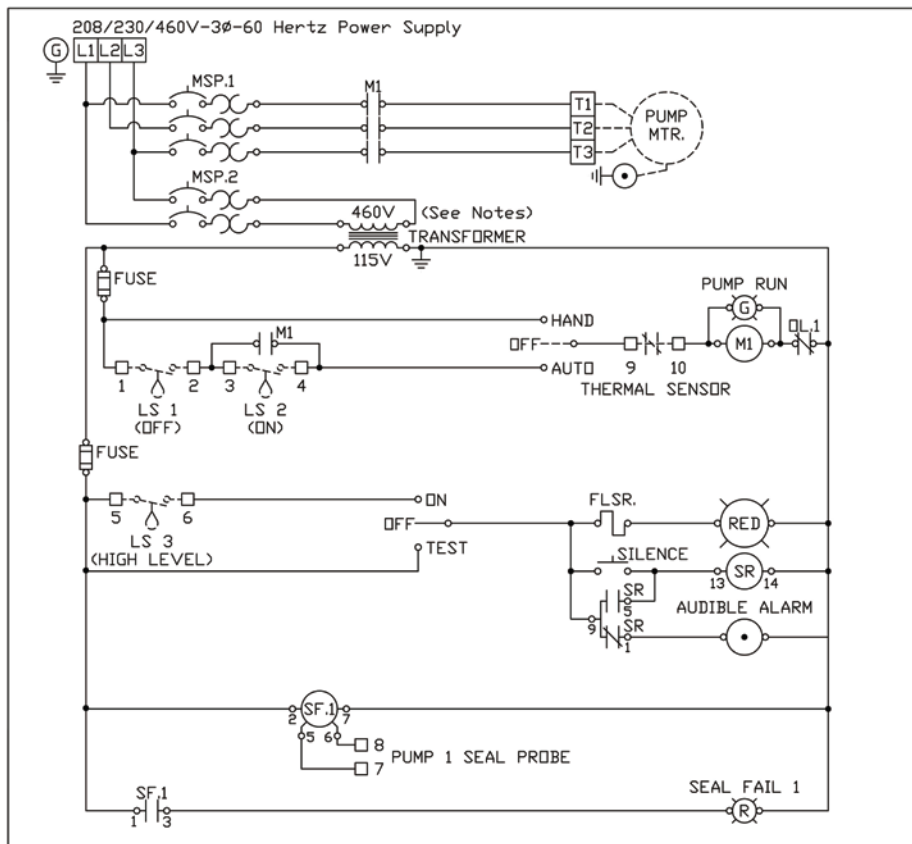
THREE PHASE WIRING INSTRUCTIONS

⚠ 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.



Typical 3 Phase Auto Control 1

Before installing a pump, make sure both of the ground leads and the power leads have been connected properly. Once the power connections have been confirmed, then check the pump rotation. 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.

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. The design of the “F” series high temperature pump models is unique and requires specific knowledge to perform the proper assembly. BJM Pumps recommends that all electrical service work be performed at the factory to insure that the materials and assembly methods meet BJM standards.

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

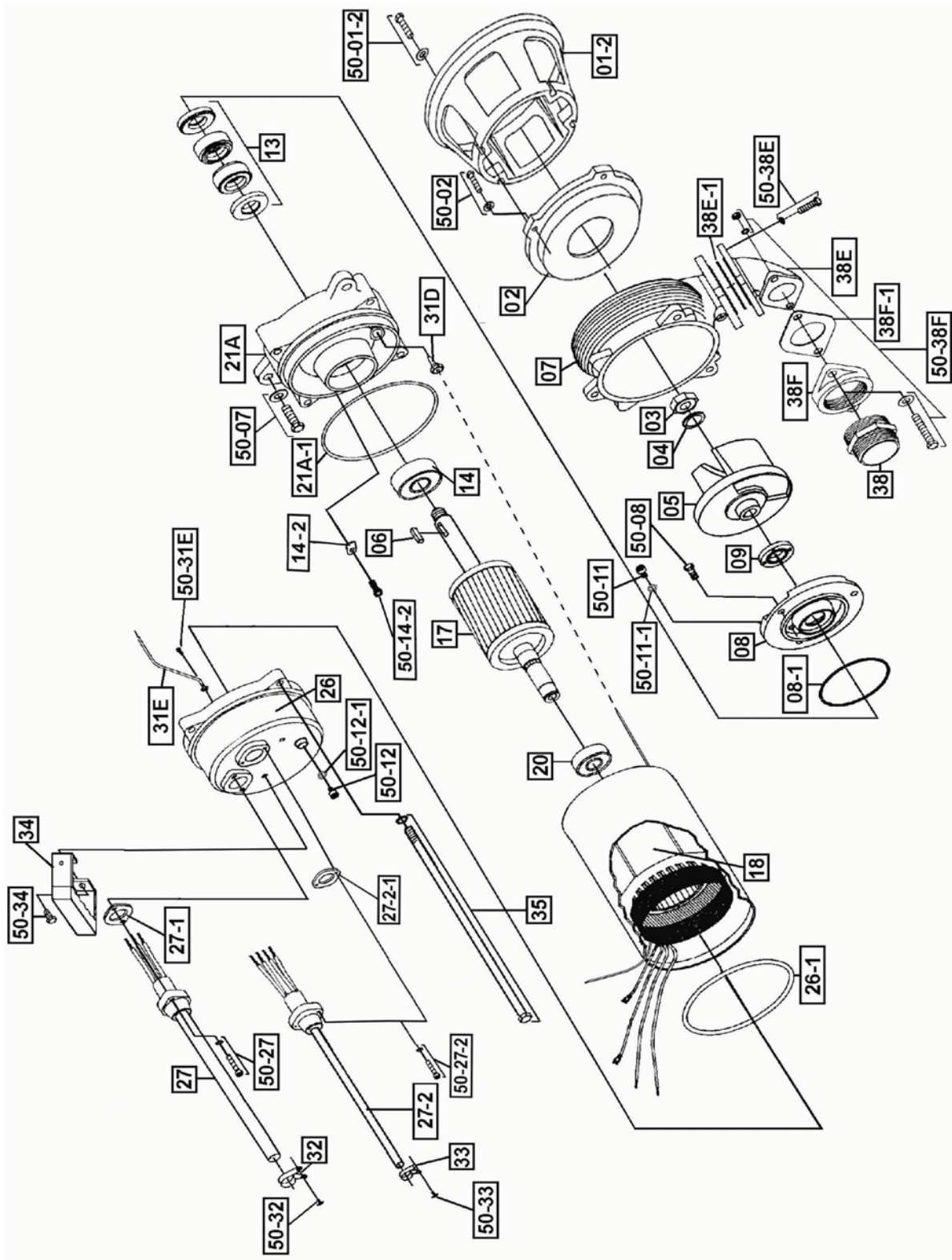
Changing the seal oil in the SK-F & SKX-F series pumps is very easy.

- 1) Make sure that the pump is de-energized and locked out for service.
- 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.

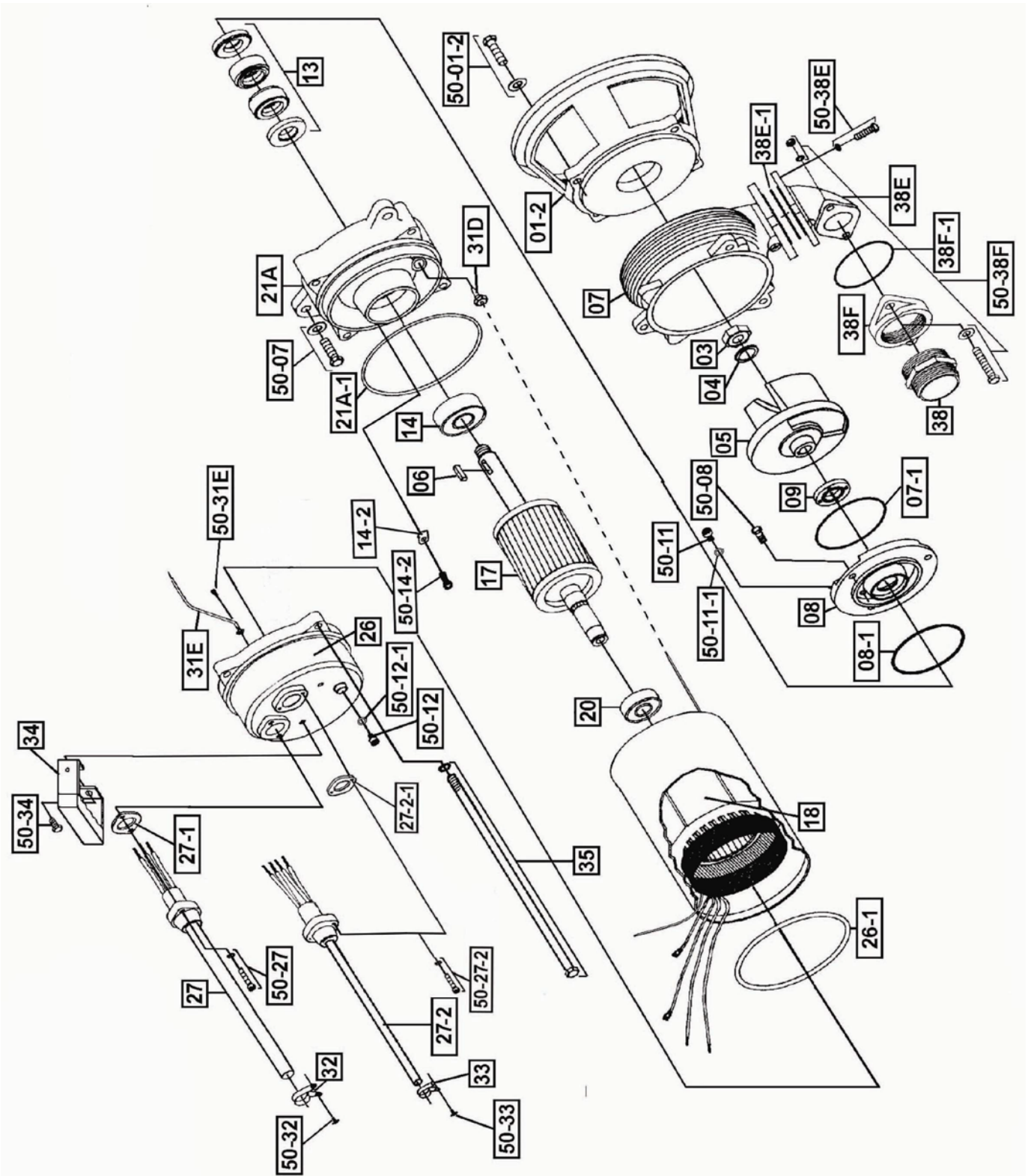


- 7) Remove the impeller.
- 8) Remove the inspection screw for the oil chamber (pos#50-08). Pour out a small sample of the oil. If it is milky white, or contains water, then the oil and possible, the mechanical seal, should be changed. If an oil change is needed.
- 9) Remove the screws that hold the 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 SK08C-F, SK15C-F

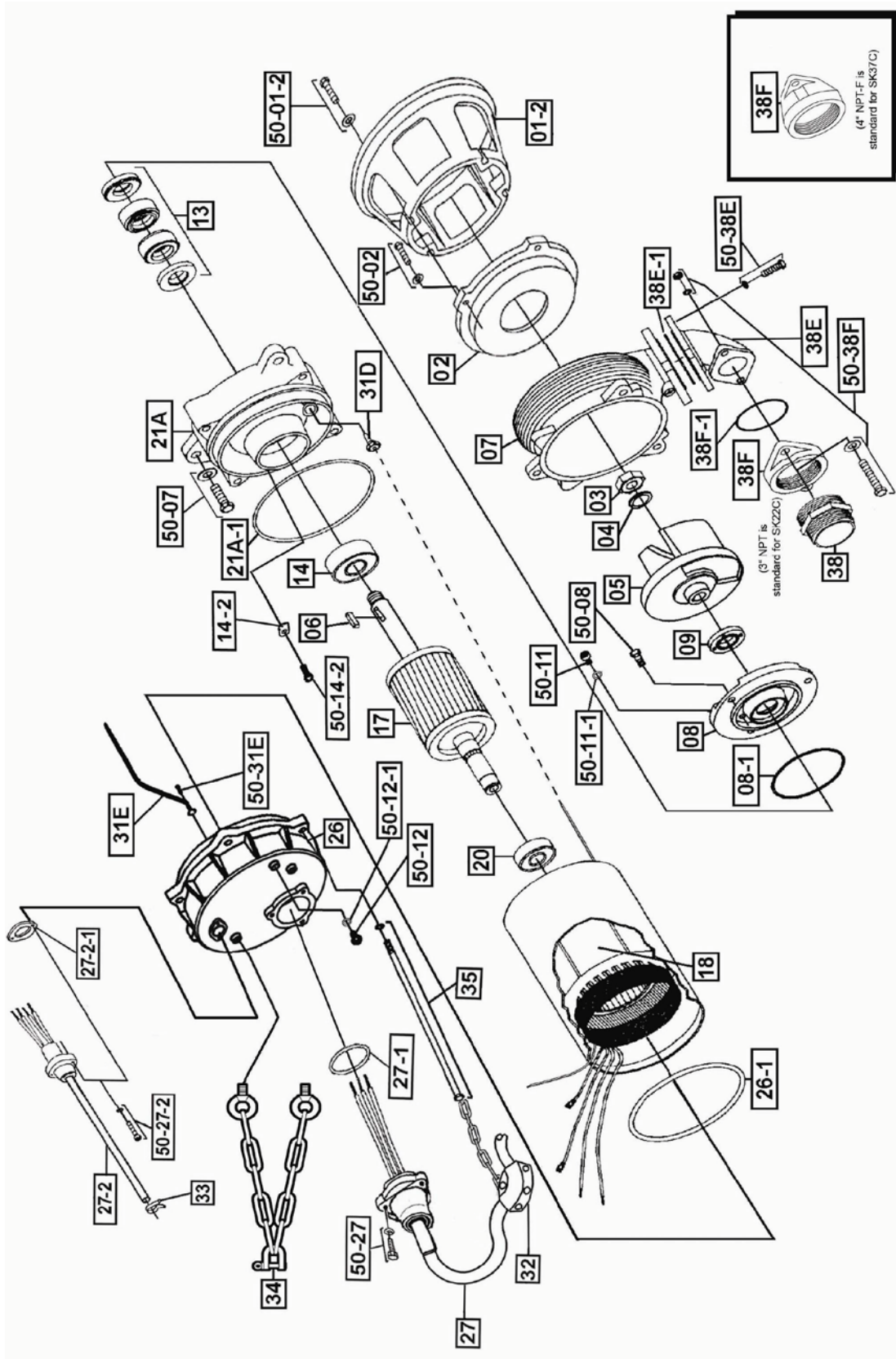


EXPLODED VIEW OF SKX08CSS-F, SKX15CSS-F



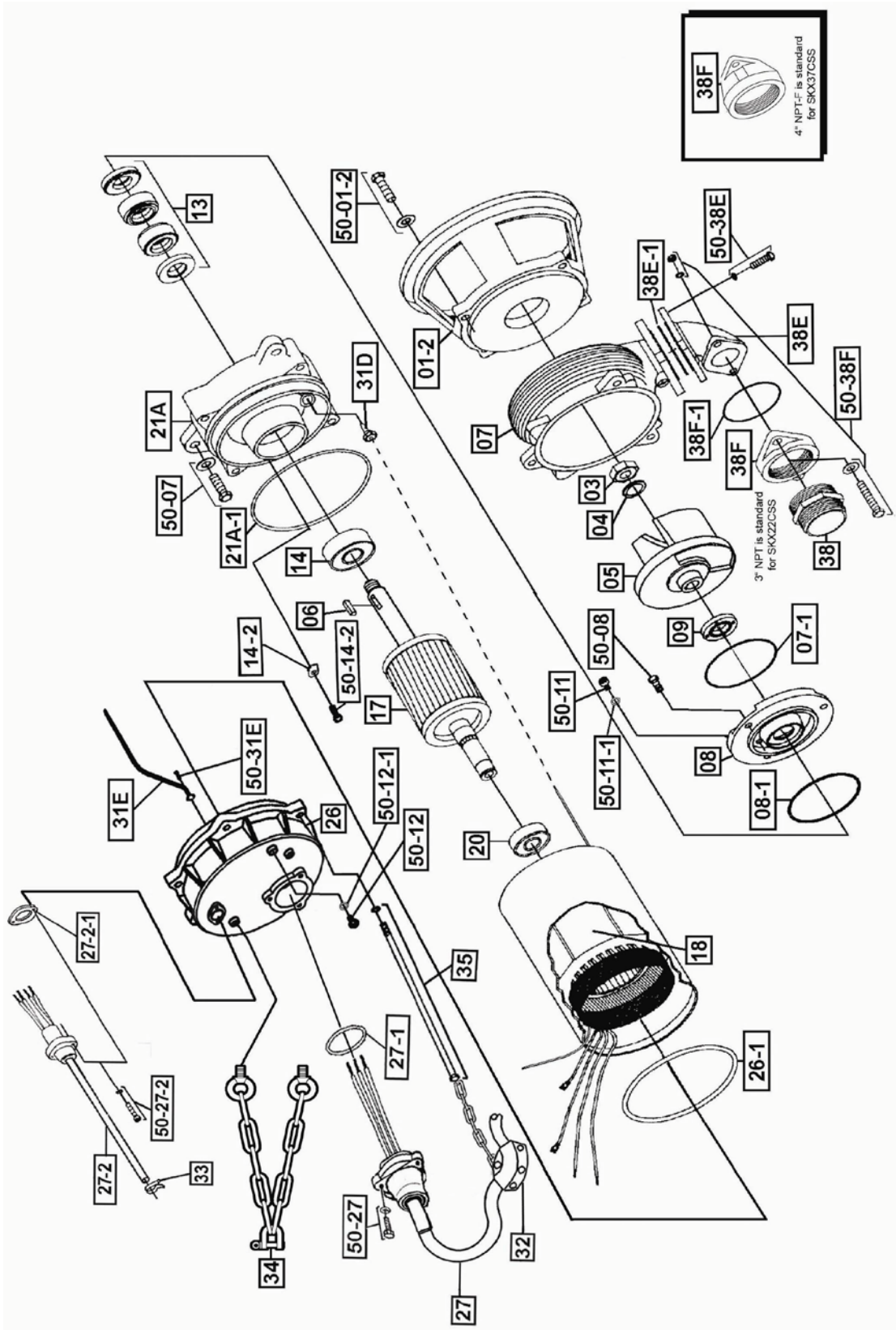


EXPLODED VIEW OF SK22C-F, SK37C-F



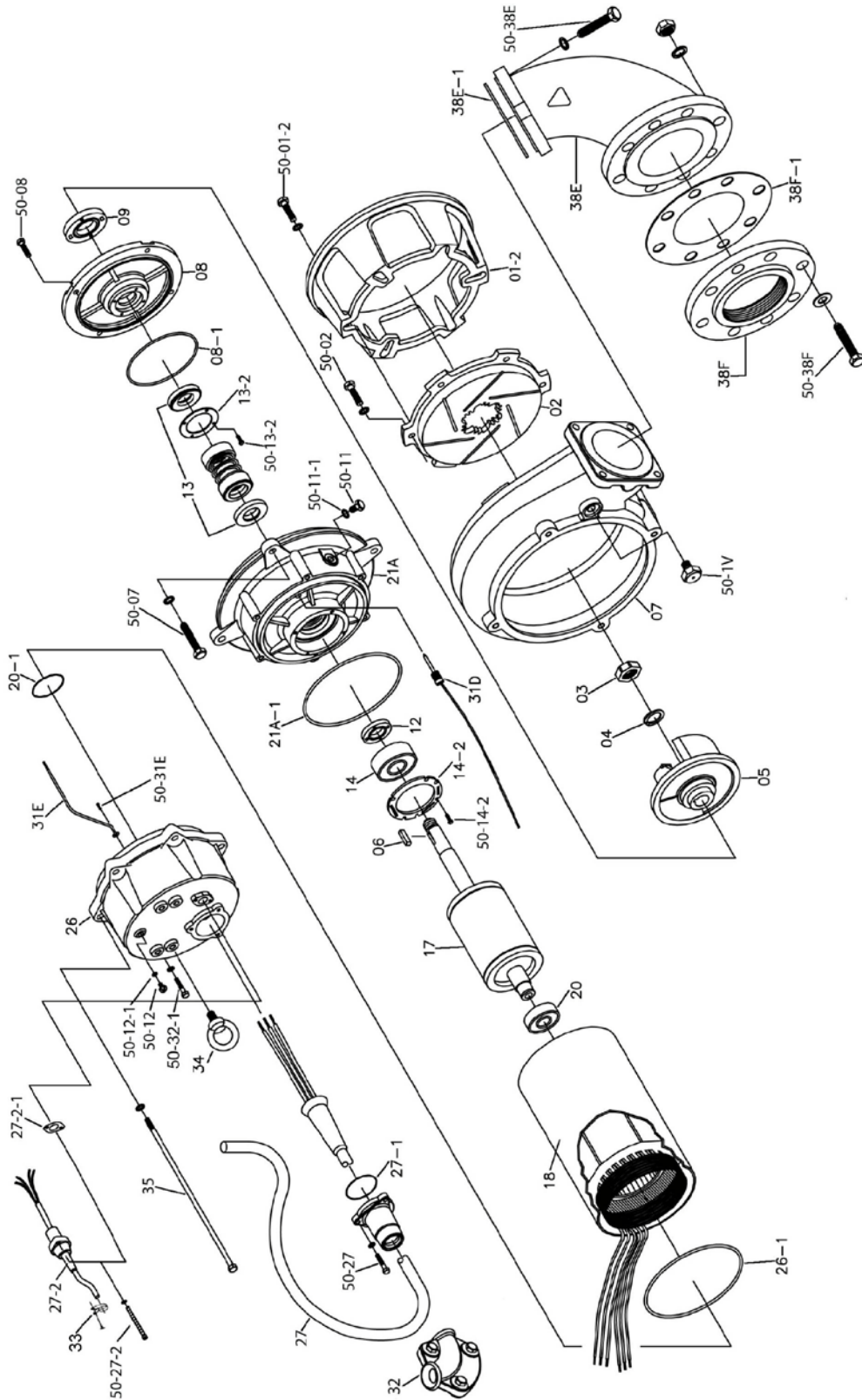


EXPLODED VIEW OF SKX22CSS-F, SKX37CSS-F



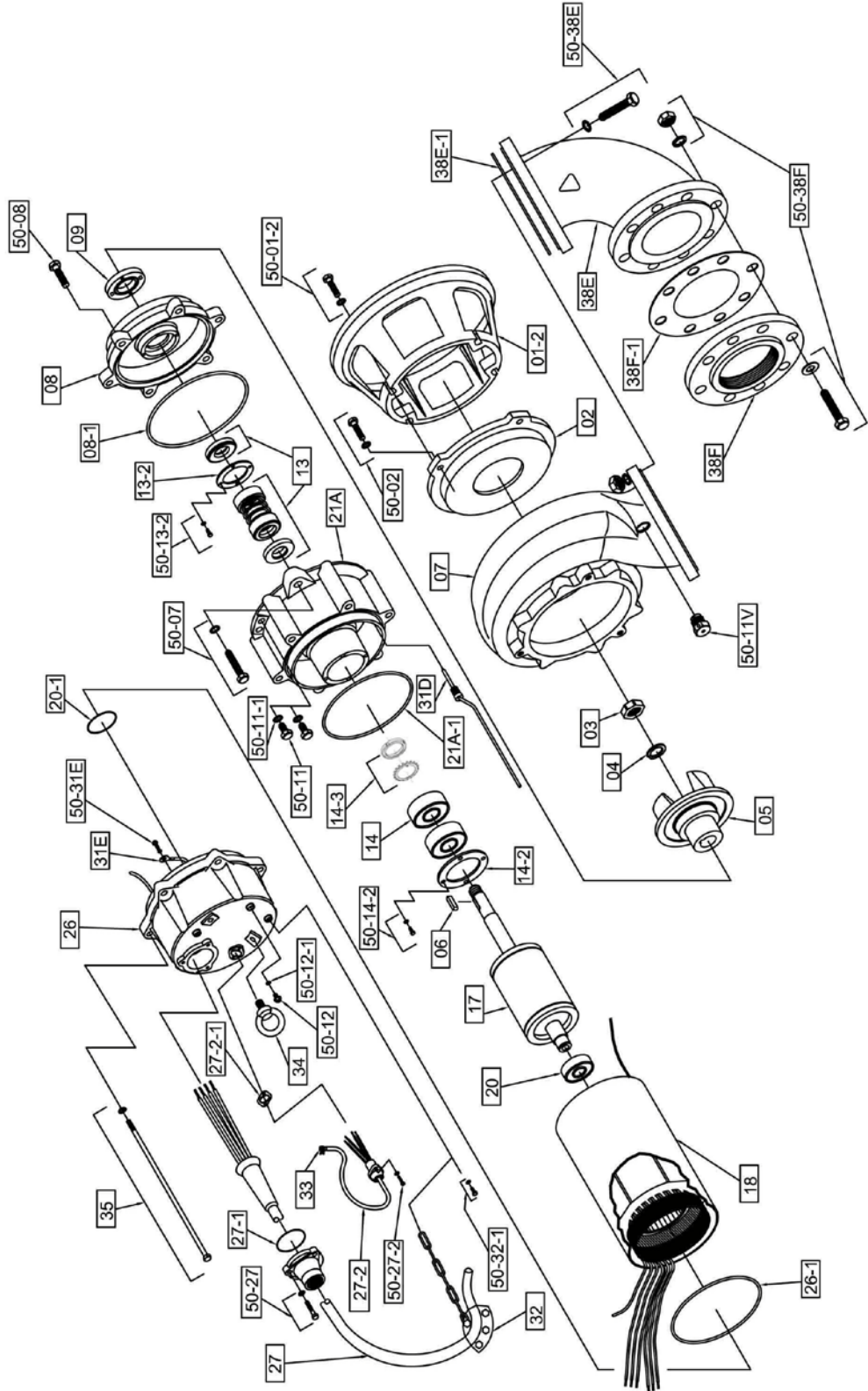


EXPLODED VIEW OF SK55C-F, SKX55CSS-F, SK75C-F, SKX75CSS-F





EXPLODED VIEW OF SK110C-F, SKX110CSS-F, SK150C-F, SKX150CSS-F



SK-F SERIES PARTS LIST

	Pump Model	SK08CF	SK15CF	SK22CF	SK37CF	SK55CF	SK75CF	SK110CF	SK150CF
Pos. No.	Part Description	Part #	Part #	Part #	Part #	Part #	Part #	Part #	Part #
01-2	Stand Only	115B	120B	116B	119B	124C	124C	125C	125C
02	Suction Cover, Cast Iron	-	-	-	-	220	220	221	221
02	Suction Cover, Hi-Chrome	226A	227A	228A	229A	-	-	-	-
03	Impeller Nut	305	305	305	305	308C	308C	308C	308C
04	Impeller Washer	405C	405C	405C	405C	420	420	420	420
05	Impeller, Cast Iron	576C	577C	578C	579C	587C	588C	562C	563C
05	Impeller, Hi-Chrome	576A	577A	578A	579A	-	-	-	-
06	Impeller Key	602	602	602	602	610	610	610	613
07	Pump Housing	719C	718C	721C	723C	744C	744C	747C	747C
08	Oil Chamber Cover	810C	810C	822C	822C	823C	823C	825C	825C
08-1	O-Ring (Kit Only)	Kit	Kit	Kit	Kit	Kit	Kit	Kit	Kit
09	Lip Seal FKM	903CV	903CV	905CV	905CV	914CV	914CV	914CV	914CV
12	Lip Seal for Lower Bearing	-	-	-	-	910CV	910CV	-	-
13	Mechanical Seal FKM	200214	200214	200301	200301	200307	200307	200307	200307
13-2	Mechanical Seal Retainer	-	-	-	-	1377	1377	1377	1377
14	Lower Ball Bearing (* =Qty 2 Needed)	1401	1401	1402	1402	2012	2012	* 2012	* 2012
14-2	Lower Bearing Retainer	1453	1453	1453	1453	1454	1454	1455	1455
14-3	Lock Nut & Lock Washer							200424	200424
17	Rotor w/ Shaft, 3PH	1708C	1709C	1710C	1711C	1724C	1725C	1726C	1727C
18	Stator w/ Casing 208V, 3PH	200525	200529	200533	200537	200670	-	-	-
18	Stator w/ Casing 230/460V, 3PH	200547	200551	200555	200559	200573	200577	200581	-
18	Stator w/ Casing 460V, 3PH	-	-	-	-	-	-	-	200585
18	Stator w/ Casing 575V, 3PH	200589	200593	200597	200601	200617	200623	200630	200637
20	Upper Ball Bearing	2002	2002	2004	2004	2011	2011	2011	2011
20-1	O-Ring (Kit Only)	-	-	-	-	Kit	Kit	Kit	Kit
21A	Oil Chamber/Motor Housing	752C	752C	753C	753C	754C	754C	755C	755C
21A-1	O-Ring (Kit Only)	Kit	Kit	Kit	Kit	Kit	Kit	Kit	Kit
26	Pump Top Cover (w/ Sensor Opening)	2670B	2670B	2671B	2671B	2673	2673	2674	2675
26-1	O-Ring Kit Only	Kit	Kit	Kit	Kit	Kit	Kit	Kit	Kit
27	Power Cable w/ Gland- 3PH(high temp)	2722F	2722F	2731F	2731F	2731F	2731F	2727F	2727F
27-1	O-Ring Kit Only	Kit	Kit	Kit	Kit	Kit	Kit	Kit	Kit
27-2	Seal Minder/Temp. Sensor Cord (High Temp)	2736BF	2736BF	2736BF	2736BF	2736BF	2736BF	2736BF	2736BF
27-2-1	O-Ring Kit Only	Kit	Kit	Kit	Kit	Kit	Kit	Kit	Kit
31D	Seal Minder Sensor w/ wire	2330	2330	2330	2330	2330	2330	2330	2330
31E	Ground Wire w/Ring Term.	2776	2776	2776	2776	2776	2776	2776	2776

32	Power Cord Line Clip / Strain Relief	3200	3200	3208	3208	3210	3210	3211	3211
33	Seal Minder Sensor Cord Line Clip	3203	3203	3203	3203	3203	3203	3203	3203
34	Handle / Chain Handle	3420	3420	3413	3413	-	-	-	-
34	Lifting Ring	-	-	-	-	3423	3423	3423	3423
35	Rod Bolts	4105	4106	4107	4108	4112	4113	4114	4115
38	Discharge Nipple 2"	3802	-	-	-	-	-	-	-
38	Discharge Nipple 3"	-	3804	3804	3804	-	-	-	-
38E	Discharge Elbow	3831	3820C	3820C	3820C	3833	3833	3834C	3834C
38E-1	Gasket, Disch. Elbow FKM	4075V	4072V	4072V	4072V	4073V	4073V	4076V	4076V
38F	Discharge Flange 2"	3822	-	-	-	-	-	-	-
38F	Discharge Flange 3"	-	3810	3810	3810	-	-	-	-
38F	Discharge Flange 4"	-	-	3816C	3816C	3835	3835	-	-
38F	Discharge Flange 6"	-	-	-	-	-	-	3812C	3812C
38F-1	Gasket, Disch. Flange FKM	4070V	4071V	4071V	4071V	4074V	4074V	4076V	4076V
50-01-2	Bolt for Strainer/Stand	5013	5013	5013	5013	5022	5022	5069	5069
50-02	Bolt for Suction Cover	5013	5013	5013	5013	5022	5022	5069	5069
50-07	Screw for Oil Chamber/Motor Housing	5013	5013	5013	5013	5061	5061	5070	5070
50-08	Screw for Oil Chamber Cover	5009	5009	5009	5009	5034	5034	5071	5071
50-11	Screw for Oil Fill	5008	5008	5008	5008	5051	5051	5072	5072
50-11-1	O-Ring (Kit Only)	Kit	Kit	Kit	Kit	Kit	Kit	Kit	Kit
50-11V	Air Release Valve	-	-	-	-	5080	5080	5080	5080
50-12	Screw for Pressure Check	5008	5008	5008	5008	5008	5008	5008	5008
50-12-1	O-Ring (Kit Only)	Kit	Kit	Kit	Kit	Kit	Kit	Kit	Kit
50-13-2	Screw for Seal Retainer	-	-	-	-	5001	5001	5001	5001
50-14-2	Screw for Brg. Retainer	5009	5009	5009	5009	5010	5010	5010	5010
50-27	Screw for Power Cord	5004	5004	5004	5004	5034	5034	5034	5034
50-27-2	Screw for Oil Sensor Cord	5004	5004	5004	5004	5004	5004	5004	5004
50-31E	Screw for Ground Wire	5000	5000	5000	5000	5000	5000	5000	5000
50-32/50-33	Screw for Line Clip	5001	5001	-	-	-	-	-	-
50-32-1	Bolt for Power Cord Chain	-	-	-	-	5077	5077	5077	5077
50-34	Screw for Handle	5009	5009	-	-	-	-	-	-
50-38E	Bolt for Discharge Elbow	5041	5043	5043	5043	5066	5066	5068	5068
50-38F	Bolt for Discharge Flange	5083	5083	5083	5041	5067	5067	5068	5068
	O-Ring Kit - FKM	4046CV	4046CV	4044CV	4044CV	4052CV	4052CV	4054CV	4054CV

SKX-F SERIES PARTS LIST

	Pump Model	SKX08CSSF	SKX15CSSF	SKX22CSSF	SKX37CSSF	SKX55CSSF	SKX75CSSF	SKX110CSSF	SKX150CSSF
Pos. No.	Part Description	Part #	Part #	Part #	Part #	Part #	Part #	Part #	Part #
01-2	Stand Only	115PX	120PX	116PX	119PX	124CX	124CX	125CX	125CX
02	Suction Cover	-	-	-	-	220X	220X	221X	221X
03	Impeller Nut	305	305	305	305	308C	308C	308C	308C
04	Impeller Washer	405C	405C	405C	405C	420	420	420	420
05	Impeller	576CX	577CX	578CX	579CX	587CX	588CX	562CX	563CX
06	Impeller Key	602	602	602	602	610	610	610	613
07	Pump Housing	719PX	718PX	721PX	723PX	744CX	744CX	747CX	747CX
07-1	O-Ring (Kit Only)	Kit	Kit	Kit	Kit	-	-	-	-
08	Oil Chamber Cover	810PX	810PX	822PX	822PX	823CX	823CX	825CX	825CX
08-1	O-Ring (Kit Only)	Kit	Kit	Kit	Kit	Kit	Kit	Kit	Kit
09	Lip Seal FKM	903CV	903CV	905CV	905CV	914CV	914CV	914CV	914CV
12	Lip Seal for Lower Bearing	-	-	-	-	910CV	910CV	-	-
13	Mechanical Seal FKM	200214	200214	200301	200301	200307	200307	200307	200307
13-2	Mechanical Seal Retainer	-	-	-	-	1377	1377	1377	1377
14	Lower Ball Bearing (*=qty 2 Needed)	1401	1401	1402	1402	2012	2012	* 2012	* 2012
14-2	Lower Bearing Retainer	1453	1453	1453	1453	1454	1454	1455	1455
14-3	Lock Nut & Lock Washer							200424	200424
17	Rotor w/ Shaft, 3PH	1708CX	1709CX	1710CX	1711CX	1724CX	1725CX	1726CX	1727CX
18	Stator w/ Casing 208V, 3PH	200527	200531	200535	200539	200672	-	-	-
18	Stator w/ Casing 230/460V,3PH	200549	200553	200557	200561	200575	200579	200583	-
18	Stator w/ Casing 460V,3PH	-	-	-	-	-	-	-	200587
18	Stator w/ Casing 575V, 3PH	200591	200595	200599	200603	200619	200625	200632	200639
20	Upper Ball Bearing	2002	2002	2004	2004	2011	2011	2011	2011
20-1	O-Ring (Kit Only)	-	-	-	-	Kit	Kit	Kit	Kit
21A	Oil Chamber/Motor Housing	752PX	752PX	753PX	753PX	754CX	754CX	755CX	755CX
21A-1	O-Ring (Kit Only)	Kit	Kit	Kit	Kit	Kit	Kit	Kit	Kit
26	Pump Top Cover (w/ Sensor opening)	2670BX	2670BX	2671PX	2671PX	2673X	2673X	2674X	2675X
26-1	O-Ring (Kit Only)	Kit	Kit	Kit	Kit	Kit	Kit	Kit	Kit
27	Power Cable w/ Gland- 3PH(high temp)	2722F	2722F	2731XF	2731XF	2731XF	2731XF	2727XF	2727XF
27-1	O-Ring (Kit Only)	Kit	Kit	Kit	Kit	Kit	Kit	Kit	Kit
27-2	Seal Minder/Temp. Sensor Cord (High Temp)	2736BXF	2736BXF	2736BXF	2736BXF	2736BXF	2736BXF	2736BXF	2736BXF
27-2-1	O-Ring Kit Only	Kit	Kit	Kit	Kit	Kit	Kit	Kit	Kit
31D	Seal Minder Sensor w/ wire	2330	2330	2330	2330	2330	2330	2330	2330
31E	Ground Wire w/Ring Term.	2776	2776	2776	2776	2776	2776	2776	2776
32	Power Cord Line Clip / Strain Relief	3200	3200	3216	3217	3210	3210	3211	3211
33	Seal Minder Sensor Cord Line Clip	3203	3203	3203	3203	3203	3203	3203	3203
34	Handle / Chain Handle	3420	3420	3413X	3413X	-	-	-	-

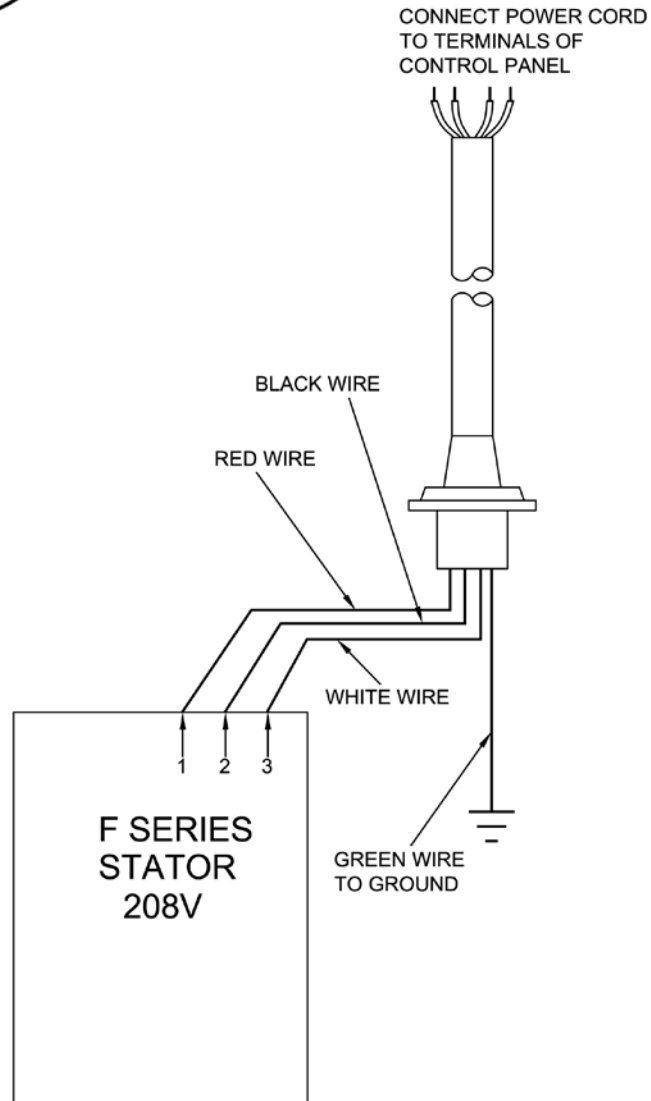
34	Lifting Ring	-	-	-	-	3423X	3423X	3423X	3423X
35	Rod Bolts	4120	4121	4122	4123	4112	4113	4114	4115
38	Discharge Nipple 2"	3802X	-	-	-	-	-	-	-
38	Discharge Nipple 3"	-	3804X	3804X	3804X	-	-	-	-
38E	Discharge Elbow	3831PX	3820PX	3820PX	3820PX	3833X	3833X	3834CX	3834CX
38E-1	O-Ring, Discharge Elbow FKM	5127V	5128V	5128V	5128V	-	-	-	-
38E-1	Gasket, Discharge Elbow FKM	-	-	-	-	4073V	4073V	4076V	4076V
38F	Discharge Flange 2"	3822PX	-	-	-	-	-	-	-
38F	Discharge Flange 3"	-	3810PX	3810PX	3810PX	-	-	-	-
38F	Discharge flange 4"	-	-	3816PX	3816PX	3835X	3835X	-	-
38F	Discharge flange 6"	-	-	-	-	-	-	3812CX	3812CX
38F-1	O-Ring 2" Discharge Flange FKM	5125V	-	-	-	-	-	-	-
38F-1	O-Ring, 3" Discharge Flange FKM	-	5126V	5126V	5126V	-	-	-	-
38F-1	O-Ring, 4" Discharge Flange FKM	-	-	5129V	5129V	-	-	-	-
38F-1	Gasket, 4" Discharge Flange FKM	-	-	-	-	4074V	4074V	-	-
38F-1	Gasket, 6" Discharge Flange FKM	-	-	-	-	-	-	4076V	4076V
50-01-2	Bolt for Strainer/Stand	5013	5013	5013	5013	5022	5022	5069	5069
50-02	Bolt for Suction Cover	-	-	-	-	5022	5022	5069	5069
50-07	Screw for Oil Chamber/Motor Housing	5097	5097	5097	5097	5061	5061	5070	5070
50-08	Screw for Oil Chamber Cover	5009	5009	5009	5009	5034	5034	5071	5071
50-11	Screw for Oil Fill	5008	5008	5008	5008	5051	5051	5072	5072
50-11-1	O-Ring (Kit Only)	Kit	Kit	Kit	Kit	Kit	Kit	Kit	Kit
50-11V	Air Release Valve	-	-	-	-	5080	5080	5080	5080
50-12	Screw for Pressure Check	5008	5008	5008	5008	5008	5008	5008	5008
50-12-1	O-Ring (Kit Only)	Kit	Kit	Kit	Kit	Kit	Kit	Kit	Kit
50-13-2	Screw for Seal Retainer	-	-	-	-	5001	5001	5001	5001
50-14-2	Screw for Bearing Retainer Plate	5009	5009	5009	5009	5010	5010	5010	5010
50-27	Screw for Power Cord	5095	5095	5034	5034	5034	5034	5034	5034
50-27-2	Screw for Sensor Cord	5095	5095	5095	5095	5095	5095	5095	5095
50-31E	Screw for Ground Wire	5000	5000	5000	5000	5000	5000	5000	5000
50-32/50-33	Screw for Line Clip	5001	5001	-	-	-	-	-	-
50-32-1	Bolt for Power Cord Strain Relief Chain	-	-	-	-	5077	5077	5077	5077
50-34	Screw for Handle	5009	5009	-	-	-	-	-	-
50-38E	Bolt for Discharge Elbow	5093	5061	5061	5061	5066	5066	5068	5068
50-38F	Bolt for Discharge Flange	5014	5093	5093	5093	5067	5067	5068	5068
	O-Ring Kit - FKM	4046PV	4046PV	4044PV	4044PV	4052CV	4052CV	4054CV	4054CV

THREE PHASE WIRING DIAGRAMS

208V



WIRING DIAGRAM THREE PHASE 208V (FOR F SERIES FAHRENHEIT PUMPS ONLY)



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SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE

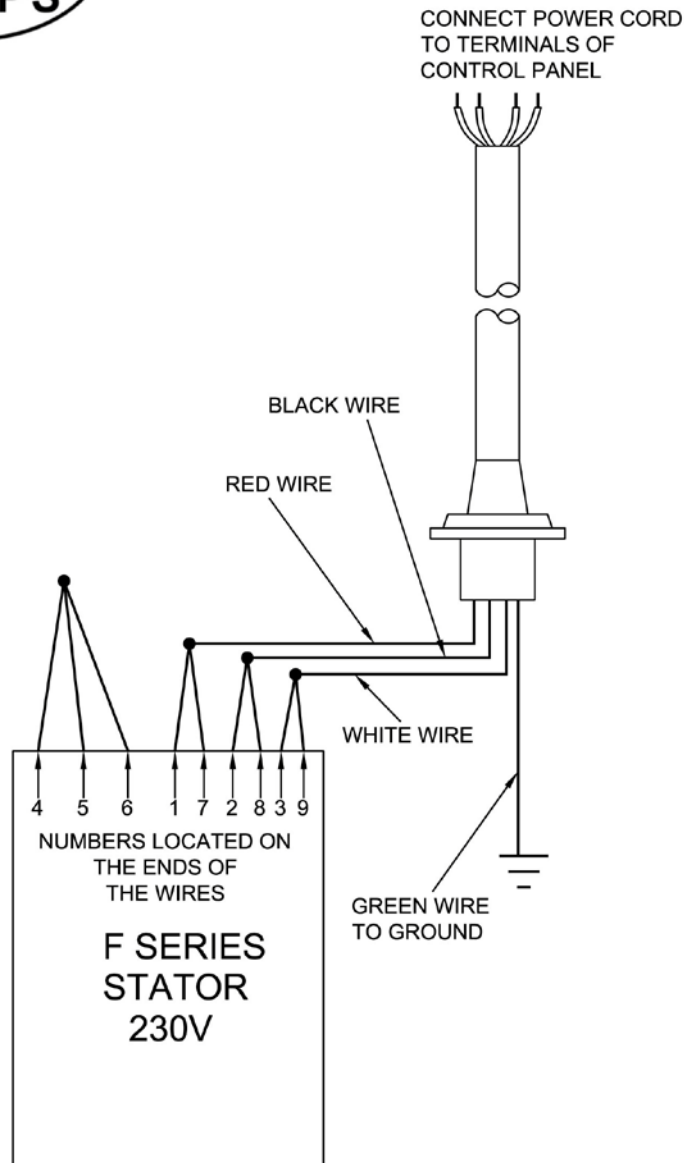
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230V



**WIRING DIAGRAM
THREE PHASE 230V**

(FOR F SERIES FAHRENHEIT PUMPS ONLY)



NOTE: 20 HP & 30 HP MOTORS ARE NOT AVAILABLE IN 230V.

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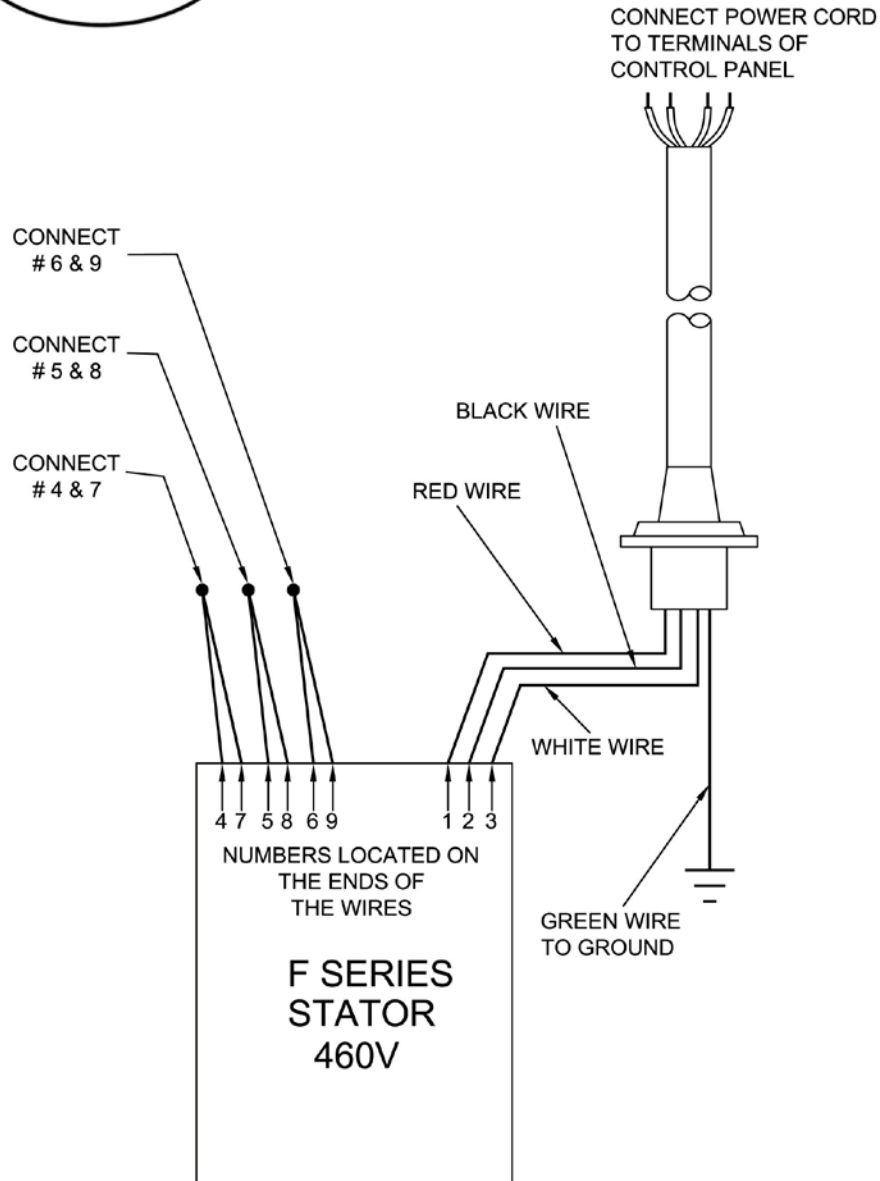
SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE

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460V



WIRING DIAGRAM
THREE PHASE 460V
(FOR F SERIES FAHRENHEIT PUMPS ONLY)



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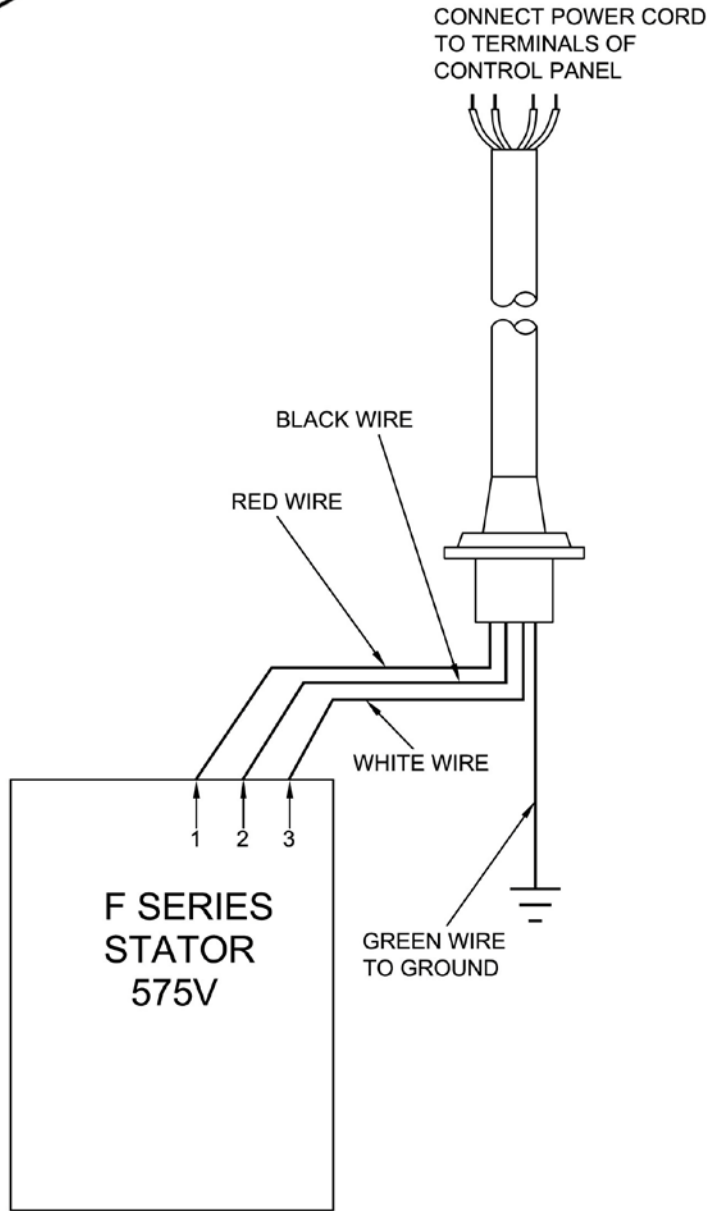
SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE

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575V



WIRING DIAGRAM
THREE PHASE 575V
(FOR F SERIES FAHRENHEIT PUMPS ONLY)



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SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE

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

SEAL MINDER® - THERMAL MOTOR SENSOR SWITCH

(For high temperature pump models)

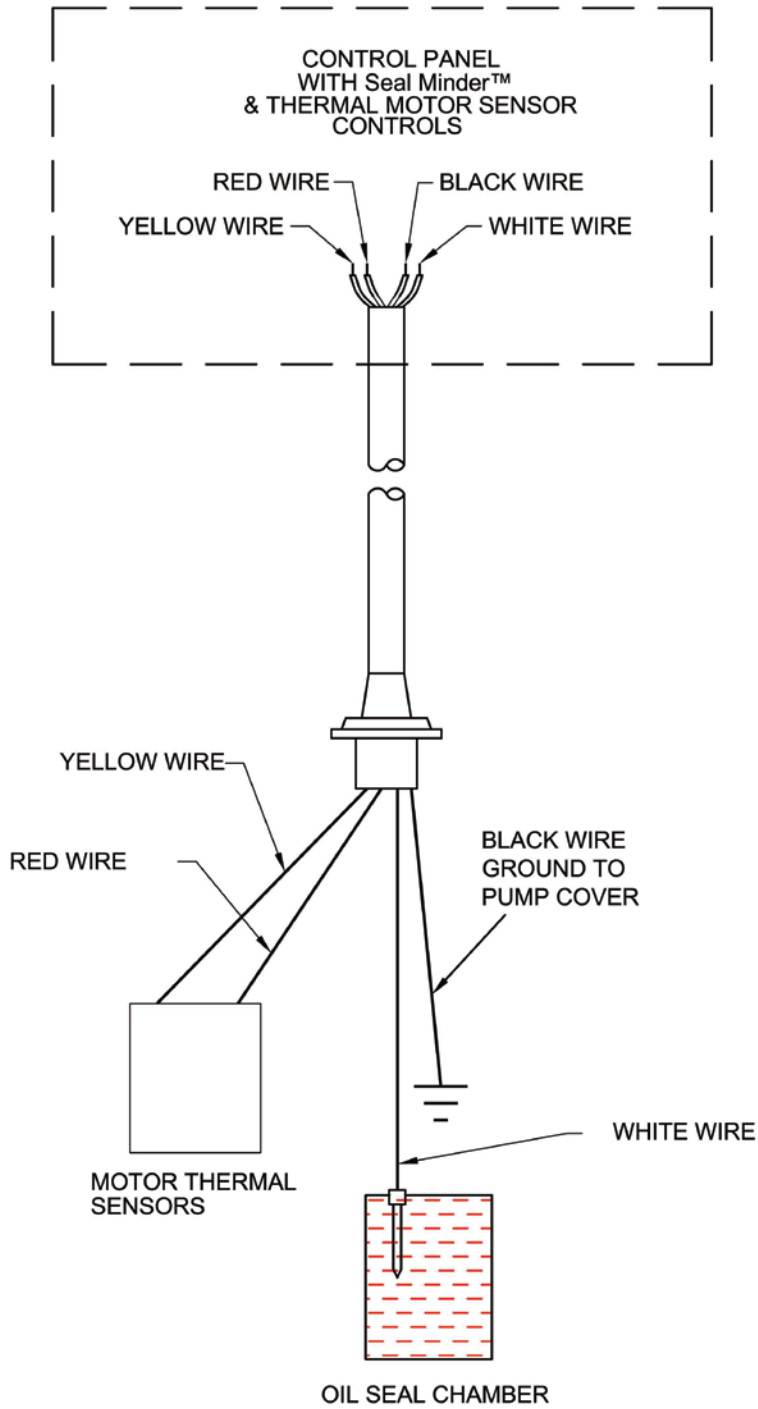
Seal Minder:

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** sensor probe is 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.

Along, with the **Seal Minder**, the **FAHRENHEIT**™ Series high temperature pumps also feature thermal temperature sensor switches that are imbedded into the motor stator windings. Three switches are imbedded into the stator windings and wired in series. The leads are connected to the pump control panel through the sensor cable. If the windings would see a temperature above 300 degrees F, then the switch(s) would open and cut power to the pump. Once the temperature dropped below 300 degrees F, the switch(s) would reset, and the pump would be returned to a state of operation. This feature is designed to prevent damage to the stator winding and allow for longer pump life.

The sensor cable consists of four leads, two are connected to the **Seal Minder**, and two are connected to the thermal sensor switches located in the stator windings. These four leads run to the pump control panel and connect to the proper connections points for seal alarm and thermal cut off. The black and white wires are for the **Seal Minder** connections and the seal sensors will be connected to the yellow and red wires. The three phase automatic wiring diagram shown earlier in the manual will give a guide to the connections in the control panel. The manual for the control panel should be consulted for the exact connections.

The sensor cable with **Seal Minder** and thermal sensor switch connections is standard on all **FAHRENHEIT**™ Series high temperature pumps. The cable is designed for a high temperature environment. The proper replacement part can be found parts list found in this manual. BJM Pumps, can supply a control with the Seal Minder and Thermal sensor switch option. Separate stand alone Seal Minder alarm panels are also available. Consult your BJM Pumps representative for part numbers and ordering details. BJM Pumps requires the **Seal Minder** and thermal sensor switches be used. Failure to connect or misuse of these devices will void warranty.



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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)			
<p align="center"> Red-Black____ohms Red-White____ohms White-Black____ohms </p>			
Resistance of ground circuit between control panel and outside of pumps _____ Ohms			
MEG OHM CHECK OF INSULATION			
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
Float Operation Check		
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		
NOTE: At no time should hole be made in top of control panel, unless proper sealing devices are utilized.		
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		
SINGLE PHASE		
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
THREE PHASE		
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
FINAL CHECK		
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:		

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