INSTALLATION, OPERATION & MAINTENANCE MANUAL

S & SX SERIES
SIDE DISCHARGE
Electric Submersible Pumps

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

CAST IRON

SINGLE PHASE	THREE PHASE
S750C	S08C
S1500C	S15C
	S22C
	S37C
	S55C
	S75C

316 STAINLESS STEEL

SINGLE PHASE	THREE PHASE
SX750CSS	SX08CSS
SX1500CSS	SX15CSS
	SX22CSS
	SX37CSS
	SX55CSS
	SX75CSS

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.

Version 1/27/16

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BJMPumps

INTRODUCTION

This Installation, Operation and Maintenance manual provides important information on safety and the proper inspection, disassembly, assembly and testing of the BJM Pumps® S & SX Series submersible pump. This manual also contains information to optimize performance and longevity of your **BJM Pumps®** submersible pump.

The submersible S Series pumps are designed to pump water. The SX Series pumps are designed to pump corrosive liquids in concentrations chemically compatible with 316SS and FKM. The S & SX Series pumps are not explosion-proof. They are not designed to pump volatile or flammable liquids.

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

If you have any questions regarding the inspection, disassembly, assembly or testing please contact your **BJM Pumps®** distributor, or Industrial Flow Solutions Operating, LLC.

Industrial Flow Solutions Operating, LLC
104 John W Murphy Drive
New Haven, CT 06513, USA

Phone:860-399-5937
Fax: 860-399-7784

Information, including pump data sheets and performance curves, is also available on our web site: www.flowsolutions.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 Industrial Flow Solutions Operating, 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 cable (and Seal Minder® cable, 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 Industrial Flow Solutions Operating, 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 below.

OIL FILL QUANTITY/TYPE

	OIL IN SEAL CHAMBER		
MODEL	**U.S. FL. OZ.**	**CC.**	**TYPE OF OIL**
S750C	7.8	230	ISO 32 NSF Food Grade Mineral Oil
S750C-3	7.8	230	ISO 32 NSF Food Grade Mineral Oil
S1500C	7.8	230	ISO 32 NSF Food Grade Mineral Oil
S08C	7.8	230	ISO 32 NSF Food Grade Mineral Oil
S08C-3	7.8	230	ISO 32 NSF Food Grade Mineral Oil
S15C	7.8	230	ISO 32 NSF Food Grade Mineral Oil
S22C	11.8	350	ISO 32 NSF Food Grade Mineral Oil
S37C	11.8	350	ISO 32 NSF Food Grade Mineral Oil
S55C	35.5	1050	ISO 32 NSF Food Grade Mineral Oil
S75C	35.5	1050	ISO 32 NSF Food Grade Mineral Oil

	OIL IN SEAL CHAMBER		
MODEL	**U.S. FL. OZ.**	**CC.**	**TYPE OF OIL**
SX750CSS	10.1	300	ISO 32 NSF Food Grade Mineral Oil
SX750CSS-3	10.1	300	ISO 32 NSF Food Grade Mineral Oil
SX1500CSS	10.1	300	ISO 32 NSF Food Grade Mineral Oil
SX08CSS	10.1	300	ISO 32 NSF Food Grade Mineral Oil
SX08CSS-3	10.1	300	ISO 32 NSF Food Grade Mineral Oil
SX15CSS	10.1	300	ISO 32 NSF Food Grade Mineral Oil
SX22CSS	13.5	400	ISO 32 NSF Food Grade Mineral Oil
SX37CSS	13.5	400	ISO 32 NSF Food Grade Mineral Oil
SX55CSS	35.5	1050	ISO 32 NSF Food Grade Mineral Oil
SX75CSS	35.5	1050	ISO 32 NSF Food Grade Mineral Oil

PUMP INSTALLATION

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

⚠WARNING **Risk of electric shock.** Pump models; S750C, SX750C, S750C-3, SX750CSS (115v) are supplied with a grounding conductor and grounding-type attachment plug. 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® S & SX 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.flowsolutions.com or by calling Industrial Flow Solutions Operating, LLC at 860-399-5937. As a general rule, S and SX 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

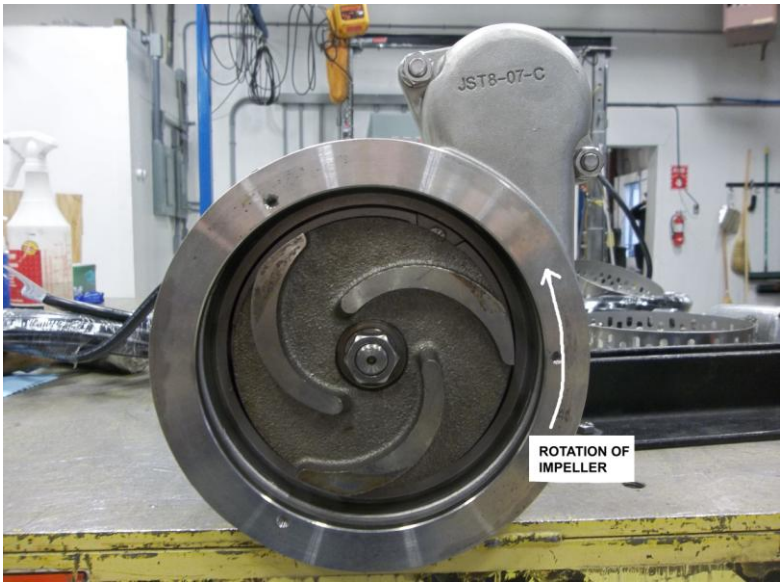
- Do not run the pump dry.
- Pump liquid should not exceed a maximum temperature of 104°F.
- Never place the pump on loose or soft ground. The pump may sink, preventing water from reaching the impeller. Place on a solid surface or suspend the pump with a lifting rope/chain. The S & SX Series pumps are 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.

BJMPumps

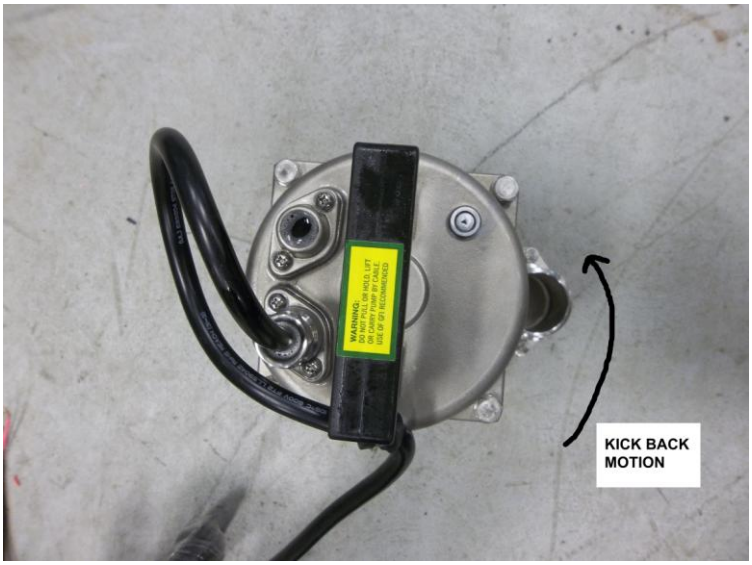
PUMP ROTATION

Two ways to check the correct pump rotation:

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



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



PUMP OPERATION

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

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

TYPICAL MANUAL DEWATERING INSTALLATION

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

All S & SX models are provided with a 33' (10 m) power cable. 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.

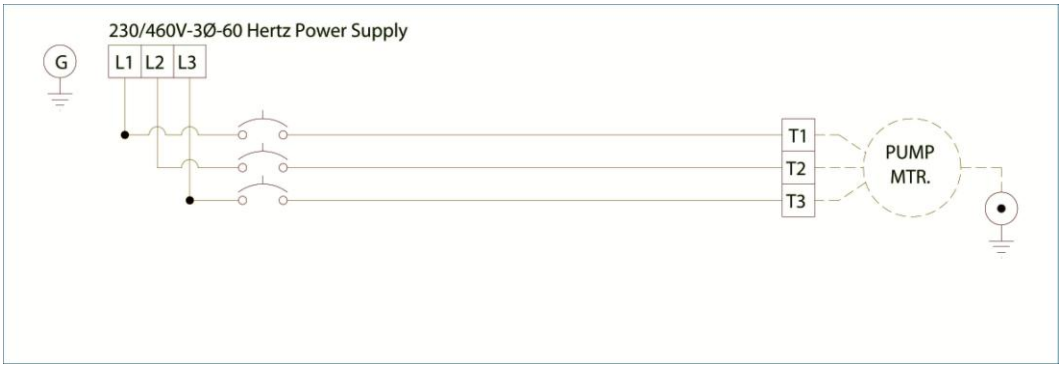
⚠WARNING Do not alter the length or repair any power cable with a splice. The pump motor and cable must be completely waterproof. Damage to the pump or personal injury may result from alterations.

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.

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).



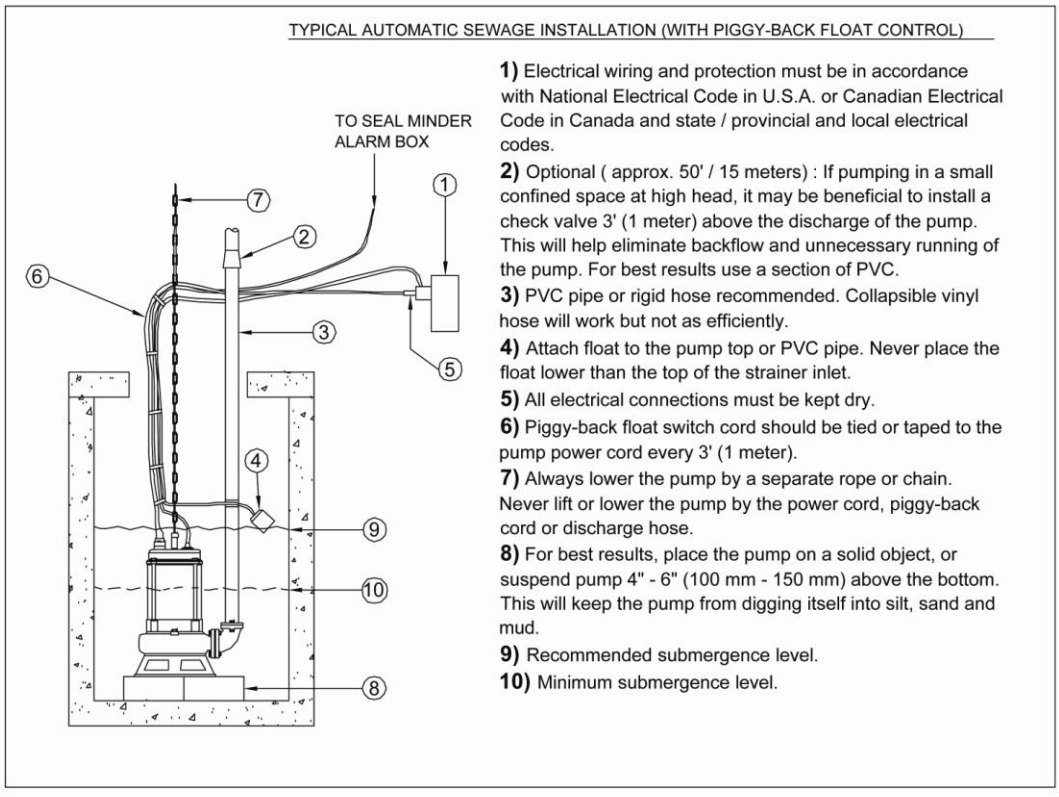
Typical 3 phase manual control 1

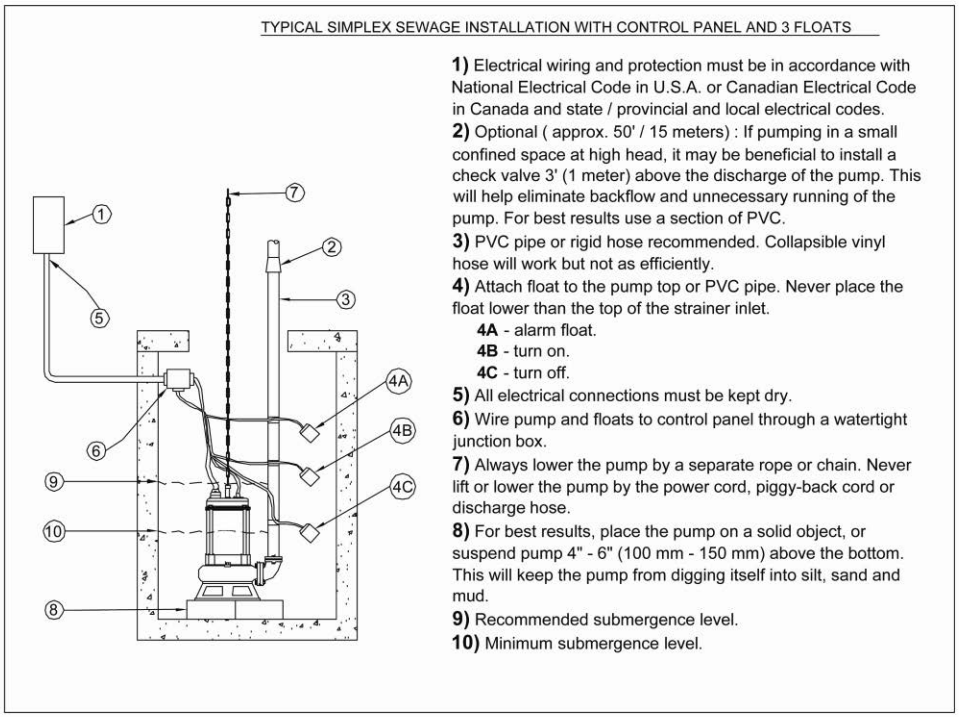
TYPICAL AUTOMATIC DEWATERING INSTALLATION

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

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).

INTENDED METHODS OF CONNECTION

⚠ CAUTION Use with approved motor control that matches motor input in full load amperes. “UTILLISER UN DÉMARREAR 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 cable 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.

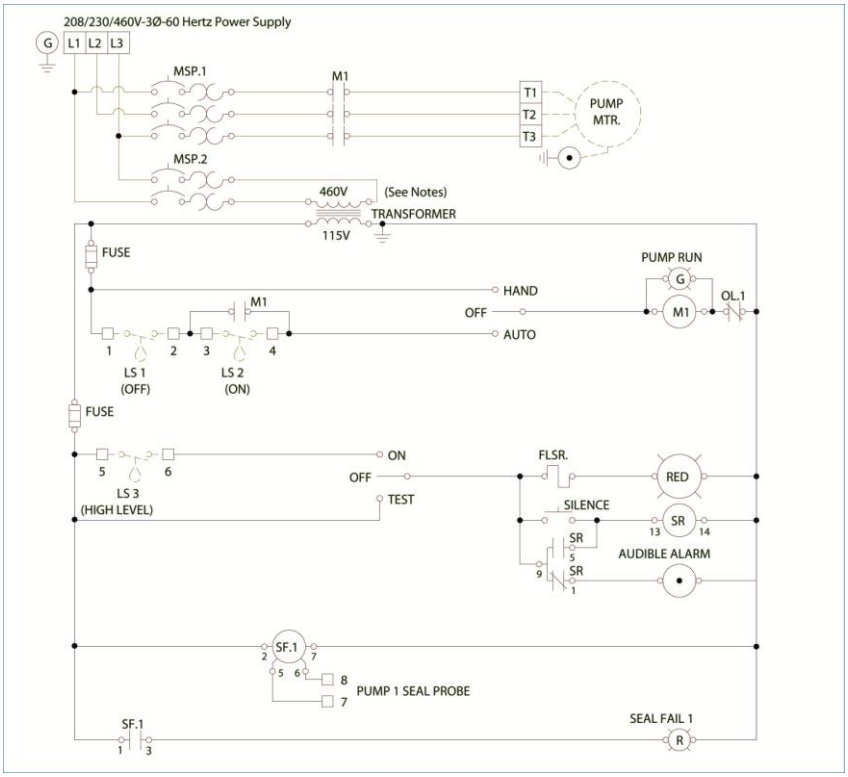
THREE PHASE WIRING INSTRUCTIONS

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

⚠ CAUTION **"Risk of electrical shock"** Do not remove power supply cable 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, check the pump rotation to insure that wiring has been connected properly to power source, and that the green lead of power cable (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 cables must be replaced. **(Never operate a pump with a cut, cracked or damaged power cable.)**
- 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.

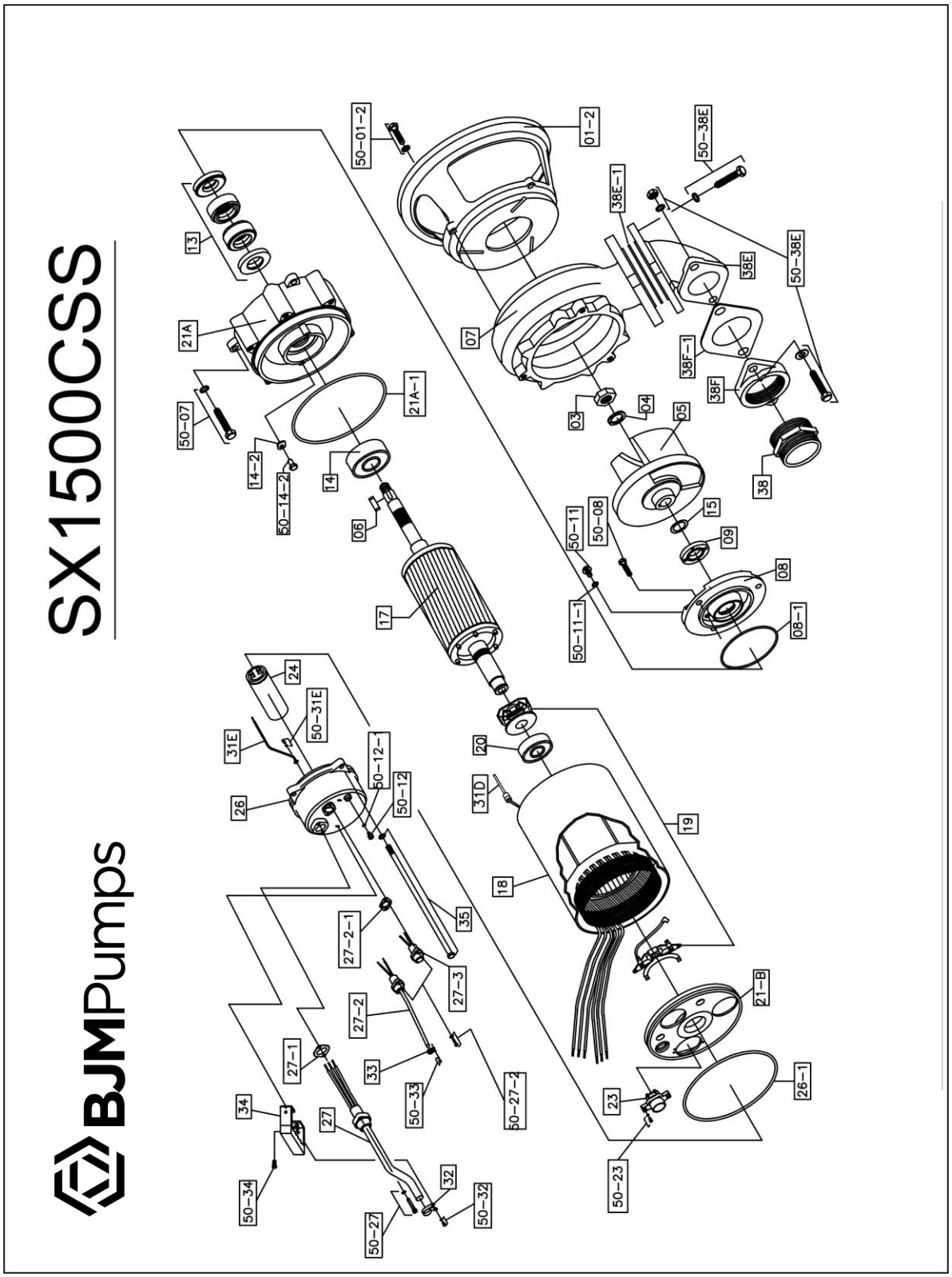
7. Select a set of shims that will give you a measurement that fits between your minimum and maximum calculated shim height. Note that the closer the clearance is to 0.010 inch, the better the shredding and hydraulic performance of the pump.
8. Install the selected shims onto the pump shaft. Then, replace 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 S & SX 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 SX1500CSS



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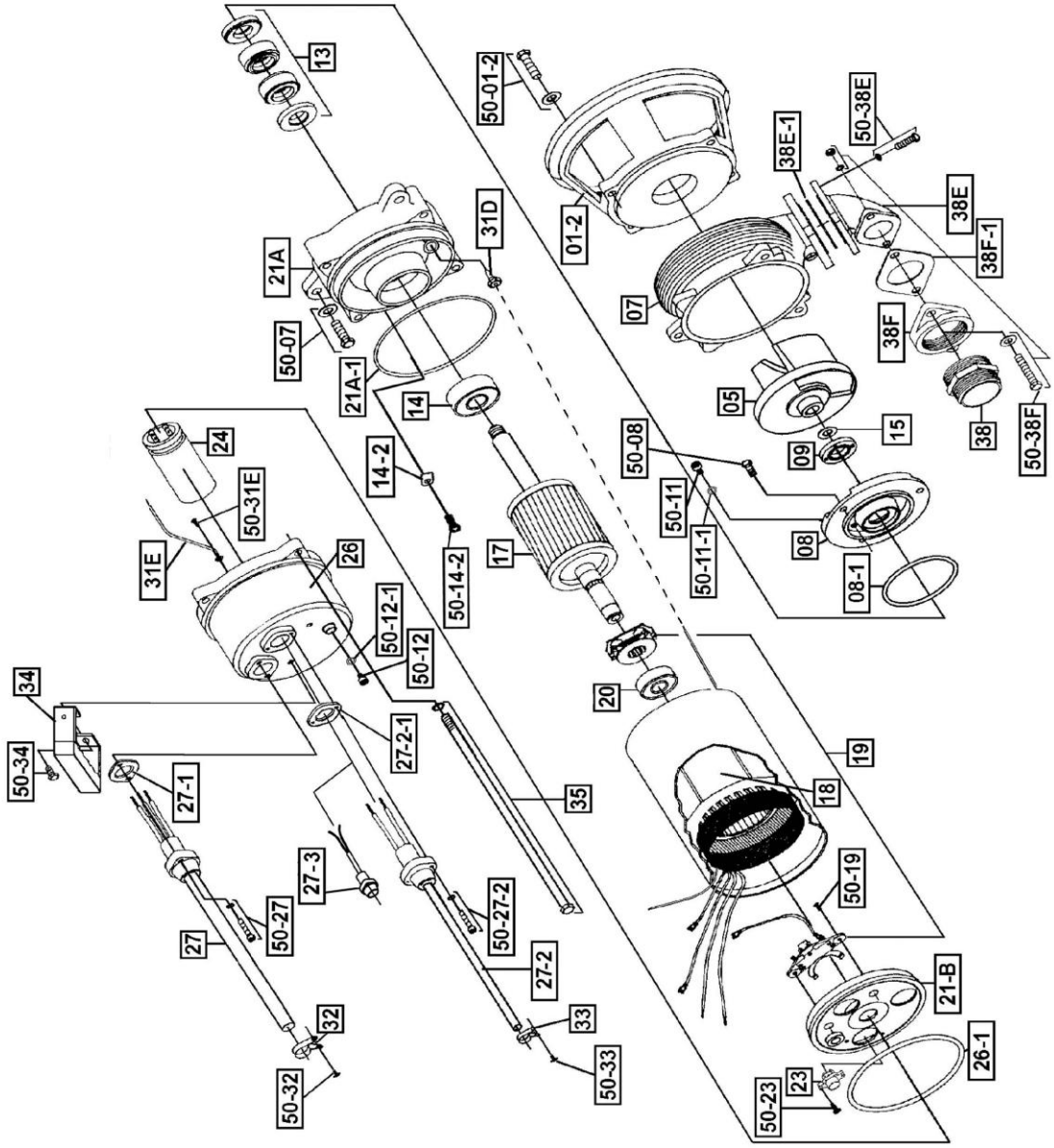
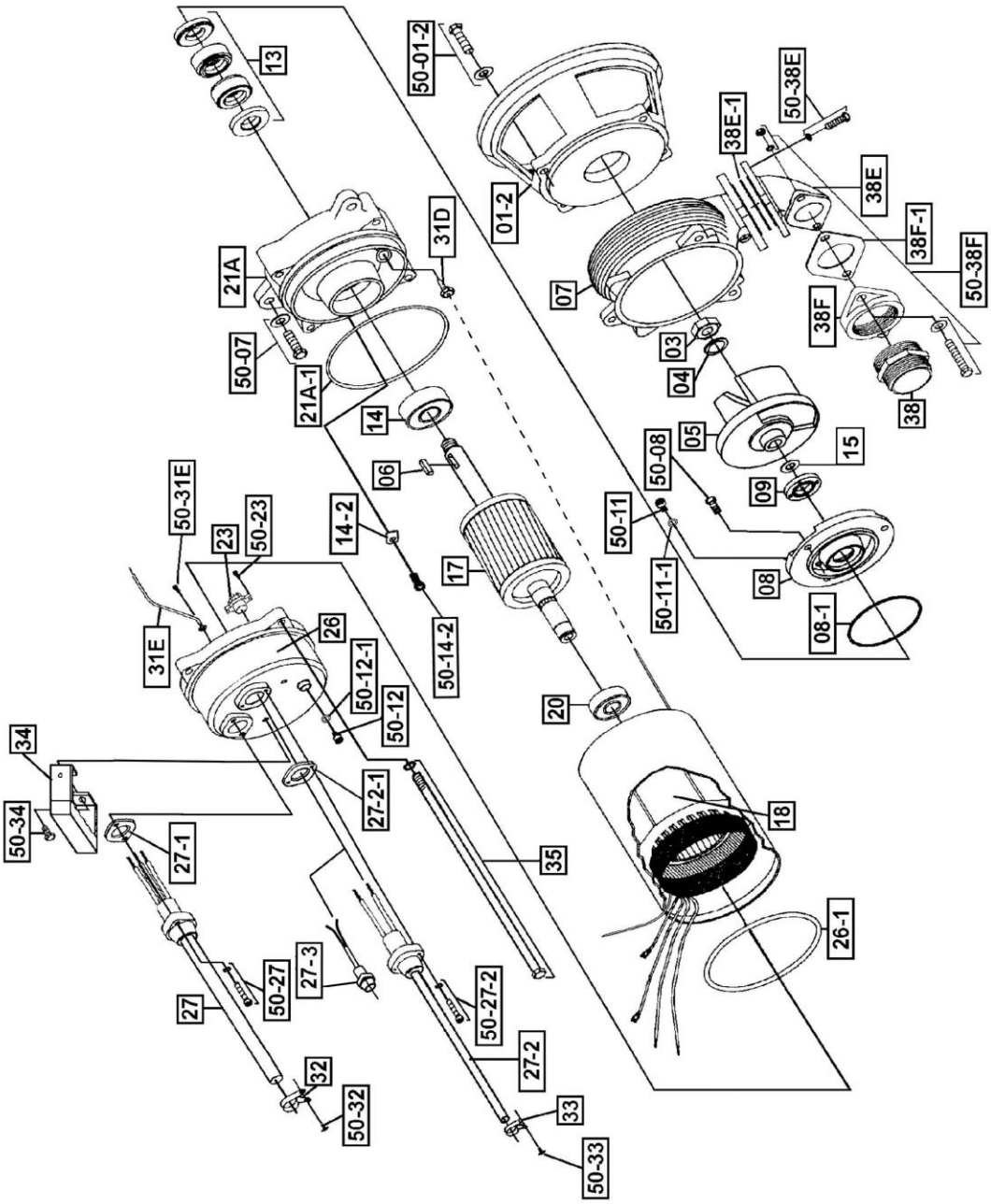
EXPLODED VIEW OF S750C, SX750CSS, S1500C



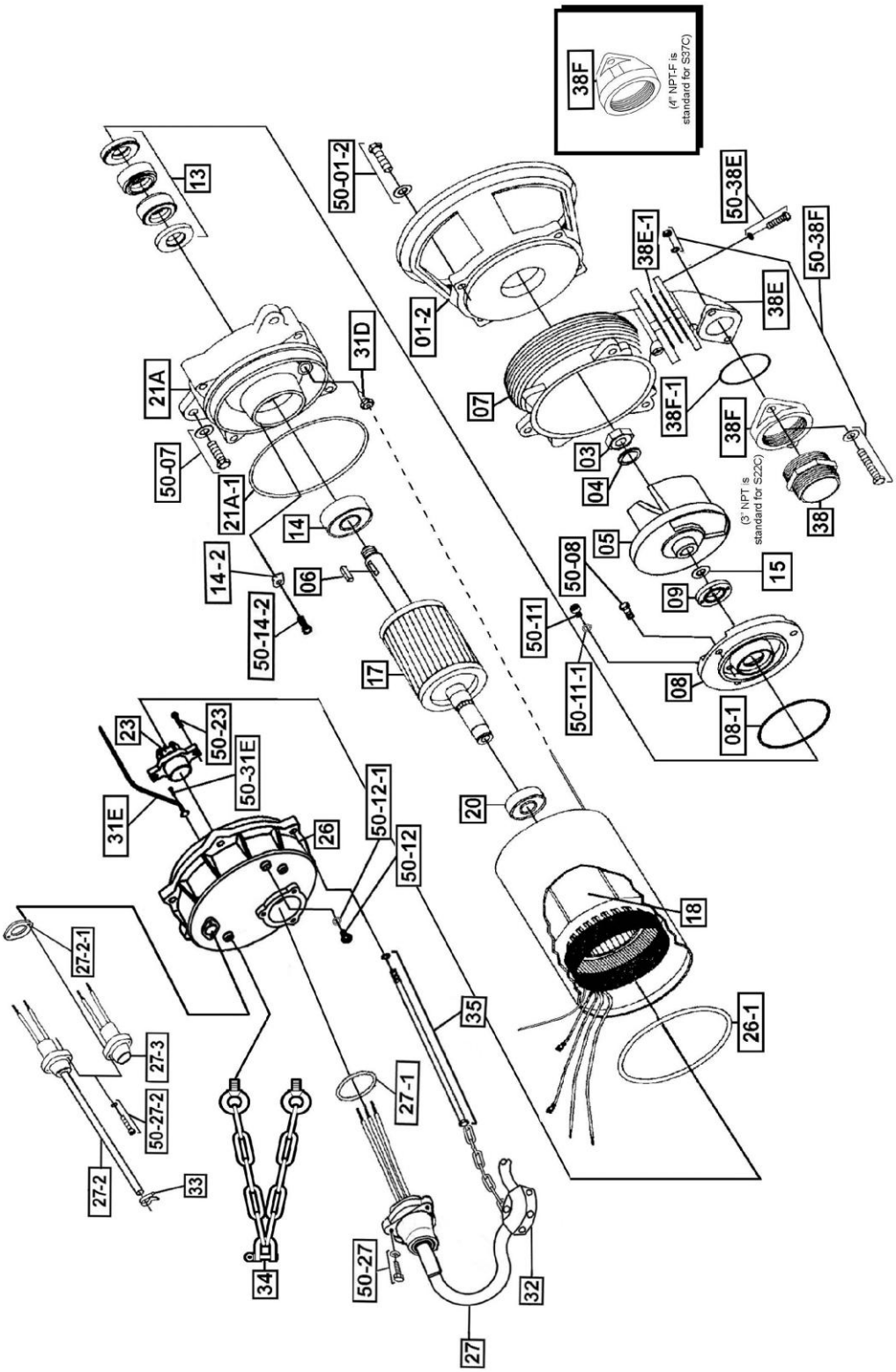
BJMPumps

EXPLODED VIEW OF S08C, SX08CSS, S15C, SX15CSS



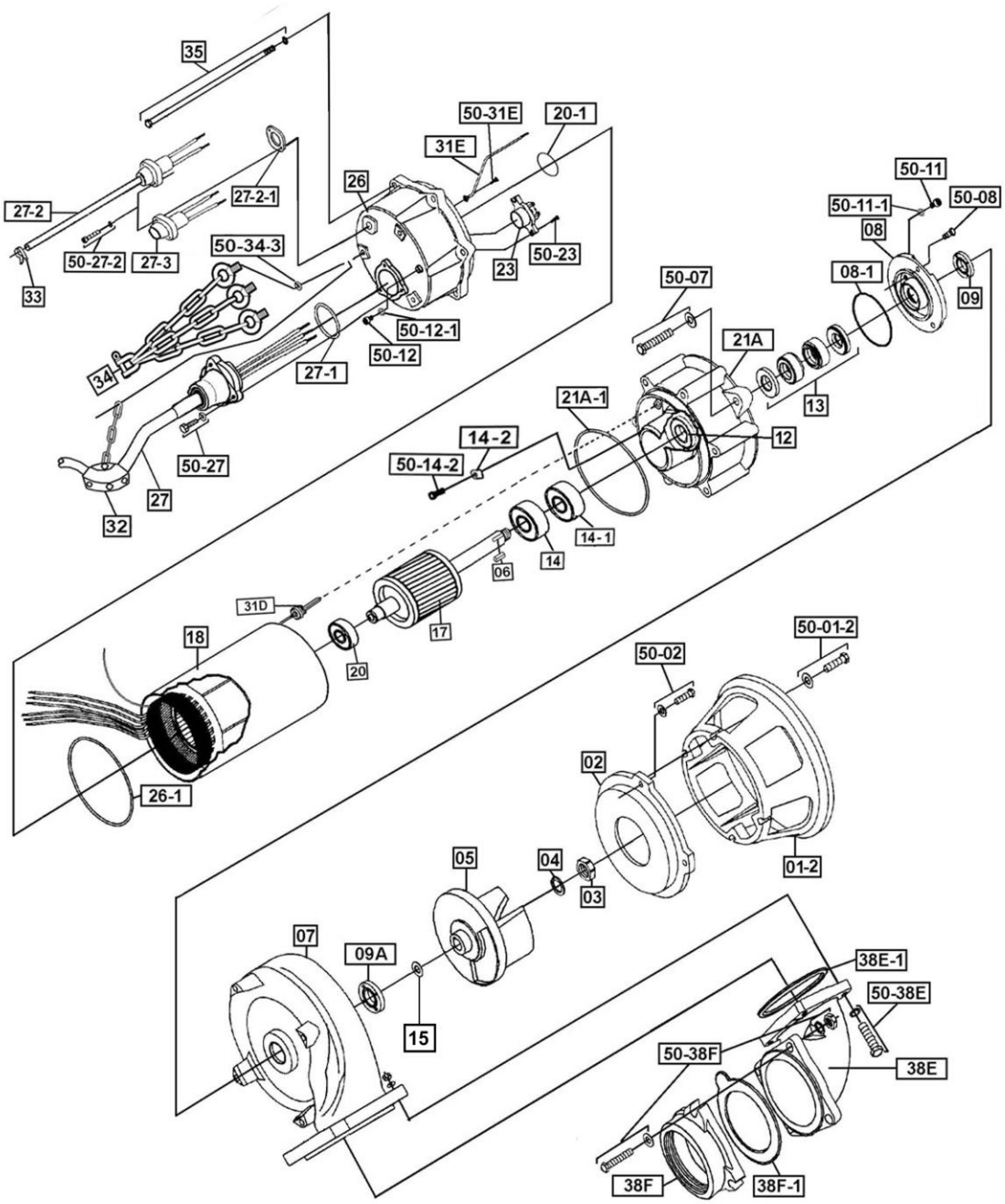
BJMPumps

EXPLODED VIEW OF S22C, SX22CSS, S37C, SX37CSS



BJM Pumps

EXPLODED VIEW OF S55C, SX55CSS, S75C, SX75CSS



S SERIES PARTS LIST

	Pump Model	S750C	S1500C	S08C	S15C	S22C	S37C	S55C	S75C
Pos. No.	Part Description	Item #	Item #	Item #	Item #	Item #	Item #	Item #	Item #
01-2	Stand	202843	201986	202843	201986	201990	201992	201996	201996
02	Bottom Plate	-	-	-	-	-	-	202020	202020
03	Impeller Nut	-	-	202894	202894	202894	202894	202897	202897
04	Impeller Washer	-	-	202907	202907	202907	202907	202917	202917
05	Impeller	202093	202098	202099	202103	202105	202107	202109	202112
06	Impeller Key	-	-	202140	202140	202140	202140	202142	202142
07	Pump Housing	202173	203008	202173	203008	203011	203014	203022	203022
08	Oil Chamber Cover	202213	202213	202213	202213	202218	202218	203044	203044
08-1	O-Ring (Kit Only)	Kit	Kit	Kit	Kit	Kit	Kit	Kit	Kit
09	Lip Seal Buna-N	203051	203051	203051	203051	202234	202234	202238	202238
09	Lip Seal FKM (Optional)	202232	202232	202232	202232	202235	202235	202241	202241
09	Lip Seal EPDM (Optional)	203052	203052	203052	203052	203054	203054	203061	203061
09A	Lower Lip Seal Buna-N	-	-	-	-	-	-	202238	202238
09A	Lower Lip Seal FKM (Optional)	-	-	-	-	-	-	202241	202241
09A	Lower Lip Seal EPDM (Optional)	-	-	-	-	-	-	203061	203061
12	Lip Seal for Lower Bearing	-	-	-	-	-	-	202236	202236
13	Mechanical Seal Buna-N	200501	200501	200501	200501	200302	200302	200305	200305
13	Mechanical Seal FKM**	200500	200500	200500	200500	200301	200301	200304	200304
14	Lower Ball Bearing	200958	200958	200958	200958	200959	200959	200960	200961
14-1	Lower Ball Bearing	-	-	-	-	-	-	200960	200961
14-2	Lower Bearing Retainer Clip	202279	202279	202279	202279	202279	202279	202279	202279
15	Impeller Shim Kit (Required)	200481	200481	200480	200480	200480	200480	200479	200479
17	Rotor w/ Shaft 115/230V, 1PH	203088	203092	-	-	-	-	-	-
17	Rotor w/ Shaft, 3PH	-	-	202307	202311	202315	202319	202324	202326
18	Stator w/ Casing 115V, 1PH	200511	-	-	-	-	-	-	-
18	Stator w/ Casing 230V, 1PH	200570	200514	-	-	-	-	-	-
18	Stator w/ Casing 208V, 3 PH	-	-	200524	200528	200532	200536	200665	-
18	Stator w/ Casing 230/460V, 3PH	-	-	200546	200550	200554	200558	200562	200566
18	Stator w/ Casing 575V, 3PH	-	-	200588	200592	200596	200600	200605	200609
19	Governor Switch w/Switch Plate	202360	202360	-	-	-	-	-	-
20	Upper Ball Bearing	200967	200967	200967	200967	200958	200958	200959	200959
20-1	O-Ring (Kit Only)	-	-	-	-	-	-	Kit	Kit
21A	Oil Chamber/Motor Housing	202196	202196	202196	202196	203030	203030	202180	203004
21A-1	O-Ring (Kit Only)	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	-

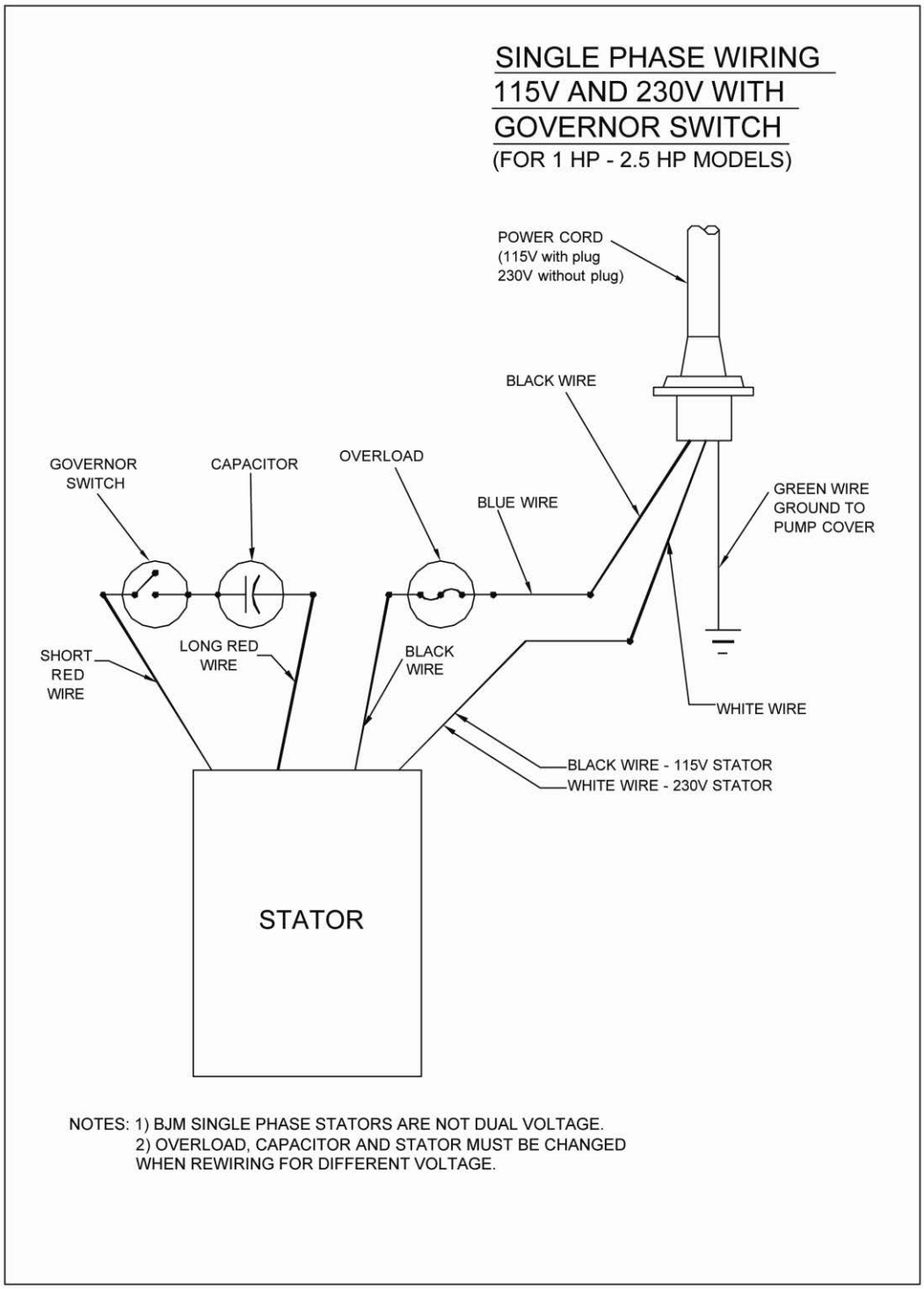
23	Overload Protector 230V, 3PH	-	-	202385	202388	202390	202392	202394	202396
23	Overload Protector 460V, 3PH	-	-	202387	202386	202389	202391	202393	202394
23	Overload Protector 575V, 3PH	-	-	202399	202387	202386	202389	202391	202393
24	Capacitor 115V	202417	-	-	-	-	-	-	-
24	Capacitor 230V	202418	202420	-	-	-	-	-	-
26	Pump Top Cover (W/ Sensor opening)	202433	202433	202435	202435	202818	202437	202439	202439
26-1	O-Ring (Kit Only)	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
27-1	O-Ring (Kit Only)	Kit	Kit	Kit	Kit	Kit	Kit	Kit	Kit
27-2	Seal Minder Cable	202763	202763	202763	202763	202763	202763	202763	202763
27-2-1	O-Ring Kit Only	Kit	Kit	Kit	Kit	Kit	Kit	Kit	Kit
27-3	Seal Minder Cap	203139	203139	203139	203139	203139	203139	203139	203139
31D	Seal Minder Probe	202408	202408	202408	202408	202410	202410	204000	204000
31E	Ground Wire w/Ring Term.	203145	203145	203145	203145	203145	203145	203145	203145
32	Power Cord Line Clip / Strain Relief	203161	203161	203161	203161	204161	202497	202497	202497
33	Seal Minder Cable Line Clip	203163	203163	203163	203163	203163	203163	203163	203163
34	Handle / Chain Handle	202517	202517	202517	202517	202509	202509	202515	202515
35	Rod Bolts	202666	202668	202669	202670	202671	202672	202673	202674
38	Discharge Nippple 2"	202531	-	202531	-	-	-	-	-
38	Discharge Nipple 3"	202534	202534	202534	202534	202534	202534	-	-
38E	Discharge Elbow	202570	202558	202570	202558	202558	202558	202560	202560
38E-1	Gasket, Discharge Elbow Buna-N	203212	203208	203212	203208	203208	203208	203210	203210
38E-1	Gasket, Discharge Elbow FKM (Optional)	203213	203209	203213	203209	203209	203209	203211	203211
38F	Discharge Flange 2"	202562	-	202562	-	-	-	-	-
38F	Discharge Flange 3"	-	202545	-	202545	202545	202545	-	-
38F	Discharge Flange 4"	-	-	-	-	202552	202552	202537	202537
38F-1	Gasket, Discharge Flange Buna-N	203206	202659	203206	202659	202659	202659	203210	203210
38F-1	Gasket, Discharge Flange FKM (Optional)	203207	202660	203207	202660	202660	202660	203211	203211
50-01-2	Bolt for Strainer/Stand	203228	203228	203228	203228	203228	203228	203229	203229
50-02	Bolt for Suction Cover	-	-	-	-	-	-	203229	203229
50-07	Screw for Oil Chamber/Motor Housing	203228	203228	203228	203228	203228	203228	203229	203229
50-08	Screw for Oil Chamber Cover	203219	203219	203219	203219	203219	203219	203246	203246
50-11	Screw for Oil Fill	203218	203218	203218	203218	203218	203218	203218	203218
50-11-1	O-Ring (Kit Only)	Kit	Kit	Kit	Kit	Kit	Kit	Kit	Kit
50-12	Screw for Pressure Check	203218	203218	203218	203218	203218	203218	203218	203218
50-12-1	O-Ring (Kit Only)	Kit	Kit	Kit	Kit	Kit	Kit	Kit	Kit
50-14-2	Screw	203219	203219	203219	203219	203219	203219	203219	203219
50-19	Screw for Gov. Switch Plate	202693	202693	-	-	-	-	-	-
50-23	Screw for Overload	202700	202700	202700	202700	202700	202700	202700	202700
50-27	Screw for Power Cord	203216	203216	203216	203216	203246	203246	203246	203246
50-27-2	Screw for Seal Minder Cable	203216	203216	203216	203216	203216	203216	203216	203216
50-31E	Screw for Ground Wire	202692	202692	202692	202692	202692	202692	202692	202692
50-32/50-33	Screw for Line Clip	203214	203214	203214	203214	-	-	-	-
50-34	Screw for Handle	203219	203219	203219	203219	-	-	-	-
50-34-3	Lock Washer	-	-	-	-	-	-	202902	202902
50-38E	Bolt for Discharge Elbow	203253	203255	203253	203255	203255	203255	203286	203286
50-38F	Bolt for Discharge Flange	203289	203289	203289	203289	203289	203253	203287	203287
	O-Ring Kit - Buna N	202629	202629	202636	202636	202638	202638	202640	202640

SX SERIES PARTS LIST

	Pump Model	SX750CSS	SX1500CSS	SX08CSS	SX15CSS	SX22CSS	SX37CSS	SX55CSS	SX75CSS
Pos. No.	Part Description	Item #	Item #	Item #	Item #	Item #	Item #	Item #	Item #
01-2	Stand	201985	201987	201985	201987	201991	201993	201997	201997
02	Bottom Plate	-	-	-	-	-	-	202022	202022
03	Impeller Nut	-	202894	202894	202894	202894	202894	202897	202897
04	Impeller Washer	-	202907	202907	202907	202907	202907	202917	202917
05	Impeller *	202095	204631	202101	204631	204632	204633	202111	202113
06	Impeller Key	-	202140	202140	202140	202140	202140	202142	202142
07	Pump Housing	202176	202172	202176	202172	202177	202181	202189	202189
07-1	O-Ring (Kit Only)	Kit	Kit	Kit	Kit	Kit	Kit	-	-
08	Oil Chamber Cover	202214	202214	202214	202214	202219	202219	202217	202217
08-1	O-Ring (Kit Only)	Kit	Kit	Kit	Kit	Kit	Kit	Kit	Kit
09	Lip Seal FKM	202232	202232	202232	202232	202235	202235	202241	202241
09	Lip Seal Buna-N (Optional)	203051	203051	203051	203051	202234	202234	202238	202238
09	Lip Seal EPDM (Optional)	203052	203052	203052	203052	203054	203054	203061	203061
09A	Lower Lip Seal FKM	-	-	-	-	-	-	202241	202241
09A	Lower Lip Seal Buna-N (Optional)	-	-	-	-	-	-	202238	202238
09A	Lower Lip Seal EPDM (Optional)	-	-	-	-	-	-	203061	203061
12	Lip Seal for Lower Bearing	-	-	-	-	-	-	202236	202236
13	Mechanical Seal FKM**	204240	204240	204240	204240	204243	204243	200304	200304
13	Mechanical Seal Buna-N (Optional)	200501	200501	200501	200501	200302	200302	200305	200305
14	Lower Ball Bearing	200958	200958	200958	200958	200959	200959	200960	200961
14-1	Lower Ball Bearing	-	-	-	-	-	-	200960	200961
14-2	Lower Bearing Retainer	202279	202279	202279	202279	202279	202279	202279	202279
15	Impeller Shim Kit (Required)	200481	200481	200480	200480	200480	200480	200479	200479
17	Rotor w/ Shaft 115/230V, 1PH	203089	203093	-	-	-	-	-	-
17	Rotor w/ Shaft, 2PH	-	204716	-	-	-	-	-	-
17	Rotor w/ Shaft, 3PH	-	-	202308	202312	202316	202320	202325	202327
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	200667	-
18	Stator w/ Casing 230/460V, 3PH	-	-	200548	200552	200556	200560	200564	200568
18	Stator w/ Casing 575V, 3PH	-	-	200590	200594	200598	200600	200607	200611
19	Governor Switch w/Switch Plate	202360	202360	-	-	-	-	-	-
20	Upper Ball Bearing	200967	200967	200967	200967	200958	200958	200959	200959
20-1	O-Ring (Kit Only)	-	-	-	-	-	-	Kit	Kit
21A	Oil Chamber/Motor Housing	202197	202197	202197	202197	202198	202198	203013	203005
21A-1	O-Ring (Kit Only)	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	202396
23	Overload Protector 460V, 3PH	-	-	202387	202386	202389	202391	202393	202394
23	Overload Protector 575V, 3PH	-	-	202399	202387	202386	202389	202391	202393
24	Capacitor 115V	202417	-	-	-	-	-	-	-

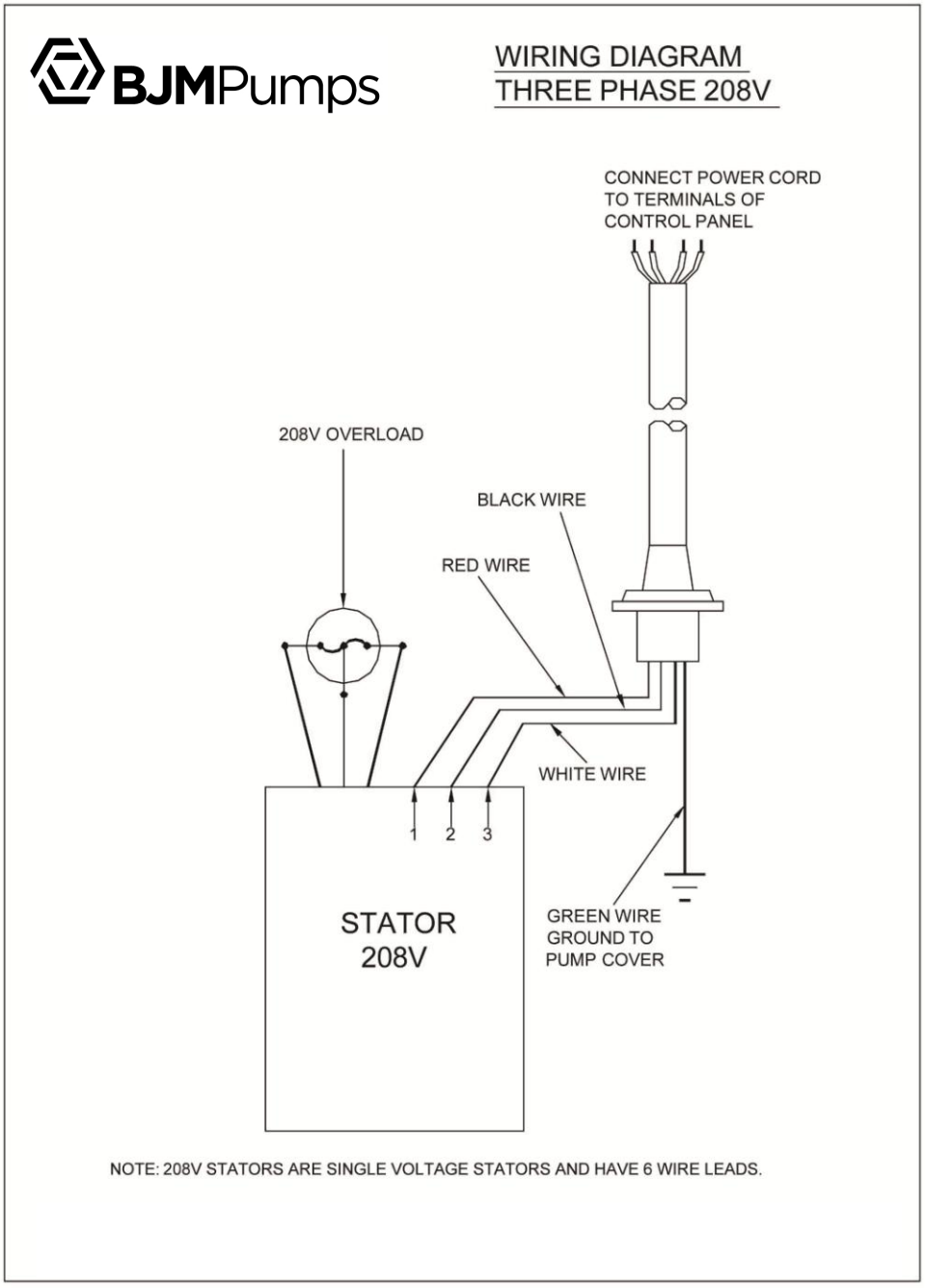
24	Capacitor 230V	202418	202420	-	-	-	-	-	-
26	Pump Top Cover (W/ Sensor opening)	202434	202434	202436	202436	202438	202438	202440	202440
26-1	O-Ring (Kit Only)	Kit	Kit	Kit	Kit	Kit	Kit	Kit	Kit
27	Power Cable w/ Gland- 115V,1PH	204262	-	-	-	-	-	-	-
27	Power Cable w/ Gland-230V, 1PH, No Plug	201695	201695	-	-	-	-	-	-
27	Power Cable w/ Gland- 3PH	-	-	201702	201702	203443	203445	203447	203447
27-1	O-Ring (Kit Only)	Kit	Kit	Kit	Kit	Kit	Kit	Kit	Kit
27-2	Seal Minder Cable	201713	201713	201713	201713	201713	201713	201713	201713
27-2-1	O-Ring Kit Only	Kit	Kit	Kit	Kit	Kit	Kit	Kit	Kit
27-3	Seal Minder Cap	201718	201718	201718	201718	201718	201718	201718	201718
31D	Seal Minder Probe	202408	202408	202408	202408	202410	202410	204000	204000
31E	Ground Wire w/Ring Term.	203145	203145	203145	203145	203145	203145	203145	203145
32	Power Cord Line Clip / Strain Relief	203166	203166	203161	203161	202504	202505	202497	202497
33	Seal Minder Cable Line Clip	203163	203163	203163	203163	203163	203163	203163	203163
34	Handle / Chain Handle	202517	202517	202517	202517	202510	202510	202516	202516
35	Rod Bolts	202682	202683	202684	202685	202686	202687	202673	202674
38	Discharge Nippple 2"	202532	-	202532	-	-	-	-	-
38	Discharge Nipple 3"	-	202535	-	202535	202535	202535	-	-
38E	Discharge Elbow	202571	202559	202571	202559	202559	202559	202561	202561
38E-1	O-Ring, Discharge Elbow FKM	203326	203327	203326	203327	203327	203327	-	-
38E-1	Gasket, Discharge Elbow FKM	-	-	-	-	-	-	203211	203211
38E-1	Gasket, Discharge Elbow Buna-N (Optional)	-	-	-	-	-	-	203210	203210
38F	Discharge Flange 2"	202563	-	202563	-	-	-	-	-
38F	Discharge Flange 3"	-	202546	-	202546	202546	202546	-	-
38F	Discharge Flange 4"	-	-	-	-	202553	202553	202540	202540
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	-	-	-	-	-	-	203211	203211
38F-1	Gasket, Discharge Flange Buna-N (Optional)	-	-	-	-	-	-	203210	203210
50-01-2	Bolt for Strainer/Stand	203228	203228	203228	203228	203228	203228	203229	203229
50-02	Bolt for Suction Cover	-	-	-	-	-	-	203229	203229
50-07	Screw for Oil Chamber/Motor Housing	203296	203296	203296	203296	203296	203296	203229	203229
50-08	Screw for Oil Chamber Cover	203219	203219	203219	203219	203219	203219	203246	203246
50-11	Screw for Oil Fill	203218	203218	203218	203218	203218	203218	203218	203218
50-11-1	O-Ring (Kit Only)	Kit	Kit	Kit	Kit	Kit	Kit	Kit	Kit
50-12	Screw for Pressure Check	203218	203218	203218	203218	203218	203218	203218	203218
50-12-1	O-Ring (Kit Only)	Kit	Kit	Kit	Kit	Kit	Kit	Kit	Kit
50-14-2	Screw for Bearing Retainer	203219	203219	203219	203219	203219	203219	203219	203219
50-19	Screw for Gov. Switch Plate	202693	202693	-	-	-	-	-	-
50-23	Screw for Overload	202700	202700	202700	202700	202700	202700	202700	202700
50-27	Screw for Power Cord	203295	203295	203295	203295	203246	203246	203246	203246
50-27-2	Screw for Seal Minder Cable	203295	203295	203295	203295	203295	203295	203295	203295
50-31E	Screw for Ground Wire	202692	202692	202692	202692	202692	202692	202692	202692
50-32/50-33	Screw for Line Clip	203214	203214	203214	203214	-	-	-	-
50-34	Screw for Handle	203219	203219	203219	203219	-	-	-	-
50-34-3	Lock Washer	-	-	-	-	-	-	202902	202902
50-38E	Bolt for Discharge Elbow	203294	203271	203294	203271	203271	203271	203286	203286
50-38F	Bolt for Discharge Flange	203229	203294	203229	203294	203294	203294	203287	203287
	O-Ring Kit - FKM	202630	202630	202647	202647	202642	202642	202644	202644
	O-Ring Kit - Buna-N (Optional)	-	-	-	-	-	-	-	-
*** New Rotor With Shaft Required When Upgrading From 202097 Impeller To 204631 Impeller.**									

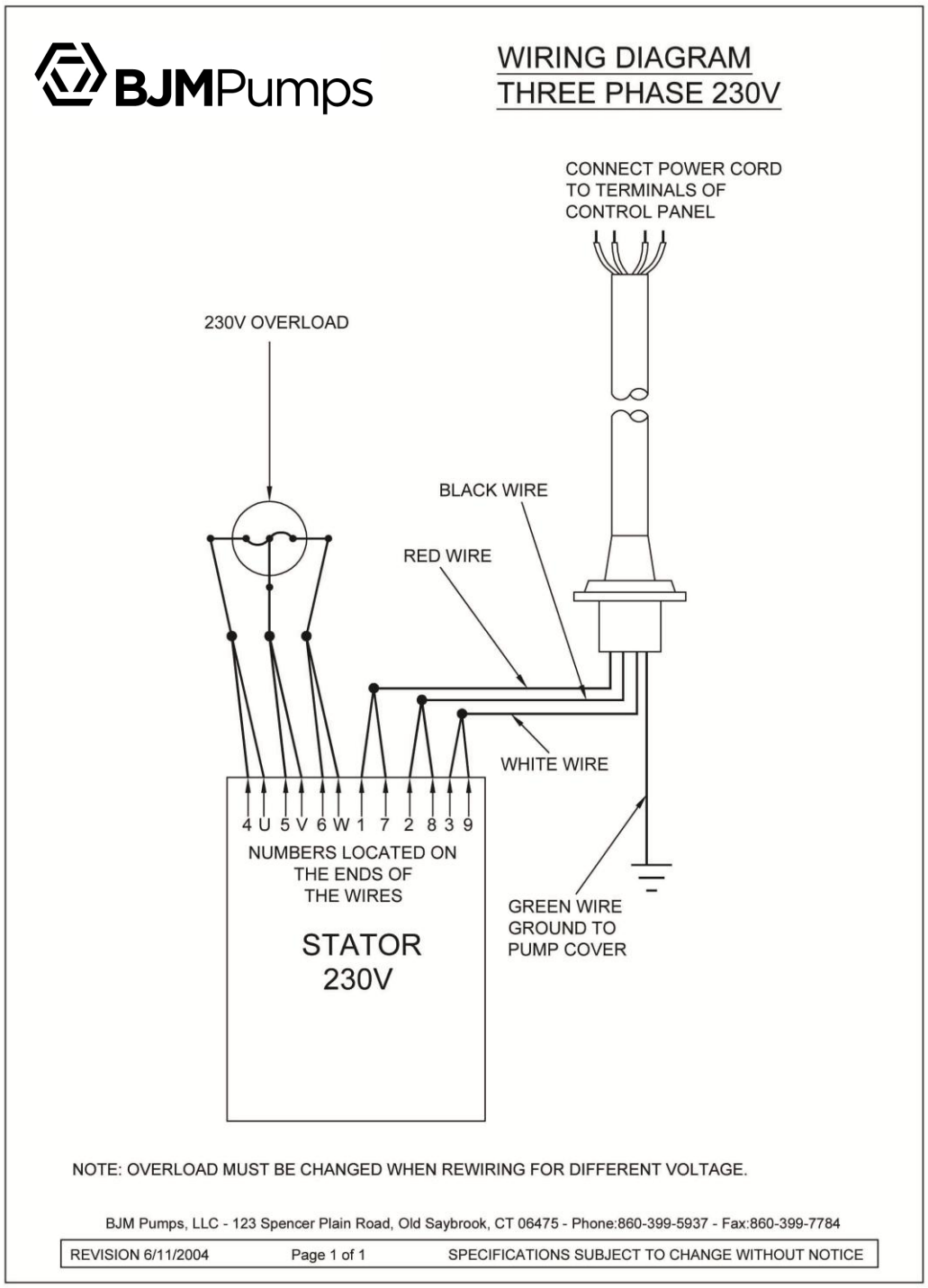
SINGLE PHASE WIRING DIAGRAM 115V & 230V W/GOVERNOR SWITCH



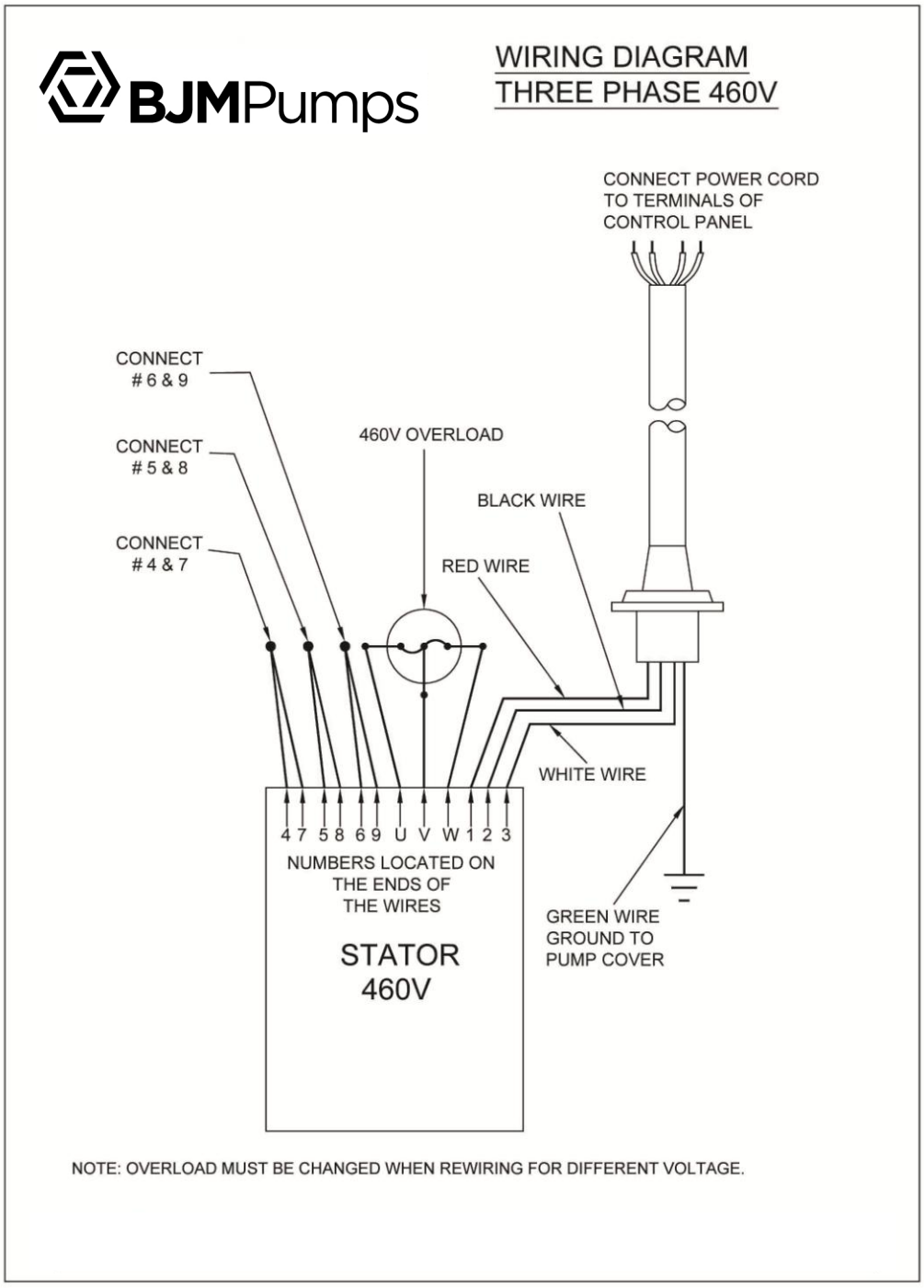
MODELS S750C, SX750CSS, S1500C, SX1500CSS

208V

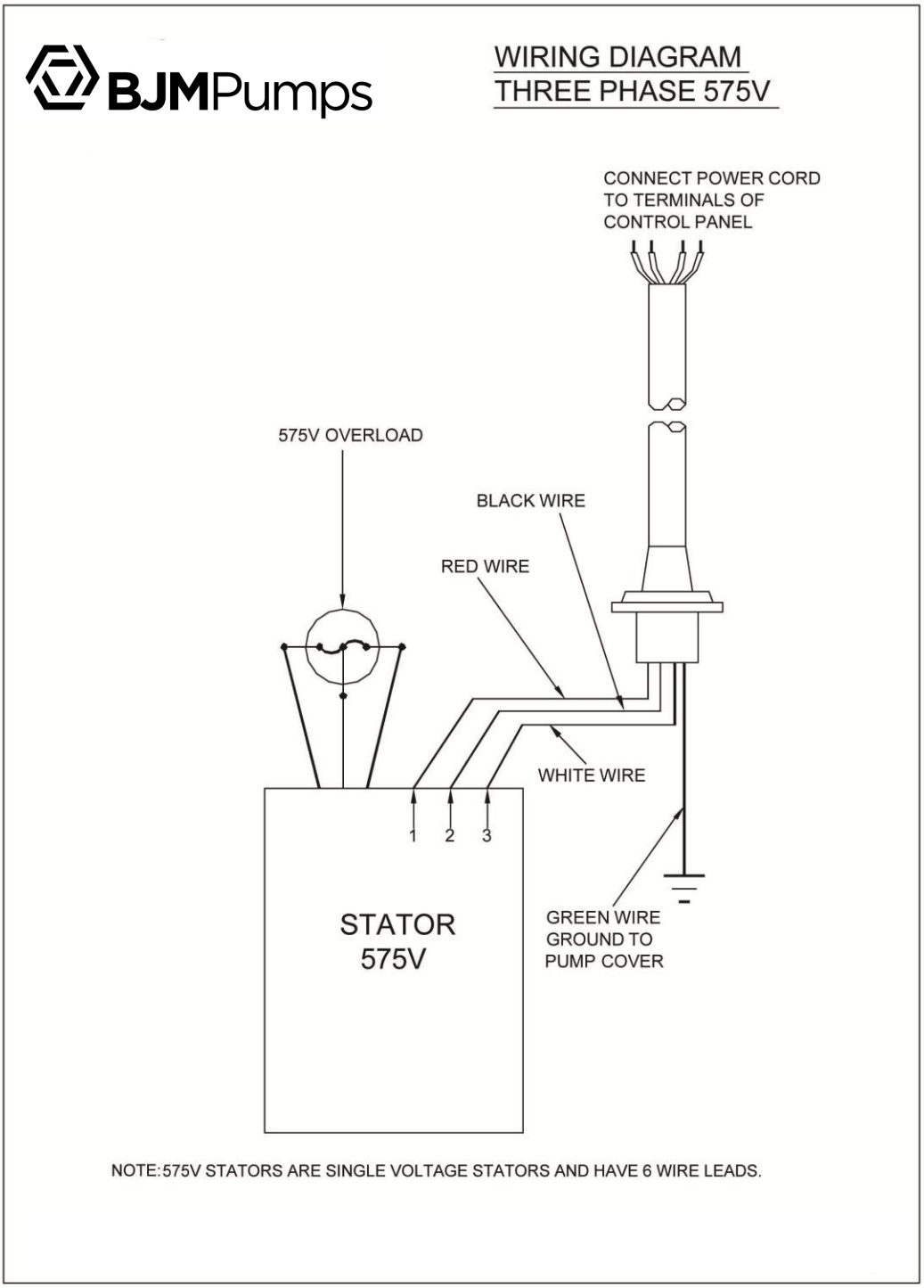

BJMPumps
WIRING DIAGRAM
THREE PHASE 208V
CONNECT POWER CORD
TO TERMINALS OF
CONTROL PANEL
208V OVERLOAD
BLACK WIRE
RED WIRE
WHITE WIRE
1
2
3
STATOR
208V
GREEN WIRE
GROUND TO
PUMP COVER
NOTE: 208V STATORS ARE SINGLE VOLTAGE STATORS AND HAVE 6 WIRE LEADS.



MODELS S08C, SX08CSS, S15C, SX15CSS, S22C, SX22CSS, S37C, SX37CSS, S55C, SX55CSS, S75C, SX75CSS



MODELS S08C, SX08CSS, S15C, SX15CSS, S22C, SX22CSS, S37C, SX37CSS, S55C, SX55CSS, S75C, SX75CSS



MODELS S08C, SX08CSS, S15C, SX15CSS, S22C, SX22CSS, S37C, SX37CSS, S55C, SX55CSS, S75C, SX75CSS

Seal Minder®:

Also known as a seal fail circuitry (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 connect to a control panel, can help indicate seal failure. The **Seal Minder** cord requires a seal fail circuitry 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 manufactures can incorporate the **Seal Minder** cord option. BJM Pumps®, an Industrial Flow Solutions Company, has a standalone, **Seal Minder** panel for both simplex (P/N MSP8350A) and duplex (P/N MSP8350B) systems. For more information, contact Industrial Flow Solutions Operating, LLC or visit us online at www.flowsolutions.com

The **Seal Minder** cord has two leads, black and white. Note that the power cable is much larger and has three 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. These leads need to be properly connected to the seal failure alarm relay circuit. Most controls that have proceeded 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 standalone 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).

Industrial Flow Solutions Operating, LLC
104 John W Murphy Drive
New Haven, CT 06513, USA

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

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

Industrial Flow Solutions Operating, LLC
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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?	☐ Yes ☐ No
Condition of Equipment	☐ New ☐ Good ☐ Fair ☐ Poor
Condition of Cable Jacket	☐ New ☐ Good ☐ Fair ☐ 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	
MEG OHM CHECK OF INSULATION Red to ground_____ White to ground_____ Black to ground_____	
Condition of location at start-up	☐ Dry ☐ Wet ☐ Muddy
Was equipment stored If YES, length of storage:	☐ Yes ☐ No.
Liquid being pump	
Debris in bottom of station?	☐ Yes ☐ No

START-UP REPORT FORM

Are guide rails vertical?	☐ Yes	☐ No
Is base elbow installed level?	☐ Yes	☐ No
Liquid level controls: Model_____		
Is control installed away from turbulence?	☐ Yes	☐ 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).

☐ Check here if using manual on/off only.

Does liquid level ever drop below volute top?	☐ Yes	☐ 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?	☐ Yes	☐ No
Are all pump connections tight?	☐ Yes	☐ No
Is the interior of the panel dry?	☐ Yes ☐ 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?	☐ Yes	☐ No
Was pump checked for leaks?	☐ Yes	☐ No
Do check valves operate properly?	☐ Yes	☐ No
Flow: Do pumps appear to operate at proper rate?	☐ Yes	☐ No
Noise level:	Acceptable ☐	Unacceptable ☐

Comments:

Installed by:

Company:

Person:

Date:

NOTES:

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