

Standard Pump

Ultra Mass High Viscosity Batch Control System



Models: 8500, 8501, 8513, 8514, 8500BL, 8501BL, 8513BL, 8514BL, 8540, 8541, 8550, 8551, 8540BL, 8541BL, 8550BL & 8551BL

Description

Standard's Drum Pumps are designed to transfer a variety of materials from 55 gallon drums and tanks. Standard Pump offers several different pumps, each designed for specific applications. Before operating, please confirm that the pump's materials of construction are suitable for the application.

Unpacking

Cartons should be handled with care to avoid damage from dropping, etc. After unpacking, inspect carefully for any damage that may have occurred during transit. Check for loose, damaged or missing parts.

General Safety Information

The responsibility for safe assembly, installation, and operation ultimately rests with the operator. Read and understand ALL safety precautions and operating instructions before operation. Careless pump operation can result in serious injury.

1. Before operating the pump, read and understand these operating instructions.
2. The operator should wear suitable protective clothing including the following: face mask, safety shield or goggles, gloves, apron, and safety shoes.
3. Before operating, verify the materials being pumped are compatible with the pump's "wetted components."
4. All Federal, State, and local safety codes should be followed.
5. Verify that the motor voltage corresponds to proper electrical supply.
6. Before plugging motor into power supply, make sure the motor switch is in the OFF position. For Air Motors ensure inlet valve is closed before attaching air line.
7. Before operation, confirm all pump connections are properly tightened.
8. First pump clean water in order to familiarize yourself with the pump's operation, flow rate, discharge pressure and motor speed.
9. Before starting the pump, confirm the discharge hose is securely fastened to the receiving vessel in order to prevent splashing.
10. Never leave pump unattended during operation.
11. Do not submerge the motor in any liquid.
12. When finished using the pump, flush the pump by pumping water or an appropriate cleaning solution. Do not use flammable or combustible cleaning solutions.
13. Never carry the motor by the power cord.
14. Never store pump in container. Always rinse pump thoroughly and hang on wall bracket or ensure pump tube is stored in an upright and vertical position.

Ultra Mass Specifications – Electric Systems

Model	Immersion Length	Wetted Components	Mechanical Seal	Voltage	Motors Drives	Inlet/ Discharge Size	Max Viscosity cps (mPAS)*	Max Discharge Pressure	Max Flow Rate	Max Temp	Finish	Max Solid Size	Duty Cycle
8500 (BL)	39" (1000 mm)	SS316, PTFE & SiC	SiC/Viton®/SiC	110-120V	TEFC (IP54), Variable Speed	2" (51 mm) / 1.5" (38 mm)	1-10,000	43 psi (3 bar)	10 GPM (38 LPM)	212° F (100° C)	32 Ra	.25" (6 mm)	Intermittent
8501 (BL)	39" (1000 mm)	SS316, PTFE & SiC	SiC/Viton®/SiC	220-240V			1-10,000	43 psi (3 bar)	10 GPM (38 LPM)	212° F (100° C)	32 Ra	.25" (6 mm)	Intermittent
8513 (BL)	44" (1120 mm)	SS316, PTFE & SiC	SiC/Viton®/SiC	110-120V			10,000 -25,000	87 psi (6 bar)	3 GPM (11,3 LPM)	212° F (100° C)	32 Ra	.25" (6 mm)	Intermittent
8514 (BL)	44" (1120 mm)	SS316, PTFE & SiC	SiC/Viton®/SiC	220-240V			10,000 -25,000	87 psi (6 bar)	3 GPM (11,3 LPM)	212° F (100° C)	32 Ra	.25" (6 mm)	Intermittent

Meter Specifications

Metering Principle	Check Valve	System Accuracy
Coriolis Mass Flow Meter Technology	316 Stainless Steel	+/- 0.3% of reading (+/- .5% Repeatability)

Notes

1. Performance will vary depending on whether the product being pumped is Newtonian (viscosity remains constant regardless of shear) or non-Newtonian (viscosity does not remain constant with shearing).
2. Flow rates based on water. As viscosity increases, the flow rate will decrease.

Models: 8500, 8501, 8513, 8514, 8500BL, 8501BL, 8513BL, 8514BL, 8540, 8541, 8550, 8551, 8540BL, 8541BL, 8550BL & 8551BL

**Operation –
Ultra Mass Series**

For information regarding the calibration and operation of the Ultra Mass Meter, please refer to the factory operating instructions included in this package.

**8500(BL), 8501(BL),
8513(BL) & 8514(BL)**

▲ WARNING *The Ultra Mass Batch Control System is a positive displacement pump system and should never be operated against shut-off elements such as nozzles, valves, etc. Failure to comply may result in excessive pressure build resulting in serious injury and pump damage.*

▲ WARNING *The Ultra Mass Batch Control System should not be run dry. Running the pump dry will result in serious damage to the mechanical seal and stator of the pump.*

Assembly

**8500(BL), 8501(BL), 8513(BL)
& 8514(BL)**

1. Remove the pump, motor, and meter from packaging.
2. Inspect all contents for damages.
3. Couple the electric motor to the pump using the hex nut (see Figure 1).
4. Attach the Ultra Mass meter to the pump discharge using the supplied Tri-clamp® fitting (see Figure 1).
5. Attach the check valve (p/n:384510V) to the Ultra Mass meter using the supplied Tri-clamp® fitting. (see Figure 1)
6. Attach the hose barb to the check valve using the supplied Tri-clamp® fitting (see Figure 1).

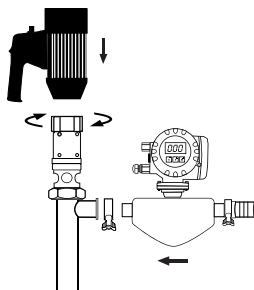


Figure 1

7. Pump clean water in order to familiarize yourself with the system operation.
8. It is recommended to thoroughly clean and sanitize the Ultra Mass Batch Control System before use.

9. Use closed top drum or cover to prevent possible contamination.

▲ WARNING *Do not use the Ultra Mass Batch Control System for the transfer of flammable or combustible products or in an environment where flammable or combustible fumes are present. Failure to comply may result in serious injury or death.*

▲ WARNING *Recommended for intermittent duty use only. (ie., 30 minute intervals with a 10 minute cooling off period). For continuous duty applications, Standard Pump recommends using the 8540(BL), 8541(BL), 8550(BL) & 8551(BL).*

▲ WARNING *Do not operate 8500 (BL) and 8501 (BL) on viscosities greater than 10,000 cps (mPAS). Do not operate the 8513 (BL) and 8514 (BL) on viscosities greater than 25,000 cps (mPAS). Failure to comply will result in premature pump failure.*

▲ WARNING *The Pump should not be run dry. Running the pump dry will result in serious damage to the mechanical seal and stator of the pump*

Operation

**8500(BL), 8501(BL), 8513(BL)
& 8514(BL)**

1. Once the pump is fully assembled and all connections are fastened, insert the pump into the drum or tank (see Figure 2).

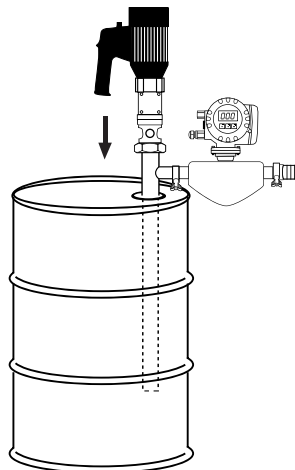


Figure 2

2. It is recommended to attach a suitable hose or pipe to the pump discharge.

▲ WARNING *Make sure the hose discharge pressure requirement. It is recommended to use a hose that is rated 4 x the pump discharge pressure. Ex: 87 x 4= 348 psi (24,3 bar).*

3. If you opt to use a hose, fasten the hose to the hose barb with a suitable hose clamp that exceeds the pump discharge pressure.
4. Make sure the speed control knob on the motor is turned to the MIN position (completely counterclockwise).
5. Turn the motor switch to the ON position.
6. Slowly throttle the motor up by turning the speed control knob clockwise.

▲ WARNING  *Do not use these pumps for the transfer of flammable or combustible products or in an environment where flammable or combustible fumes are present. Please consult the factory or authorized distributor with any questions regarding installation.*

**Maintenance & Disassembly
(See page 6)**

Models: 8500, 8501, 8513, 8514, 8500BL, 8501BL, 8513BL, 8514BL, 8540, 8541, 8550, 8551, 8540BL, 8541BL, 8550BL & 8551BL

Ultra Mass Spare Parts Lists

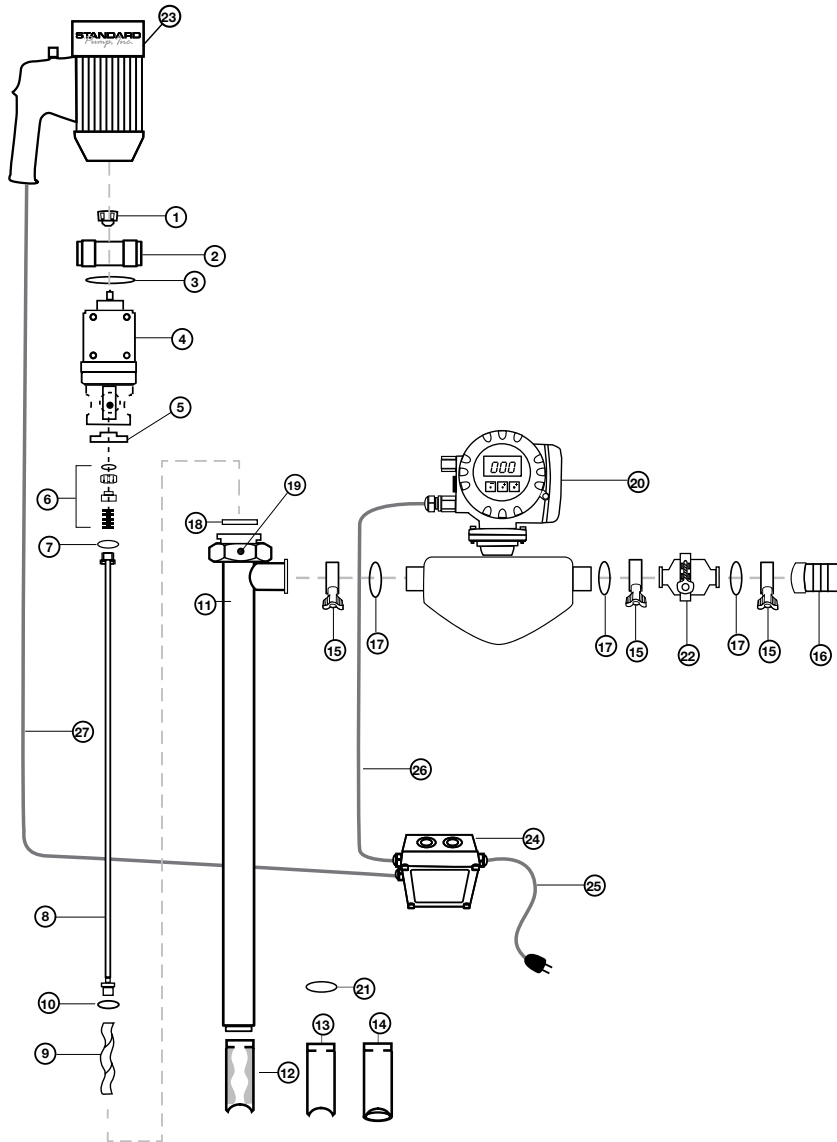


Figure 3 – Ultra Mass Batch Control System – Electric

Batch Control System - Electric

See Figure 3

Ref #	Description	Part Number
1	Pump Coupling	1004
2	Connection Nut, SS316	8842
3	Snap Ring, SS316	8208
4	Gear Reduction Unit, SS316	779
5	Mechanical Seal Bushing, SS316	702
6	Mechanical Seal, SIC	703
7	Gasket, PTFE	735
8	Drive Shaft, SS316	
	SP-1851-39	705
	SP-752-39	706
9	Rotor, SS316	
	Size 752	709
	Size 1851	710
10	Gasket, PTFE	731
11	Outer Tube Assembly, SS316	
	SP-1851-39	801
	SP-752-39	802
12	Stator	
	PTFE (Stator Insert Only)	
	Size 752	823
	Size 1851	824
13	Stator Tube, SS316	
	Size 752	875
	Size 1851	876
14	Stator for Bagliners, SS316	
	Size 752	875BL
	Size 1851	876BL
15	Tri-Clamp®, SS316	833
16	Hose Barb, SS316, 1.50" (38 mm)	835
17	O-Ring, Buna	836
18	Gasket, PTFE	738
19	Set Screw, SS316	757
20	Batch Control Meter	83E25AFTAAAAA
21	Ring, SS316	0016
22	Check Valve, SS316	384510V
23	Drum Pump Motor, TEFC	
	110-120V	SP-ENC-V
	220-240V	SP-ENC-2-V
24	Relay Box	US51G08
25	Relay Box Power Cord	
	110-120V	8362
	220-240V	8710
26	Power Cord, Meter to Relay Box	113443
27	Power Cord, Motor to Relay Box	
	110-120V	8363
	220-240V	8711

Models: 8500, 8501, 8513, 8514, 8500BL, 8501BL, 8513BL, 8514BL, 8540, 8541, 8550, 8551, 8540BL, 8541BL, 8550BL & 8551BL

Ultra Mass Specifications – Air Systems

Model	Immersion Length	Wetted Components	Mechanical Seal	Meter Voltage	Motors Drives	Inlet/ Discharge Size	Max Viscosity cps (mPAS)*	Max Discharge Pressure	Max Flow Rate	Max Temp	Finish	Max Solid Size	Duty Cycle
8540 (BL)	39" (1000 mm)	SS316, PTFE & SiC	SiC/Viton®/SiC	110-120V	Air, 2 HP (1.5 KW) (0.25" Air Connection)	2" 51 mm) / 1.5" (38 mm)	1-10,000	43 psi (3 bar)	10 GPM (38 LPM)	212° F (100° C)	32 Ra	.25" (6 mm)	Continuous
8541 (BL)	39" (1000 mm)	SS316, PTFE & SiC	SiC/Viton®/SiC	220-240V			1-10,000	43 psi (3 bar)	10 GPM (38 LPM)	212° F (100° C)	32 Ra	.25" (6 mm)	Continuous
8550 (BL)	44" (1120 mm)	SS316, PTFE & SiC	SiC/Viton®/SiC	110-120V			10,000 -25,000	87 psi (6 bar)	3 GPM (11,3 LPM)	212° F (100° C)	32 Ra	.25" (6 mm)	Continuous
8551 (BL)	44" (1120 mm)	SS316, PTFE & SiC	SiC/Viton®/SiC	220-240V			10,000 -25,000	87 psi (6 bar)	3 GPM (11,3 LPM)	212° F (100° C)	32 Ra	.25" (6 mm)	Continuous

Meter Specifications

Metering Principle	Check Valve	System Accuracy
Coriolis Mass Flow Meter Technology	316 Stainless Steel	+/- 0.3% of reading (+/- .5% Repeatability)

Notes

1. Performance will vary depending on whether the product being pumped is Newtonian (viscosity remains constant regardless of shear) or non-Newtonian (viscosity does not remain constant with shearing).
2. Flow rates based on water. As viscosity increases, the flow rate will decrease.

8540(BL), 8541(BL), 8550(BL) & 8551(BL)

⚠ WARNING *The Ultra Mass Batch Control System is a positive displacement pumps and should never be operated against shut-off elements such as nozzles, valves, etc. Failure to comply may result in excessive pressure build resulting in serious injury and pump damage.*

⚠ WARNING *The Ultra Mass Batch Control System should not be run dry. Running the pump dry will result in serious damage to the mechanical seal and stator of the pump.*

Assembly 8540(BL), 8541(BL), 8550(BL) & 8551(BL)

1. Remove the pump and motor from packaging.
2. Inspect all contents for damages.
3. Couple the motor to the pump. Bolt electric or pneumatic motor to the pump using the hardware provided by the manufacturer (see figure 4).

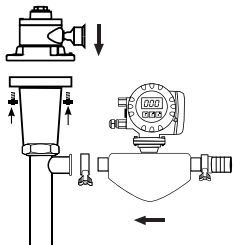
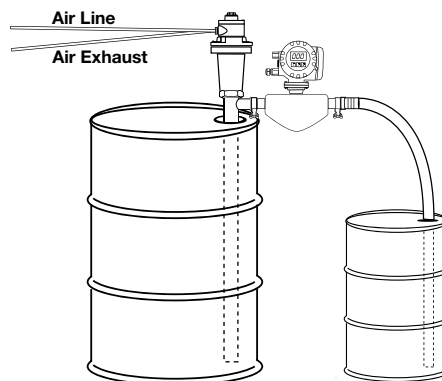


Figure 4

4. It is recommended to thoroughly clean and sanitize before operation.

5. Closed top drum or cover is recommended to prevent possible contamination.
6. Air Motor – for optimum performance make sure proper 0.25" size air line and connection.



Note: Recommend plumbing discharge air away from drum or tank to prevent possible contamination.

⚠ WARNING *Standard Pump recommends the use of a Fliter Lubricator Regulator (FLR) in order to ensure a moisture free supply of air to the motor.*

⚠ WARNING *Do not operate 8540(BL) and 8541(BL) on viscosities greater than 10,000 cps (mPAS). Do not operate the 8550(BL) and 8551(BL) on viscosities greater than 25,000 cps (mPAS). Failure to comply will result in premature pump failure.*

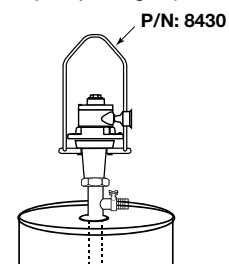
⚠ WARNING *Make sure the air line is connected to the air inlet hole on the left side of the motor as you face the motor. This will insure that the motor turns in a*

clockwise direction. Use the pump arrow to verify proper direction. If the pump rotates counterclockwise, the internal components will disassemble.

⚠ WARNING *Do not use these pumps for the transfer of flammable or combustible products or in an environment where flammable or combustible fumes are present.*

Operation 8540(BL), 8541(BL), 8550(BL) & 8551(BL)

1. Once the pump is fully assembled and all connections are fastened, insert the pump into the drum or tank. Pump can be suspended from hoisting system using an optional pump hanger (P/N: 8430).



2. It is recommended to attach a suitable hose or pipe to the pump discharge.
3. If you opt to use a hose, fasten the hose to the hose barb with a suitable hose clamp that exceeds the pump discharge pressure.

⚠ WARNING *Make sure the hose meets the pump discharge pressure requirements. It is recommended to use a hose that is rated 4 x the pump discharge pressure. Ex: 87 x 4= 348 psi (24,3 bar).*

Models: 8500, 8501, 8513, 8514, 8500BL, 8501BL, 8513BL, 8514BL, 8540, 8541, 8550, 8551, 8540BL, 8541BL, 8550BL & 8551BL



Batch Control System - Air

See Figure 5

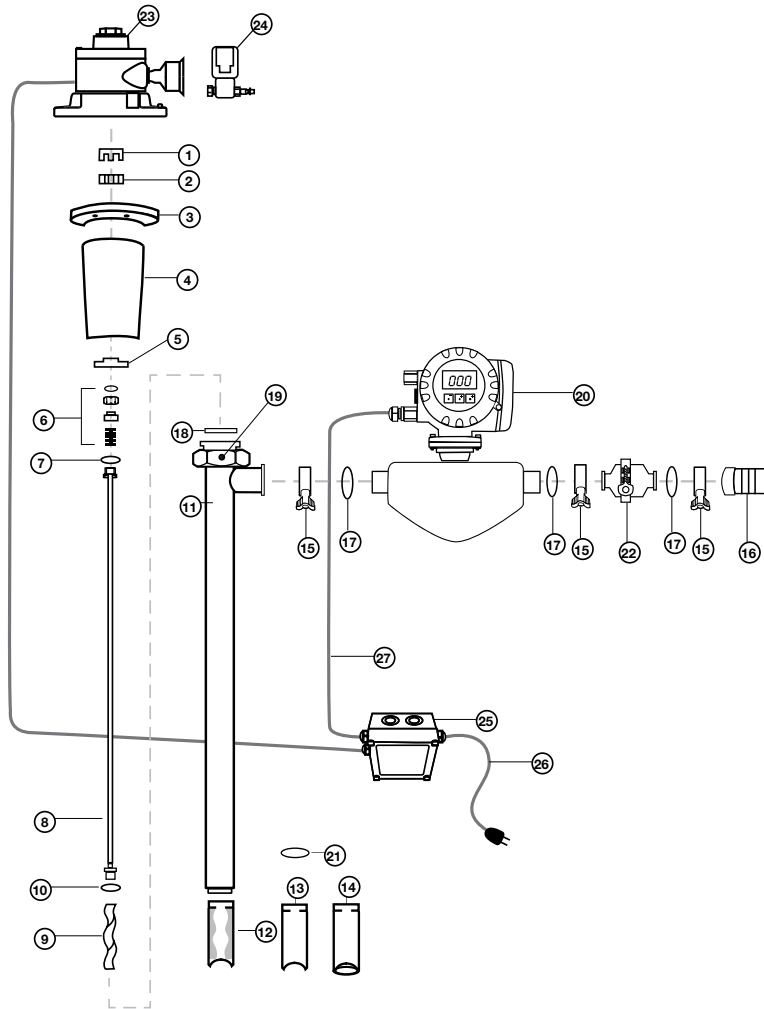


Figure 5 – Ultra Mass Batch Control System – Air

Ref #	Description	P/N for SP-800DD
1	Motor Coupling , 14 mm	744
2	Coupling Insert	745
3	Motor Mount Flange, Aluminum	760
4	Bearing Housing Assembly, Aluminum	759
5	Mechanical Seal Bushing, SS316	702
6	Mechanical Seal, SIC	703
7	Gasket, PTFE	735
8	Drive Shaft, SS316	
	SP-1851-39	705
	SP-752-39,	706
9	Rotor, SS316	
	Size 752	709
	Size 1851	710
10	Gasket, PTFE	731
11	Outer Tube Assembly, SS316	
	SP-1851-39	801
	SP-752-39,	802
12	Stator	
	Size 752	823
	Size 1851	824
13	Stator Tube, SS316	
	Size 752	875
	Size 1851	876
14	Stator for Bagliners, SS316	
	Size 752	875BL
	Size 1851	876BL
15	Tri-Clamp®, SS316	833
16	Hose Barb, SS316, 1.50" (38 mm)	835
17	O-Ring, Buna	836
18	Gasket, PTFE	738
19	Set Screw, SS316	757
20	Batch Control Meter	83E25AFTA-AAAA
21	Ring, SS316	0016
22	Check Valve, SS316	384510V
23	Air Motor, 2 HP (1,5 KW)	SP-A4FP
24	Solenoid Valve Kit, SS316	
	110-120V	0031SS
	220-240V	0031SS-2
25	Relay Box	US51G08
26	Relay Box Power Cord	
	110-120V	8362
	220-240V	8710
27	Power Cord, Meter to Relay Box	113443

Models: 8500, 8501, 8513, 8514, 8500BL, 8501BL, 8513BL, 8514BL, 8540, 8541, 8550, 8551, 8540BL, 8541BL, 8550BL & 8551BL

Maintenance

Disassembly / Cleaning

8501(BL), 8513(BL), 8514(BL), 8540(BL), 8541(BL), 8550(BL) & 8551(BL)

1. Remove motor from pump tube (see Figures 6 & 7).

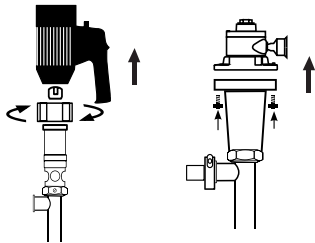


Figure 6

NOTE: Remove motor by turning hex nut clockwise

Figure 7

NOTE: Remove 4 bolts from motor flange.

2. Loosen set screw on side of hex nut (see Figure 8).
3. Place a screwdriver (or similarly shaped object) in the mechanical seal inspection port (see Figure 8).
4. Use a large wrench to loosen the hex nut while simultaneously holding the screwdriver in the seal inspection port (see Figure 8).

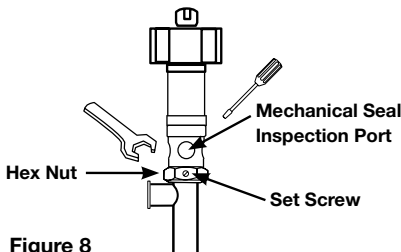


Figure 8

5. Once the hex nut is loosened, remove the outer tube from the drive shaft assembly (see Figure 9).

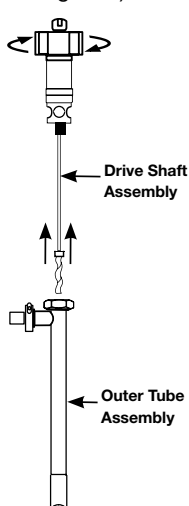


Figure 9

6. Remove the stator from the pump tube body by turning clockwise (see Figure 10).

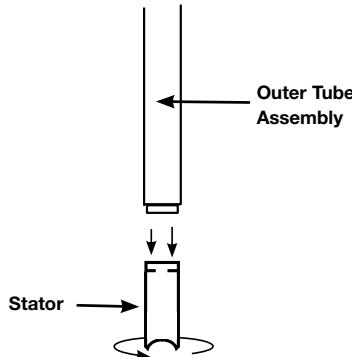


Figure 10

7. Hold the drive shaft in a fixed position and loosen the rotor (counterclockwise) located at the bottom of the drive shaft (see Figure 11).

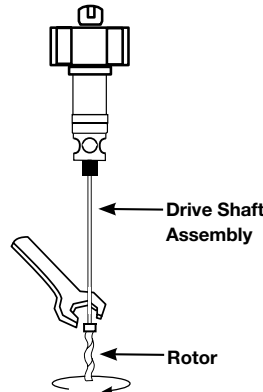


Figure 11

8. Insert a small screwdriver (or similar object) through the small hole on the shaft located inside the mechanical seal inspection port (see Figure 12).
9. While holding the small shaft still, loosen (counterclockwise) the pump drive shaft with large wrench. (see Figure 12).

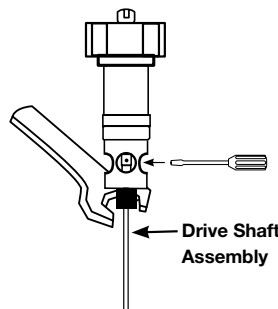


Figure 12

Mechanical Seal Replacement / Pump Assembly 8500(BL), 8501(BL), 8513(BL), 8514(BL), 8540(BL), 8541(BL), 8550(BL) & 8551(BL)

1. Follow steps 1-9 under the Disassembly / Cleaning Procedures from above.
2. The mechanical seal will be exposed in the lower portion of the mechanical seal bushing (see Figure 13).

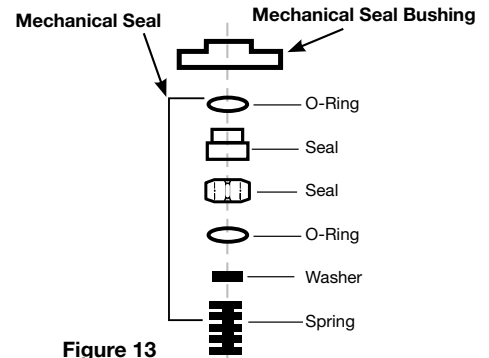


Figure 13

3. Remove damaged seal and replace with a new mechanical seal. Use a suitable lubricant on the seals O-rings.

WARNING *Wear gloves when performing seal maintenance. Touching the seal face could cause premature failure.*

4. Reinstall mechanical seal bushing into bearing housing.
5. Thread drive shaft onto bearing housing shaft (see Figure 12).
6. Thread rotor onto drive shaft (see Figure 11).
7. Thread stator can onto pump body (see Figure 10).
8. Apply a suitable lubricant on rotor.
9. Once bearing housing, drive shaft, and rotor are securely threaded together, insert this assembly into the pump body (see Figure 9).
10. Tighten the hex nut on the pump body to the bearing housing. Use screwdriver (or similarly shaped object) in the mechanical seal inspection port (see Figure 8).
11. Use a large wrench to tighten the hex nut while simultaneously holding the screwdriver in the seal inspection port (see Figure 8).
12. Replace set screw into hex nut.
13. Reattach motor and resume operation.

3A Certified

INITIALLY ISSUED: 7/27/2004

AUTHORIZATION NUMBER: 1338



THIS IS TO CERTIFY THAT

Standard Pump, Inc.

1540 University Dr., Auburn, GA 30011

is hereby authorized to continue to apply the
3-A Symbol to the models of equipment, conforming to 3-A Sanitary Standards for:

Number: 02-11, Centrifugal and Positive Rotary Pumps

set forth below

**Progressing Cavity Pumps SP-800SR and SP-800DD with lengths 27 in.,
39 in., and 47 in.; NBR and PTFE stators; SiC-SiC seals Centrifugal
Pumps HV SP-8800 and HP SP-8900 in lengths 39 in. and 47 in.**

VALID THROUGH: **December 31, 2014**

Timothy R. Rugh

Timothy R. Rugh
Executive Director, 3-A Sanitary Standards, Inc.

The issuance of this authorization for the use of the 3-A Symbol is based upon the voluntary certification, by the applicant for it, that the equipment listed above complies fully with the 3-A Sanitary Standards designated. Legal responsibility for compliance is solely that of the holder of this Certificate of Authorization, and 3-A Sanitary Standards, Inc. does not warrant that the holder of an authorization at all times complies with the provisions of the said 3-A Sanitary Standards. This in no way affects the responsibility of 3-A Sanitary Standards, Inc. to take appropriate action in such cases in which evidence of nonconformance had been established.

NEXT TPV INSPECTION/REPORT DUE: **December 2016**

Warranty

Declarations

Declaration of Conformity	When this unit is used as a stand alone unit it complies with: Machinery Directive 98/37/EC EN60204, EN60335-2-41, EN60335-1, Low Voltage Directive 73/23/Eec EN61010-1, EMC Directive 89/336/Eec EN55014, EN 550104, EN50081-1, EN50082-1
Declaration of Incorporation	When this pump unit is to be installed into machine or is to be assembled with other machines for installations, it must not be put into service until the relevant machinery has been declared in conformity with Machine Directive 98/37/EC EN60204, EN60335-2-41, EN60335-1.

Three year limited warranty

Standard Pump, Inc. warrants, subject to the conditions below, through either Standard Pump, Inc., its subsidiaries, or its authorized distributors, to repair or replace free of charge, including labor, any part of this equipment which fails within **three years** of delivery of the product to the end user. Such failure must have occurred because of defect in material or workmanship and not as a result of operation of the equipment other than in accordance with the instructions given in this material. Specific exceptions include:

- Consumable items such as motor brushes, bearings, couplings and impellers. (Motor brushes typically have a life span of approximately 700 hours. This will vary with the manner in which the motor is used)

Conditions of exceptions include:

- Equipment must be returned by prepaid carriage to Standard Pump, Inc., its subsidiary or authorized distributor.
- All repairs, modifications must have been made by or with express written permission by Standard Pump, Inc., its subsidiary or authorized distributor.
- Equipment which have been abused, misused, or subject to malicious or accidental damage or electrical surge are excluded.

Warranties purporting to be on behalf of Standard Pump, Inc. made by any person, including representatives of Standard Pump, Inc, its subsidiaries, or its distributors, which do not fall within the terms of this warranty shall not be binding upon Standard Pump, Inc. unless expressly approved in writing by a Director or Manager of Standard Pump, Inc. Information for returning pumps Equipment which has been contaminated with, or exposed to, bodily fluids, toxic chemicals or any other substance hazardous to health must be decontaminated before it is returned to Standard Pump, Inc, or its distributor. A returned goods authorization number (RGA #) issued by Standard Pump, Inc., its subsidiary or authorized distributor, must be included with the returned equipment. The RGA # is required if the equipment has been used. If the equipment has been used, the fluids that have been in contact with the pump and the cleaning procedure must be specified along with a statement that the equipment has been decontaminated.