



Operating Instructions and Parts Manual
Industrial Pump Models: SP-PP, SP-PHT, SP-CPVC, SP-PVDF, SP-SS,
SP-700SR & SP-700DD Series
Pump Package Models: 9400, 9410, 9420, 9430,
9500, 9510, 9600 Series

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Standard Drum Pumps

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.

⚠ WARNING

When pumping flammable or combustible products or operating in a hazardous duty environment, the SP-SS Series Pump must be used in conjunction with an explosion proof motor. Please contact the factory or an authorized distributor with any questions regarding this matter.

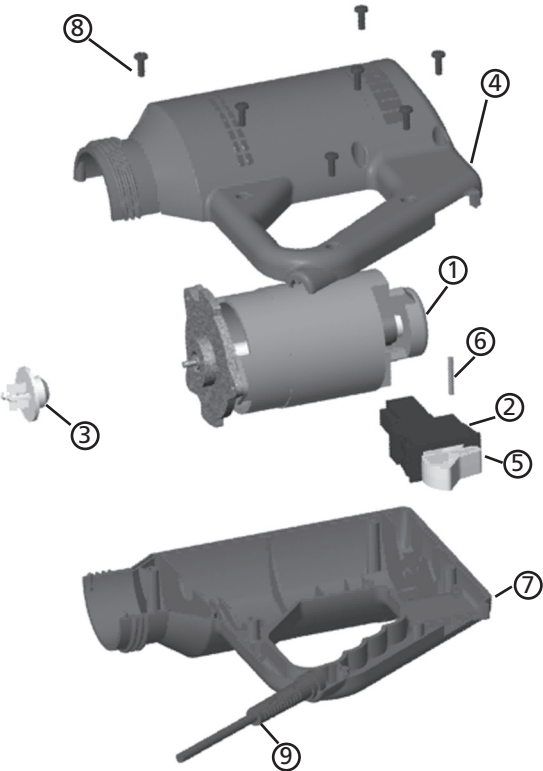
Centrifugal Drum Pumps

MOTOR SPECIFICATIONS

Model	Voltage	Amps	Watts	HP	Phase	Hz	Enclosure	Variable Speed	Explosion Proof	Air Consumption	Airline Size Inches (mm)
SP-ODP	110V	8.5	550	0.75	1	50-60	ODP	N	N	N/A	N/A
SP-ODP-2	220V	5	550	0.75	1	50-60	ODP	N	N	N/A	N/A
SP-280P	110V	8.5	825	1	1	50-60	ODP (IP44)	N	N	N/A	N/A
SP-280P-V	110V	8.5	825	1	1	50-60	ODP (IP44)	Y	N	N/A	N/A
SP-280P-2	220V	5	825	1	1	50-60	ODP (IP44)	N	N	N/A	N/A
SP-280P-2-V	220V	5	825	1	1	50-60	ODP (IP44)	Y	N	N/A	N/A
SP-ENC	110V	8.5	825	1	1	50-60	TEFC (IP54)	N	N	N/A	N/A
SP-ENC-V	110V	8.5	825	1	1	50-60	TEFC (IP54)	Y	N	N/A	N/A
SP-ENC-2	220V	5	825	1	1	50-60	TEFC (IP54)	N	N	N/A	N/A
SP-ENC-2-V	220V	5	825	1	1	50-60	TEFC (IP54)	Y	N	N/A	N/A
SP-A1	N/A	N/A	370	0.50	N/A	N/A	N/A	Y	Y	22 cfm (10,4 L/sec) @ 90 PSI (6,2 Bar)	0.125 (3,2) or greater
SP-A2 Series	N/A	N/A	560	0.75	N/A	N/A	N/A	Y	Y	28 CFM (13,2 L/sec) @ 90 PSI (6,2 Bar)	0.25 (6,3) or greater

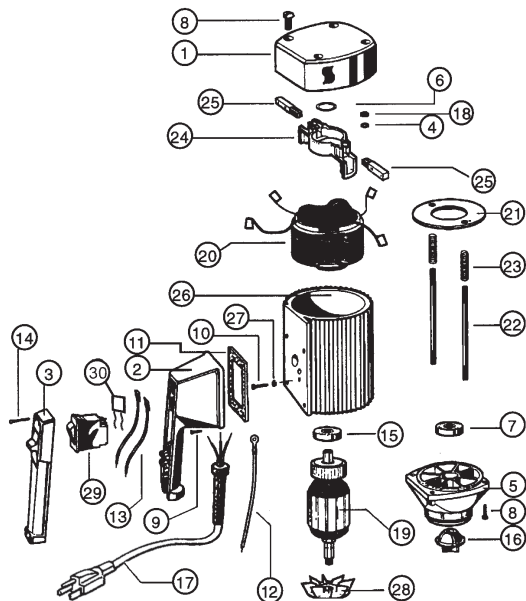
⚠ The speed control switch should not be used as the main ON/OFF switch. Using the speed control switch in this manner causes excessive wear to the potentiometer and may result in premature failure. The use of the speed control switch does not cut power to the motor and inadvertent activation could result in injury or death if the motor is activated when not properly attended and secured. (Only applies to SP-280P and SP-ENC Series)

SP-ODP SERIES MOTOR SPARE PARTS



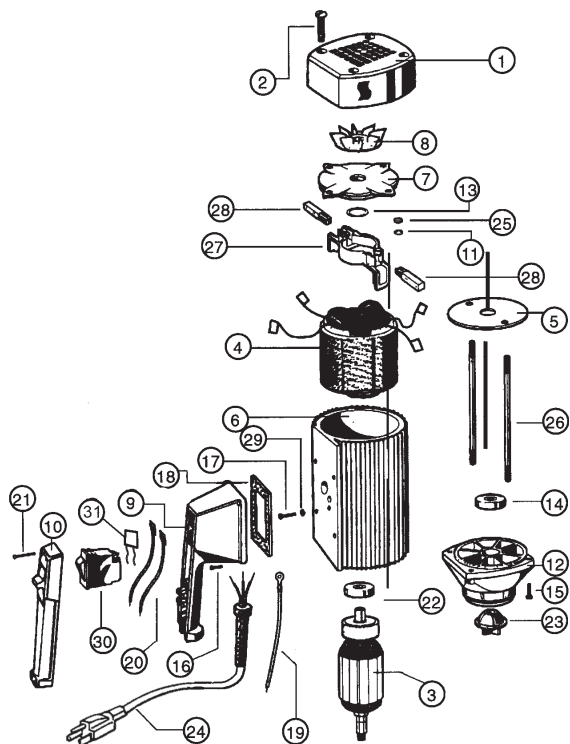
ITEM NUMBER	DESCRIPTION	PART NUMBER
1	Motor assembly 110-120V	8900
	Motor assembly 220-240V	8900-2
2	Overload switch	
	8.5 amp, 110-120V	8611
	5 amp, 220-240V	8704 LVR
3	Motor coupling	8333
4	Case left	8902
5	Actuator switch	8903
6	Rocker pin	8904
7	Case right	8901
8	Screw	8905
9	Power cord w/ strain relief & plug	
	110-120V	8361
	220-240V	8706

SP-280P SERIES MOTOR SPARE PARTS



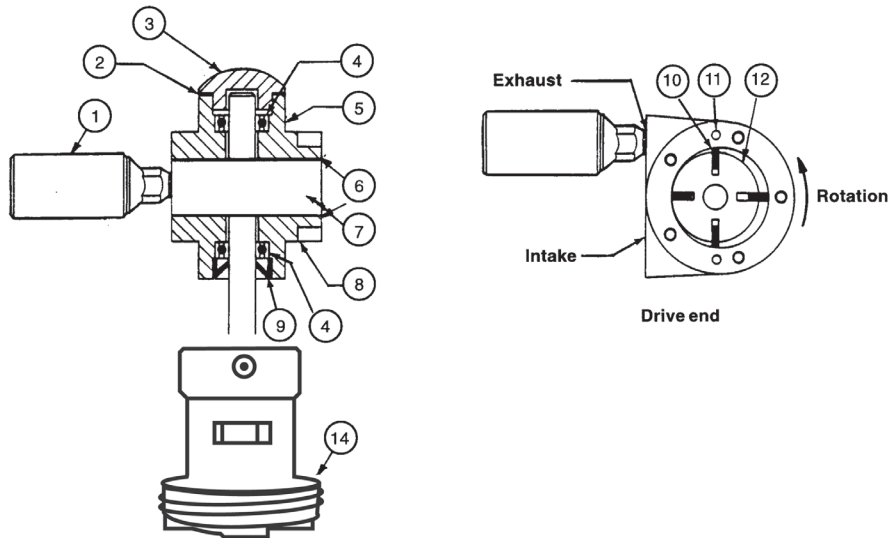
ITEM NUMBER	DESCRIPTION	PART NUMBER
1	Motor cover	8000
2	Switch housing	8001
2A	Switch housing for variable speed, includes potentiometer	
	110-120V	8004
	220-240V	8005
3	Switch cover	8002
4	Lock washer	8071
5	Lower housing	8100
6	Wave washer	8125
7	Ball bearing	8126
8	Screw for plastic housing	8130P
9A	Screw for 110-120V	8131
9B	Screw for 220-240V	8131LVR
10	Ground screw	8162
11	Gasket, 110-120V	8167
	Gasket, 220-240V	8167LVR
12	Earthing lead	8183
13	Lead	8185
14	Screw	8220
15	Ball bearing	8331
16	Motor coupling	8333
17	Power cord w/strain relief & plug	
	110-120V	8360
	220-240V	8705
18	Hexagon nut	8448
19	Armature	
	110-120V	8502
	220-240V	8701
20	Stator	
	110-120V	8503
	220-240V	8702
21	Guide disc	8504
22	Rod connector	8506
23	Pressure spring	8507
24	Brush holder	8508
25	Carbon brush	
	110-120V	8509
	220-240V	8703
26	Motor housing, plastic	8510P
27	Star washer	8511
28	Fan	8512
29	Overload switch,	
	8.5 amp 110-120V	8611
	5 amp 220-240V low voltage release	8704LVR
30	EMI Filter	8003
31	Repair kit 110-120V (includes PN's 8333 & (2) 8509)	9055
32	Repair kit 220-240V (includes PN's 8333 & (2) 8703)	9056

SP-ENC SERIES MOTOR SPARE PARTS



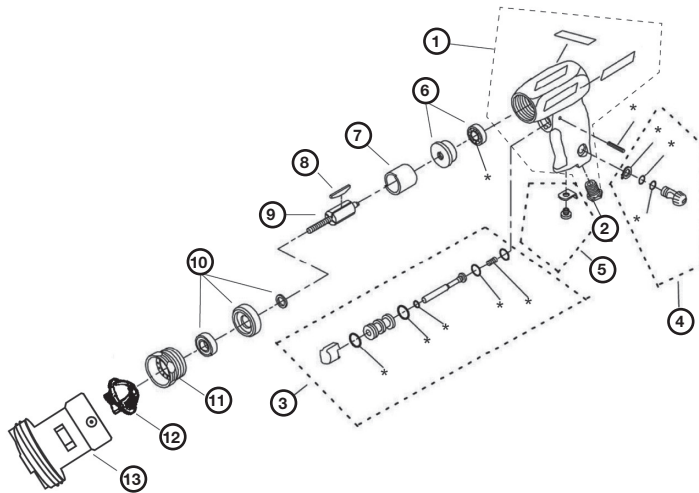
ITEM NUMBER	DESCRIPTION	PART NUMBER
1	Motor cover	3000
2	Screw	3130
3	Armature	110-120V 3502 220-240V 3701
4	Stator	110-120V 3503 220-240V 3702
5	Guide disc	3504
6	Motor housing	3510
7	Bearing cover	3511
8	Fan	3512
9	Switch housing	8001
9A	Switch housing for variable speed, includes potentiometer	110-120V 8004 220-240V 8005
10	Switch cover	8002
11	Lock washer	8071
12	Lower housing	8100
13	Wave washer	8125
14	Ball bearing	8126
15	Screw	8130
16A	Screw for 110-120V	8131
16B	Screw for 220-240V	8131LVR
17	Ground screw	8162
18	Gasket, 110-120V	8167
	Gasket, 220-240V	8167LVR
19	Earthing lead	8185
20	Lead	8183
21	Screw	8220
22	Ball bearing	8331
23	Motor coupling	8333
24	Power cord w/strain relief & plug	110-120V 8360 220-240V 8705
25	Hexagon nut	8448
26	Rod connector	3703
27	Brush holder	8508
28	Carbon brush	110-120V 8509 220-240V 8703
29	Star washer	8511
30	Overload switch, 8.5 amp 110-120V	8611
	5 amp 220-240V low voltage release	8704LVR
31	EMI Filter	8003
32	Repair kit 110-120V (includes PN's 8333 & (2) 8509)	9055
33	Repair kit 220-240V (includes PN's 8333 & (2) 8703)	9056

SP-A1 MOTOR SPARE PARTS



ITEM NUMBER	DESCRIPTION	PART NUMBER
1	Muffler	SAF350
2*	Gasket	SAC229
3	Dead end cap	SAC228A
4*	Bearing (2 required)	SAG549
5	Dead end plate	SAC617
6*	Gasket (2 required)	SAC527
7	Body	SAE899
8	Drive end plate	SAC616
9*	Shaft seal	SAC190A
10*	Vane (4 required)	SAE893
11	Dowel pin (4 required)	SD324A
12	Impeller	SAE896
13	Repair kit*	SK285
	Includes item numbers	
	2, 4, 6, 9 and 10	
14	A1 adapter	9007

SP-A2 SERIES MOTOR SPARE PARTS



ITEM NUMBER	DESCRIPTION	PART NUMBER
1	Housing assembly	317A-A40
4	Inlet bushing (with Screen)	317A-3B
5	Trigger assembly	317A-A93
6	Regulator assembly	317A-A249
7	Muffler kit	317A-AMK1
8	Rear-end plate assembly	317A-A12
9	Cylinder	317A-3
10	Vanes (set of 4)	317A-42-4
11	Rotor	317A-53
12	Front-end plate, assembly	317A-A11
13	Motor lock-nut	317A-27
14	Motor coupling	8333
15	Adaptor	9014
–	Trigger Lock (SP-A2L only)	5017813OP

DRUM PUMP SPECIFICATIONS

Model	Material Of Construction	Maximum Liquid Temperature	Wetted Materials	Flow Rate	Discharge Pressure
SP-CPVC	CPVC	190° F (90° C)	CPVC, Carbon, Hastelloy C	35 gpm (132 l/min)	16 psi (1,1 bar)
SP-CPVC-HH	CPVC	190° F (90° C)	CPVC, Carbon, Hastelloy C	16 gpm (60 l/min)	32 psi (2,2 bar)
SP-PP	Polypropylene	130° F (55° C)	PP, Carbon, Hastelloy C	35 gpm (132 l/min)	16 psi (1,1 bar)
SP-PP-HH	Polypropylene	130° F (55° C)	PP, Carbon, Hastelloy C	16 gpm (60 l/min)	32 psi (2,2 bar)
SP-PHT	Polypropylene	175° F (80° C)	PP, Carbon, Hastelloy C	35 gpm (132 l/min)	16 psi (1,1 bar)
SP-PHT-HH	Polypropylene	175° F (80° C)	PP, Carbon, Hastelloy C	16 gpm (60 l/min)	32 psi (2,2 bar)
SP-PVDF	PVDF (Kynar)	175° F (80° C)	PVDF, Carbon, Hastelloy C	35 gpm (132 l/min)	16 psi (1,1 bar)
SP-PVDF-HH	PVDF (Kynar)	175° F (80° C)	PVDF, Carbon, Hastelloy C	16 gpm (60 l/min)	32 psi (2,2 bar)
SP-SS	SS316	175° F (80° C)	SS316, Carbon, Teflon	35 gpm (132 l/min)	16 psi (1,1 bar)
SP-SS-HH	SS316	175° F (80° C)	SS316, Carbon, Teflon	16 gpm (60 l/min)	32 psi (2,2 bar)

PUMP PACKAGE SPECIFICATIONS

Electric Motor Pump Packages

Model	HP	Voltage	Phase	Meter	Wetted Components	Immersion Length	Hose Length	Nozzle Material
9400	1	110V	1	No	Polypropylene, Carbon, Hastelloy C, PVC, Viton	39" (1000 mm)	6 ft. (1,83 meters)	Polypropylene
9401	1	220V	1	No	Polypropylene, Carbon, Hastelloy C, PVC, Viton	39" (1000 mm)	6 ft. (1,83 meters)	Polypropylene
9402	1	110V	1	No	Polypropylene, Carbon, Hastelloy C, PVC, Viton	47" (1200 mm)	6 ft. (1,83 meters)	Polypropylene
9403	1	220V	1	No	Polypropylene, Carbon, Hastelloy C, PVC, Viton	47" (1200 mm)	6 ft. (1,83 meters)	Polypropylene
9410	1	110V	1	No	SS316, Teflon, Carbon, Aluminum, PVC, Buna	39" (1000 mm)	6 ft. (1,83 meters)	Aluminum
9411	1	220V	1	No	SS316, Teflon, Carbon, Aluminum, PVC, Buna	39" (1000 mm)	6 ft. (1,83 meters)	Aluminum
9412	1	110V	1	No	SS316, Teflon, Carbon, Aluminum, PVC, Buna	47" (1200 mm)	6 ft. (1,83 meters)	Aluminum
9413	1	220V	1	No	SS316, Teflon, Carbon, Aluminum, PVC, Buna	47" (1200 mm)	6 ft. (1,83 meters)	Aluminum

Electric Motor Pump Packages (continued)

Model	HP	Voltage	Phase	Meter	Wetted Components	Immersion Length	Hose Length	Nozzle Material
9420	1	110V	1	No	PVDF, Carbon, Hastelloy C, Alphasyn, Viton	39" (1000 mm)	6 ft. (1,83 meters)	PVDF
9421	1	220V	1	No	PVDF, Carbon, Hastelloy C, Alphasyn, Viton	39" (1000 mm)	6 ft. (1,83 meters)	PVDF
9422	1	110V	1	No	PVDF, Carbon, Hastelloy C, Alphasyn, Viton	47" (1200 mm)	6 ft. (1,83 meters)	PVDF
9423	1	220V	1	No	PVDF, Carbon, Hastelloy C, Alphasyn, Viton	47" (1200 mm)	6 ft. (1,83 meters)	PVDF
9430	1	110V	1	No	CPVC, Polypropylene, Carbon, Hastelloy C, PVC, Viton	39" (1000 mm)	6 ft. (1,83 meters)	Polypropylene
9431	1	220V	1	No	CPVC, Polypropylene, Carbon Hastelloy C, PVC, Viton	39" (1000 mm)	6 ft. (1,83 meters)	Polypropylene
9432	1	110V	1	No	CPVC, Polypropylene, Carbon, Hastelloy C, PVC, Viton	47" (1200 mm)	6 ft. (1,83 meters)	Polypropylene
9433	1	220V	1	No	CPVC, Polypropylene, Carbon Hastelloy C, PVC, Viton	47" (1200 mm)	6 ft. (1,83 meters)	Polypropylene
9500	1	110V	1	Yes	Polypropylene, Carbon, Hastelloy C, PVC, Viton, Ceramic, PVDF, Halar	39" (1000 mm)	6 ft. (1,83 meters)	Polypropylene
9501	1	220V	1	Yes	Polypropylene, Carbon, Hastelloy C, PVC, Viton, Ceramic, PVDF, Halar	39" (1000 mm)	6 ft. (1,83 meters)	Polypropylene
9502	1	110V	1	Yes	Polypropylene, Carbon, Hastelloy C, PVC, Viton, Ceramic, PVDF, Halar	47" (1200 mm)	6 ft. (1,83 meters)	Polypropylene
9503	1	220V	1	Yes	Polypropylene, Carbon, Hastelloy C, PVC, Viton, Ceramic, PVDF, Halar	47" (1200 mm)	6 ft. (1,83 meters)	Polypropylene
9510	1	110V	1	Yes	PVDF, Carbon, Hastelloy C, Alphasyn Viton, Ceramic, Halar	39" (1000 mm)	6 ft. (1,83 meters)	PVDF
9511	1	220V	1	Yes	PVDF, Carbon, Hastelloy C, Alphasyn Viton, Ceramic, Halar	39" (1000 mm)	6 ft. (1,83 meters)	PVDF
9512	1	110V	1	Yes	PVDF, Carbon, Hastelloy C, Alphasyn Viton, Ceramic, Halar	47" (1200 mm)	6 ft. (1,83 meters)	PVDF
9513	1	220V	1	Yes	PVDF, Carbon, Hastelloy C, Alphasyn Viton, Ceramic, Halar	47" (1200 mm)	6 ft. (1,83 meters)	PVDF

Air Motor Pump Packages

Model	HP	Air Consumption	Meter	Wetted Components	Immersion Length	Hose Length	Nozzle Material
9600	0.5	22 CFM (10.4 L/sec) @ 90 psi (6,2 bar)	No	SS316, Teflon, Carbon, Aluminum, Buna, UHMWPE	39" (1000 mm)	6 ft. (1,83 meters)	Aluminum
9601	0.5	22 CFM (10.4 L/sec) @ 90 psi (6,2 bar)	No	SS316, Teflon, Carbon, Aluminum, Buna, UHMWPE	47" (1200 mm)	6 ft. (1,83 meters)	Aluminum
9602	0.75	28 CFM (13.2 L/sec) @ 90 psi (6,2 bar)	No	SS316, Teflon, Carbon, Aluminum, Buna, UHMWPE	39" (1000 mm)	6 ft. (1,83 meters)	Aluminum
9603	0.75	28 CFM (13.2 L/sec) @ 90 psi (6,2 bar)	No	SS316, Teflon, Carbon, Aluminum, Buna, UHMWPE	47" (1200 mm)	6 ft. (1,83 meters)	Aluminum

Assembly

1. Remove the pump and motor from packaging.
2. Inspect all contents for damage.
3. Couple the motor to the pump tube by using the Hand Wheel. (See figure 1).

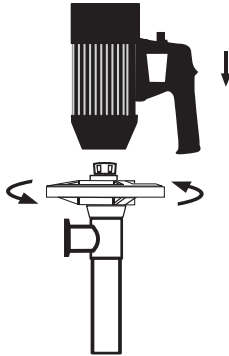


Figure 1

⚠ WARNING When using an SP-A1 or SP-A2 Series motor, Standard Pump recommends the use of a Filter Lubricator Regulator (FLR) in order to ensure a moisture free supply of air to the motor.

⚠ WARNING SP-A1 and SP-A2 Series motors must be lubricated daily to ensure proper functionality.

Operation

1. Once the pump is fully assembled and all connections are securely fastened, insert the pump into the drum or tank.
2. Turn the motor switch to the "ON" position or open air inlet valve.
3. If your package contains a flow meter (Package numbers 9500-9503 or 9510-9513) please reference the factory operating instructions which are located in your carton.
4. After use, clean the pump and store vertically.

Maintenance

DISASSEMBLY / CLEANING PROCEDURES

1. In order to clean a majority of the residue from the pump tube, immerse the pump into a 55 Gallon Drum of water. Allow the pump to circulate the water for 3 minutes.
2. For a more thorough cleaning remove the motor from the pump tube by loosening the hand wheel (see Figure 2).

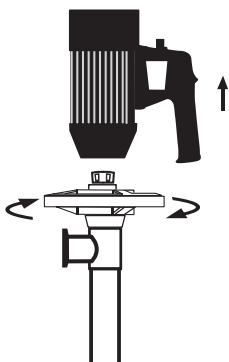


Figure 2

3. Remove the pump foot. (see Figure 3)

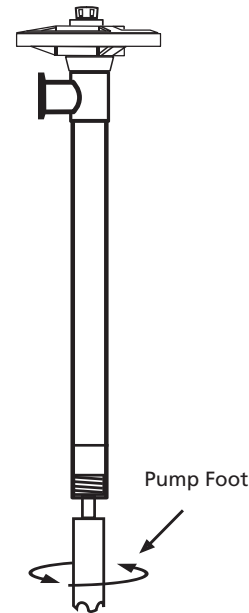


Figure 3

NOTE: Remove pump foot by turning clockwise.

4. While holding the drive shaft with pliers (factory suggests using grip-locks to avoid scarring shaft) remove the impeller by turning counter clockwise (see Figure 4).

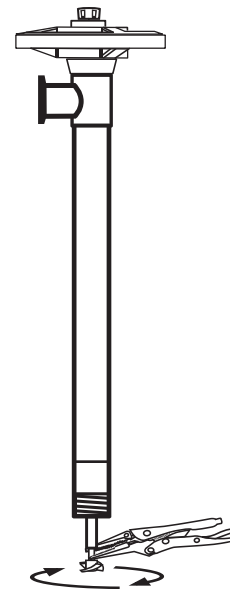


Figure 4

NOTE: Use grip lock pliers to hold shaft while removing impeller.

5. Remove the Pump Housing (see Figure 5).

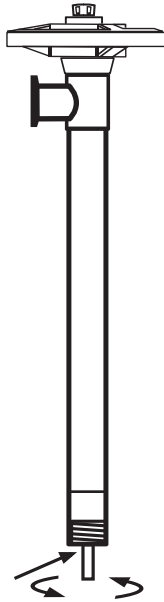


Figure 5

NOTE: Remove pump housing by turning clockwise.

6. For plastic models remove outer tube and inner tube from discharge housing by turning clockwise (see Figure 6).

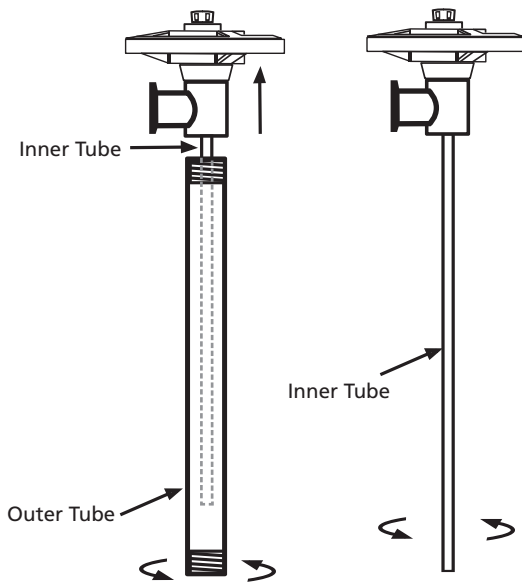


Figure 6

7. For stainless steel models (i.e. SP-SS Series, 9410-9413 & 9600- 9603), remove connection flange (P/N 8102) from inner/ outer tube assembly by turning clockwise (see Figure 7).

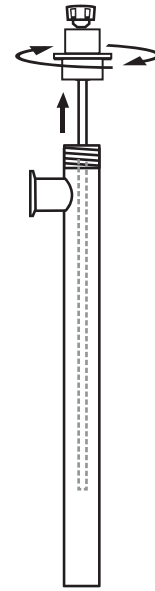


Figure 7

8. Remove pump coupling (P/N: 1004) from drive shaft by turning counterclockwise (see Figure 8). **NOTE:** Use grip-lock pliers to hold shaft while removing coupling.

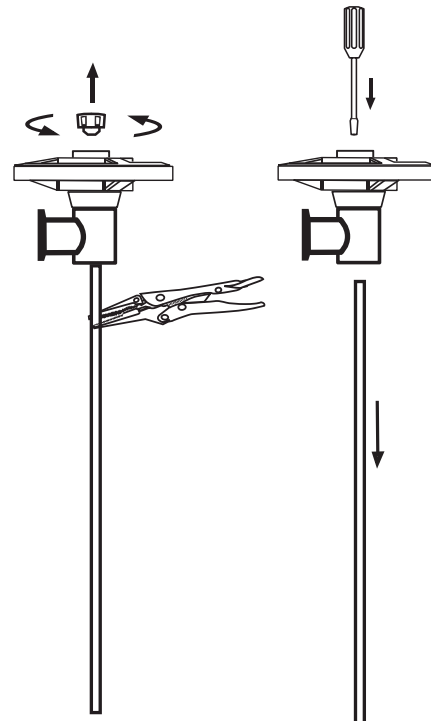


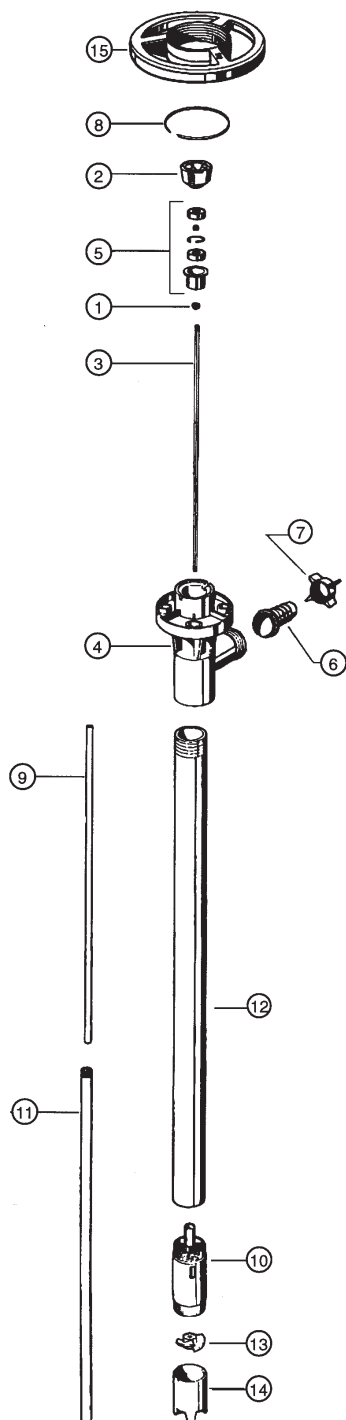
Figure 8

Figure 9

9. Pull drive shaft straight down removing it from the discharge housing or connection flange while inserting a screwdriver through bearing unit (P/N: 1038) (see Figure 9). **NOTE:** Ensure screwdriver is maintained inside bearing unit so spacer and seal are stationary and aligned properly for reassembly.

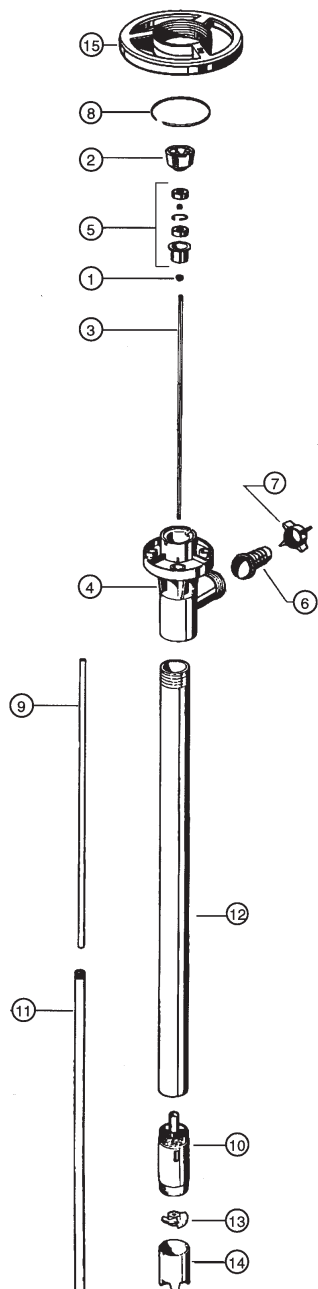
⚠ WARNING *When replacing the drive shaft in the bearing unit (PIN1038) during reassembly, make sure the drive shaft is inserted through the spacer in between the bearings inside the bearing unit. Failure to do so could cause the bearing unit to prematurely fail.*

POLYPROPYLENE PUMP SERIES



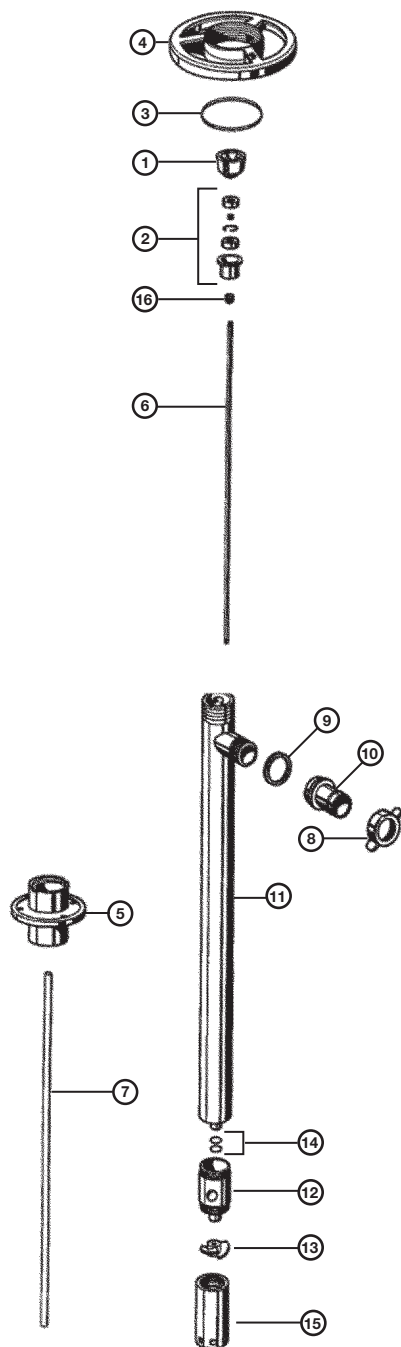
ITEM NUMBER	DESCRIPTION	PART NUMBER
1	V-seal, Viton	1000
2*	Pump Coupling	1004
3	Drive Shaft, Hastelloy	
	27" (700 mm)	1543
	39" (1000 mm)	1544
	47" (1200 mm)	1545
	50" (1270 mm)	1549
	60" (1500 mm)	1546
	72" (1800 mm)	1547
4	Discharge Housing	1028
5*	Bearing Unit Assembled – 2 each	1038
	Viton shielded bearings, spacer, snap ring, bearing can	
6	Hose Barb, .75" (19 mm)	1051
	1" (25 mm)	1082
7	Wing Nut	1106
8	Snap Ring	1508
9	Guide Sleeve, PTFE	
	27" (700 mm)	1516
	39" (1000 mm), 47" (1200 mm), 50" (1270 mm)	1514
	60" (1500 mm), 72" (1800 mm)	1661
10*	Pump Housing (Includes Carbon Bushing)	1524
11	Inner Tube, 27" (700 mm)	1600
	39" (1000 mm)	1601
	47" (1200 mm)	1602
	50" (1270 mm)	1623
	60" (1500 mm)	1615
	72" (1800 mm)	1616
12	Outer Tube, 27" (700 mm)	1604
	39" (1000 mm)	1603
	47" (1200 mm)	1605
	50" (1270 mm)	1624
	60" (1500 mm)	1617
	72" (1800 mm)	1618
13*	High Volume Impeller	1608
	High Pressure Impeller	4608 HH
14*	High Volume Pump Foot	1609
	High Pressure Pump Foot	1609 HH
15	Hand Wheel	1842
16	Repair Kit (*Includes Items 2, 5, 10, 13, & 14)	9050

CPVC PUMP SERIES



ITEM NUMBER	DESCRIPTION	PART NUMBER
1	V-Seal, PTFE	4000
2*	Pump Coupling	1004
3	Drive Shaft, Hastelloy	
	27" (700 mm)	1543
	39" (1000 mm)	1544
	47" (1200 mm)	1545
	50" (1270 mm)	1549
	60" (1500 mm)	1546
	72" (1800 mm)	1547
4	Discharge Housing	5028
5*	Bearing Unit Assembled – 2 each	1038
	Viton shielded bearings, spacer, snap ring, bearing can	
6	Hose Barb, .75" (19 mm)	5051
	1" (25 mm)	5082
7	Wing Nut	5106
8	Snap Ring	1508
9	Guide Sleeve, PTFE	
	27" (700 mm)	1516
	39" (1000 mm), 47" (1200 mm), 50" (1270 mm)	1514
	60" (1500 mm), 72" (1800 mm)	1661
10*	Pump Housing (Includes Carbon Bushing)	5524
11	Inner Tube, 27" (700 mm)	5600
	39" (1000 mm)	5601
	47" (1200 mm)	5602
	50" (1270 mm)	5623
	60" (1500 mm)	5615
	72" (1800 mm)	5616
12	Outer Tube, 27" (700 mm)	5604
	39" (1000 mm)	5603
	47" (1200 mm)	5605
	50" (1270 mm)	5624
	60" (1500 mm)	5617
	72" (1800 mm)	5618
13*	High Volume Impeller	5608
	High Pressure Impeller	4608 HH
14*	High Volume Pump Foot	5609
	High Pressure Pump Foot	5609 HH
15	Hand Wheel	1842
16	Repair Kit (*Includes Items 2, 5, 10, 13, & 14)	9052

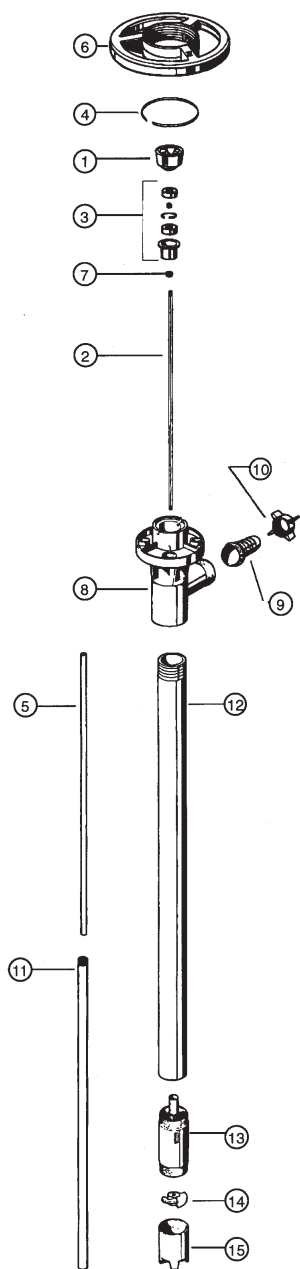
316 STAINLESS STEEL PUMP SERIES



ITEM NUMBER	DESCRIPTION	PART NUMBER
1*	Pump Coupling	1004
2*	Bearing Unit Assembled – 2 each Viton shielded bearings, spacer, snap ring, bearing can	1038
3	Snap Ring	1508
4	Hand Wheel	1842
5	Connection Flange, SS316	8102
6	Drive Shaft, SS316	
	27" (700 mm)	2027
	39" (1000 mm)	2028
	47" (1200 mm)	2029
	60" (1500 mm)	2709
	72" (1800 mm)	2710
7	Guide Sleeve, PTFE	
	27" (700 mm)	2031
	39" (1000 mm) / 47" (1200 mm)	2032
	60" (1500 mm)	2711
	72" (1800 mm)	2712
8	Wing Nut, SS316	8068
9*	Seal, PTFE	2195
10	Hose Barb, SS316	
	.75" (19 mm)	2197
	1" (25 mm)	2196
11	Inner/Outer Tube Assembly, SS316	
	27" (700 mm)	2700
	39" (1000 mm)	2701
	47" (1200 mm)	2702
	60" (1500 mm)	2713
	72" (1800 mm)	2714
12*	Pump Housing with Carbon Bushing, SS316	2704
13*	High Volume Impeller, PTFE	2706
	High Pressure Impeller, PTFE	4608 HH
14	O-Ring, Viton (2 per set)	2707
15	High Volume Pump Foot, SS316	2708
	High Pressure Pump Foot, SS316	2708 HH
16	V-Seal, PTFE	4000
17	Repair Kit (*Includes Items 1, 2, 9, 12 & 13)	9054

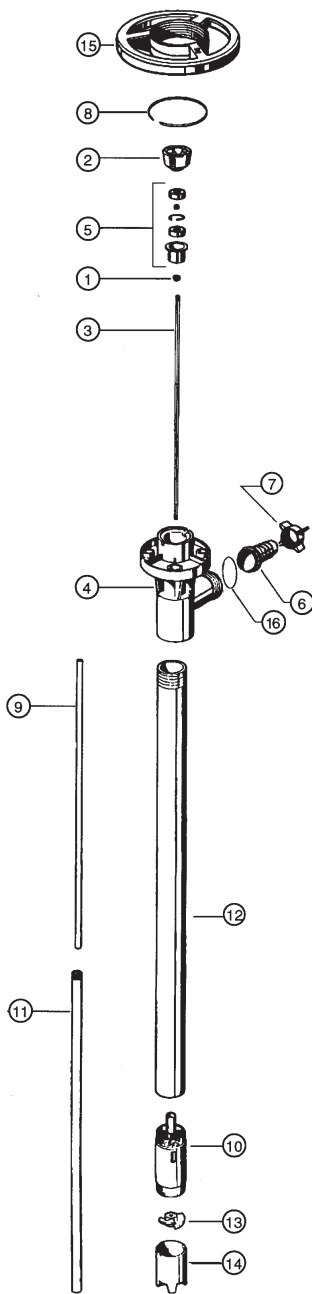
 When pumping flammables or combustible liquids, this pump must be used in conjunction with an explosion proof motor.

PVDF PUMP SERIES



ITEM NUMBER	DESCRIPTION	PART NUMBER
1*	Pump Coupling	1004
2	Drive Shaft, Hastelloy	
	27" (700 mm)	1543
	39" (1000 mm)	1544
	47" (1200 mm)	1545
	50" (1270 mm)	1549
	60" (1500 mm)	1546
	72" (1800 mm)	1547
3*	Bearing Unit Assembled – 2 each Viton shielded bearings, spacer, snap ring, bearing can	1038
4	Snap Ring	1508
5	Guide Sleeve, PTFE	
	27" (700 mm)	1516
	39" (1000 mm), 47" (1200 mm), 50" (1270 mm)	1514
	60" (1500 mm), 72" (1800 mm)	1661
6	Hand Wheel	1842
7	V-Seal, PTFE	4000
8	Discharge Housing	4028
9	Hose Barb, .75" (19 mm)	4051
	1" (25 mm)	4082
10	Wing Nut	4106
11	Inner Tube, 27" (700 mm)	4600
	39" (1000 mm)	4601
	47" (1200 mm)	4602
	50" (1270 mm)	4623
	60" (1500 mm)	4615
	72" (1800 mm)	4618
12	Outer Tube, 27" (700 mm)	4604
	39" (1000 mm)	4603
	47" (1200 mm)	4605
	50" (1270 mm)	4622
	60" (1500 mm)	4617
	72" (1800 mm)	4619
13*	Pump Housing (Includes Carbon Bushing)	4607
14*	High Volume Impeller	4608
	High Pressure Impeller	4608HH
15*	High Volume Pump Foot	4609
	High Pressure Pump Foot	4609HH
16	Repair Kit (*Includes Items 1, 3, 13, 14 & 15)	9051

HIGH TEMPERATURE POLYPROPYLENE PUMP SERIES



ITEM NUMBER	DESCRIPTION	PART NUMBER
1	V-Seal, PTFE	4000
2*	Pump Coupling	1004
3	Drive Shaft, Hastelloy	
	27" (700 mm)	1543
	39" (1000 mm)	1544
	47" (1200 mm)	1545
	50" (1270 mm)	1549
	60" (1500 mm)	1546
	72" (1800 mm)	1547
4	Discharge Housing	6028
5*	Bearing Unit Assembled (2 each)	1038
	Viton shielded bearings, spacer, snap ring, bearing can	
6	Hose Barb, .75" (19 mm)	6051
	1" (25 mm)	6082
7	Wing Nut	6106
8	Snap Ring	1508
9	Guide Sleeve, PTFE	
	27" (700 mm)	1516
	39" (1000 mm), 47" (1200 mm), 50" (1270 mm)	1514
	60" (1500 mm), 72" (1800 mm)	1661
10*	Pump Housing (Includes Carbon Bushing)	6524
11	Inner Tube, 27" (700 mm)	6600
	39" (1000 mm)	6601
	47" (1200 mm)	6602
	50" (1270 mm)	6623
	60" (1500 mm)	6615
	72" (1800 mm)	6616
12	Outer Tube, 27" (700 mm)	6604
	39" (1000 mm)	6603
	47" (1200 mm)	6605
	50" (1270 mm)	6624
	60" (1500 mm)	6617
	72" (1800 mm)	6618
13*	High Volume Impeller	6608
	High Pressure Impeller	4608 HH
14*	High Volume Pump Foot	6609
	High Pressure Pump Foot	6609 HH
15	Hand Wheel	1842
16	O-Ring, Viton	6695
17	Repair Kit (*includes items 2, 5, 10, 13, & 14)	9053



High Temperature Polypropylene pumps should not be used to pump flammables.

Progressive Cavity – SP-700SR, SP-700DD

MOTOR SPECIFICATIONS

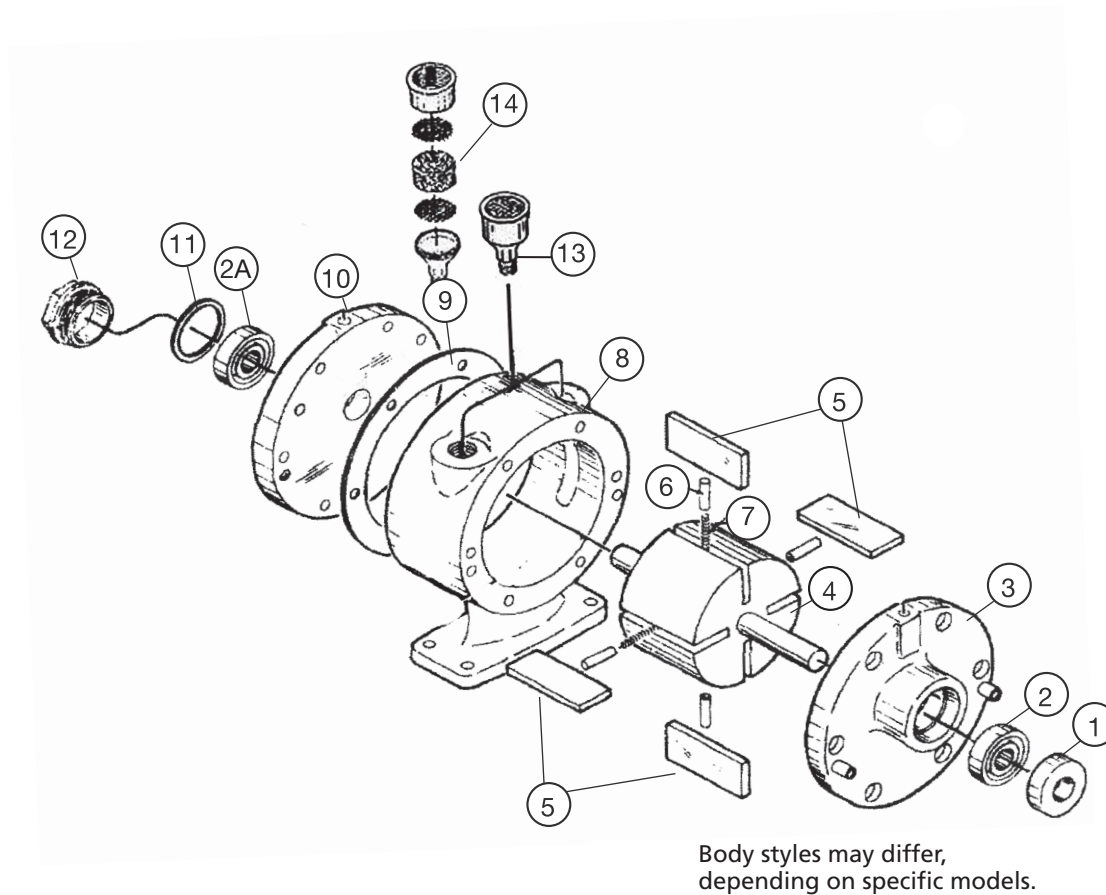
SP-700SR Series Motors

SP-ENC Series see page 2.

SP-700DD Series Motors

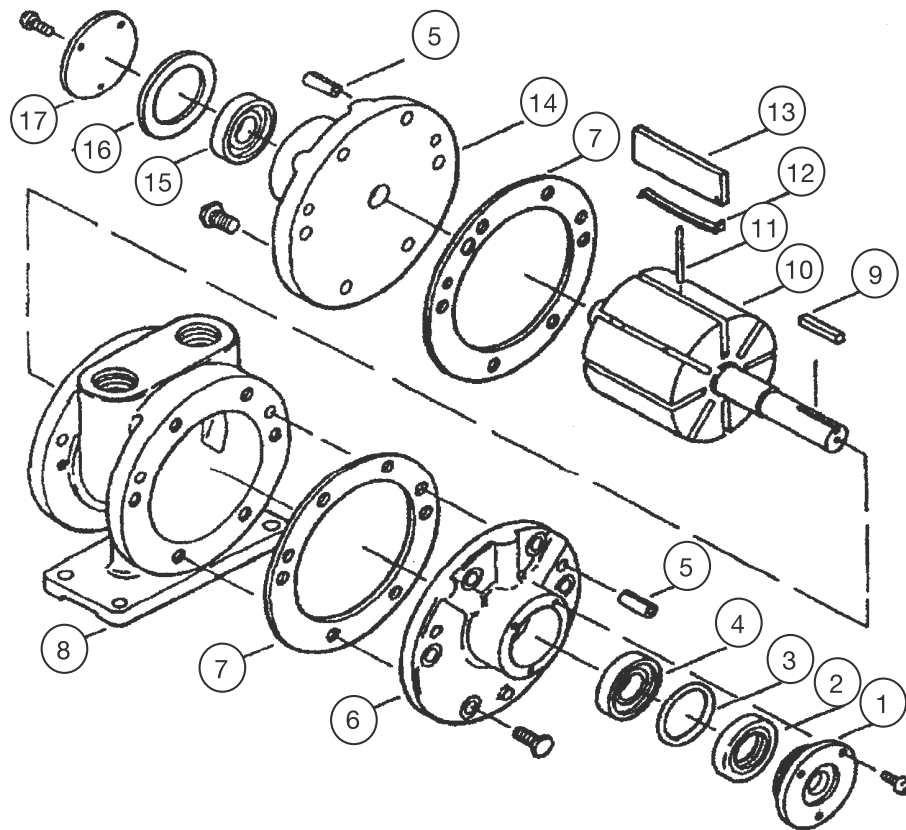
Model	Voltage	Amps	Watts	HP	Phase	Hz	Enclosure	Variable Speed	Explosion Proof	Air Consumption	Airline Size Inches (mm)
SP-502	190/380-230/460V	2-4.2	0,56 KW	0.75	3	50-60	TEFC (IP54)	N	N	N/A	N/A
SP-512	190/380-230/460V	2.1-4.6	0,75 KW	1	3	50-60	TEFC (IP54)	N	N	N/A	N/A
SP-522	190/380-230/460V	2.9-6.4	1,1 KW	1.5	3	50-60	TEFC (IP54)	N	N	N/A	N/A
SP-A4	N/A	N/A	1,5 KW	2	N/A	N/A	N/A	Y	Y	80 CFM (37 L/sec) @ 100 PSI (7 Bar)	0.25 (6,3) or greater
SP-A6	N/A	N/A	3,0 KW	4	N/A	N/A	N/A	Y	Y	130 CFM (65 L/sec) @ 100 PSI (7 Bar)	0.5 (12,7) or greater
SP-A8	N/A	N/A	3,7 KW	5	N/A	N/A	N/A	Y	Y	170 CFM (80 L/sec) @ 100 PSI (7 Bar)	0.5 (12,7) or greater

SP-A4 SERIES SPARE PARTS



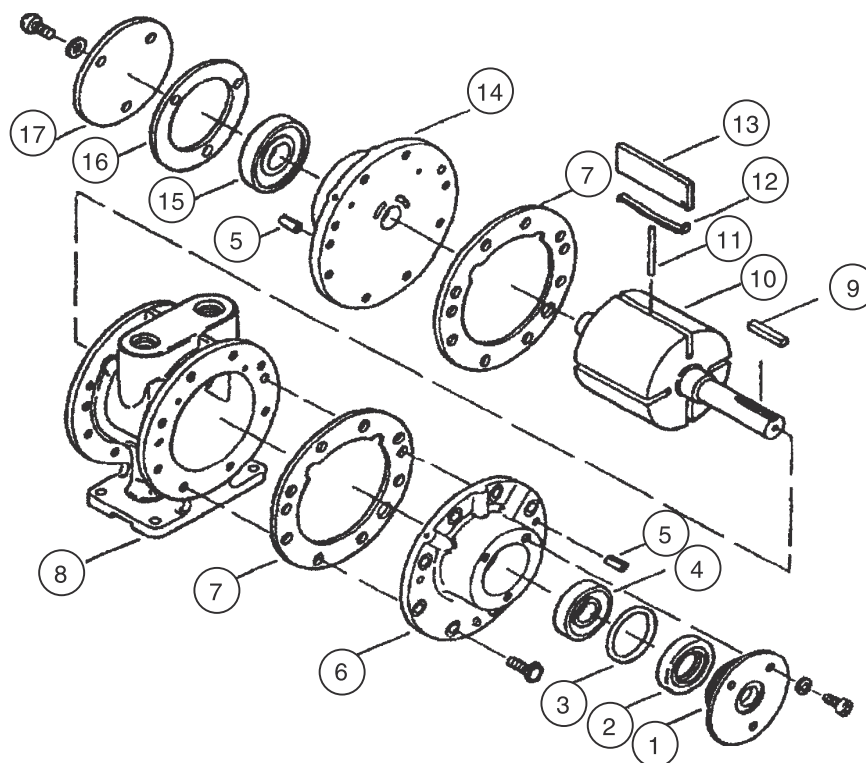
ITEM NUMBER	DESCRIPTION	QUANTITY	PART NUMBER
Service kit – only service kits are available for parts replacement		1	K206C
* Denotes parts included in the Service Kit			
1*	Shaft Seal	1	B2328
2*	Bearing, Drive End	1	AB519
2A*	Bearing, Dead End	1	AA299J
3	End Plate, Drive	1	AK425A
4	Rotor Assembly	1	AM455C
5*	Vane	4	
6*	Push Pin	4	
7*	Vane, Spring	2	
8	Body	1	AM410M
9*	Shims	2	B330
10	End Plate, Dead	1	AB622M
11*	End Cap, Gasket	1	AA46
12	End Cap, Dead	1	AM307D
13	Muffler Assembly	1	AC980
14*	Muffler Felt	1	AC983

SP-A6 SERIES SPARE PARTS



ITEM NUMBER	DESCRIPTION	QUANTITY	PART NUMBER
Service kit – only service kits are available for parts replacement		1	K281A
* Denotes parts included in the Service Kit			
1	End Cap, Drive End	1	AC998
2*	Shaft Seal	1	AK423
3*	O-Ring	1	AC989
4*	Bearing, Drive End	1	AC894B
5	Dowel Pin	4	AB162C
6	End Plate, Drive	1	AK424
7*	Body Gasket	2	AD641
8	Body	1	AD665D
9	Key	1	AK422
10	Rotor Assembly	1	AD648E
11*	Push Pin	2	AD655A
12*	Vane, Spring	4	AD692
13*	Vane	4	AD691
14	End Plate, Dead	1	AD651
15*	Bearing, Dead End	1	AB519
16*	End Cap, Gasket	1	AD644
17	End Cap, Dead End	1	AD643
	Muffler Assembly	1	AC990
*	Felt	1	AC993

SP-A8 SERIES SPARE PARTS



ITEM NUMBER	DESCRIPTION	QUANTITY	PART NUMBER
Service kit – only service kits are available for parts replacement * Denotes parts included in the Service Kit		1	K282A
1	End Cap, Drive End	1	AC988
2*	Shaft Seal	1	AK420
3*	O-Ring	1	AC989
4*	Bearing, Drive End	1	AB927
5	Dowel Pin	4	AB162
6	End Plate, Drive	2	AK421
7*	Body Gasket	2	AC888
8	Body	1	AC878G
9	Key	1	AK668
10	Rotor Assembly	1	AC986D
11*	Push Pin	2	AC879
12*	Vane, Spring	4	AC817
13*	Vane	4	AC816
14	End Plate, Dead	1	AC964
15*	Bearing, Dead End	1	AC894B
16*	End Cap, Gasket	1	AC837
17	End Cap, Dead End	1	AC836
	Muffler Assembly	1	AC990
*	Felt	1	AC993

SP-700SR SERIES

Specifications

Models SP-700SR

Maximum Liquid Temperature ...Teflon & Viton Stator	300° F (148° C)
Buna Stator	185° F (85° C)
Pump Type	Progressive Cavity (Positive Displacement)
Pump Speed.....	900 RPM
Max. Flow Rate.....751 & 752	7 GPM (27 LPM)
1851	12 GPM (45 LPM)
Max. Discharge Pressure.....751 & 1851	87 psi (6 bar)
752	174 psi (12 bar)
Immersion Length.....27" (700 mm), 39" (1000 mm) (Drums) &	47" (1200 mm) (Tanks)
Wetted Materials	SS 316, Teflon, Buna or Viton
Discharge Port	1.5" (38 mm) Hose Barb
(Optional 1.25" (32 mm) Hose Barb)	
Max. Viscosity.....751 & 752	25,000 cps (mPAS)
1851	10,000 cps (mPAS)
Max. Solid Size25" (6 mm)
Motor.....	SP-ENC Series

Notes

1. Pump stator elastomer (Teflon & Buna) may vary performance.
2. Performance is based on using a 900 RPM motor. Reducing motor speed will decrease pump performance.
3. The SP-700SR Series pump is equipped with a gear reduction unit which reduces the speed of the pump to between 750 and 900 RPM's. The motor speed must not exceed 16,000 RPM's in order to achieve the proper operating RPM's of the pump.
4. 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).
5. Flow rates are based on water. As viscosity increases, the flow rate will decrease.

⚠ WARNING

The SP-700SR Series Pump is 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 SP-700DD Series Pump.

⚠ WARNING

The SP-700SR Series Pump is 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 SP-700SR Series Pump should not run dry. Running the pump dry will result in damage to the mechanical seal and stator of the pump.

Assembly

1. Remove the pump and motor from packaging.
2. Inspect all contents for damages.
3. Couple the electric motor to the pump using the hex nut (see Figure 1).
4. First pump clean water in order to familiarize yourself with the pump's operation, flow rate, discharge pressure and motor speed.

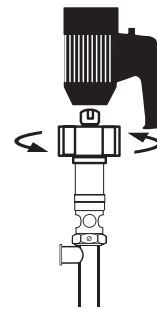


Figure 1 – Attach Motor by Turning Hex Nut Clockwise

Operation

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

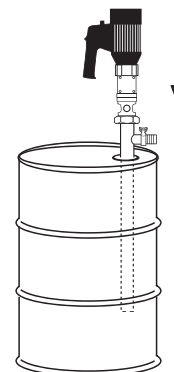


Figure 2

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

⚠ WARNING

Make sure the hose meets the pump discharge pressure requirements (SP-700-751 or SP-700-1851= 87 psi (6 bar)) | (SP-700-752= 174 psi (12,1 bar)). 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.

Maintenance & Disassembly (See page 23)

SP-700DD SERIES

Specifications

Models SP-700DD

Maximum Liquid Temperature ...Teflon & Viton Stator 300° F (148° C) Buna Stator 185° F (85° C)	
Pump Type	Progressive Cavity (Positive Displacement)
Pump Speed.....	900 RPM
Max. Flow Rate.....751 & 752	7 GPM (27 LPM)
1851	12 GPM (45 LPM)
Max. Discharge Pressure.....751 & 1851.....	87 psi (6 bar)
752	174 psi (12 bar)
Immersion Length.....	27" (700 mm), 39" (1000 mm) (Tanks) & 47" (1200 mm) (Drums)
Wetted Materials	SS 316, Teflon, Buna or Viton
Discharge Port.....	1.5" (38 mm) Hose Barb Tri-Clamp (Optional 1.25" (32 mm) Hose Barb)
Max. Viscosity.....751 & 752	100,000 cps (mPAS)
1851	10,000 cps (mPAS)
Max. Solid Size25" (6 mm)
Motors	SP-500 Series, SP-A4, SP-A6, SPA8

Notes

1. Pump stator elastomer (Teflon & Buna) may vary performance.
2. Performance is based on using a 900 RPM motor. Reducing motor speed will decrease pump performance. Do not increase motor speed above 900 RPM. Failure to comply will result in premature pump failure.
3. 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).
4. Flow rates are based on water. As viscosity increases, the flow rate will decrease.

▲ WARNING *The SP-700DD Series Pump is 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 SP-700DD Series Pump should not run dry. Running the pump dry will result in damage to the mechanical seal and stator of the pump.*

Assembly

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 3).

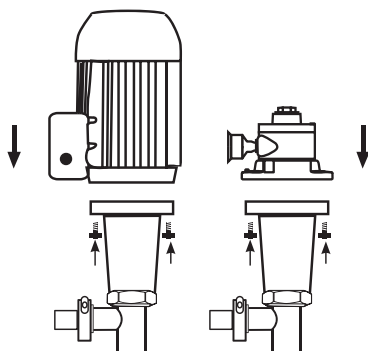


Figure 3

4. Motor

- a) Electric – make sure motor and plug are wired to proper voltage and clockwise direction. Use wiring diagram on nameplate.
- b) Air – for optimum performance make sure proper size airlines are installed.


▲ WARNING *When using an SP-A4, SP-A6 or SP-A8 motor, 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 *SP-A4, SP-A6 and SP-A8 motors must be lubricated daily to ensure proper functionality.*

Model	Air Connection	Consumption
SP-A4	.25" (6,33 mm)	80 CFM @ 100 psi 37 L/Sec @ 7 bar
SP-A6	.5" (12,7 mm)	130 CFM @ 100 psi 65 L/Sec @ 7 bar
SP-A8	.5" (12,7 mm)	170 CFM @ 100 psi 80 L/Sec @ 7 bar

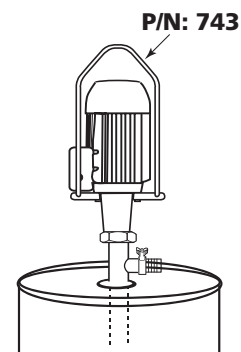
▲ WARNING *Do not operate the SP-700DD-1851 series pump on viscosities greater than 10,000 cps (mPAS). Do not operate the SP-700DD-751 or SP-700DD-752 series pumps on viscosities greater than 100,000 cps (mPAS). Failure to comply will result in premature pump failure.*

▲ WARNING *When using an SP-700DD pump in conjunction with an air motor (SP-A4, SP-A6 or SP-A8), 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 unless used in conjunction with Explosion Proof or Air motor as well as proper grounding and bonding wires. Please consult the factory or authorized distributor with any questions regarding installation (see page 27).*

Operation

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 a pump hanger (P/N: 743).



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 (SP-700-751 or SP-700-1851=87 psi (6 bar)) / (SP-700-752=174 psi (12,1 bar)). 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).*

Maintenance

DISASSEMBLY / CLEANING PROCEDURES (SP-700SR & SP-700DD)

1. Remove motor from pump tube. For models SP-700SR: loosen Hex Nut in clockwise rotation (see Figure 3).

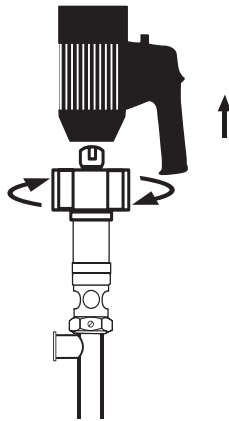


Figure 3

NOTE: Remove motor by turning hex nut clockwise

For models SP-700DD: loosen (4) bolts that attach the pump to the motor (see Figure 4).

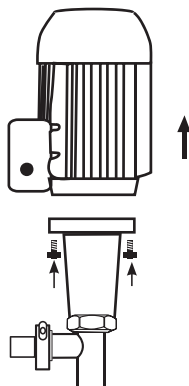


Figure 4

NOTE: Remove 4 bolts from motor flange.

NOTE: Steps 2-9 of DISASSEMBLY / CLEANING procedures as well as mechanical seal replacement and pump assembly are the same for the SP-700SR and SP-700DD series pump tubes.

2. Loosen set screw on side of Hex Nut (see Figure 5).
3. Place a screwdriver (or similarly shaped object) in the mechanical seal inspection port (see Figure 5).
4. Use a large wrench to loosen the Hex Nut while simultaneously holding the screwdriver in the seal inspection port (see Figure 5).

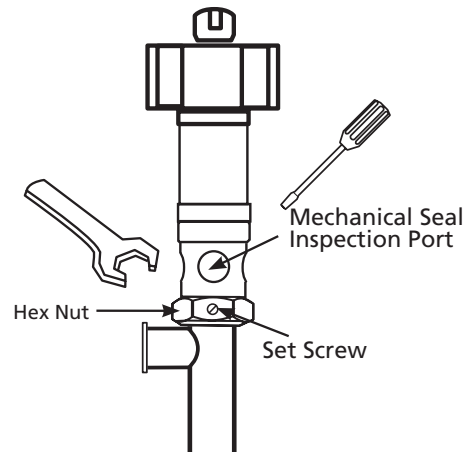


Figure 5

NOTE: Turn hex nut clockwise to loosen

5. Once the Hex Nut is loosened, remove the outer tube from the drive shaft assembly (see Figure 6).

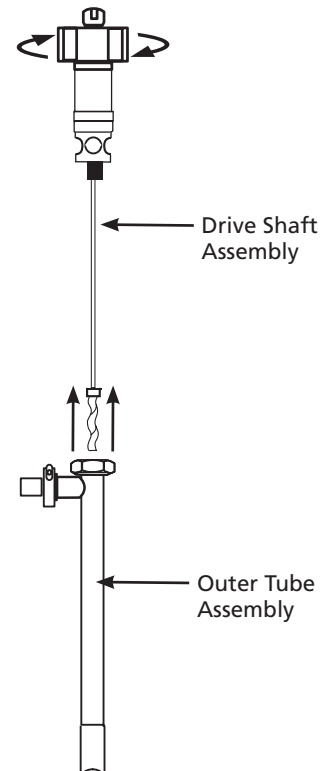


Figure 6

- Remove the stator from the pump tube body by turning clockwise (see Figure 7).

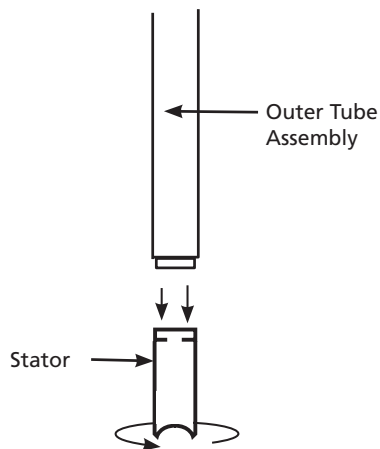


Figure 7

- Hold the drive shaft in a fixed position and loosen the rotor (counterclockwise) located at the bottom of the drive shaft (see Figure 8).

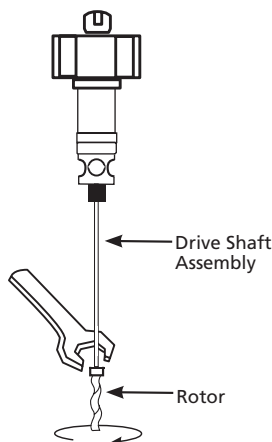


Figure 8

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

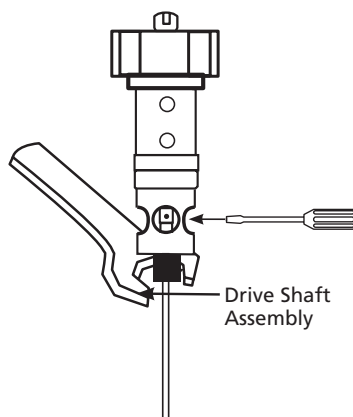


Figure 9

MECHANICAL SEAL REPLACEMENT/ PUMP ASSEMBLY (SP-700SR & SP-700DD)

- Follow steps 1-9 under the Disassembly / Cleaning Procedures from above.
- The mechanical seal will be exposed in the lower portion of the mechanical seal bushing (see Figure 10).

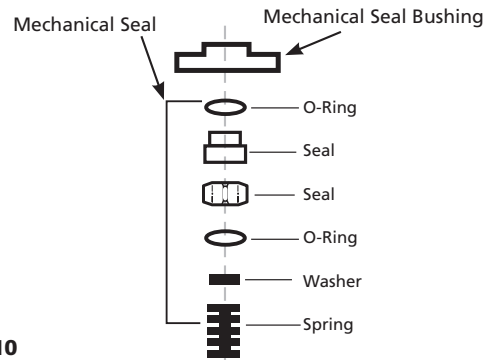
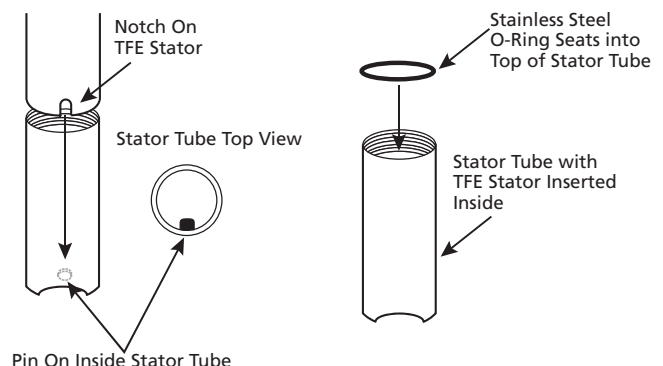


Figure 10

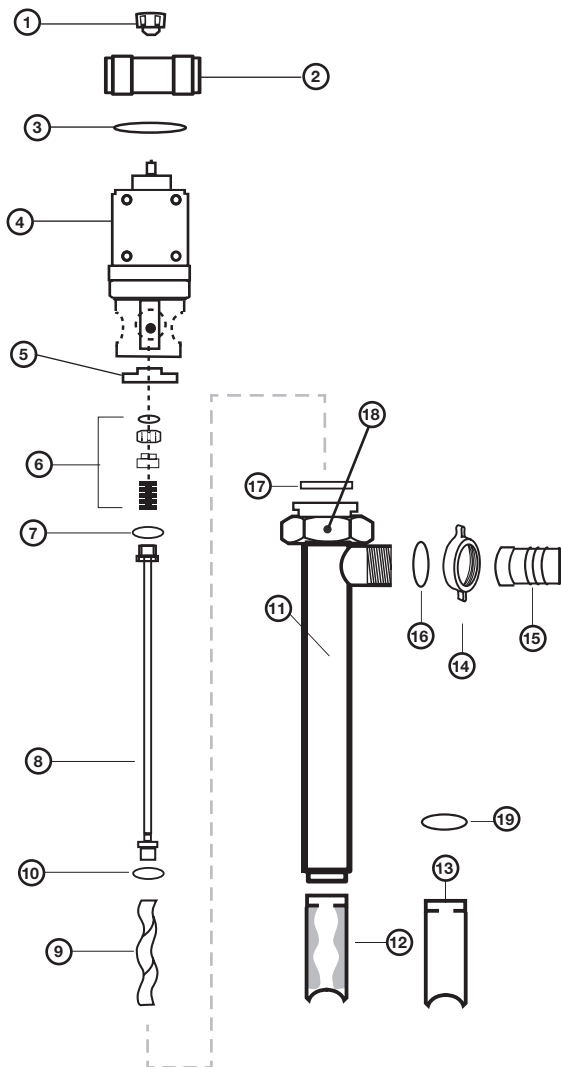
- Remove damaged seal and replace with a new mechanical seal. Use a suitable lubricant on the seals O-rings.
- ⚠ WARNING** *Wear gloves when performing seal maintenance. Touching the seal face could cause premature failure.*
- Reinstall mechanical seal bushing into bearing housing.
 - Thread drive shaft onto bearing housing shaft (see Figure 9).
 - Thread rotor onto drive shaft (see Figure 8).
 - Thread stator can onto pump body (see Figure 7).
 - Apply a suitable lubricant on rotor.
 - Once Bearing Housing, drive shaft, and rotor are securely threaded together, insert this assembly into the pump body (see Figure 6, page 23).
 - 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 5, page 23).
 - Use a large wrench to tighten the Hex Nut while simultaneously holding the screwdriver in the seal inspection port (see Figure 5, page 23).
 - Replace set screw into hex nut.
 - Reattach motor and resume operation. (SP-700SR: see Figure 3, page 23); (SP-700DD: see Figure 4, page 23).

TFE Series Only



Note: Slide the TFE stator into the stator tube. Make sure the pin on the stator tube lines up with the notch on the TFE stator insert.

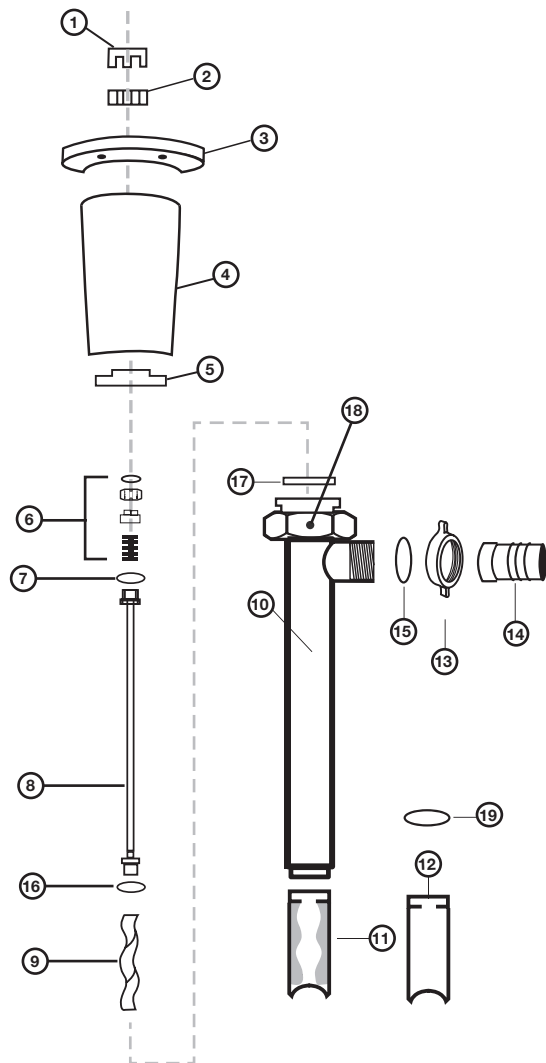
SP-700SR SERIES SPARE PARTS



ITEM NUMBER	DESCRIPTION	PART NUMBER
1	Pump Coupling	1004
2	Connection Nut, SS316	8842
3	Snap Ring, SS316	8208
4	Gear Reduction Unit, SS316 & Aluminum	701
5	Mechanical Seal Bushing, SS316	702
6	Mechanical Seal, SIC	703
7	Gasket, PTFE	735
8	Drive Shaft, SS316	
	Pump Sizes - SP-751-27, SP-752-27, SP-1851-27	704
	Pump Sizes - SP-1851-39	705
	Pump Sizes - SP-751-39, SP-752-39, SP-1851-47	706
	Pump Sizes - SP-751-47, SP-752-47	707
9	Rotor, SS316	
	Size 751	708
	Size 752	709
	Size 1851	710
10	Gasket, PTFE	731
11	Outer Tube Assembly, SS316	
	Pump Sizes - SP-751-27, SP-752-27, SP-1851-27	770
	Pump Sizes - SP-1851-39	771
	Pump Sizes - SP-751-39, SP-752-39, SP-1851-47	772
	Pump Sizes - SP-751-47, SP-752-47	773
12	Stator	
	Buna* (SS316 Tube)	
	Size 751	713
	Size 752	714
	Size 1851	715
	Viton* (SS316 Tube)	
	Size 751	719
	Size 752	720
	Size 1851	721
	PTFE (Stator Insert Only)	
	Size 751	722
	Size 752	723
	Size 1851	724
13	Stator Tube,** SS316	
	Size 751	774
	Size 752	775
	Size 1851	776
14	Wing Nut, SS316	727
15	Hose Barb, SS316	
	1.25" (32 mm)	728
	1.5" (38 mm)	729
16	O-Ring, PTFE	730
	Viton	730V
	Buna	730B
17	Gasket, Buna	737
	PTFE	738
	Viton	739
18	Set Screw, SS316	757
19	Ring, SS316 (For Use with Teflon Stator Only)	0016

*Includes Stator & Stator Tube. ** Does not include Stator #12 (PTFE stator only).

SP-700DD SERIES SPARE PARTS



ITEM NUMBER	DESCRIPTION	PART NUMBER
1	Motor Coupling	
	SP-500 & SP-A8 Models – 24 mm	740
	SP-4 model - 14 mm	744
	SP-A6 model - 19 mm	747
	SP-510 & SP-520 Models – 28 mm	746
2	Coupling Insert	745
3	Motor Mount Flange, Aluminum	
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	
	Pump Sizes - SP-751-27, SP-752-27, SP-1851-27	704
	Pump Sizes - SP-1851-39	705
	Pump Sizes - SP-751-39, SP-752-39, SP-1851-47	706
	Pump Sizes - SP-751-47, SP-752-47	707
9	Rotor, SS316	
	Size 751	708
	Size 752	709
	Size 1851	710
10	Outer Tube Assembly, SS316	
	Pump Sizes - SP-751-27, SP-752-27, SP-1851-27	770
	Pump Sizes - SP-1851-39	771
	Pump Sizes - SP-751-39, SP-752-39, SP-1851-47	772
	Pump Sizes - SP-751-47, SP-752-47	773
11	Stator	
	Buna* (SS316 Tube)	
	Size 751	713
	Size 752	714
	Size 1851	715
	Viton* (SS316 Tube)	
	Size 751	719
	Size 752	720
	Size 1851	721
	PTFE (Stator Insert Only)	
	Size 751	722
	Size 752	723
	Size 1851	724
12	Stator Tube,** SS316	
	Size 751	774
	Size 752	775
	Size 1851	776
13	Wing Nut, SS316	727
14	Hose Barb, SS316	
	1.25" (32 mm)	728
	1.50" (38 mm)	729
15	O-Ring, PTFE	730
	Buna	730B
	Viton	730V
16	Gasket, PTFE	731
17	Gasket, Buna	737
	PTFE	738
	Viton	739
18	Set Screw, SS316	757
19	Ring, SS316 (For Use with Teflon Stator Only)	0016

*Includes Stator & Stator Tube. ** Does not include Stator #13 (PTFE stator only).

Use Of Air Motors In Hazardous Atmospheres

At the present time, there are no known standards governing the operation of air motors in hazardous atmospheres. However, there are several points regarding the safety of air motors.

First of all, an air motor is not a source of electric sparks. However, it is possible that an article which is not part of the air motor (e.g., wrenches, hammers, etc.) could create a spark by sharply impacting a cast iron or aluminum case or the steel shaft of the air motor. (Note that electric motor enclosures for both class I and II hazardous locations can be made of "...iron, steel, copper, bronze, or aluminum..." (UL 674, Electric Motors and Generators – Hazardous Locations, June 23, 1989; paragraph 4.2, page 6). Second, an air motor housing is not designed to contain an internal explosion as is an explosion-proof electric motor. The only possible internal source of ignition in an air motor is a contact between the station housing components and the rotating elements that might create a spark. The likelihood of this occurring is reduced by the fact that the contact must be made at precisely the same time as a flammable or explosive gas is introduced into the air motor in a sufficient quantity to achieve a flammable or explosive mixture while overcoming the positive pressure of the driving gas. In other words, although highly improbable, an internal explosion in an air motor is possible.

Finally, an air motor is designed to be operated by compressed air, the expansion of which in normal operation creates a cooling effect. As a result, the temperature of the air motor will not exceed the height of the temperatures of the surrounding atmosphere or the air delivered to the inlet.

We do not guarantee the safety of every application, but to ensure the safe operation of an air motor in your application, always follow the product direction and consult with a qualified engineer.

(Source: Gast Manufacturing, Air Motors Handbook, page 2)

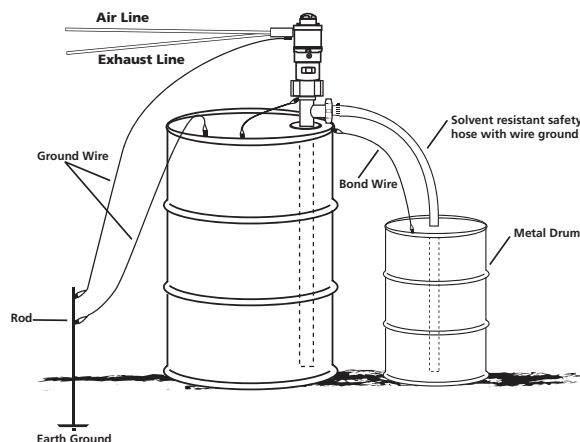
Note: This statement is only applicable in North America.

Grounding Procedures

⚠ WARNING TRANSFERRING OF FLAMMABLES OR USE IN HAZARDOUS DUTY

Bonding is an electrical connection between a primary metal vessel and a metal receiving vessel. See schematic. Grounding is an electrical connection between a metal vessel, pump, motor and a constant ground; i.e. a metal rod driven into the earth.

Bonding and grounding are required when pumping flammable materials or in hazardous duty environments. Failure to bond and ground properly can cause a discharge of static electricity resulting in fire, injury or death. Follow NFPA 77 and 30 procedures at all times. If in doubt, do not start pump! Be sure bonding and grounding wires are secure before starting operation. (Ground and bond wires must have less than one ohm resistance for safe usage. Check continuity before starting). Always check with a safety engineer when any question arises and periodically check safety procedures with a safety engineer



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.

Responsible person: Donald M. Murphy, President, Standard Pump, Inc.
1540 University Drive, Auburn, Georgia 30011
Ph: 001-770-307-1003 Fax: 001-770-307-1009
e-mail: info@standardpump.com
www.standardpump.com

Three year limited warranty

Standard Pump, Inc. warrants, subject to the conditions below, through either Standard Pump, Inc., it's 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., it's 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.

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