

Standard Pump

Centrifugal Drum Pump Motor Models: SP-8600, SP-8700, SP-8800 & SP-8900



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. 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.
6. Before operation, confirm all pump connections are properly tightened.
7. First pump clean water in order to familiarize yourself with the pump's operation, flow rate, discharge pressure and motor speed.
8. Before starting the pump, confirm the discharge hose is securely fastened to the receiving vessel in order to prevent splashing.
9. Never leave pump unattended during operation.
10. Do not submerge the motor in any liquid.
11. When finished using the pump, flush the pump by pumping water or an appropriate cleaning solution. Do not use flammable or combustible cleaning solutions.
12. Never carry the motor by the power cord.

13. 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.

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 Hex Nut (see Figure 1).

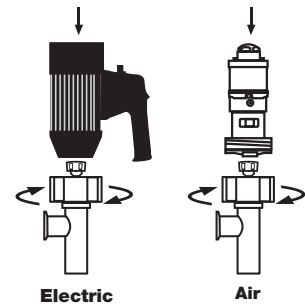


Figure 1

4. It is recommended to thoroughly clean and sanitize models SP-8600, SP-8700, SP-8800 & SP-8900 before operation.
5. First pump clean water in order to familiarize yourself with the pump's operation, flow rate, discharge pressure and motor speed.

SP-8600 & 8700 Specifications

Model	Immersion Length	Wetted Components	Motors Drive	Discharge Size	Max Viscosity	Max Discharge Pressure	Max Flow Rate	Max Temp	Pump Weight	ATEX Certification
SP-8600	39" (1000 mm) Drums 47" (1200 mm) Tote® Tanks & Kettles	SS316L, PTFE & Buna	SP-280P Series, SP-ENC Series, SP-A1, SP-A2, SP-400 Series	1.5" Tri-Clamp®	1,000 cps (mPAS)*	43 psi (2,9 bar)	35 GPM (132 LPM)	175° F (80° C)	11 lbs (5 kg)	DTI 13.0022X II 2 G c IIB T4
SP-8700	39" (1000 mm) Drums 47" (1200 mm) Tote® Tanks & Kettles	SS316L, PTFE & Buna	SP-280P Series, SP-ENC Series, SP-A1, SP-A2, SP-400 Series	1.5" Tri-Clamp®	1,000 cps (mPAS)*	43 psi (2,9 bar)	35 GPM (132 LPM)	175° F (80° C)	11 lbs (5 kg)	DTI 13.0022X II 2 G c IIB T4

Note: Flow rates are based on water. As viscosity increases, the flow rate will decrease.

Note: Pump is constructed with FDA compliant materials; however, the pump does not have FDA certification.

*Pump is intended for intermittent use when operating at maximum viscosity.

Centrifugal Drum Pump Motor Models: SP-8600, SP-8700, SP-8800 & SP-8900

⚠ 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 an Explosion Proof Motor, SP-A1 or SP-A2 Series air motor. Please contact the factory or authorized distributor with any questions regarding this matter.*

General Operation Guide

1. Use closed top drum or other cover to prevent possible contamination.
2. Once the pump is fully cleaned, assembled and all connections are securely fastened, insert the pump into the drum or tank.
3. It is recommended to attach a suitable hose or pipe to the pump discharge (see Figure 2).

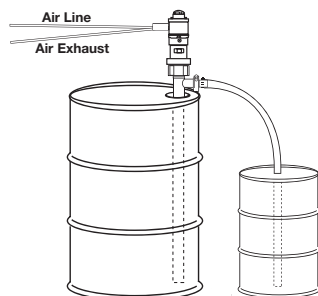


Figure 2

Note: It is recommended to plumb the SP-A1 and SP-A2 exhaust air away from drum or tank to avoid possible contamination. Left port is air intake, right port is air exhaust.

4. 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-8600 = 16 psi (1,1 bar)) / (SP-8700 = 32 psi (2,2 bar)). It is recommended to use a hose that is rated 4 x the pump discharge pressure.*
Ex: 32 x 4 = 128 psi (9 bar).

5. Turn the motor to the "ON" position.
6. After use, clean the pump and store vertically.

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 or a non-flammable, food safe cleaning agent. 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 connection nut (see Figure 3).
3. Remove the pump foot by turning clockwise (see Figure 3).

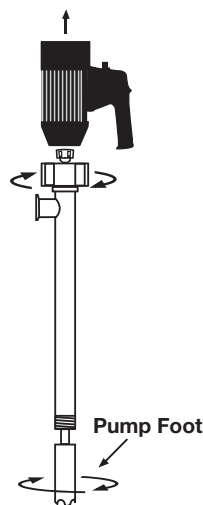


Figure 3

4. While holding the drive shaft with pliers (Factory suggests grip-locks to avoid scarring shafts) remove the impeller (see Figure 4).

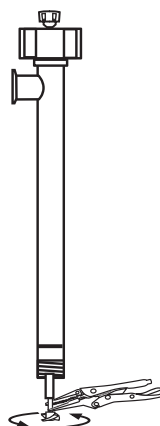


Figure 4

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

5. Remove the Pump Housing by turning clockwise (see Figure 5).

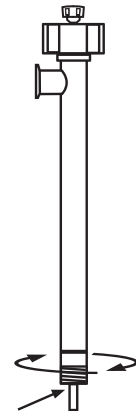


Figure 5

6. Remove the connection nut (see Figure 6).

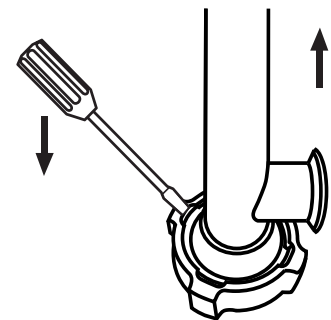


Figure 6

7. Loosen connection flange from inner/outer assembly by turning clockwise. Pull straight up separating the connection flange and drive shaft from the inner / outer tube assembly (see Figure 7).

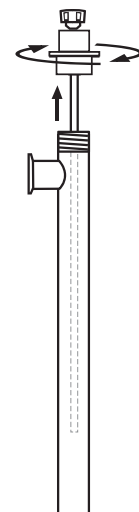


Figure 7

Centrifugal Drum Pump Motor Models: SP-8600, SP-8700, SP-8800 & SP-8900

Disassembly / Cleaning Procedures (Continued)

8. Remove drive shaft assembly from connection flange.
(see Figure 8).
9. Secure drive shaft with grip-locks.
Remove coupling counter clockwise (see Figure 9).
10. Use a non-flammable, food safe cleaning agent to manually clean remainder of pump tube.
11. After thoroughly inspecting all components, reassemble in the reverse order of disassembly steps. Make sure all components are clean, secure and undamaged.



Figure 8

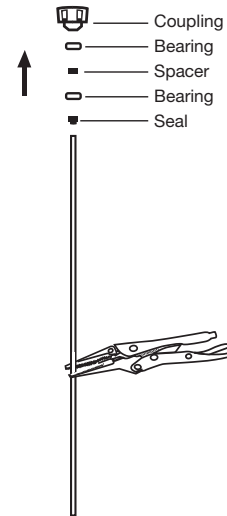
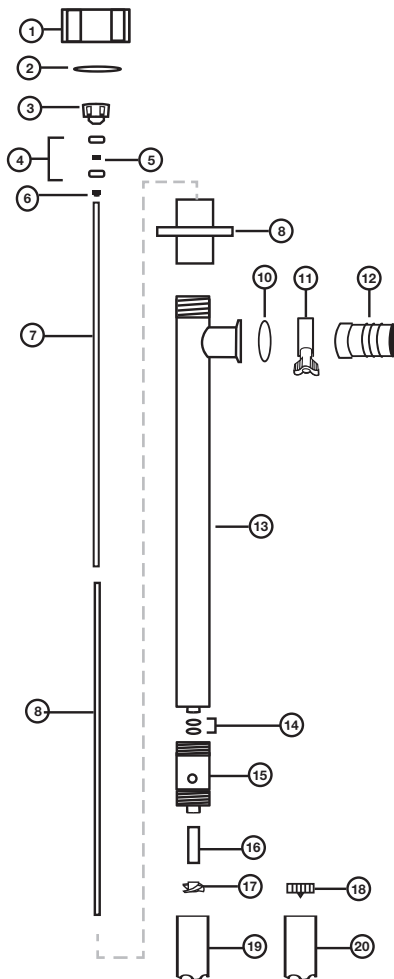


Figure 9

SP-8600 & SP-8700 Spare Parts List



Reference Number	Description	Part Number for Model SP-8600	Part Number for Model SP-8700	Qty
1	Connection Nut, SS316L	8842	8842	1
2	Snap Ring, SS316L	8208	8208	1
3	Pump Coupling	1004	1004	1
4	Bearing	8838-2	8838-2	2
5	Bearing Spacer	8838-4	8838-4	1
6	Secondary Seal, PTFE	8803	8803	1
7	Drive Shaft, SS316L			
	39" (1000 mm)	8606	8606	1
	47" (1200 mm)	8607	8607	1
8	Guide Sleeve, PTFE			
	39" (1000 mm) / 47" (1200 mm)	8811	8811	1
9	Connection Flange, SS316L	8602	8602	1
10	O-Ring, Buna (Optional)	836	836	1
11	Tri-Clamp®, SS316L (Optional)	833	833	1
12	Hose Barb, SS316L, 1" (25 mm) (Optional)	8833	8833	1
13	Inner/Outer Tube Assembly, SS316L			
	39" (1000 mm)	8614	8614	1
	47" (1200 mm)	8615	8615	1
14	O-Ring, Buna (2 Required)	8823	8823	2
15	Pump Housing, SS316L	8824	8824	1
16	Bushing, PTFE	8825	8825	1
17	Impeller, High Volume, SS316L	8827	-	1
18	Impeller, High Pressure, SS316L	-	8927	1
19	Pump Foot, High Volume, SS316L	8826	-	1
20	Pump Foot, High Pressure, SS316L	-	8926	1

Centrifugal Drum Pump Motor Models: SP-8600, SP-8700, SP-8800 & SP-8900

SP-8800 & SP-8900 Specifications

Model	Immersion Length	Wetted Components	Motors Drive	Discharge Size	Max Viscosity	Max Discharge Pressure	Max Flow Rate	Max Temp	Pump Weight	ATEX Certification
SP-8800	39" (1000 mm) Drums 47" (1200 mm) Tote® Tanks & Kettles	SS316L, PTFE & Buna	SP-ENC, SP-A1, SP-A2, SP-400 Series	1.5" Tri-Clamp®	1,000 cps (mPAS)*	40 psi (2,8 bar)	35 GPM (132 LPM)	175° F (80° C)	11 lbs (5 kg)	DTI 13.0022X II 2 G c IIB T4
SP-8900	39" (1000 mm) Drums 47" (1200 mm) Tote® Tanks & Kettles	SS316L, PTFE & Buna	SP-ENC, SP-A1, SP-A2, SP-400 Series	1.5" Tri-Clamp®	1,000 cps (mPAS)*	40 psi (2,8 bar)	35 GPM (132 LPM)	175° F (80° C)	11 lbs (5 kg)	DTI 13.0022X II 2 G c IIB T4

Note: Flow rates are based on water. As viscosity increases, the flow rate will decrease.

Note: Pump is constructed with FDA compliant materials; however, the pump does not have FDA certification.

*Pump is intended for intermittent use when operating at maximum viscosity.

⚠ 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 an Explosion Proof Motor, SP-A1 or SP-A2 Series air motor. Please contact the factory or authorized distributor with any questions regarding this matter.*

General Operation Guide

1. Use closed top drum or other cover to prevent possible contamination.
2. Once the pump is fully cleaned, assembled and all connections are securely fastened, insert the pump into the drum or tank.
3. It is recommended to attach a suitable hose or pipe to the pump discharge (see Figure 2).

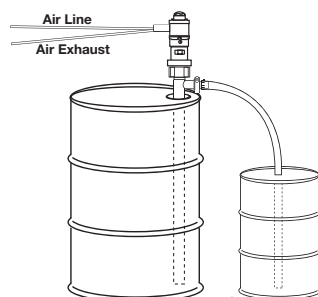


Figure 2

Note: It is recommended to plumb the SP-A1 and SP-A2 exhaust air away from drum or tank to avoid possible contamination. Left port is air intake, right port is air exhaust.

4. 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-8800 = 16 psi (1,1 bar)) / (SP-8900 = 32 psi (2,2 bar)). It is recommended to use a hose that is rated 4 x the pump discharge pressure.
Ex: 32 x 4 = 128 psi (9 bar).*

5. Turn the motor to the "ON" position.
6. After use, clean the pump and store vertically.

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 or a non-flammable, food safe cleaning agent. 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 connection nut (see Figure 3).
3. Remove the pump foot by turning clockwise (see Figure 3).

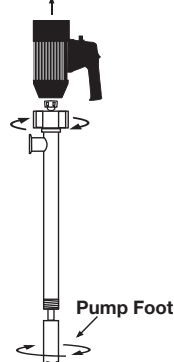


Figure 3

4. While holding the drive shaft with pliers (Factory suggests grip-locks to avoid scarring shafts) remove the impeller (see Figure 4).

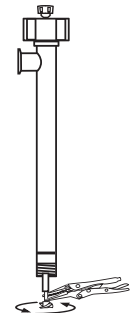


Figure 4

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

5. Remove O-ring from drive shaft located behind impeller (see Figure 5).

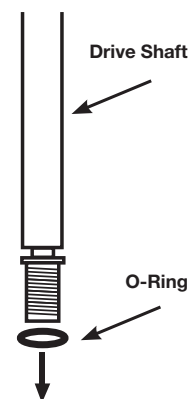


Figure 5

Centrifugal Drum Pump Motor Models: SP-8600, SP-8700, SP-8800 & SP-8900

Disassembly / Cleaning Procedures (Continued)

6. Remove the Pump Housing by turning clockwise (see Figure 6).

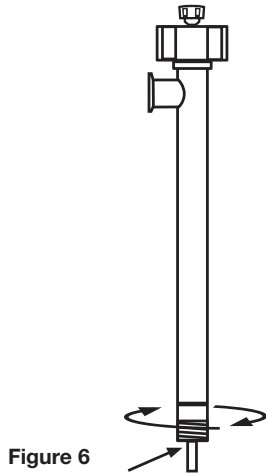


Figure 6

7. Remove the connection nut (see Figure 7).

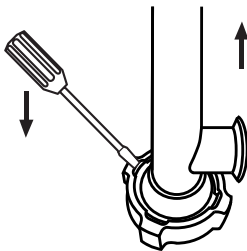


Figure 7

8. Remove Tri-clamp® fitting.
9. Pull straight up separating the inner tube assembly from outer tube assembly (see Figure 8).

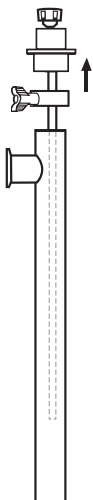


Figure 8

10. Secure inner tube assembly. Lightly tap drive shaft up through inner tube assembly (see Figure 9).



Figure 9

11. Remove guide sleeve from drive shaft (see Figure 10).



Figure 10

12. Secure drive shaft with grip-locks. Remove coupling, bearings, bearing spacer and secondary seal (see Figure 11).

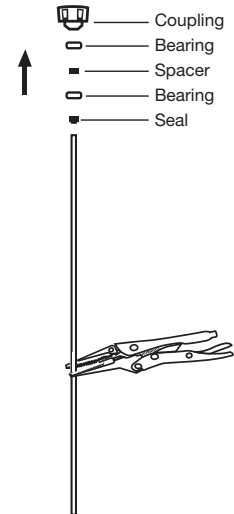
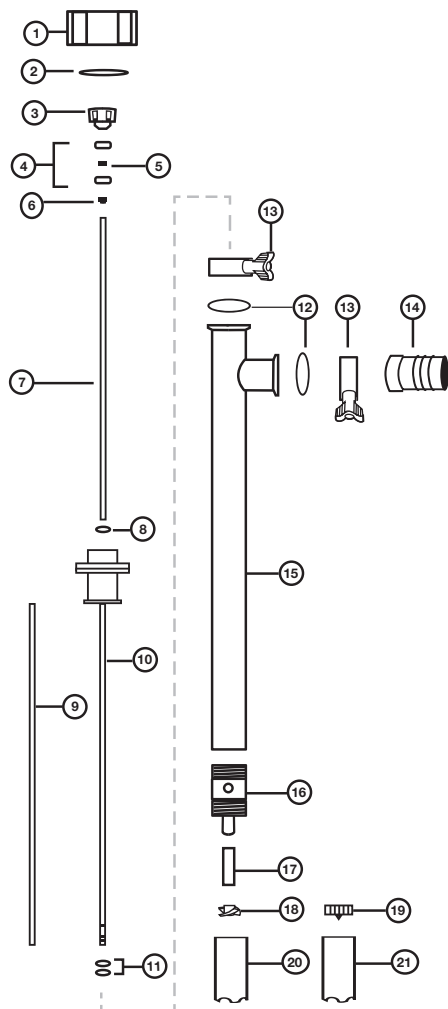


Figure 11

13. Use a non-flammable, food safe cleaning agent to manually clean remainder of pump tube.
14. After thoroughly inspecting all components, reassemble in the reverse order of disassembly steps. Make sure all components are clean, secure and undamaged.

Centrifugal Drum Pump Motor Models: SP-8600, SP-8700, SP-8800 & SP-8900

SP-8800 & SP-8900 Spare Parts List



Reference Number	Description	Part Number for Model SP-8800	Part Number for Model SP-8900	Qty
1	Connection Nut, SS316	8842	8842	1
2	Snap Ring, SS316	8208	8208	1
3	Pump Coupling	1004	1004	1
4	Bearing	8838-2	8838-2	2
5	Bearing Spacer	8838-4	8838-4	1
6	Secondary Seal, PTFE	8803	8803	1
7	Drive Shaft, SS316			
	39" (1000 mm)	8806	8806	1
	47" (1200 mm)	8807	8807	1
8	O-Ring, Buna	8830	8830	1
9	Guide Sleeve, PTFE			
	39" (1000 mm) / 47" (1200 mm)	8811	8811	1
10	Inner Tube Assembly, SS316			
	39" (1000 mm)	8819	8819	1
	47" (1200 mm)	8820	8820	1
11	O-Ring, Buna, (2 Required)	8823	8823	2
12	O-Ring, Buna (Optional)	836	836	1
13	Tri-Clamp®, SS316 (Optional)	833	833	1
14	Hose Barb, SS316 1.00" (25 mm) (Optional)	8833	8833	1
15	Outer Tube Assembly, SS316			
	39" (1000 mm)	8814	8814	1
	47" (1200 mm)	8815	8815	1
16	Pump Housing, SS316	8824	8824	1
17	Bushing, PTFE	8825	8825	1
18	Impeller, High Volume, SS316	8827	-	1
19	Impeller, High Pressure, SS316	-	8927	1
20	Pump Foot, High Volume, SS316	8826	-	1
21	Pump Foot, High Pressure, SS316	-	8926	1

Centrifugal Drum Pump Motor Models: SP-8600, SP-8700, SP-8800 & SP-8900

Hazardous Duty Operation

⚠ WARNING *When pumping flammable or combustible products or operating in a hazardous duty environment, the SP-8600, SP-8700, SP-8800, SP-8900 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.*

SP-420 EX & SP-A1 Series

When operating in Hazardous Duty applications SP-420EX or SP-A1 must be used in conjunction with an SP-8600 or SP-8800 Series pump and properly bonded and grounded. Refer to the Motor specification chart for motor information.

Special Conditions for Safety Use

- Only for conductive liquids (gases groups IIA and IIB).
- The flashpoint for the flammable media shall be 50°C higher than the maximum temperature T4 (135°C).
- The tube shall regular be inspected for damage and corrosions. If there is any damage or corrosions the equipment and the tube shall be taken out of service.
- The grounding clamp and wire on the pump shall be connected to the liquid container before and after pump start.
- The pumps must not be exposed to pumping hard solid particles which can create sparks.
- Demands for inspections, maintenance and repair according to the instructions.
- The pump is only for hand held operation and may not be running dry.

Drum Pump Installation SP-410EX

- Install the Pump and Static Protection Kit as described in Figure 2 on page 7.
- Connect Ground Wire assembly to earth ground using supplied clamp.

- Connect Ground Wire between drum and earth ground.
- Connect Ground Wire between receiving container and earth ground (or use bonding wire to connect to drum).

⚠ CAUTION *Check electrical continuity of all components before pumping. All should be one (1) ohm or less.*

Operation and Safety Guidelines

- Use only metallic pump tubes with explosion proof motors to transfer flammable or combustible liquids.
- Area for use must comply with NFPA 30 guidelines for safe storage and use of flammable and combustible liquids.
- All containers and other equipment must be metal and grounded.
- Follow NGPA 77 guidelines for control of static electricity.
- Avoid splashing. Splash filling can create static electricity and is extremely hazardous.
- Fluid velocity must be 3 feet/second (0.91 meters/second) maximum 7 GPM in 1" hose (26.5 LPM in 25 mm hose).

Use Of Air Motors In Hazardous Atmospheres

SP-A1 Series & SP-A2 Series

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.

⚠ 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*

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 (see Figure 10, page 8).

Centrifugal Drum Pump Motor Models: SP-8600, SP-8700, SP-8800 & SP-8900

Grounding Procedures (Continued)

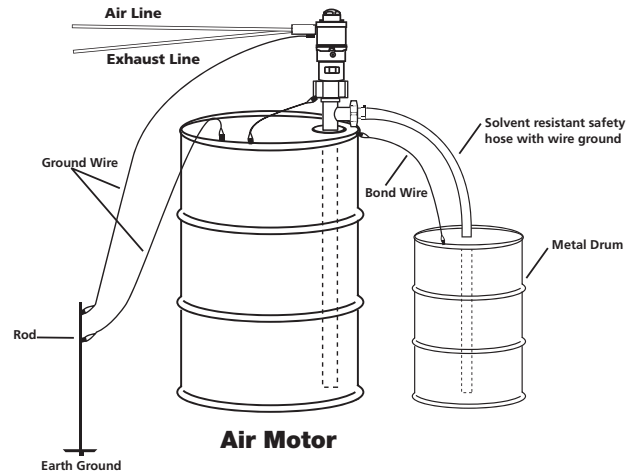
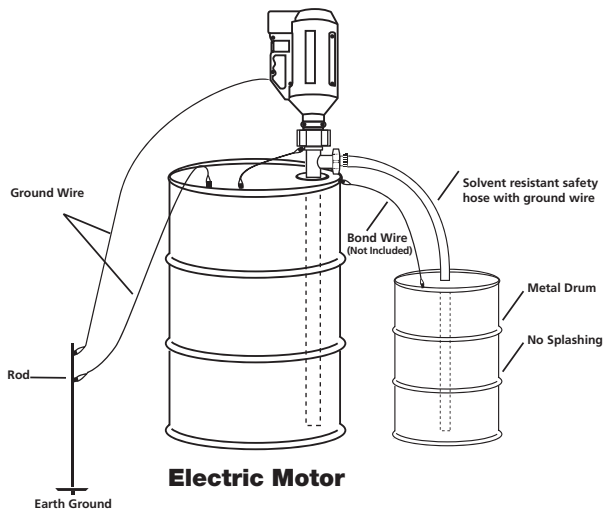
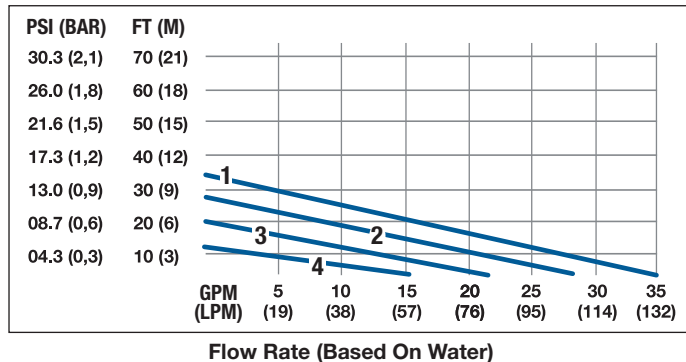


Figure 10 - Static Protection Kit

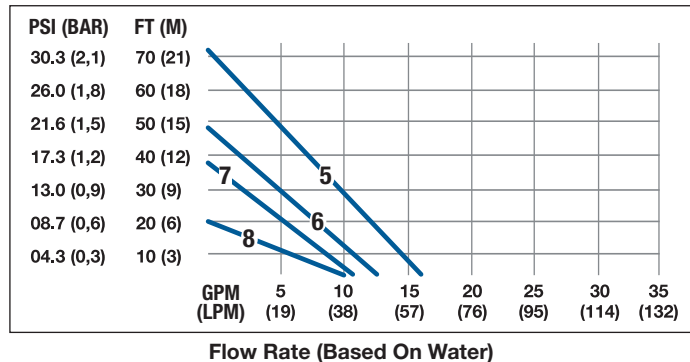
Flow Curves

SP-8600 High Volume Pumps:



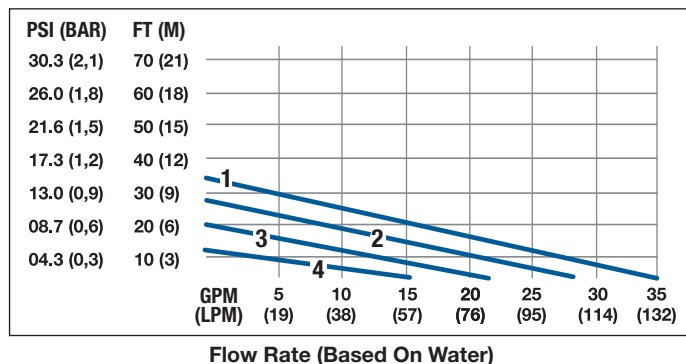
- 1** SP-280P, SP-ENC / High Volume Tube **3** SP-A1 / High Volume Tube
2 SP-420EX, SP-A2 / High Volume Tube **4** SP-410EX / High Volume Tube

SP-8700 High Pressure Pumps:



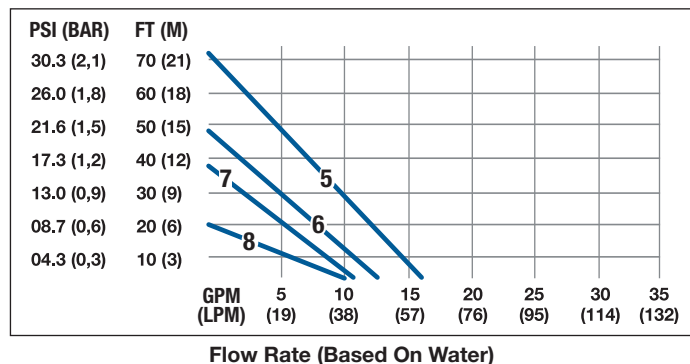
- 5** SP-280P, SP-ENC / High Pressure Tube **7** SP-A1 / High Pressure Tube
6 SP-420EX, SP-A2 / High Pressure Tube **8** SP-410EX / High Pressure Tube

SP-8800 High Volume Pumps:



- 1** SP-ENC / High Volume Tube **3** SP-A1 / High Volume Tube
2 SP-420EX, SP-A2 / High Volume Tube **4** SP-410EX / High Volume Tube

SP-8900 High Pressure Pumps:



- 5** SP-ENC / High Pressure Tube **7** SP-A1 / High Pressure Tube
6 SP-420EX, SP-A2 / High Pressure Tube **8** SP-410EX / High Pressure Tube

WARRANTY

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.

STANDARD PUMP

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EU-Conformity Declaration ATEX 2014/34/EU

We herewith declare that the products:

Model name: SP-6600/6700, SP-7600/7700, SP-8600/8700 and SP-8850/8950
Model design: All versions
Technical data: Equipment group II, Category 2G and 3G
Marking: EX II 2G c IIB T4
Liquid temperature: Max. 40 °C
Ambient temperature: +5 °C to +40 °C

Confirms with the relevant EC Directive: Directive 2014/34/EU for equipment and protective systems intended for use in potentially explosive atmospheres (ATEX).

Applied harmonized standards: EN 13463-1:2009
EN 13463-5:2011

In accordance with appendix VIII of 2014/34/EU the documents are stored by the notified body no. 0396:

Danish Technological Institute
Kongsvang Allé 29
DK-8000 Århus C
File no / Certificate no.: DTI 13.0022X – ver.03

The protection of the pump against abnormal working situations has to be insured by user according to the manual.

Hillerød, January 15th. 2018

Standard Pump Europe A/S

Hans-Peder Jensen
Technical Director