

## **Operation Instructions & Parts Manual**

### **Industrial Pump Models:**

SPFP20NPT SPFP20NPS SPFP20SSS SPFP20SST SPFP20NPP SPFP20SSP Pump Package Models: 9400, 9420, 9430, 9500, 9510, 9710, 9760, 9900 & 9920 Series

OIPM-SPFP20-202207



## **Safety Information**

IMPORTANT



Read the safety warnings and instructions in this manual before pump installation and start-up. Failure to comply with the recommendations stated in this manual could damage the pump and void factory warranty.



When the pump is used for materials that tend to settle out or solidify, the pump should be flushed after each use to prevent damage. In freezing temperatures the pump should be completely drained between uses.

### 



Before pump operation, inspect all fasteners for loosening caused by gasket creep. Retighten loose fasteners to prevent leakage. Follow recommended torques stated in this manual.



Nonmetallic pumps and plastic components are not UV stabilized. Ultraviolet radiation can damage these parts and negatively affect material properties. Do not expose to UV light for extended periods of time.



#### WARNING

Pump not designed, tested or certified to be powered by compressed natural gas. Powering the pump with natural gas will void the warranty.

### A WARNING



When used for toxic or aggressive fluids, the pump should always be flushed clean prior to disassembly.



Before maintenance or repair, shut off the compressed air line, bleed the pressure, and disconnect the air line from the pump. Be certain that approved eye protection and protective clothing are worn at all times. Failure to follow these recommendations may result in serious injury or death.



Airborne particles and loud noise hazards. Wear eye and ear protection.



In the event of diaphragm rupture, pumped material may enter the air end of the pump, and be discharged into the atmosphere. If pumping a product that is hazardous or toxic, the air exhaust must be piped to an appropriate area for safe containment.



Take action to prevent static sparking. Fire or explosion can result, especially when handling flammable liquids. The pump, piping, valves, containers and other miscellaneous equipment must be properly grounded.



This pump is pressurized internally with air pressure during operation. Make certain that all fasteners are in good condition and are reinstalled properly during reassembly.



Use safe practices when lifting

## **Grounding the Pump**

To be fully groundable, the pumps must be ATEX Compliant.



Optional 8 foot long (244 centimeters) Ground Strap is available for easy ground connection.

To reduce the risk of static electrical sparking, this pump must be grounded. Check the local electrical code for detailed grounding instruction and the type of equipment required.

### WARNING



Take action to prevent static sparking. Fire or explosion can result, especially when handling flammable liquids. The pump, piping, valves, containers or other miscellaneous equipment must be grounded.



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### Performance

#### Model SPFP20NPS & SPFP20SSS 2" Food Processing FDA SANTOPRENE FITTED



NOTE: Performance based on the following: elastomeric fitted pump, flooded suction, water at ambient conditions. The use of other materials and varying hydraulic conditions may result in deviations in excess of 5%.

#### Model SPFP20NPT & SPFP20SST 2" Food Processing PTFE FITTED

#### Flow Rate

1: PUMP SPECS

Adjustable to 0-153 gpm (579 lpm)
Port Size
Suction
Discharge 21/2" Tri-Clamp
Air Inlet
Air Exhaust 1" NPT
Suction Lift
Dry
Wet
Max Solid Size (Diameter)
Max Noise Level 102 dB(A)
Shipping Weights
Stainless



NOTE: Performance based on the following: PTFE fitted pump, flooded suction, water at ambient conditions. The use of other materials and varying hydraulic conditions may result in deviations in excess of 5%.



## **Materials**

Material Profile:		Operating Temperatures:	
CAUTION! Operating temperature limitations are as follows:	Max.	Min.	
Santoprene®: Injection molded thermoplastic elastomer with no fabric layer. Long mechanical flex life. Excellent abrasion resistance.	275°F 135°C	-40°F -40°C	
Virgin PTFE: (PFA/TFE) Chemically inert, virtually impervious. Very few chemicals are known to chemically react with PTFE; molten alkali metals, turbulent liquid or gaseous fluorine and a few fluoro-chemicals such as chlorine trifluoride or oxygen difluoride which readily liberate free fluorine at elevated temperatures.	220°F 104°C	-35°F -37°C	
Maximum and Minimum Temperatures are the limits for which these materials can be operated. Temperatures coupled with pressure affect the longevity of diaphragm pump components. Maximum life should not be expected at the extreme limits of the temperature ranges.			
Metals:			
Stainless Steel: Equal to or exceeding ASTM specification A743 CF-8M for corrosion			

resistant iron chromium, iron chromium nickel and nickel based alloy castings for general applications. Commonly referred to as 316 Stainless Steel in the pump industry.



## **Dimensional Drawings**

## Model SPFP20 Food Processing Dimensions in inches (mm dimensions in brackets)

The dimensions on this drawing are for reference only. A certified drawing can be requested if physical dimensions are needed.







### **Principle of Pump Operation**



Air-Operated Double Diaphragm (AODD) pumps are powered by compressed air or nitrogen.

The main directional (air) control valve ① distributes compressed air to an air chamber, exerting uniform pressure over the inner surface of the diaphragm ②. At the same time, the exhausting air ③ from behind the opposite diaphragm is directed through the air valve assembly(s) to an exhaust port ④.

As inner chamber pressure (P1) exceeds liquid chamber pressure (P2), the rod ⑤ connected diaphragms shift together creating discharge on one side and suction on the opposite side. The discharged and primed liquid's directions are controlled by the check valves (ball or flap)⑥ orientation.

The pump primes as a result of the suction stroke. The suction stroke lowers the chamber pressure (P3) increasing the chamber volume. This results in a pressure differential necessary for atmospheric pressure (P4) to push the fluid through the suction piping and across the suction side check valve and into the outer fluid chamber  $\mathcal{D}$ .

2: INSTAL & OP

Suction (side) stroking also initiates the reciprocating (shifting, stroking or cycling) action of the pump. The suction diaphragm's movement is mechanically pulled through its stroke. The diaphragm's inner plate makes contact with an actuator plunger aligned to shift the pilot signaling valve. Once actuated, the pilot valve sends a pressure signal to the opposite end of the main directional air valve, redirecting the compressed air to the opposite inner chamber.



Pump can be submerged if the pump materials of construction are compatible with the liquid being pumped. The air exhaust must be piped above the liquid level. When the pumped product source is at a higher level than the pump (flooded suction condition), pipe the exhaust higher than the product source to prevent siphoning spills.

# HYGENITEC

### SUBMERGED ILLUSTRATION

### **Recommended Installation Guide**



#### Installation And Start-Up

Locate the pump as close to the product being pumped as possible. Keep the suction line length and number of fittings to a minimum. Do not reduce the suction line diameter.

#### Air Supply

Connect the pump air inlet to an air supply with sufficient capacity and pressure to achieve desired performance. A pressure regulating valve should be installed to insure air supply pressure does not exceed recommended limits.

#### **Air Valve Lubrication**

The air distribution system is designed to operate WITHOUT lubrication. This is the standard mode of operation. If lubrication is desired, install an air line lubricator set to deliver one drop of SAE 10 non-detergent oil for every 20 SCFM (9.4 liters/sec.) of air the pump consumes. Consult the Performance Curve to determine air consumption.

#### **Air Line Moisture**

Water in the compressed air supply may cause icing or freezing of the exhaust air, causing the pump to cycle erratically or stop operating. Water in the air supply can be reduced by using a point-of-use air dryer.

#### **Air Inlet And Priming**

To start the pump, slightly open the air shut-off valve. After the pump primes, the air valve can be opened to increase air flow as desired. If opening the valve increases cycling rate, but does not increase the rate of flow, cavitation has occurred. The valve should be closed slightly to obtain the most efficient air flow to pump flow ratio.



## **Troubleshooting Guide**

Symptom:	Potential Cause(s):	Recommendation(s):
Pump Cycles Once	Deadhead (system pressure meets or exceeds air supply pressure).	Increase the inlet air pressure to the pump. Pump is designed for 1:1 pressure ratio at zero flow. (Does not apply to high pressure 2:1 units).
	Air valve or intermediate gaskets installed incorrectly.	Install gaskets with holes properly aligned.
	Bent or missing actuator plunger.	Remove pilot valve and inspect actuator plungers.
Pump Will Not Operate	Pump is over lubricated.	Set lubricator on lowest possible setting or remove. Units are designed for lube free operation.
/ Cycle	Lack of air (line size, PSI, CFM).	Check the air line size and length, compressor capacity (HP vs. cfm required).
-	Check air distribution system.	Disassemble and inspect main air distribution valve, pilot valve and pilot valve actuators.
	Discharge line is blocked or clogged manifolds.	Check for inadvertently closed discharge line valves. Clean discharge manifolds/piping.
	Deadhead (system pressure meets or exceeds air supply pressure).	Increase the inlet air pressure to the pump. Pump is designed for 1:1 pressure ratio at zero flow. (Does not apply to high pressure 2:1 units).
	Blocked air exhaust muffler.	Remove muffler screen, clean or de-ice, and re-install.
	Pumped fluid in air exhaust muffler.	Disassemble pump chambers. Inspect for diaphragm rupture or loose diaphragm plate assembly.
	Pump chamber is blocked.	Disassemble and inspect wetted chambers. Remove or flush any obstructions.
Pump Cycles and Will	Cavitation on suction side.	Check suction condition (move pump closer to product).
Not Prime or No Flow	Check valve obstructed. Valve ball(s) not seating properly or sticking.	Disassemble the wet end of the pump and manually dislodge obstruction in the check valve pocket. Clean out around valve ball cage and valve seat area. Replace valve ball or valve seat if damaged. Use heavier valve ball material.
	Valve ball(s) missing (pushed into chamber or manifold).	Worn valve ball or valve seat. Worn fingers in valve ball cage (replace part). Check Chemical Resistance Guide for compatibility.
	Valve ball(s)/seat(s) damaged or attacked by product.	Check Chemical Resistance Guide for compatibility.
	Check valve and/or seat is worn or needs adjusting.	Inspect check valves and seats for wear and proper setting. Replace if necessary.
	Suction line is blocked.	Remove or flush obstruction. Check and clear all suction screens or strainers.
	Excessive suction lift.	For lifts exceeding 20' of liquid, filling the chambers with liquid will prime the pump in most cases.
	Suction side air leakage or air in product.	Visually inspect all suction-side gaskets and pipe connections.
	Pumped fluid in air exhaust muffler.	Disassemble pump chambers. Inspect for diaphragm rupture or loose diaphragm plate assembly.
Pump Cycles Running	Over lubrication.	Set lubricator on lowest possible setting or remove. Units are designed for lube free operation.
Sluggish/Stalling,	Icing.	Remove muffler screen, de-ice, and re-install. Install a point of use air drier.
Flow Unsatisfactory	Clogged manifolds.	Clean manifolds to allow proper air flow
	Deadhead (system pressure meets or exceeds air supply pressure).	Increase the inlet air pressure to the pump. Pump is designed for 1:1 pressure ratio at zero flow. (Does not apply to high pressure 2:1 units).
	Cavitation on suction side.	Check suction (move pump closer to product).
	Lack of air (line size, PSI, CFM).	Check the air line size, length, compressor capacity.
	Excessive suction lift.	For lifts exceeding 20' of liquid, filling the chambers with liquid will prime the pump in most cases.
	Air supply pressure or volume exceeds system hd.	Decrease inlet air (press. and vol.) to the pump. Pump is cavitating the fluid by fast cycling.
	Undersized suction line.	Meet or exceed pump connections.
	Restrictive or undersized air line.	Install a larger air line and connection.
	Suction side air leakage or air in product.	Visually inspect all suction-side gaskets and pipe connections.
	Suction line is blocked.	Remove or flush obstruction. Check and clear all suction screens or strainers.
	Pumped fluid in air exhaust muffler.	Disassemble pump chambers. Inspect for diaphragm rupture or loose diaphragm plate assembly.
	Check valve obstructed.	Disassemble the wet end of the pump and manually dislodge obstruction in the check valve pocket.
	Check valve and/or seat is worn or needs adjusting.	Inspect check valves and seats for wear and proper setting. Replace if necessary.
	Entrained air or vapor lock in chamber(s).	Purge chambers through tapped chamber vent plugs. Purging the chambers of air can be dangerous.
Product Leaking	Diaphragm failure, or diaphragm plates loose.	Replace diaphragms, check for damage and ensure diaphragm plates are tight.
Through Exhaust	Diaphragm stretched around center hole or bolt holes.	Check for excessive inlet pressure or air pressure. Consult Chemical Resistance Chart for compatibility with products, cleaners, temperature limitations and lubrication.
Premature Diaphragm	Cavitation.	Enlarge pipe diameter on suction side of pump.
Failure	Excessive flooded suction pressure.	Move pump closer to product. Raise pump/place pump on top of tank to reduce inlet pressure. Install Back pressure device (Tech bulletin 41r). Add accumulation tank or pulsation dampener.
	Misapplication (chemical/physical incompatibility).	Consult Chemical Resistance Chart for compatibility with products, cleaners, temperature limitations and lubrication.
	Incorrect diaphragm plates or plates on backwards, installed incorrectly or worn.	Check Operating Manual to check for correct part and installation. Ensure outer plates have not been worn to a sharp edge.
Unbalanced Cycling	Excessive suction lift.	For lifts exceeding 20' of liquid, filling the chambers with liquid will prime the pump in most cases.
	Undersized suction line.	Meet or exceed pump connections.
	Pumped fluid in air exhaust muffler.	Disassemble pump chambers. Inspect for diaphragm rupture or loose diaphragm plate assembly.
	Suction side air leakage or air in product.	Visually inspect all suction-side gaskets and pipe connections.
	Check valve obstructed.	Disassemble the wet end of the pump and manually dislodge obstruction in the check valve pocket.
	Check valve and/or seat is worn or needs adjusting.	Inspect check valves and seats for wear and proper setting. Replace if necessary.
	Entrained air or vapor lock in chamber(s).	Purge chambers through tapped chamber vent plugs.



## **Composite Repair Parts Drawing - FDA Santoprene Fitted**





## Composite Repair Parts List - FDA Santoprene Fitted $\ensuremath{\mathcal{R}}$



3: EXP VIEW

Air Valve Assembly					
ltem #	Otv	Description	Part Number		
nem #	wiy.	Description	Nickle Plated	Stainless Steel	
1	1	Valve Body (includes items 2-11)	200-201	200-430	
2	1	Valve Body	200-206 200-431		
3	1	Valve Body Gasket	200-277		
4	1	Valve Sleeve	200-237		
5	6	O-Ring	200-224		
6	1	Valve Spool Assembly (Includes items 7)	200-238		
7	6	Glyde Ring Assembly	200-307		
8	1	Air Valve Screen	200-279 200-439		
9	2	End Cap Gasket	200-278		
10	2	End Cap	200-332		
11	13	Mounting Screws	200-324		
		Center S	ection Assembly		
ltem #	Qtv.	Description	Part N	lumber	
	City.	Description	Nickle Plated	Stainess Steel	
12	1	Center Block Assembly (Includes item 13)	200-281	200-440	
13	2	Main Shatt O-Ring	200	-282	
14	2	Air Chamber	200-210	200-432	
15	2	Air Chamber Gasket	200-214	200-437	
16	8	Bolt	200	)-327	
17	1	Pilot Sleeve Assembly (include item 18)	200	-232	
18	6	O-Ring	200	)-223	
19	1	Retaining Ring	200	)-227	
20	1	Pilot Spool Assembly (Includes item 21)	200	)-239	
21	7	O-Ring	200	)-221	
22	1	Muffler	200	)-217	
		Diaphragm As	sembly / Elastomers		
			Part Number		
item #	Qty.	Description	Model SPFP20NPS	Model SPFP20SSS	
Item #	Qty.	Description	Model SPFP20NPS FDA Santoprene	Model SPFP20SSS FDA Santoprene	
23	Qty.	Description           Main Shaft	Model SPFP20NPS FDA Santoprene	Model SPFP20SSS FDA Santoprene	
23 24 25	Qty.	Description           Main Shaft           Diaphragm           O Plag	Model SPFP20NPS FDA Santoprene 200 200	Model SPFP20SSS           FDA Santoprene           0-272           0-397           0-204	
23 24 25	Qty. 1 2 2	Description           Main Shaft           Diaphragm           O-Ring           Diaphragm Plate	Model SPFP20NPS           FDA Santoprene         200           200         200           200         424	Model SPFP20SSS           FDA Santoprene           -272           -397           -394           200.445	
23 24 25 26	Qty. 1 2 2 2 2	Description       Main Shaft       Diaphragm       O-Ring       Inner Diaphragm Plate	Model SPFP20NPS           FDA Santoprene           200           200           200           200           200-424	Model SPFP20SSS           FDA Santoprene          272          397          394           200-445	
23 24 25 26 27 28	Qty. 1 2 2 2 2 2	Description       Main Shaft       Diaphragm       O-Ring       Inner Diaphragm Plate       Bumper Washer       Outer Diaphragm Plate	Model SPFP20NPS           FDA Santoprene           200           200           200           200           200-424           N           200	Model SPFP20SSS           FDA Santoprene          272          397          394           200-445           I/A           -284	
23 24 25 26 27 28 29	Qty. 1 2 2 2 2 2 4	Description       Main Shaft       Diaphragm       O-Ring       Inner Diaphragm Plate       Bumper Washer       Outer Diaphragm Plate       Value Scat	Model SPFP20NPS           FDA Santoprene           200           200           200           200           200-424           N           200           200	Model SPFP20SSS           FDA Santoprene          272          397          394           200-445           //A          381           309	
23 24 25 26 27 28 29 30	Qty. 1 2 2 2 2 2 4	Description       Main Shaft       Diaphragm       O-Ring       Inner Diaphragm Plate       Bumper Washer       Outer Diaphragm Plate       Valve Seat       Valve Rall	Model SPFP20NPS           FDA Santoprene           200           200           200           200           200-424           N           200           200           200-424           200           200           200           200	Model SPFP20SSS           FDA Santoprene           -272           -397           -394           200-445           I/A           0-381           0-398           0400	
nem #           23           24           25           26           27           28           29           30	Qty. 1 2 2 2 2 2 4 4 4	Description         Main Shaft         Diaphragm         O-Ring         Inner Diaphragm Plate         Bumper Washer         Outer Diaphragm Plate         Valve Seat         Valve Ball	Model SPFP20NPS           FDA Santoprene           200           200           200           200           200-424           N           200           200           200-424           N           200           200           200           200           200           200           200           200           200           200           200           200	Model SPFP20SSS           FDA Santoprene           )-272           )-397           )-394                       200-445           I/A           )-381           )-398           )-400	
nem #           23           24           25           26           27           28           29           30	Qty. 1 2 2 2 2 4 4 4 0tv	Description       Main Shaft       Diaphragm       O-Ring       Inner Diaphragm Plate       Bumper Washer       Outer Diaphragm Plate       Valve Seat       Valve Ball       Wet E	Model SPFP20NPS           FDA Santoprene           200           200           200           200-424           N           200           200           200-424           N           200	Model SPFP20SSS           FDA Santoprene           )-272           )-397           )-394                       200-445           I/A           )-398           )-400	
Item #           23           24           25           26           27           28           29           30           Item #	Qty. 1 2 2 2 2 4 4 4 Qty.	Description       Main Shaft       Diaphragm       O-Ring       Inner Diaphragm Plate       Bumper Washer       Outer Diaphragm Plate       Valve Seat       Valve Ball       Wet E       Description	Model SPFP20NPS           FDA Santoprene           200           200           200           200-424           N           200           200           200-424           N           200           200           200           200           200           200           200           200           Part N           200	Model SPFP20SSS           FDA Santoprene           )-272           )-397           )-394                       200-445           I/A           )-381           )-398           )-400	
Item #           23           24           25           26           27           28           29           30           Item #           32	Qty. 1 2 2 2 4 4 Qty. 2 4 4	Description       Main Shaft       Diaphragm       O-Ring       Inner Diaphragm Plate       Bumper Washer       Outer Diaphragm Plate       Valve Seat       Valve Ball       Wet E       Description       Water Chamber       Large Clamp Half	Model SPFP20NPS           FDA Santoprene           200           200           200           200-424           N           200           200           200-424           N           200	Model SPFP20SSS           FDA Santoprene           0-272           0-397           0-394           1           200-445           I/A           0-381           0-398           0-400           Jumber           1-359           1-359           1-357	
Item #           23           24           25           26           27           28           29           30           Item #           31           32           33	Qty. 1 2 2 2 4 4 Qty. 2 4 4 4 4	Description       Main Shaft       Diaphragm       O-Ring       Inner Diaphragm Plate       Bumper Washer       Outer Diaphragm Plate       Valve Seat       Valve Ball       Wet E       Description       Water Chamber       Large Clamp Half	Model SPFP20NPS           FDA Santoprene           200           200           200           200-424           N           200           200           200-424           N           200	Model SPFP20SSS           FDA Santoprene           0-272           0-397           0-394           200-445           I/A           0-381           0-398           0-400           Jumber           0-359           0-357           0-358	
Item #           23           24           25           26           27           28           29           30           Item #           31           32           33           34	Qty. 1 2 2 2 2 4 4 Qty. 2 4 4 4 4 4	Description       Main Shaft       Diaphragm       O-Ring       Inner Diaphragm Plate       Bumper Washer       Outer Diaphragm Plate       Valve Seat       Valve Ball       Wet E       Description       Water Chamber       Large Clamp Half       Bolt	Model SPFP20NPS           FDA Santoprene           200           200           200-424           N           200           200-424           N           200           200           200           200-424           N           200	Model SPFP20SSS           FDA Santoprene           0-272           0-397           0-394           200-445           I/A           0-381           0-398           0-400           Jumber           0-359           1-358           1-269	
Item #           23           24           25           26           27           28           29           30           Item #           31           32           33           34           35	Qty. 1 2 2 2 2 2 4 4 4 4 4 4 1	Description       Main Shaft       Diaphragm       O-Ring       Inner Diaphragm Plate       Bumper Washer       Outer Diaphragm Plate       Valve Seat       Valve Seat       Valve Ball       Wet E       Description       Water Chamber       Large Clamp Half       Bolt       Wing Nut	Model SPFP20NPS           FDA Santoprene           200           200           200-424           N           200           200-424           N           200	Model SPFP20SSS           FDA Santoprene           )-272           )-397           )-397           )-394           200-445           //A           )-381           )-398           )-400           Jumber           )-359           -359           -357           )-358           )-269           )-269           )-360	
Item #           23           24           25           26           27           28           29           30           Item #           31           32           33           34           35           36	Qty. 1 2 2 2 2 2 4 4 4 4 4 4 4 1 1	Description       Main Shaft       Diaphragm       O-Ring       Inner Diaphragm Plate       Bumper Washer       Outer Diaphragm Plate       Valve Seat       Valve Seat       Water Chamber       Large Clamp Half       Bolt       Wing Nut       Discharge Manifold	Model SPFP20NPS           FDA Santoprene           200           200           200-424           N           200           200-424           N           200	Model SPFP20SSS           FDA Santoprene           )-272           )-397           )-397           )-394           200-445           //A           )-381           )-388           )-400           Jumber           )-359           )-357           )-358           )-269           )-360           )-361	
Item #           23           24           25           26           27           28           29           30           Item #           31           32           33           34           35           36           37	Qty. 1 2 2 2 2 2 4 4 4 4 4 4 1 1 8	Description         Main Shaft         Diaphragm         O-Ring         Inner Diaphragm Plate         Bumper Washer         Outer Diaphragm Plate         Valve Seat         Valve Ball         Wet E         Description         Water Chamber         Large Clamp Half         Bolt         Wing Nut         Discharge Manifold         Suction Manifold         Small Clamp Half	Model SPFP20NPS           FDA Santoprene           200           200           200           200           200-424           N           200           200           200-424           N           200	Model SPFP20SSS           FDA Santoprene           )-272           )-397           )-394           200-445           //A           )-381           )-383           )-400           Jumber           )-359           )-357           )-358           )-269           )-360           )-361           )-362	
Item #           23           24           25           26           27           28           29           30           Item #           31           32           33           34           35           36           37           38	Qty. 1 2 2 2 2 4 4 4 4 4 4 1 1 8 8	Description         Main Shaft         Diaphragm         O-Ring         Inner Diaphragm Plate         Bumper Washer         Outer Diaphragm Plate         Valve Seat         Valve Ball         Wet E         Description         Water Chamber         Large Clamp Half         Bolt         Wing Nut         Discharge Manifold         Small Clamp Half	Model SPFP20NPS           FDA Santoprene           200           200           200           200           200           200-424           N           200           200           200-424           N           200	Model SPFP20SSS           FDA Santoprene          272          397          394           200-445           //A          381          383          398          400           Jumber          359          355          269          361          362          363	
Item #           23           24           25           26           27           28           29           30           Item #           31           32           33           34           35           36           37           38           39	Qty. 1 2 2 2 4 4 4 4 4 4 4 1 1 8 8 8 8	Description         Main Shaft         Diaphragm         O-Ring         O-Ring         Inner Diaphragm Plate         Bumper Washer         Outer Diaphragm Plate         Valve Seat         Valve Ball         Wet E         Description         Water Chamber         Large Clamp Half         Bolt         Wing Nut         Discharge Manifold         Small Clamp Half         Bolt         Wing Nut	Model SPFP20NPS           FDA Santoprene           200           200           200           200           200           200-424           N           200           200-424           N           200	Model SPFP20SSS           FDA Santoprene          272          397          394           200-445           I/A          381          398          400           state          359          355          269          360          361          362          363          270	
Item #           23           24           25           26           27           28           29           30           Item #           31           32           33           34           35           36           37           38           39	Qty. 1 2 2 2 4 4 4 4 4 4 1 1 8 8 8	Description         Main Shaft         Diaphragm         O-Ring         O-Ring         Inner Diaphragm Plate         Bumper Washer         Outer Diaphragm Plate         Valve Seat         Valve Ball         Wet E         Description         Water Chamber         Large Clamp Half         Bolt         Wing Nut         Discharge Manifold         Small Clamp Half         Bolt         Wing Nut	Model SPFP20NPS           FDA Santoprene           200           200           200           200           200           200-424           N           200           200-424           N           200           nd Assembly           Part N           200 <t< th=""><th>Model SPFP20SSS           FDA Santoprene          272          397          394           200-445           I/A           0-381           0-383           0-398           0-400           Number           0-359           0-357           0-358           0-269           0-361           0-362           0-363           -270</th></t<>	Model SPFP20SSS           FDA Santoprene          272          397          394           200-445           I/A           0-381           0-383           0-398           0-400           Number           0-359           0-357           0-358           0-269           0-361           0-362           0-363           -270	
1000000000000000000000000000000000000	Qty. 1 2 2 2 4 4 4 4 4 4 1 1 8 8 8 8 1 1 1 1 1 1 1 1 1 1 1 1 1	Description         Main Shaft         Diaphragm         O-Ring         O-Ring         Inner Diaphragm Plate         Bumper Washer         Outer Diaphragm Plate         Valve Seat         Valve Ball         Wet E         Description         Water Chamber         Large Clamp Half         Bolt         Wing Nut         Discharge Manifold         Small Clamp Half         Bolt         Wing Nut         Parts Not Shown F	Model SPFP20NPS           FDA Santoprene           200           200           200           200           200-424           N           200           200-424           N           200           200           Assembly           Part N           200      2	Model SPFP20SSS           FDA Santoprene          272          397          394           200-445           I/A           0-381           0-383           0-398           0-400           Number           0-359           0-357           0-358           -269           -361           0-362           0-363           -270	
1000000000000000000000000000000000000	Qty. 1 2 2 2 4 4 4 4 4 4 1 1 8 8 8 1 4 4 4 4 4 4 4 4 4 4 4 4 4	Description         Main Shaft         Diaphragm         O-Ring         Inner Diaphragm Plate         Bumper Washer         Outer Diaphragm Plate         Valve Seat         Valve Ball         Wet E         Description         Water Chamber         Large Clamp Half         Bolt         Wing Nut         Discharge Manifold         Small Clamp Half         Bolt         Wing Nut         Description         Example Clamp Half         Discharge Manifold         Small Clamp Half         Bolt         Parts Not Shown F         Description         Foot Munifier	Model SPFP20NPS           FDA Santoprene           200           200           200           200           200           200-424           N           200           200-424           N           200           nd Assembly           200	Model SPFP20SSS           FDA Santoprene           )-272           )-397           )-397           )-394           200-445           I/A           )-381           )-383           )-400           Number           )-359           )-357           )-358           )-269           )-361           )-362           )-363           )-270	
1000000000000000000000000000000000000	Qty. 1 2 2 2 4 4 4 4 1 1 8 8 8 1 4 4 4 4 4 4 4 4 4 4 4 4 4	Description         Main Shaft         Diaphragm         O-Ring         Inner Diaphragm Plate         Bumper Washer         Outer Diaphragm Plate         Valve Seat         Valve Ball         Wet E         Description         Water Chamber         Large Clamp Half         Bolt         Wing Nut         Discharge Manifold         Suction Manifold         Small Clamp Half         Bolt         Wing Nut         Parts Not Shown F         Description         Foot, Mounting         Canscrew Hay Heard	Model SPFP20NPS           FDA Santoprene           200           200           200           200           200           200-424           N           200           200-424           N           200           200           200-424           N           200	Model SPFP20SSS           FDA Santoprene          272          397          397          394           200-445           //A           0-381           0-381           0-383           0-398           0-400           Jumber           -359           0-357           -358           -269           -360           -361           -362           -363           0-270           Jumber           -212           -200	
Item #         23         24         25         26         27         28         29         30         Item #         31         32         33         34         35         36         37         38         39	Qty. 1 2 2 2 2 4 4 4 4 1 1 8 8 1 8 1 4 4 4 4 4 4 4 4 4 4 4 4 4	Description         Main Shaft         Diaphragm         O-Ring         Inner Diaphragm Plate         Bumper Washer         Outer Diaphragm Plate         Valve Seat         Valve Ball         Wet E         Description         Water Chamber         Large Clamp Half         Bolt         Wing Nut         Discharge Manifold         Small Clamp Half         Bolt         Wing Nut         Description         Foot, Mounting         Foot, Mounting         Capscrew, Hex Head	Model SPFP20NPS           FDA Santoprene           200           200           200           200           200           200-424           N           200           200-424           N           200           200           200-424           N           200	Model SPFP20SSS           FDA Santoprene          272          397          394           200-445           //A          381          381          398          400           Mumber          359          357          358          269          361          362          363          270           Mumber          212          209           -209	
Item #         23         24         25         26         27         28         29         30         Item #         31         32         33         34         35         36         37         38         39         Q         2         3         3         3         3         3         3         3         3         3         2         2         2         3         3         3	Qty. 1 2 2 2 4 4 4 4 1 1 8 8 4 4 4 4 4 4 4 4 4 4 4 4 4	Description         Main Shaft         Diaphragm         O-Ring         Inner Diaphragm Plate         Bumper Washer         Outer Diaphragm Plate         Valve Seat         Valve Seat         Valve Ball         Wet E         Description         Water Chamber         Large Clamp Half         Bolt         Wing Nut         Discharge Manifold         Suction Manifold         Small Clamp Half         Bolt         Parts Not Shown F         Description         Foot, Mounting         Capscrew, Hex Head         Nut, Hex         Lockwasher	Model SPFP20NPS           FDA Santoprene           200           200           200           200           200           200-424           N           200           200-424           N           200           200           200-424           N           200	Model SPFP20SSS           FDA Santoprene           )-272           )-397           )-397           )-394           200-445           //A           )-381           )-383           )-398           )-400           //A           //A           >359           )-357           >358           )-269           )-360           )-361           )-362           )-363           )-270           //Meter           )-212           )-212           )-219           )-219	
Item #         23         24         25         26         27         28         29         30         Item #         31         32         33         34         35         36         37         38         39         2         3         3         3         3         3         3         3         3         3         3         3         3         3         3         3	Qty. 1 2 2 2 4 4 4 4 4 4 4 4 4 4 4 4 8 8	Description         Main Shaft         Diaphragm         O-Ring         O-Ring         Inner Diaphragm Plate         Bumper Washer         Outer Diaphragm Plate         Valve Seat         Valve Seat         Water Chamber         Large Clamp Half         Bolt         Wing Nut         Discharge Manifold         Suction Manifold         Small Clamp Half         Bolt         Wing Nut         Description         Ket Read         Nut, Hex         Lockwasher         Elatwasher	Model SPFP20NPS           FDA Santoprene           200           200           200           200           200-424           N           200           200           200-424           N           200	Model SPFP20SSS           FDA Santoprene           )-272           )-397           )-397           )-397           )-397           )-397           )-397           )-397           )-397           )-397           )-397           )-397           )-397           )-398           )-381           )-388           )-400           Jumber           )-359           -357           )-358           )-269           )-361           )-362           )-270           Jumber           )-212           )-209           )-219           )-243	



## **Composite Repair Parts Drawing - PTFE Fitted**





## **Composite Repair Parts List - PTFE Fitted**

Air Valve Assembly						
Itom #	044	Description	Part Number			
ittem #	Qiy.	Description	Nickle Plated		Stainless Steel	
1	1	Valve Body (includes items 2-11)	200-201		200-428	
2	1	Valve Body	200-206		200-431	
3	1	Valve Body Gasket		200-277		
4	1	Valve Sleeve		200-237		
5	6	O-ring		200-224		
6	1	Valve Spool Assembly (Includes items 7)		200-238		
7	6	Glyde Ring Assembly		200-307		
8	1	Air Valve Screen	200-279		200-439	
9	2	End Cap Gasket		200-278	200 100	
10	2	End Cap		200-332		
11	13	Mounting Screws		200-324		
	10	Center Section A	ssembly	200 024		
				Part Number		
Item #	Qty.	Description	Nickle Plated		Stainless Steel	
12	1	Center Block Assembly (Includes item 13)	200-281		200-440	
13	2	Main Shaft O-Ring	200 201	200-282	200 110	
10	2	Air Chamber	200-210	1	200-432	
15	2	Air Chamber Gasket	200-210		200-432	
16	8	Bolt	200-214	200-327	200-401	
10	1	Pilot Sleeve Assembly (include items 18 & 19)		200-327		
11	6			200-232		
10	1	Petaining Ping		200-223		
20	1	Pilot Spool Assembly (Includes item 21)		200-227		
20	7			200-239		
21	1	Mufflor		200-221		
			/ Electomore	200-217		
		Diaphragin Assembly		Part Number		
Item #	Qtv.	Description		Fait Number		
		Description	I Model SPED20NDT	I Model SDED20NDD	SDFD20SST	
23	1	Main Shaft	Model SPFP20NPT	200-436	Model SPFP20SST 200-273	MODEL SPFP20SSP
23	1	Main Shaft	Model SPFP20NPT           200-273           200-396	200-436	Model SPFP20SST 200-273 200-396	MODEL SPFP20SSP 200-436 200-456
23 24	1 2 2	Main Shaft Diaphragm Back Up Diaphragm	Model SPFP20NPT           200-273           200-396	Model SPFP20NPP           200-436           200-456           200 457	Model SPFP20SST 200-273 200-396	MODEL SPFP20SSP 200-436 200-456 200-457
23 24 40 25	1 2 2 2	Main Shaft Diaphragm Back-Up Diaphragm	Model SPFP20NPT           200-273           200-396           N/A	Model SPFP20NPP           200-436           200-456           200-457	Model SPFP20SST 200-273 200-396 N/A 1/425	200-436           200-456           200-457
23 24 40 25 26	1 2 2 2 2	Main Shaft Diaphragm Back-Up Diaphragm O-Ring	Model SPFP20NPT 200-273 200-396 N/A	Model SPFP20NPP           200-436           200-456           200-457           200-457           200-457	Model SPFP20SST 200-273 200-396 N/A -425 N/A	MODEL SPFP20SSP           200-436           200-456           200-457
23 24 40 25 26 27	1 2 2 2 2 2	Main Shaft Diaphragm Back-Up Diaphragm O-Ring Inner Diaphragm Plate Bumper Wacher	Model         SPFP20NPT           200-273         200-396           N/A         N/A	Model         SPFP20NPP           200-436         200-456           200-457         200           200-454         200	Model         SPFP20SST           200-273         200-396           N/A         N/A           0-425         N/A           283         283	MODEL SPFP20SSP           200-436           200-456           200-457           200-446
23 24 40 25 26 27 28	1 2 2 2 2 2 2 2 2 2	Main Shaft Diaphragm Back-Up Diaphragm O-Ring Inner Diaphragm Plate Bumper Washer Outer Diaphragm Plate	Model         SPFP20NPT           200-273         200-396           N/A         N/A	Model         SPFP20NPP           200-436         200-456           200-457         200           200-454         200           200-454         200	Model         SPFP20SST           200-273         200-396           N/A         0-425           N/A         283	MODEL SPFP20SSP           200-436           200-456           200-457           200-446           200-447
23 24 40 25 26 27 28 20	$\begin{array}{c} 1\\ 1\\ 2\\ 2\\ 2\\ 2\\ 2\\ 2\\ 2\\ 2\\ 2\\ 4 \end{array}$	Main Shaft Diaphragm Back-Up Diaphragm O-Ring Inner Diaphragm Plate Bumper Washer Outer Diaphragm Plate	Model         SPFP20NPT           200-273         200-396           N/A         N/A           N/A         N/A	Model         SPFP20NPP           200-436         200-456           200-457         200           200-454         200           200-454         200           200-447         200           200-364/7         200	Nodel         SPFP20SST           200-273         200-396           N/A         0-425           N/A         283           N/A         Son pate 1)	MODEL SPFP20SSP           200-436           200-456           200-457           200-446           200-447
23 24 40 25 26 27 27 28 29 30	$\begin{array}{c} 1\\ 1\\ 2\\ 2\\ 2\\ 2\\ 2\\ 2\\ 2\\ 2\\ 4\\ 4\\ 4 \end{array}$	Main Shaft Diaphragm Back-Up Diaphragm O-Ring Inner Diaphragm Plate Bumper Washer Outer Diaphragm Plate Valve Seat	Model         SPFP20NPT           200-273         200-396           N/A         N/A           N/A         N/A	Model         SPFP20NPP           200-436         200-456           200-457         200           200-454         200           200-454         200           200-447         200-364 (           200-364 (         200	Nodel         SPFP20SST           200-273         200-396           N/A         0-425           N/A         283           N/A         See note 1)           200         300	MODEL SPFP20SSP           200-436           200-456           200-457           200-446           200-447
23 24 40 25 26 27 28 29 30	$     \begin{array}{r}       1 \\       2 \\       2 \\       2 \\       2 \\       2 \\       2 \\       2 \\       2 \\       4 \\       4 \\       4     \end{array} $	Main Shaft Diaphragm Back-Up Diaphragm O-Ring Inner Diaphragm Plate Bumper Washer Outer Diaphragm Plate Valve Seat Valve Ball Wat End Asse	Model SPFP20NPT           200-273           200-396           N/A           N/A           N/A           N/A	Model         SPFP20NPP           200-436         200-456           200-457         200           200-454         200           200-454         200           200-447         200-364 (	Nodel         SPFP20SST           200-273         200-396           N/A         0-425           N/A         283           N/A         See note 1)           -399         -399	MODEL SPFP20SSP           200-436           200-456           200-457           200-446           200-447
23 24 40 25 26 27 28 29 30	1 2 2 2 2 2 2 2 4 4 4	Main Shaft Diaphragm Back-Up Diaphragm O-Ring Inner Diaphragm Plate Bumper Washer Outer Diaphragm Plate Valve Seat Valve Ball Wet End Asse	Model         SPFP20NPT           200-273         200-396           N/A         N/A           N/A         N/A           N/A         N/A	Model         SPFP20NPP           200-436         200-456           200-457         200           200-454         200           200-454         200           200-447         200-364 (           200         200           200         200	Nodel         SPFP20SST           200-273         200-396           N/A         0-425           N/A         283           N/A         See note 1)           -399         umber	MODEL SPFP20SSP           200-436           200-456           200-457           200-446           200-447
23 24 40 25 26 27 28 29 30 <b>Item #</b>	1 2 2 2 2 2 2 2 4 4 4 4 <b>Qty.</b>	Main Shaft Diaphragm Back-Up Diaphragm O-Ring Inner Diaphragm Plate Bumper Washer Outer Diaphragm Plate Valve Seat Valve Ball Wet End Asse Description	Model SPFP20NPT           200-273           200-396           N/A           N/A           N/A           mbly	Model         SPFP20NPP           200-436         200-456           200-457         200           200-454         200           200-454         200           200-447         200-364 (           200         200           200         Part N	Model         SPFP20SST           200-273         200-396           N/A         9-425           N/A         9-425           N/A         9-283           See note 1)         -399           umber         359	MODEL SPFP20SSP           200-436           200-456           200-457           200-446           200-447
23 24 40 25 26 27 28 29 30 <b>Item #</b> 31	1 2 2 2 2 2 2 2 4 4 4 <b>Qty.</b>	Main Shaft Diaphragm Back-Up Diaphragm O-Ring Inner Diaphragm Plate Bumper Washer Outer Diaphragm Plate Valve Seat Valve Ball Wet End Asse Description Water Chamber	Model SPFP20NPT           200-273           200-396           N/A           N/A           N/A           mbly	Model         SPFP20NPP           200-436         200-456           200-457         200           200-454         200           200-454         200           200-454         200           200-454         200           200-454         200           200-364 (         200           Part N         200           200         200	Model         SPFP20SST           200-273         200-396           N/A         9-425           N/A         9-425           N/A         9-425           See note 1)         -399           umber         -359           357         359	MODEL SPFP20SSP           200-436           200-456           200-457           200-446           200-447
23 24 40 25 26 27 28 29 30 <b>Item #</b> 31 32 33	1 2 2 2 2 2 2 2 2 2 2 4 4 4 4 4	Main Shaft Diaphragm Back-Up Diaphragm O-Ring Inner Diaphragm Plate Bumper Washer Outer Diaphragm Plate Valve Seat Valve Ball Wet End Asse Description Water Chamber Large Clamp Half	Model         SPFP20NPT           200-273         200-396           N/A         N/A           N/A         N/A           mbly         N/A	Model         SPFP20NPP           200-436         200-456           200-457         200           200-454         200           200-454         200           200-454         200           200-454         200           200-454         200           200-454         200           200-457         200           200-454         200           200-447         200           200         Part N           200         200           200         200	Model         SPFP20SST           200-273         200-396           N/A         N/A           -425         N/A           283         N/A           283         N/A           see note 1)         -399           umber         359           357         357           358         258	MODEL SPFP20SSP           200-436           200-456           200-457           200-446           200-447
23 24 40 25 26 27 28 29 30 <b>Item #</b> 31 32 33	1 2 2 2 2 2 2 2 2 2 4 4 4 4 4	Main Shaft Diaphragm Back-Up Diaphragm O-Ring Inner Diaphragm Plate Bumper Washer Outer Diaphragm Plate Valve Seat Valve Ball Wet End Asse Description Water Chamber Large Clamp Half Bolt	Model SPFP20NPT           200-273           200-396           N/A           N/A           N/A           mbly	Model         SPFP20NPP           200-436         200-456           200-457         200           200-454         200           200-454         200           200-454         200           200-454         200           200-454         200           200-454         200           200-457         200           200-454         200           200-447         200           200         200           200         200           200         200           200         200           200         200           200         200	Model         SPFP20SST           200-273         200-396           N/A         N/A           -425         N/A           -283         N/A           2883         N/A           See note 1)         -399           umber         359           357         358           260         260	MODEL SPFP20SSP           200-436           200-456           200-457           200-446           200-447
23 24 40 25 26 27 28 29 30 <b>Item #</b> 31 32 33 33 34	1 2 2 2 2 2 2 2 2 2 4 4 4 4 4 4 4	Main Shaft Diaphragm Back-Up Diaphragm O-Ring Inner Diaphragm Plate Bumper Washer Outer Diaphragm Plate Valve Seat Valve Ball Wet End Asse Description Water Chamber Large Clamp Half Bolt Wing Nut Dischargo Manifold	Model SPFP20NPT           200-273           200-396           N/A           N/A           N/A           mbly	Model         SPFP20NPP           200-436         200-456           200-457         200           200-454         200           200-454         200           200-454         200           200-457         200           200-454         200           200-454         200           200-457         200           200-454         200           200-447         200           200         200           200         200           200         200           200         200           200         200           200         200	Model         SPFP20SST           200-273         200-396           N/A         N/A           -425         N/A           283         N/A           283         N/A           see note 1)         -399           -359         357           358         -269           360	MODEL SPFP20SSP           200-436           200-456           200-457           200-446           200-447
23 24 40 25 26 27 28 29 30 <b>Item #</b> 31 32 33 34 35	1 2 2 2 2 2 2 2 2 4 4 4 4 4 4 4 1	Main Shaft Diaphragm Back-Up Diaphragm O-Ring Inner Diaphragm Plate Bumper Washer Outer Diaphragm Plate Valve Seat Valve Ball Wet End Asse Description Water Chamber Large Clamp Half Bolt Wing Nut Discharge Manifold Suction Manifold	Model         SPFP20NPT           200-273         200-396           N/A         N/A           N/A         N/A           mbly         N/A	Model         SPFP20NPP           200-436         200-456           200-457         200           200-454         200           200-454         200           200-454         200           200-454         200           200-457         200           200-454         200           200-457         200           200-454         200           200-447         200           200         200           200         200           200         200           200         200           200         200           200         200           200         200           200         200           200         200           200         200	Model         SPFP20SST           200-273         200-396           N/A         N/A           -425         N/A           283         N/A           283         N/A           see note 1)         -399           umber         -359           357         -358           269         -360           361	MODEL SPFP20SSP           200-436           200-456           200-457           200-446           200-447
23 24 40 25 26 27 28 29 30 <b>Item #</b> 31 32 33 34 35 36 27	1 2 2 2 2 2 2 2 4 4 4 4 4 4 4 1 1 2	Main Shaft Diaphragm Back-Up Diaphragm O-Ring Inner Diaphragm Plate Bumper Washer Outer Diaphragm Plate Valve Seat Valve Seat Valve Ball Wet End Asse Description Water Chamber Large Clamp Half Bolt Wing Nut Discharge Manifold Suction Manifold Suction Manifold	Model SPFP20NPT           200-273           200-396           N/A           N/A           N/A	Model         SPFP20NPP           200-436         200-456           200-457         200           200-454         200           200-454         200           200-457         200           200-454         200           200-454         200           200-364 (         200           200         200           200         200           200         200           200         200           200         200           200         200           200         200           200         200           200         200           200         200           200         200           200         200           200         200           200         200	Model         SPFP20SST           200-273         200-396           N/A         N/A           0-425         N/A           283         N/A           See note 1)         -399           umber         -359           359         -357           358         -269           360         -361           262	MODEL SPFP20SSP           200-436           200-456           200-457           200-446           200-447
23 24 40 25 26 27 28 29 30 <b>Item #</b> 31 32 33 34 35 36 37 38	1 2 2 2 2 2 2 2 2 2 4 4 4 4 4 4 1 1 1 8 8	Main Shaft Diaphragm Back-Up Diaphragm O-Ring Inner Diaphragm Plate Bumper Washer Outer Diaphragm Plate Valve Seat Valve Seat Valve Ball Wet End Asse Description Uater Chamber Large Clamp Half Bolt Wing Nut Discharge Manifold Suction Manifold Small Clamp Half Pote	Model SPFP20NPT           200-273           200-396           N/A           N/A           N/A	Model         SPFP20NPP           200-436         200-456           200-457         200           200-454         200           200-454         200           200-457         200           200-454         200           200-454         200           200-364 (         200           200         200           200         200           200         200           200         200           200         200           200         200           200         200           200         200           200         200           200         200           200         200           200         200           200         200           200         200           200         200	Model         SPFP20SST           200-273         200-396           N/A         N/A           0-425         N/A           283         N/A           See note 1)         -399           umber         -359           355         -357           358         -269           360         -361           362         -262	MODEL SPFP20SSP           200-436           200-456           200-457           200-446           200-447
23 24 40 25 26 27 28 29 30 <b>Item #</b> 31 32 33 34 35 36 37 38 30	1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	Main Shaft Diaphragm Back-Up Diaphragm O-Ring Inner Diaphragm Plate Bumper Washer Outer Diaphragm Plate Valve Seat Valve Ball Wet End Asse Description Uater Chamber Large Clamp Half Bolt Wing Nut Discharge Manifold Suction Manifold Suction Manifold Bolt Wing Nut Bolt Bolt Wing Nut Bolt Bolt Wing Nut Bolt Bolt Wing Nut Bolt Bolt Bolt Wing Nut Bolt Bolt Bolt Bolt Bolt Bolt Bolt Bol	Model SPFP20NPT           200-273           200-396           N/A           N/A           N/A	Model         SPFP20NPP           200-436         200-456           200-457         200           200-454         200           200-454         200           200-457         200           200-454         200           200-457         200           200-457         200           200-454         200           200-364 (         200           200         200           200         200           200         200           200         200           200         200           200         200           200         200           200         200           200         200           200         200           200         200           200         200           200         200	Model         SPFP20SST           200-273         200-396           N/A         N/A           -425         N/A           283         N/A           See note 1)         -399           umber         -359           357         -358           269         -360           361         -362           363         -270	MODEL SPFP20SSP           200-436           200-456           200-457           200-446           200-447
23 24 40 25 26 27 28 29 30 30 <b>Item #</b> 31 32 33 34 35 36 37 38 39	1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	Main Shaft Diaphragm Back-Up Diaphragm O-Ring Inner Diaphragm Plate Bumper Washer Outer Diaphragm Plate Valve Seat Valve Ball Wet End Asse Description Water Chamber Large Clamp Half Bolt Wing Nut Discharge Manifold Suction Manifold Small Clamp Half Bolt Wing Nut Discharge Manifold Small Clamp Half Bolt Wing Nut Discharge Manifold Small Clamp Half Bolt Wing Nut Discharge Manifold	Model SPFP20NPT           200-273           200-396           N/A           N/A           N/A           mbly	Model         SPFP20NPP           200-436         200-456           200-457         200           200-454         200           200-457         200           200-454         200           200-457         200           200-457         200           200-454         200           200-364 (         200           200         200           200         200           200         200           200         200           200         200           200         200           200         200           200         200           200         200           200         200           200         200           200         200           200         200           200         200           200         200	Model         SPFP20SST           200-273         200-396           N/A         N/A           0-425         N/A           283         N/A           See note 1)         -399           umber         359           357         358           269         360           361         362           363         -270           230         -270	MODEL SPFP20SSP           200-436           200-456           200-457           200-446           200-447
23 24 40 25 26 27 28 29 30 <b>Item #</b> 31 32 33 33 34 35 36 37 38 39	1           2           2           2           2           2           2           4           4           4           1           8           8           2	Main Shaft Diaphragm Back-Up Diaphragm O-Ring O-Ring Inner Diaphragm Plate Bumper Washer Outer Diaphragm Plate Valve Seat Valve Ball Wet End Asse Description Water Chamber Large Clamp Half Bolt Wing Nut Discharge Manifold Suction Manifold Suction Manifold Small Clamp Half Bolt Wing Nut Diaphragm Seal Tape Kit (Not Pictured) Descharge Manifold Descharge Manifold Descharge Manifold Diaphragm Seal Tape Kit (Not Pictured) Descharge Manifold Descharge Manifold Descharge Manifold Descharge Manifold Diaphragm Seal Tape Kit (Not Pictured) Descharge Manifold Descharge Manifold Descharge Manifold Descharge Manifold Descharge Manifold Diaphragm Seal Tape Kit (Not Pictured) Descharge Manifold Descharge Manifold Descharge Manifold Descharge Manifold Diaphragm Seal Tape Kit (Not Pictured) Descharge Manifold	Model SPFP20NPT           200-273           200-396           N/A           N/A           N/A           N/A	Model         SPFP20NPP           200-436         200-456           200-457         200           200-454         200           200-457         200           200-457         200           200-454         200           200-364 (         200           200         200	Model         SPFP20SST           200-273         200-396           N/A         0-425           N/A         -           283         N/A           See note 1)         -           -399         -           umber         -           359         -           357         -           358         -           269         -           361         -           362         -           363         -           2270         -           230         -	MODEL SPFP20SSP 200-436 200-456 200-457 200-446 200-447
23 24 40 25 26 27 28 29 30 <b>Item #</b> 31 32 33 33 33 33 33 35 36 37 38 39	1 2 2 2 2 2 2 2 2 4 4 4 4 4 4 4 1 1 8 8 8 8 8 2	Main Shaft Diaphragm Back-Up Diaphragm O-Ring O-Ring Inner Diaphragm Plate Bumper Washer Outer Diaphragm Plate Valve Seat Valve Seat Valve Ball Wet End Asse Description Water Chamber Large Clamp Half Bolt Wing Nut Discharge Manifold Suction Manifold Suction Manifold Small Clamp Half Bolt Wing Nut Diaphragm Seal Tape Kit (Not Pictured) Parts Not Shown For Rubb Description	Model SPFP20NPT           200-273           200-396           N/A           N/A           N/A           N/A           Imply           I	Model SPFP20NPP           200-436           200-456           200-457           200           200-454           200-454           200-364 (           200           200-300           200           200-300           200           200           200           200-300           200	Model SPFP20SST           200-273           200-396           N/A           -425           N/A           -283           N/A           2883           N/A           283           N/A           359           3557           358           269           360           361           362           363           270           230	MODEL SPFP20SSP           200-436           200-456           200-457           200-446           200-447
23 24 40 25 26 27 28 29 30 <b>Item #</b> 31 32 33 33 34 35 36 37 38 39	1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 4 4 4 4	Main Shaft         Diaphragm         Back-Up Diaphragm         O-Rinq         Inner Diaphragm Plate         Bumper Washer         Outer Diaphragm Plate         Valve Seat         Valve Ball         Wet End Asse         Description         Water Chamber         Large Clamp Half         Bolt         Wing Nut         Discharge Manifold         Suction Manifold         Small Clamp Half         Bolt         Wing Nut         Discharge Kanifold         Suction Manifold         Small Clamp Half         Bolt         Wing Nut         Diaphragm Seal Tape Kit (Not Pictured)         Parts Not Shown For Rubit         Description	Model SPFP20NPT           200-273           200-396           N/A           N/A           N/A           mbly	Model SPFP20NPP           200-436           200-456           200-457           200           200-454           200-454           200-364 (           200           200-364 (           200           200           200-364 (           200	Model         SPFP20SST           200-273         200-396           N/A         N/A           -425         N/A           283         N/A           See note 1)         -399           umber         359           357         358           269         361           361         362           363         -270           230         212	MODEL SPFP20SSP           200-436           200-456           200-457           200-446           200-447
23 24 40 25 26 27 28 29 30 <b>Item #</b> 31 32 33 33 34 35 35 36 37 38 39 <b>Q</b>	1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 4 4 4 4	Main Shaft         Diaphragm         Back-Up Diaphragm         O-Ring         Inner Diaphragm Plate         Bumper Washer         Outer Diaphragm Plate         Valve Seat         Valve Ball         Wet End Asse         Description         Water Chamber         Large Clamp Half         Bolt         Wing Nut         Discharge Manifold         Suction Manifold         Small Clamp Half         Bolt         Wing Nut         Discharge Manifold         Suction Manifold         Small Clamp Half         Bolt         Wing Nut         Diaphragm Seal Tape Kit (Not Pictured)         Parts Not Shown For Rubit         Description         Foot, Mounting	Model SPFP20NPT           200-273           200-396           N/A           N/A           N/A           mbly	Model SPFP20NPP           200-436           200-456           200-457           200           200-454           200-454           200-457           200-454           200-454           200-364 (           200           200           Part N           200	Model SPFP20SST           200-273           200-396           N/A           -425           N/A           -283           N/A           -283           N/A           -399           umber           -359           357           358           269           360           361           362           363           -270           -230           umber           -212           000	MODEL SPFP20SSP           200-436           200-456           200-457           200-446           200-447
23 24 40 25 26 27 28 29 30 <b>Item #</b> 31 32 33 34 35 35 36 37 38 39 <b>Q</b>	1 2 2 2 2 2 2 2 2 2 2 2 4 4 4 4 4 4 1 1 8 8 8 2 2 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4	Main Shaft         Diaphragm         Back-Up Diaphragm         O-Ring         Inner Diaphragm Plate         Bumper Washer         Outer Diaphragm Plate         Valve Seat         Valve Ball         Wet End Asse         Description         Water Chamber         Large Clamp Half         Bolt         Wing Nut         Discharge Manifold         Swation Manifold         Small Clamp Half         Bolt         Wing Nut         Discharge Kanifold         Suction Manifold         Small Clamp Half         Bolt         Wing Nut         Diaphragm Seal Tape Kit (Not Pictured)         Parts Not Shown For Rubit         Description         Foot, Mounting         Capscrew, Hex Head	Model SPFP20NPT           200-273           200-396           N/A           N/A           N/A           mbly	Model SPFP20NPP           200-436           200-456           200-457           200           200-454           200-454           200-364 (           200           200-306 (           200           200-300           200           200           200-300           200	Model SPFP20SST           200-273           200-396           N/A           -425           N/A           -283           N/A           -283           N/A           -283           N/A           -399           umber           -359           357           358           -269           360           -361           -362           -363           -270           -230           umber           -212           -209	MODEL SPFP20SSP 200-436 200-456 200-457 200-446 200-447
23 24 40 25 26 27 28 29 30 <b>Item #</b> 31 32 33 34 35 36 37 38 39 29 29 30 <b>Item #</b> 29 29 30 <b>Item #</b> 29 29 30 <b>Item #</b> 22 33 22 33 34 22 22 23 24 29 30 29 20 20 20 20 20 20 20 20 20 20 20 20 20	1 2 2 2 2 2 2 2 2 2 2 4 4 4 4 4 4 1 1 8 8 8 8 2 1 4 4 4	Main Shaft         Diaphragm         Back-Up Diaphragm         O-Ring         Inner Diaphragm Plate         Bumper Washer         Outer Diaphragm Plate         Valve Seat         Valve Ball         Wet End Asse         Description         Water Chamber         Large Clamp Half         Bolt         Wing Nut         Discharge Manifold         Swall Clamp Half         Bolt         Wing Nut         Discharge Manifold         Swall Clamp Half         Bolt         Wing Nut         Discharge Manifold         Small Clamp Half         Bolt         Wing Nut         Diaphragm Seal Tape Kit (Not Pictured)         Parts Not Shown For Rubi         Description         Foot, Mounting         Capscrew, Hex Head         Nut, Hex	Model SPFP20NPT           200-273           200-396           N/A           N/A           mbly	Model SPFP20NPP           200-436           200-456           200-457           200           200-454           200-454           200-364 (           200           200-457           200-454           200-364 (           200	Model SPFP20SST           200-273           200-396           N/A           >-425           N/A           283           N/A           283           N/A           See note 1)           -399           umber           3559           357           358           269           360           361           362           363           270           230           umber           -212           209           219	MODEL SPFP20SSP 200-436 200-456 200-457 200-446 200-447
23 24 40 25 26 27 28 29 30 <b>Item #</b> 31 32 33 34 35 36 37 37 38 39 29 29 30 <b>Item #</b> 29 29 30 <b>Item #</b> 29 29 30 <b>Item #</b> 29 29 20 29 29 29 20 20 20 20 20 20 20 20 20 20 20 20 20	1 2 2 2 2 2 2 2 2 4 4 4 4 4 4 1 1 8 8 8 8 2 2 4 4 4 4 4 4 4 4 4 4 4 4 4 4	Main Shaft         Diaphragm         Back-Up Diaphragm         O-Ring         Inner Diaphragm Plate         Bumper Washer         Outer Diaphragm Plate         Valve Seat         Valve Ball         Wet End Asse         Description         Water Chamber         Large Clamp Half         Bolt         Wing Nut         Discharge Manifold         Small Clamp Half         Bolt         Wing Nut         Discharge Manifold         Small Clamp Half         Bolt         Wing Nut         Discharge Manifold         Small Clamp Half         Bolt         Wing Nut         Discharge Seat Tape Kit (Not Pictured)         Parts Not Shown For Rubl         Description         Foot, Mounting         Capscrew, Hex Head         Nut, Hex         Lockwasher	Model SPFP20NPT           200-273           200-396           N/A           N/A           N/A           mbly	Model         SPFP20NPP           200-436         200-456           200-457         200           200-454         200           200-454         200           200-454         200           200-457         200           200-454         200           200-364 (         200           200         200           200         200           200         200           200         200           200         200           200         200           200         200           200         200           200         200           200         200           200         200           200         200           200         200           200         200           200         200           200         200           200         200           200         200           200         200	Model SPFP20SST           200-273           200-396           N/A           0-425           N/A           283           N/A           283           N/A           See note 1)           -399           umber           -359           3559           3557           358           269           360           361           362           -363           270           -230           umber           -212           -209           -219           -243	MODEL SPFP20SSP 200-436 200-456 200-457 200-446 200-447

#### Notes:

1.) In addition to this seat, (4) 200-425 o-rings are needed.



**3: EXP VIEW** 

## **DECLARATION OF CONFORMITY**

DECLARATION DE CONFORMITE • DECLARACION DE CONFORMIDAD • ERKLÄRUNG BEZÜGLICH EINHALTUNG DER VORSCHRIFTEN DICHIARAZIONE DI CONFORMITÀ • CONFORMITEITSVERKLARING • DEKLARATION OM ÖVERENSSTÄMMELSE EF-OVERENSSTEMMELSESERKLÆRING • VAATIMUSTENMUKAISUUSVAKUUTUS • SAMSVARSERKLÄRING DECLARAÇÃO DE CONFORMIDADE

#### **MANUFACTURED BY:**

FABRIQUE PAR: FABRICADA POR: HERGESTELLT VON: FABBRICATO DA: VERVAARDIGD DOOR: TILLVERKAD AV: FABRIKANT. VALMISTAJA: PRODUSENT: FABRICANTE:

#### STANDARD PUMP, a UNIBLOC® BRAND

1610 Satellite Blvd., Suite D Duluth, GA 30097 USA

Tel: 770-307-1003

### PUMP MODEL SERIES: SPFP05, SPFP10, SPFP15, SPFP20, SPFP30, SPSN15, SPSN20, SP3A15, SP3A20

#### This product complies with the following European Community Directives:

Ce produit est conforme aux directives de la Communauté européenne suivantes:

Este producto cumple con las siguientes Directrices de la Comunidad Europea:

Dieses produkt erfüllt die folgenden Vorschriften der Europäischen Gemeinschaft:

Questo prodotto è conforme alle seguenti direttive CEE:

Dir produkt voldoet aan de volgende EG-richtlijnen:

Denna produkt överensstämmer med följande EU direktiv:

Standard Pump, Inc., erklærer herved som fabrikant, at ovennævnte produkt er i overensstemmelse med bestemmelserne i Direkktive:

Tämä tuote täyttää seuraavien EC Direktiivien vaatimukstet:

Dette produkt oppfyller kravene til følgende EC Direktiver:

Este produto está de acordo com as seguintes Directivas comunitárias:

#### This product has used the following harmonized standards to verify conformance:

Ce materiel est fabriqué selon les normes harmonisées suivantes, afin d'en garantir la conformité: Este producto cumple con las siguientes directrices de la comunidad europa:

Dieses produkt ist nach folgenden harmonisierten standards gefertigtworden, die übereinstimmung wird bestätigt:

Questo prodotto ha utilizzato i seguenti standards per verificare la conformita':

De volgende geharmoniseerde normen werden gehanteerd om de conformiteit van dit produkt te garanderen:

För denna produkt har följande harmoniserande standarder använts för att bekräfta överensstämmelse:

Harmoniserede standarder, der er benyttet:

Tässä tuotteessa on sovellettu seuraavia yhdenmukaistettuja standardeja:

Dette produkt er produsert i overenstemmelse med fløgende harmoniserte standarder:

Este produto utilizou os seguintes padrões harmonizados para varificar conformidade:

### AUTHORIZED/APPROVED BY:

Approuve par: Aprobado por: Genehmiat von: approvato da: Goedgekeurd door: Underskrift: Valtuutettuna: Bemyndiget av: Autorizado Por:

rev 202204



Chris Murphy Director of Operations DATE: July 20, 2012 FECHA: DATUM: DATA: DATO PÄIVÄYS:



on Machinery, according to Annex VIII

### EN809:1998+ A1:2009

2006/42/EC



### DECLARATION OF CONFORMITY WITH ATEX 95 DIRECTIVE



(Ex) WITH ATEX 95	
Date of Issue:	10 May 2014
Technical File No.:	203104000-1410/MER
Quality System Registration No:	ISO 9001-2000
Directive:	94/9/EC 23 March 1994 Annex VIII
Conforming Apparatus:	Air-Operated Metal Double Diaphragm Pumps for Use In Potentially Explosive Atmospheres
Hazardous Location Applied:	II 2 G c T5 II 2 D c T100°C T5 fluids up to 95° C
Manufacturer:	Standard Pump, Inc. 1610 Satellite Blvd., Suite D Duluth, GA 30097 USA
On File With:	DEKRA Certification B.V. (0344) Meander 1051 6825 MJ Arnhem The Netherlands
Harmonized Standards Applied:	BS EN 13463-1:2009 Non-Electrical Equipment Potentially Explosive Atmospheres-Part 1 Basic Methods and Requirements EN 13463-5:2011 Non-Electrical Equipment for Potentially Explosive Atmospheres-Part 5 Protection by Constructional Safety
Equipment:	SPFP20, SPFP30, SPSN20, SPFP15, SPSN15

We hereby certify that the above apparatuses described above conforms with the protection requirements of Council Directive 94/9/EC of 23 March 1994 Annex VIII on the approximation of the laws of the Member States Concerning Equipment and Protective Systems Intended for use in Potentially Explosive Atmospheres

my Murphy

Chris Murphy Director of Operations





A UNIBLOC' BRAND

# **Declaration of** Conformity

Manufacturer: STANDARD PUMP, a UNIBLOC® BRAND 1610 Satellite Blvd., Suite D, Duluth, GA 30097, USA certifies that Air-Operated Double Diaphragm Food Processing and Sanitary Pump Models comply with the European Community Regulation 1935/2004/EC for Food Contact Materials.

#### Food Processing Pump Models:

SPFP05PPS SPFP10PPS SPFP15NPS SPFP20NPS SPFP20SSS SPFP30NPT SPFP30SST

SPFP30NPS SPFP30SSS SPFP05PPP SPFP10PPP SPFP15NPP SPFP20NPP SPFP20SSP

Sanitary Pump Models: SPSN15NPS SPSN20NPS SPSN20SSS SPSN15NPP SPSN20NPP SPSN20SSP

Chry Murphy Signature of authorized person

Chris Murphy Printed name of authorized person

Revision Level: 202204

September 11, 2013 Date of issue

**Director of Operations** Title

October 13, 2015 Date of revision

CE



### WARRANTY

### 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 250 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.

## a UNIBLOC HYGIENIC TECHNOLOGIES brand

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