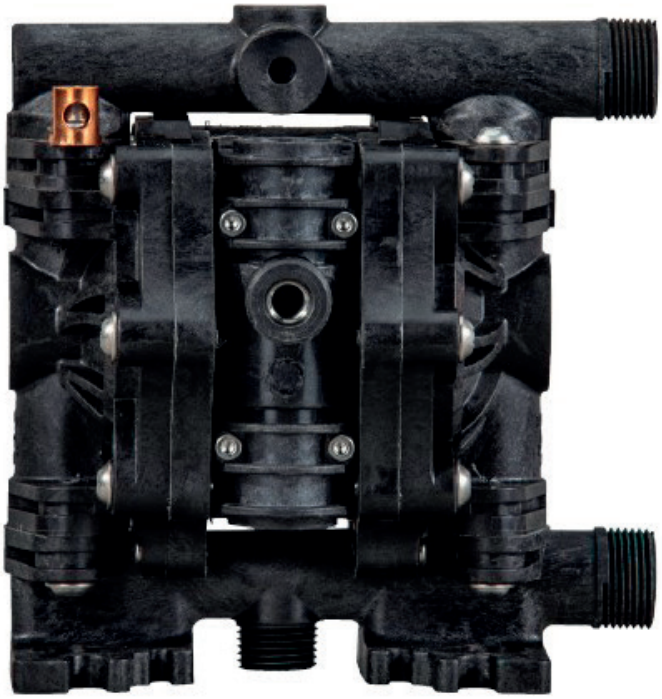
OPERATING INSTRUCTIONS

AIR OPERATED DIAPHRAGM PUMP

airPUMP AP025 *(plastic design)*



TRANSLATION OF THE ORIGINAL OPERATING INSTRUCTIONS EN

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IMPORTANT INFORMATION

Export Information

U.S. Export Administration Regulations, pursuant to ECCN 2B350, prohibit the export or re-export to certain enumerated countries of air operated double diaphragm pumps in which all wetted materials are constructed from fluoropolymers without first applying for and obtaining a license from the U.S. Bureau of Industry and Security(BIS). This affects all sera airPUMP pumps constructed from PVDF with PTFE balls and diaphragms.

Chemical Reaction Disclaimer

The user must exercise primary responsibility in selecting the product's materials of construction which are compatible with the fluid(s) that come(s) in contact with the product. The user may consult a manufacturer's representative/distributor agent to seek a recommendation of the product's material of construction that offers the optimum available chemical compatibility. However neither manufacturer nor agent shall be liable for product damage or failure, injuries, or any other damage or loss arising out of a reaction, interaction or any chemical effect that occurs between the materials of the product's construction and fluids that come into contact with the product's components.

Unpacking & Inspection

Unpack the pump and examine for any signs of shipping damage.
If damage is detected, save the packaging and notify the carrier immediately.
To install the pump, follow the installation instructions provided.

SAFETY PRECAUTIONS FOR ATEX PUMPS

WARNING

READ THIS SUPPLEMENTAL INSERT COMPLETELY BEFORE INSTALLING AND OPERATING THIS PUMP. FAILURE TO FOLLOW THESE PRECAUTIONS CAN RESULT IN SERIOUS INJURY OR DEATH.

WARNING

Static sparking can cause explosion. When operating in a hazardous area or pumping a hazardous fluid, the pump's grounding screw and entire pump system must be grounded to earth to prevent static discharge. This includes but is not limited to pipes, hoses, tanks, containers, valves, etc. Before operating the pump, ensure the electrical continuity throughout the pumping system and earth ground is 1 Ohm or less. If it is greater than 1 Ohm, re-check all grounding connections.

WARNING

Static sparking can cause explosion. Excessive fluid flow rates and improper tank filling methods can produce static electricity causing an explosion. Ensure safe fluid velocities and tank filling procedures in compliance with EN 13463-1 and CLC/TR 50404.

WARNING

Vibrations from operation may cause mounting surfaces and connections to loosen and generate a spark.
Ensure the pump and connections are securely mounted and fastened prior to each operation.

WARNING

Do not exceed minimum and maximum temperature limits of pump components.
A table of temperature limits is provided in the "Pump Data" section of the manual.

WARNING

Prior to operating, check pump for any worn o-rings, gaskets, or seals. Any leaking or damaged o-rings, gaskets, or seals must be repaired or replaced immediately.

WARNING

Do not exceed maximum pressure stated on the pump serial number sticker.

WARNING

Pump exhaust may be loud and contain particles. Wear appropriate ear and eye protection. In the event of a diaphragm rupture material can be forced out of the air exhaust muffler. If product is hazardous or toxic, pipe exhaust to appropriate safe area.

WARNING

Pump must be cleaned on a regular basis to avoid dust buildup greater than 5mm.

WARNING

The surface temperature of the pump depends upon the temperature of the fluid that is being pumped. The chart below lists different fluid temperatures and the corresponding pump surface temperatures, which determine the Temperature Class when used in a hazardous area.

Fluid Temperature	Maximum Surface Temperature	Temperature Class	Maxium Allowable Surface Temperature
80°C (176°F)	80°C (176°F)	T6	85°C (185°F)

SAFETY PRECAUTIONS (GENERAL)

EXPLOSION HAZARD

sera airPUMP with standard materials of construction should not be used with halogenated hydrocarbons. Halogenated hydrocarbon solvents can cause explosion when used with aluminum components in a closed (pressurized) system. sera airPUMPs with standard materials of construction contain aluminum components and will be affected by halogenated hydrocarbon solvents.
1-1-1 Trichloroethane and Methylene Chloride are the most common halogenated hydrocarbons. However, other halogenated hydrocarbon solvents are suspect if used either as part of paint or adhesive formulation, or for clean-up flushing.
For applications that may involve halogenated hydrocarbons, contact **sera** to discuss the availability of alternative pump materials of construction.

WARNING

sera airPUMPs maximum temperature limits are based upon the material's mechanical stress only. Maximum temperature is application dependent. Consult a chemical resistance guide or the chemical manufacturer for chemical compatibility and temperature limits.

WARNING

Chemical Hazard. This pump is used for transferring many types of potentially dangerous chemicals.
Always wear protective clothing, eye protection and follow standard safety procedures when handling corrosive or personally harmful materials. Proper procedures should be followed for draining and decontaminating the pump before disassembly and inspection of the pump. There may be small quantities of chemicals present during inspection.

WARNING

Hot surfaces. **sera** airPUMPs are capable of handling liquids with temperatures as high as 104ºC (220ºF).
This may cause the outer areas of the pump to become hot as well and could cause burns.

WARNING

If a diaphragm rupture occurs, material being pumped may be forced out of the air exhaust. Proper care should be taken, always wear protective clothing, eye protection & follow standard safety procedures.

WARNING

Do not exceed 8.3 bar (120 psig) air supply.

WARNING

When pumping hazardous liquids, or operating the pump in an enclosed room, it is important to pipe the exhaust air to a safe area.

WARNING

Pump exhaust may be loud and contain particles. Wear appropriate ear and eye protection. In the event of a diaphragm rupture material can be forced out of the air exhaust muffler. If product is hazardous or toxic, pipe exhaust to appropriate safe area.

CAUTION

Before attaching air supply to pump to make sure all airline debris is clear. It is recommended to use a minimum 5µ (micron) air filter before the air valve.

CAUTION

Do not over-tighten the air inlet fitting or muffler. Too much torque could damage the air valve or muffler plate.

CAUTION

Before maintenance or repair, close the compressed air line supply valve, bleed the pressure and disconnect air line from the pump. Discharge line may also be pressurized. Any pressure must be relieved prior to servicing. Remove suction / discharge lines & drain the pump.

CAUTION

If pump is used with materials that tend to solidify or settle, the pump should be flushed after each use to prevent damage.

CAUTION

Use only genuine **sera** replacement parts to assure compatibility and longest service life.

CAUTION

Check the temperature limits for all wetted components when choosing pump materials. See table below.

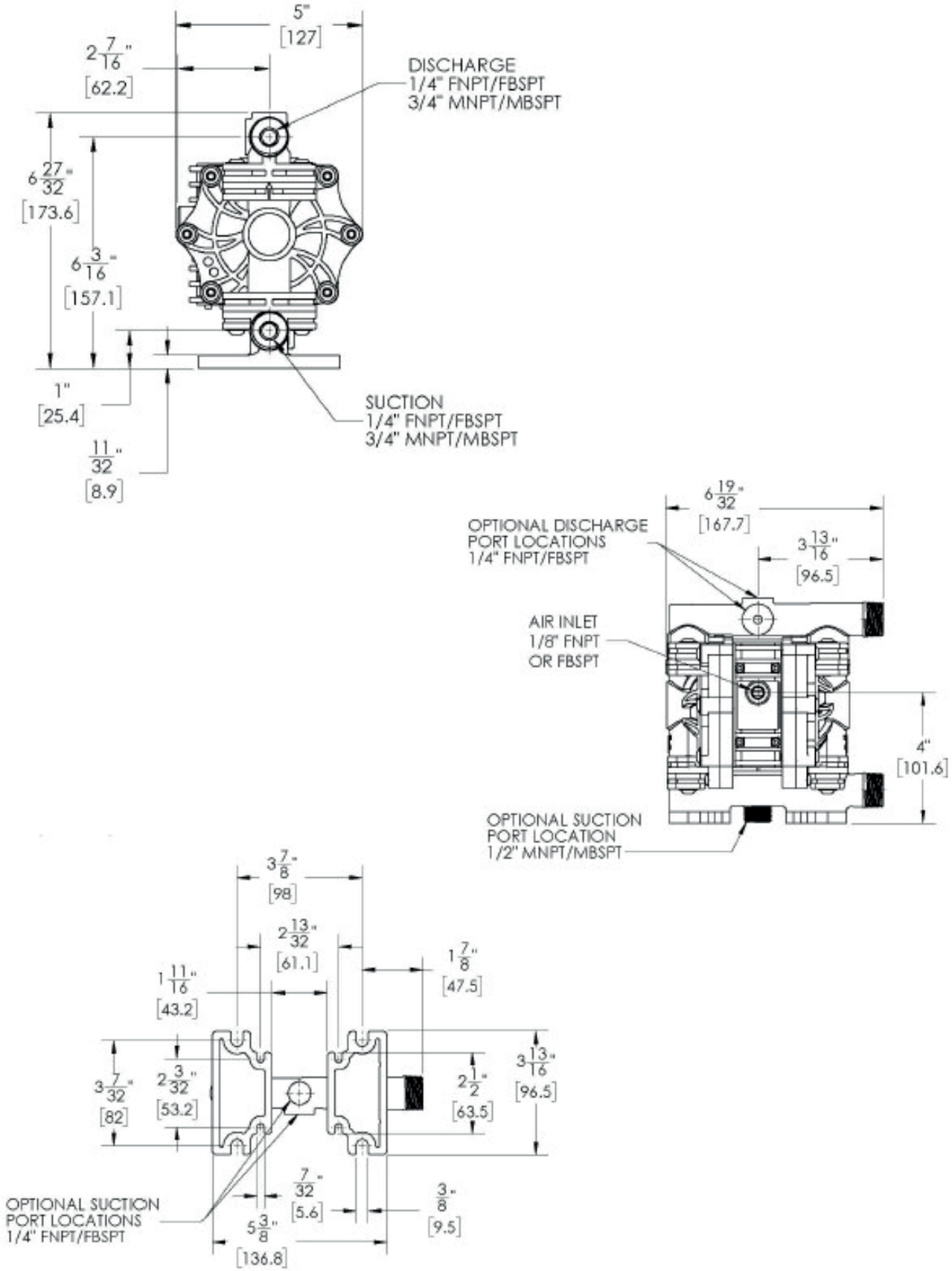
MATERIAL SPECIFICATION

MATERIAL PROFILES

Material	Chemical composition	Description	Operating temperature	
			min.	max.
PP	Pure Polypropylene	Thermoplastic that is resistant to alkali and strong acids.	0°C (32°F)	70°C (158°F)
Conductive PP	Carbon filled Polypropylen	Thermoplastic that is resistant to alkali and strong acids and conductive.	0°C (32°F)	70°C (158°F)
PVDF	Pure Polyvinylidene Fluoride	Strong fluoropolymer with excellent chemical resistance.	-12°C (10°F)	104°C (220°F)
Buna	Acrylonitrile-butadiene Rubber	General purpose elastomer.Resistant to oil, water, solvent, and hydraulic fluid.	-12°C (10°F)	88°C (190°F)
Neoprene	Chloroprene Rubber	General purpose elastomer with good resistance to moderate chemicals, oils, grease, solvents, and some refrigerants.	-18°C (0°F)	100°C (212°F)
Santoprene™	Fully cured EPDM rubber particles encapsulated in a polypropylene (PP) matrix	Thermoplastic elastomer with good abrasion resistance with chemical resistance to a wide range of solvents and chemicals. Injection molded with no fabric layer.	-40°C (-40°F)	107°C (225°F)
PTFE	Polytetrafluoroethylene	Chemically inert. Resistant to a wide range of chemicals.	4°C (40°F)	107°C (225°F)
FEP	Fluorinated Ethylene Propylene	Similar to PTFE in composition and chemical resistance. Used to encapsulate FKM o-rings for superior chemical resistance.	-40°C (-40°F)	107°C (225°F)

Santoprene™ is a registered tradename of Exxon Mobil Corp.

DIMENSIONS

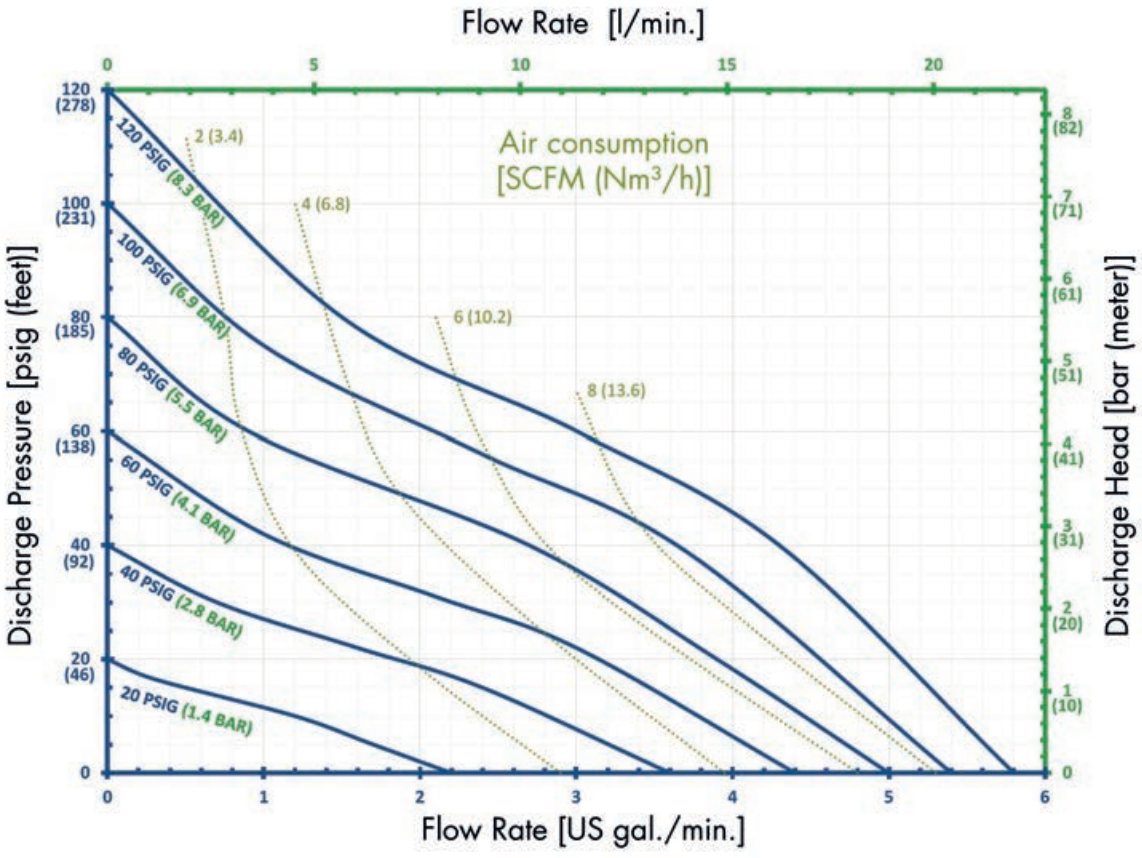

5"
[127]
2 7/16"
[62.2]
DISCHARGE
1/4" FNPT/FBSPT
3/4" MNPT/MBSPT
6 27/32"
[173.6]
6 3/16"
[157.1]
1"
[25.4]
11/32"
[8.9]
SUCTION
1/4" FNPT/FBSPT
3/4" MNPT/MBSPT
6 19/32"
[167.7]
OPTIONAL DISCHARGE
PORT LOCATIONS
1/4" FNPT/FBSPT
3 13/16"
[96.5]
AIR INLET
1/8" FNPT
OR FBSPT
4"
[101.6]
OPTIONAL SUCTION
PORT LOCATION
1/2" MNPT/MBSPT
3 7/8"
[98]
2 13/32"
[61.1]
1 7/8"
[47.5]
1 11/16"
[43.2]
3 7/32"
[82]
2 3/32"
[53.2]
2 1/2"
[63.5]
3 13/16"
[96.5]
7/32"
[5.6]
3/8"
[9.5]
5 3/8"
[136.8]
OPTIONAL SUCTION
PORT LOCATIONS
1/4" FNPT/FBSPT

PERFORMANCE DATA

Air operated diaphragm pump **AP025** (Plastic)

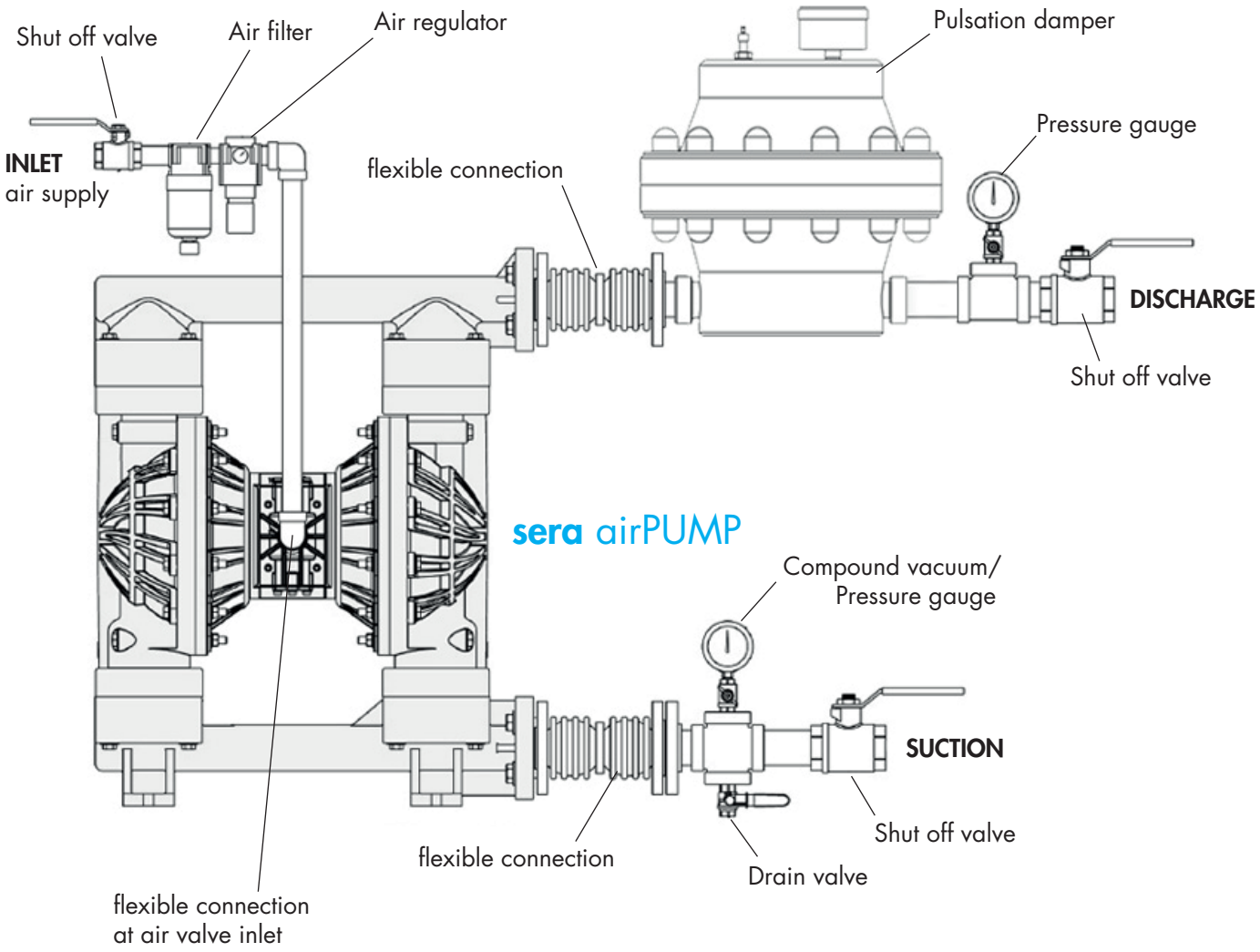
Max Flow Rate:	22 Litre/min. (5.8 gal/m)	Suction/Discharge Size:	1/4" BSB (i) / FNPT or 3/4" BSP (a) / MNPT
Displacement Per Stroke:	0,02 Litre (0.005 gal)	Air Inlet:	1/8" FNPT or FBSPT
Max Outlet Pressure:	8,3 bar (120 psig)	Air Consumption @6,9 bar:	13,6 Nm³/h (8 sfcm)
Max Particle Size:	0,06" (1,8 mm)	Max Material Inlet Pressure:	0,7 bar (10 psig)
Noise Level:	65,3 dB(A)	Max Air Inlet Pressure:	8,3 bar (120 psig)
Max Suction Lift (Water)	dry: 1,8 mWC (6 ft.) wet: 8,5 mWC (28 ft.)	Weight:	PP & CFPP: 1,0 kg (2.3 lbs) PVDF: 1,4 kg (3.1 lbs)

CHARACTERISTIC CURVES



INSTALLATION/OPERATION

INSTALLATION DRAWING



INSTALLATION / START UP

Installation and Start up

Install the pump in a vertical position or it may not prime properly. Pump should be located as close to the product being pumped as possible. Suction line length should be as short as possible and limit the number of fittings. Suction line diameter should not be reduced smaller than the suction diameter of the pump. When using rigid pipe run short sections of flexible hose or flexible connections between the pump & piping. Secure the pump to a suitable surface.

Air Supply

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

Air Valve Lubrication

No lubrication is required for the air distribution system.

Fasteners

Re-torque all fasteners before operation. Creep of housing and gasket materials may cause fasteners to loosen.
Re-torque all fasteners to the torque specifications listed on the exploded view drawing in this manual.

Air Inlet & Priming

Pump will start to operate as soon as the shut-off valve is opened. It is recommended to open the shut-off valve slowly at first. Once the pump primes; the shut-off valve can be opened additionally to increase the pump's flow. If the pump is operating but not pumping any liquid see the troubleshooting section for tips & suggestions.

Accessories

Surge suppressors, spill stops & filter regulators are available and should be used with **sera airPUMP**.

TROUBLESHOOTING TIPS AND SUGGESTIONS

PUMP WILL NOT START OR CYCLEL:

Blocked liquid pipe or hose - Clean out or replace
Clogged liquid chamber - Remove debris
Diaphragm shaft bushing / o-ring leak - Replace o-rings
Air valve carrier not shifting - Inspect, clean

ERRATIC CYCLING:

Diaphragm failure - Replace diaphragm
Valve ball not seating properly, worn or damaged – Inspect, remove debris or replace
Leak in suction line - Inspect, repair or replace
Diaphragm shaft / o-ring leak - Replace o-rings
Air valve carrier not shifting - Inspect and clean
Over lubrication in air valve - Inspect, degrease, clean, and reuse. Remove lubrication
Excess moisture in air valve – Inspect, dry, reuse. Consider installing an air dryer
Worn carrier or valve bore – measure carrier and valve bore, diametrical clearance should be between 0,05 - 0,13 mm. Replace worn components as needed

PUMP CYCLES BUT WILL NOT PUMP:

Too much suction lift - Reduce suction lift or try filling up liquid chambers with fluid
Leak in suction line - Inspect, repair or replace
Valve ball not seating properly, worn or damaged - Inspect, remove debris or replace
Clogged suction pipe or hose - Inspect & clear
Clogged strainer if used - Inspect & clear
Diaphragm failure - Replace diaphragm

PUMPED LIQUID RELEASED FROM AIR EXHAUST:

Diaphragm failure - Replace diaphragm
Outer plate unthreading - Tighten & re-torque

MAINTENANCE

Recommended tools for servicing pump

Torx bits (T20, T27 or T30)
Socket wrenches (5/8" (2x))
Snap ring pliers
Hex wrench (3mm)
O-Ring pick
Torque wrench

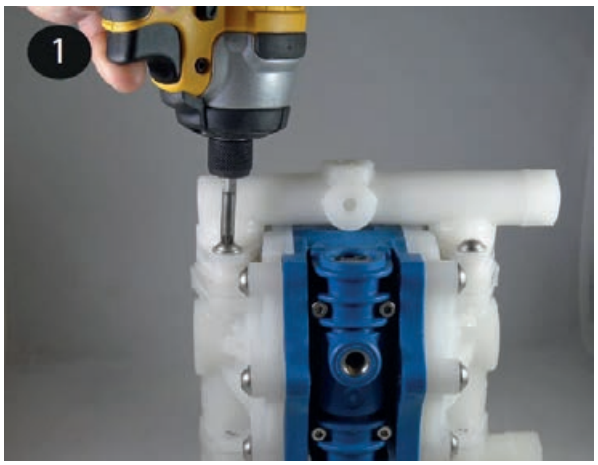
Wet End Servicing (Installing Wet End Kit)

Relieve airline pressure and fluid line pressures before conducting maintenance.
The pump can be drained by turning it upside down and allowing fluid to drain into an appropriate container. Use proper safety equipment when conducting maintenance as internal components may still contain the pumped media.
Lubricate all stainless steel to stainless steel fasteners to prevent galling.

DISASSEMBLY

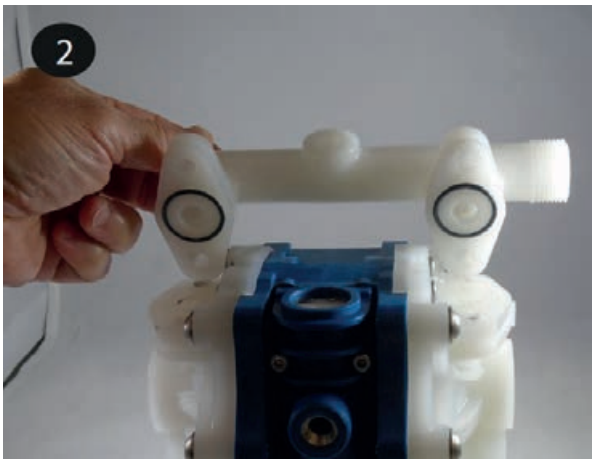
1)

Remove the four discharge manifold bolts (item 9) from the discharge manifold (item 16) using a T30 or T20 Torx bit..



2)

The discharge seat o-rings, valve seats and valve balls (items 13, 14 &15) can now be accessed and replaced if needed.



3)

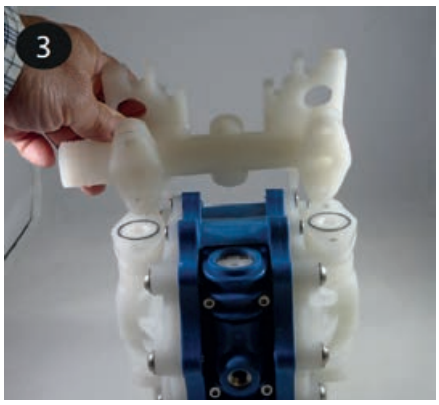
Repeat the above steps for the suction manifold (item12). The seat o-rings, valve seats and valve balls (items 13, 14, & 15) are located in the liquid chambers (item 18).

4)

Remove both liquid chambers by removing the six self-threading screws (item 11) using a T30 or T27 Torx bit and (5) button head cap screws (item 17) using a T20 Torx bit. Inspect and replace diaphragms as needed.

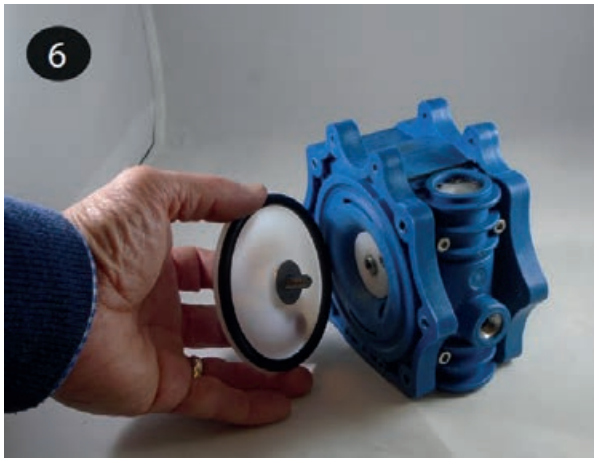
5)

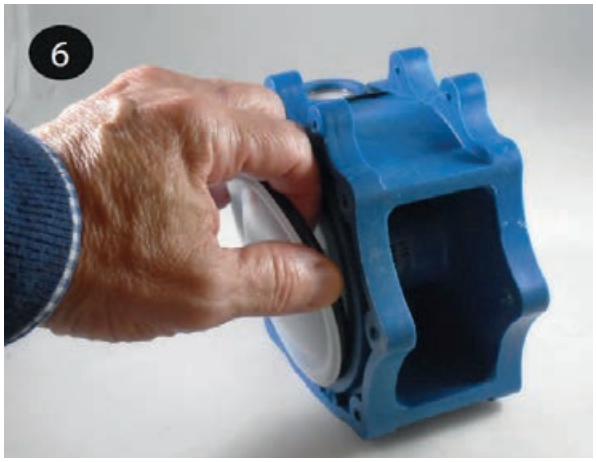
Remove the diaphragms (items 20), begin by loosening the two outer plates (item 19) using two 5/8" wrenches. Use 6-sided sockets or wrenches to prevent damage to the hex portion of the outer plate.



6)

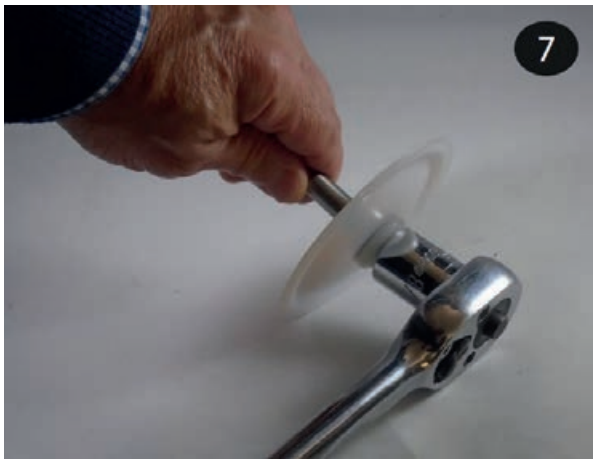
Remove the outer plate, diaphragm(s), and inner plate (items 19, 20, 21, 22, & 23) from the side that is loosened. Pull or push the shaft (item 27) and remaining plates and diaphragms out of the center section. If pulling, it may be easier to grip the diaphragm if it is inverted.





7)

The remaining diaphragm (item 20) and plates (items 19 & 23) may be removed from the shaft (item 27) by hand or by placing the shaft in a vise fitted with soft jaws.
Use a 6-sided 5/8" wrench to remove the remaining diaphragm and plates. Soft jaws are required to prevent damage to the shaft. A damaged shaft with result in accelerated o-ring wear.
Jaws can be fitted with wood, plastic, rubber, or other soft material to prevent shaft damage.



After performing required maintenance, the pump can be reassembled. The pump can also be reassembled using the disassembly instructions in the reverse order as listed above. For detailed assembly instructions, follow steps „Mounting" instructions on next page.

MOUNTING

1)

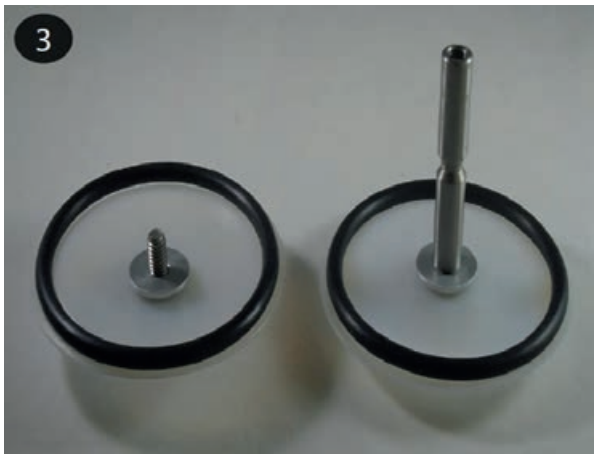
Slide the center hole of one diaphragm (item 20) over the molded in bolt of an outer plate (item 19).
For both PTFE and Santoprene™ fitted pumps the outer plate should be on the convex face of the diaphragm as shown.

2)

For Santoprene fitted pumps place the inner plate (item 23) over the bolt so that the round groove in the inner plate faces the diaphragm. For PTFE fitted pumps place the small diaphragm o-ring (item 22) into the groove of the diaphragm. Then place the inner plate over the bolt so that the round groove in the inner plate faces the diaphragm.

3)

Apply a medium strength thread locker, such as Loctite® 246, to the outer plate (19) bolt threads and shaft (item 27) threads. To ensure thread locker cures quickly, a primer such as Loctite® SF7649 should be used. Thread the shaft onto the outer plate bolt until it is snug.

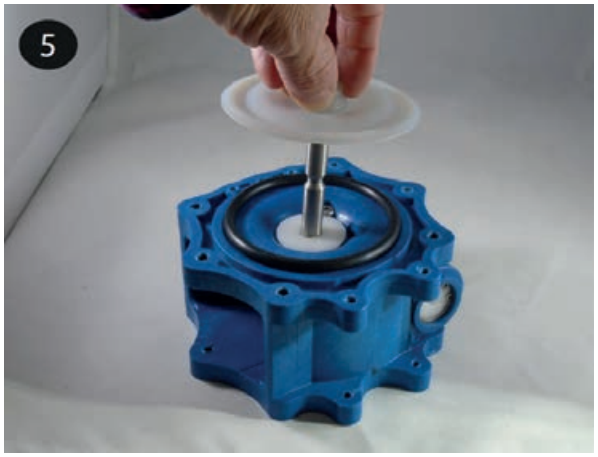


4)

The shaft (item 27) and shaft bushing assembly (items 24, 25 & 26) should retain the lubricant that was factory applied. If they appear dry, apply a light coat of lithium thickened grease. Avoid over lubrication as it can cause decreased performance of the air distribution system.

5)

For PTFE fitted pumps place the large diaphragm o-ring (item 21) into the groove in the center section (item 28).

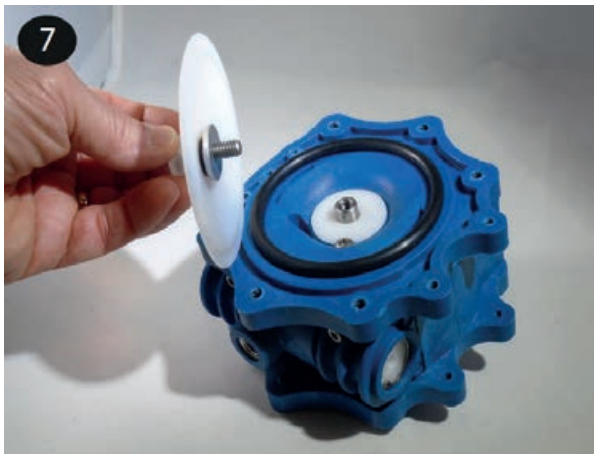


6)

Push the shaft (item 27) through the center of the center section (item 28).

8)

The other diaphragm(s) (item 17) and inner/outer plates (items 19 & 23) can be installed onto the opposite end of the shaft (item 27). It may be easier to thread the molded in bolt into the shaft if the diaphragm(s) is inverted on one or both sides. This can be done by hand.



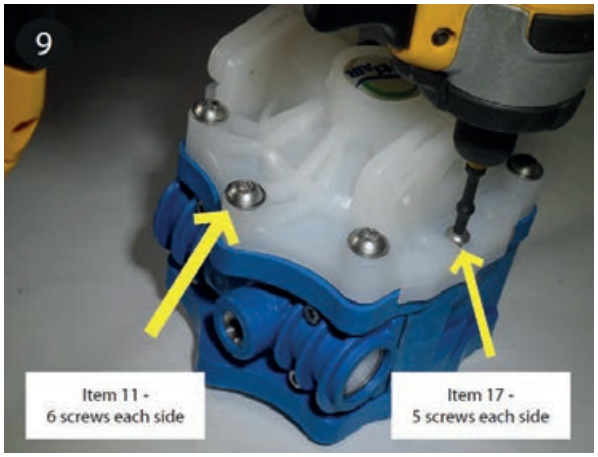
9)

Tighten and torque the outer plates (item 19) to 40 in-lbs (4,5 Nm).

11)

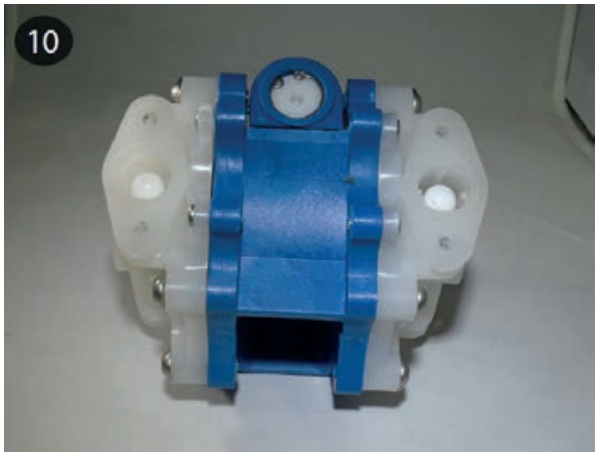
Install the liquid chambers (item 18) by placing one side over the diaphragm. Start all 6 screws (item 11) before tightening and torqueing. Torque all fasteners in a star pattern to 50 in-lbs (5,6 Nm). Start all 5 screws (item 17) before tightening and Torqueing. Torque all screws in a X Pattern to 30 in-lbs (3,4 Nm). Repeat to install the second liquid chamber. Ensure both chambers are orientated the same and that the inlet and outlet ports are vertical when facing the front of the pump.

IMPORTANT: Threads must line up or stripping of threads can occur.



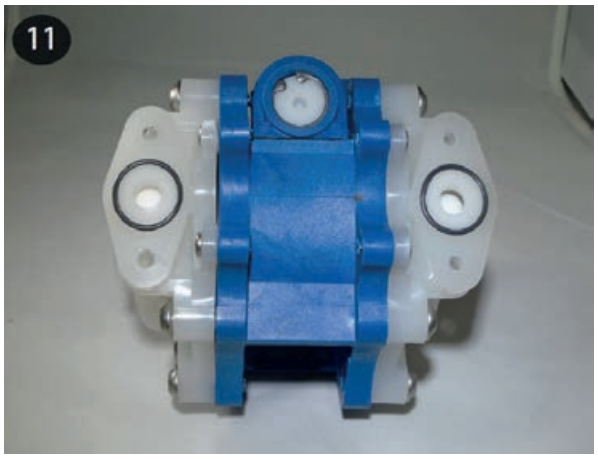
12)

Flip the pump upside down and drop the suction valve balls (item 15) into the liquid chambers (item 18) ball cages.



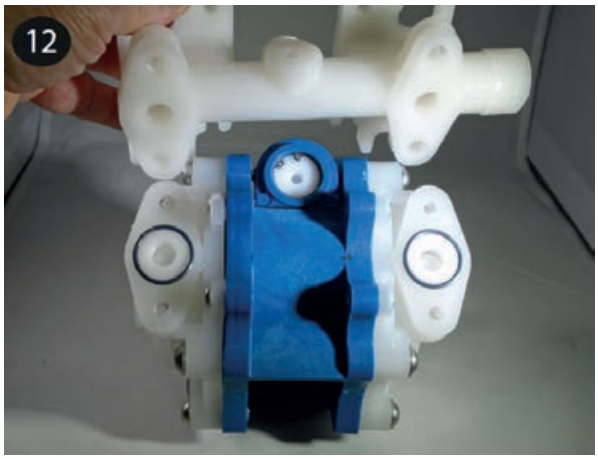
11)

Place the valve seats (item 14) into the seat bore then the valve seat o-rings (item 13) into the groove that is formed by the seats.



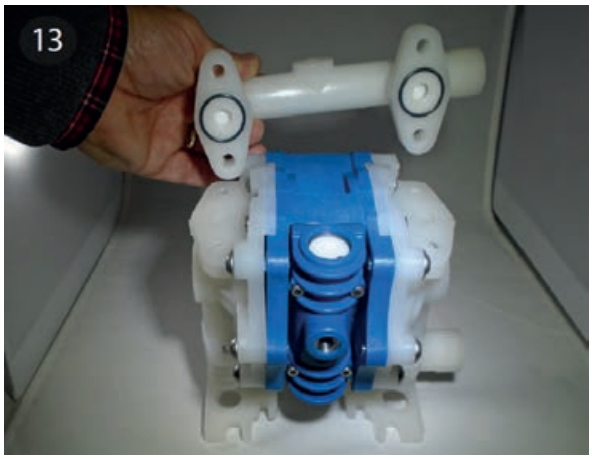
12)

Place the suction manifold (item 12) atop the pump. Tighten and torque the suction manifold bolts (item 11) in an "X" pattern. Torque to 50 in-lbs (5,6 Nm)



13)

Stand the pump upright onto the suction manifold feet (item 12). Place the valve balls (item 15), valve seats (item 14), and seat o-rings (item 13) into the discharge manifold (item 16) in the same order as the suction side was done in step 11. Place the discharge manifold atop the pump, tighten, and torque the discharge manifold bolts (item 11) in an "X" pattern. Torque to 50 in-lbs (5,6 Nm).



AIR END SERVICING (INSTALLING AIR END KIT)

Follow steps 1 – 6 in the Wet End Servicing disassembly section to access the shaft bushing (item 24) and o-rings (items 23 & 26), then follow steps below.

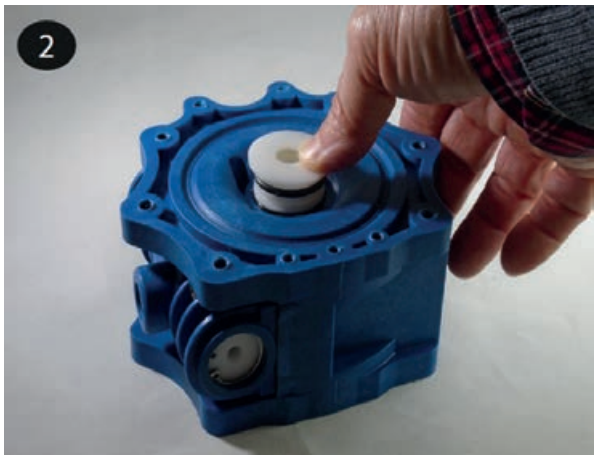
SHAFT, BUSHING AND O-RING REPLACEMENT

1)

To replace the shaft bushings (item 24), carefully remove the old bushings. Remove the bushing hold down screw (item 17) using a T20 Torx bit. Use 1 or 2 flat head screw drivers to pry the bushing out. Repeat for the other side.

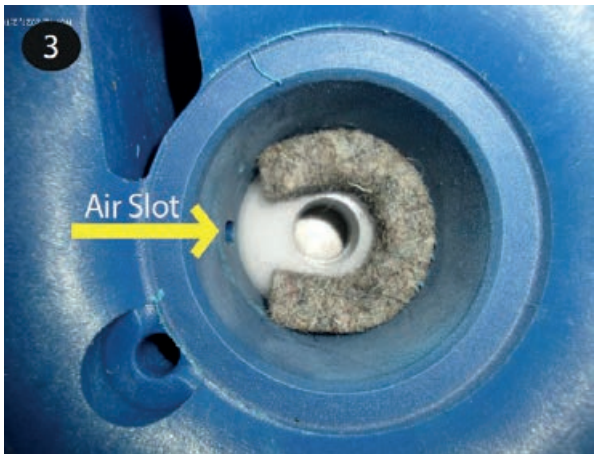
2)

Bushings (item 24) are supplied with both o-rings (items 25 & 26). Lubricate the o-rings (item 25) with a compatible lubricant and push it into the bushing (item 28) gland in the center section. Reinstall the bushing hold down screw (item 17).



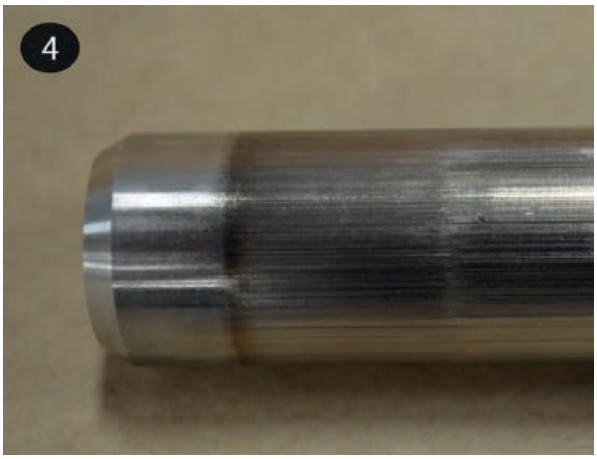
3)

If replacing the bushings (item 24), then the muffler felt (NS) should also be replaced prior to replacing the second bushing. It is important when installing the felt that it does not block the air slot. Lubricate the bushing o-rings (item 25) and press it into the open bushing gland. Reinstall the bushing, hold down screw (item 17).



4)

Inspect the shaft (item 27) for damage. It is common for shafts to become grooved during service. Grooving is normally caused by carbonized oil and/or abrasive foreign material getting trapped between the seal and the shaft. Over time, deep grooves can form in the shaft. When that occurs, it is recommended that the shaft be replaced.

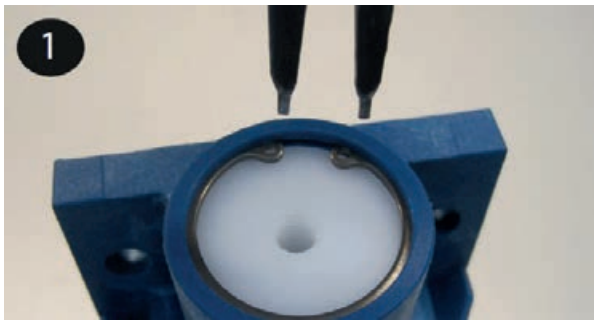


After determining if the condition of the shaft is acceptable, follow steps 5 - 13 in the Wet End Servicing - Wet End Reassembly section to rebuild the rest of the pump.

AIR VALVE O-RING REPLACEMENT

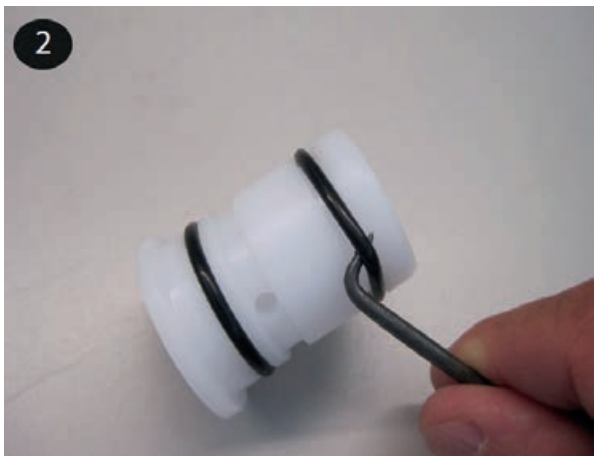
1)

Plastic Air Valve
Plastic Air Valve. To replace the valve cup (item 6) or valve cup o-rings (item 5) remove the retaining ring (item 7), then pull straight up. The use of an M6 bolt, vise grip, and pry bars may be necessary. See 1 and 1A pictures.



2)

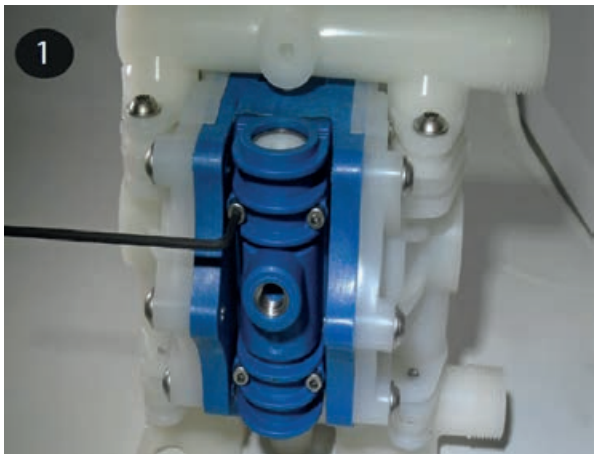
Plastic Air Valve
Remove and replace o-rings. Insert cap (item 6) push down until groove for the retaining ring is visible. Make sure to lubricate the o-rings prior to inserting into the valve body with a compatible lubricant.



VALVE GASKET REPLACEMENT

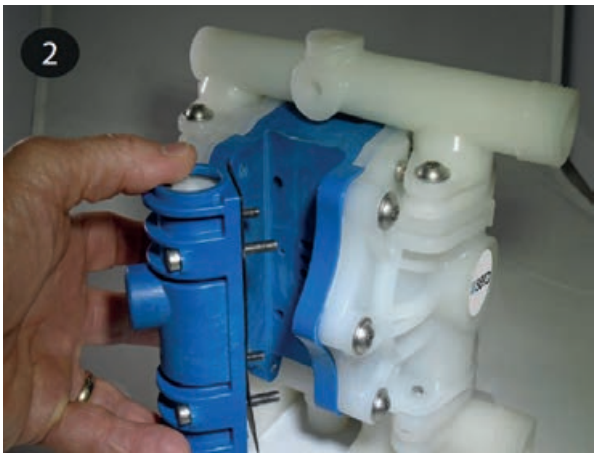
1)

Remove the valve body (item 2) by removing the four socket head cap screws (item 1) that attach the valve body to the center section (item 23) with a 3mm hex wrench.



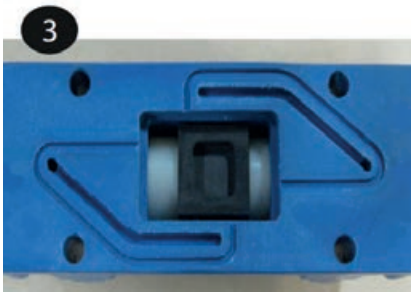
2)

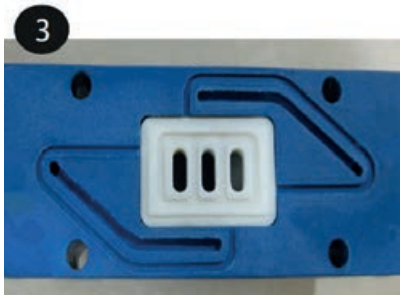
Pull the valve body (item 2) off the front of the center section (item 23).

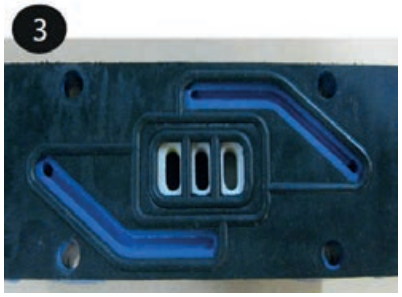


3)

Place the new gasket (item 8) on the air valve (item 2) and ensure the slots in the gasket align with the slots in the air valve and valve plate (item 7).
Air Valve Slide, Plate & Gasket Orientation: If the valve plate (item 7) and slide valve (item 6) are removed, ensure they are installed in the proper orientation. The flat face of the slide valve sits in the pocket of the valve carrier (item 5) so that the square cut out on the slide valve faces the smooth polished side of the valve plate.

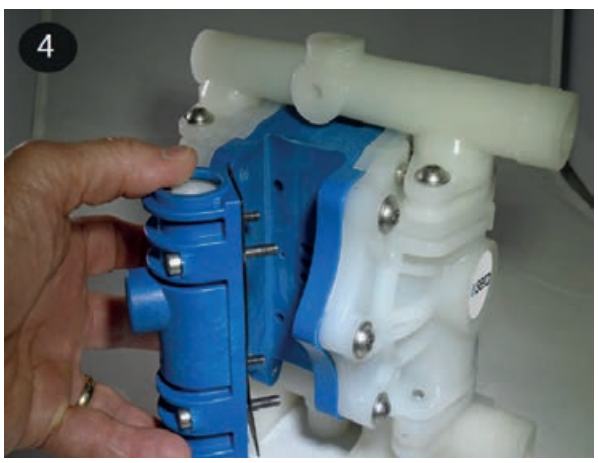






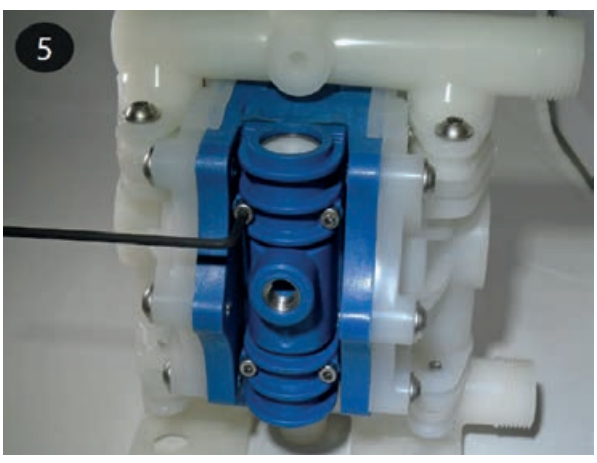
4)

Insert the four cap screws (item 1) through the valve body and gasket (items 2 & 10) and place onto the center section (item 8). Ensure the slide valve and valve plate (items 8 & 9) are in place and the valve sits flat on the center section.



5)

First hand tighten only each cap screw (item 1) until the cap screw head makes contact with the valve body. Torque the cap screws in an "X" pattern. Do not exceed 15 in-lbs (1,7 Nm).

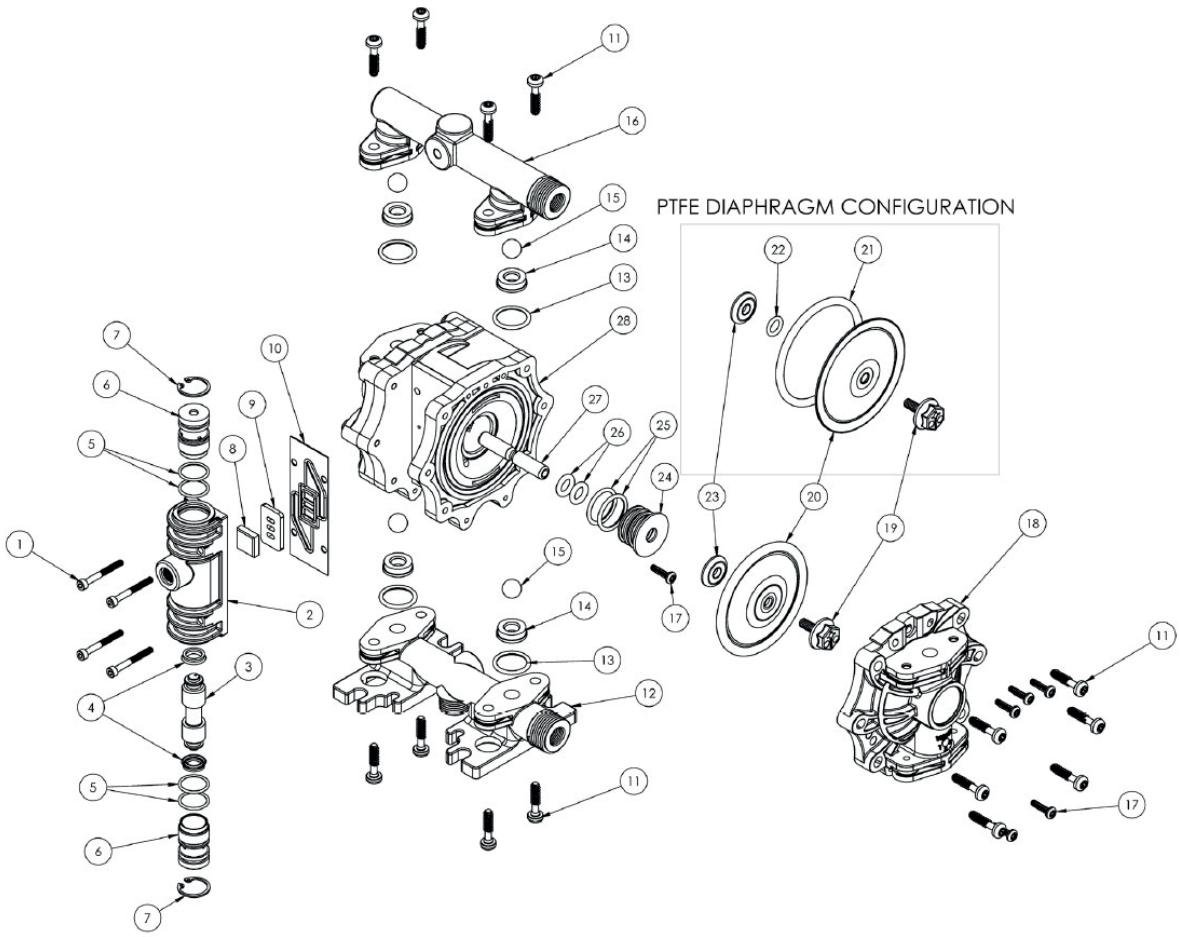


REPLACEMENT AIR VALVE KIT INSTALLATION

1) Remove the valve that is to be replaced by removing the four socket head cap screws with a 3mm hex wrench that attaches the valve body to the center section.
2) Save the four cap screws (item 1). All other valve components can be discarded.
3) Remove the packing tape that holds the air valve components in place during shipping.

Follow steps 3 – 5 in the Valve Gaskets section of Air End Servicing above.

EXPLODED VIEW AND SPARE PARTS LIST



Pos.	Description	Part-No.	ATEX Part-No.	Qty.	Kit
1	CAP SCREW, SOCKET HD M4-0.7X35MM SSTL	109724	–	4	–
2	VALVE BODY, FNPT GLASS FIBER REINFORCED PP (GFRPP)	109248	–	1	V1
	VALVE BODY, FNPT CARBON FILLED ACETAL (CFPOMC)	–	109248-1	1	V2
	VALVE BODY, FBSPT GLASS FIBER REINFORCED PP (GFRPP)	109248-2	–	1	V1
	VALVE BODY, FBSPT CARBON FILLED ACETAL (CFPOMC)	–	109248-3	1	V2
3	VALVE CARRIER W/CUP SEALS (ITEM 4)	111797	–	1	V1/V2
4	CUP SEAL	109972	–	2	V1/V2
5	VALVE CAP O-RING, BUNA	109877	–	4	A1/V1/V2
6	VALVE CAP, DELRIN W/O-RINGS (ITEM 5)	111796	–	2	V1/V2
7	RETAINING RING, HO-81SSTL	109649	–	2	V1/V2
8	SLIDE VALVE	109256	–	1	V1/V2
9	VALVE PLATE	109260	–	1	V1/V2
10	GASKET, AIR VALVE	109264	–	1	A1/V1/V2
11	TORX HD, DELTA P60-2.14 X 25MM	109764	–	20	–

Pos.	Description	Part-No.	ATEX Part-No.	Qty.	Kit
12	MANIFOLD, SUCTION PP UNIVERSAL NPT/BSPT	SEE MANIFOLD TABLE			
	MANIFOLD, SUCTION PVDF UNIVERSAL NPT/BSPT	SEE MANIFOLD TABLE			
	MANIFOLD, SUCTION CFPP UNIVERSAL NPT/BSPT	–	109116-3	1	–
13	O-RING, VALVE SEAT, SANTOPRENE (RED)	109733	–	4	W
	O-RING, VALVE SEAT, FEP/FKM	109325	–	4	
14	VALVE SEAT, PP	109223	–	4	W
	VALVE SEAT, PVDF	109223-1	–	4	
	VALVE SEAT, CARBON FILLED PTFE (CFPTFE)	–	109223-2	4	
15	VALVE BALL, PTFE (WHITE), FDA	109198	–	4	W
	VALVE BALL, SANTOPRENE (RED)	109198-1	–	4	
16	MANIFOLD, DISCHARGE PP UNIVERSAL NPT/BSPT	SEE MANIFOLD TABLE			
	MANIFOLD, DISCHARGE PVDF UNIVERSAL NPT/BSPT	SEE MANIFOLD TABLE			
	MANIFOLD, DISCHARGE CFPP UNIVERSAL NPT/BSPT	–	109131-3	1	–
17	SCREW, PLASTITE #8X5/8	109858	–	12	–
18	CHAMBER, LIQUID PP	109767-22	–	2	–
	CHAMBER, LIQUID PVDF	109767-23	–	2	–
	CHAMBER, LIQUID CFPP	–	109767-24	2	–
19	PLATE, OUTER PP	109152-1	–	2	–
	PLATE, OUTER PVDF	109152-2	–	2	–
	PLATE, OUTER CFPP	–	109152-3	2	–
20	DIAPHRAGM, PTFE (WHITE)	109181	–	2	W
	DIAPHRAGM, SANTOPRENE (RED)	109465	–	2	
21	PTFE DIAPHRAGM, LARGE BACKUP O-RING, NEOPRENE	109725	–	2	W
22	PTFE DIAPHRAGM, SMALL BACKUP O-RING, NEOPRENE	109727	–	2	W
23	PLATE, INNER, AL	109167-3	–	2	–
	PLATE, INNER, SSTL	109167-2	–	2	–
24	BUSHING W/O-RINGS (ITEMS 25 & 26)	111795	–	2	A1
25	O-RING, BUSHING OD BUNA	111738	–	4	A1
26	O-RING, BUSHING ID	111737	–	4	A1
27	SHAFT, SS	109172	–	1	–
28	CENTER SECTION, PP	109148	–	1	–
	CENTER SECTION, CFPP	–	109148-1	1	–
29	PIPE PLUG, PP 1/4" NPT/BSPT	SEE MANIFOLD TABLE			
	PIPE PLUG, PVDF 1/4" NPT/BSPT	SEE MANIFOLD TABLE			
NS	GROUNDING LUG	–	109698	1	–
NS	MUFFLER FELT	109072	–	1	–

NS - Not Shown

KIT COLUMN KEY:

W PARTS SUPPLIED IN A WET SIDE KITS
A1 PARTS SUPPLIED IN AIR END KIT.....**109815**
V1 PARTS SUPPLIED IN GFPP REPLACEMENT VALVE KIT.....**109816**
V2 PARTS SUPPLIED IN CF POMC REPLACEMENT VALVE KIT.....**109816-1**

Maximum Torque Settings* AP025 (Plastic designs)

*Asterisk (*) from the exploded view diagram indicates fasteners to be torqued.

Design: **AP025 PP, AP025 C & AP025 PVDF**	
Pos.	**Torque**
1	1,7 Nm (15 in-lbs)
11	5,6 Nm (50 in-lbs)
17	3,4 Nm (30 in-lbs)
19	4,5 Nm (40 in-lbs)

SUCTION MANIFOLD (POS. 12)	N1 (END)		N2 (CH)		N3 (CV)		N4 (CV & END)	
	Part-No.	Qty.	Part-No.	Qty.	Part-No.	Qty.	Part-No.	Qty.
AP025 PP	109116-1	1	109746	1	109746-1	1	109746-1	1
Pos. 29 (NS) Pipe plug, PP	N/A	0	109754	1	109754	1	109754	1
AP025 PVDF	109116-2	1	109746-2	1	109746-3	1	109746-3	1
Pos. 29 (NS) Pipe plug, PVDF	N/A	0	109755	1	109755	1	109755	1

DISCHARGE MANIFOLD (POS. 16)	N1 (END)		N2 (CH)		N3 (CV)		N4 (CV & END)	
	Part-No.	Qty.	Part-No.	Qty.	Part-No.	Qty.	Part-No.	Qty.
AP025 PP	109131-1	1	109747	1	109747-1	1	109131-1	1
Pos. 29 (NS) Pipe plug, PP	N/A	0	109754	1	109754	1	N/A	0
AP025 PVDF	109131-2	1	109747-2	1	109747-3	1	109131-2	1
Pos. 29 (NS) Pipe plug, PVDF	N/A	0	109755	1	109755	1	N/A	0

OPTIONAL PORTING LOCATIONS:

END = Standard Porting
CH = Center Horizontal
CV = Center Vertical
CV & END = Center Vertical Suction & END discharge.

CLEARENCE CERTIFICATE

NOTE

Inspection / repair of machines and machine parts is only carried out after the clearance certificate was filled in correctly and completely by authorized and qualified personnel.

NOTE

Acceptance will be refused if parts are returned to the manufacturer without a proper clearance certificate.

All industrial companies are obligated by the legal provisions for occupational health, e.g. the workplaces ordinances, the Ordinance on Hazardous Substances, the regulations for prevention of accidents and the environmental protection regulations such as the Waste Management Act and the German Household Water Act to protect their employees or man and the environment from detrimental effects when handling hazardous substances.

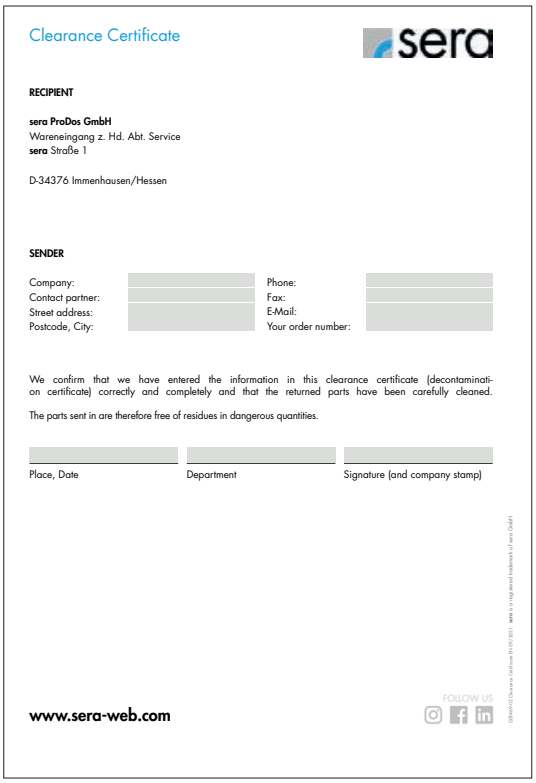
Should special safety precautions be necessary despite careful draining and cleaning of the product the necessary information are to be provided.

Machines which are operated with radioactive media shall only be inspected and/or repaired in the safety area of the owner by a **sera** specialized fitter.

The clearance certificate is part of the inspection-/repair order.
sera reserves the right to refuse acceptance of the order for other reasons.

DOWNLOAD
Clearance certificate

Or directly scan
the QR code opposite:



Clearance Certificate

sera

RECIPIENT

sera ProDos GmbH
Wareneingang z. Hd. Abt. Service
sera Straße 1

D-34376 Immenhausen/Hessen

SENDER

Company: Phone:
Contact partner: Fax:
Street address: E-Mail:
Postcode, City: Your order number:

We confirm that we have entered the information in this clearance certificate (decontamination certificate) correctly and completely and that the returned parts have been carefully cleaned.

The parts sent in are therefore free of residues in dangerous quantities.

Place, Date | Department | Signature (and company stamp)

www.sera-web.com

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EC DECLARATION OF CONFORMITY
OF THE MACHINERY

Original

Business name and full address of the manufacturer:

sera GmbH, sera-Straße 1, D - 34376 Immenhausen

Name and address of the person authorised to compile the technical file:

Sabine Morell, sera-Straße 1, D – 34376 Immenhausen

Description and identification of the machinery:

Air-operated diaphragm pump for dosing fluids for industrial applications.

airPUMP ¼“ AP025 PP Santo	airPUMP ¼“ AP025 PP PTFE
airPUMP ¼“ AP025 PVDF Santo	airPUMP ¼“ AP025 PVDF PTFE
airPUMP ½“ AP05 PP Santo	airPUMP ½“ AP05 PP PTFE
airPUMP ½“ AP05 PVDF Santo	airPUMP ½“ AP05 PVDF PTFE
airPUMP 1“ AP10 PP Santo	airPUMP 1“ AP10 PP PTFE
airPUMP 1“ AP10 PVDF Santo	airPUMP 1“ AP10 PVDF PTFE
airPUMP 1½“ AP15 PP Santo	airPUMP 1½“ AP15 PP PTFE
airPUMP 1½“ AP15 PVDF Santo	airPUMP 1½“ AP15 PVDF PTFE
airPUMP 2“ AP20 PP Santo	airPUMP 2“ AP20 PP PTFE
airPUMP 2“ AP20 PVDF Santo	airPUMP 2“ AP20 PVDF PTFE

The machinery fulfils all the relevant provisions of this Directive:

2006/42/EC Machinery

Where appropriate, harmonised standards used:

EN ISO 12100:2010

Place and date of the declaration: Immenhausen, 11.02.2022

Identity and signature of the person empowered to draw up the declaration on behalf of the manufacturer or his authorised representative:

sera GmbH
34376 Immenhausen

i.A.

S. Morell
Quality Management

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