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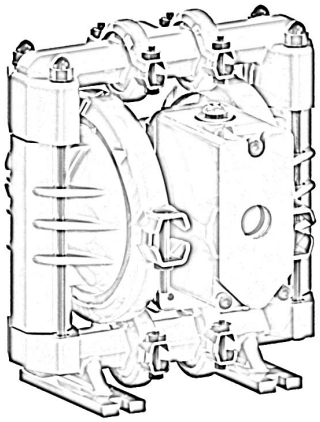
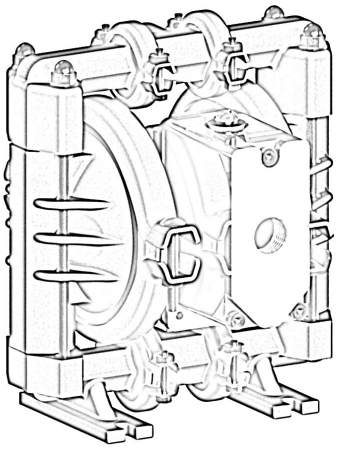
Operation and Maintenance Guide



SDP 12 AL S/H/T



SDP 12 SS S/H/T

SDP 12 Aluminum and Stainless Steel Construction, All variants

Models	Descriptions
SDP 12 AL S/H/T	Aluminum with, Santoprene, Hytrel and PTFE fitments
SDP 12 SS S/H/T	Stainless Steel with , Santoprene, Hytrel and PTFE fitments

Read this manual carefully before installing, operating or servicing this equipment. It's the responsibility of the employer to ensure this manual is read by the operator. Please preserve this manual.

This document is issued with Product Serial No

Table of Contents

Pump Nomenclature

XX	XX	XX	X	X	X
Air Valve Type	*Pump Size*	*Material of Construction*	*Material of Diaphragm*	*Bolted or Clamped*	*Threading on Inlet and Outlet*
DP - Classic ADP - Advanced SDP - MaxFlo	06 - 1/4” 12 - 1/2” 15 - 1/2” 25 - 1” 40 - 1 - 1/2” 50 - 2 “ 75- 3” 100 - 4”	AL - Aluminium SS - Stainless Steel 316L PP - Polypropylene CI - Ductile Iron	B - Nitrile N - Neoprene S - Santoprene T - PTFE V - Viton H - Hytrel	B - Bolted C - Clamped	R- NPT G - BSPT P - BSPP F - Flanged

Operating and Safety Instructions

⚠ Warning. Static Electricity

Static sparks can cause explosion resulting in severe injury or death.

Ground the pump and the pump connections like hoses and containers into which or from the fluid is being transferred. Connect the grounding wire to any bolt on the pump.

Check continuity of electrical path to ground at regular intervals.

Consult local building and electrical codes for grounding requirements where needed.

Use hoses containing a grounding wire.

⚠ Warning: Pump Exhaust

In case of a diaphragm failure, fluid being pumped may spray out from the exhaust of the pump. This may cause severe injury depending on the fluid being pumped.

If the fluid is hazardous, pipe away the exhaust to a safe remote location using a generous diameter pipe preferably with a grounding arrangement, and refit the muffler at the end of this arrangement.

Always wear safety glasses while in the vicinity of an operating pump.

⚠ Warning: Overpressure/Hazardous Pressure

Do not exceed the max supply air pressure of 125 PSI.

Make sure all connected hoses and pipelines are rated to operate safely with the pressures generated by pump of 125 PSI.

Do not open or handle pump or hoses while pressurized.

Disconnect air supply line and relieve pressure from the system by carefully opening discharge and supply lines.

⚠ Warning: Hazardous Materials

Do not move a pump that contains hazardous fluids trapped inside it. Please observe prescribed handling and safety codes. Drain the pump safely, by turning it upside down and collecting the fluid safely, before moving the pump.

⚠ Warning :Explosion

Please check compatibility of fluids intended to be handled with the materials of construction of the pump. Severe reactions and explosions may occur if materials are incompatible Caution: Chemical compatibility

Please check that the fluid being pumped is compatible with the wetted parts of the pump. Refer Cole Parmer compatibility (http://www.coleparmer.in/Chemical-Resistance) guide for details. Note that chemical compatibility may change with temperature; take this into account while selecting pump material.

Caution: Structural support

Please refer figure 1 and ensure that the piping system is independently supported and does not load the pump. The pumps are not designed to take the continuous and often pulsating load of a piping system. Important to use a flexible connection between rigid piping and pump casings.

Caution: Running dry, disconnection of hoses when not in use

Although these pumps can be run dry for long periods, it is advisable to avoid this as it causes unnecessary wear of wearing parts.

Caution: Operator understanding

Please ensure that all operators have read this manual and have the required understanding of safe working practices and are equipped with safety equipment when working on/around the pump.

Caution: Using genuine teryair fittings & spares

Use genuine teryair parts to ensure correct pump operation and maximize life.

Warning Conditions for Certification

1. Control of Environmental humidity to minimize the generation of the static electricity.

2. Protection from direct airflow causing a charge transfer.

3. Touch with an insulating object to avoid electrostatic charge hazard.

4. Clean the surface with damp cloth only to avoid electrostatic charge hazard.

Operating Instructions

The Teryair Stroke diaphragm pump generates a alternate stroking of the diaphragms against the fluid in the liquid chambers of the Pump. This reciprocatory action is responsible for the fluid being pumped.

It is possible to control the output of the pump by controlling the supply air pressure.

It is also possible to control the output of the pump by throttling action on the fluid flowing in the outlet piping by means of a valve. if such a valve is shut completely the pressure in the discharge piping increases to a point when the pressure at pump discharge equals it and the pump comes to a stop. This causes no damage to the pump and the pump consumes no more energy.
Upon opening of the valve, the pump starts reciprocating once again and resumes fluid delivery.

Caution: Temperature limitations and diaphragm options

Neoprene		An excellent general-purpose diaphragm for use in non-aggressive applications such as water-based slurries, well water or sea water. Exhibits excellent flex life and low cost. Temperature range -18°C to +93°C (0°F to +200°F)
Nitile		Excellent for applications involving petroleum / oil-based fluids such as leaded gasolines, fuel oils, non-synthetic hydraulic oils, kerosene, turpentine and motor oils. Temperature range -12°C to +82°C (+10°F to +180°F)
Santoprene		Good abrasion resistance. Low cost. Can handle mild acids and alkalis well. Excellent low cost alternative to ptfe. Excellent suction capabilites Excellent general purpose diaphragm. Temperature range -40°C to +107°C (-40F to +225°F)
Hytrel		Good abrasion resistance. Low cost. . Excellent suction capabilites Good general purpose diaphragm. Temperature range -29°C to +104°C (-20°F to +220°F)
Viton		Excellent for use in applications requiring extremely hot temperatures. May also be used with aggressive fluids such as aromatic or chlorinated hydrocarbons and highly aggressive acids. Especially where high suction lift is important. Temperature range -40°C to +177°C (-40°F to +350°F)
PTFE		Excellent choice when pumping highly aggressive fluids such as aromatic or chlorinated hydrocarbons, acids, caustics, ketones and acetates. Temperature range +4°C to +104°C (+40°F to +220°F)

Suggested Lubricants

Brand	Above 27 Deg C (	From 5 Deg C to 27 Deg C	Below 5 Deg C
Shell	Toona R 72	Toona R 41	Toona R 27
Mobil	Almo 529	Almo 527	Almo 525
Esso	-- -- --	Arox EP 65	Arox EP 45
Caltex	Rando Oil 150	Rando Oil 100	Rando Oil 46
Texaco	Regal Oil F	Regal Oil PE	Regal Oil B
Daltron	Silkolene 881	Silkolene 548	Silkolene 773
Burmah Castrol	RD Oil 3	RD Oil Light	Megna SPX
BP	RD 220 HP60C	RD150 HP20C	RD80 HP10C
Duckham	Garnet 7	Garnet 6	Zero Flo 5
Sternol	Merlin 87	Merlin 71	Merlin 54
Petrofina	Purifoc 53	Purifoc 46	Purifoc 32
Chevron	Vistac Oil 18X	Vistac Oil 19X	Vistac Oil 9X

Suggested site selection and installation recommendations

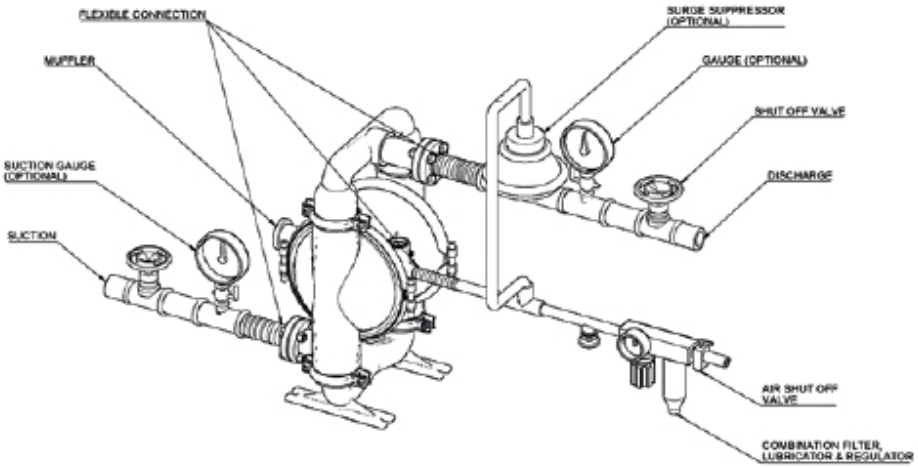


Figure 1

Location Selection

Pump location must be easily accessible with reasonable space around for maintenance operations.
Pump dimensional data for each variant is available in section showing exploded views ir supply

Air Supply

Compressed air at 90 PSI (Stroke pumps can take a max of 125PSI), free from moisture and having an oil mist is essential. Use of a filter (50 microns), a lubricator and a regulator is highly recommended and should be installed as close as possible to the pump inlet.
Ensure correct grade of oil is used in the lubricator bowl. Too thick oil may slow down the valve shifting mechanism and affect pump performance. See suggested lubricants on page no 5
Piping
see section on safety if used in hazardous area)
See Figure 1.
Suction side ½ inch or larger, non-collapsible
Delivery side ½ inch or larger.
A minimum number of bends and fittings to be used.
A flexible connection between suction, delivery and air supply piping is highly recommended such that piping stresses and loads do not transfer to pump housing.
Select piping materials such that chemical compatibility is maintained with the fluid being pumped.

Suction

Ensure that the suction head after installation is well within the pumps suction capabilities

Muffler

Use of supplied muffler is recommended to bring pump operation sounds down to comfortable levels, in case of hazardous fluids handling, please read section of safety regarding piping away of exhaust see
Warning: Pump Exhaust) earlier in this manual.

Troubleshooting

Serial No	Description	Causes	Remedial Action
1	Pump stops and will not start	Insufficient Air Pressure	Check air pressure is as recommended at the pump air inlet
		Air Filter Blocked	Check if debris has clogged the inlet filter on the FRL unit/pump inlet air valve (some models have air filter on the air inlet valve) and ensure clear passage of air
		Internal damage or excessive wear on components	roceed to dismantle the pump, examine component for wear, replace any worn components, re assemble carefully as instructed in this manual and re start the pump.
2	Pumps runs slowly, poor delivery	Cavitation	Check if cavitation is occurring in the suction side, if so reduce suction vacuum by slowing down the pump.
		Worn Balls and Seats	Check proper sealing action of balls against seals, these components need to be replaced as a set if they are worn.
		Insufficient or wrong lubricant in the air supply.	Ensure that the lubricant is as per the recommended chart, a thicker lubricant often makes the air valve work sluggishly
		Internal damage or excessive wear on components	Proceed to dismantle the pump, examine component for wear, replace any worn components, re assemble carefully as instructed in this manual and re start the pump.
3	Pump air valve frerzes	Excessive moisture in supply air line.	Ensure that the dew point of the supplied air is low enough. Install a air dryer or moisture separator on the supply line
4	Air bubbles in pump discharge or product sprays out of exhaust vent	Broken Diaphragm	Proceed to dismantle the pump, examine component for wear, replace any worn components, re assembly carefully as instructed in this manual and re start the pump
		mproper seal between inner pistons, outer pistons and shaft.	
		Air leakage into product from balls / seats area	
		Air sucked into suction pipeline due to insufficiently tight joints on suction pipeline.	

Maintenance

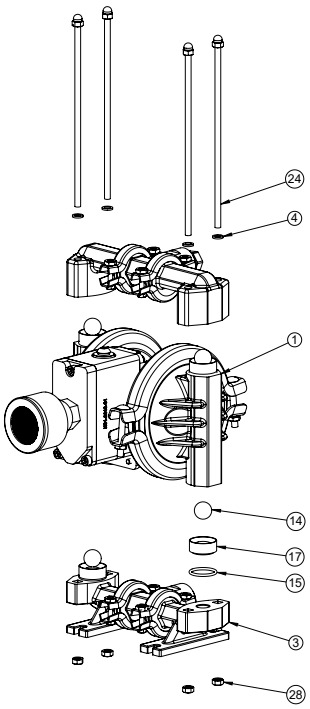
Regular inspection and maintenance schedules will greatly enhance the life of the pump and will ensure a trouble free and safe working environment with little chance of breakdowns.
Follow the instructions clearly in "Disassembly and Reassembly" of the pump and in the troubleshooting section.
Use genuine Teryair spares and if possible mention the serial number of the pump when ordering spares.
Always replace elastomers as a set, eg diaphragms, balls and seats.

Disassembly and Re assembly

- Shut off air supply and allow residual Pressure to bleed off.
- Disconnect air supply
- Disconnect suction and discharge piping
- Turn pump upside down allow process fluid to drain away. If fluid is hazardous due care should be taken.
- Make a mark to indicate the positioning of each liquid chamber relative to the housing.

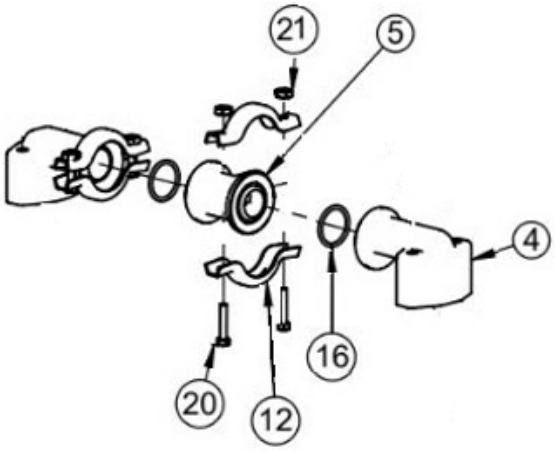
NOTE: Replace worn parts with genuine TERYAIR parts for reliable performance.

1. Replacement Of Diaphragms, Ball & Ball Seat.

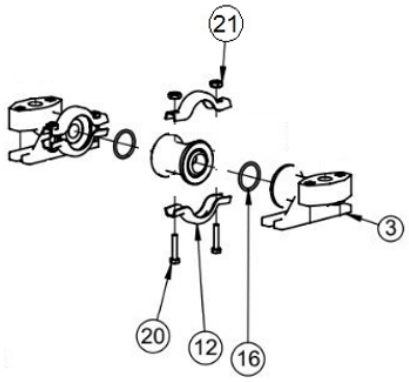


a. Unscrew the four manifold bolts (24) & washer (25) & nut (28). Remove the top and bottom manifolds (3 & 4)

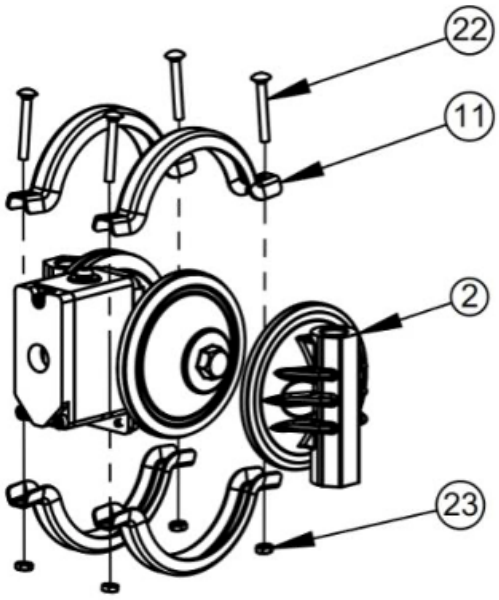
b. Inspect manifolds (3 & 4), O-rings (15), and valve balls (14). If swelling, cracking or other damage is apparent, these parts must be replaced with genuine TERYAIR parts



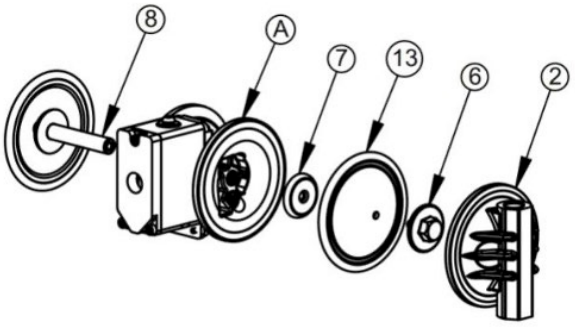
c. Now unscrew the Outlet Manifold bolt (20) and nut (21) & remove clamp (12) then inspect the O-rings (16), If swelling, cracking or other damage is apparent, these parts must be replaced with genuine TERYAIR parts. Now repeat the same procedure to remove other side clamp(12)



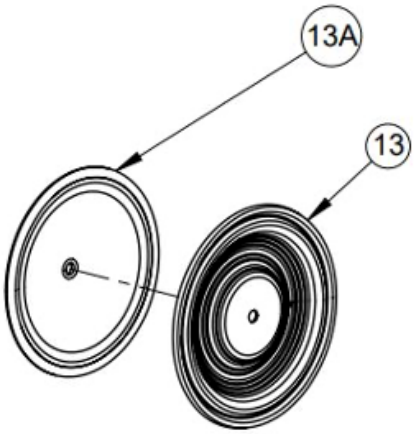
d. Now unscrew the inlet Manifold bolt (20) and nut (21) & remove clamp (12) then inspect the O-rings (16), If swelling, cracking or other damage is apparent, these parts must be replaced with genuine TERYAIR parts. Now repeat the same procedure to remove other side clamp(12)



e. Now unscrew hex socket head bolts (22) & nuts (23) of any one side and proceed to remove the big clamp (11). Now remove the outer chamber (2). Now repeat the same procedure to remove the second outer chamber.



For PTFE Models



f. Now with the help of two spanner hold one of the across flat of one outer flange (6) and rotate the second outer flange (6) to disassemble it from the shaft (8) Remove the diaphragm (13) & inner flange (7). Now pull out the shaft (8) out of the shaft housing assembly (A).
*For ALT/SST series hold one of the across flat of Outer flange (6) and rotate the second side Outer flange to disassemble it from the shaft(8). Remove backup diaphragm (13A) & Diaphragm(13) & inner flange (7). Now pull out the shaft (8) out of the shaft housing assembly (A).

g. For other side Diaphragm removal- hold the shaft (8) in a vice with proper packing. Care must be taken not to damage the shaft outer surface. Now remove the outer flange (6) with spanner.
*For ALT/SST series hold one of the across flat of Outer flange (6) and rotate the second side Outer flange to disassemble it from the shaft(8).
Remove backup diaphragm (13A) &

Diaphragm (13) & inner flange (7). Now pull out the shaft (8) out of the shaft housing assembly (A).

h. Now replace the diaphragms (13). Ensure that diaphragm orientation is correct, i.e. For ALB/ ALN/ALV. the sticker side of the diaphragm (13) to be located on outer flange (6). Now assemble the inner flange (7) & shaft (8) in reverse manner and remove the half shaft assembly from vice.

* Refer image for ALT & SST model Hold the shaft (8) in vice , then install inner flange (6), new Backup diaphragm (13) & PTFE Diaphragm (13A) & outer flange (6) in reverse manner and remove the half shaft assembly from vice.

* For ALS/ ALH model AIR SIDE marking to be located toward the shaft housing (A).

i. Lubricate the edge of the shaft (8) with specified lubricant. Slowly insert the shaft with rotating motion. (Refer Image of step "c")

j. Once the half shaft open portion comes out of the bush, follow the procedure in reverse manner as described in step (c),(b) & (a) and assemble the pump. (Refer Image of step "c, b & a")

2. Replacement Of Shaft O-Rings

a. For removing the rubber rings from bush, first follow the steps a, b c & d from the diaphragm replacement.

b. Now remove the seals (14) with the help of needle Nose pliers. Care should be taken not to damage the inner face of bush.

c. Once all the old seals are have been removed, the inside of the bushing should be cleaned to ensure no debris is left that may damage to new seals (Pressurized air is preferable).

d. These following tools can be used to aid in the installation of new seals:
- Needle Nose pliers
- Phillips Screwdriver
- Electrical Tape

Fig. A

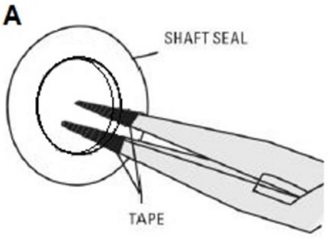
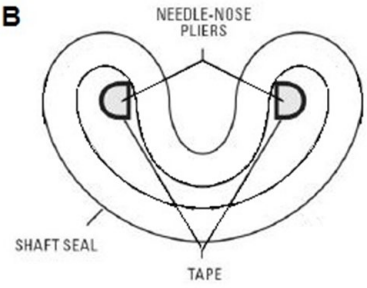


Fig. B



e. Wrap electrical tape around each leg of the needle nose pliers (heat shrink may also be used) . This is done to prevent damaging the inside portion of the new seals.

f. With a new seal in hand, place the two legs of the nose pliers inside the seal ring. Open the pliers as wide as the seal diameter will allow, then two fingers pull down on the top portion of the seal to form kidney bean shape. (Refer Fig. A)

g. Lightly clamp the pliers together to hold the seal into the kidney shape. Be sure to pull the seal into as tight of a kidney shape as possible, this will allow the seal to travel down the bushing bore easier. (Refer Fig. B)

h. With the seal clamped in the pliers, insert the seal into the bushing bore and position the bottom of the seal into the correct groove. Once the bottom of the seal is seated in the groove, release the clamp pressure on the pliers. This will allow the seal to partially snap back to its original shape.

i. After the pliers are removed, you will notice a slight bump in the seal shape. Before the seal can be properly re-sized, the bump in the seal should be removed as much as possible. This can be done with either the Phillips screw driver or your finger, apply light pressure to the peak of the bump. This

pressure will cause the bump to be almost completely eliminated.

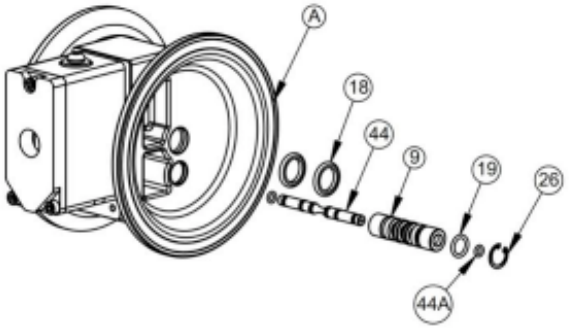
j. Lubricate the edge of the shaft with specified lubricant.

k. Slowly insert the shaft with rotating motion. This will complete the re-sizing of the seals.

l. Perform these steps for the remaining seals.

Air Valve/ Center Section Disassembly

3. Replacement Of Secondary Shaft Assembly



a. For removing the secondary shaft assembly from center piece assembly, first follow the steps a, b, c, d from the diaphragm replacement and remove the outer chamber (2).

b. Repeat the same procedure to remove the other side also.

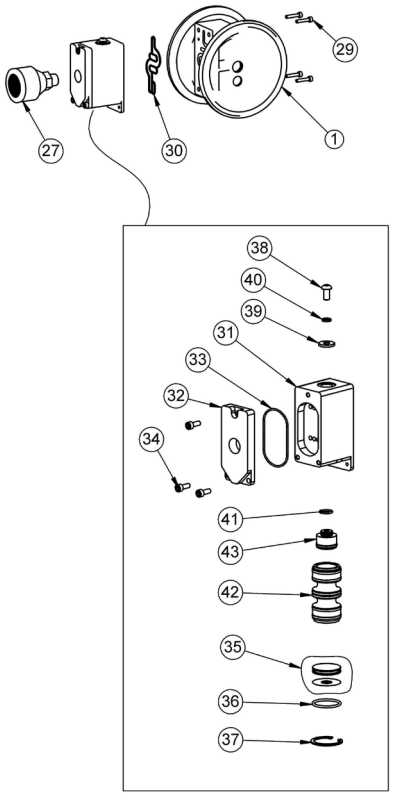
c. Remove the Circlips (26) from Shaft housing assembly housing (A) & take out the Sleeve (9) by pushing it from the shaft housing assembly (A).

d. Now remove the end O-rings (44A) from both sides of secondary shaft assembly (44).

e. Now if you see there is a center drill mark on one side of the secondary shaft assembly (44). Pull the secondary shaft assembly (44) from that side only.

f. During assembly make sure to push the secondary shaft assembly (44) from the plain side only into the sleeve (9).

4. Replacement of Air Valve, Gasket, O-Rings of End Cap & Filter



a. Unscrew Allen bolts (29) from shaft housing (1) and remove Air valve body (31) from housing (1). Now remove the gasket (30) from Air valve (31). While re-assembling replace gasket (30) with new one.

b. Remove the circlip (37) with the help of a circlip opener. Remove the end cap metal cover and now use a M6 Bolt to pull the end cap (35) with its O-ring (36) out of the air valve body (31).
(Note - Ensure that the metal cover is always installed with an end cap 35)

c. Use the same bolt to pull the air piston assembly (42) with all its seals. This piston assembly (42) needs to replace as a single piece.

d. In order to remove the end plug assembly (43) with its seals, remove the screw (38) using allen key and push it to remove. End plug assembly (43) also needs to be replace with seals.

e. Now remove O-ring (41) from the End cap (43) and replace it with new one.

f. Unscrew the Allen screw (34) using suitable

key. Open cover (32) & replace O-ring (33) with new one.

Re-Assembly

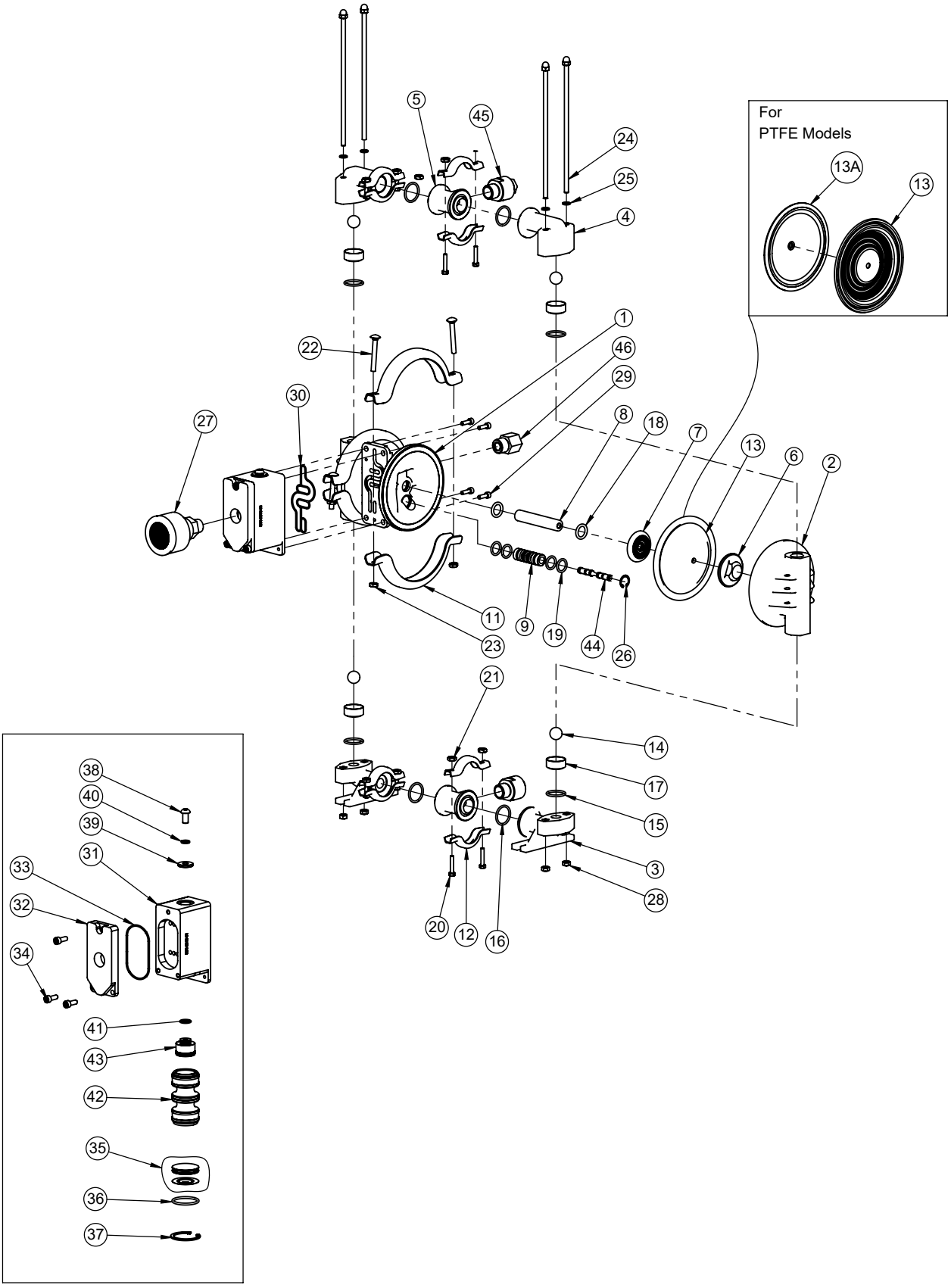
Upon performing applicable maintenance to the air distribution system, the pump can now be reassembled. Please refer to the dis-assembly instructions for photos and parts placement. To reassemble the pump, follow the dis-assembly instructions in reverse order. The air distribution system needs to be assembled first, then the Diaphragms and finally the wetted path. Please find the applicable torque specifications on this page.
The following tips will assist in the assembly process.

1. Clean the inside of the center section shaft bore to ensure no damage is done to new seals.
2. Stainless bolts should be lubed to reduce the possibility of seizing during tightening.
3. Level the water chamber side of the intake/discharge manifold to ensure a proper sealing surface. This is most easily accomplished by placing them on a flat surface prior to tightening their clamp bands to the desired torque (see below for Torque Specifications).
4. Be sure to tighten outer pistons simultaneously on PTFE-fitted pumps to ensure proper torque values.
5. Ensure proper mating of liquid chambers to manifolds prior to tightening vertical bolts. Overhang should be equal on both sides.
6. Apply a small amount of Loctite 242 to the shaft interval threads before the diaphragm assembly.
7. Concave side of disc spring in diaphragm assembly faces toward shaft.
8.

Maximum torque specifications

DESCRIPTION OF PART	MAX TORQUE
Air Valve	3.1 Nm (27 in-lb)
Outer Flange	14.1 Nm (125 in-lb)
Small Clamp Band	1.7 Nm (15 in-lb)
Big Clamp Band (Rubber/TPE-Fitted)	9.0 Nm (80 in-lb)
Big Clamp Band (PTFE-Fitted)	13.6 Nm (120 in-lb)
Vertical Bolts	14.1 Nm (125 in-lb)

Exploded View for SDP 12 Pump



Bill of Materials for SDP 12 ALS Pumps

ILLUS. NO.	PART NO.	DESCRIPTION	QTY
1	164 10 06	SHAFT HOUSING	1
2	164 10 01	LIQUID CHAMBER	2
3	164 10 02	INLET LEG	2
4	164 10 03	OUTLET ELBOW	2
5	164 10 04	T JOINT FOR INLET & OUTLET	2
6	164 20 02	OUTER FLANGE WITH STUD	2
7	164 20 03	INNER FLANGE	2
8	164 27 01	PRIMARY SHAFT	1
9	164 27 03	SLEEVE FOR SEC. SHAFT	1
10	164 21 05	SPACER FOR INNER FLANGE	2
11	164 31 01	BIG CLAMP	4
12	164 31 02	SMALL CLAMP	8
13	164 41 01	DIAPHRAGM (SANTOPRENE)	2
14	164 41 02	BALL (SANTOPRENE)	4
15	164 41 03	O RING BALL SEAT (SANTOPRENE)	4
16	164 41 04	O RING MANIFOLD (SANTOPRENE)	4
17	164 20 01	BALL SEAT	4
18	164 40 06	O RING	2
19	164 40 03	O RING	4
20	164 90 05	ALLEN BOLT	8
21	164 90 06	HEX NUT	8
22	164 90 07	ALLEN BOLT	4
23	164 90 08	HEX. NUT	4
24	164 90 15S	BOLT	4
25	171 27 22S	PLAN WASHER	4
26	200 40 12	INT CIRCLIP	2
27	200 97 15	MUFFLER	1
28	164 90 17S	NUT	4
29	803 90 01	ALLEN BOLT	4
30	164 40 05	SKELETON SEAL	1
31	167 10 02	AIR VALVE BODY	1
32	167 10 03	AIR VALVE BODY COVER	1
33	167 40 01	O' RING	1
34	171 27 47S	ALLEN BOLT	3
35	167 08 02	END CAP	1
36	167 40 05	O' RING	1
37	210 90 24S	INTERNAL CIRCLIP	1
38	167 90 04	BUTTON HEAD SCREW	1
39	167 90 05	PLAIN WASHER	1
40	536 90 14S	SPRING WASHER	1
41	167 40 02	O' RING	1
42	167 98 02	AIR PISTON ASSEMBLY	1
43	167 98 03	DIFFERENTIAL CAP ASSEMBLY	1
44	164 98 01	SECONDARY SHAFT ASSEMBLY	1

Note.

Above all parts are common for CR (NPT), CG (BSPT) & CP (BSPP) Pumps.
The additional parts for CG (BSPT) & CP (BSPP) pumps model are as follows

ITEM NO	PART NUMBER	DESCRIPTION	CG MODELS	CP MODELS
45	171 10 06	Adaptor 1/2" BSPT(F)	2	
45	171 10 10	Adaptor 1/2" BSPP(F)		2
46	151 04 03	Adaptor 1/2" BSPT(F)	1	
46	151 04 05	Adaptor 1/2" BSPP(F)		1

Bill of Materials for SDP 12 ALH Pumps

ILLUS. NO.	PART NO.	DESCRIPTION	QTY
1	164 10 06	SHAFT HOUSING	1
2	164 10 01	LIQUID CHAMBER	2
3	164 10 02	INLET LEG	2
4	164 10 03	OUTLET ELBOW	2
5	164 10 04	T JOINT FOR INLET & OUTLET	2
6	164 20 02	OUTER FLANGE WITH STUD	2
7	164 20 03	INNER FLANGE	2
8	164 27 01	PRIMARY SHAFT	1
9	164 27 03	SLEEVE FOR SEC. SHAFT	1
10	164 21 05	SPACER FOR INNER FLANGE	2
11	164 31 01	BIG CLAMP	4
12	164 31 02	SMALL CLAMP	8
13	164 43 01	DIAPHRAGM (HYTREL)	2
14	164 43 02	BALL (HYTREL)	4
15	164 43 03	O RING BALL SEAT (HYTREL)	4
16	164 43 04	O RING MANIFOLD (HYTREL)	4
17	164 20 01	BALL SEAT	4
18	164 40 06	O RING	2
19	164 40 03	O RING	4
20	164 90 05	ALLEN BOLT	8
21	164 90 06	HEX NUT	8

ILLUS. NO.	PART NO.	DESCRIPTION	QTY
22	164 90 07	ALLEN BOLT	4
23	164 90 08	HEX. NUT	4
24	164 90 15S	BOLT	4
25	171 27 22S	PLAN WASHER	4
26	200 40 12	INT CIRCLIP	2
27	200 97 15	MUFFLER	1
28	164 90 17S	NUT	4
29	803 90 01	ALLEN BOLT	4
30	164 40 05	SKELETON SEAL	1
31	167 10 02	AIR VALVE BODY	1
32	167 10 03	AIR VALVE BODY COVER	1
33	167 40 01	O' RING	1
34	171 27 47S	ALLEN BOLT	3
35	167 08 02	END CAP	1
36	167 40 05	O' RING	1
37	210 90 24S	INTERNAL CIRCLIP	1
38	167 90 04	BUTTON HEAD SCREW	1
39	167 90 05	PLAIN WASHER	1
40	536 90 14S	SPRING WASHER	1
41	167 40 02	O' RING	1
42	167 98 02	AIR PISTON ASSEMBLY	1
43	167 98 03	DIFFERENTIAL CAP ASSEMBLY	1
44	164 98 01	SECONDARY SHAFT ASSEMBLY	1

Note.

Above all parts are common for CR (NPT), CG (BSPT) & CP (BSPP) Pumps.
The additional parts for CG (BSPT) & CP (BSPP) pumps model are as follows

ITEM NO	PART NUMBER	DESCRIPTION	CG MODELS	CP MODELS
45	171 10 06	Adaptor 1/2" BSPT(F)	2	
45	171 10 10	Adaptor 1/2" BSPP(F)		2
46	151 04 03	Adaptor 1/2" BSPT(F)	1	
46	151 04 05	Adaptor 1/2" BSPP(F)		1

Bill of Materials for SDP 12 ALT Pumps

ILLUS. NO.	PART NO.	DESCRIPTION	QTY
1	164 10 06	SHAFT HOUSING	1
2	164 10 01	LIQUID CHAMBER	2
3	164 10 02	INLET LEG	2
4	164 10 03	OUTLET ELBOW	2
5	164 10 04	T JOINT FOR INLET & OUTLET	2
6	164 20 02	OUTER FLANGE WITH STUD	2
7	164 20 03	INNER FLANGE	2
8	164 27 01	PRIMARY SHAFT	1
9	164 27 03	SLEEVE FOR SEC. SHAFT	1
10	164 21 05	SPACER FOR INNER FLANGE	2
11	164 31 01	BIG CLAMP	4
12	164 31 02	SMALL CLAMP	8
13	164 40 01N	DIAPHRAGM -BACK UP	2
13A	164 36 04	DIAPHRAGM (PTFE)	2
14	164 36 01	BALL (PTFE)	4
15	164 36 02	O RING BALL SEAT (PTFE)	4
16	164 36 03	O RING MANIFOLD (PTFE)	4
17	164 20 01	BALL SEAT	4
18	164 40 06	O RING	2
19	164 40 03	O RING	4
20	164 90 05	ALLEN BOLT	8
21	164 90 06	HEX NUT	8

ILLUS. NO.	PART NO.	DESCRIPTION	QTY
22	164 90 07	ALLEN BOLT	4
23	164 90 08	HEX. NUT	4
24	164 90 15S	BOLT	4
25	171 27 22S	PLAN WASHER	4
26	200 40 12	INT CIRCLIP	2
27	200 97 15	MUFFLER	1
28	164 90 17S	NUT	4
29	803 90 01	ALLEN BOLT	4
30	164 40 05	SKELETON SEAL	1
31	167 10 02	AIR VALVE BODY	1
32	167 10 03	AIR VALVE BODY COVER	1
33	167 40 01	O' RING	1
34	171 27 47S	ALLEN BOLT	3
35	167 08 02	END CAP	1
36	167 40 05	O' RING	1
37	210 90 24S	INTERNAL CIRCLIP	1
38	167 90 04	BUTTON HEAD SCREW	1
39	167 90 05	PLAIN WASHER	1
40	536 90 14S	SPRING WASHER	1
41	167 40 02	O' RING	1
42	167 98 02	AIR PISTON ASSEMBLY	1
43	167 98 03	DIFFERENTIAL CAP ASSEMBLY	1
44	164 98 01	SECONDARY SHAFT ASSEMBLY	1

Note.

Above all parts are common for CR (NPT), CG (BSPT) & CP (BSPP) Pumps.
The additional parts for CG (BSPT) & CP (BSPP) pumps model are as follows

ITEM NO	PART NUMBER	DESCRIPTION	CG MODELS	CP MODELS
45	171 10 06	Adaptor 1/2" BSPT(F)	2	
45	171 10 10	Adaptor 1/2" BSPP(F)		2
46	151 04 03	Adaptor 1/2" BSPT(F)	1	
46	151 04 05	Adaptor 1/2" BSPP(F)		1

Bill of Materials for SDP 12 SSS Pumps

ILLUS. NO.	PART NO.	DESCRIPTION	QTY
1	164 07 05	SHAFT HOUSING	1
2	164 07 01	LIQUID CHAMBER	2
3	164 07 02	INLET LEG	2
4	164 07 03	OUTLET ELBOW	2
5	164 07 04	T JOINT FOR INLET & OUTLET	2
6	164 27 06	OUTER FLANGE WITH STUD	2
7	164 20 03	INNER FLANGE	2
8	164 27 01	PRIMARY SHAFT	1
9	164 27 03	SLEEVE FOR SEC. SHAFT	1
10	164 21 05	SPACER FOR INNER FLANGE	2
11	164 82 01	BIG CLAMP	4
12	164 82 02	SMALL CLAMP	8
13	164 41 01	DIAPHRAGM (SANTOPRENE)	2
14	164 41 02	BALL (SANTOPRENE)	4
15	164 41 03	O RING BALL SEAT (SANTOPRENE)	4
16	164 41 04	O RING MANIFOLD (SANTOPRENE)	4
17	164 27 07	BALL SEAT	4
18	164 40 06	O RING	2
19	164 40 03	O RING	4
20	164 90 12S	ALLEN BOLT	8
21	179 90 08S	HEX NUT	8

ILLUS. NO.	PART NO.	DESCRIPTION	QTY
22	164 90 07	ALLEN BOLT	4
23	164 90 14S	HEX. NUT	4
24	164 90 15S	BOLT	4
25	171 27 22S	PLAN WASHER	4
26	200 40 12	INT CIRCLIP	2
27	200 97 15	MUFFLER	1
28	164 90 17S	NUT	4
29	803 90 01	ALLEN BOLT	4
30	164 40 05	SKELETON SEAL	1
31	167 07 06	AIR VALVE BODY	1
32	167 07 07	AIR VALVE BODY COVER	1
33	167 40 01	O' RING	1
34	171 27 47S	ALLEN BOLT	3
35	167 08 02	END CAP	1
36	167 40 05	O' RING	1
37	210 90 24S	INTERNAL CIRCLIP	1
38	167 90 04	BUTTON HEAD SCREW	1
39	167 90 05	PLAIN WASHER	1
40	536 90 14S	SPRING WASHER	1
41	167 40 02	O' RING	1
42	167 98 02	AIR PISTON ASSEMBLY	1
43	167 98 03	DIFFERENTIAL CAP ASSEMBLY	1
44	164 98 01	SECONDARY SHAFT ASSEMBLY	1

Note.

Above all parts are common for CR (NPT), CG (BSPT) & CP (BSPP) Pumps.
The additional parts for CG (BSPT) & CP (BSPP) pumps model are as follows

ITEM NO	PART NUMBER	DESCRIPTION	CG MODELS	CP MODELS
45	171 07 05S	Adaptor 1/2" BSPT(F)	2	
45	171 07 11S	Adaptor 1/2" BSPP(F)		2
46	151 04 03	Adaptor 1/2" BSPT(F)	1	
46	151 04 05	Adaptor 1/2" BSPP(F)		1

Bill of Materials for SDP 12 SSH Pumps

ILLUS. NO.	PART NO.	DESCRIPTION	QTY
1	164 07 05	SHAFT HOUSING	1
2	164 07 01	LIQUID CHAMBER	2
3	164 07 02	INLET LEG	2
4	164 07 03	OUTLET ELBOW	2
5	164 07 04	T JOINT FOR INLET & OUTLET	2
6	164 27 06	OUTER FLANGE WITH STUD	2
7	164 20 03	INNER FLANGE	2
8	164 27 01	PRIMARY SHAFT	1
9	164 27 03	SLEEVE FOR SEC. SHAFT	1
10	164 21 05	SPACER FOR INNER FLANGE	2
11	164 82 01	BIG CLAMP	4
12	164 82 02	SMALL CLAMP	8
13	164 43 01	DIAPHRAGM (HYTREL)	2
14	164 43 02	BALL (HYTREL)	4
15	164 43 03	O RING BALL SEAT (HYTREL)	4
16	164 43 04	O RING MANIFOLD (HYTREL)	4
17	164 27 07	BALL SEAT	4
18	164 40 06	O RING	2
19	164 40 03	O RING	4
20	164 90 12S	ALLEN BOLT	8
21	179 90 08S	HEX NUT	8

ILLUS. NO.	PART NO.	DESCRIPTION	QTY
22	164 90 07	ALLEN BOLT	4
23	164 90 14S	HEX. NUT	4
24	164 90 15S	BOLT	4
25	171 27 22S	PLAN WASHER	4
26	200 40 12	INT CIRCLIP	2
27	200 97 15	MUFFLER	1
28	164 90 17S	NUT	4
29	803 90 01	ALLEN BOLT	4
30	164 40 05	SKELETON SEAL	1
31	167 07 06	AIR VALVE BODY	1
32	167 07 07	AIR VALVE BODY COVER	1
33	167 40 01	O' RING	1
34	171 27 47S	ALLEN BOLT	3
35	167 08 02	END CAP	1
36	167 40 05	O' RING	1
37	210 90 24S	INTERNAL CIRCLIP	1
38	167 90 04	BUTTON HEAD SCREW	1
39	167 90 05	PLAIN WASHER	1
40	536 90 14S	SPRING WASHER	1
41	167 40 02	O' RING	1
42	167 98 02	AIR PISTON ASSEMBLY	1
43	167 98 03	DIFFERENTIAL CAP ASSEMBLY	1
44	164 98 01	SECONDARY SHAFT ASSEMBLY	1

Note.

Above all parts are common for CR (NPT), CG (BSPT) & CP (BSPP) Pumps.
The additional parts for CG (BSPT) & CP (BSPP) pumps model are as follows

ITEM NO	PART NUMBER	DESCRIPTION	CG MODELS	CP MODELS
45	171 07 05S	Adaptor 1/2" BSPT(F)	2	
45	171 07 11S	Adaptor 1/2" BSPP(F)		2
46	151 04 03	Adaptor 1/2" BSPT(F)	1	
46	151 04 05	Adaptor 1/2" BSPP(F)		1

Bill of Materials for SDP 12 SST Pumps

ILLUS. NO.	PART NO.	DESCRIPTION	QTY
1	164 07 05	SHAFT HOUSING	1
2	164 07 01	LIQUID CHAMBER	2
3	164 07 02	INLET LEG	2
4	164 07 03	OUTLET ELBOW	2
5	164 07 04	T JOINT FOR INLET & OUTLET	2
6	164 27 06	OUTER FLANGE WITH STUD	2
7	164 20 03	INNER FLANGE	2
8	164 27 01	PRIMARY SHAFT	1
9	164 27 03	SLEEVE FOR SEC. SHAFT	1
10	164 21 05	SPACER FOR INNER FLANGE	2
11	164 82 01	BIG CLAMP	4
12	164 82 02	SMALL CLAMP	8
13	164 40 01N	DIAPHRAGM -BACK UP	2
13A	164 36 04	DIAPHRAGM (PTFE)	2
14	164 36 01	BALL (PTFE)	4
15	164 36 02	O RING BALL SEAT (PTFE)	4
16	164 36 03	O RING MANIFOLD (PTFE)	4
17	164 27 07	BALL SEAT	4
18	164 40 06	O RING	2
19	164 40 03	O RING	4
20	164 90 12S	ALLEN BOLT	8
21	179 90 08S	HEX NUT	8

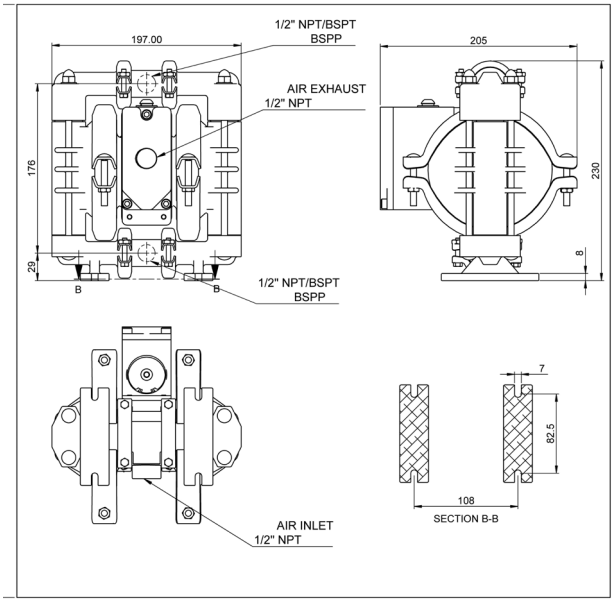
ILLUS. NO.	PART NO.	DESCRIPTION	QTY
22	164 90 07	ALLEN BOLT	4
23	164 90 14S	HEX. NUT	4
24	164 90 15S	BOLT	4
25	171 27 22S	PLAN WASHER	4
26	200 40 12	INT CIRCLIP	2
27	200 97 15	MUFFLER	1
28	164 90 17S	NUT	4
29	803 90 01	ALLEN BOLT	4
30	164 40 05	SKELETON SEAL	1
31	167 07 06	AIR VALVE BODY	1
32	167 07 07	AIR VALVE BODY COVER	1
33	167 40 01	O' RING	1
34	171 27 47S	ALLEN BOLT	3
35	167 08 02	END CAP	1
36	167 40 05	O' RING	1
37	210 90 24S	INTERNAL CIRCLIP	1
38	167 90 04	BUTTON HEAD SCREW	1
39	167 90 05	PLAIN WASHER	1
40	536 90 14S	SPRING WASHER	1
41	167 40 02	O' RING	1
42	167 98 02	AIR PISTON ASSEMBLY	1
43	167 98 03	DIFFERENTIAL CAP ASSEMBLY	1
44	164 98 01	SECONDARY SHAFT ASSEMBLY	1

Note.

Above all parts are common for CR (NPT), CG (BSPT) & CP (BSPP) Pumps.
The additional parts for CG (BSPT) & CP (BSPP) pumps model are as follows

ITEM NO	PART NUMBER	DESCRIPTION	CG MODELS	CP MODELS
45	171 07 05S	Adaptor 1/2" BSPT(F)	2	
45	171 07 11S	Adaptor 1/2" BSPP(F)		2
46	151 04 03	Adaptor 1/2" BSPT(F)	1	
46	151 04 05	Adaptor 1/2" BSPP(F)		1

Dimensional Data



SDP 12 AL/SS B/S/H/T

Repair Kits for SDP 12 ALX/SSX Pumps

Repair Kits consist of everything you need to quickly restore the pumtp. Repair Kits contain one set of Diaphragms, one set of balls, one set of seats or seats+Orings, secondary shaft complete with seals, air valve spool complete with fitted seals, all gaskets, end caps with fitted rings and other wear parts needed to rebuild the pump. Repair kits are threading independant.

Repair KIT Ordering No	Suitable for
164 97 01S	SDP 12 ALS / SSS
164 97 01H	SDP 12 ALH / SSH
164 97 01T	SDP 12 ALT / SST

Air Valve Replacement Kits for SDP 12 ALX Pumps

Air Valve Replacement Kit consists of a complete operational air valve assembly complete. Consisting of Air Valve Body, End Plates, Spool and all seals, o rings and gaskets.

Replacement KIT Ordering No	Suitable for
167 97 02	NPT Fitted ALX Pumps With Any Diaphragm Variant
	BSPT Fitted ALX Pumps With Any Diaphragm Variant
	BSPP Fitted ALX Pumps With Any Diaphragm Variant

Air Valve Replacement Kits for SDP 12 SSX Pumps

Air Valve Replacement Kit consists of a complete operational air valve assembly complete. Consisting of Air Valve Body, End Plates, Spool and all seals, o rings and gaskets.

Replacement KIT Ordering No	Suitable for
167 97 04	NPT Fitted SSX Pumps With Any Diaphragm Variant
	BSPT Fitted SSX Pumps With Any Diaphragm Variant
	BSPP Fitted SSX Pumps With Any Diaphragm Variant

Repair and Replacement Kits

ILLUS. NO.	PART NO.	DESCRIPTION	AL	SS			
			167 97 02 Replacement Kit	167 97 04 Replacement Kit	Repair Kit 1649701S	Repair Kit 1649701H	Repair Kit 1649701T
13	164 41 01	DIAPHRAGM (SANTOPRENE)			2		
13	164 43 01	DIAPHRAGM (HYTREL)				2	
13	164 40 01N	DIAPHRAGM -BACK UP					2
13A	164 36 04	DIAPHRAGM (PTFE)					2
14	164 41 02	BALL (SANTOPRENE)			4		
14	164 43 02	BALL (HYTREL)				4	
14	164 36 01	BALL (PTFE)					4
15	164 41 03	O RING BALL SEAT (SANTOPRENE)			4		
15	164 43 03	O RING BALL SEAT (HYTREL)				4	
15	164 36 02	O RING BALL SEAT (PTFE)					4
16	164 41 04	O RING MANIFOLD (SANTOPRENE)			4		
16	164 43 04	O RING MANIFOLD (HYTREL)				4	
16	164 36 03	O RING MANIFOLD (PTFE)					4
18	164 40 06	O RING			2	2	2
19	164 40 03	O RING			4	4	4
26	200 40 12	INT CIRCLIP			2	2	2
29	803 90 01	ALLEN BOLT	4	4			
30	164 40 05	SKELETON SEAL	1	1	1	1	1
31	167 10 02	AIR VALVE BODY	1				
31	167 07 06	AIR VALVE BODY		1			
32	167 10 03	AIR VALVE BODY COVER	1				
32	167 07 07	AIR VALVE BODY COVER		1			
33	167 40 01	O' RING	1	1	1	1	1
34	171 27 47S	ALLEN BOLT	3	3			
35	167 08 02	END CAP	1	1	1	1	1
36	167 40 05	O' RING	1	1	1	1	1
37	210 90 24S	INTERNAL CIRCLIP	1	1	1	1	1
38	167 90 04	BUTTON HEAD SCREW	1	1	1	1	1
39	167 90 05	PLAIN WASHER	1	1	1	1	1
40	536 90 14S	SPRING WASHER	1	1	1	1	1
41	167 40 02	O' RING	1	1	1	1	1
42	167 98 02	AIR PISTON ASSEMBLY	1	1	1	1	1
43	167 98 03	DIFFERENTIAL CAP ASSEMBLY	1	1	1	1	1
44	164 98 01	SECONDARY SHAFT ASSEMBLY			1	1	1

EU DECLARATION OF CONFORMITY

Object of declaration

PRODUCT	:	**AIR OPERATED DOUBLE DIAPHRAGM PUMP**
MODEL	:	
MANUFACTURER'S NAME	:	**TERYAIR EQUIPMENT PVT. LTD.**
ADDRESS	:	**SITE - 1 : BUILDING A - 1/2, 102 TO 105 & BUILDING C 12 & 13, TIRUPATI UDYOG NAGAR, SATIVALI ROAD, VASAI (E), PALGHAR: 401208.** **SITE - 2: AUGUSTINE - II, COLACO INDUSTRIAL COMPLEX, GALA NO - 101 TO 107, SATIVALI ROAD, VILLAGE WALIV, VASAI (E), PALGHAR: 401208**

To provide presumption of conformity in order to directive 2014/34/EU; the following harmonized standards and/or other normative documents as referenced within the following official journals are applied:

APPLICABLE DIRECTIVE: ATEX DIRECTIVE (2014/34/EU)

APPLICABE STANDARDS:

EN ISO 80079-36: 2016	:	Explosive atmospheres —Part 36: Non-electrical equipment for explosive atmospheres —Basic method and requirements.
EN ISO 80079-37:2016	:	Explosive atmospheres —Part 37: Non-electrical equipment for explosive atmospheres —Non- electrical type of protection constructional safety 'c', control of ignition sources 'b', liquid immersion 'k'.

Notified body to whom Technical file has logged with: - Technicka Inspekcia (Ref: 1354).

DECLARATION: - TERYAIR EQUIPMENT PVT. LTD., declare that under our sole responsibility for the supply of the product defined above, the said product complies with all the applicable Directives, Regulations and all essential Health and Safety requirements applying to it.

I, the undersigned, hereby declare that the product specified above conforms to the above standard(s).

ATEX MARKING APPLIED Ex CE

Please Refer ATEX Rating for **Teryair Aodd Models Table**

Signed for and on behalf of

TERYAIR EQUIPMENT PVT. LTD.

Place of Issue : Vasai
Date :

SUMMERY FOR THE ATEX RATING FOR TERYAIR AODD MODELS

Pump Size	Series	Wetted Materials	Center Section	Dipharagm Materials	ATEX Rating
06 (1/4")	SDP	Aluminium	Aluminium	Neoprene	ll 2 GD Ex h IIC T6 Gb Ex h IIIC T85°C Db (IP65)
				Buna-N	
				Viton-FKM	ll 2 GD Ex h IIC T3 Gb Ex h IIIC T200°C Db (IP65)
				Sentoprene	ll 2 GD Ex h IIC T5 Gb Ex h IIIC T100°C Db (IP65)
				Hytrel	
				PTFE	
		Stainless Steel	Stainless Steel	Neoprene	ll 2 GD Ex h IIC T6 Gb Ex h IIIC T85°C Db **I M2 Ex h I Mb (IP65)**
				Buna-N	
				Viton-FKM	ll 2 GD Ex h IIC T3 Gb Ex h IIIC T200°C Db (IP65) **I M2 Ex h I Mb (IP65)**
				Sentoprene	ll 2 GD Ex h IIC T5 Gb Ex h IIIC T100°C Db (IP65) **I M2 Ex h I Mb (IP65)**
				Hytrel	
				PTFE	
12 (1/2")	DP/SDP	Aluminium	Aluminium	Neoprene	ll 2 GD Ex h IIC T6 Gb Ex h IIIC T85°C Db (IP65)
				Buna-N	
				Viton-FKM	ll 2 GD Ex h IIC T3 Gb Ex h IIIC T200°C Db (IP65)
				Sentoprene	ll 2 GD Ex h IIC T5 Gb Ex h IIIC T100°C Db (IP65)
				Hytrel	
				PTFE	
	SDP	Stainless Steel	Stainless Steel	Neoprene	ll 2 GD Ex h IIC T6 Gb Ex h IIIC T85°C Db **I M2 Ex h I Mb (IP65)**
				Buna-N	
				Viton-FKM	ll 2 GD Ex h IIC T3 Gb Ex h IIIC T200°C Db (IP65) **I M2 Ex h I Mb (IP65)**
				Sentoprene	ll 2 GD Ex h IIC T5 Gb Ex h IIIC T100°C Db (IP65) **I M2 Ex h I Mb (IP65)**
				Hytrel	
				PTFE	
25 (1")	DP / SDP	Aluminium / Stainless Steel	Aluminium	Neoprene	ll 2 GD Ex h IIC T6 Gb Ex h IIIC T85°C Db (IP65)
				Buna-N	
				Viton-FKM	ll 2 GD Ex h IIC T3 Gb Ex h IIIC T200°C Db (IP65)
				Sentoprene	ll 2 GD Ex h IIC T5 Gb Ex h IIIC T100°C Db (IP65)
				Hytrel	
				PTFE	

SUMMERY FOR THE ATEX RATING FOR TERYAIR AODD MODELS

Pump Size	Series	Wetted Materials	Center Section	Dipharagm Materials	ATEX Rating
40 (1-1/2")	DP / SDP	Aluminium / Stain-less Steel	Aluminium	Neoprene	ll 2 GD Ex h IIC T6 Gb Ex h IIIC T85°C Db (IP65)
				Buna-N	
				Viton-FKM	ll 2 GD Ex h IIC T3 Gb Ex h IIIC T200°C Db (IP65)
				Sentoprene	ll 2 GD Ex h IIC T5 Gb Ex h IIIC T100°C Db (IP65)
				Hytrel	
				PTFE	
50 (2")	DP / SDP	Aluminium / Stain-less Steel	Aluminium	Neoprene	ll 2 GD Ex h IIC T6 Gb Ex h IIIC T85°C Db (IP65)
				Buna-N	
				Viton-FKM	ll 2 GD Ex h IIC T3 Gb Ex h IIIC T200°C Db (IP65)
				Sentoprene	ll 2 GD Ex h IIC T5 Gb Ex h IIIC T100°C Db (IP65)
				Hytrel	
				PTFE	
	SDP	Cast Iron	Cast Iron	Neoprene	ll 2 GD Ex h IIC T6 Gb Ex h IIIC T85°C Db **I M2 Ex h I Mb (IP65)**
				Buna-N	
				Viton-FKM	"ll 2 GD Ex h IIC T3 Gb Ex h IIIC T200°C Db (IP65) **I M2 Ex h I Mb (IP65)"**
				Sentoprene	ll 2 GD Ex h IIC T5 Gb Ex h IIIC T100°C Db (IP65) **I M2 Ex h I Mb (IP65)**
				Hytrel	
				PTFE	
75 (3")	DP / SDP	Aluminium	Aluminium	Neoprene	ll 2 GD Ex h IIC T6 Gb Ex h IIIC T85°C Db (IP65)
				Buna-N	
				Viton-FKM	ll 2 GD Ex h IIC T3 Gb Ex h IIIC T200°C Db (IP65)
				Sentoprene	ll 2 GD Ex h IIC T5 Gb Ex h IIIC T100°C Db (IP65)
				Hytrel	
				PTFE	
	SDP	Cast Iron	Cast Iron	Neoprene	ll 2 GD Ex h IIC T6 Gb Ex h IIIC T85°C Db **I M2 Ex h I Mb (IP65)**
				Buna-N	
				Viton-FKM	ll 2 GD Ex h IIC T3 Gb Ex h IIIC T200°C Db (IP65) **I M2 Ex h I Mb (IP65)**
				Sentoprene	ll 2 GD Ex h IIC T5 Gb Ex h IIIC T100°C Db (IP65) **I M2 Ex h I Mb (IP65)**
				Hytrel	
				PTFE	

www.teryair.com

Warranty Certificate

Every product manufactured by Teryair

is built to meet the highest standards of quality.

Teryair warrants that the Products, accessories and parts manufactured or supplied by the company be free from defects in material and workmanship for a period of six months from date of Teryair authorized dealer invoice to customer, or one year from date of Teryair invoice to dealer, whichever is earlier. Failure due to normal wear, misapplication, or abuse is, of course, excluded from this warranty.

Since the use of Teryair products and parts is beyond our control, Teryair cannot guarantee the suitability of any product or part for a particular application and Teryair shall not be liable for any consequential damage or expense arising from the use or misuse of its products on any application. Teryair does not warranty bought out products or components such as electric motors and hardware but will assist in directing warranty queries to the dealer/manufacturer responsible. Teryair responsibility is limited solely to replacement or repair of defective Teryair products or components.

Dealer/End User shall have no right or remedy and Teryair shall have no liability or obligation under the warranty, if: (i) a Product is altered, changed, modified or tampered with in any way, (ii) a Product is damaged after deposit with the transporter for shipment; (iii) a Product is not properly preserved, packaged, stored, processed or handled after receipt; (iv) a Product is not used and maintained in accordance with Teryair's recommended operating and maintenance manuals, instructions and procedures, if any; (v) a Product is not properly incorporated or installed in, or not properly combined with, an Other Product; (vi) the issue with a Product is directly or indirectly attributable to, or directly or indirectly results from or arises out of, a failure, substandard performance or other issue with another product, material, component or part not supplied by Teryair; (vii) the issue with a Product is directly or indirectly attributable to, or directly or indirectly results from or arises out of, compliance with any design, specification or other specific requirement of Dealer/End User; (viii) a Product is used in a manner, with a substance or for a purpose other than the normal manner, substance and purpose for which it is intended or is otherwise subjected to abnormal use or service; (ix) a Product is subjected to a power surge, brown out or other similar occurrence; (x) the issue with a Product is directly or indirectly attributable to, or directly or indirectly results from or arises out of, normal wear and tear of such Product (including, without limitation, things such as worn seals, diaphragms, balls, O rings, gaskets, chisels, cutters, hoses and other such wearing components; (xi) the issue with a Product is directly or indirectly.

Model Number :

Serial Numbar :

Dated :

Ajay Bhagat, Q.A. Manager

(Company Seal)