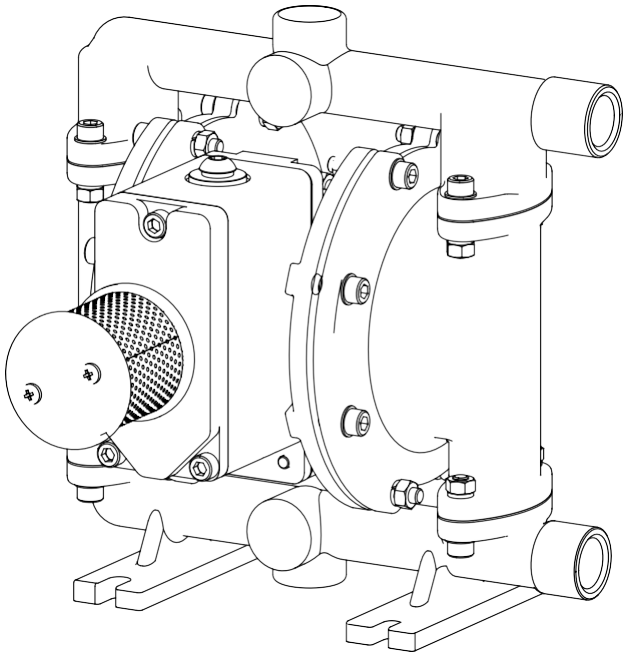
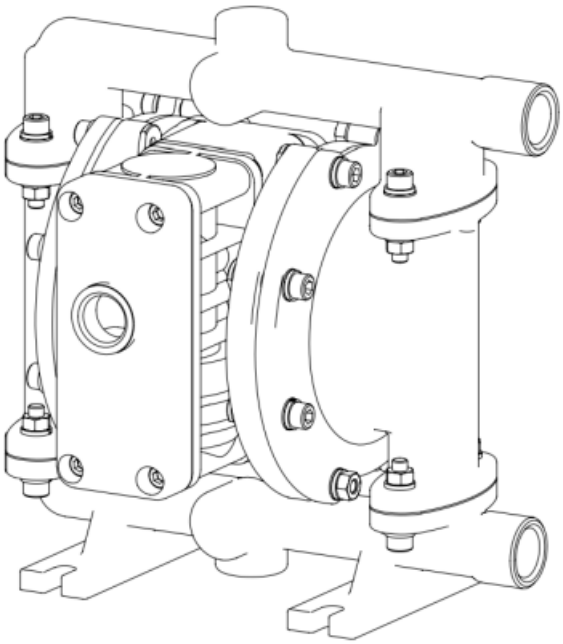
www.teryair.com

Operation and Maintenance Guide



TP15 Aluminium Pump
Series



TP15 Aluminium+PP Shaft Hsg.
Series

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.

Table of Contents

3 Pump Nomenclature
3 Operating and Safety instructions
4 Operating Instructions
5 Caution: Temperature limitations and diaphragm options
6 Suggested site selection and installation recommendations
7 Troubleshooting
8 Maintenance
8 Diassembly and Re-assembly
11 Re-Assembly
11 Maximum Torque Specifications (TP15 Series)
12 Exploded View for TP15 All Metal Pump Series
13 Bill of Materials for TP15-ASX- Pumps
14 Bill of Materials for TP15-ABX- Pumps
15 Bill of Materials for TP15-ATS- Pumps
16 Replacement & Repair Kits for TP15 ALU Pump
16 Dimensional Data
17 Exploded View TP15-ALU (With PP Sh. & Air valve)
18 Bill of Materials for TP15-USX- Pump
19 Bill of Materials for TP15-UBX- Pump
20 Bill of Materials for TP15-UTS- Pump
21 Replacement & Repair Kits for TP15 ALU Pump
21 Dimensional Data TP15Alu + PP Shaft Housing
22 Eu Declaration Of Conformity All Metal Pump Series
23 Eu Declaration Of Conformity All Metal + PP Shaft Housing Series
24/25 Summery For The Atex Rating For Teryair Aodd Models
26 Warranty Certificate

Pump Nomenclature

Position	1	2	3	4	5	6	7	8	9	10	11
Example:	TP	15	A	B	X	R	E	X	A	X	X
Example: TP25-ABX-GEX-AXX											
Position 1 Range		Position 2 Size	Position 3 Body	Position 4 Diaphragm/ Valve	Position 5 Back Up	Position 6 Port	Position 7 Port Position	Position 8 Speciality Code	Position 9 Safety Code	Position 10 Sanitary Code	Position 11 Speciality Code
TP- Industrial		15 - ½" 25 - 1" 40 - 1-½" 50 - 2"	A - Aluminium S - Stainless Steel U - Alu. Wetted Parts + PP Shaft Housing & PP Air Valve Assly. O - SS Wetted Parts + PP Shaft Housing & PP Air Valve Assly. E - SS Wetted Parts + Alu. Shaft Housing & Alu. Air Valve Assly.	B - Buna (Nitrile) T - PTFE S - Santoprene N - Neoprene V - Viton	S - Santoprene X - None	G - BSPT C - TriClamp BS 4825-3 F - Flanged ANSI/DIN R - NPT P - BSPP	C - Centre Ported, End Port Plugged E - End Ported	P - Pulse Dampener R - Remote Solenoid Driven T - Trolley Mounted X - None	A - ATEX/ IECEX X - None	F - FDA / EN 1935/2004 X - None	S - Speed Controller C - Cycle Counter B- SS Ball & Ball Seat D - Diaphragm Monitoring X - None O - See foot note

Foot note: Centre Port Horizontal, Center Port Vertical nd End Port on Inlet and Outlet are all threded and plugged. Pump is blue Painted, and comes with Brass Silencer
This is available only in 1/2" aluminum for Paint Spray Application

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 muffier at the end of this arrangement. Always wear safety glasses while in the vicinity of an operating pump.

⚠ Warning: Over pressure / Hazardous Pressure

Do not exceed the max supply air pressure of 100 PSI.
Make sure all connected hoses and pipelines are rated to operate safely with the pressures generated by pump of 100 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.
Re-fer 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 unnec-es-sary 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.

Operating Instructions

- The Teryair 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

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)
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

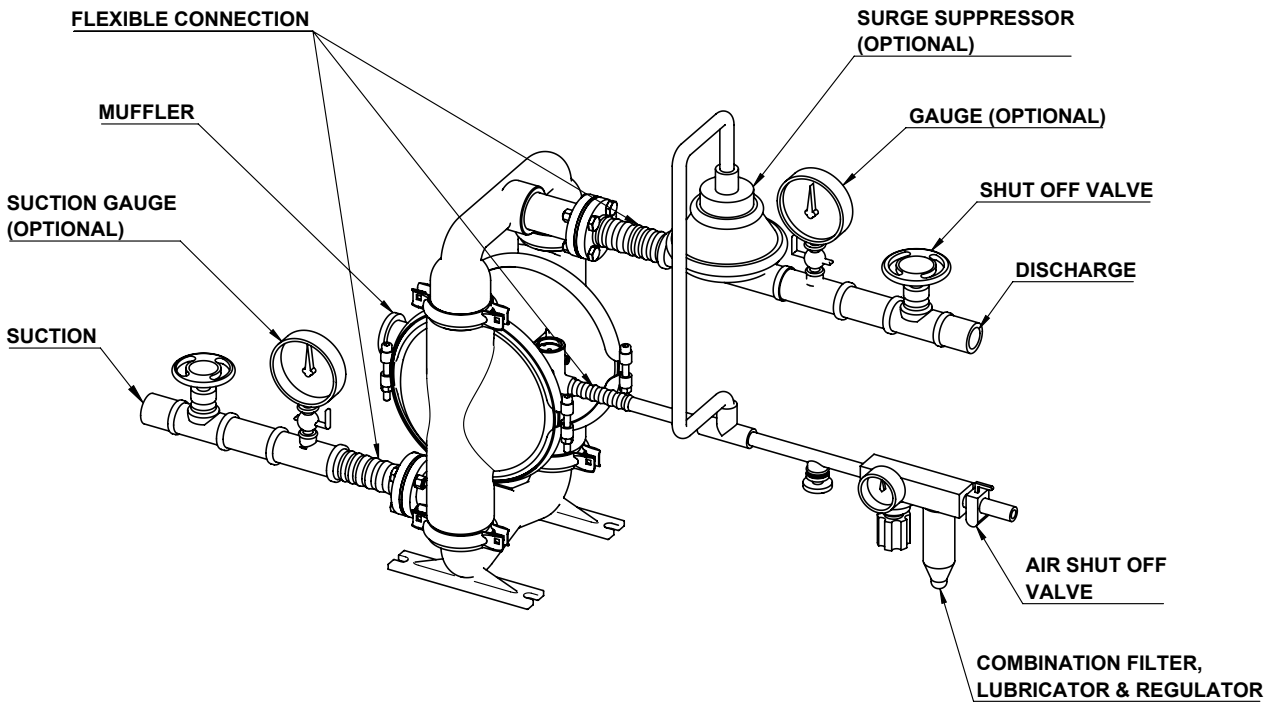


Figure 1

Location selection
Pump location must be easily accessible with rea-sonable space around for maintenance oper-ations. Pump dimensional data for each variant is avail-able in section showing exploded views

Air supply
Compressed air at 90 PSI (Pumps can take a max of 100PSI), free from moisture and having an oil mist is essential. Use of a filter (50 microns), a lubricator and a regulator is highly recommend-ed 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 shift-ing mechanism and affect pump performance. See suggested lubricants on page no 5.

Piping
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	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.
2	Pumps runs slowly, poor delivery	Cavitation	Check if cavitation is occurring in the suction side, if so reduce suction va-cu-um 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 slug-gish-ly
		Internal damage or excessive wear on components	Proceed to dismantle the pump, ex-am-ine component for wear, replace any worn components, re assemble carefully as instructed in this manual and re start the pump.
3	Pump air valve freezes	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 care-fully as instructed in this manual and re start the pump
		Proper 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

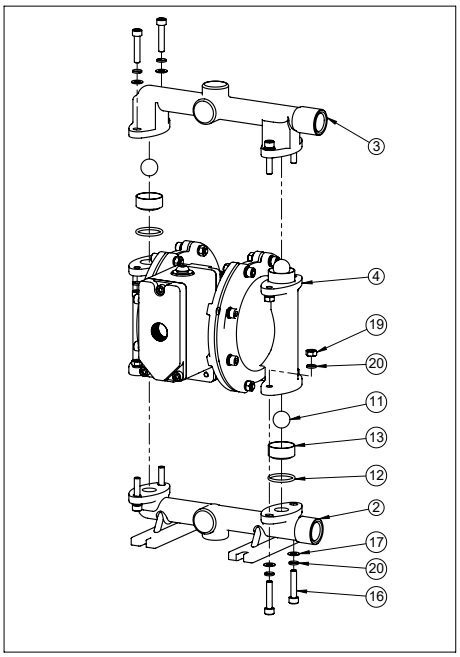
Regular inspection and maintenance schedules will greatly enhance the life of the pump and will ensure a trouble free and safe working environment with little chance of breakdowns.
Follow the instructions clearly in "Disassembly and Reassembly" of the pump and in the troubleshooting section.
Use genuine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

Diassembly 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

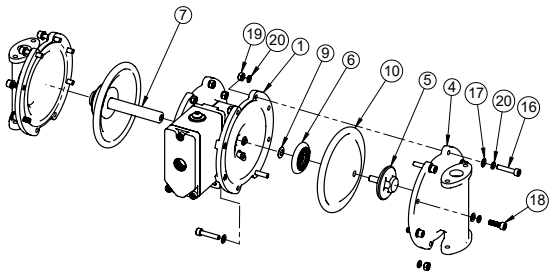
1. Replacement of Ball Seat & Ball

a. Unscrew both bolt (16) & plain washer (17), spring washer (20) & nut (19) as shown in the exploded view and proceed to remove the outlet (3) & inlet base (2) respectively.
b. Now replace the ball (10), O Ring (13) & ball seat (11).

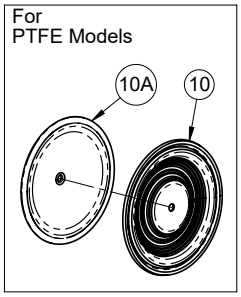


2. Replacement of Diaphragm

a. Follow the step 'a' and 'b' of replacement of ball seat and ball.
b.Now unscrew hex socket head bolt (16), spring washer (20) & plane washer (17) of any one side and proceed to remove the outer chamber (4). Now repeat the same procedure to remove the second outer chamber.



c.Now with the help of two spanner hold one of the across flat of one outer flange (5) and rotate the second outer flange (5) to disassemble it from the shaft assembly. Remove the diaphragm (10), inner flange (6) and spacer (9).
d.Now pull out the half shaft assembly out of the shaft housing (1). Now hold the shaft (7) into the Bench Vice with proper packing. Care must be taken not to damage the shaft outer surface. Now remove the outer flange (5) with spanner.
e.Now replace the diaphragms (10). Ensure that diaphragm orientation is correct. In case of PTFE, make sure PTFE side of diaphragm faces outer cham-ber (4).
*In case of Santoprene, make sure the convex side Santoprene diaphragm faces outer chamber (4).



3. Replacement of Shaft Seals

a)For removing the Seal (14) from Shaft Housing (1), first follow the steps a, b c & d from the diaphragm replacement.

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

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

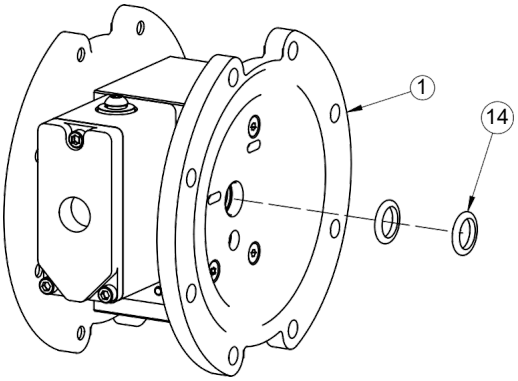
e)The Blunt point Needle can be used to aid in the installation of new seals.

f)Now place the Seal (14) nearby appropriate groove of Shaft Housing (1). Then push the seal into the groove with blunt point needle.

g)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 your finger. Apply light pressure to the peak of the bump.

h)Lubricate the edge of the shaft with specified lubricant. Then slowly insert the shaft with rotating motion to complete the re-sizing of the seals.

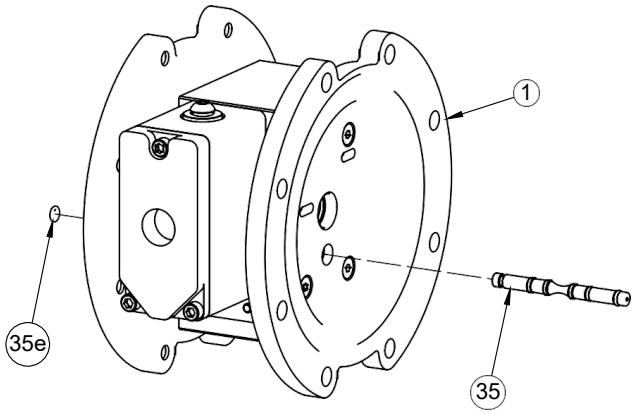
Perform these steps for the remaining seals



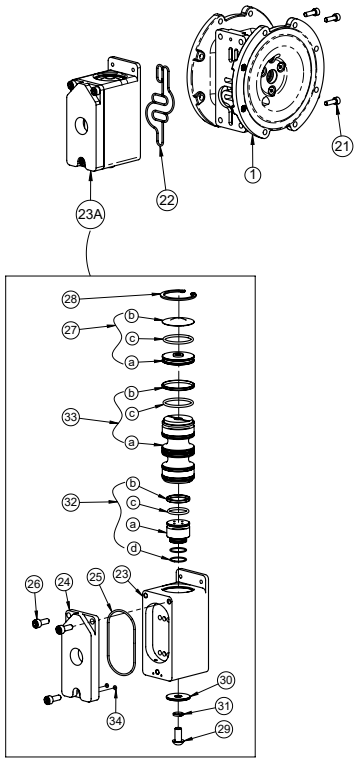
Air Valve/ Center Section Disassembly

4. 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 (4).
b. Repeat the same procedure to remove the other side also.
c. Now push the secondary shaft assembly (35) one side of shaft housing (1) and remove the end O Rings (35e) from Secondary shaft assembly (35).
d. Now if you see there is a center drill mark on one side of the secondary shaft assembly (35). Pull the secondary shaft assembly from that side only.
e. During assembly make sure to push the secondary shaft assembly (35) from the plain side only into the sleeve (8).



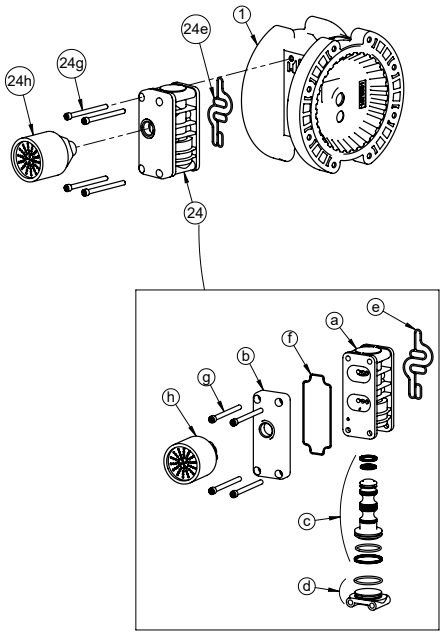
5. Replacement of Air Valve, Gasket, O-Rings of End Cap & Piston



For Metal Air Valve Assembly)
a.Unscrew Allen bolts (21) from shaft Housing (1) and remove Air valve Assly (23A) from Housing. Also remove the Gasket (22). While re-assembling replace Gasket (22) with new one.
b.Now from A.V. assly, remove the Circlip (28) with the help of a circlip opener, then remove the Metal Cover (27b). Now use a M6 Bolt to pull the End Cap (27a) with its O-ring (27c) out of the air valve body (23). [Ensure that the metal cover is always installed with an End Cap (27)].
c.Use the same bolt to pull the air piston assembly (33) with all seals. This Piston Assembly needs to replace as a single piece.
d.In order to remove the Deferential Cap Assembly (32) with its seals, first remove the screw (29) with spring washer (31) and plan washer (30) by using Allen key and push it to remove. Deferential Cap assembly (32) also needs to be replace as a single piece with its seals.

e.Now remove an O-ring (29c) from End Cap (29a) and replace it with new one.
f. Unscrew the Allen screw (28) using suitable key. Open cover (26) & replace an O-ring (27) & (36) with new one.

For Plastic Air Valve Assembly



a)Unscrew Allen bolts (24g) from shaft Housing (1) and remove Air valve Assembly (24) from Housing. Also remove the gasket (24e). While re-assembling replace Gasket (24e) with new one.

b)Now remove the End Cap Assembly (24d) with its O-ring. And now use a M6 Bolt to pull the Air piston Assembly (24c) with its O-ring & Seals out of the air valve body (24a). This piston assembly needs to replace as a single piece.

c)Also open cover (24b) from air valve body (24a) and replace Gasket (24f) 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.

a. Clean the inside of the center section shaft bore to ensure no damage is done to new seals.

b. Stainless bolts should be lubed to reduce the possibility of seizing during tightening.

c. 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).

d. Be sure to tighten outer pistons simultaneously on PTFE-fitted pumps to ensure proper torque values.

e. Ensure proper mating of liquid chambers to manifolds prior to tightening vertical bolts. Overhang should be equal on both sides.

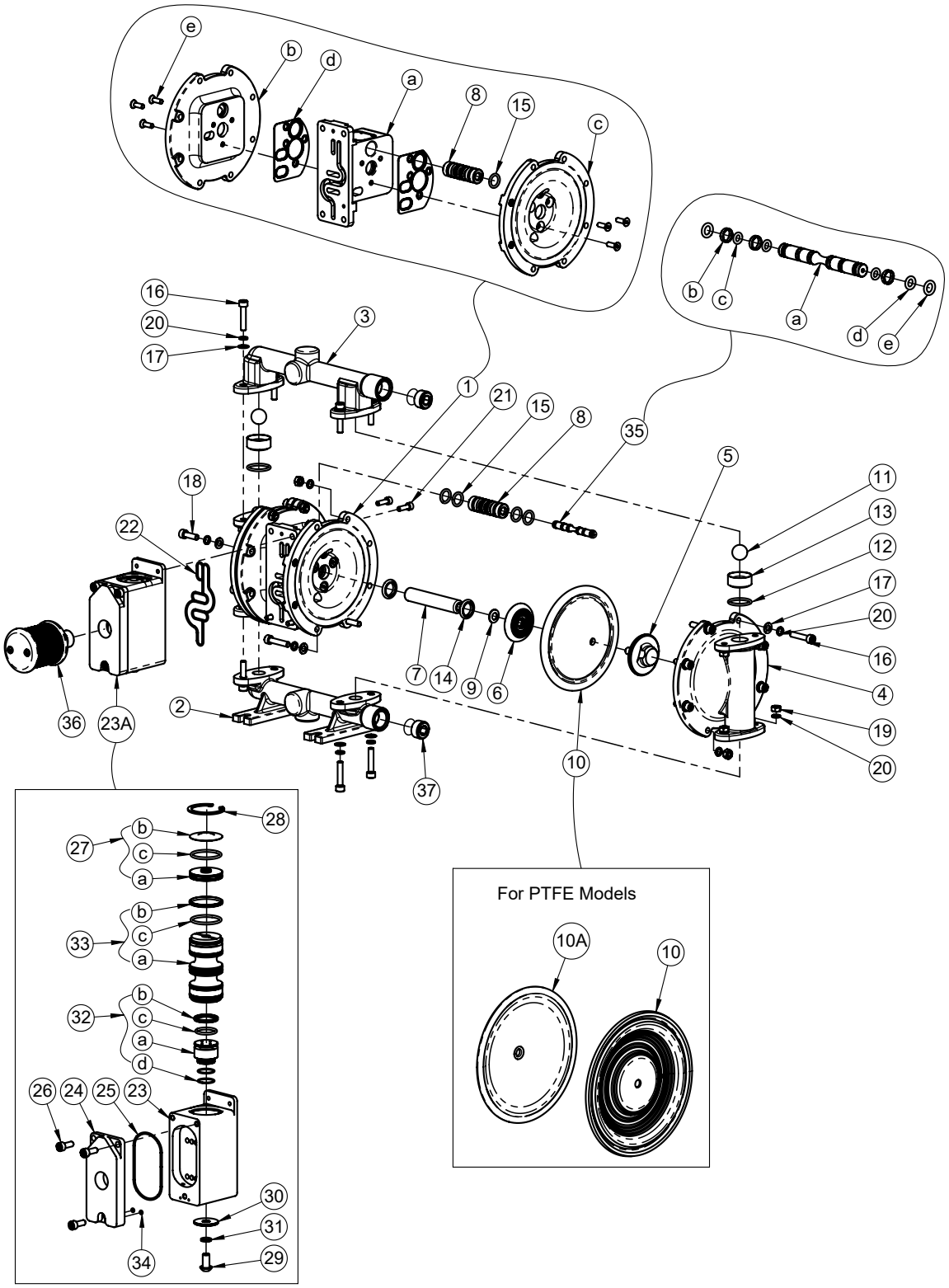
f. Apply a small amount of Loctite 242 to the shaft interval threads before the diaphragm assembly.

g. Concave side of disc spring in diaphragm assembly faces toward shaft.

Maximum Torque Specifications (TP 15 Series)

Description Of Part	Torque
Air Valve	5.1 N•m (45 in-lb)
Air Chamber/Center Block	47.5 N•m (35 ft-lb)
Outer Flanges, Rubber & PTFE, Excluding Stainless Steel Inner Pistons	106 N•m (78 ft-lb)
Outer Flanges, Rubber & PTFE, Stainless Steel Inner Pistons	119 N•m (88 ft-lb)
Outer Flanges, Ultra-Flex™	74.6 N•m (55 ft-lb)
Small Clamp Bands	6.6 N•m (58 in-lb)
Large Clamp Bands (Rubber-Fitted)	47.5 N•m (35 ft-lb)
Large Clamp Bands (PTFE-Fitted)	47.5 N•m (35 ft-lb)

Exploded View for TP15 All Metal Pump Series



Bill of Materials for TP15-ASX- Pumps

ITEM NO.	PART NUMBER	DESCRIPTION	REX	RCX	Repair Kit 1869701-S
1	1861001	Shaft Housing Assembly	1	1	-
a	1861001-1	Centre Piece	1	1	-
b	1861001-2	Air Disc (L.H.)	1	1	-
c	1861001-3	AirDisc (R.H.)	1	1	-
d	1864001	Gasket	2	2	-
e	1869001	Allen Csk	6	6	-
2	1861002	Inlet Base	1	-	-
2	1861007	Inlet Base	-	1	-
3	1861003	Outlet	1	-	-
3	1861008	Outlet	-	1	-
4	1861004	Outer Chamber	2	2	-
5	1642002	Outer Flange	2	2	-
6	1642003	Inner Flange	2	2	-
7	1642701	Primary Shaft	1	1	-
8	1642703	Sleeve	1	1	-
9	1642105	Conical Washer	2	2	-
10	1644101	Diaphragm	2	2	2
11	1644102	Ball	4	4	4
12	1644103	O Ring	4	4	4
13	1642001	Ball Seat	4	4	-
14	1646001	D Seal	2	2	2
15	1644003	O Ring	4	4	4
16	1759007S	Allen Bolt	20	20	-
17	1759009S	Plain Washer	24	24	-
18	1712719S	Allen Bolt	4	4	-
19	1649017S	Hex Nut	20	20	-
20	1712723S	Spring Washer	44	44	-
21	8039001	Allen Bolt	4	4	-
22	1644005	Skeleton Seal	1	1	1
23A	1879705	Air Valve Assembly	1	1	-

ITEM NO.	PART NUMBER	DESCRIPTION	REX	RCX	Repair Kit 1869701-S
23	1871010	Air Valve Body	1	1	-
24	1671003	Air Valve Body Cover	1	1	-
25	1674001	O Ring	1	1	1
26	1712747S	Allen Bolt	3	3	-
27	1670802	End Cap with Cover	1	1	1
a	1670802-1	End Cap	1	1	-
b	1678201	End Cap Cover	1	1	-
c	1674004	O Ring	1	1	-
28	2109024S	Internal Circlip	1	1	1
29	1679004S	Button Head Screw	1	1	-
30	2039015S	Plain Washer	1	1	-
31	5369014S	Spring Washer	1	1	-
32	1879801	Differential Cap Assembly	1	1	1
a	1870810	Differential Cap	1	1	-
b	1673601	Seal	1	1	-
c	1674003	O Ring	1	1	-
d	1874004	O Ring	2	2	-
33	1679802	Air Piston Assembly	1	1	1
a	1670801	Air Piston	1	1	-
b	1673602	Seal	6	6	-
c	1674004	O Ring	6	6	-
34	1874006	O Ring	2	2	2
35	1649801	Secondary Shaft Assembly	1	1	1
a	1642702	Secondary Shaft	1	1	-
b	2033604	Seal	3	3	-
c	2034010	O Ring	3	3	-
d	6854001	O Ring	1	1	-
e	6854003	O Ring	2	2	-
36	8059801	Silencer	1	1	-
37	1862302	Plug	-	2	-

Note.

Above all parts are common for End port & Centre port (NPT) models only.
The additional parts for (BSPT) & (BSPP) pumps model are as below

ITEM. NO.	PART NUMBER	DESCRIPTION	BSPT	BSPP
-	1711006	Adapter	2	-
-	1711010	Adapter	-	2
-	1510403	Adapter	1	-
-	1510405	Adapter	-	1

Bill of Materials for TP15-ABX- Pumps

ITEM NO.	PART NUMBER	DESCRIPTION	REX	RCX	Repair Kit 1869701-B
1	1861001	Shaft Housing Assembly	1	1	-
a	1861001-1	Centre Piece	1	1	-
b	1861001-2	Air Disc (L.H.)	1	1	-
c	1861001-3	AirDisc (R.H.)	1	1	-
d	1864001	Gasket	2	2	-
e	1869001	Allen Csk	6	6	-
2	1861002	Inlet Base	1	-	-
2	1861007	Inlet Base	-	1	-
3	1861003	Outlet	1	-	-
3	1861008	Outlet	-	1	-
4	1861004	Outer Chamber	2	2	-
5	1642002	Outer Flange	2	2	-
6	1642003	Inner Flange	2	2	-
7	1642701	Primary Shaft	1	1	-
8	1642703	Sleeve	1	1	-
9	1642105	Conical Washer	2	2	-
10	1644009B	Diaphragm	2	2	2
11	1644010B	Ball	4	4	4
12	1644012B	O Ring	4	4	4
13	1642001	Ball Seat	4	4	-
14	1646001	D Seal	2	2	2
15	1644003	O Ring	4	4	4
16	1759007S	Allen Bolt	20	20	-
17	1759009S	Plain Washer	24	24	-
18	1712719S	Allen Bolt	4	4	-
19	1649017S	Hex Nut	20	20	-
20	1712723S	Spring Washer	44	44	-
21	8039001	Allen Bolt	4	4	-
22	1644005	Skeleton Seal	1	1	1
23A	1879705	Air Valve Assembly	1	1	-

ITEM NO.	PART NUMBER	DESCRIPTION	REX	RCX	Repair Kit 1869701-B
23	1871010	Air Valve Body	1	1	-
24	1671003	Air Valve Body Cover	1	1	-
25	1674001	O Ring	1	1	1
26	1712747S	Allen Bolt	3	3	-
27	1670802	End Cap with Cover	1	1	1
a	1670802-1	End Cap	1	1	-
b	1678201	End Cap Cover	1	1	-
c	1674004	O Ring	1	1	-
28	2109024S	Internal Circlip	1	1	1
29	1679004S	Button Head Screw	1	1	-
30	2039015S	Plain Washer	1	1	-
31	5369014S	Spring Washer	1	1	-
32	1879801	Differential Cap Assembly	1	1	1
a	1870810	Differential Cap	1	1	-
b	1673601	Seal	1	1	-
c	1674003	O Ring	1	1	-
d	1874004	O Ring	2	2	-
33	1679802	Air Piston Assembly	1	1	1
a	1670801	Air Piston	1	1	-
b	1673602	Seal	6	6	-
c	1674004	O Ring	6	6	-
34	1874006	O Ring	2	2	2
35	1649801	Secondary Shaft Assembly	1	1	1
a	1642702	Secondary Shaft	1	1	-
b	2033604	Seal	3	3	-
c	2034010	O Ring	3	3	-
d	6854001	O Ring	1	1	-
e	6854003	O Ring	2	2	-
36	8059801	Silencer	1	1	-
37	1862302	Plug	-	2	-

Note.

Above all parts are common for End port & Centre port (NPT) models only.
The additional parts for (BSPT) & (BSPP) pumps model are as below

ITEM. NO.	PART NUMBER	DESCRIPTION	BSPT	BSPP
-	1711006	Adapter	2	-
-	1711010	Adapter	-	2
-	1510403	Adapter	1	-
-	1510405	Adapter	-	1

Bill of Materials for TP15-ATS- Pumps

ITEM NO.	PART NUMBER	DESCRIPTION	REX	RCX	Repair Kit 1869701-T
1	1861001	Shaft Housing Assembly	1	1	-
a	1861001-1	Centre Piece	1	1	-
b	1861001-2	Air Disc (L.H.)	1	1	-
c	1861001-3	AirDisc (R.H.)	1	1	-
d	1864001	Gasket	2	2	-
e	1869001	Allen Csk	6	6	-
2	1861002	Inlet Base	1	-	-
2	1861007	Inlet Base	-	1	-
3	1861003	Outlet	1	-	-
3	1861008	Outlet	-	1	-
4	1861004	Outer Chamber	2	2	-
5	1642002	Outer Flange	2	2	-
6	1642003	Inner Flange	2	2	-
7	1642701	Primary Shaft	1	1	-
8	1642703	Sleeve	1	1	-
9	1642105	Conical Washer	2	2	-
10	1643604	Diaphragm (Full Stroke)	2	2	2
10A	1864101	Backup Diaphragm (Full Stroke)	2	2	2
11	1643601	Ball	4	4	4
12	1643602	O Ring	4	4	4
13	1863601	Ball Seat	4	4	-
14	1646001	D Seal	2	2	2
15	1644003	O Ring	4	4	4
16	1759007S	Allen Bolt	20	20	-
17	1759009S	Plain Washer	24	24	-
18	1712719S	Allen Bolt	4	4	-
19	1649017S	Hex Nut	20	20	-
20	1712723S	Spring Washer	44	44	-
21	8039001	Allen Bolt	4	4	-
22	1644005	Skeleton Seal	1	1	1

ITEM NO.	PART NUMBER	DESCRIPTION	REX	RCX	Repair Kit 1869701-T
23A	1879705	Air Valve Assembly	1	1	-
23	1871010	Air Valve Body	1	1	-
24	1671003	Air Valve Body Cover	1	1	-
25	1674001	O Ring	1	1	1
26	1712747S	Allen Bolt	3	3	-
27	1670802	End Cap with Cover	1	1	1
a	1670802-1	End Cap	1	1	-
b	1678201	End Cap Cover	1	1	-
c	1674004	O Ring	1	1	-
28	2109024S	Internal Circlip	1	1	1
29	1679004S	Button Head Screw	1	1	-
30	2039015S	Plain Washer	1	1	-
31	5369014S	Spring Washer	1	1	-
32	1879801	Differential Cap Assembly	1	1	1
a	1870810	Differential Cap	1	1	-
b	1673601	Seal	1	1	-
c	1674003	O Ring	1	1	-
d	1874004	O Ring	2	2	-
33	1679802	Air Piston Assembly	1	1	1
a	1670801	Air Piston	1	1	-
b	1673602	Seal	6	6	-
c	1674004	O Ring	6	6	-
34	1874006	O Ring	2	2	2
35	1649801	Secondary Shaft Assembly	1	1	1
a	1642702	Secondary Shaft	1	1	-
b	2033604	Seal	3	3	-
c	2034010	O Ring	3	3	-
d	6854001	O Ring	1	1	-
e	6854003	O Ring	2	2	-
36	8059801	Silencer	1	1	-
37	1862302	Plug	-	2	-

Note.

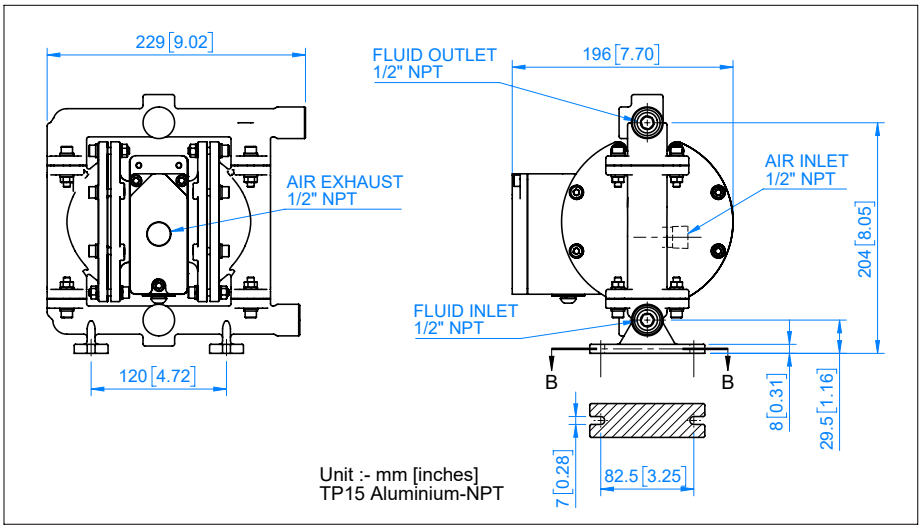
Above all parts are common for End port & Centre port (NPT) models only.
The additional parts for (BSPT) & (BSPP) pumps model are as below

ITEM. NO.	PART NUMBER	DESCRIPTION	BSPT	BSPP
-	1711006	Adapter	2	-
-	1711010	Adapter	-	2
-	1510403	Adapter	1	-
-	1510405	Adapter	-	1

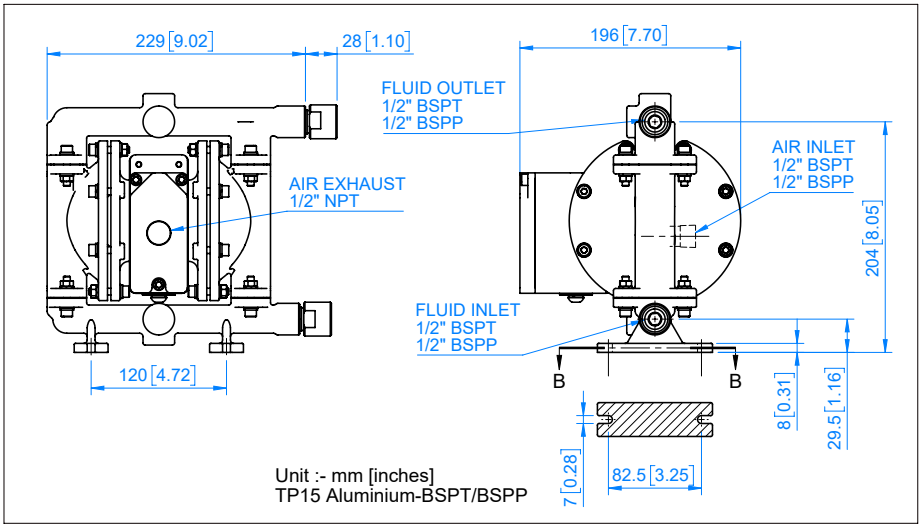
Replacement & Repair Kits for TP15 ALU Pump

ITEM NO.	PART NUMBER	DESCRIPTION	Replacement Kit 1879706
21	8039001	Allen Bolt	4
22	1644005	Skeleton Seal	1
23	1871010	Air Valve Body	1
24	1671003	Air Valve Body Cover	1
25	1674001	O Ring	1
26	1712747S	Allen Bolt	3
27	1670802	End Cap with Cover	1
28	2109024S	Internal Circlip	1
29	1679004S	Button Head Screw	1
30	2039015S	Plain Washer	1
31	5369014S	Spring Washer	1
32	1679802	Air Piston Assembly	1
33	1879801	Differential Cap Assembly	1

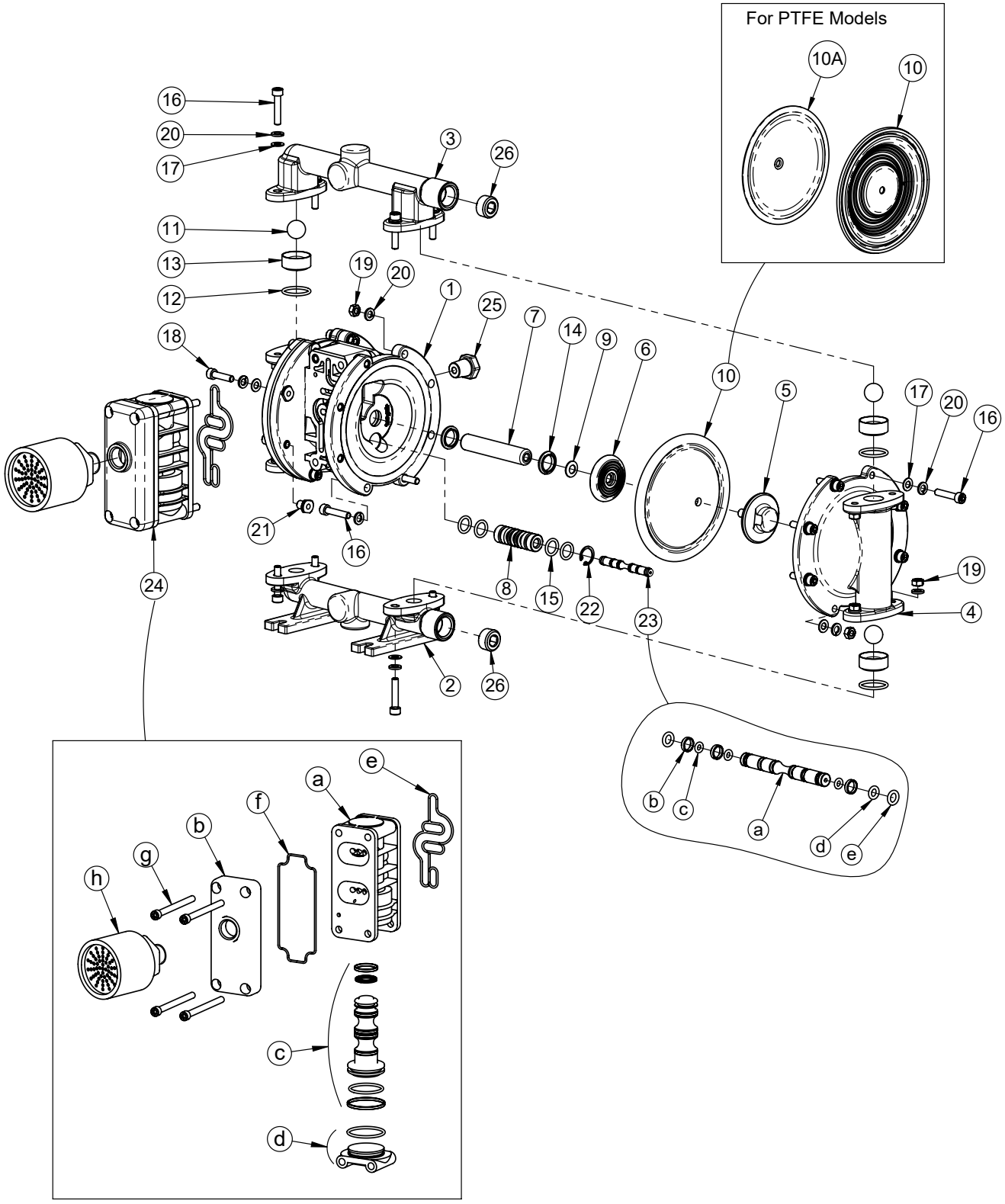
Dimensional Data - TP15Alu. Metal Series GA-NPT



Dimensional Data - TP15Alu. Metal Series GA-BSPT/BSPP



Exploded View TP15-ALU (With PP Sh. & Air valve)



Bill of Materials for TP15-USX- Pump

ITEM NO.	PART NUMBER	DESCRIPTION	REX	RCX	Repair Kit 1869705-S
1	1640820	Shaft Housing	1	1	-
2	1861002	Inlet Base	1	-	-
2	1861007	Inlet Base	-	1	-
3	1861003	Outlet	1	-	-
3	1861008	Outlet	-	1	-
4	1861004	Outer Chamber	2	2	-
5	1642002	Outer Flange	2	2	-
6	1642003	Inner Flange	2	2	-
7	1642701	Primary Shaft	1	1	-
8	1642703	Sleeve	1	1	-
9	1642105	Conical Washer	2	2	-
10	1644101	Diaphragm	2	2	2
11	1644102	Ball	4	4	4
12	1644103	O Ring	4	4	4
13	1642001	Ball Seat	4	4	-
14	1646001	D Seal	2	2	2
15	1644003	O Ring	4	4	4
16	1759007S	Allen Bolt	18	18	-
17	1759009S	Plain Washer	24	24	-
18	5369002S	Allen Bolt	6	6	-

ITEM NO.	PART NUMBER	DESCRIPTION	REX	RCX	Repair Kit 1869705-S
19	1649017S	Hex Nut	18	18	-
20	1712723S	Spring Washer	42	42	-
21	1642710	Insert	6	6	-
22	2004012S	Internal Circlip	2	2	2
23	1649801	Secondary Shaft Assembly	1	1	1
a	1642702	Secondary Shaft	1	1	-
b	2033604	Seal	3	3	-
c	2034010	O Ring	3	3	-
d	6854001	O Ring	1	1	-
e	6854003	O Ring	2	2	-
24	1649804	Air Valve Assembly	1	1	-
a	1640808	Air Valve Body	1	1	-
b	1640809	Air Valve Body Cover	1	1	-
c	1640810A	Air Piston Assembly	1	1	1
d	1640811A	End Cap Assembly	1	1	1
e	1644005	Skeleton Seal-TP15/TC15	1	1	1
f	1644007	Seal	1	1	1
g	1649003	Allen Bolt	4	4	-
h	1640813	Silencer	1	1	-
25	1640812	Adapter	1	1	1
26	1862302	Plug	-	2	-

Note.

Above all parts are common for End port & Centre port (NPT) models only.
The additional parts for (BSPT) & (BSPP) pumps model are as below

ITEM. NO.	PART NUMBER	DESCRIPTION	BSPT	BSPP
-	1711006	Adapter	2	-
ITEM. NO.	**PART NUMBER**	**DESCRIPTION**	**BSPT**	**BSPP**
-	1711010	Adapter	-	2

Bill of Materials for TP15-UBX- Pump

ITEM NO.	PART NUMBER	DESCRIPTION	REX	RCX	Repair Kit 1869705-B
1	1640820	Shaft Housing	1	1	-
2	1861002	Inlet Base	1	-	-
2	1861007	Inlet Base	-	1	-
3	1861003	Outlet	1	-	-
3	1861008	Outlet	-	1	-
4	1861004	Outer Chamber	2	2	-
5	1642002	Outer Flange	2	2	-
6	1642003	Inner Flange	2	2	-
7	1642701	Primary Shaft	1	1	-
8	1642703	Sleeve	1	1	-
9	1642105	Conical Washer	2	2	-
10	1644009B	Diaphragm	2	2	2
11	1644010B	Ball	4	4	4
12	1644012B	O Ring	4	4	4
13	1642001	Ball Seat	4	4	-
14	1646001	D Seal	2	2	2
15	1644003	O Ring	4	4	4
16	1759007S	Allen Bolt	18	18	-
17	1759009S	Plain Washer	24	24	-
18	5369002S	Allen Bolt	6	6	-

ITEM NO.	PART NUMBER	DESCRIPTION	REX	RCX	Repair Kit 1869705-B
19	1649017S	Hex Nut	18	18	-
20	1712723S	Spring Washer	42	42	-
21	1642710	Insert	6	6	-
22	2004012S	Internal Circlip	2	2	2
23	1649801	Secondary Shaft Assembly	1	1	1
a	1642702	Secondary Shaft	1	1	-
b	2033604	Seal	3	3	-
c	2034010	O Ring	3	3	-
d	6854001	O Ring	1	1	-
e	6854003	O Ring	2	2	-
24	1649804	Air Valve Assembly	1	1	-
a	1640808	Air Valve Body	1	1	-
b	1640809	Air Valve Body Cover	1	1	-
c	1640810A	Air Piston Assembly	1	1	1
d	1640811A	End Cap Assembly	1	1	1
e	1644005	Skeleton Seal-TP15/TC15	1	1	1
f	1644007	Seal	1	1	1
g	1649003	Allen Bolt	4	4	-
h	1640813	Silencer	1	1	-
25	1640812	Adapter	1	1	1
26	1862302	Plug	-	2	-

Note.

Above all parts are common for End port & Centre port (NPT) models only.
The additional parts for (BSPT) & (BSPP) pumps model are as below

ITEM. NO.	PART NUMBER	DESCRIPTION	BSPT	BSPP
-	1711006	Adapter	2	-
-	1711010	Adapter	-	2

Bill of Materials for TP15-UTS- Pump

ITEM NO.	PART NUMBER	DESCRIPTION	REX	RCX	Repair Kit 1869705-T
1	1640820	Shaft Housing	1	1	-
2	1861002	Inlet Base	1	-	-
2	1861007	Inlet Base	-	1	-
3	1861003	Outlet	1	-	-
3	1861008	Outlet	-	1	-
4	1861004	Outer Chamber	2	2	-
5	1642002	Outer Flange	2	2	-
6	1642003	Inner Flange	2	2	-
7	1642701	Primary Shaft	1	1	-
8	1642703	Sleeve	1	1	-
9	1642105	Conical Washer	2	2	-
10	1643604	Diaphragm (Full Stroke)	2	2	2
10A	1864101	Backup Diaphragm (Full Stroke)	2	2	2
11	1643601	Ball	4	4	4
12	1643602	O Ring	4	4	4
13	1863601	Ball Seat	4	4	-
14	1646001	D Seal	2	2	2
15	1644003	O Ring	4	4	4
16	1759007S	Allen Bolt	18	18	-
17	1759009S	Plain Washer	24	24	-

ITEM NO.	PART NUMBER	DESCRIPTION	REX	RCX	Repair Kit 1869705-T
18	5369002S	Allen Bolt	6	6	-
19	1649017S	Hex Nut	18	18	-
20	1712723S	Spring Washer	42	42	-
21	1642710	Insert	6	6	-
22	2004012S	Internal Circlip	2	2	2
23	1649801	Secondary Shaft Assembly	1	1	1
a	1642702	Secondary Shaft	1	1	-
b	2033604	Seal	3	3	-
c	2034010	O Ring	3	3	-
d	6854001	O Ring	1	1	-
e	6854003	O Ring	2	2	-
24	1649804	Air Valve Assembly	1	1	-
a	1640808	Air Valve Body	1	1	-
b	1640809	Air Valve Body Cover	1	1	-
c	1640810A	Air Piston Assembly	1	1	1
d	1640811A	End Cap Assembly	1	1	1
e	1644005	Skeleton Seal-TP15/TC15	1	1	1
f	1644007	Seal	1	1	1
g	1649003	Allen Bolt	4	4	-
h	1640813	Silencer	1	1	-
25	1640812	Adapter	1	1	1
26	1862302	Plug	-	2	-

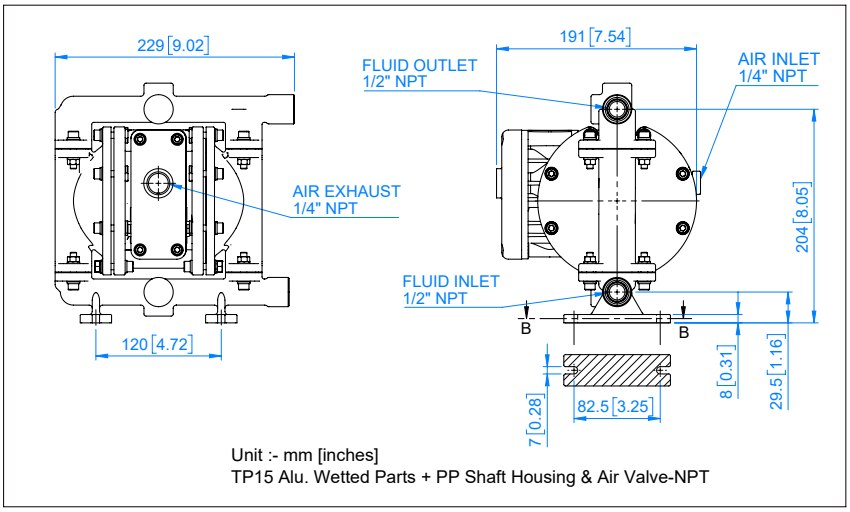
Above all parts are common for End port & Centre port (NPT) models only.
The additional parts for (BSPT) & (BSPP) pumps model are as below

ITEM. NO.	PART NUMBER	DESCRIPTION	BSPT	BSPP
-	1711006	Adapter	2	-
-	1711010	Adapter	-	2

Replacement & Repair Kits for TP15 ALU Pump

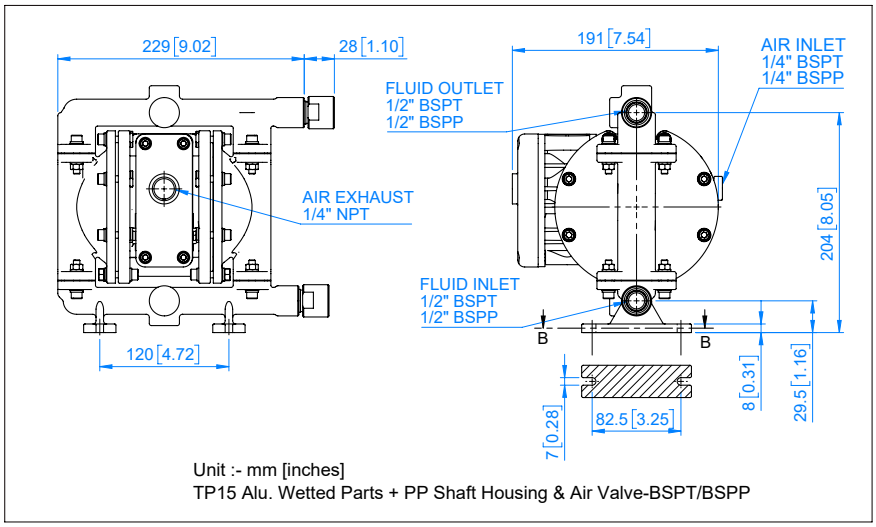
Replacement Kit for TP15 SS Pumps (SS Wetted Parts + PP Shaft Housing & PP Air Valve Assly.)	**1649804**

Dimensional Data - TP15-AL (With PP Sh. & Air valve) GA-NPT



Unit :- mm [inches]
TP15 Alu. Wetted Parts + PP Shaft Housing & Air Valve-NPT

Dimensional Data - TP15-AL (With PP Sh. & Air valve) GA-BSPT,BSPP



Unit :- mm [inches]
TP15 Alu. Wetted Parts + PP Shaft Housing & Air Valve-BSPT/BSPP

EU DECLARATION OF CONFORMITY

PRODUCT	:	**AIR OPERATED DOUBLE DIAPHRAGM PUMP**
MODEL	:	**TP15 All Metal Pump Series**
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

EU DECLARATION OF CONFORMITY

We hereby certify that the Listed Product stipulated below comply with all relevant provisions of the machinery directive (2006/42/EC) and the national laws and regulations adopting this directive.

Description : AIR OPERATED DOUBLE DIAPHRAGM PUMP

Model Number : TP15 Metal + PP Shaft Housing Series

Is in conformity with the provisions of the following European Directives: (2006/42/EC) Machinery Safety and Harmonized standards

ISO 12100-1: 2010: Safety of Machinery –general Principles for Design –Risk Assessment and Risk Reduction.

Registered Office : 416 Gundecha Industrial Complex, Akuril Road,
Kandivali East, Mumbai – 400101, Maharashtra, India.

Web site : www.teryair.com

Works : A-1, Tirupati Udyog Nagar, Sativali Road, Vasai East,
Palghar – 401208, Maharashtra, India.

CE certification registration no – C E 16831

Issued by – BMQR Certifications Pvt Ltd.
www.cemarking-india.com

Signed for and on behalf of

TERYAIR EQUIPMENT PVT. LTD. Place of Issue :Vasai

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/TP	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	
	TP	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/TP	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	
	DP/TP	Stainless Steel	Stainless Steel	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/TP	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	
	DP/TP	Stainless Steel	Stainless Steel	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/TP	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	
	TS	Stainless Steel	Stainless Steel	Neoprene	ll 2 GD Ex h IIC T6 Gb Ex h IIIC T85°C Db (IP65)
				Buna-N	
				EPDM	
				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	
75 (3")	DP	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	

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.

Mr. Pratik Tikhande
Q.A. Manager
(Company Seal)

This page is intentionally Left blank.