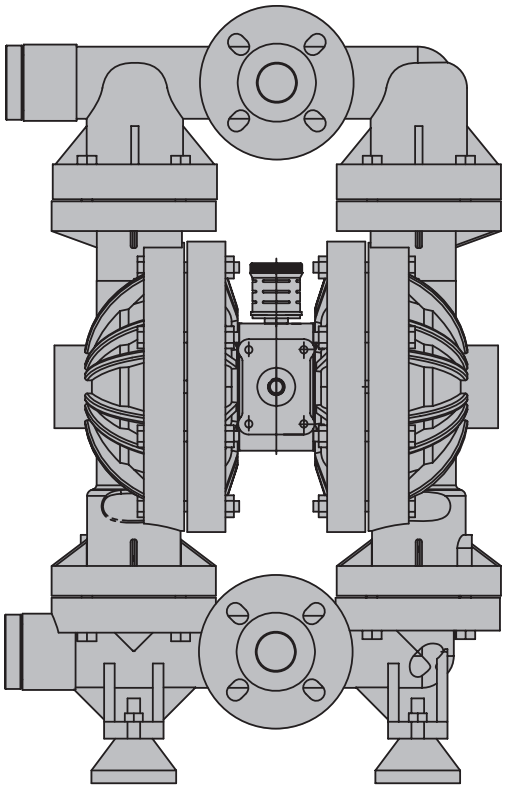
NOMAD
NO BOUNDARIES

NOMAD™

OPERATION MANUAL

1.5” POLYPROPYLENE PUMP
DURA-FLO™ AIR DISTRIBUTION SYSTEM



JDA GLOBAL®

CAUTIONS - READ FIRST

CAUTION: Do not apply compressed air to the exhaust port – pump will not function.

CAUTION: Do not over-lubricate air supply – excess lubrication will reduce pump performance. Pump is pre-lubed.

TEMPERATURE LIMITS:

Neoprene	-17.7°C to 93.3°C	0°F to 200°F
Buna-N	-12.2°C to 82.2°C	10°F to 180°F
EPDM	-15.1°C to 137.8°C	-60°F to 280°F

NOTE: Not all materials are available for all models. Refer to Section 2 for material options for your pump.

CAUTION: Check temperature limits for all wetted components. Example: Viton® has a maximum limit of 176.7°C (350°F) but polypropylene has a maximum limit of only 79°C (175°F).

CAUTION: Maximum temperature limit are based upon mechanical stress only. Certain chemicals will significantly reduce maximum safe operating temperatures.

WARNING: Prevention of static parking – if static sparking occurs, fire or explosion could result. Pump, valves, and containers must be grounded to a proper grounding point when handling flammable fluids and whenever discharge of static electricity is a hazard.

CAUTION: Do not exceed 8.6 bar (125psig) air supply pressure.

CAUTION: The process fluid and cleaning fluids must be chemically compatible with all wetted pump components.

CAUTION: Do not exceed 82°C (180°F) air inlet temperature.

CAUTION: Pumps should be thoroughly flushed before installing into process lines.

CAUTION: Always wear safety glasses when operating pump. If diaphragm rupture occurs, material being pumped may be forced out air exhaust.

CAUTION: Before any maintenance or repair is attempted, the compressed air line to the pump should be disconnected and all air pressure allowed to bleed from pump. Disconnect all intake, discharge and air lines. Drain the pump by turning it upside down and allowing any fluid to flow into a suitable container.

CAUTION: Blow out air line for 10 to 20 seconds before attaching to pump to make sure all pipeline debris is clear. Use an in-line air filter. A 5µ (micron) air filter is recommended.

NOTE: When installing PTFE diaphragms, it is important to tighten outer pistons simultaneously (turning in opposite directions) to ensure a tight fit. (See torque specifications.)

NOTE: Before starting disassembly, mark a line from each liquid chamber to its corresponding air chamber. This line will assist in proper alignment during reassembly.

CAUTION: Tighten all hardware prior to installation.

Pump Designation System

NOMAD

XXX XX / XXXX / XX / XX / XXX / X / X / X

1 2 3 4 5 6 7 8 9 10 11 12 13

1	Air Distribution System
N	Nomad
T	Trans-Flo
G	Gold
PF	Pwr-Flo
DF	Dura-Flo

2	Liquid Port Size
07	07mm/.25"
15	15mm/.5"
25	25mm/1"
40	40mm/1.5"
50	50mm/2"
80	80mm/3"
100	100mm/4"

3	Wetted Parts
A	Aluminum
W	Ductile
S	Stainless Steel
P	Polypropylene

4	Air Chambers
A	Aluminum
W	Ductile
S	Stainless Steel
W	Mild Steel

5	Center Block
A	Aluminum
P	Polypropylene

6	Air Valve
B	Brass
P	Poly

7,8	Diaphragms & Valve Balls
BN	Buna - N/ Nitrile
ND	Nordel/EPDM
NE	Neoprene
TF	PTFE (with Neoprene back-up)
VT	Viton/FKM
FG	Hytrel®
SN	Santoprene®
SNF	Santoprene® - UFI
TFF	PTFE - Full Flow
TGN	Garlock® - NEO BACKED
TGE	Garlock® - EPDM BACKED
TGV	Garlock® - Viton BACKED
PU	Polyurethane
FGF	Hytrel UFI
PUF	Polyurethane UFI

9	Valve Seats
A	Aluminum
S	Stainless Steel
BN	Buna - N/Nitrile
NE	Neoprene
ND	Nordel/EPDM
VT	Viton
SP	Santoprene
FG	Hytrel
P	Poly
K	Kynar
PU	Polyurethane

10	O-Ring
BN	Buna - N/Nitrile
NE	Neoprene
ND	Nordel/EPDM
VT	Viton
TF	PTFE

11	Fittings
N	NPT
B	BSP
TC	Tri-Clamp

12	Connections
C	Clamped
B	Bolted
FL	Flanged

13	ATEX

NTG 50 / AAAB / TF / TF / ATF / N / C / X

1 2 3 4 5 6 7 8 9 10 11 12 13

1	Air Distribution System
N	Nomad
T	Trans-Flo
G	Gold

2	Liquid Port Size
50	50mm/2"

3	Wetted Parts
A	Aluminum

4	Air Chambers
A	Aluminum

5	Center Block
A	Aluminum

6	Air Valve
B	Brass

7,8	Diaphragms & Valve Balls
TF	PTFE (with Buna back-up)

9	Valve Seats
A	Aluminum

10	O-Ring
TF	PTFE

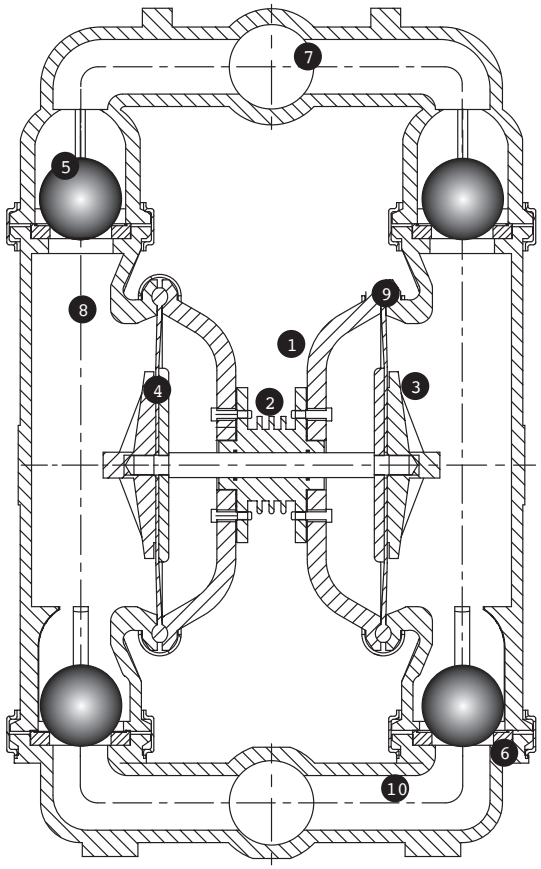
11	Fittings
N	NPT

12	Connections
C	Clamped

13	ATEX

How It Works - Pump

The NOMAD diaphragm pump is an air-operated, positive displacement, self-priming pump. These drawings show flow pattern through the pump upon its initial stroke. It is assumed the pump has no fluid in it prior to its initial stroke.



1. Air Chamber
The air chamber is the chamber that houses the air which powers the diaphragms.

2. Air Distribution System
The air distribution system is the heart of the pump. The air distribution system is the mechanism that shifts the pump in order to create suction and discharge strokes.

3. Lock Nut (Outer Diaphragm Piston)
The outer diaphragm pistons provide a means to connect the diaphragms to the reciprocating common shaft and to seal the liquid side from the air side of the diaphragm.

4. Holding plate (Inner Diaphragm Piston)
The inner piston is located on the air side of the pump and does not come into contact with the process fluid.

5. Check Valve Ball
NOMAD air-operated pumps use suction and discharge check valves to produce directional flow of process fluid in the liquid chamber. The check valve balls seal and release on the check valve seats allowing for discharge and suction of process fluid to occur.

6. Check Valve Seat
The removable seats provide the ball valves a site to check.

7. Discharge Manifold
Process fluid exits the pump from the discharge port located on the discharge manifold at the top of the pump.

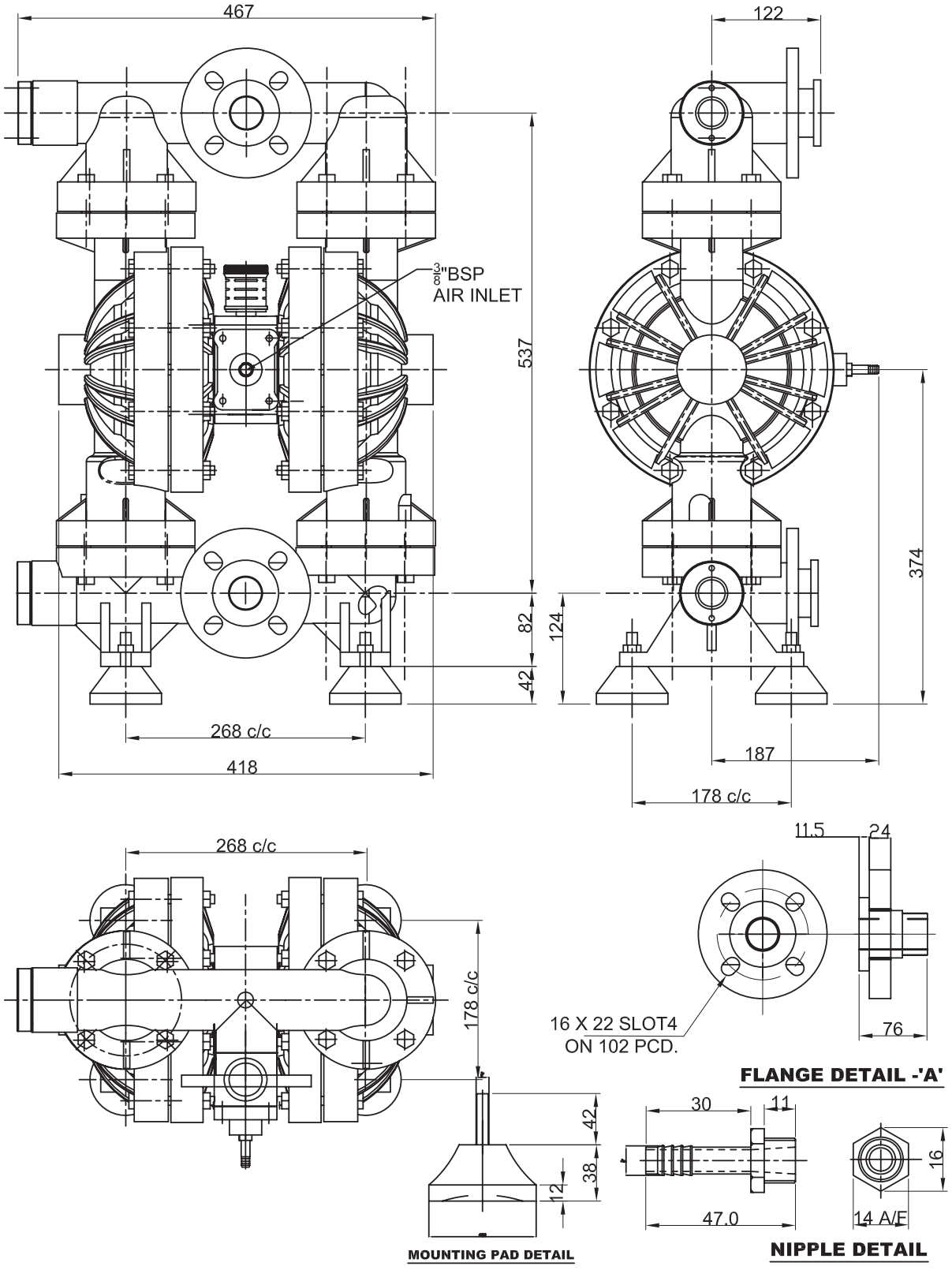
8. Liquid Chamber
The liquid chamber is filled with the process fluid during the suction stroke and is emptied during the discharge stroke. It is separated from the compressed air by the diaphragms.

9. Diaphragm
The diaphragm membrane provides for separation of the process fluid and the compressed air power source. To perform adequately, diaphragms should be of sufficient thickness and of appropriate material to prevent degradation or permeation in specific process fluid applications. NOMAD offers a variety of diaphragm materials for your specific application requirements.

10. Inlet Manifold
Process fluid enters the pump from the intake port located on the inlet manifold at the bottom of the pump.

Dimensional Drawings

NOMAD™

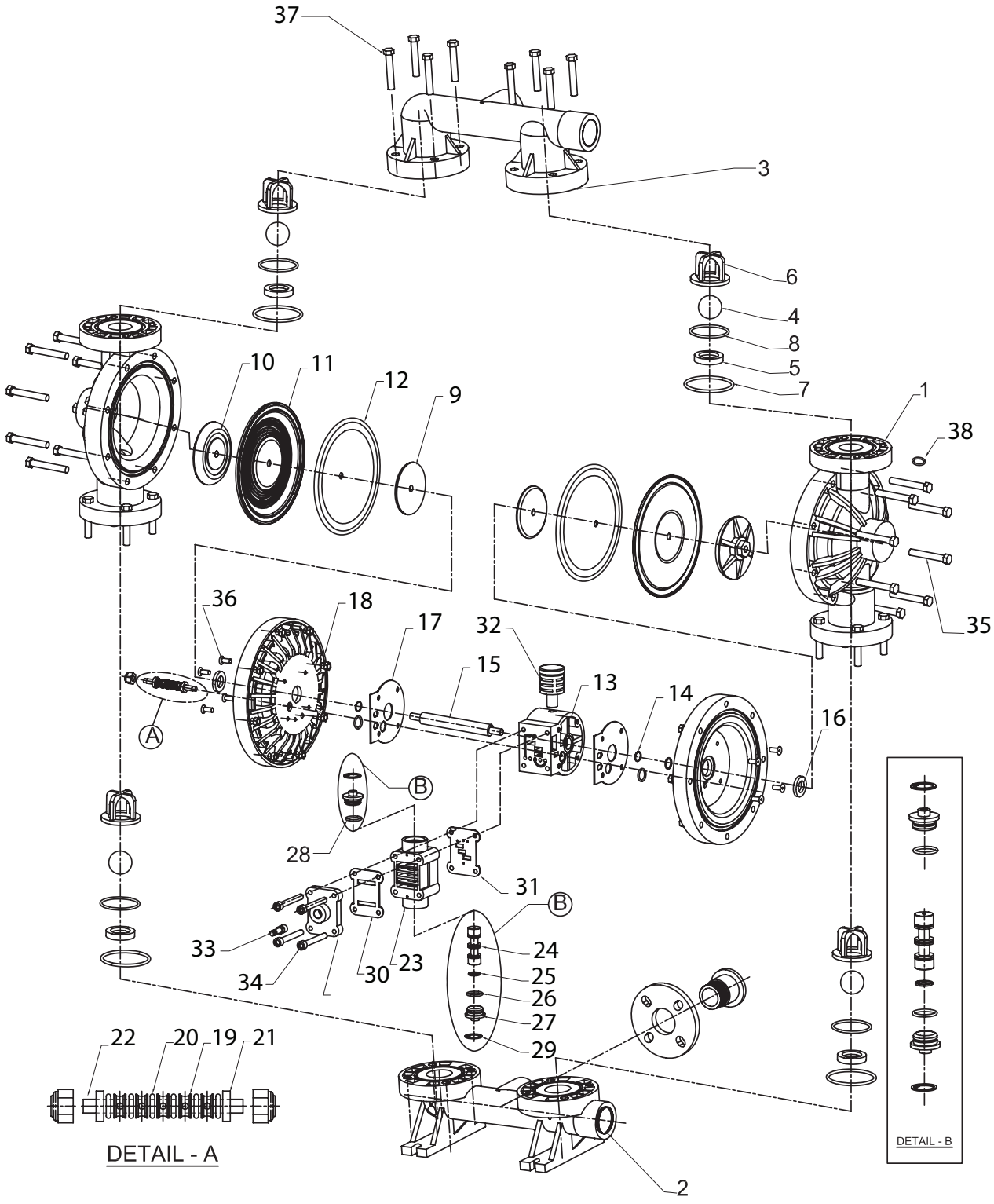


No.	Part Description	Qty.	Teflon-Fitted	Santoprene-Fitted
1	Liquid Chamber	2	T40-5005-20	
2	Inlet Manifold	1	T40-5300-20	
3	Discharge Manifold	1	T40-5200-20	
4	Valve Ball	4	N050-042-600	
5	Valve Seat	4	T40-1120-20	
6	Ball Cage	4	T40-5710-20	
7	Seat O-Ring (L)	4	T40-1204-55	
8	Seat O-Ring (S)	4	T40-1203-55	
9	Inner Piston	2	T40-3710-01	
10	Outer Piston	2	T40-4600-20	T40-4550-20
11	Diaphragm	2	N04-1010-55	N04-1010-58
12	Back-Up Diaphragm	2	N04-1060-55	
13	Center Block	1	T40-3110-23	
14	Center Block O-Ring	2	T40-1300-51	
15	Shaft	1	T40-3820-59	T40-3800-59
16	Main Shaft Buffer	2	T40-6700-51	
17	Air Chamber Gasket	2	T40-3210-60	
18	Air Chamber	2	T40-3620-20	
19	Pilot Bushing	5	T40-3411-07	
20	Pilot Bushing O-Ring	6	T40-1312-51	
21	Pilot Bushing Ring	3	T40-3412-07	
22	Pilot Shaft	1	T40-3410-03	
23	Air Valve Assembly	1	T40-2000-23	
24	Air Valve Pilot Shaft	1	T40-2010-01	
25	Piston O-Ring	3	T40-1310-51	
26	End Cap O-Ring	2	T40-1315-51	
27	End Cap w/o Guide	1	T40-2510-23	
28	End Cap w/ Guide	1	T40-2310-23	
29	Snap Ring	2	T40-2410-61	
30	Air Valve Gasket	1	T40-2600-60	
31	Center Block Gasket	1	T40-3210-60	
32	Muffler	1	T40-3500-23	
33	Air Nipple	1	T40-8200-23	
34	Air Valve Bolts	4	T40-6000-08	
35	Liquid Chamber Bolts	16	T40-6191-03	
36	Air Chamber Bolts	8	T40-6190-08	
37	Manifold Bolts	16	T40-6181-03	
38	Washer	48	T40-6732-03	

Note 1: Nomad Parts (“N” Pre-fix) used where interchangeable
Note 2: For BSP, consult factory

Exploded View

NOMAD



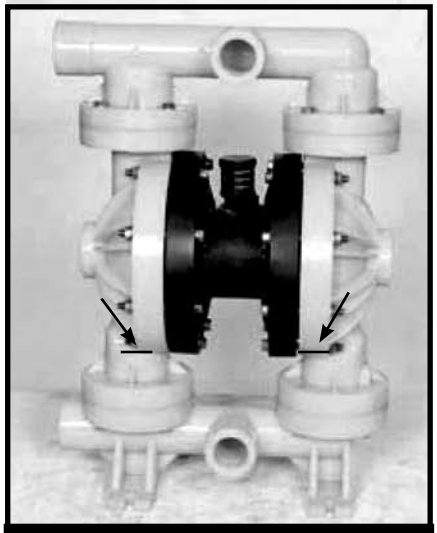
Directions for Disassembly and Reassembly

CAUTION:
Before any maintenance or repair is attempted, the compressed air line to the pump should be disconnected and all air pressure allowed to bleed from the pump. Disconnect all intake, discharge, and air lines. Drain the pump by turning it upside down and allowing any fluid to flow into a suitable container. Be aware of any hazardous effects of contact with your process fluid.

The **TABLA D/L 40** has a 40 mm (1.5") inlet and outlet. 1.5" BSP connection

TOOLS REQUIRED:
- Wrench
- Allen Wrench
- Adjustable Wrench
- Adjustable Spanner
- Vise equipped with soft jaws (such as plywood, plastic or other suitable material)

DISASSEMBLY

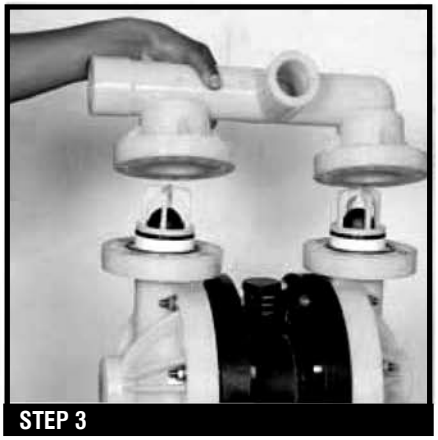


STEP 1

Before starting disassembly, mark a line from each liquid chamber to its corresponding air chamber. This line will assist in proper alignment during reassembly.

STEP 2

Utilizing a wrench, remove the bolts that fasten the discharge manifold to the liquid chambers.

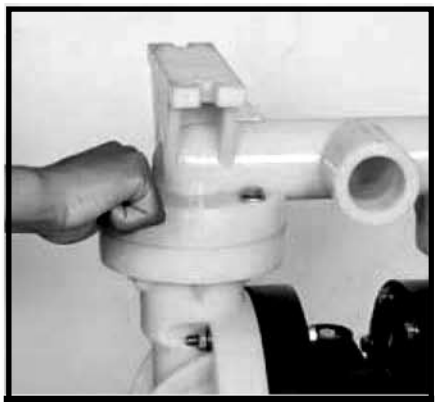


STEP 3

Lift away the discharge manifold to expose the valve balls and seats.

STEP 4

Remove the discharge valve balls, O-rings and seats (Fig 4) from the liquid chambers and inspect for nicks, gouges, chemical attack or abrasive wear. Replace worn parts with genuine TABLA parts for reliable performance.



STEP 5

Remove the bolts which fasten the suction manifold to the liquid chambers.

STEP 6

Lift suction manifold from liquid chambers and center section to expose intake valve balls and seat. Inspect ball cage area of liquid chamber for excessive wear and damage.

STEP 7 a

Remove the discharge valve balls, O-rings and seats (Fig 7) from the liquid chambers and inspect for nicks, gouges, chemical attack or abrasive wear. Replace worn parts with genuine TABLA parts for reliable performance.

Directions for Disassembly and Reassembly

STEP 7 b

Remove one set of clamps, which secure one liquid chamber to the center section

STEP 8

Lift liquid chamber away from center section to expose diaphragm and outer piston

STEP 9

Using an adjustable wrench, or by rotating the diaphragm by hand, remove the diaphragm assembly.

STEP 10

NOTE: Due to varying torque values, one of the following two situations may occur:

1) The lock nut (outer piston), diaphragm and holding plate (inner piston) remain attached to the shaft and the entire assembly can be removed from the center section (Fig 10).
2) The lock nut (outer piston), diaphragm and holding plate (inner piston) separate from the shaft which remains connected to the opposite side diaphragm assembly (Fig 10). Repeat disassembly instructions for the opposite liquid chamber. Inspect diaphragm assembly and shaft for signs of wear or chemical attack. Replace all worn parts with genuine TABLA parts for reliable performance.

STEP 11

To remove diaphragm assembly from shaft, secure shaft with soft jaws (a vise fitted with plywood or other suitable material) to ensure shaft is not nicked, scratched, or gouged. Using an adjustable wrench or by hand, remove diaphragm assembly from shaft. Inspect all parts for wear and replace with genuine TABLA parts if necessary.

REASSEMBLY

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

- Clean the inside of the center section shaft bushing to ensure no damage is done to new seals.
- Stainless bolts should be lubed to reduce the possibility of seizing during tightening.
- Ensure proper alignment on the sealing surfaces of intake and discharge manifolds.
- Liquid chambers are easier to attach when the diaphragm is inverted. Prior to attaching the second water chamber, push diaphragm assembly so that it is as close as possible to the center section.
- PVDF pumps require Teflon® gasket kits for improved sealing. Gasket kits may be installed on other pumps where sealing is an issue.

Directions for Disassembly and Reassembly

TOOLS REQUIRED:
- Adjustable Spanner
- 1/4" Spanner
- 5/16" Spanner
- Circlip Plyer
- Vise equipped with soft jaws
  (such as plywood, plastic or other suitable material)

DISASSEMBLY

STEP 1

Remove the locknuts (outer piston) with the help of a Bench wice

STEP 2

Remove the diaphragm & lock nut If diaphragm are damaged replace them (always replace both the diaphragm).

STEP 3

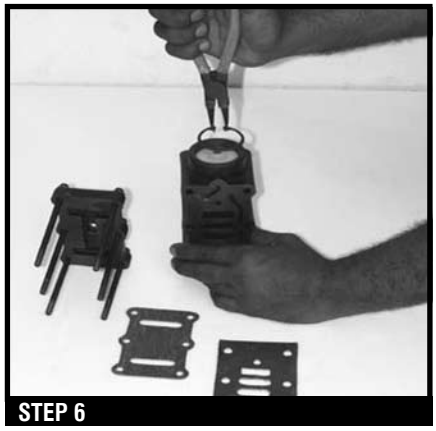
Now check the centre block i.e. air valve with air cover Take out main shaft, replace If worn out or scored. Check shaft block bush 'O' rings, replace If worn out.

STEP 4

Remove pilot shaft by unscrewing two nylock nuts if found damage replace them.

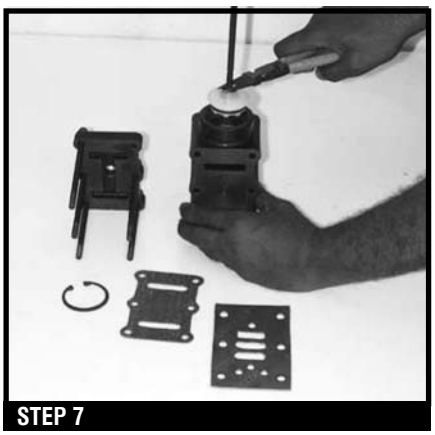
STEP 5

Remove the piston block from the shaft block by opening the 4 holding bolts



STEP 6

Remove the piston circlips, check piston block gasket and piston block cover.

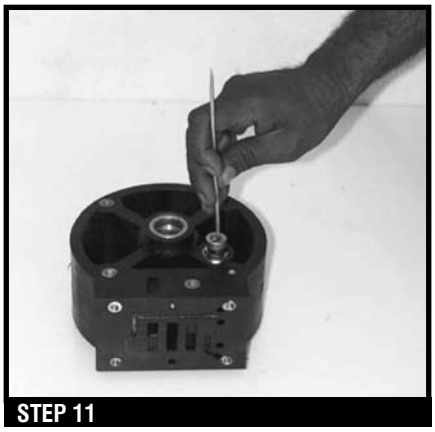


STEP 7

Remove piston block cap by help and holding bolts. Check the 'O' rings. Replace if worn out or damaged.

STEP 8

Remove the piston. Check Piston rings. Clean the piston with solvent.



STEP 11

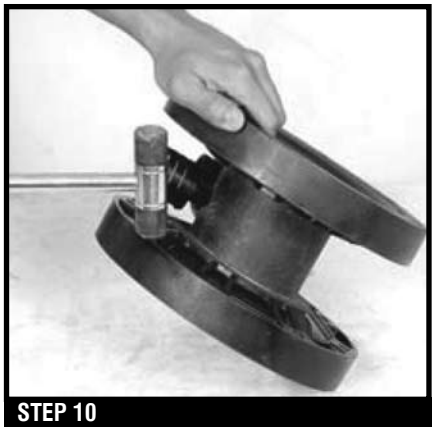
Pilot bushes with rings and 'O' rings.

STEP 9

Remove air cover if required. Change gasket if Required.

STEP 12

Check the air covers and shaft block gaskets. If found damaged, replace them.



STEP 10

Remove the pilot bushes. Check the 'O' rings. Replace if worn out or damaged.

ASSEMBLY

For assembly, follow the reverse procedure.

A JDA Global Company

1351 Park Ave., Suite 104
Redlands, CA USA 92373
(909) 798-9532

NOMAD™

NO BOUNDARIES™