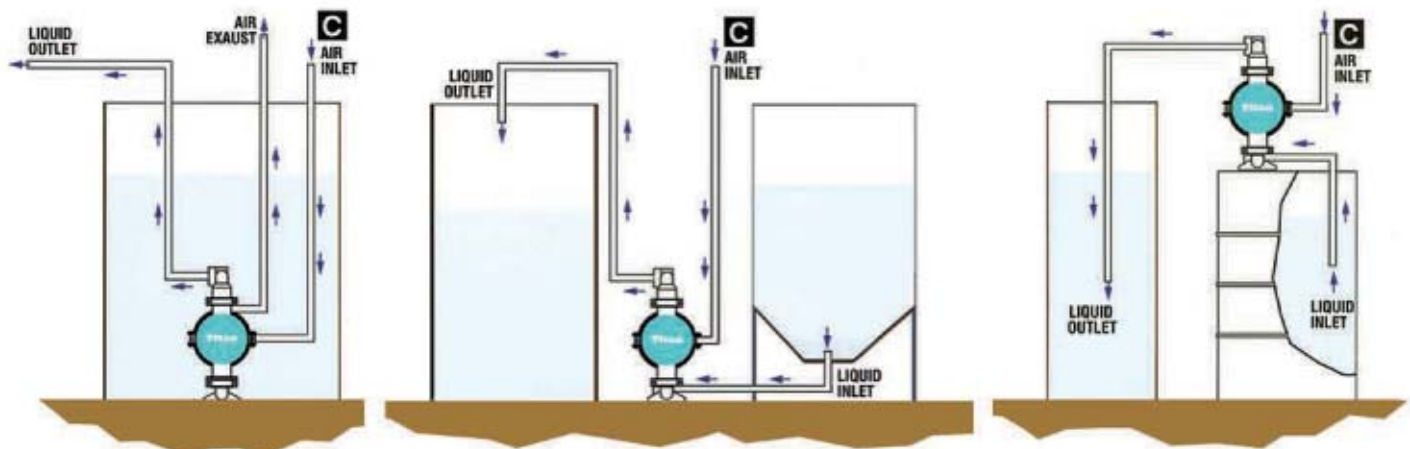


# Titan T-25 & T-40

# PARTS LIST

Item	Description		T-25	T-25	T-40	T-40
			Rubber Fitted	PTFE Fitted	Rubber Fitted	PTFE Fitted
1-A	Air Valve Assembly	1	D02-2000-07	D02-2000-07	D04-2000-07	D04-2000-07
1-B	Air Valve Screen				D04-2500-07	D04-2500-07
2	Air Valve End Cap w/out Guide (Bottom)	1	D02-2331-23	D02-2331-23	D04-2300-23	D04-2300-23
3	Air Valve End Cap w/ Guide (Top)	1	D02-2301-23	D02-2301-23	D04-2330-23	D04-2330-23
4	Air Valve Snap Ring	2	D02-2650-03	D02-2650-03	D04-2650-03	D04-2650-03
5	Air Valve Cap O-ring	2	D02-3200-52-200	D02-3200-52-200	D04-2390-52	D04-2390-52
6	Air Valve Gasket	1	D02-2600-52	D02-2600-52	D04-2600-52	D04-2600-52
7	Center Section	1	D02-3151-20-225	D02-3151-20-225	D04-3150-20-225	D04-3150-20-225
8	Muffler Plate	1	D02-3180-20	D02-3180-20	D04-3180-20	D04-3180-20
9	Muffler Plate Gasket	1	D02-3500-52-500	D02-3500-52-500	D04-3500-52	D04-3500-52
10	Air Valve Cap Screw 1/4" - 20 x 2"	4	D02-6000-08	D02-6000-08	D04-6000-08	D04-6000-08
	Hex Head Nut 1/4" - 20 (Not Shown)	4	D02-6400-08	D02-6400-08	D04-6400-08	D04-6400-08
11	Center Block TRACKER™ Seal	4	D02-3210-77-225	D02-3210-77-225	D04-3210-77-225	D04-3210-77-225
12	Shaft / * Teflon	1	D02-3800-03-07	* D02-3820-09-07	D04-3800-03-07	* D04-3820-03-07
13	Shaft Stud	2	D02-6150-08	D02-6150-08	D04-6150-08	D04-6152-08
14	Disc Spring	2	D02-6802-08	D02-6802-08		
15	Inner Piston	2	D02-3750-01	D02-3750-01	D04-3700-08	D04-3752-01
16-A	Diaphragm - Neoprene / * Teflon	2	D02-1010-51	* D02-1010-55	D04-1010-51	* D04-1010-55
16-B	Backup Diaphragm		D02-1060-52		D04-1060-52	
17	Outer Piston	2	D02-4601-01	D02-4601-01	D04-4552-01	D04-4600-01
18	Liquid Chamber	2	D02-5000-01	D02-5000-01	D04-5000-01	D04-5000-01
19	Discharge Manifold	1	D02-5020-01	D02-5020-01	D04-5020-01	D04-5020-01
20	Inlet Manifold	1	D02-5080-01	D02-5080-01	D04-5080-01	D04-5080-01
21	Manifold Bolt 3/6" - 16 x 8-1/2"	4	D02-6080-08	D02-6080-08		
22	Muffler	1	D02-3510-99	D02-3510-99	D04-3510-99	D04-3510-99
23	Valve Ball - Neoprene / * Teflon	4	D02-1080-51	* D02-1080-55	D04-1080-51	* D04-1080-55
24	Valve Seat - Aluminum	4	D02-1120-01	D02-1120-01	D04-1120-51	D04-1121-01
25	Valve Seat O-ring - Neoprene / * Teflon	4	D02-1200-51	* D02-1200-55	D04-1200-52	* D04-1200-55
26	Manifold Bolt Washer 3/8"	4	D02-6720-08	D02-6720-08		
27	Manifold Bolt Nut 3/8" - 16	4	D02-6430-08	D02-6430-08		
28	Clamp Band (Large)	2			D04-7330-08	D04-7330-08
29	Clamp Band (Small)	4			D04-7100-08	D04-7100-08
30	Large Clamp Bolts 5/16" - 18 x 2-1/4"	4			D04-6070-08	D04-6070-08
31	Large Hex Nut 5/16" - 18	4			D04-6420-08	D04-6420-08
32	Small Clamp Band Bolts 1/4" - 20 x 1-3/4"	8			D04-6050-08	D04-6050-08
33	Small Hex Nut 1/4" x 20	8			D04-6400-08	D04-6400-08

## Installation Applications

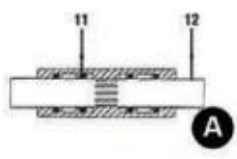
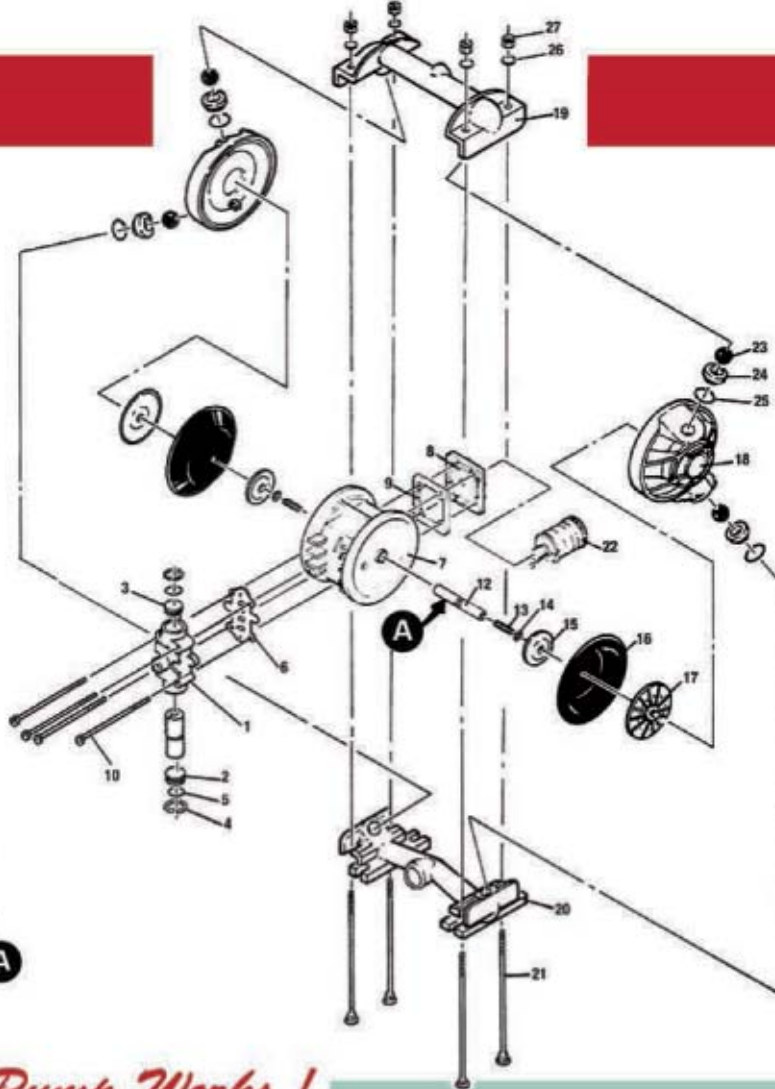


*Pumping by Design!*

**C** = Compressor Line

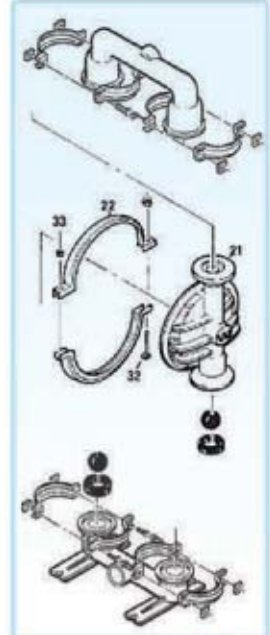
# Isometric Drawing

## T-25



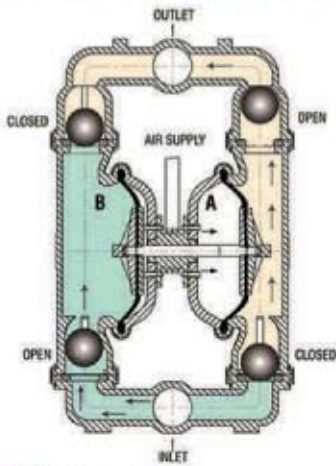
# Isometric Drawing

## T-40



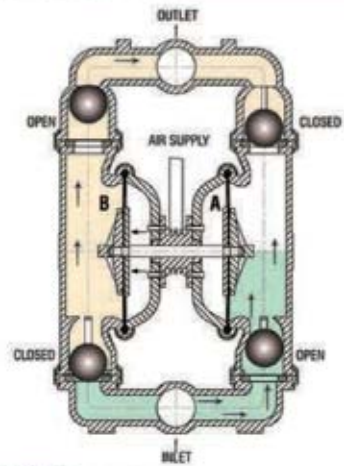
## T-40

### How the Pump Works!



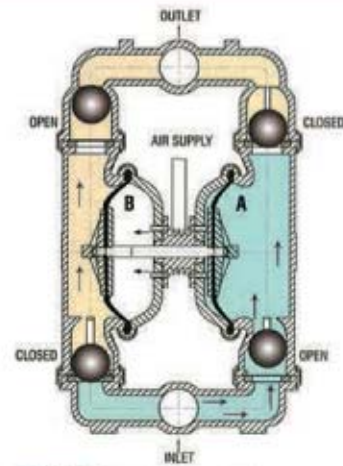
**FIGURE 1 (LEFT STROKE)**

The air valve directs pressurized air to the back side of diaphragm A. The compressed air is applied directly to the liquid column separated by elastomeric diaphragms. The diaphragm acts as a separation membrane between the compressed air and liquid, balancing the load and removing mechanical stress from the diaphragm. The compressed air moves the diaphragm away from the center block of the pump. The opposite diaphragm is pulled in by the shaft connected to the pressurized diaphragm. Diaphragm B is on its suction stroke; air behind the diaphragm has been forced out to the atmosphere through the exhaust port of the pump. The movement of diaphragm B toward the center block of the pump creates a vacuum within chamber B. Atmospheric pressure forces fluid into the inlet manifold forcing the inlet valve ball off its seat. Liquid is free to move past the inlet valve ball and fill the liquid chamber (see shaded area).



**FIGURE 2 (MID STROKE)**

When the pressurized diaphragm, diaphragm A, reaches the limit of its discharge stroke, the air valve redirects pressurized air to the back side of diaphragm B. The pressurized air forces diaphragm B away from the center block while pulling diaphragm A to the center block. Diaphragm B is now on its discharge stroke. Diaphragm B forces the inlet valve ball onto its seat due to the hydraulic forces developed in the liquid chamber and manifold of the pump. These same hydraulic forces lift the discharge valve ball off its seat, while the opposite discharge valve ball is forced onto its seat, forcing fluid to flow through the pump discharge. The movement of diaphragm A toward the center block of the pump creates a vacuum within liquid chamber A. Atmospheric pressure forces fluid into the inlet manifold of the pump. The inlet valve ball is forced off its seat allowing the fluid being pumped to fill the liquid chamber.



**FIGURE 3 (RIGHT STROKE)**

At completion of the stroke, the air valve again redirects air to the back side of diaphragm A, which starts diaphragm B on its exhaust stroke. As the pump reaches its original starting point, each diaphragm has gone through one exhaust and one discharge stroke. This constitutes one complete pumping cycle. The pump may take several cycles to completely prime depending on the conditions of the application.

**The Titan diaphragm pump is an air-operated, positive displacement, self-priming pump. These drawings show the flow pattern through the pump upon its initial stroke.**

**It is assumed the pump has no fluid in it prior to its initial stroke.**