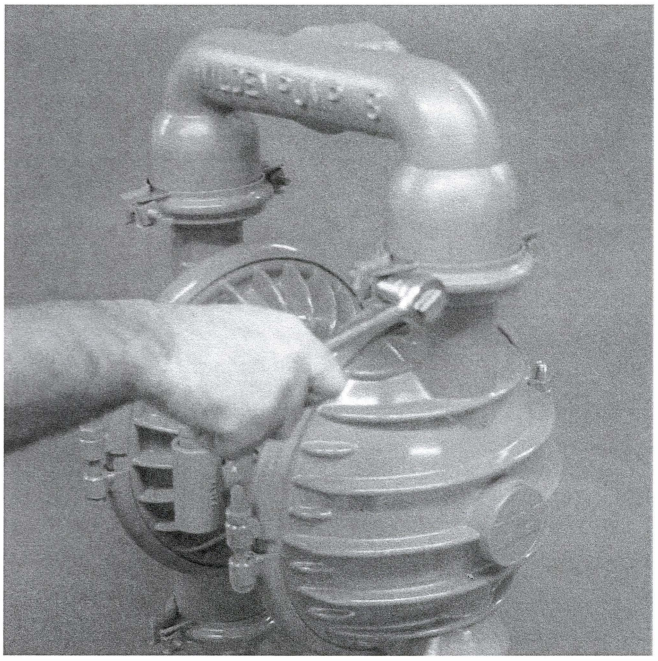
CAUTION: Before any maintenance or repair is attempted, the compressed air line to the pump should be disconnected and all air pressure allowed to bleed from the pump. Disconnect all intake, discharge, and air lines. Drain the pump by turning it upside down and allowing any fluid to flow into a suitable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

The Wilden T8 has a 51 mm (2") inlet and 51 mm (2") outlet and is designed for flows up to 617 lpm (163 gpm). The model T8 is available in aluminum, cast iron, or 316 stainless steel wetted parts. The center block is available in polypropylene, aluminum, nickel-plated aluminum, PTFE-coated aluminum and 316 stainless steel. All o-rings used in the pump are of a special material and shore hardness that should only be replaced with factory-supplied parts.

TOOLS REQUIRED:

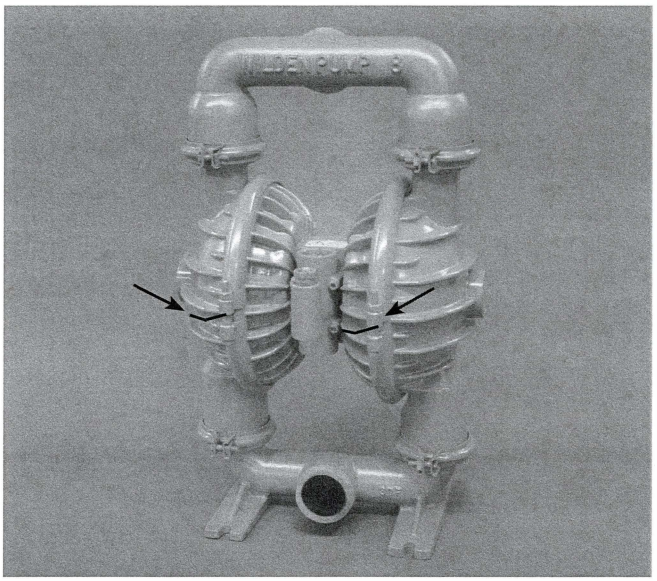
Adjustable Wrench
13 mm (1/2") Socket
14 mm (9/16") Box Wrench
17 mm (11/16") Socket
25 mm (1") Box Wrench or Adjustable Wrench
Vise equipped with soft jaws (such as plywood, plastic or other suitable material)

NOTE: The model used for these instructions incorporates rubber diaphragms, balls, and seats. Models with PTFE diaphragms, balls and seats are the same except where noted. The procedures for A8 Accu-Flo™ pumps are the same except for the air distribution system.



Step 2. *Figure 2*

Utilizing the 13 mm (1/2") box wrench, remove the two small clamp bands that fasten the discharge manifold to the liquid chambers.

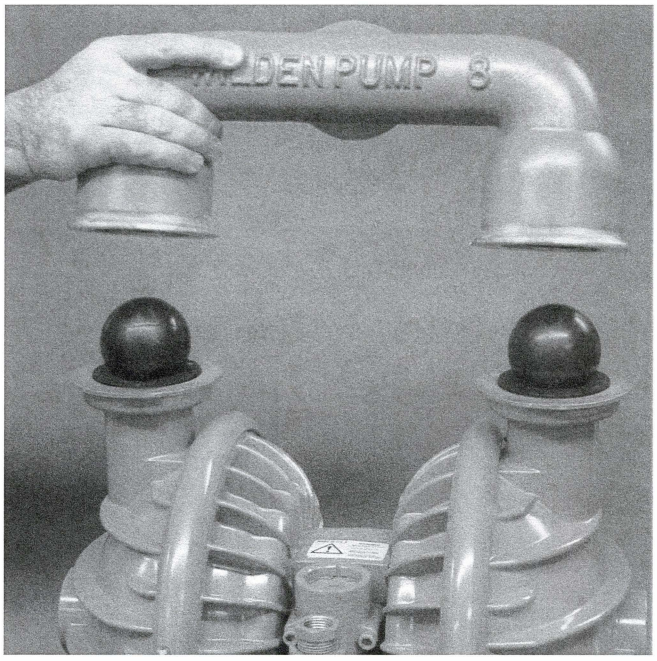


DISASSEMBLY:

Figure 1

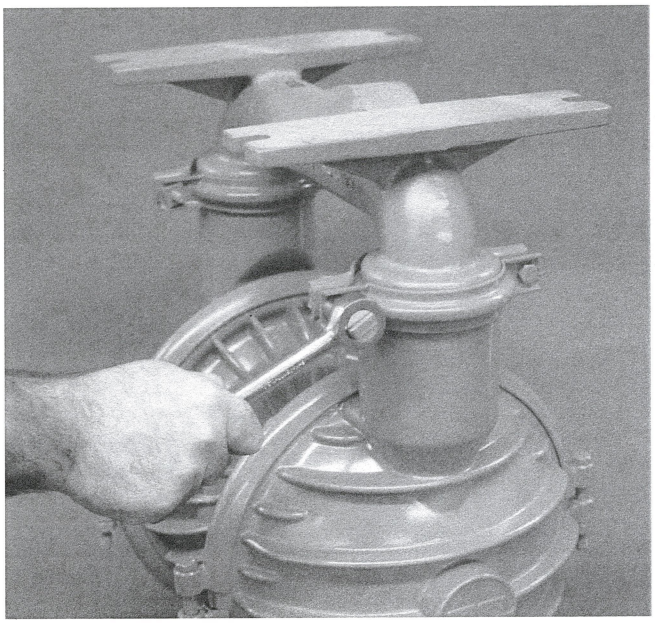
Step 1.

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



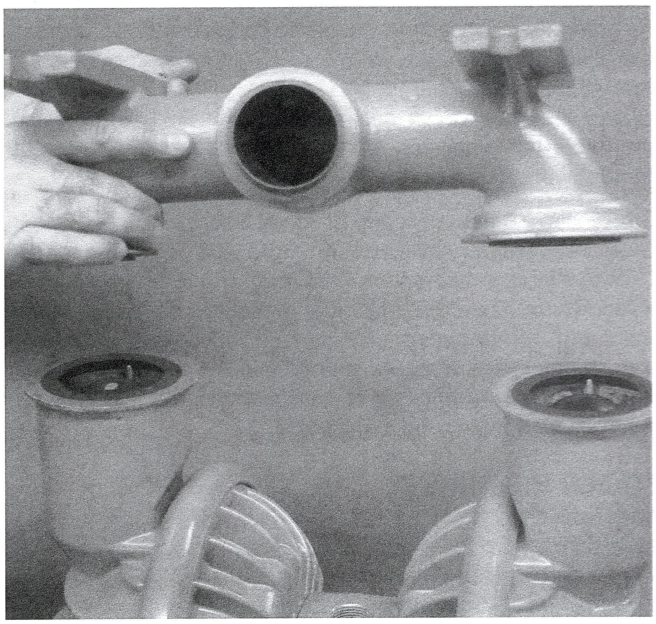
Step 3. *Figure 3*

Remove the discharge manifold to expose the valve balls and seats. Inspect the ball cage area of the manifold for excessive wear or damage. Remove the discharge valve balls, seats and o-rings from the discharge manifold and inspect for nicks, gouges, chemical attack or abrasive wear. Replace worn parts with genuine Wilden parts for reliable performance. PTFE o-rings should be replaced when reassembled.



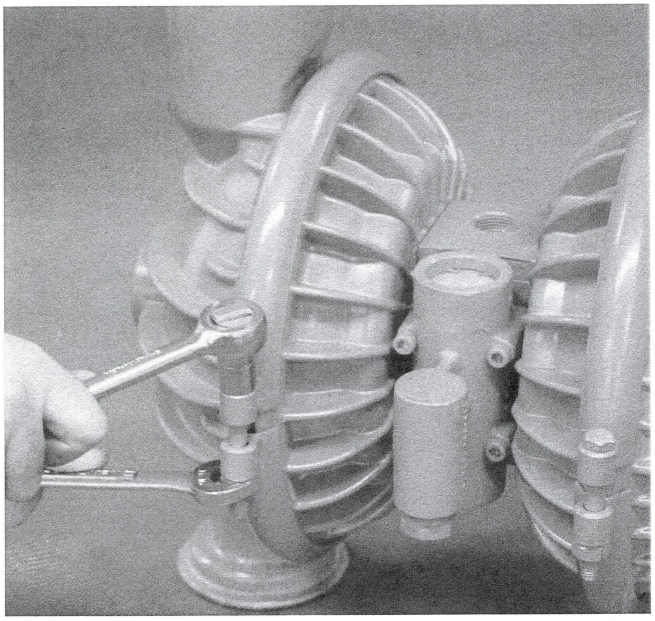
Step 4. *Figure 4*

Remove the two small clamp bands that fasten the intake manifold to the liquid chambers.



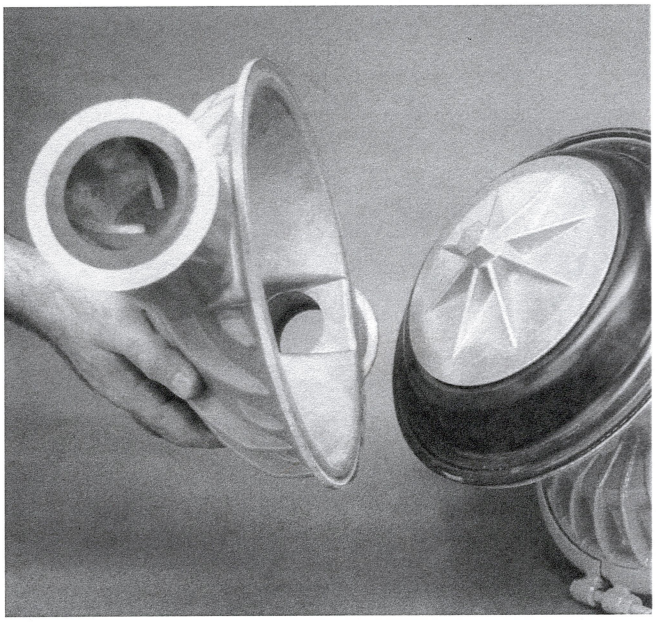
Step 5. *Figure 5*

Lift the intake manifold away to expose the valve balls and seats. Inspect intake valve ball cage for excessive wear or damage. Remove the intake valve balls, seats and o-rings from the discharge manifold and inspect for nicks, gouges, chemical attack or abrasive wear. Replace worn parts with genuine Wilden parts for reliable performance. PTFE o-rings should be replaced when reassembled.



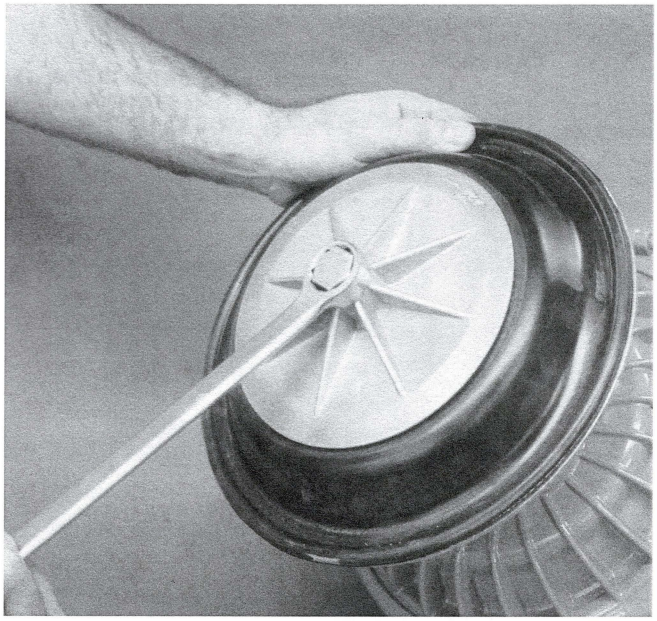
Step 6. *Figure 6*

With 14 mm (9/16") socket and 17 mm (11/16") box wrench, remove one set of large clamp bands that attach liquid chamber to center section assembly.



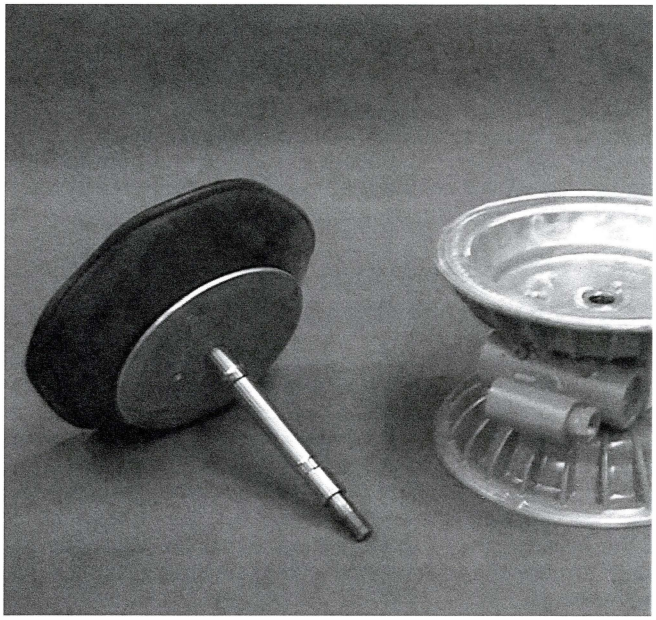
Step 7. *Figure 5*

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



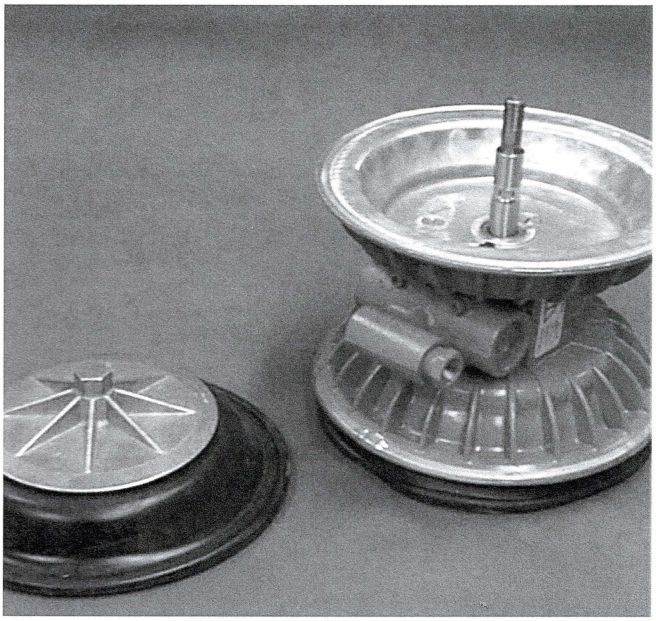
Step 8. *Figure 8*

Using a 25 mm (1") box wrench, adjustable wrench, or by rotating the diaphragm by hand, remove the diaphragm assembly.



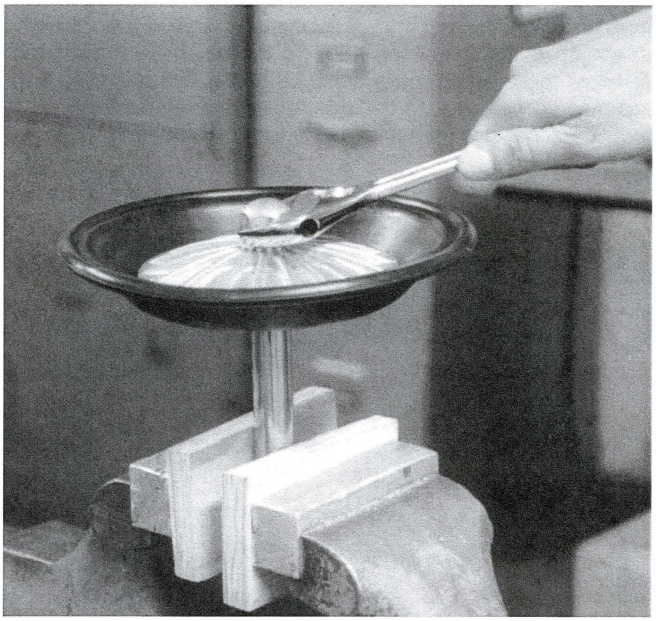
Step 9A. *Figure 9A*

NOTE: Due to varying torque values, one of the following two conditions may occur: 1) The outer piston, diaphragm and inner piston remain attached to the shaft and the entire assembly can be removed from the center section.



Step 9B. *Figure 9B*

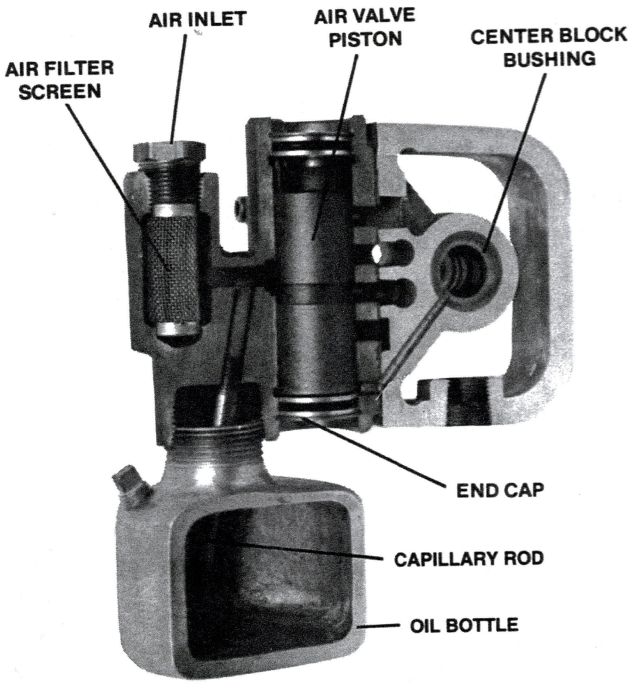
2) The outer piston, diaphragm, and inner piston separate from the shaft which remains connected to the opposite side diaphragm assembly. Repeat disassembly instructions for opposite liquid chamber. Inspect diaphragm assembly and shaft for signs of wear or chemical attack. Replace all worn parts with genuine Wilden parts for reliable performance.



Step 10. *Figure 10*

To remove the diaphragm assembly from the 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, remove diaphragm assembly from shaft. Inspect all parts for wear and replace with genuine Wilden parts if necessary.

The air valve assembly consists of both the air valve body and piston and the center block. The unique design of the air valve relies only on differential pressure to effect the diaphragm shift. It is reliable and simple to maintain. The bushing in the center block, along with the diaphragm shaft, provides the "trigger" to tell the air valve to shift. The following procedure will ensure that the air valve on your Wilden pump will provide long trouble-free service.



AIR VALVE BODY AND PISTON ASSEMBLY AND DISASSEMBLY:

The air valve body and piston can be disconnected from the pump by removing the four socket head cap screws which attach it to the center block. The piston in the air valve is aluminum with a dark gray anodized coating. The piston should move freely and the ports in the piston should line up with the ports on the face of the air valve body (see below). The piston should also appear to be a dull, dark gray in color. If the piston appears to be a shiny aluminum color, the air valve is probably worn beyond working tolerance and should be replaced.

If the piston does not move freely in the air valve, the entire air valve should be immersed in a cleaning solution.

[**NOTE:** Do not force the piston by inserting a metal object.] This soaking should remove any accumulation of sludge and grit which is preventing the air valve piston from moving freely. Also, remove and clean the air valve screen. If the air valve piston does not move freely after the above cleaning, the air valve should be disassembled as follows: remove the snap ring from the top end of the air valve cylinder and apply an air jet to the 3/16-inch hole on the opposite end of the air valve face. (See *Figure C.)* **CAUTION:** The air valve end cap may come out with considerable force. Hand protection such as a padded glove or rag should be used to capture the end cap.

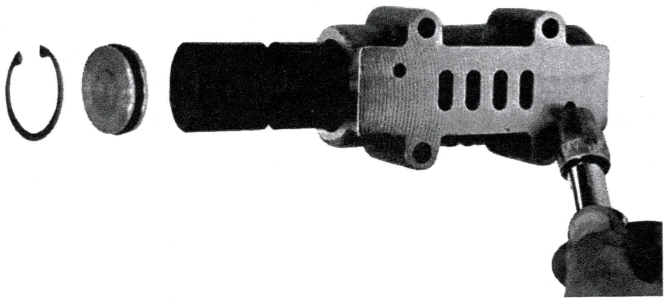


Figure C

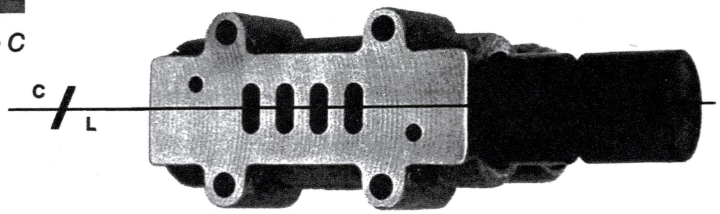


Figure D

Small nicks can usually be dressed out and the piston returned to service. Make sure that the guide pin is straight and smooth or the piston will not move freely in the cylinder. Clean out anti-centering pin holes located at each side of the piston. Pin holes are located on each side of the annular groove on the top of the piston and travel to each end. New o-rings should be installed on the end caps. Lubricate the o-rings and install the end caps, assuring that proper alignment of the piston and cylinder ports is maintained. (See *Figure D).* Reinstall air valve to center block of pump. Tighten per the torque specifications in Section 8C.

GLYD™ RING REPLACEMENT:

When the Glyd™ rings become worn, they will no longer seal and must be replaced. Due to the design characteristics of the Glyd™ rings, it is suggested that you use the Ringer Seal installation kit when replacing Glyd™ rings. Consult EOM-Ringer for installation instructions.

CENTER BLOCK ASSEMBLY:

The pump's center block consists of a polypropylene or die cast housing with a cast-in bronze bushing. The bushing has eleven grooves cut on the inside diameter. There are seven Glyd™ rings that fit in these grooves (see *Figure E).* Since these Glyd™ rings form a part of the shifting function of the pump, it is necessary that they be located in the proper grooves. The bronze bushing is replaceable in cast iron or stainless steel center blocks only. When bushing wear becomes excessive, a new center block must be used.

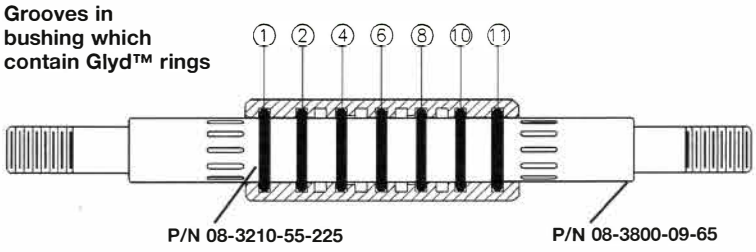
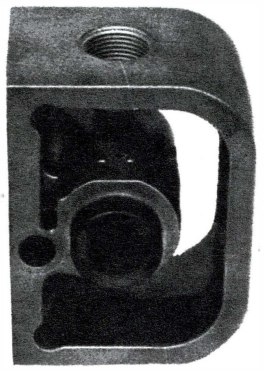


Figure E



P/N 08-3300-07 Bronze Bushing can be pressed into a stainless steel or cast iron center section. (See *Figure F).* When installing a new bushing, four bleeder holes which allow the pump to exhaust air must be drilled. (See *Figure G).*

Figure F (Side View)

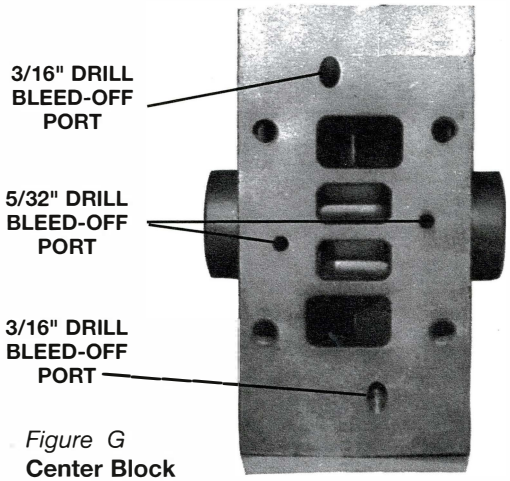


Figure G
Center Block
(Front View)

REASSEMBLY HINTS & TIPS

ASSEMBLY:

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 path. 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 and PFA pumps require PTFE gasket kits for improved sealing. Gasket kits may be installed on other pumps where sealing is an issue.
- When assembling PTFE-coated hardware, care should be taken to keep the coating intact.
- When installing Glyd™ rings, the use of the Wilden Ringer tool simplifies seal installation.

MAXIMUM TORQUE SPECIFICATIONS

Description of Part	Metal Pumps
Air Valve	9.6 N•m (85 in-lbs)
Outer Piston (PTFE-fitted)	108.5 N•m (80 ft-lbs)
Outer Piston (Rubber-fitted)	108.5 N•m (80 ft-lbs)
Small Clamp Band (PTFE-fitted))	6.6 N•m (58 in-lbs)
Small Clamp Band (Rubber-fitted))	2.8 N•m (25 in-lbs)
Large Clamp Band (All)	47.4 N•m (35 ft-lbs)

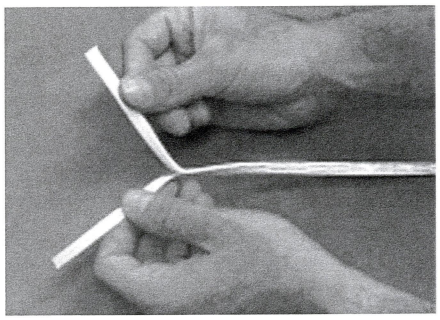
Description of Part	Metal Pumps
Center Block Assembly	31.1 N•m (23 ft-lbs)
Polyurethane Screen Base	2.3 N•m (20 in-lbs)
Metal Screen Base	9.0 N•m (80 in-lbs)
Inlet Cover	9.0 N•m (80 in-lbs)
Stallion Handle	20.4 N•m (15 ft-lbs)

GASKET KIT INSTALLATION

The Wilden T4 cast iron pumps require Teflon® gasket tape on the liquid chambers (P/N 04-9502-99). Other pump types may use Teflon® gasket kits for additional sealing characteristics.

During reassembly follow the procedures listed in your pump's Engineering, Operation and Maintenance manual. Carefully prepare sealing surfaces by removing all debris and foreign matter from diaphragm bead and all mating surfaces. If necessary, smooth or deburr all sealing surfaces. Mating surfaces must be properly aligned in order to ensure positive sealing characteristics.

Always wear safety glasses when performing maintenance on any Wilden product.a



Step 1

Gently remove the adhesive covering from the back of the Teflon® tape. Ensure that the adhesive strip remains attached to the Teflon® tape.

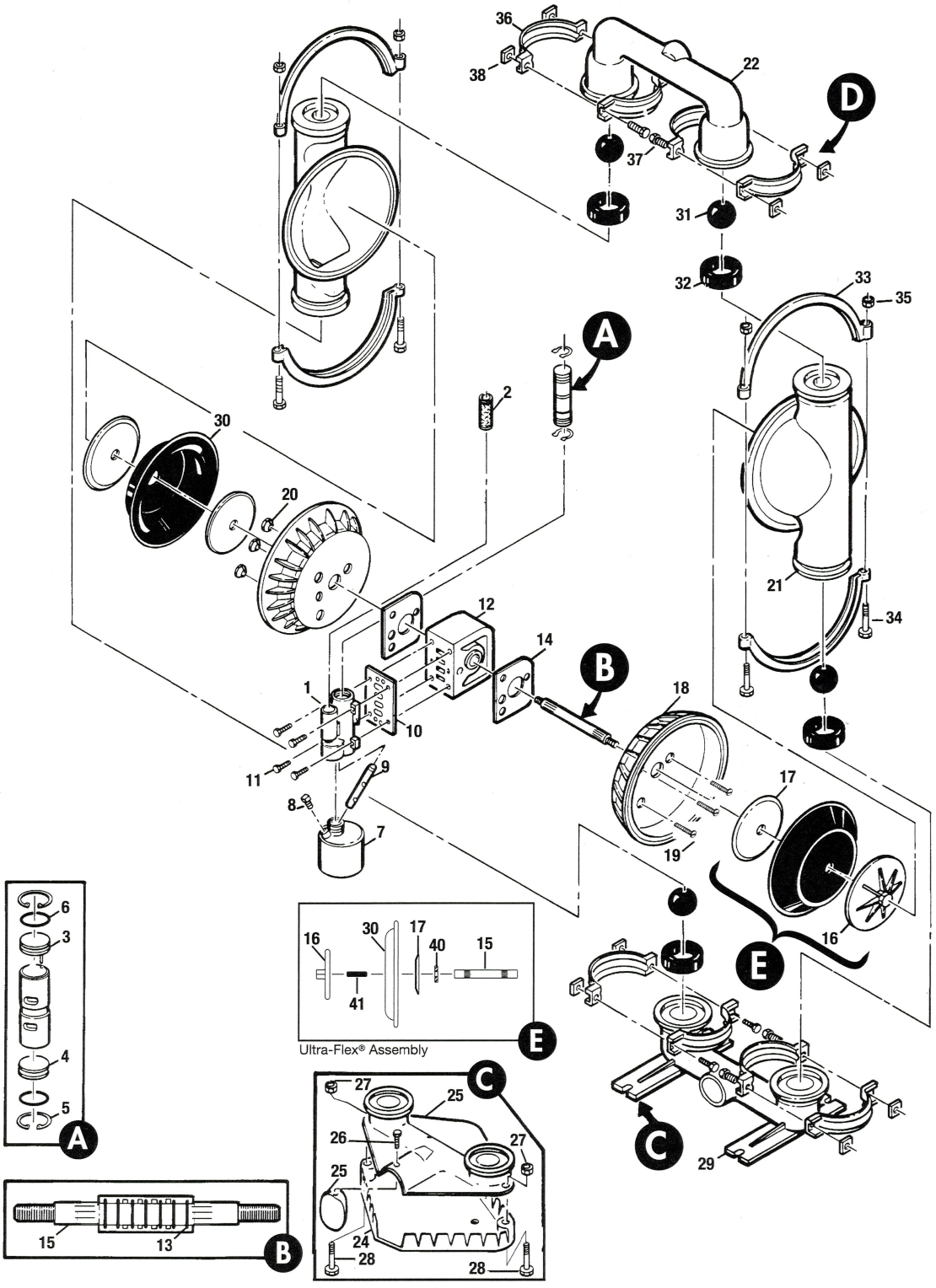
Step 2

Starting at any point, place the Teflon® tape in the center of the diaphragm bead groove on the liquid chamber and press lightly on the tape to ensure that the adhesive holds in place during assembly. Do not stretch the tape during placement in the center of diaphragm bead groove.

Step 3

The end of the tape should overlap approximately 13 mm (1/2"). Proceed to install the Teflon® tape on the remaining diaphragm.

T8 METAL | Rubber/TPE-Fitted | EXPLODED VIEW



T8 METAL | Rubber/TPE-Fitted | PARTS LISTING

Item	Part Description	Qty.	T8/AAAPB/0030 P/N	T8/AAAPB P/N	T8/AAAAB P/N
1	**Air Valve Assembly[1]**	**1**	**08-2000-07**	**08-2000-07**	**08-2000-07**
2	Air Valve Screen	1	08-2500-07	08-2500-07	08-2500-07
3	Air Valve End Cap w/Guide (Top)	1	08-2300-23	08-2300-23	08-2300-23
4	Air Valve End Cap w/o Guide (Bottom)	1	08-2330-23	08-2330-23	08-2330-23
5	Air Valve Snap Ring	2	08-2650-03	08-2650-03	08-2650-03
6	Air Valve Cap O-Ring	2	08-2390-52	08-2390-52	08-2390-52
7	Oil Bottle (Optional) w/Air Valve 08-2050-07	1	08-2850-01	08-2850-01	08-2850-01
8	Plug (Optional)	1	08-7000-07	08-7000-07	08-7000-07
9	Capillary Rod (Optional)	1	08-2900-99	08-2900-99	08-2900-99
10	Air Valve Gasket — Buna-N	1	08-2600-52	08-2600-52	08-2600-52
11	Air Valve Screw 5/16"-18 x 2-1/4"	4	08-6000-08	08-6000-08	08-6000-08
12	Center Block	1	08-3100-20-225	08-3100-20-225	08-3100-01-225
13	**Center Block Glyd™ Ring**	**7**	**08-3210-55-225**	**08-3210-55-225**	**08-3210-55-225**
14	Block Gasket — Buna-N	2	08-3520-52	08-3520-52	08-3520-52
15	Shaft	1	08-3800-09-07	08-3800-09-07	08-3800-09-07
	Shaft, Ultra-Flex™	1	08-3820-09-07	08-3820-09-07	08-3820-09-07
16	Piston, Outer	2	08-4550-01	08-4550-01	08-4550-01
	Piston, Outer, Ultra-Flex™	2	04-4552-01	04-4552-01	04-4552-01
17	Piston, Inner	2	08-3700-01	08-3700-01	08-3700-01
	Piston, Inner, Ultra-Flex™	2	04-3700-08	04-3700-08	04-3700-08
18	Air Chamber, Counter Sunk	2	08-3650-01	08-3650-01	08-3650-01
19	Air Chamber Screw 3/8"-16 x 3-9/16"	3	08-6200-08	08-6200-08	08-6200-08
20	Air Chamber Cone Nut 3/8"-16	3	08-6550-08	08-6550-08	08-6550-08
21	Liquid Chamber	2	08-5000-01	08-5000-01	08-5000-01
22	Discharge Manifold	1	08-5020-01	08-5020-01	08-5020-01
23	Inlet Housing for Screened Base	1	08-5080-01-30	N/A	N/A
24	Screen Base for Item 24	1	08-5620-01	N/A	N/A
25	Suction Hook Up Cover for Item 24	1	08-5660-01	N/A	N/A
26	Cap Screw for Item 24 3/8"-16 x 7/8"	1	08-6140-08	N/A	N/A
27	Cap Screw Nut 3/8"-16	2	02-6430-03	N/A	N/A
28	Cap Screw 3/8"-16 x 3"	2	08-6120-08	N/A	N/A
29	Inlet Housing for Footed Base	1	N/A	08-5080-01	08-5080-01
30	**Diaphragm***	**2**	*	*	*
31	**Valve Ball***	**4**	*	*	*
32	**Valve Seat***	**4**	*	*	*
33	Large Clamp Band Assy.	2	08-7300-08	08-7300-08	08-7300-08
34	Large Carriage Bolt 3/8"-16 x 3"	4	08-6120-08	08-6120-08	08-6120-08
35	Large Hex Nut 3/8"-16	4	08-6450-08	08-6450-08	08-6450-08
36	Small Clamp Band Assy.	4	08-7100-08	08-7100-08	08-7100-08
37	Small Hex Head Cap Screw 5/16"-18 x 1-3/8"	8	08-6050-08	08-6050-08	08-6050-08
38	Small Hex Nut 5/16"-18	8	04-6420-08	04-6420-08	04-6420-08
39	Muffler (not shown)	1	08-3510-99	08-3510-99	08-3510-99
40	Spacer, Ultra-Flex™	2	08-3860-08	08-3860-08	08-3860-08
41	Stud, Ultra-Flex™	1	08-6150-08	08-6150-08	08-6150-08

[1]Air Valve Assembly includes parts through 08-2390-52.
[2]T8 Stallion pumps utilize only four (4) of P/N's 08-6100-03 and 08-6408-08 on the bottom manifold and water chambers.
*Refer to elastomer options in Section 9.
NOTE: BSP threads available.

All boldface items are primary wear parts.

0030 Specialty Code = Screen Base
0050 Specialty Code = Stallion