

Diaphragm Pump**DESCRIPTION**

The Model 8302 Air-Powered Diaphragm Pump is used to transfer lubricants and other compatible liquids. The wetted parts are aluminum and the diaphragms, balls and seals are Buna-N rubber. An external muffler is included to reduce the noise. The pump delivers a maximum of sixteen gallons per minute.

The pump has the following outstanding features:

1. Leak-Free Flange Connections
2. Non-Leak Manifold
3. Corrosion-Resistant Air Motor
4. Abrasion-Resistant Housing
5. Air-Valve Reset Button
6. Air Valve Requires No Lubrication

SPECIFICATIONS

Pump Ratio: 1:1

Air Connections:

Inlet: 1/4" NPT (f)

Outlet: 3/4" NPT (f)

Material Connections:

Inlet: 3/4" NPT (f)

Outlet: 3/4" NPT (f)

Discharge Volume per Cycle 0.092 Gal.

Maximum Size Solid: 1/16"

Maximum Suction Lift: 10 ft.

Maximum Air-Supply Pressure: 100 PSI

Temperature Range: 32-140° F.

Net Weight: 19.8 lbs.

GENERAL SAFETY REQUIREMENTS

IMPORTANT: Read all instruction sheets and any other explanatory information before beginning any installation, operation or maintenance.

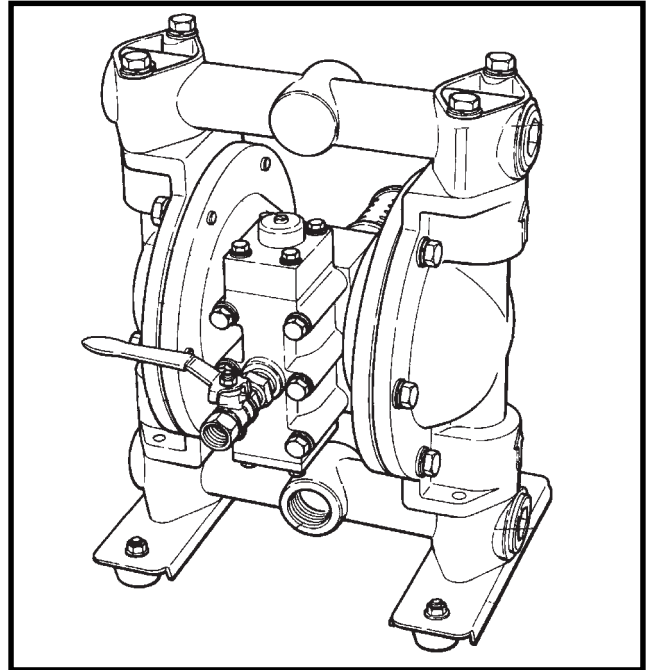


Figure 1: Model 8302 Diaphragm Pump

1. Check all hoses and lines for weak or damaged condition and make sure that all connections are secure.

NOTE: Worn or damaged parts threaten person and property. Replace all such parts.

2. Do not use pump with any liquids not compatible with the materials of the pump components.

3. Never exceed the maximum pressure rating of any component in the system.

4. Never point the dispensing device at anyone. Accidental discharge can cause serious injury.

5. Shut off the air pressure and relieve all material pressures before attempting to service any part.

6. Check for leaks before starting any pumping operation. If any leaks or other abnormalities are found, do not operate the pump.

7. Wear safety glasses at all times when operating the pump.

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8. Wear a face shield and proper body protection when working with hazardous chemicals.

9. When pumping Class 1 Hazardous (flammable) liquids, use pump outdoors or in an OSHA approved location.

10. When pump is used with flammable or Class 1 materials, the following procedures must be strictly applied:

A. A special "static hose " must be used which has a provision for conducting static electrical charges.

B. Hose must be properly grounded with a grounding conductor.

C. Pump and entire system must be properly grounded, in accordance with local and national codes.

WARNING: Unless proper grounding is followed, static discharge can cause a fire or an explosion.



DO NOT use Halogenated Hydrocarbon Solvents, such as methylene chloride or 1,1,1-trichloroethane, in this pump. An explosion can result when aluminum

parts within an enclosed device capable of containing pressure come in contact with Halogenated Hydrocarbon Solvents.

DO NOT TAKE ANY CHANCES! CONSULT YOUR MATERIAL SUPPLIER TO BE SURE.

The use of pressure relief devices or chemical "stabilizers" WILL NOT provide the necessary safety to eliminate the explosion hazard!

INSTALLATION

There are many possible configurations in which the pump can be connected. Specific installations will depend on the fluid being pumped and the application.

NOTE: For best results, it is recommended that an air filter/moisture separator (such as the Alemite 5604-2) and an air-pressure regulator (such as the Alemite (7604-B) be used in the air line.

NOTE: The inlet and outlet manifolds are reversible to facilitate connecting the hoses from either direction, however, it is recommended that the outlet manifold not be plumbed over the air valve, as this could restrict access to the reset button.

1. Connect a suction hose from the supply container to the pump fluid inlet.
2. Connect a discharge hose to the pump fluid outlet.

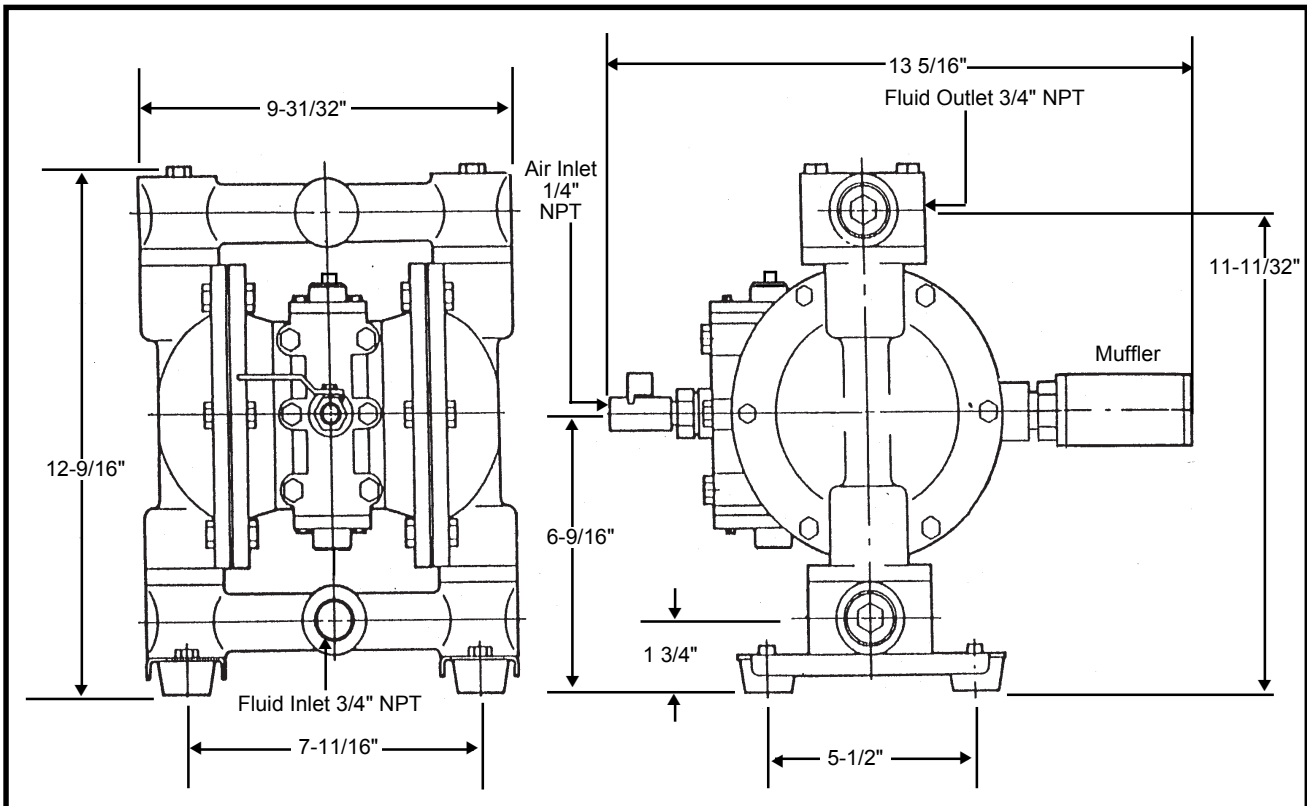


Figure 2: Dimensions & Locations

NOTE: A strainer mounted in the suction line is recommended to protect the pump.

NOTE: Use a flexible hose between the pump and any piping to eliminate any vibration in the piping.

3. Attach the air-inlet bushing (130) to the air valve unit (127) and the ball valve (129) to the air inlet bushing (See Figure 7).

NOTE: Make sure that the air-control ball valve on the diaphragm pump is closed before connecting to the air supply.

CAUTION: Maximum air pressure is 100 PSI. Do not exceed this rating.

OPERATION

NOTE: Check for leaks before starting any pumping operation. If any leaks or other abnormalities are found, do not operate the pump.

1. The positive-displacement pump is self priming. To initially prime the pump, using either the air control ball valve on the pump or the air-regulator valve, bring the air pressure up slowly.

NOTE: If starting difficulty is encountered, press the reset button which is located at the air valve.

2. When the pump and hose are fully primed, the pump is ready for operation.

3. Adjust air-pressure regulator to obtain desired product flow.

NOTE: If the pump is operated faster than the allowable flow rate, it can cause cavitation. This will reduce the flow rate of the fluid and also reduces the life of the diaphragm.

NOTE: To maximize the material flow rate, start with a low air pressure and increase slowly while observing the material discharge of the pump. When the material discharge decreases, reduce the air pressure slightly to obtain the maximum flow rate.

SERVICE

Trouble-Shooting:

For the most common of problems, a trouble-shooting chart is provided as a guide to most of the corrective remedies. (See Table 1 on page 10.)

NOTE: Before servicing any part of the pump, be sure to shut off the air pressure, relieve the material pressure and disconnect the material connections.

During reassembly, note or mark all parts so that they can be reassembled in the exact same manner in which they were disassembled.

As pump is disassembled, components should be cleaned and inspected. All worn or damaged parts should be replaced.

If a vise is used during disassembly, the vise should be equipped with nondestruct jaws. If the center rod is damaged by the vise, it can destroy both the center-rod bushing (121) and the "O" rings in the center-rod bushing.

NOTE: Follow all recommendations for proper torque values and do not overtorque any nuts or bolts.

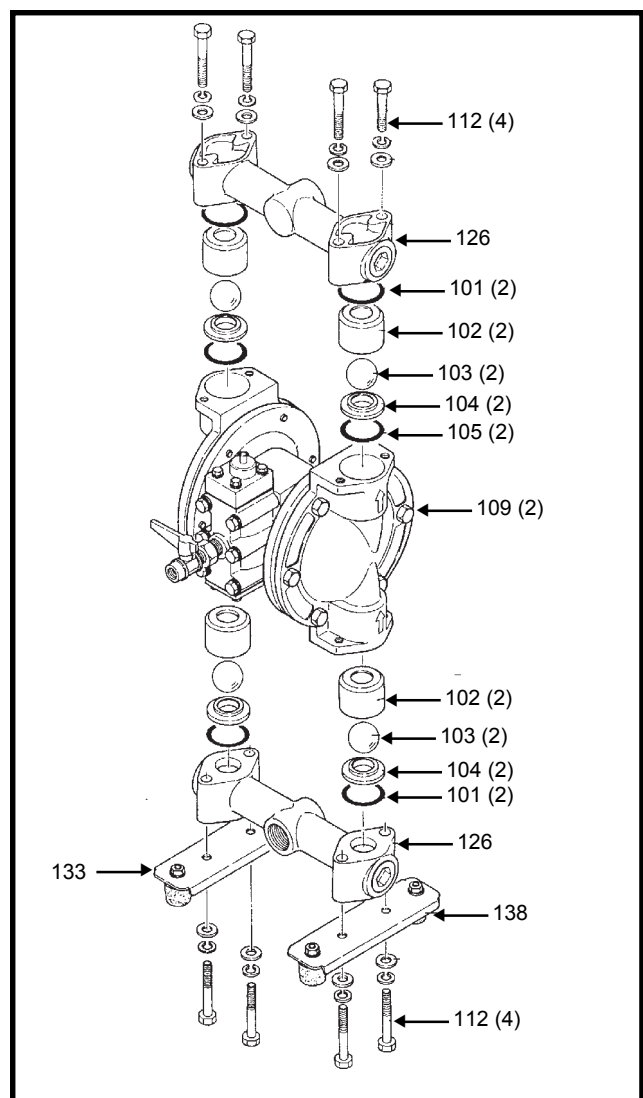


Figure 3: Inlet & Outlet Check Valves

NOTE: Lubricate all “O” rings associated with moving parts. Static “O” rings do not need to be lubricated.

NOTE: It is recommended that Locquic Primer T be used on all threads before using Loctite, as this degreases the threads and speeds the curing process.

INLET CHECK VALVES:

(Figures 3 and 4)

Disassembly:

NOTE: To remove the inlet check valves, the pump must be turned over.

1. Remove the four bolts (112) with lockwashers and flatwashers that hold the two bases (133 & 138) and the inlet manifold (126) to the two end castings (109).
2. Remove the two bases and the inlet manifold.

NOTE: There are two inlet cavities in the pump. This procedure is written for one but is identical for the other.

3. Remove the “O” ring (101) from the inlet cavity.
4. Remove the valve seat (104) from the inlet cavity.
5. Remove the ball cage (102) with the ball (103) from the inlet cavity.
6. Remove the ball (103) from the ball cage (102).
7. Clean and inspect all parts. Replace any parts that are worn or damaged.

Reassembly:

NOTE: The reassembly procedure is written for one inlet valve but is identical for the other.

1. Insert the ball (103) into the ball cage (102).
2. Insert the ball cage with the ball into the inlet cavity.
3. Reinsert the valve seat (104) into the inlet cavity. Make sure that it is pressed down completely.
4. Replace the “O” ring (101) in the inlet cavity.
5. Replace the inlet manifold (126) and the two bases.
6. Replace the four bolts (112) with lockwashers and flatwashers that hold the inlet manifold and the bases to the two end castings (109).

NOTE: The inlet and outlet manifolds can be turned either way for connection convenience. Be sure to orient this manifold in the correct direction.

7. Tighten the bolts to a maximum torque of 7-1/2 ft.-lbs. Do not over tighten.

OUTLET CHECK VALVES:

(Figures 3 and 4)

Disassembly:

1. Remove the four bolts (112) with lockwashers and flatwashers that hold the outlet manifold (126) to the two end castings (109).
2. Remove the outlet manifold.

NOTE: There are two outlet cavities in the pump. This procedure is written for one but is identical for the other.

3. Remove the top “O” ring (101) from the outlet cavity.
4. Remove the ball cage (102) from the outlet cavity.

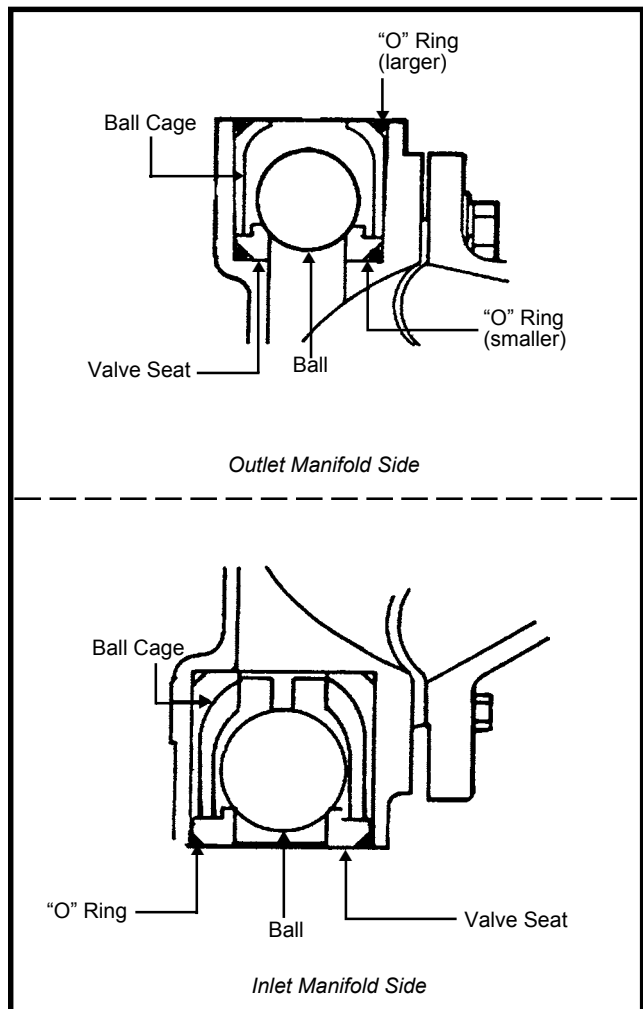


Figure 4: Parts Placement in Manifolds

5. Remove the ball (103) from the outlet cavity.
6. Remove the valve seat (104) from the outlet cavity.
7. Remove the bottom "O" ring (105) from the outlet cavity.
8. Clean and inspect all parts. Replace any parts that are worn or damaged.

Reassembly:

NOTE: The reassembly procedure is written for one outlet valve but is identical for the other.

1. Reinsert the bottom "O" ring (105) in the outlet cavity. Make sure that it is properly seated.
2. Reinsert the valve seat (104) in the outlet cavity. Make sure that it is pressed down completely.
3. Set the ball (103) into the center of the valve seat.
4. Insert the ball cage (102) in the outlet cavity over the ball.
5. Replace the top "O" ring (101) in the outlet cavity.
6. Replace the outlet manifold (126) and replace the four bolts (112) with lockwashers and flatwashers that hold the outlet manifold to the two end castings (109).

NOTE: The inlet and outlet manifolds can be mounted either way. Be sure to orient this manifold in the correct direction.

7. Tighten the bolts to a maximum torque of 7-1/2 ft.-lbs. Do not over tighten.

AIR-VALVE UNIT:

Disassembly:

(Figure 5)

1. Remove the six bolts (128) with lockwashers and flat washers that hold the air-valve unit to the pump body (120) and remove it (See Figure 7).

NOTE: Do not allow the gasket (134) to get lost or torn.

2. Remove the four bolts (151) that hold the top cap (152) and remove it.
3. Remove the top gasket (155).

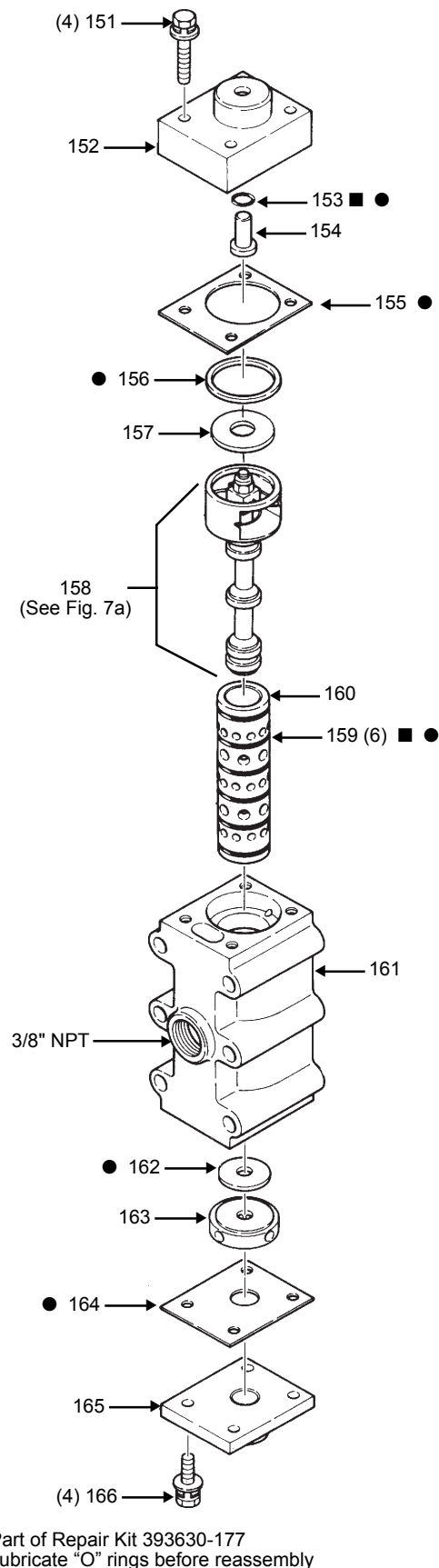


Figure 5: Components of Air-Valve Unit

4. Remove the reset button (154) and the “O” ring (153) from the top cap (152). Replace the “O” ring with the one in the kit.
5. Remove the rubber packing (156) and the metal washer (157).
6. Remove the four bolts (166) that hold the bottom cap (165) and remove it with its gasket (164).
7. Remove the lantern ring (163) and the air-valve cushion (162) from the air-valve body (161).
8. Push the Spool-Valve Assembly (158) out by hand from the bottom of the air-valve body.
9. Check the seal rings (173) on the spool assembly for any damage. If any defects are found, replace the seal rings, cushion and nut from kit 393630-179.
10. Remove the sleeve (160) from the air-valve body.
11. Check the six “O” rings (159) on the sleeve for any damage. If any is found, replace the “O” rings.

Reassembly:
(Figure 5)

1. Push the sleeve (160) with “O” rings (159) into the air-valve body and center the sleeve in the air-valve body (161).

NOTE: To ease installation, apply grease to the “O” rings.

2. Push the Spool-Valve Assembly (158) with seal rings (173) into the sleeve from the top of the air-valve body.

CAUTION: Be careful not to damage the seal rings.

3. Place the metal washer (157) and the rubber packing (156) on the Spool-Valve Assembly.
4. Place the top gasket (155) on the air-valve body.
5. Place the reset button (154) with “O” ring (153) into the top cap (152).
6. Reattach the top cap onto the air-valve body and secure with the four bolts (151). Do Not Overtighten.
7. Place the lantern ring (163) and the air-valve cushion (162) into the air valve body (161).

8. Replace the bottom cap (165) and its gasket (164) and secure with the four bolts (166). Do Not Overtighten.

9. Place the air-valve gasket (134) behind the air-valve unit (127) and secure the air-valve unit to the pump body (120) using the six bolts (128) (Figure 7).

NOTE: Make sure that the reset button is facing up.

10. Tighten the bolts by a criss-cross method to prevent any unusual strain on the aluminum air-valve. Torque to 20 ft.-lbs. Do Not Overtighten.

ENTIRE PUMP:

Disassembly: (Figures 6 and 7)

1. Remove the muffler (135) from the pump body (120).
2. Remove the air valve unit (127) and its gasket (134) from the pump body (120) by removing six hex-head bolts (128).

NOTE: Do not allow the gasket (134) to get torn or lost.

NOTE: It is not necessary to remove the ball valve (129) or the bushing (130) if the air valve is not to be serviced.

3. Remove the inlet and outlet manifolds (126) by removing the four bolts (112) for each one.

NOTE: The bases (133 and 138) will come off with the inlet manifold.

4. Remove the six bolts (113) on one end casting (109) and remove the end casting.
5. Repeat step 4 for the other end casting.
6. Remove the hex nut (110) on one end of the center rod (124). Remove the cone-disk spring washer (111).
7. Remove one washer (108), one centerdisk (107), the rubber diaphragm (106), a second centerdisk (107) and a second washer (108) and the diaphragm cushion (125) from the center rod (124).
8. Repeat steps 6 and 7 for the same parts on the other side of the center rod.
9. Using a five-millimeter Allen wrench, remove the four flat-head bolts (123) with four lock washers that hold the air-chamber disk (114).

NOTE: Do not lose the small lock washers on the bolts.

10. Remove the air-chamber disk and the body gasket (116) from the pump body (120).

11. Repeat steps 9 and 10 for the other air-chamber disk and body gasket.

12. Remove the pilot-valve assembly (115), spring (119) and valve seat (118) from the hole on one side of the pump body (120).

NOTE: The pilot-valve assembly includes a spring and an "O" ring.

13. Check the "O" ring (117) on the valve seat (118) and replace if damaged.

14. Check the pilot-valve assembly. If any part is bad, replace the entire pilot-valve assembly.

15. Repeat steps 12-14 for the pilot valve assembly spring and valve seat on the other side of the pump body.

16. If the center rod is bad, push the two center rod bushings (121) out and replace the two "O" rings (6 and 122) in each one.

Reassembly: (Figures 6 and 7)

NOTE: Before reassembly, lubricate all "O" rings except the two "O" rings (122) on the center-rod bushings (121) with oil. Lubricate these "O" rings (122) with grease.

1. Push the center-rod bushings (121) into the center cavity of the pump body (120).

2. Press the two new springs (119) onto the two pilot valves (115).

3. Place the two valve seats (118) and the two "O" rings (117) on the two pilot valves.

4. Push one pilot-valve assembly into the hole on one side of the pump body (120).

5. Place one body gasket (116) on the pump body (120).

6. Place one air-chamber disk (114) on the pump body and secure with four flat-head bolts (123) and four lock washers through the four countersunk holes.

7. Tighten with a five-millimeter Allen wrench.

NOTE: Use Loctite "Type 242" on the four bolts.

8. Repeat steps 4-7 for the other side of the pump body.

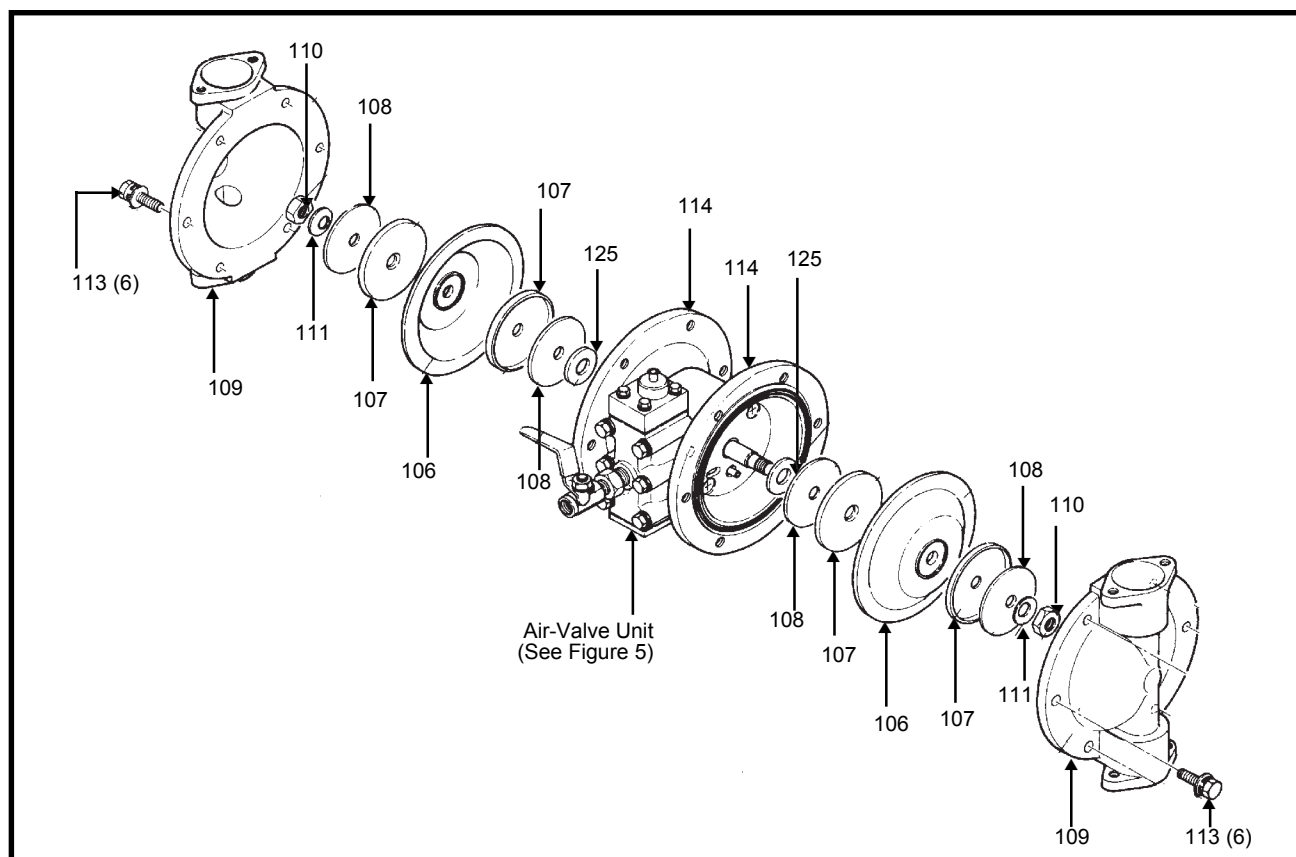


Figure 6: Components of Diaphragm Portion of Pump with Manifolds Removed

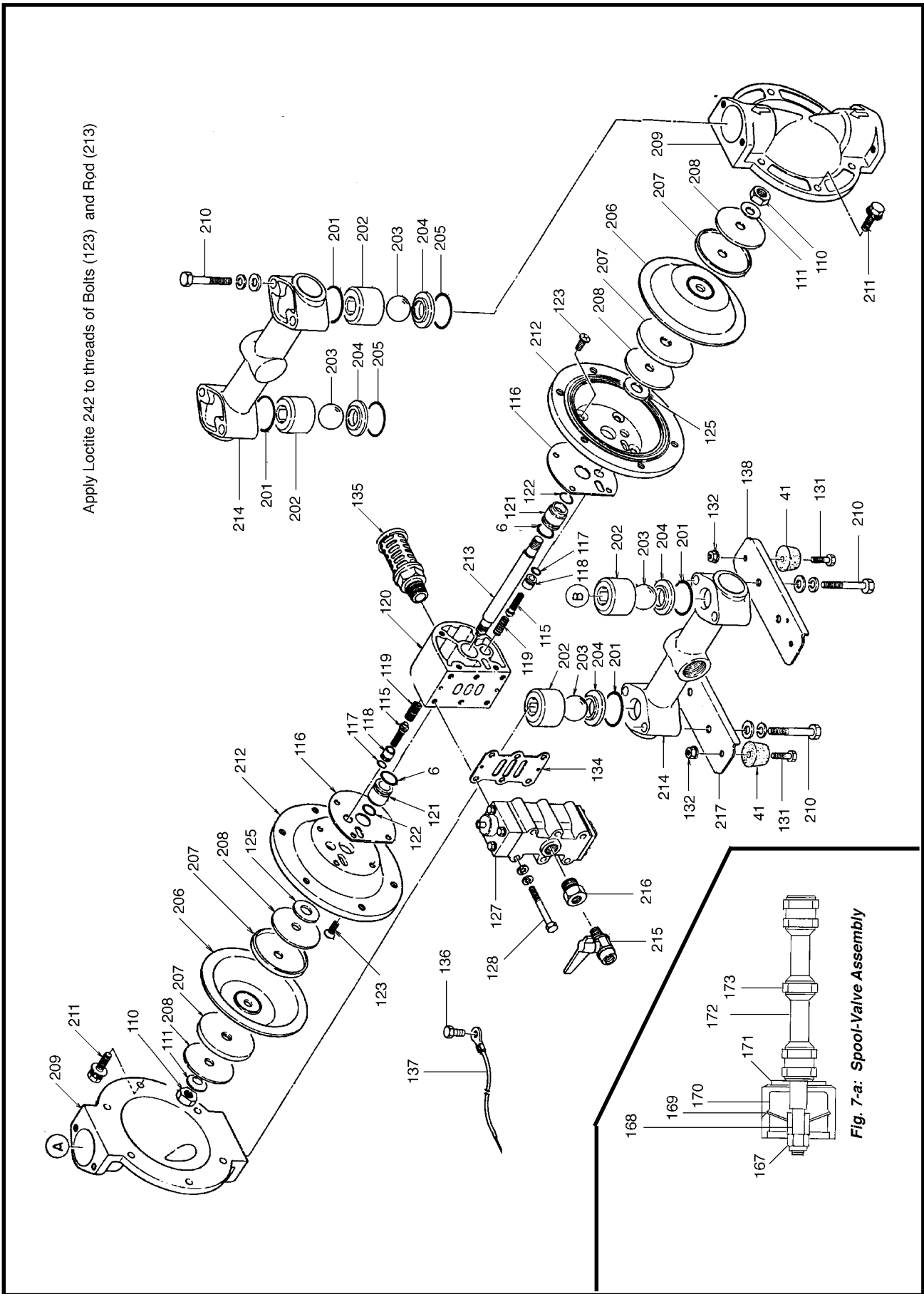


Figure 7: Components of Model 8302 Diaphragm Pump

9. Lubricate the center rod (124) with grease and push it through the center rod bushing (121) into the pump body (120).

10. Place the diaphragm cushion (125), one washer (108), one centerdisk (107), the rubber diaphragm (106), a second centerdisk (107) and a second washer (108) on the center rod (124). (See Figure 8).

NOTE: One side of the diaphragm is labeled "OUTSIDE." Make sure that this side of the diaphragm faces to the outside of the pump.

11. Place the cone-disk spring washer (111) on the center rod (124) and secure with a hex nut (110). Do not tighten at this time.

NOTE: Apply Loctite "Type 242" to threads on each end of center rod before reassembly.

NOTE: The cone disk spring washer must be placed so that the convex side faces out (See Figure 8).

12. Repeat steps 9 through 11 for the parts that mount on the other side of the center rod.

13. Tighten the hex nuts (110) on each end of the center rod to a maximum torque of 45 ft. lbs.

NOTE: To make this easier, hold one nut in a vise and use a torque wrench on the other nut.

14. Attach one of the end castings (109) to one of the air-chamber disks (114) with six hex-head bolts (113). Do not tighten at this time. The first end casting to be reattached should be on the end where the diaphragm is pushed outward by the rod.

NOTE: Make sure that the arrow on the end casting is pointing up from the base of the pump.

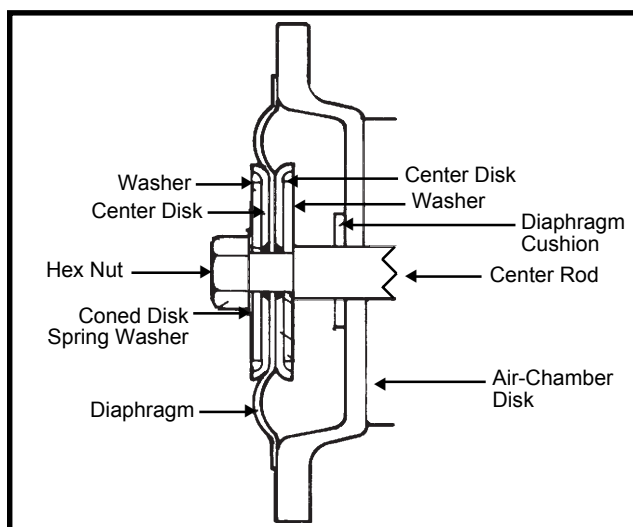


Figure 8: Diaphragm and Parts

NOTE: Make sure that the diaphragm is properly fitted between the air-chamber disk and the end casting.

15. Insert a screwdriver through the inlet or outlet port to the end of the rod that has been reassembled and push up on the end of the center rod to push the diaphragm up on the other side of the pump.

16. Repeat step 14 for the other end casting.

NOTE: For easier assembly, hold the pump in a vise with the other end casting.

17. Before the hex bolts (113) for each end casting are tightened, make sure that the end castings are rotated to the proper angles so that the manifolds align properly.

18. Tighten the bolts in a criss-cross fashion to a maximum torque of 7-1/2 ft.-lbs.

19. Attach the air valve unit (127) and its gasket (134) to the pump body (120) with six hex-head bolts (128).

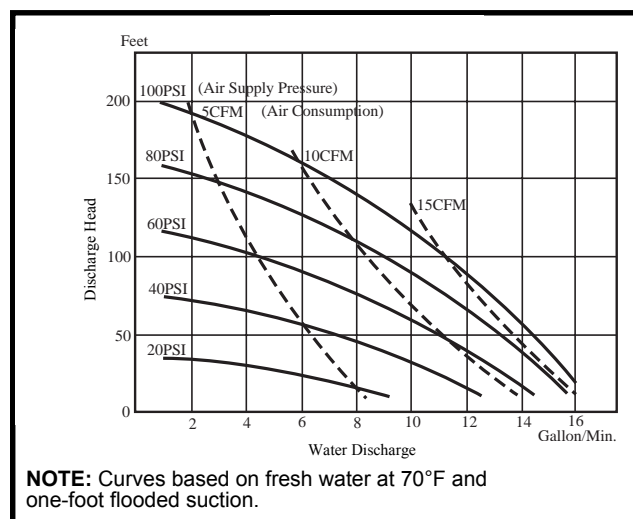
NOTE: Make sure that the reset button on the air valve unit is facing up. (It should be facing in the same direction as the arrows on the end castings.)

20. Tighten the bolts in a criss-cross fashion to a maximum torque of 20 ft. lbs.

21. Attach the air-inlet bushing (130), the ball valve (129) and the male adapter 328034 if they had been removed.

22. Reattach the muffler (135) to the pump body (120).

23. Reattach the inlet and outlet manifolds (126) and bases (133 and 138).



NOTE: Curves based on fresh water at 70°F and one-foot flooded suction.

Figure 9: Performance Curves for Diaphragm Pump

SYMPTOM	POSSIBLE CAUSE(S)	CORRECTIVE ACTION
Little or no flow	<ol style="list-style-type: none"> 1. Insufficient air supply. 2. Closed valve or clogged line. 3. Piping too small. 4. Spool valve stopped in neutral position. 5. Damaged spool valve. 6. Clogged diaphragm chamber. 7. Damaged diaphragm. 8. Incorrectly positioned and plumbed. 9. Clogged muffler. 	<ol style="list-style-type: none"> 1. Check air supply. 2. Open valve or remove restriction. 3. Increase piping size; should be at least one size larger than pump port. 4. Push Reset Button for manual start. 5. Repair or replace valve. 6. Clean diaphragm chamber. 7. Replace diaphragm. 8. Position pump with discharge at top and suction at bottom. Pump must be mounted horizontally. 9. Clean or replace muffler.
Pulsating flow	<ol style="list-style-type: none"> 1. Some pulsating flow is normal. 2. Clogged check valve. 3. Damaged check valve ball. 4. Damaged check valve seat. 5. Air leak in suction line. 6. Clogged discharge line. 7. Clogged diaphragm chamber. 	<ol style="list-style-type: none"> 1. None required. 2. Clean or replace. 3. Replace ball. 4. Replace seat. 5. Repair or replace. 6. Clean line. 7. Clean diaphragm chamber.
Unbalanced pumping	<ol style="list-style-type: none"> 1. Damaged diaphragm. 2. Damaged check valve ball. 3. Damaged check valve seat. 4. Damaged spool and detent. 	<ol style="list-style-type: none"> 1. Replace diaphragm. 2. Replace ball. 3. Replace seat. 4. Replace spool and detent.
Air exhaust from discharge	<ol style="list-style-type: none"> 1. Damaged diaphragm. 2. Air leak in suction line. 	<ol style="list-style-type: none"> 1. Replace diaphragm. 2. Repair or replace.
Liquid returns from inlet	<ol style="list-style-type: none"> 1. Damaged check valve ball. 2. Damaged check valve seat. 3. Viscosity of liquid too high. 4. Pump speed too fast. 	<ol style="list-style-type: none"> 1. Replace ball. 2. Replace seat. 3. Reduce pump speed. 4. Reduce pump speed.
Pump does not stop when discharge is closed	<ol style="list-style-type: none"> 1. Clogged check valve. 2. Damaged check valve ball. 3. Damaged check valve seat. 4. Air leak in suction line. 	<ol style="list-style-type: none"> 1. Clean or replace valve. 2. Replace ball. 3. Replace seat. 4. Repair or replace.
Abnormal sound in exhaust	Clogged diaphragm chamber.	Clean diaphragm chamber.

Table 1: Trouble-Shooting Chart

Minor Repair Kits

393630-175 Check Valves and Diaphragm Kit

Item No.	Part No.	Description	Qty.
101	393630-101	"O" Ring, 35.7 mm I.D. x 3.5 mm thick (Buna-N)	4
103	393630-103	Ball (Buna-N)	4
105	393630-105	"O" Ring, 34.4 mm I.D. x 3.1 mm thick (Buna N)	2
106	393630-106	Diaphragm (Buna N)	2

393630-176 Pilot-Valve Kit

Item No.	Part No.	Description	Qty.
115	393630-115	Pilot Valve with Spring and "O" Ring	2
116	393630-116	Body Gasket	2
117	393630-117	"O" Ring, 10.8 mm I.D. x 2.4 mm thick (Buna N)	2
119	393630-119	Spring	2

393630-177 Air-Valve Seal Kit

Item No.	Part No.	Description	Qty.
134	393630-134	Air-Valve Gasket	1
153	393630-153	"O" Ring, 7.8 mm I.D. x 1.9 mm thick (Buna-N)	1
155	393630-155	Top Gasket	1
156	393630-156	Rubber Packing	1
159	393630-159	"O" Ring, 23.6 mm I.D. x 2.6 mm thick (Buna-N)	6
164	393630-164	Bottom Gasket	1

393630-178 Center Rod Seal Kit

Item No.	Part No.	Description	Qty.
6	393630-6	"O" Ring, 21.7 mm I.D. x 3.1 mm thick (Buna-N)	2
116	393630-116	Body Gasket	2
122	393630-122	"O" Ring, 17.8 mm I.D x 2.4 mm thick (Buna-N)	2

393630-179 Spool Seal Kit

Item No.	Part No.	Description	Qty.
162	393630-162	Air-Valve Cushion	2
167	393630-167	Nut	1
169	393630-169	"C" Spring	2
170	393630-170	Spring Guide	1
171	393630-171	Cushion	1
173	393630-173	Seal Ring	5

393630-180 Sleeve Seal Kit

Item No.	Part No.	Description	Qty.
159	393630-159	"O" Ring, 23.6 mm I.D. x 2.6 mm thick (Buna-N)	6

393630-181 Inlet/Outlet Aluminum Valve Kit

Item No.	Part No.	Description	Qty.
102	393630-102	Ball Cage	4
104	393630-104	Valve Seat	4

PARTS LIST – Model 8302 Diaphragm Pump

Item No.	Part No.	Description	Qty.
● +	6	393630-6 "O" Ring, 21.7 mm I.D. x 3.1 mm thick (Buna-N)	2
	41	393630-41 Rubber Foot	4
● +	101	393630-101 "O" Ring, 35.7 mm I.D. x 3.5 mm thick (Buna-N)	4
● +	102	393630-102 Ball Cage	4
● +	103	393630-103 Ball (Buna-N)	4
● +	104	393630-104 Valve Seat	4
● +	105	393630-105 "O" Ring, 34.4 mm I.D. x 3.1 mm thick (Buna-N)	2
+	106	393630-106 Diaphragm (Buna-N)	2
● +	107	393630-107 Center Disk	4
+	108	393630-108 Washer, 2-1/2" O.D.	4
	109	393630-109 End Casting	2
+	110	393630-110 Hex Nut	2
+	111	393630-111 Coned Disk Spring Washer	2
+	112	393630-112 Hex-Head Bolt	8
+	113	393630-113 Hex-Head Bolt	12
+	114	393630-114 Air-Chamber Disk	2
● +	115	393630-115 Pilot Valve with spring and "O" ring	2
● +	116	393630-116 Body Gasket	2
● +	117	393630-117 "O" Ring, 10.8 mm I.D. x 2.4 mm thick (Buna-N)	2
	118	393630-118 Valve Seat	2
● +	119	393630-119 Spring	2
+	120	393630-120 Pump Body	1
	121	393630-121 Center-Rod Bushing	2
● +	122	393630-122 "O" Ring, 17.8 mm I.D. x 2.4 mm thick (Buna-N)	2
+	123	393630-123 Flat-Head Bolt with Lockwasher	8
	124	393630-124 Center Rod	1
	125	393630-125 Diaphragm Cushion (Buna-N)	2
	126	393630-126 Manifold	2
* +	127	393630-127 Air-Valve Unit	1
+	128	393630-128 Hex-Head Bolt, 7 x 75 x 1.25 mm	6
	129	393630-129 Ball Valve	1
+	130	393630-130 Air-Inlet Bushing	1
+	131	393630-131 Hex-Head Bolt	4
+	132	393630-132 Lock Nut	4
+	133	393630-133 Base	1
●	134	393630-134 Air-Valve Gasket	1
	135	393630-135 Muffler	1
+	136	393630-136 Hex-Head Bolt	1
+	137	393630-137 Ground Strap	1
+	138	393630-138 Base	1

- Repair-Kit Part
- * See Separate Parts List
- + Not available as a separate purchased part

PARTS LIST – Air Valve Unit

Item No.	Part No.	Description	Qty.
+	151	393630-151 Hex-Head Bolt, 5.25 x 32 x 1.0 mm	4
+	152	393630-152 Top Cap	1
● +	153	393630-153 "O" Ring, 7.8 mm I.D. x 1.9 mm thick (Buna-N)	1
+	154	393630-154 Reset Button	1
● +	155	393630-155 Top Gasket	1
● +	156	393630-156 Rubber Packing	1
+	157	393630-157 Special Washer	1
+	158	393630-158 Spool-Valve Assembly	1
● +	159	393630-159 "O" Ring, 23.6 mm I.D. x 2.6 mm thick (Buna-N)	6
+	160	393630-160 Sleeve	1
+	161	393630-161 Air-Valve Body	1
● +	162	393630-162 Air-Valve Cushion (Plastic)	1
+	163	393630-163 Lantern Ring (Plastic)	1
● +	164	393630-164 Bottom Gasket	1
+	165	393630-165 Bottom Cap	1
+	166	393630-166 Hex-Head Bolt, 5.25 x 16 x 1.0 mm	4
* ● +	167	393630-167 Nut	1
* +	168	393630-168 Bushing	1
* ● +	169	393630-169 "C" Spring	2
* ● +	170	393630-170 Spring Guide	1
* ● +	171	393630-171 Cushion	1
* +	172	393630-172 Spool	1
* ● +	173	393630-173 Seal Ring	5

● Repair-Kit Part

+ Not available as a separate purchased part

* These parts make up the Spool-Valve Assembly (393630-158)

NOTE: The parts listed in this instruction sheet are for reference identification in the instructions and illustrations. Some of them are not available as separate parts and these are noted in the parts list. Refer to the current parts price list and bulletins before ordering parts, and always give the part number, quantity, description and model where used when ordering parts. Parts availability and prices are subject to change without notice.

PARTS CHANGES SINCE LAST PRINTING

Deleted Air Coupler