



SERVICE INSTRUCTIONS

Material Pumps

**7835-C1
7835-DTR1**

DESCRIPTION

The 7835 Series of air operated pumps are designed to move a broad spectrum of fluid products. The pumps have a ratio of 5:1, meaning product pressure will be 5 times greater than the air pressure used.

The air motor is isolated from the pump tube assembly, eliminating any possible damage to the air motor from the product being pumped. A compatibility chart should always be consulted to determine that the pump will move the product without adverse effects.

The 7835-C1 includes a 2" bung adapter for mounting into a variety of different container sizes. It is also a "stubby" (short overall height) with a threaded 1 1/2" NPTF material inlet, allowing it to be attached to extension tubes or a variety of plumbing arrangements. The fluid wetted path includes Buna "n" packings and nickel plated steel.

The description of the 7835-DTR1 is similar to the 7835-C1 with the following exceptions:

1. Teflon packings in the fluid wetted path.
2. Tube length to accommodate a 55 Gallon or 205 Ltr. container.
3. Foot valve (fluid inlet) is unthreaded.

**FOR AIR MOTOR SERVICE,
SEE SER 338905 SERVICE INSTRUCTIONS.**

SAFETY PRECAUTIONS

These safety precautions should be followed at all times.

1. Read all instructions sheets and any other explanatory material before attempting to install, service, or operate the system.
2. DO NOT exceed the pressure rating of any component in the system.
3. Protect all air, material, and supply lines from damage or puncture. Keep all lines and hoses away from hot machinery, moving parts, and cramped areas where damage may occur from flexing or twisting.

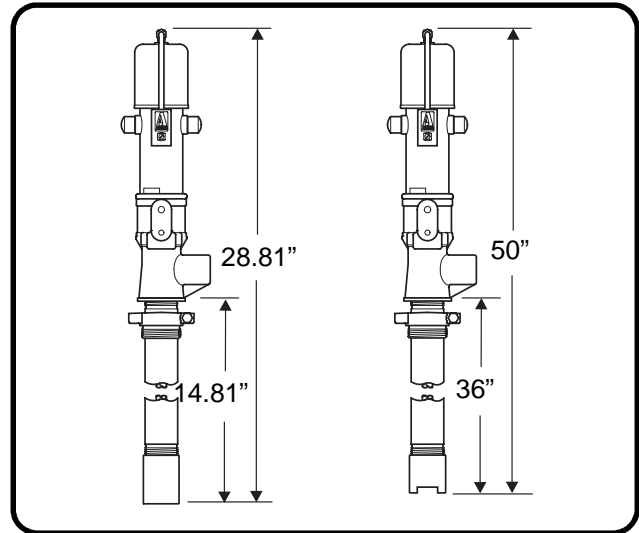


Figure 1: Model 7835-C1 and 7835-DTR1

4. Check all hoses for wear or damage prior to daily operation. Make sure all connections and fittings are secure.
5. Shut down the system and relieve all pressures before servicing any component in the system.
6. Never point the dispensing system at anyone. Accidental discharge can result in serious injury.
7. Never install a low-pressure air hose in any part of the pump's distribution system.

SPECIFICATIONS

Pump Ratio	5:1
Weight:	
Model 7835-DTR1	33 lbs. (15 kgs.)
Model 7835-C1	27 lbs. (12.25 kgs.)
Air Inlet	1/4" NPSI (f)
Material Inlet	1-1/2" NPTF (f) (7835-C1 Only)
Material Outlet	3/4" NPTF (f)
Maximum Operational Air Pressure.....	200 psi (13.6 bar)
Maximum Material Pressure	1000 psi (68 bar)

FOR FURTHER SERVICE, CONTACT YOUR LOCAL ALEMITE DISTRIBUTION CENTER



ALEMITE CORPORATION
167 Rowland Drive, Johnson City, Tennessee 37601

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SER 7835-C1 (5-04)

OPERATION

1. Attach pump to drum or pail and fasten securely.
2. Connect hose and control device (accessories).
 - A. Attach a material hose to the material outlet of the pump casting.
 - B. Attach other end of the material hose to the material inlet of a suitable control device. Hose inner liner must be compatible with product being pumped.
3. Attach male adapter 328034 to the air inlet (See Figure 2).

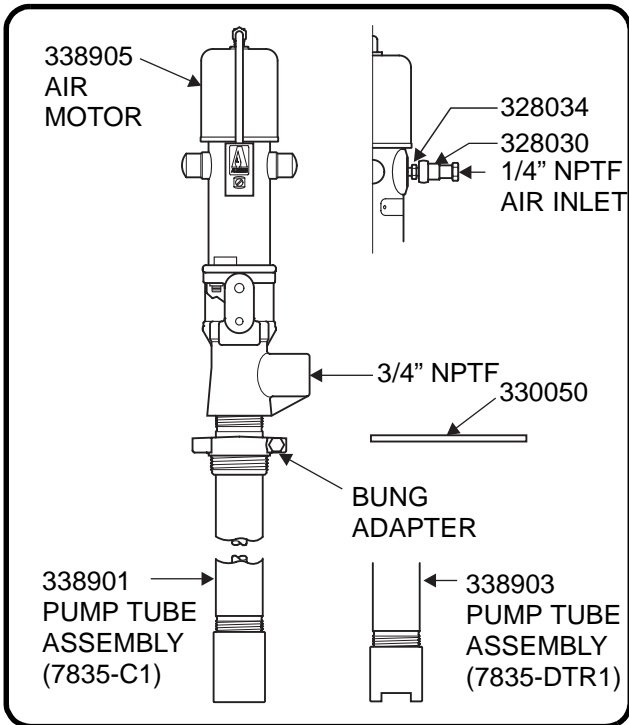


Figure 2: Models 7835-C1 and 7835-DTR1

4. Attach air coupler 328030 to the air supply line.
5. Attach the air coupler to the male adapter.
6. Allow the pump to operate until it stalls against pressure.

CAUTION

Do not run the pump dry. Check the material level before using.

NOTE

Due to the friction of new packings, pump may not develop full pressure until it has run for ten minutes.

7. To achieve maximum efficiency, adjust packing nut 321625 occasionally. Use adjustment bar 330050 (shipped loose). Packing nut should be snug but not overtight. (See Figure 3.)

NOTE

This adjustment should be made after the first half hour of operation.

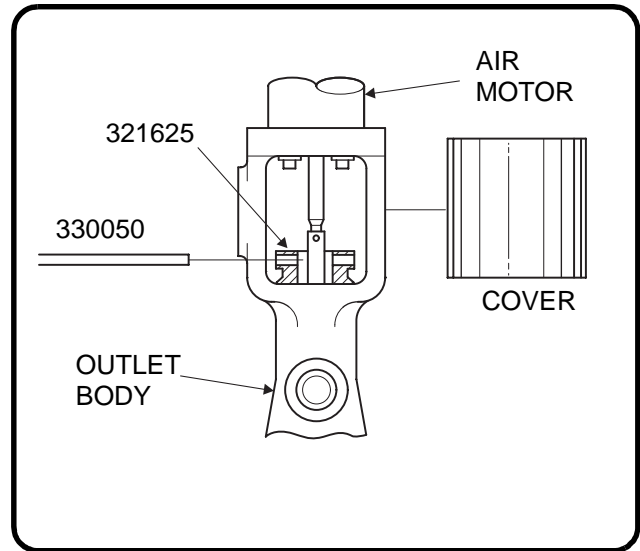
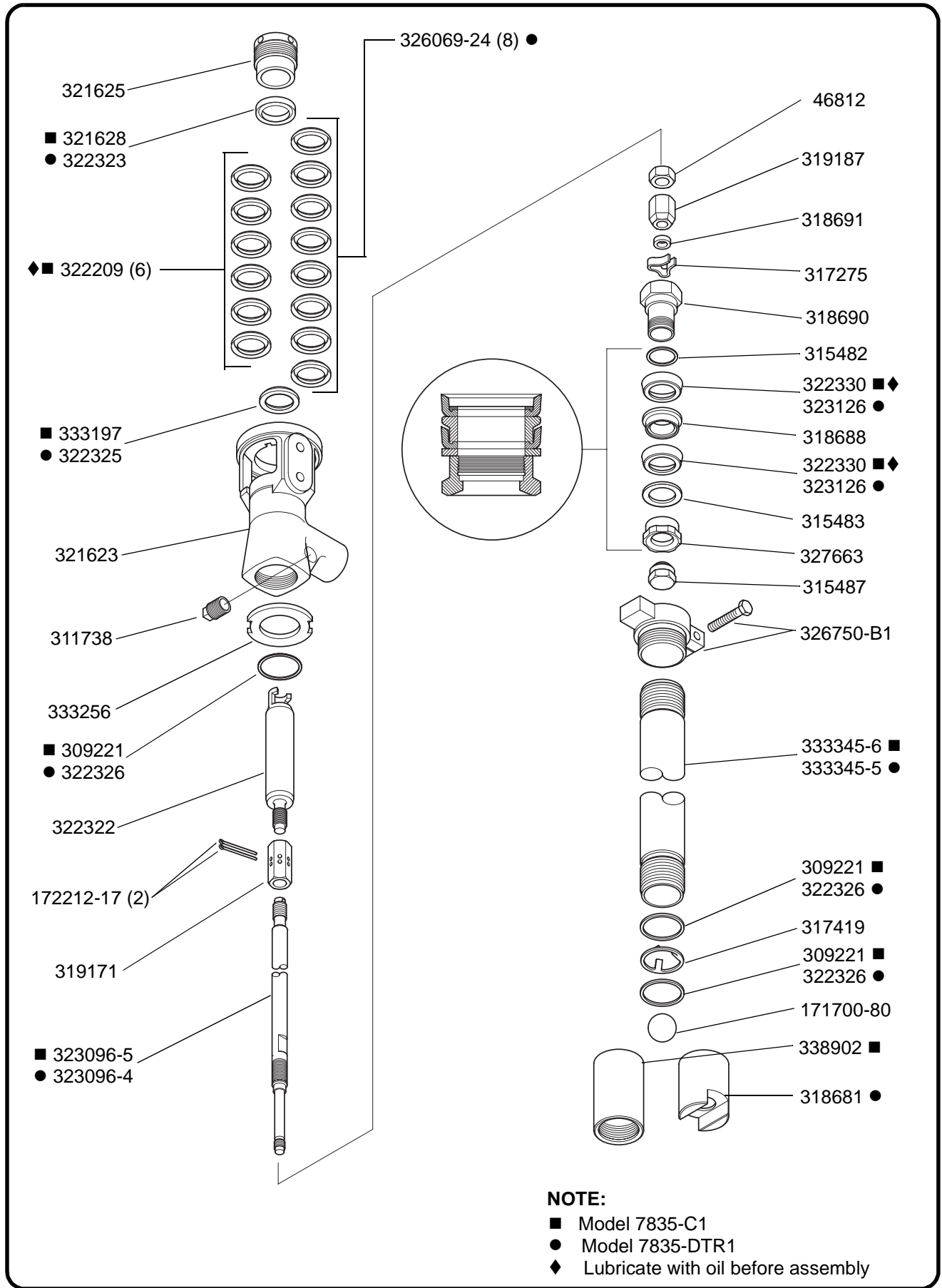


Figure 3: Tightening Packing Nut

CLEANING PROCEDURE

As a precautionary measure, clean the unit completely before shutting down the pump for any length of time or when a basic material change is made. The following dismantling and cleaning procedure is recommended at least once a week.

1. Remove the pump from the material container and insert the foot valve in a bucket of solvent.
2. Allow the pump to operate for approximately five minutes, circulating solvent through the pump mechanism, hose, and control device.
3. Remove pump from solvent. Depress the control device trigger allowing it to expel solvent from within the pump and material hose. Detach the air coupler.



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Figure 4: Pump Tube Assembly

SERVICE DIAGNOSIS



CAUTION

Before servicing pump assemblies or accessories, always disconnect air coupler at air motor and reduce system pressure to zero.

If pump does not operate properly, check the following points:

1. Inadequate air pressure.
2. Insufficient material in drum.
3. Foreign material lodged in check valves and seat of the lower pump mechanism.
4. Worn or damaged parts in the pump.



CAUTION

Worn or damaged parts represent a potential threat to people and property. Do not reuse worn or damaged parts, under any circumstances.

5. Worn piston “packings” in pump body or on the cylinder.
6. Worn or damaged parts in the air motor.
7. Improper packing adjustment.
8. Obstruction in the material line or the nozzle of control device.
9. Clogged pump tube.

SERVICE

**FOR AIR MOTOR SERVICE,
SEE SER 338905 SERVICE INSTRUCTIONS.**



CAUTION

Worn or damaged parts present a threat to personnel and property. REPLACE any worn or damaged parts.



CAUTION

Before servicing pump assemblies or accessories, always disconnect air coupler at air motor and reduce system pressure to zero.

FOOT VALVE ASSEMBLY Models 7835-C1 and 7835-DTR1

1. Unthread the foot valve body 338902 or 318681 from the pump tube. Remove the stop washer 317419, ball 171700-80, and gaskets 309221 or 322326.
2. Clean the stop washer, ball, and ball seat in the foot valve body.
3. Inspect the parts and replace worn or damaged parts. Always replace the gaskets with new ones.
4. Reassemble the foot valve body and attach the foot valve body to the pump tube.

PISTON AND VALVE ASSEMBLY Models 7835-C1 and 7835-DTR1

1. Loosen the bung adapter screw and slide bung adapter 326750-B1 away from jam nut 333256.
2. Loosen jam nut and detach cylinder 333345-6 or 333345-5 from the outlet body 321623. Slide cylinder off piston and remove upper gasket 309221 or 322326.
3. Loosen jam nut 46812 while holding stop nut 319187 with a wrench.
4. Secure flats of rod and insert assembly 323096-5 or 323096-4 with a wrench and remove valve seat 315487.
5. Unscrew valve body 327663 from adapter 318690 then remove washer 315483, nitrile rubber cup packing 322330 (or teflon cup packing 323126), spacer 318688, nitrile rubber cup packing 322330 (or teflon cup packing 323126), washer 315482, adapter 318690, spacers 317275 and 318691, stop nut 319187 and jam nut 46812.

NOTE

Upon reassembly, screw jam nut on fully, install stop nut tight against stop on rod then tighten jam nut against stop nut. Also, install washer 315482 with stepped side against cup packing.

6. Clean all parts, inspecting for wear or damage. Discard parts that have replacements in repair kits.

NOTE

Lubricate packings with oil before assembly.

7. Reassemble by reversing steps 1 through 5.

PACKINGS IN PUMP CASTING Models 7835-C1 and 7835-DTR1

1. Remove snap-on cover 321639 from around the casting 321623.

2. Remove socket head cap screws 171604 and washers 380667 that hold the air motor and pump casting together.
3. Carefully pull air motor away from pump tube assembly until coupler is above pump casting 321623. Slide air motor to the side to disengage coupler from packing rod.

Model 7835-C1 (See next section for Model 7835-DTR1)

4. Unthread tube 333345-6 from pump casting 321623 by using a wrench on the tube knurling. Pull tube off piston.
5. Carefully pull rod and insert assembly 323096-5 and packing rod 322322 out of packings 322209 in the pump casting.
6. Unthread packing nut 321625.
7. Remove worn packings and replace with new packings.
 - a. Place male adapter ring 333197 into the casting with the flat side down.

NOTE

Lubricate packings with oil before assembly.

- b. Place the six "V" packings 322209 into the casting one-by-one with the cupped side down. Press in snug.
 - c. Place female adapter ring 321628 into the casting with the cupped side down.
8. Rethread packing nut 321625 finger-tight.
9. Carefully insert packing rod 322322 and rod and insert assembly 323096-5 (packing rod end first) into the packing assembly of the pump casting.
10. Replace gasket 309221. Slide pump tube 333345-6 over the piston assembly and rethread it into the pump casting.
11. Secure pump in vise and mount air motor 338905. Secure with the three hex head cap screws 171604 and washers 380667.
12. Adjust packing nut 321625 (see OPERATION).
13. Replace snap-on cover 321639.
14. Reassemble pump accessories.

Model 7835-DTR1

4. Unthread tube 333345-5 from pump casting 321623 by using a wrench on the tube knurling. Pull tube off piston.
5. Carefully pull rod and insert assembly 323096-4 and packing rod 322322 out of packings 326069-24 in the pump casting.
6. Unthread packing nut 321625.
7. Remove worn packings and replace with new packings.

- a. Place male adapter ring 322325 into the casting with the flat side down.

NOTE

Lubricate all "O" rings, seals and packings with oil.

- b. Place the eight "V" packings 326069-24 into the casting one-by-one with the cupped side down. Press in snug.
 - c. Place female adapter ring 322323 into the casting with the cupped side down.
8. Rethread packing nut 321625 finger-tight.
9. Carefully insert packing rod 322322 and rod and insert assembly 323096-4 (packing rod end first) into the packing assembly of the pump casting.
10. Replace gasket 322326. Slide pump tube 333345-5 over the piston assembly and rethread it into the pump casting.
11. Secure pump in vise and mount air motor 338905. Secure with the three hex head cap screws 171604 and washers 380667.
12. Adjust packing nut 321625 (see OPERATION).
13. Replace snap-on cover 321639.
14. Reassemble pump accessories.

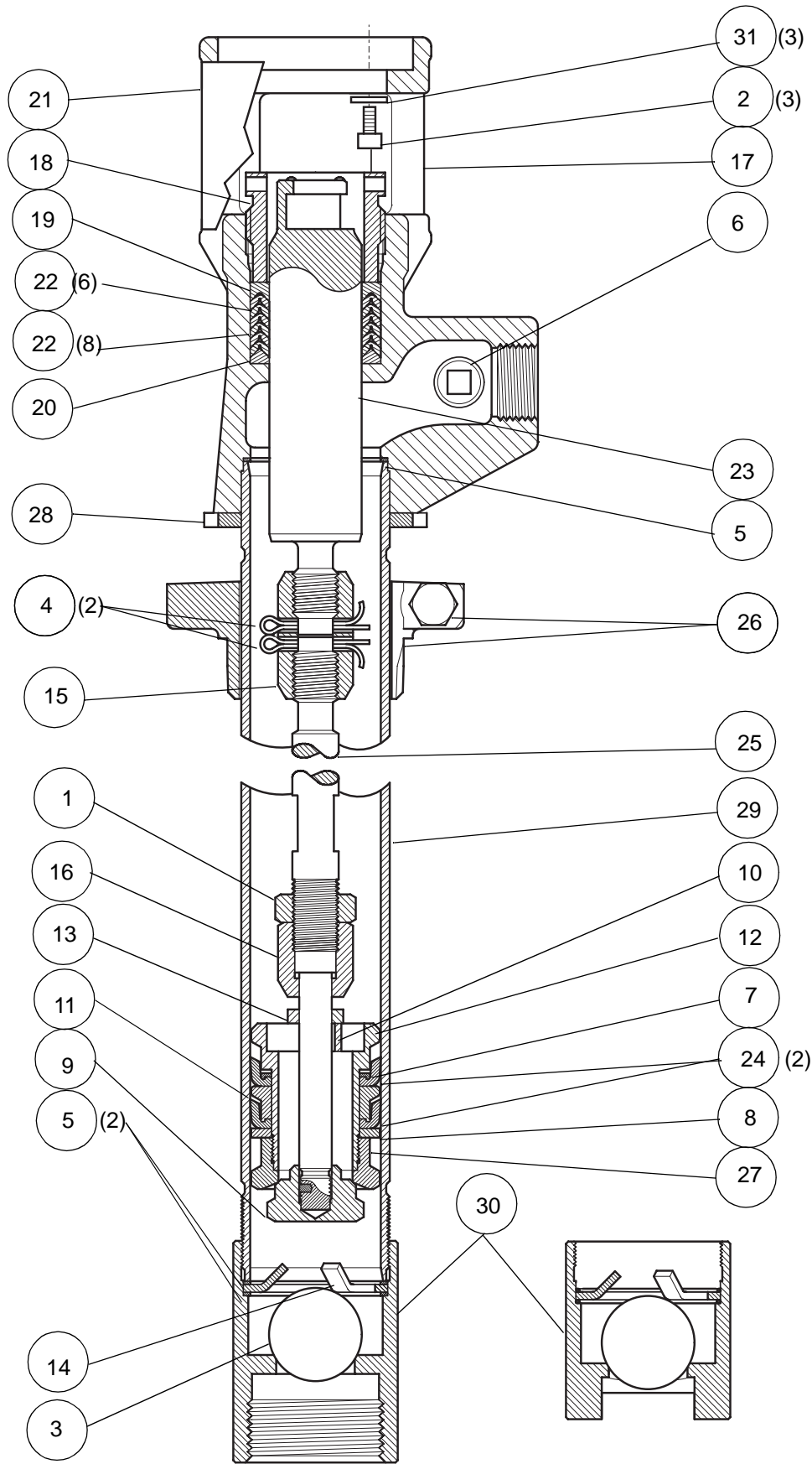


Figure 5: Pump Tube Assembly

PARTS LIST - Model 7835-C1 and 7835-DTR1

Item	Part No. 7835-C1	Part No. 7835-DTR1	Description	Qty
1	46812 ■	46812 ■	JAM NUT, 5/8 - 18 (Nickel-Plated Steel)	1
2	171604	171604	HEX SOCKET HEAD CAP SCREW, 1/4-20 x 7/8" Long (Steel)	3
3	171700-80 ◆ ■	171700-80 ◆ ■	BALL, 1-1/4" Diameter (Steel)	1
4	172212-17 ◆ ■	172212-17 ◆ ■	COTTER PIN, 1/8" Diameter X 1-1/4" Long (Steel)	2
5	309221 ◆ ● ■		GASKET, 1-3/4" I.D. X 1-15/16" O.D. (Copper)	3
5		322326 ◆ ● ■	GASKET, 1-3/4" I.D. X 1-15/16" O.D. (Stainless Steel)	3
6	311738 ■	311738 ■	SQUARE-SOCKET PIPE PLUG, 3/8" NPT (Zinc-Plated Steel)	1
7	315482 ■	315482 ■	WASHER, 1-3/16" I.D. X 1-15/32" O.D. (Nickel-Plated Steel)	1
8	315483 ■	315483 ■	WASHER, 1-3/16" I.D. X 1-47/64" (Brass)	1
9	315487 ◆ ■	315487 ◆ ■	VALVE SEAT, (Nickel-Plated Steel)	1
10	317275 ◆ ■	317275 ◆ ■	SPACER, 3/8" Thick (Nickel-Plated Steel)	1
11	318688 ■	318688 ■	SPACER, (Nickel-Plated Steel)	1
12	318690 ■	318690 ■	ADAPTER, (Nickel-Plated Steel)	1
13	318691 ■	318691 ■	SPACER, 3/4" O.D. X 3/16" Thick (Nickel-Plated Steel)	1
14	317419 ◆ ■	317419 ◆ ■	STOP WASHER, (Stainless Steel)	1
15	319171 ■	319171 ■	COUPLING, (Nickel-Plated Steel)	1
16	319187 ■	319187 ■	STOP, (Nickel-Plated Steel)	1
17	321623 ■	321623 ■	OUTLET BODY (Nickel-Plated Steel)	1
18	321625 ■	321625 ■	PACKING NUT, (Zinc-Plated Steel)	1
19	321628 ◆ ■		FEMALE ADAPTER RING, (Aluminum)	1
19		322323 ◆ ■	FEMALE ADAPTER RING, (Stainless Steel)	1
20	333197 ■		MALE SUPPORT RING, (Brass)	1
20		322325 ■	MALE ADAPTER RING, (Stainless Steel)	1
21	321639 ◆ ■	321639 ◆ ■	COVER (Zinc-Plated Steel)	1
22	322209 ◆ ● ■		CHEVRON PACKING, 1-1/4" I.D. X 1-3/4" O.D. (Nitrile Rubber Coated Duck)	6
22		326069-24 ◆ ● ■	CHEVRON PACKING, 1-1/4" I.D. X 1-3/4" O.D. (Glass-Filled Teflon)	8
23	322322 ■	322322 ■	PACKING ROD, (Stainless Steel)	1
24	322330 ◆ ● ■		CUP PACKING, 1-3/16" I.D. X 1-3/4" O.D. (Nitrile Rubber Coated Duck)	2
24		323126 ◆ ● ■	CUP PACKING, 1-3/16" I.D. X 1-3/4" O.D. (Glass-Filled Teflon)	2
25	323096-5 ■		ROD-AND-INSERT ASSEMBLY, 9-11/16" Long (Nickel-Plated Steel)	1
25		323096-4 ■	ROD-AND-INSERT ASSEMBLY, 31-11/16" Long (Nickel-Plated Steel)	1
26	326750-B1 ■	326750-B1 ■	BUNG ADAPTER, (Nickel-Plated Cast Iron)	1
27	327663 ◆ ■	327663 ◆ ■	VALVE BODY, (Nickel-Plated Steel)	1
	328030	328030	AIR COUPLER	1
	328034	328034	MALE ADAPTER	1
	330050	330050	ADJUSTMENT BAR	1
28	333256 ■	333256 ■	JAM NUT, 2-16 UN (Zinc-Plated Steel)	1
29	333345-6 ■		CYLINDER, 13" Long (Nickel-Plated Steel)	1
29		333345-5 ■	CYLINDER, 35" Long (Nickel-Plated Steel)	1
30	338902 ■		FOOT-VALVE BODY, 3.0" Long (White Nickel-Plated Steel)	1
30		318681 ■	FOOT-VALVE BODY, 2-5/16" (White Nickel-Plated Steel)	1
	**338905	**338905	AIR MOTOR	1
31	380667	380667	WASHER, 1/4" I.D. X 9/16" O.D. (Zinc-Plated Steel)	3

** See parts list in SER 338905 Service Instructions

■ 338901 (7835-C1) and 338903 (7835-DTR1) Tube-and-Rod Assembly

◆ 398654-2 Buna-N (7835-C1) and 393659 Teflon (7835-DTR1) Major Repair Kit

● 393661 Buna-N (7835-C1) and 323590-3 Teflon (7835-DTR1) Packing Kit (Minor Repair Kit)

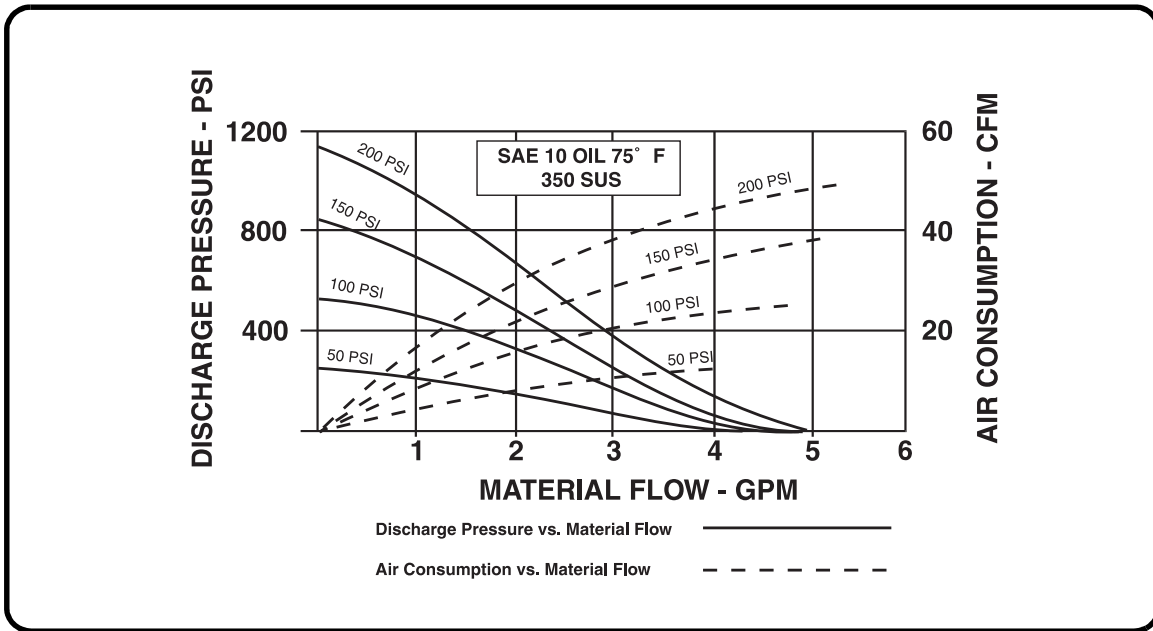


Figure 6: Performance Curves

PARTS MAKEUP FOR THE 7835 SERIES MATERIAL PUMPS AND REPAIR KITS

The 7835-C1 material pump includes the 338901 tube-and-rod assembly and the 338905 air motor. This material pump uses the 398654-2 major Buna"N" repair kit and the 393661 minor Buna"N" repair kit.

The 7835-DTR1 material pump includes the 338903 tube-and-rod assembly and the 338905 air motor. This material pump uses the 393659 major Teflon repair kit and the 393590-3 minor Teflon repair kit.

The Buna"N" and Teflon repair kits are interchangeable for the 7835 series material pumps. The repair kits used by the 338901 and 338903 tube-and-rod assemblies can be used in either assembly.

CHANGES SINCE LAST PRINTING

Changed Stop Washer 318866 to 317419