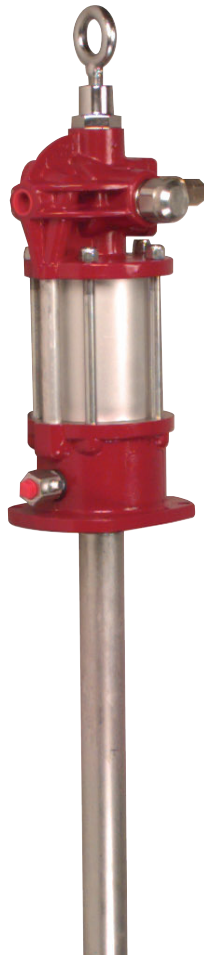


#### Description

The major components of the pump models in the 7785 series consist of an air-operated motor and a pump tube. The air motor connects directly to the double-acting reciprocating pump tube. These high-pressure grease pumps are designed to deliver a range of greases (up to NLGI # 3) and operate directly from their original drums or bulk containers.\* Each pump model is designed with a pump tube length to accommodate different size containers. See Figure 1.



#### Specifications

##### Air Motor

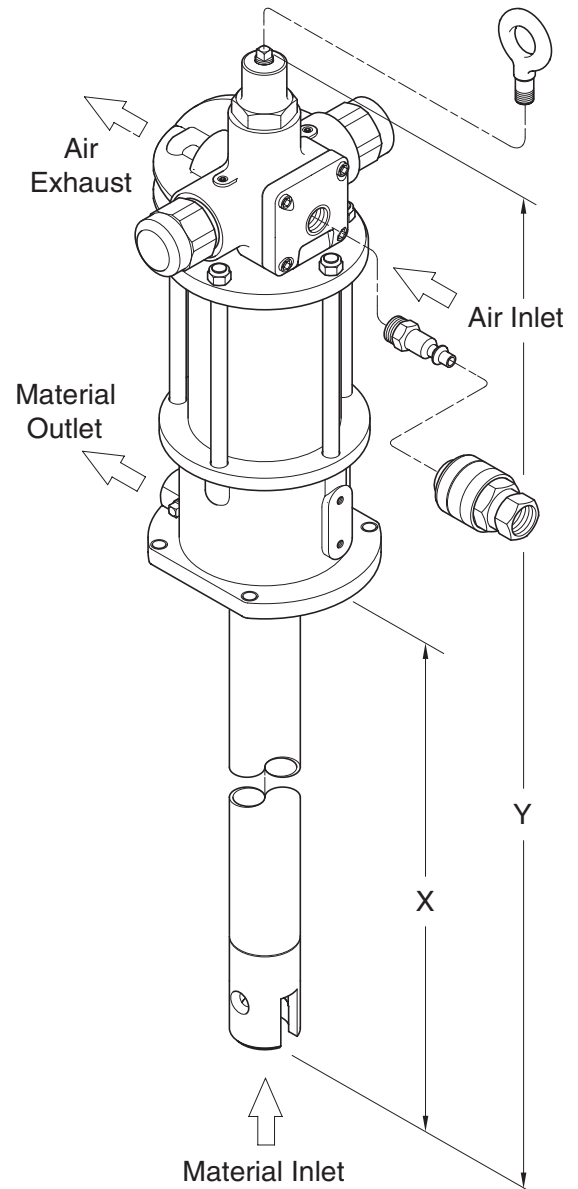
Piston Diameter / Stroke		Air Inlet / Outlet	Max. Air Pressure		Material Outlet
Inches	Centimeters		psi	Bars	
4-1/4 / 4	10.8 / 10.2	3/4 " NPTF (f)	200	14	1/2 " NPTF (f)

For information on the air motor, refer to Service Guide SER 323440-4

##### Pump Tube

Ratio	Max. Material Pressure		Delivery/Minute (Approximate)*		Displacement/Cycle	
	psi	Bars	Pounds	Kilograms	Inches <sup>3</sup>	Centimeters <sup>3</sup>
40:1	8,000	552	13	6	2.45	40.15

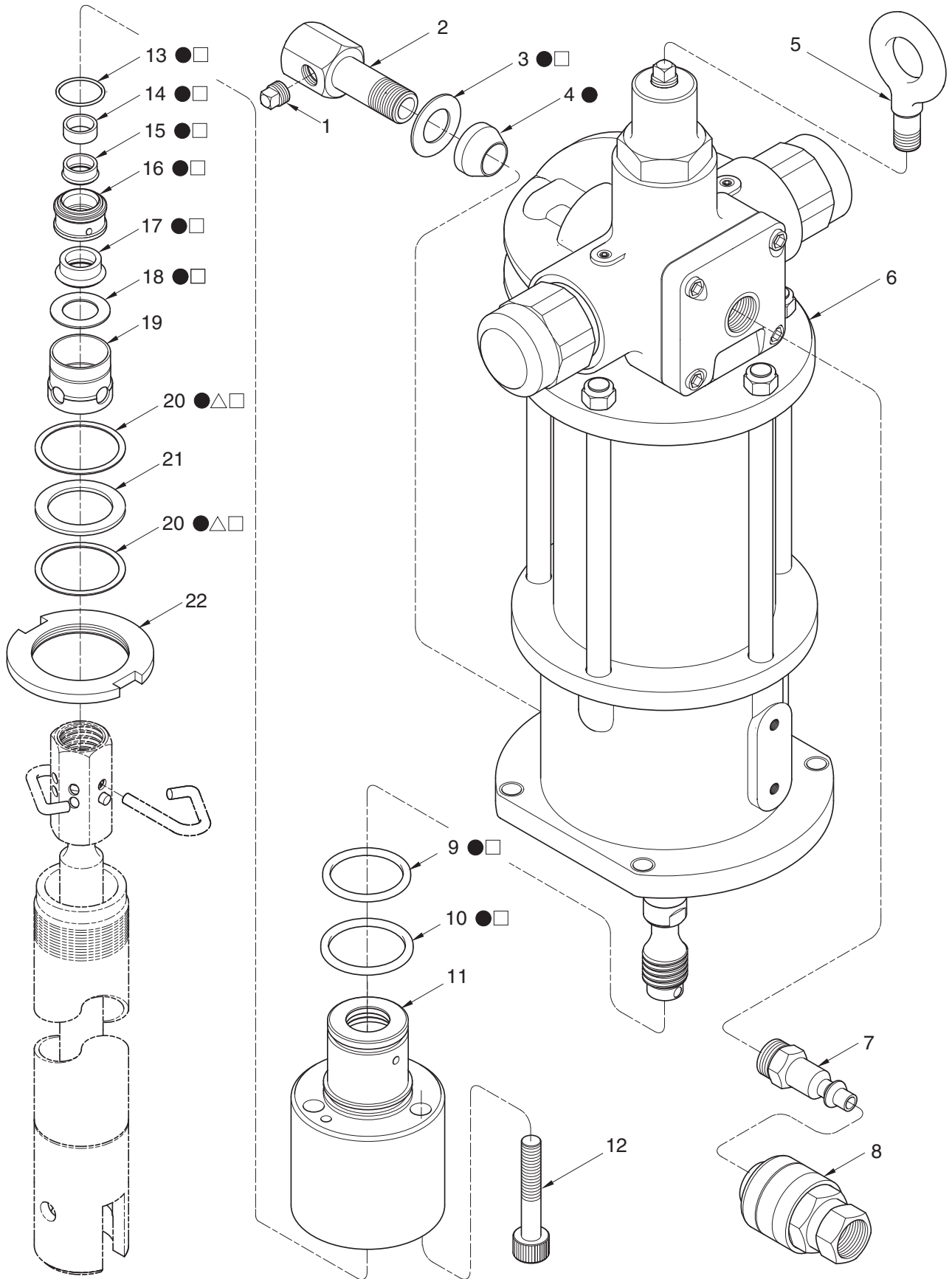
\* For detailed information, refer to **Figure 3**



Pump Model	Container Size		Model Weight		X		Y	
	lbs	kg	lbs	kg	Inches	Cm	Inches	Cm
7785-A5	400	180	77	35	33-1/8	84	52-1/4	133
7785-B5	120		72	33	25-5/8	65	44-3/4	114

**Figure 1** High-Pressure Grease Pump

# Parts And Drawing Breakdown For The 7785-A5



**Figure 2-A** High-Pressure Grease Pump Model 7785 Series - Exploded View

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TEL: (09) 447 1007  
FAX: (09) 447 1008

# Parts And Drawing Breakdown For The 7785-A5

Item No.	Part No.	Description	Qty	Notes	Numeric Order Part # (Item #)
1	10522	Plug, Square Head Pipe, 1/4 " NPTF (m)	1		10522 (1)
2	327706	Adapter, 1/2 " NPTF (m)	1		171009-13 (13)
3	323419	Washer, 1.29 " OD	1	● □	171009-33 (9)
4	324274	Bushing (Rubber)	1	●	171009-35 (10)
5	323842	Bolt, Eye, 3/8 " NPTF (m)	1		172190-5 (15)
6		Motor Assembly, Air	1	See SER <b>323440-4</b>	172190-6 (17)
7	328037	Connector, 3/4 " NPTF (m)	1		323419 (3)
8	328031	Coupler Air, 1/2 " NPTF (f)	1		323440-4 (6)
9	171009-33	O-Ring, 1-13/16" ID x 2 " OD	1	● □	323693 (20)
10	171009-35	O-Ring, 1-15/16" ID x 2-1/8 " OD	1	● □	323786 (11)
11	323786	Body	1		323787 (12)
12	323787	Screw, Cap, Socket Head, 1/2 " - 13	3		323842 (5)
13		O-Ring, 1-3/16" ID x 1-5/16 " OD	1	● □	324274 (4)
14		Spacer	1	● □	327706 (2)
15		Seal, 0.812 " ID x 1.062 " OD	1	● □	328031 (8)
16		Ring, Lantern (Brass)	1	● □	328037 (7)
17		Seal, 0.812 " ID x 1.562 " OD	1	● □	332465 (21)
18	337361	Washer, 1.55 " OD	1	● □	332466 (19)
19	332466	Spacer	1		333256 (22)
20	323693	Gasket (Aluminum)	2	● △ □	337361 (18)
21	332465	Washer, 1.93 " OD	1		337362 (16)
22	333256	Nut, Jam, 2.00 - 16 UN - 2B	1		337363 (14)

**Legend:**  
 Part numbers left blank (or in *italics*) are not available separately  
 ● △ □ designates a repair kit item

## Repair Kits

Part No.	Kit Symbol	Description	Notes
<b>398988-2</b>	●	Kit, Major Repair	Includes items on <b>Figure 2-A</b> and <b>2-B</b>
<b>393622</b>	△	Kit, Minor Repair (for Pump Tube Assembly)	Includes items on <b>Figure 2-A</b> and <b>2-B</b>
<b>393040-1</b>	□	Kit, Minor Repair (for Body and Seal Group)	
393530-5		Kit, Seal [includes five (5) of item number <b>15</b> ]	
393530-6		Kit, Seal [includes five (5) of item number <b>17</b> ]	

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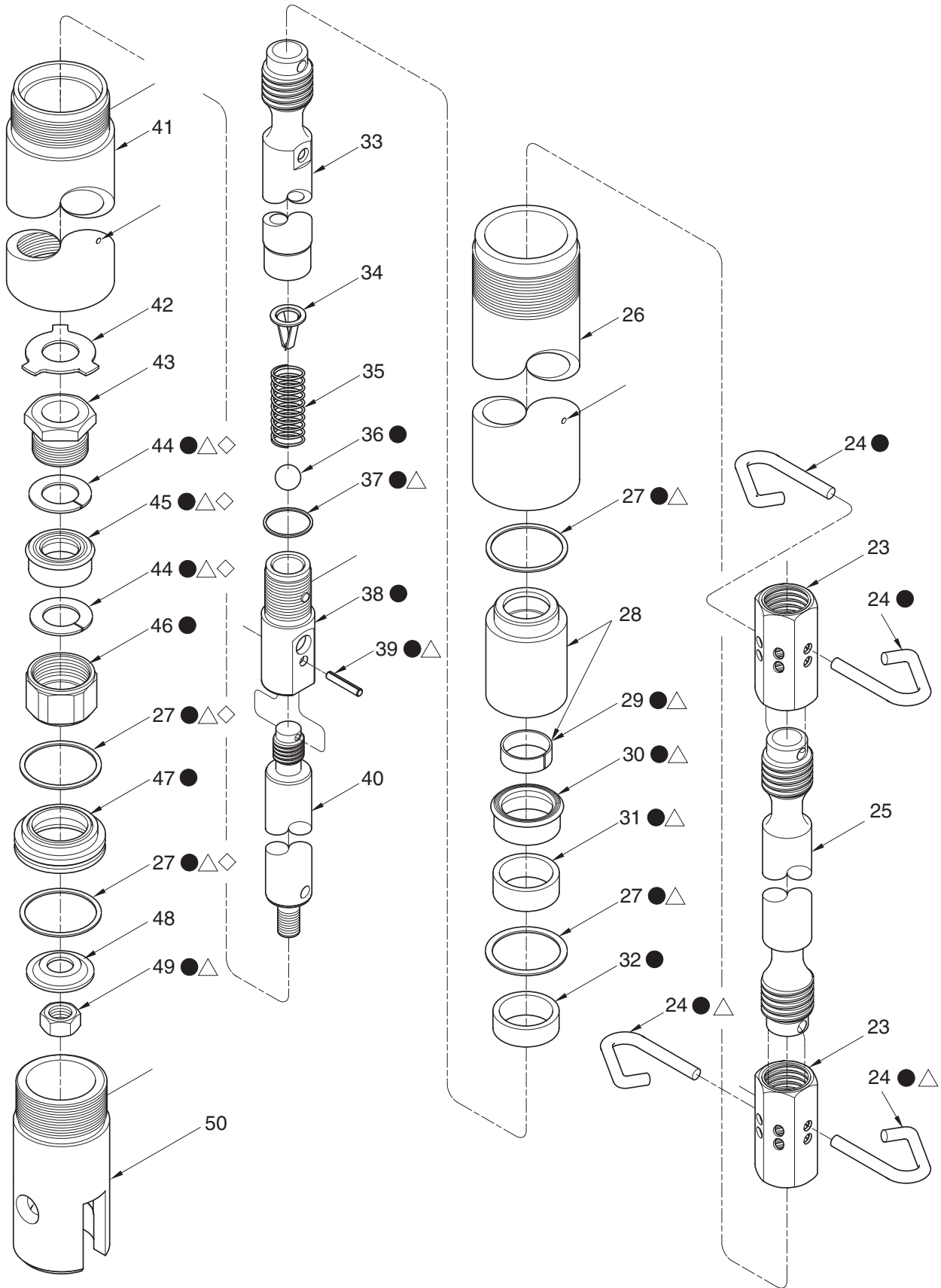
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# Parts And Drawing Breakdown For The 7785-A5



**Figure 2-B** High-Pressure Grease Pump Model 7785 Series - Exploded View

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# Parts And Drawing Breakdown For The 7785-A5

Item No.	Part No.	Description	Qty	Notes	Numeric Order Part # (Item #)
23	323439	Coupling	2		18850 (49)
24	324648	Clip, Spring	4	● △	50666 (37)
25	323438-22	Rod, Pump Tube, 13.25 " Long	1	Model 7785-A5	131402 (27)
	323438-23	Rod, Pump Tube, 5.75 " Long	1	Model 7785-B5	131398-1 (47)
26	333257-1	Tube, Pump, 22.25 " Long	1	Model 7785-A5	171032-9 (39)
	333257-3	Tube, Pump, 14.75 " Long	1	Model 7785-B5	171700-32 (36)
27	131402	Gasket, 1.68 " OD (Aluminum)	4	● △ ◇	172190-8 (45)
28	337380	Barrel Assembly	1		172190-7 (30)
29		Ring, Wear (Glass-Reinforced Nylon)	1	● △	323438-22 (25)
30		Seal, 1.00 " ID x 1.375 " OD	1	● △	323438-23 (25)
31		Bearing (Brass)	1	● △	323439 (23)
32		Spacer	1	●	323717 (34)
33	332246	Piston	1		323732 (38)
34	323717	Stop, Ball	1		323734 (48)
35	327705	Spring, 1-1/2 " Long Straight	1		323738 (46)
36		Ball, 1/2 " Dia.	1	●	323741 (43)
37	50666	Washer, 0.87 " OD (Aluminum)	1	● △	323742 (42)
38	323732	Adapter and Insert Assembly	1	●	323747-2 (41)
39	171032-9	Pin, Roll, 3/32 Dia. x 3/4 " Long	1	● △	324648 (24)
40	333342	Rod, Primer	1		327705 (35)
41	323747-2	Adapter	1		332246 (33)
42	323742	Washer, Guide	1		333085 (50)
43	323741	Screw, 1.00 "	1		333257-1 (26)
44		Washer, 0.93 " OD (Nylon)	2	● △ ◇	333257-3 (26)
45		Seal, 0.50 " ID x 0.950 " OD	1	● △ ◇	333342 (40)
46	323738	Body, Valve	1	●	337376 (32)
47	131398-1	Seat, Valve	1	●	337377 (31)
48	323734	Plate	1		337378 (44)
49	18850	Nut, Elastic Stop, 1/4 " - 28	1	● △	337379 (29)
50	333085	Body, Primer	1		337380 (28)

## Legend:

Part numbers left blank (or in *italics* ) are not available separately

● △ ◇ designates a repair kit item

## Repair Kits

Part No.	Kit Symbol	Description	Notes
<b>398988-2</b>	●	Kit, Major Repair	Includes items on <b>Figure 2-A</b> and <b>2-B</b>
<b>393622</b>	△	Kit, Minor Repair (for Pump Tube Assembly)	Includes items on <b>Figure 2-A</b> and <b>2-B</b>
<b>394077-1</b>	◇	Kit, Minor Repair (for Lower Pump Tube Packing)	
393530-7		Kit, Seal [includes five (5) of item number <b>30</b> ]	
393530-8		Kit, Seal [includes five (5) of item number <b>45</b> ]	

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# Parts And Drawing Breakdown For The 7785-A5

## Accessories

Model Number	Air Hose	Material Hose	Follower	Cover	Union	Bung Adapter	Muffler
7785-A5	317811-5	317882-7	338912	323847-4	321155	326750-B1	324170
7785-B5			338804	323800-4			

Table 2 7785 Model Series Accessories

## Preventive Maintenance

Refer to section entitled **Overhaul** for the procedures necessary to perform maintenance.

Daily	Weekly	Monthly	Yearly
Wipe Exterior with Clean Cloth	Inspect for Air and/or Material Leakage		

Table 3 7785 Model Series Preventive Maintenance Schedule

## Performance Curves

A pump's ability to deliver material is based on the pressure (psi/Bars) and quantity (cfm/lpm) of air supplied to the motor and the amount of material discharge [back] pressure to be overcome within the system.

This chart contains curves based on four different air pressures. The curves relate delivery in pounds (kilograms) per minute (X axis) to air consumption in cubic feet (liters) per minute (right Y axis) and to material discharge pressure in psi/Bars (left Y axis).

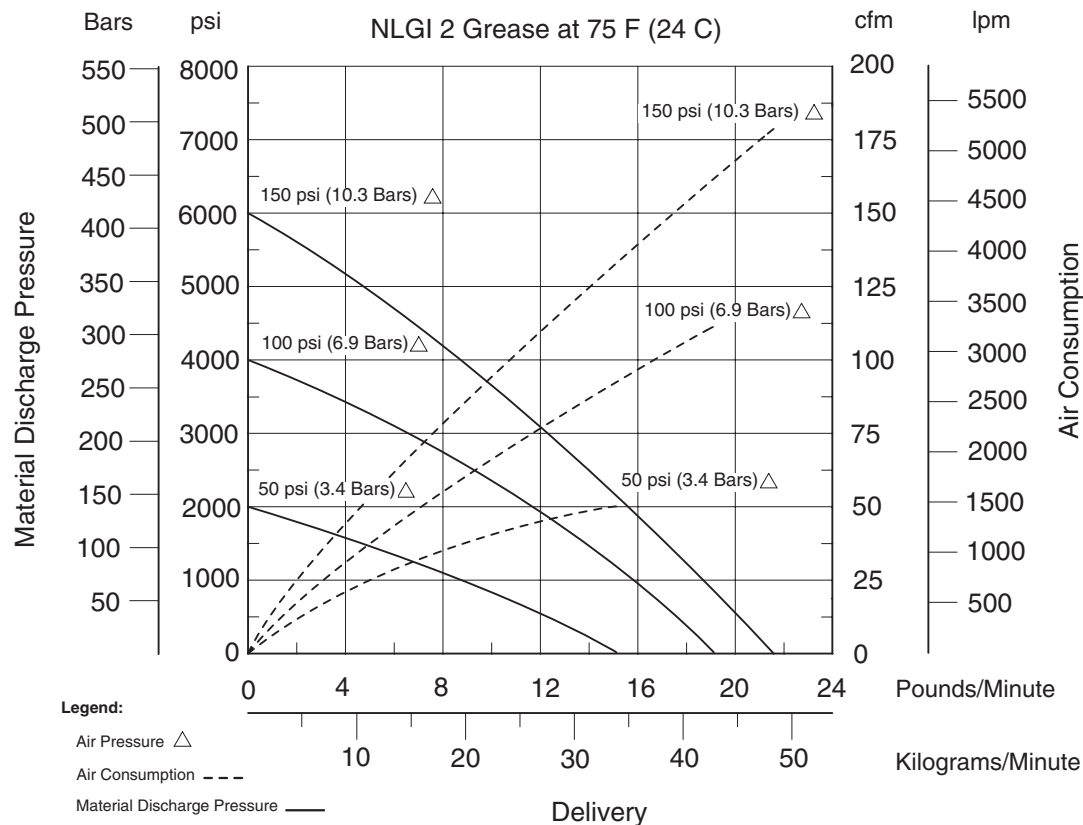


Figure 3 Delivery versus Discharge Pressure and Air Consumption

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# Parts And Drawing Breakdown For The 7785-A5

## Overhaul

**NOTE:** Refer to **Figure 2-A** and **2-B** for component identification on all overhaul procedures.

Prior to performing any maintenance procedure, the following safety precautions must be observed. Personal injury may occur.



### WARNING

**Do not use halogenated hydrocarbon solvents such as methylene chloride or 1,1,1-trichloroethane in this pump. An explosion can result when aluminum and/or zinc-plated parts in the pump come in contact with halogenated hydrocarbon solvents.**

**Release all pressure within the system prior to performing any overhaul procedure.**

- **Disconnect the air supply line from the pump motor.**
- **Into an appropriate container, operate the control valve to discharge remaining pressure within the system.**

**Never point a control valve at any portion of your body or another person. Accidental discharge of pressure and/or material can result in injury.**

**Read each step of the instructions carefully. Make sure a proper understanding is achieved before proceeding.**

## Removal

**NOTE:** These model pumps are used in numerous applications and are mounted accordingly. The following procedures consider the pump assembly to be mounted to a container with a cover.

1. Remove the cover and pump assembly from its container.
2. Remove the four bolts that secure the pump assembly to the cover.

***IMPORTANT:** Remove the follower from the bottom of the container.*

## Disassembly

1. Unscrew Adapter (2) from the air motor housing.
2. Remove Washer (3) and rubber Bushing (4).

### Separate Pump Tube from Air Motor

3. Clamp the motor housing horizontally in a vise.
4. Loosen Jam Nut (22) that secures the Pump Tube assembly to the Air Motor assembly (6).

### CAUTION

**Support the Pump Tube assembly during removal. Damage to components can occur.**

5. Unscrew Pump Tube (26) [with attached components] from the Air Motor.
6. Pull on the Pump Tube to expose Coupling (23).
7. Remove upper Spring Clip (24) that secures Pump Tube Rod (25) to Coupling (23).
8. Unscrew the Coupling from the air motor piston rod.
  - Rotate the entire Pump Tube assembly.

### Pump Tube Upper Packing

9. Unscrew Cap screws (12) that secure Body (11) to the Air Motor.
  - Do not remove the Cap Screws from the Body.
10. Remove the Body from the Air Motor.
  - Use the Cap Screws as levers.
11. Position the Body on the bench with the larger diameter facing upward.
12. Remove aluminum Gasket (20), Washer (21), and additional Gasket (20) from the Body.
13. Remove Spacer (19), Washer (18), and Seal (17).
14. Remove Lantern Ring (16) with Seal (15), and Spacer (14).
  - Remove the Seal from the Lantern Ring.
15. Remove O-Ring (13), O-ring (9), and O-Ring (10) from the Body.

### Pump Tube

16. Clamp the pump tube assembly at Adapter (41) securely in a soft-jaw vise.

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# Parts And Drawing Breakdown For The 7785-A5

17. Unscrew and remove Tube (26) from the Adapter.
18. Remove upper and lower Spring Clips (24) that secure Pump Tube Rod (25) to upper and lower Couplings (23).
19. Unscrew the Rod from both Couplings.  
*IMPORTANT: Should the pump contain the obsolete piston (see Figure 5), and stall properly, certain parts within the major repair kit are discarded. If the new piston is required, order Barrel (28) and Piston (33) separately.*
20. Remove lower Spring Clip (24) that secures Piston (33) to lower Coupling (23).
21. Unscrew the Coupling from the Piston.
22. Remove Barrel (28) from the Piston.
23. Remove both aluminum Gaskets (27).
24. Remove brass Bearing (31), Seal (30), and nylon Wear Ring (29) from the Barrel.
25. Unscrew Primer Body (50) from Adapter (41).
26. Remove the Primer Rod (with attached components) from the bottom of the Adapter.
27. Remove Spacer (32) from top of Adapter.
28. Remove Stop Nut (49) from Primer Rod (40).
  - Support the Primer Rod through the hole as needed.
29. Remove Plate (48), Gasket (27), Valve Seat (47), and additional Gasket (27) from the Primer Rod assembly.

## CAUTION

**Support the Piston and Primer Rod assembly during Roll Pin (39) removal. Damage to components can occur.**

30. Remove Roll Pin (39) that secures Adapter and Insert assembly (38) to Primer Rod (40).
  - Use a punch and a small hammer.

31. Unscrew Primer Rod from Adapter and Insert assembly.
32. Remove Valve Body (46) [with attached components] and Guide Washer (42) from the upper end of the Primer Rod assembly.
33. Remove Screw (43), nylon Washer (44), Seal (45) and additional Washer (44) from the Valve Body.
34. Unscrew the Adapter and Insert assembly from Piston (33).
35. Remove aluminum Washer (37), Ball (36), Spring (35), and Ball Stop (34) from the Piston.

## Clean and Inspect

**NOTE:** Use the appropriate repair kit for replacement parts. Make sure all the components are included in the kit before discarding used parts.

1. Clean all metal parts in a modified petroleum-based solvent. The solvent should be environmentally safe.
2. Inspect all parts for wear and/or damage.
  - Replace as necessary.
3. Inspect Piston (33) and Primer Rod (40) closely. Use a magnifying glass to detect any score marks.
  - Replace as necessary.
4. Closely inspect the mating surfaces of all check valve components for any imperfections. Ensure a smooth and clean contact is obtained when assembled.

## Assembly

**NOTE:** Prior to assembly, certain components require lubrication in clean oil. Refer to Table 4 for details.

Item No. on Figure 2-A	Description	Item No. on Figure 2-B	Description
9	O-Ring, 1-13/16 " ID x 2 " OD	29	Ring, Wear (Glass-Reinforced Nylon)
10	O-Ring, 1-15/16 " ID x 2-1/8 " OD	30	Seal, 1.00 " ID x 1.375 " OD
13	O-Ring, 1-3/16 " ID x 1-5/16 " OD	45	Seal, 0.50 " ID x 0.950 " OD
15	Seal, 0.812 " ID x 1.062 " OD		
17	Seal, 0.812 " ID x 1.562 " OD		

**Table 4** Lubricated Components

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# Parts And Drawing Breakdown For The 7785-A5

## Pump Tube Upper Packing

**NOTE:** Refer to **Figure 4** for a section view of the upper packing components.

1. Install O-Ring (9) and O-Ring (10) onto Body (11).
2. Position the Body with the large diameter upward.
3. Install O-Ring (13) into the Body.
4. Install Spacer (14) into the Body.
  - Make sure the Spacer centers and seats properly.
5. Install Seal (15) [lip end first] into Lantern Ring (16).
6. Install the Lantern Ring assembly into the Body.
  - Make sure the assembly centers and seats properly.
7. Install and seat Seal (17) [heel end first] into the Body.

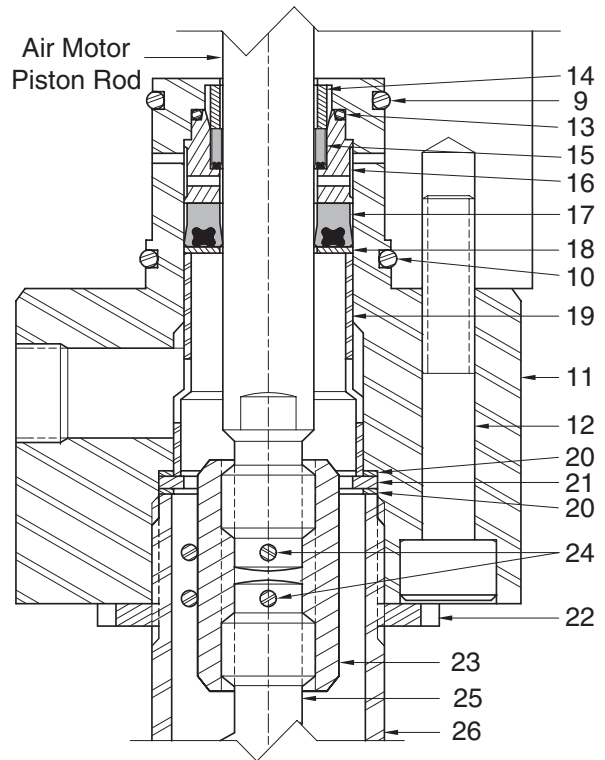
### CAUTION

**Do not place Washer (18) inside Spacer (19).  
Damage to components will occur.**

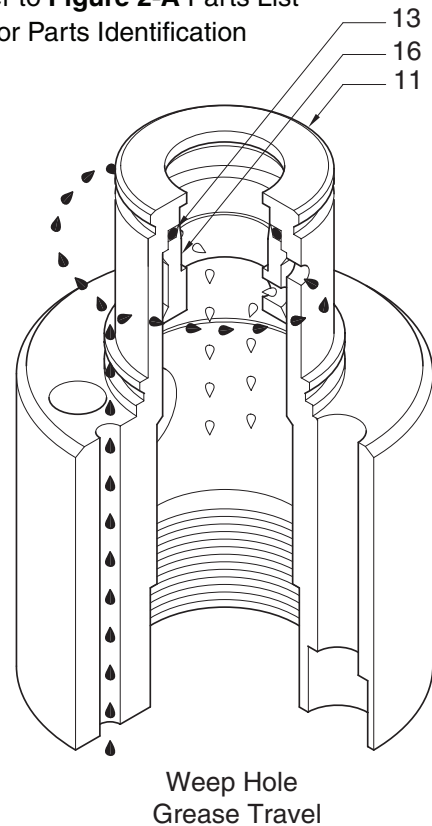
8. Install Washer (18) and Spacer (19) into the Body.
9. Lubricate the air motor piston rod with grease.
10. Install the Body assembly (while holding the Spacer in place) onto the piston rod.
  - Use a small hammer or other suitable tool.
11. Rotate the Body to align the product outlet with the hole in the air motor housing.

**NOTE:** Refer to **Figure 2-A** for steps 12 and 13.

12. Install Washer (3) and Bushing (4) onto Adapter (2).
13. Install the Adapter assembly into the Body.
  - Do not tighten.
14. Install Cap Screws (12) that secure the Body to the air motor.
  - Tighten each Cap Screw securely.
15. Tighten the Adapter assembly into the Body.
16. Install aluminum Gasket (20), Washer (21), and additional Gasket (20) into the Body.
  - Make sure the components maintain their position.



Refer to **Figure 2-A** Parts List for Parts Identification



**Figure 4** Upper Packing - Section View

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# Parts And Drawing Breakdown For The 7785-A5

## Pump Tube

**NOTE:** Refer to **Figure 5** for cross section view of pump tube components.

17. Clamp the flats of Piston (33) into a soft-jaw vise.
  - Make sure the Piston bore points upward.
18. Install Ball Stop (34) [flange end first] into the Piston.
  - Make sure the Retainer centers and seats properly.
19. Install Spring (35) into the Piston.
20. Install Ball (36) into the Spring.
21. Install Washer (37) onto Adapter and Insert assembly (38).
22. Screw the Adapter and Insert assembly (with Loctite 222) into the Piston. See **Figure 2-B**.
  - Tighten securely.
23. Install Washer (44) into Valve Body (46).

### CAUTION

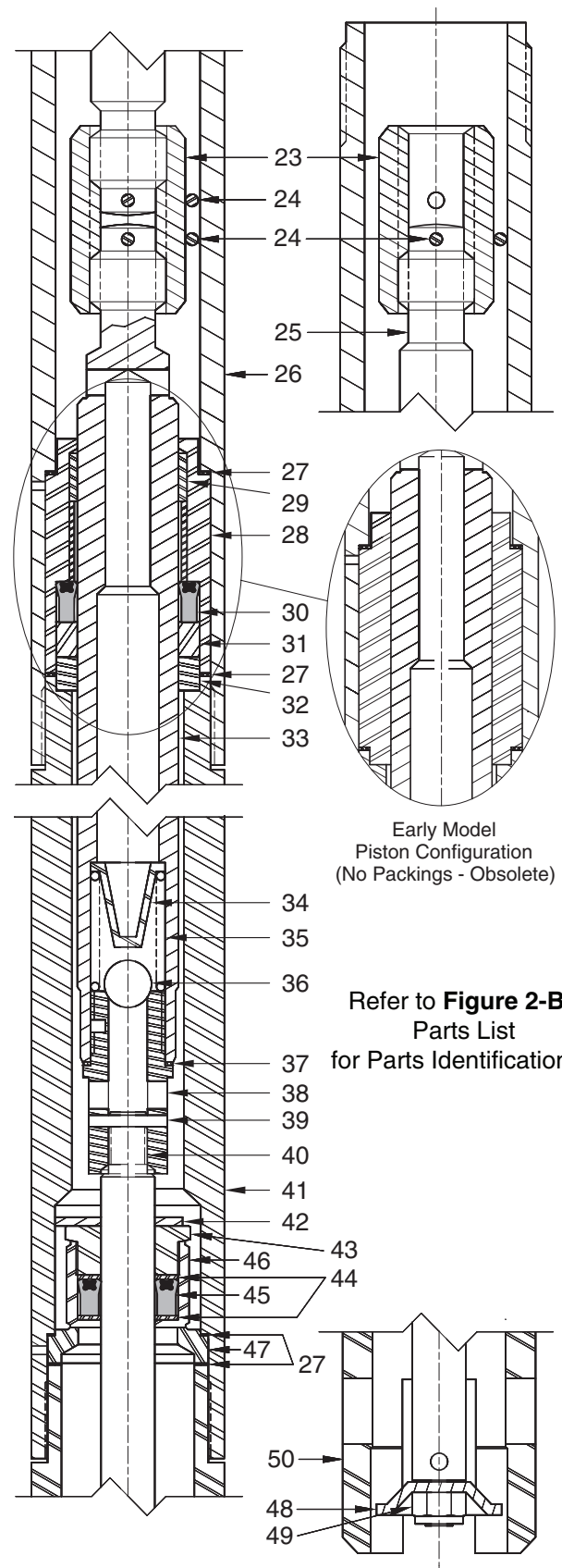
**Use care seating Seal (45) into the Valve Body. Damage to the Seal can occur.**

24. Install and seat Seal (45) [heel end first] into the Valve Body.
25. Install additional Washer (44) and Screw (43) into the Valve Body.
  - Do not tighten or seat the Screw.
26. Lubricate the Primer Rod with grease.
27. Install the Valve Body assembly onto the upper end of the Primer Rod.
  - Use a small hammer or other suitable tool.
28. Tighten the Screw into the Valve Body securely.
29. Install Guide Washer (42) onto the Primer Rod.
30. Screw Primer Rod (40) into the Adapter and Insert assembly until the roll pin holes align.

### CAUTION

**Support the Primer Rod and the Adapter and Insert assembly during Roll Pin installation. Damage to components can occur.**

31. Install Roll Pin (39).
  - Use a small hammer.



**Figure 5** Pump Tube Assemblies  
323730-A1 and 323730-B1 - Section View

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# Parts And Drawing Breakdown For The 7785-A5

32. Install Valve Seat (47), Plate (48), and Stop Nut (49) onto the Primer Rod.
  - Tighten the Stop Nut securely. Place a small punch into the hole of the Primer Rod to prevent its rotation

33. Position Adapter (41) horizontally into the vise.

## Internally-Threaded End of Adapter

34. Install Gasket (27) into the internally-threaded end of the Adapter.
35. Install the Primer Rod and Piston assembly (Piston end first) into the Adapter.
  - Center and seat all components properly. Pull on the Piston as necessary. Use care to ensure the Gasket does not move.
36. Install the additional Gasket (27) onto Valve Seat (47).

## Externally-Threaded End of Adapter

37. Install Spacer (32) into the externally-threaded end of the Adapter.
  - Make sure the Spacer centers and seats properly.
38. Install Gasket (27) into the Adapter.
39. Position Barrel assembly (28) with the large diameter pointing upward.
40. Install Wear Ring (29) into the Barrel assembly.
41. Install and seat Seal (30) [lip end first] into the Barrel assembly.
42. Install Bearing (31) into the Barrel assembly.

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## CAUTION

**Use care installing the Barrel assembly over the threads of Piston (33). Damage to the Seal can occur.**

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43. Install the Barrel assembly (large diameter first) onto Piston (33).
  - Make sure the Barrel assembly seats properly against Spacer (32).
44. Install Gasket (27) onto the Barrel assembly.
45. Screw the upper and lower Couplings (23) onto each end of Pump Tube Rod (25) until the Spring Clip holes align.
46. Install Spring Clips (24).
47. Screw the Rod and Coupling assembly onto the Piston.
  - Install the Spring Clip.

*IMPORTANT: If a primer is used with Loctite 222, the curing time is greatly reduced.*

48. Screw Pump Tube (26) onto Adapter (41) [with Loctite 222]. See **Figure 2-B**.
  - Do not tighten.
49. Screw Primer Body (50) [with Loctite 222] into the opposite end of the Adapter. See **Figure 2-B**.
  - Do not tighten.
50. Screw Jam Nut (22) onto the Pump Tube.
51. Push on Plate (48) to expose Coupling (23) from the Pump Tube as necessary.

## Attach Pump Tube to Air Motor

52. Screw the Coupling onto the air motor piston rod until the Spring Clip holes align.
  - Rotate the entire pump tube assembly.
53. Install the Spring Clip.
54. Screw the pump tube assembly into Body (11).
55. Place a large wrench or other suitable tool into the slot of Primer Body (50).
  - Tighten all the components of the assembly securely. Crush all gaskets.
56. Tighten Jam Nut (22).

## Operation

### Bench Test and Prime

**NOTE:** Perform the following procedures at a pressure not to exceed 40 psi (2.8 Bars).

1. Make sure air pressure at the regulator reads zero.
2. Connect a product hose to the pump's material outlet.
3. Place the hose into an appropriate collection container.
4. Install air Connector (7) to the inlet of the air motor.
5. Connect Air Coupler (8) to the Connector.
6. Slowly supply air pressure to the pump's motor.
  - The pump assembly should cycle.

If the pump assembly does not cycle, refer to the **Troubleshooting Chart** for details.

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NZ  
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## Priming

With air pressure at zero:

7. Place the pump in the product to be dispensed.
8. Slowly supply air pressure to the pump's motor.
9. Allow the pump to cycle slowly until the system and product is free of air.

If the pump assembly does not prime, refer to the **Troubleshooting Chart** for details.

10. Check the motor for air leakage.

If the motor leaks, refer to the **Air Motor Service Guide** for details.

## Stall Test

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**WARNING**

 **Should leakage occur anywhere within the system, disconnect air to the motor. Personal injury can occur.**

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With air pressure at zero:

11. Attach a control valve to the outlet hose of the pump.
12. Set the air pressure to 100 psi (6.9 Bar).
13. Operate the control valve into a container.
14. Allow the pump to cycle until the system and product is once again free of air.
15. Shut off the control valve.
  - The pump should not cycle.

If the pump cycles slowly (once or twice a minute) or continuously, refer to the **Troubleshooting Chart** for details.

## Installation

**NOTE:** The following procedures consider the pump assembly to be installed onto a container with a cover.

1. Install the bolts that attach the cover to the pump assembly.
  - Tighten the bolts securely.
2. Place the follower into the container.
3. Press downward and maneuver the follower until grease appears around its edges and center hole.
  - Make sure all air is removed.
4. Install the pump assembly through the follower and onto the container.
5. Secure the cover and pump assembly to the container.

Additional items that should be incorporated into the air piping systems are listed in **Table 5**.

Part Number	Description
338862	Moisture Separator/Regulator & Gauge Combination
5608-2	Moisture Separator
7608-B	Regulator and Gauge
5908-2	Lubricator *

**Table 5** Air Line Components

\* Although the air motor is lubricated at the factory, the life of the motor can be extended with the use of a lubricator.

## Alternate Installations

Pump model 7785-A5 is often mounted:

- from either a single- or dual-post hoist
- in bulk grease distribution systems

When either of these type arrangements are employed, alternate accessory items must be purchased. See **Table 6**.

Application	Followers	Adapter Kit	Primer Body
Single-Post Hoist	327242	327247	
Dual-Post Hoist	327690		
Bulk Grease			333693*
* 1-1/2 " NPTF (m)			

**Table 6** Accessory Items for Alternate Installations

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# Troubleshooting Chart

Pump Indications	Possible Problems	Solution
Pump does not cycle	<ol style="list-style-type: none"> <li>1. Air motor not operating properly</li> <li>2. Pump tube jammed and/or contains loose components</li> <li>3. Insufficient air pressure</li> </ol>	<ol style="list-style-type: none"> <li>1. Inspect air motor and rebuild or replace as necessary</li> <li>2. Rebuild pump tube</li> <li>3. Increase air pressure</li> </ol>
Pump will not prime	<ol style="list-style-type: none"> <li>1. Excessive cycling speed</li> <li>2. Pump leaking internally</li> </ol>	<ol style="list-style-type: none"> <li>1. Reduce air pressure</li> <li>2. See <b>Internal Leaks</b></li> </ol>
Pump cycles rapidly	<ol style="list-style-type: none"> <li>1. Product source empty</li> </ol>	<ol style="list-style-type: none"> <li>1. Replenish product</li> </ol>
Pump cycles continuously, or slowly (once or twice/minute)	<ol style="list-style-type: none"> <li>1. Pump leaking internally</li> <li>2. Pump leaking externally</li> <li>3. Distribution system leaking</li> </ol>	<ol style="list-style-type: none"> <li>1. See <b>Internal Leaks</b></li> <li>2. See <b>External Leaks</b></li> <li>3. Correct leak</li> </ol>
<b>External Leaks</b>		
Product leakage visible at weep hole in Body (11)	<ol style="list-style-type: none"> <li>1. Damaged Seal (17)</li> <li>2. Damaged air motor piston rod.</li> </ol>	<ol style="list-style-type: none"> <li>1. Separate pump tube from air motor and replace Seal (17)</li> <li>2. Inspect piston rod and replace as necessary</li> </ol>
Product leakage visible at bottom of Body (11)	<ol style="list-style-type: none"> <li>1. Pump tube not sufficiently tight</li> <li>2. Damaged Gasket(s) (20)</li> </ol>	<ol style="list-style-type: none"> <li>1. Tighten pump tube assembly</li> <li>2. Separate pump tube from air motor and replace Gaskets (20)</li> </ol>
Air leakage at weep hole in Body (11)	Damaged Seal (15)	Separate pump tube from air motor and replace Seal (15)
Product leakage visible at weep hole in Tube (26) and/or Adapter (41)	<ol style="list-style-type: none"> <li>1. Pump tube not sufficiently tight</li> <li>2. Damaged Gasket(s) (27)</li> </ol>	<ol style="list-style-type: none"> <li>1. Tighten pump tube assembly</li> <li>2. Disassemble pump tube and replace Gaskets (27)</li> </ol>
<b>Internal Leaks</b>		
Pump does not prime or cycles continuously, or slowly (once or twice/minute)	<ol style="list-style-type: none"> <li>1. Foreign material between Ball (36) and Adapter and Insert assembly (38)</li> <li>2. Foreign material between Valve Body (46) and Valve Seat (47)</li> <li>3. Worn or damaged Ball (36)</li> <li>4. Worn or damaged Adapter and Insert assembly (38)</li> <li>5. Worn or damaged Valve Body (46)</li> <li>6. Worn or damaged Valve Seat (47)</li> <li>7. Worn or damaged Seal (30)</li> <li>8. Worn or damaged Piston (33)</li> <li>9. Worn or damaged Seal (45)</li> <li>10. Worn or damaged Primer Rod (40)</li> </ol>	<p>Locate and eliminate source of foreign material.</p> <p>Disassemble pump tube, clean, inspect and replace worn or damaged components.</p>

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