Service Guide

8568 Series

Medium-Pressure Stub Pump

Description

The major components of an 8568 series pump consist of an air-operated motor and a pump tube. The air motor connects directly to the double-acting reciprocating pump tube.

This medium-pressure stub pump is designed to deliver a range of light weight oils including gear lubricants. The pump's bung adapter [2 " NPTF (m)] allows installation directly onto original containers or bulk tanks.

The stub pump is also designed to accept a variety of different length and types of extension tubes. These extension tubes can also be equipped with a low level cut-off valve. See **Table 2**.

The pump can also be installed remotely. In this case the pump threads directly to the appropriate piping hardware.

Specifications

Air Motor

Piston Diameter / Stroke		Air Inlet	Max. Air Pressure		Material Outlet
Inches	Millimeters		psi	Bars	
2-7/16 / 1-5/8	62 / 41	1/4 " NPTF (f)	200	14	3/8 " NPTF (f)
For information on the air motor, refer to Service Guide **SER 324300-5**					

Pump Tube

Ratio	Max. Material Pressure		Delivery/Minute (Approximate)*		Material Inlet
	psi	Bars	Gallons	Liters	
4:1	800	56	3.4	12.9	1-1/2 " NPTF (f)
* For detailed information, refer to **Figure 3**					

Table 1 *Model 8568 Series Specifications*

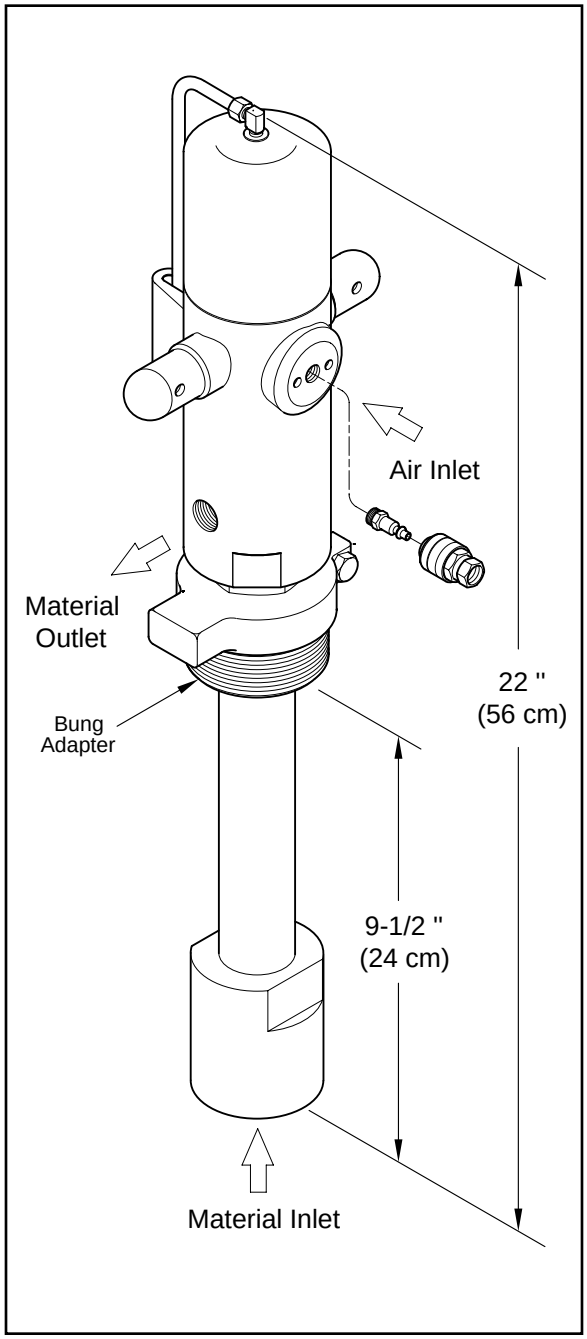

Figure 1 *Medium-Pressure Stub Pump Model 8568 Series*

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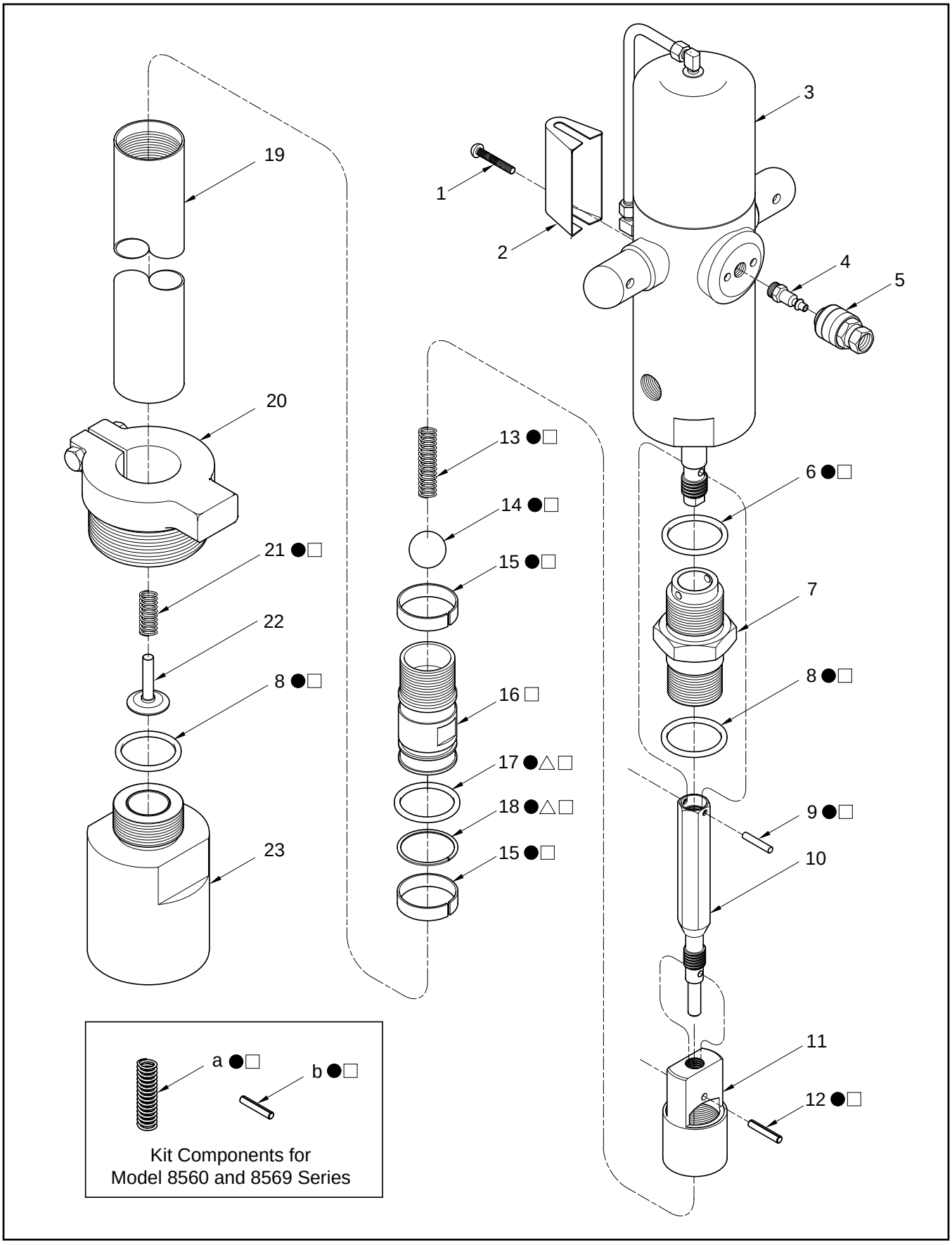

Figure 2 *Medium-Pressure Stub Pump Model 8568 Series - Exploded View*

Item No.	Part No.	Description	Qty	Notes	Numeric Order Part # (Item #)
1	170292	Screw, Machine 8-32 x 1-1/4 " Long	1		170292 (1)
2	321085	Muffler	1		*171000-18* (17)
3		Motor Assembly, Air	1	See SER **324300-5**	171000-19 (8)
4	328034	Connector, 1/4 " NPTF (m)	1		171013-12 (6)
5	328030	Coupler, Air, 1/4 " NPTF (f)	1		171033-4 (b)
6	171013-12	O-Ring, 1-1/8 " ID x 1-1/4 " OD	1	● □	171033-5 (12)
7	320972	Adapter, Tube	1		*171700-36* (14)
8	171000-19	O-Ring, 1 " ID x 1-1/4 " OD	2	● □	319932 (a)
9	320971	Pin, 5/64 " Dia. x 5/8 " Long	1	● □	320952 (22)
10	321615	Rod, Coupling	1		320954 (21)
11	320976	Adapter, Piston	1		320955 (13)
12	171033-5	Pin, Roll, 1/8 " Dia. x 5/8 " Long	1	● □	320971 (9)
13	320955	Spring, Light-Duty, 1-5/32 " Long	1	● □	320972 (7)
14		Ball, 9/16 " Dia.	1	● □	320976 (11)
15		Ring, Wear (Glass-Filled Nylon)	2	● □	321085 (2)
16		Piston	1	□	321316 (19)
17		O-Ring, 15/16 " ID x 1-3/16 " OD	1	● △ □	321318 (23)
18		Washer, Back-Up (Nylon)	1	● △ □	321615 (10)
19	321316	Tube and Guide Assembly	1		*324300-5* (3)
20	326750	Adapter, Bung, 2 " NPTF (m)	1		326750 (20)
21	320954	Spring, Light-Duty, 5/8 " Long	1	● □	328030 (5)
22	320952	Disk, Valve	1		328034 (4)
23	321318	Seat, Valve 1-1/2 " NPT (f)	1		*337401* (15)
Additional Kit Items not Applicable to Pump Model 8568 Series					*337402* (16)
a	319932	Spring, Heavy-Duty, 1-1/32 " Long	1	● □	*337913* (18)
b	171033-4	Pin, Roll, 1/8 " Dia. x 9/16 " Long	1	● □	

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

Repair Kits

Part No.	Kit Symbol	Description
393497	●	Kit, Major Repair
393565	△	Kit, Minor Repair (includes ten (10) of each item)
398503-3	□	Kit, Conversion (used to update pumps with obsolete piston).

Accessories

This model pump can be used in a variety of locations which allows an assortment of accessory items to be utilized. Please refer to Sales Catalog for details on additional accessory items.

Part Number	Description
321206	Low Level Cut-Off Valve

Table 2 *Model 8568 Accessory Component*

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 *Model 8568 Preventive Maintenance Schedule*

Performance Chart

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

This chart contains curves based on three different air pressures (75, 100, and 150 psi). The curves relate delivery in gallons per minute (X axis) to air consumption in cfm (right Y axis) and to material discharge pressure in psi (left Y axis).

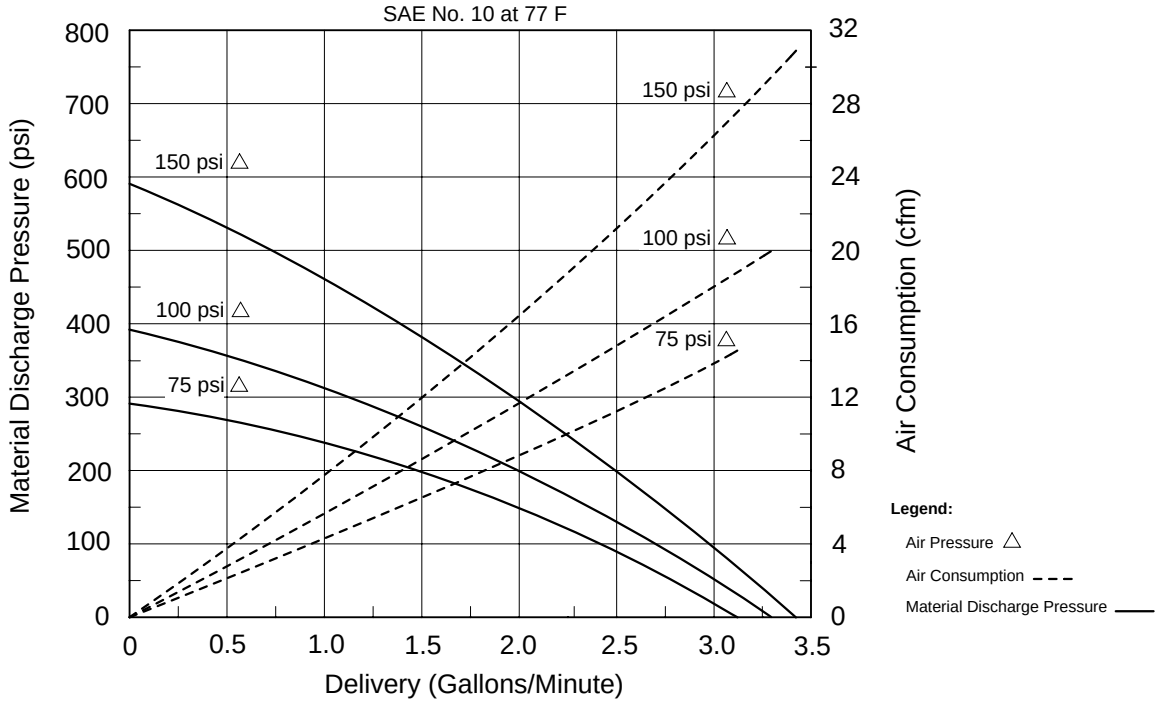

Figure 3 *Delivery versus Discharge Pressure and Air Consumption*

Overhaul

NOTE: Refer to **Figure 2** 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

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

1. Disconnect the air hose assembly at Air Coupler **(5)**.
2. Unscrew the pump assembly at Valve Seat (**23**) or Bung Adapter (**20**).

Disassembly

Separate Pump Tube from Air Motor

1. Place the pump assembly in a soft-jaw vise. See **Figure 4**.
2. Unscrew Tube Adapter (**7**) from Air Motor assembly (**3**).
3. Remove Pin (**9**) that secures Coupling Rod (**10**) to the **Air Motor Piston Rod**.
4. Unscrew the Coupling Rod from the Piston Rod.
5. Remove the pump tube assembly from the air motor.

Pump Tube

6. Place the pump tube in a vise at Valve Seat (**23**) with the Coupling Rod facing upward.
7. Remove Tube Adapter (**7**) from Tube and Guide assembly (**19**).

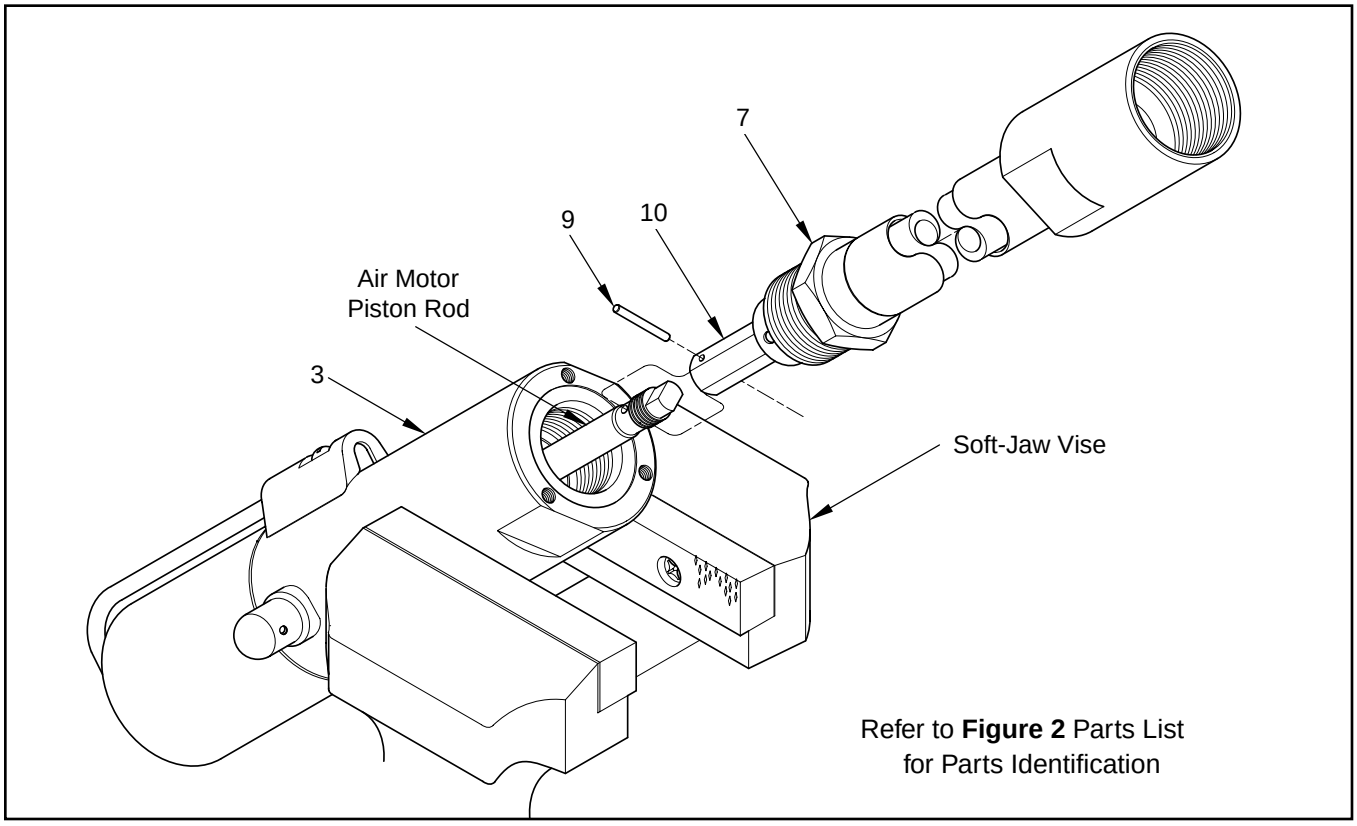

Figure 4 *Separation of Pump Tube Assembly from Air Motor*

8. Grasp the Coupling Rod and pull the piston assembly from the Tube and Guide assembly.

   NOTE: Use care not to lose Spring (21) and Valve Disk (22) during the next disassembly procedure.

9. Remove the Tube and Guide assembly from Valve Seat (**23**).
   • Use Bung Adapter (**20**) as a lever.

10. Remove the Spring and the Valve Disk.

CAUTION

Support Rod Coupling (10) and Piston Adapter (11) during Roll Pin removal. Damage to components can occur.

11. Remove Roll Pin (**12**) that secures Piston Adapter (**11**) to Coupling Rod (**10**).
    • Use a punch and a small hammer.

12. Unscrew the Coupling Rod from the Piston Adapter.

    NOTE: Use care not to lose Spring (**13**) and Ball (**14**) during the next disassembly procedure.

13. Unscrew the Piston Adapter from the Piston assembly.

14. Remove the Spring and the Ball from the assembly.

    *IMPORTANT: Should the pump contain the obsolete piston (see **Figure 5**), discard the assembly and use the conversion kit for replacement.*

15. Remove Wear Rings (**15**), O-Ring (**17**) and Back-Up Washer (**18**) from Piston (**16**).

16. Remove O-Ring **(8**) from the Valve Seat.

17. Remove O-Ring (**6**) and O-Ring (**8**) from the Tube Adapter.

18. Remove Bung Adapter (**20**) from the Tube and Guide assembly.

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.

WARNING

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

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 (**16**) closely. Use a magnifying glass to detect any wire draw marks.
   • Replace as necessary.

4. Closely inspect the mating surfaces of all components for any imperfections. Ensure a smooth and clean contact is obtained when assembled.

   EXAMPLE: Place Ball (**14**) into Piston (**16**). Fill the Piston with solvent. Make sure no leakage occurs.

5. Measure the depth of the Guide within the Tube and Guide Assembly (**19**). The distance must be 1-3/16 " (30 mm). See **Figure 5**.
   • Replace as necessary.

Assembly

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

Item No. on **Figure 2**	Description
8	O-Ring, 1 " ID x 1-1/4 " OD
6	O-Ring, 1-1/8 " ID x 1-1/4 " OD
15	Ring, Wear, (Glass-Filled Nylon)
17	O-Ring, 15/16 " ID x 1-3/16 " OD
18	Washer, Back-Up (Nylon)

Table 4 *Lubricated Components*

Pump Tube

1. Place Ball (**14**) into Piston (**16**).

2. Screw Piston Adapter (**11**) into the Piston.
   - Tighten securely.

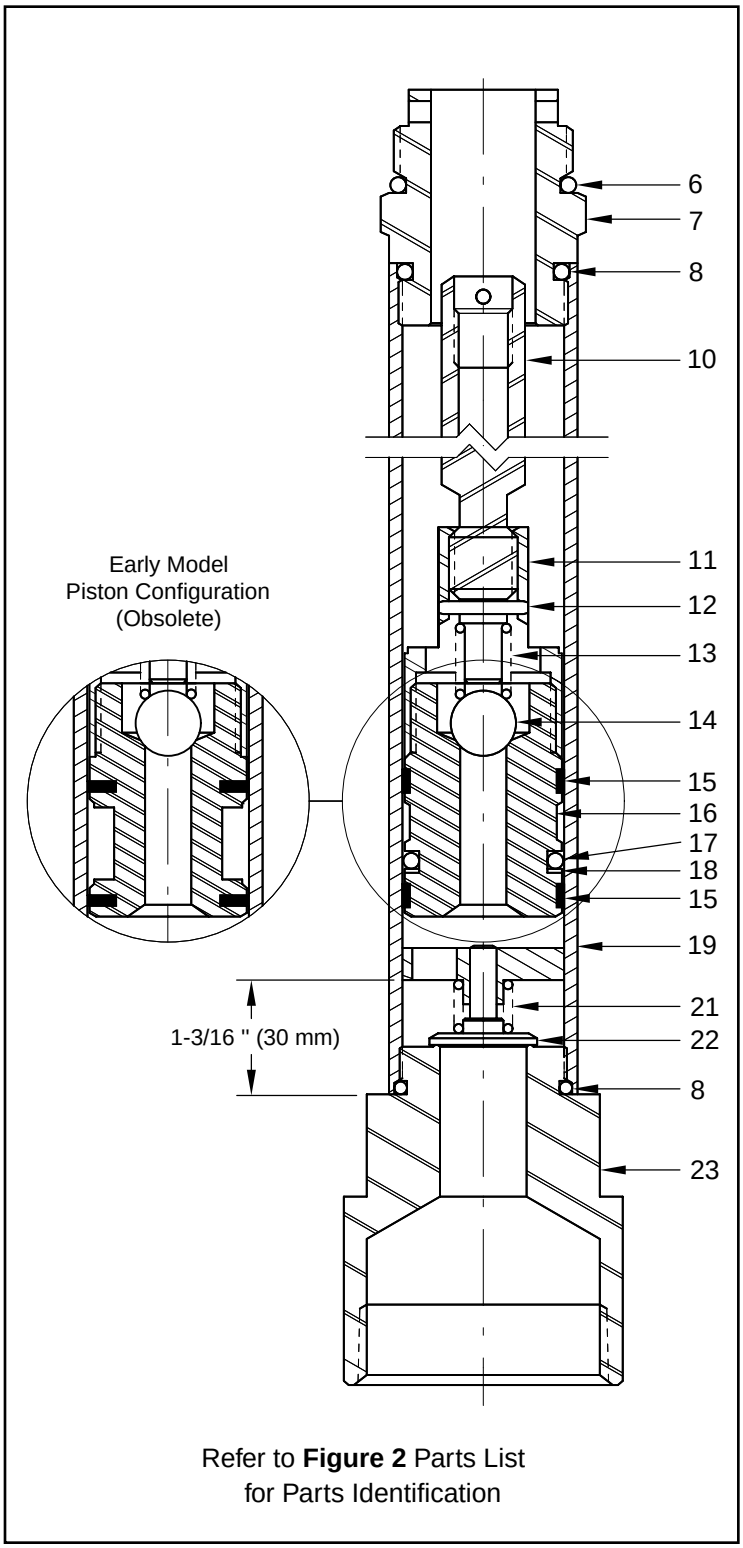

Figure 5 *Pump Tube 321314 - Section View*

IMPORTANT: Do not mix Springs. Make sure to use the light-duty spring from the kit. The heavy-duty spring will not operate in pump model 8568.

3. Install Spring (**13**) into the Piston Adapter.
   - Make sure the Spring centers on the Ball.

4. Screw Coupling Rod (**10**) into the Piston Adapter until the pin holes are in alignment.

5. With a small screwdriver or other suitable tool, press on the Ball to ensure it operates and seats properly.

CAUTION

Support the Rod Coupling and the Piston Adapter during Roll Pin installation. Damage to components can occur.

6. Install Roll Pin (**12**) to secure the Coupling Rod to the Piston Adapter.
   - Use a small hammer.

7. Install Wear Rings (**15**), O-Ring (**17**) and Back-Up Washer (**18**) onto the Piston.

8. Install O-Ring (**8**) onto Valve Seat (**23**).

9. Install O-Ring (**6**) and O-Ring (**8**) onto Tube Adapter (**7**).
   - Make sure to place the larger O-Ring on the upper portion of the Adapter (with holes).

10. Install Bung Adapter (**20**) onto Tube and Guide assembly (**19**).
    - Tighten the Bung Adapter bolt.

11. Install Spring (**21**) and Valve Disk (**22**) into the bottom of the Tube and Guide assembly.
    - Make sure the components are stacked and centered properly.

12. Screw the Valve Seat into the Tube and Guide assembly. Use care when passing over the O-Ring.
    - Use the Bung Adapter as a lever and tighten securely.

13. Turn the Tube and Guide assembly end for end.

CAUTION

Use care not to damage the piston rings during the installation process.

14. With a slight twisting motion, install the piston assembly into the Tube and Guide assembly.
    • Ease the lubricated assembly past the tube threads.

15. Position the top of the Piston Adapter level with the bottom thread in the tube.

16. Screw Tube Adapter (**7**) [holes upward] into the Tube and Guide assembly and tighten securely.
    • Use care when passing over the O-Ring.

Connect Pump Tube to Air Motor

17. Place Air Motor assembly (**3**) in a vise with the piston rod facing upward.

18. Thread Coupling Rod (**10**) onto the piston rod until the pin holes are in alignment.

19. Lubricate Pin (**9**) with grease to prevent loss during the installation process.

20. Install the Pin that secures the piston rod to the Coupling Rod.

21. Thread the Tube Adapter into the air motor and tighten securely.
    • Use care when passing over the O-Ring.

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. Attach Connector (**4**) to the inlet of the air motor.

5. Connect Air Coupler (**5**) 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.

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

WARNING

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

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 once or continuously, refer to the **Troubleshooting Chart** for details.

Installation

1. Screw the pump assembly into its system at Valve Seat **(23)** or Bung Adapter (**20**).
   • Tighten securely.

2. Connect the air hose assembly to Air Coupler **(5)** [as necessary].
   • Tighten connection securely.

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

Part Number	Description
338860	Moisture Separator/Regulator & Gauge Combination
5604-2	Moisture Separator
7604-B	Regulator and Gauge
5904-2	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.

Troubleshooting Chart

Refer to **Table 6** for details on troubleshooting.

Pump is Installed with Ample Air Pressure			
Pump Indications	**Possible Problems**	**Solution**	**Reference See:**
Pump does not cycle	1. Air motor not operating properly 2. Pump tube jammed and/or contains loose components	1. Inspect air motor and rebuild or replace as necessary 2. Rebuild pump tube	Air motor Service Guide Section **Assembly**
Pump will not prime	1. Excessive cycling (too fast) 2. Air Leak before pump tube (extension tube) 3. Pump leaking internally	1. Supply air pressure slowly 2. Tighten connection 3. See specific leak under **Pump Indications**	
Pump cycles rapidly	1. Material source empty 2. Leaking externally 3. Excessive air pressure	1. Replenish material 2. See **External Leaks** 3. Supply correct air pressure	
Pump cycles continuously, or slowly (once or twice/ minute)	1. Leaking externally 2. Leaking internally	1. See **External Leaks** 2. See **Internal Leaks**	
External Leaks			
Product leakage at outlet hose	Hose connection not tightened sufficiently	Tighten connection	
Product leakage at control valve	Control valve connection to hose not tightened sufficiently	Tighten connection	

Table 6 *Model 8568 Troubleshooting Chart*

Pump is Installed with Ample Air Pressure			
Pump Indications	**Possible Problems**	**Solution**	**Reference See:**
Product leakage past O-Ring (**6**) and visual at top of Tube and Guide assembly (**19**)	1. Initial tightening of Tube and Guide assembly (**19**) to Tube Adapter (**7**) not sufficient 2. Foreign material between O-Ring (**6**), Tube and Guide assembly (**19**), and Tube Adapter (**7**) 3. Damaged O-Ring (**6**), Tube and Guide assembly (**19**), or Tube Adapter (**7**)	1. Tighten Tube Adapter (**7**) into Tube and Guide assembly (**19**) 2. Disconnect Tube and Guide assembly (**19**) from Tube Adapter (**7**). Clean and inspect all parts. Replace parts as necessary. Locate and eliminate source of foreign material.	**Assembly:** Step 16
Product leakage past O-Ring (**8**) and visual at bottom of Tube and Guide assembly (**19**)	1. Initial tightening of Tube and Guide assembly (**19**) to Valve Seat (**23**) not sufficient 2. Foreign material between O-Ring (**8**), Tube and Guide assembly (**19**), or Valve Seat (**23**) 3. Damaged O-Ring (**6**), Tube and Guide assembly (**19**), or Valve Seat (**23**)	1. Tighten Valve Seat (**23**) into Tube and Guide assembly (**19**) 2. Disconnect Valve Seat (**23**) from Tube and Guide assembly (**19**). Clean and inspect all parts. Replace parts as necessary. Locate and eliminate source of foreign material.	**Assembly:** Step 12
Internal Leaks			
Product leakage past Piston Rings (**15** and **17**)	1. Worn or damaged Piston Rings (**15** and/or **17**). Worn or damaged Piston (**16**) 2. Contamination	1. Disassemble pump, clean and inspect Piston Rings (**15** and **17**). Inspect Piston (**16**). Replace parts as necessary. 2. Locate and eliminate source of foreign material.	
Product leakage past Ball (**14**)	1. Foreign material between Ball (**14**) and Piston (**16**) 2. Damaged Ball (**14**) 3. Damaged Piston (**16**)	1. Disassemble pump, clean and inspect seat areas. Check mating surfaces and replace parts as necessary. Locate and eliminate source of foreign material.	
Product leakage past Valve Disk (**22**)	1. Foreign material between Valve Disk (**22**) and Valve Seat (**23**) 2. Damaged Valve Disk (**22**) 3. Damaged Valve Seat (**23**) 4. Damaged Spring (**21**)	1. Disassemble pump, clean and inspect seat areas. Check mating surfaces and replace parts as necessary. Locate and eliminate source of foreign material.	

Table 6 *Model 8568 Troubleshooting Chart*

Changes Since Last Printing

Initial Release