

High-Pressure Pump (Stripped and Portable)

Description

The major components of high-pressure pump model 9940 series consist of a(n):

- air-operated motor
- lubricant pressure controller (Pressurtrol)
- double-acting reciprocating pump tube
- dolly, cover assembly & follower plate (model 9941)
- control valve, z-swivel, and hose (model 9941)

The Pressurtrol minimizes material pressure drop that occurs when the pump cycles. Refer to SER 319800-1.

Pump Assembly

The high-pressure (70:1 ratio) pump included with each model is designed to deliver a range of greases [up to NLGI # 3] and operate directly from their original drum.

Models 9940, 9941, and 9949

Models 9940 and 9949 are stripped pumps. Each of these models have a pump tube length to accommodate different size containers. See **Figure 1**.

Model 9941 is portable and contains a dolly, cover, follower plate, control valve, z-swivel, and delivery hose.

Specifications

Air Motor

Piston Diameter x Stroke		Air Inlet	Max. Air Pressure *	
Inches	Centimeters		psi	Bars
3 x 3-5/16	7.6 x 8.4	1/4 " NPTF (f)	150	10.3

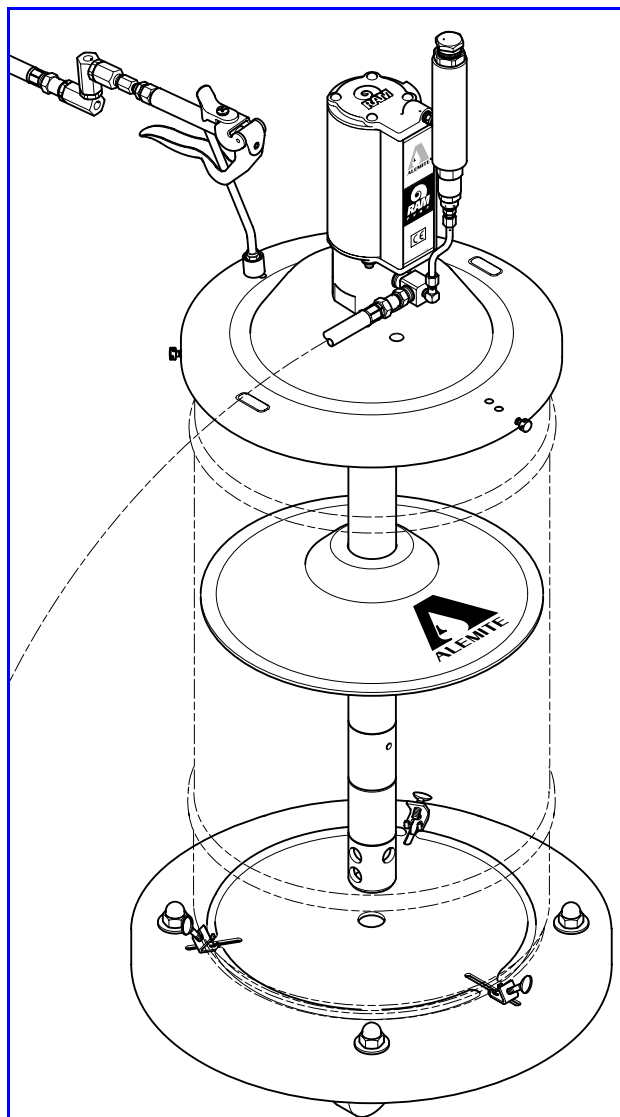
* With Pressurtrol, [100 psi (6.9 Bars) without Pressurtrol]
For information on the air motor, refer to SER 339413

Pump Tube

Material Outlet	Max. Material Pressure		Max. Delivery/Minute (Approximate)*		Displacement per Cycle	
	psi	Bars	Ounces	Grams	in ³	cm ³
3/8 " NPTF (f)	7500	517	51	1449	0.53	8.68

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

Table 1 High-Pressure Pump Specifications



Pump Model	Container Size		Cover, Follower, Control Valve, Z-Swivel, Hose, and Dolly	Overall Height	
	lbs	kg		Inches	Cm
9940	120	50	Not Included	40-5/8	103.1
9941		-	Included	47-1/4 *	120 *
9949	400	180	Not Included	47-1/4	120

* Dimensions include 120-pound container

Figure 1 High-Pressure Pump Model 9940 Series Model 9941 Shown

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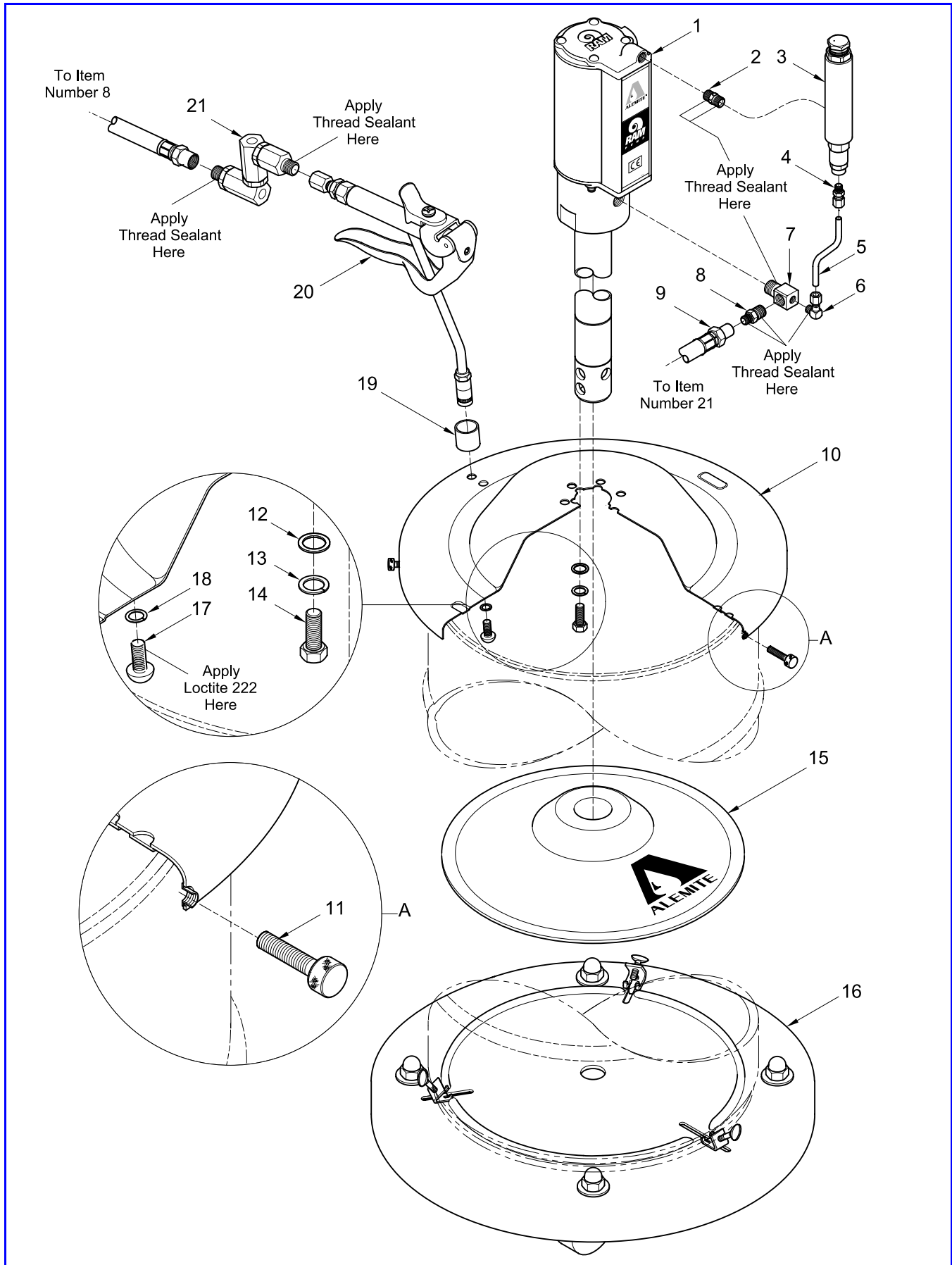


Figure 2-A High-Pressure Pump Model 9940 Series - Exploded View

Item No.	Part No.	Description	Qty	Model	Notes	Numeric Order Part # (Item #)	
1		Pump, High-Pressure	1	9940, 41	See Figure 2-B	6320-3 (20)	
				9949		17804 (12)	
2	327033	Adapter, 1/4 " NPTF (m)	1	All		44734 (8)	
3	319800-1	Control, Pressure (Pressurtrol)	1		See SER 319800-1	48018 (11)	
4	339515	Connector, 3/16 " Tube x 1/8 " -27	1		B52752 (21)		
5	339511	Tube	1		77009 (18)		
6	338507	Fitting, 90 °, 3/16 " Tube x 1/8 " NPTF (m)	1		77786 (14)		
7	324971	Adapter, 3/8 " PTF (f) x 3/8 " NPTF (m)	1		170561 (17)		
8	44734	Adapter, 3/8 " NPTF (m) x 1/2 " -27 (m)	1		172207-1 (13)		
9	317875-7	Hose Assembly, Material	1		315943 (19)		
10	338371	Cover Assembly	1	316315-5 (16)			
11	48018	Screw, Thumb, 1/4 " -28 x 7/8 "	3	9941	Included w/ 338371	317875-7 (9)	
12		Washer, 1/4 "	3			319800-1 (3)	
13		Washer, Lock, 1/4 "	3			324971 (7)	
14		Capscrew, 1/4 " -20 x 1/2 "	3			327033 (2)	
15	338802	Plate, Follower	1			338371 (10)	
16	316315-5	Dolly Assembly	1			See SER 316315-5	338507 (6)
17		Screw, 1/4 " -20 x 5/16 "	1			338802 (15)	
18		Washer, Internal Tooth Lock, 1/4 "	1			339511 (5)	
19	315943	Bushing	1	339515 (4)			
20	6320-3	Valve Assembly, Control	1	See SER 6320-3	339517-A1 (1)		
21	B52752	Z-Swivel Assembly, High-Pressure	1	See SER B52750	339517-B1 (1)		
Legend: Part numbers left blank (or in <i>italics</i>) are not available separately							

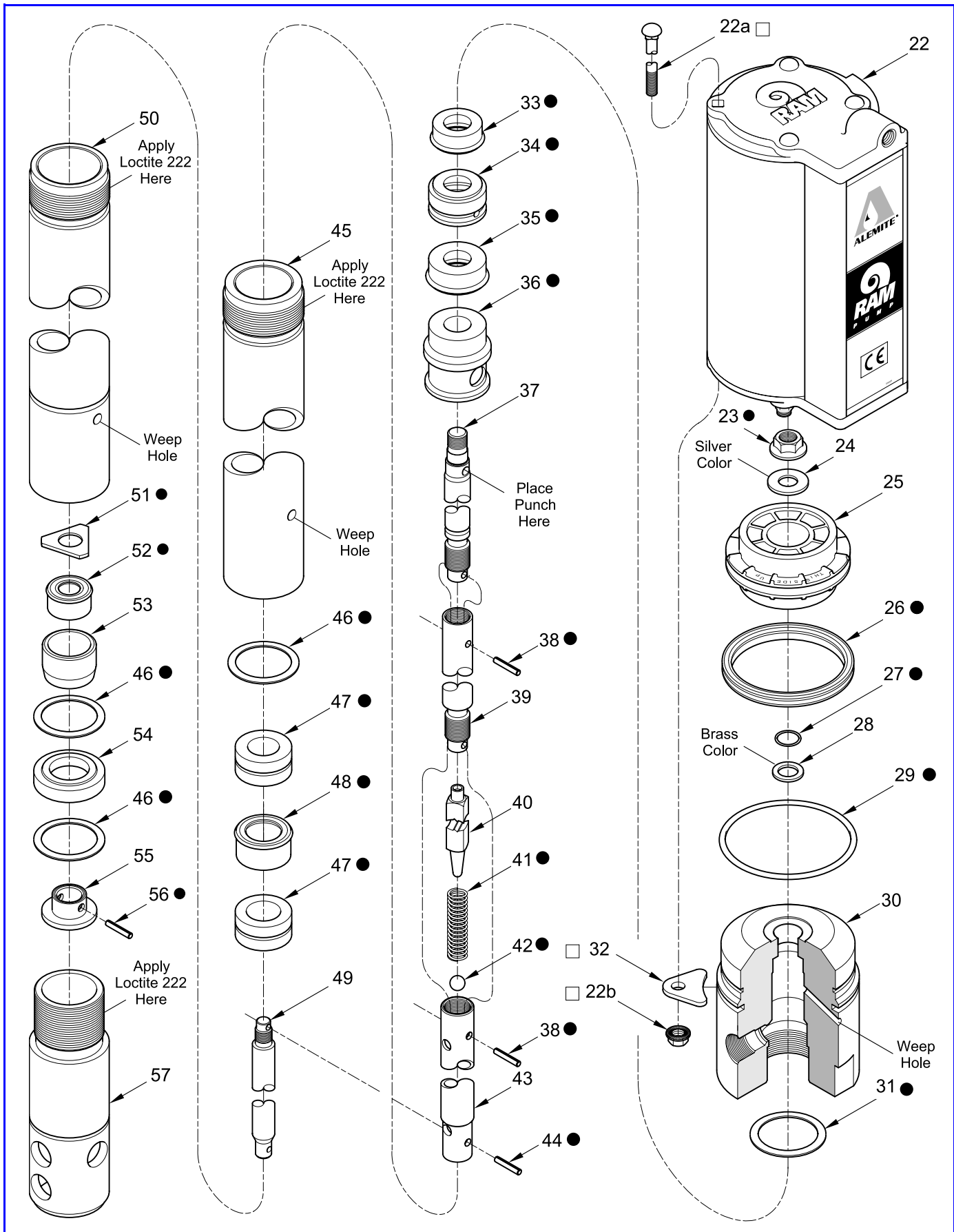


Figure 2-B High-Pressure Pump Assembly for Models 9940, 9941, and 9949 - Exploded View

Item No.	Part No.	Description	Qty	Notes	Numeric Order Part # (Item #)
22		Motor Assembly, Air	1		14536 (24)
22a		Bolt, Carriage, 1/4 " -20 x 7-1/2 "	4	<input type="checkbox"/>	X171000-7 (27)
22b		Nut, Serrated Flange, 1/4 " -20	4	<input type="checkbox"/>	X171003-10 (29)
23	339513	Nut, Flange, 3/8 " -24	1	●	X171008-37 (26)
24		Washer, 3/8 " ID x 7/8 " OD	1		171031-5 (44)
25	339429	Piston, Air	1		171032-3 (56)
26	X171008-37	Quad-Ring, 2-5/8 " ID x 3 " OD	1	●	171032-6 (38)
27	X171000-7	O-Ring, 3/8 " ID x 1/2 " OD	1	●	171700-18 (42)
28	338109	Washer, 3/8 " ID x 3/4 " OD	1		172190-24 (33)
29	X171003-10	O-Ring, 2-3/4 " ID x 3 " OD	1	●	172190-25 (48)
30	338083	Body	1		172190-26 (35)
31		Gasket, 1.12 " ID (Aluminum)	1	●	172190-33 (52)
32	339412	Keeper	4	<input type="checkbox"/>	338055-1 (39)
33		Seal, 1/2 " ID x 3/4 " OD	1	●	338055-2 (39)
34		Ring, Lantern	1	●	338070 (54)
35		Seal, 1/2 " ID x 7/8 " OD	1	●	338072 (34)
36	338073	Bearing (Brass)	1	●	338073 (36)
37	338509	Rod, Upper	1		338074 (31)
38		Pin, Roll, 3/32 " Dia. x 9/16 " Long	2	●	338077 (46)
39	338055-1	Extension, 14.62 " Long	1		Model 9940, 9941 338079 (41)
	338055-2	Extension, 21.12 " Long	1		Model 9949 338080 (40)
40	338080	Guide, Spring	1		338083 (30)
41		Spring	1	●	338109 (28)
42		Ball, 9/32 " Dia.	1	●	338498 (51)
43	338504	Piston	1		338499 (57)
44		Pin, Roll, 5/64 " Dia. x 1/2 " Long	1	●	338500 (53)
45	338508-1	Tube, 19.78 " Long	1		Model 9940, 9941 338501 (49)
	338508-2	Tube, 26.28 " Long	1		Model 9949 338502 (55)
46		Gasket, 1.00 " ID (Aluminum)	3	●	338503 (47)
47		Bearing (Brass)	2	●	338504 (43)
48		Seal, 5/8 " ID x 1 " OD	1	●	338505 (50)
49	338501	Rod, Primer	1		338508-1 (45)
50	338505	Tube, Lower	1		338508-2 (45)
51		Stop	1	●	338509 (37)
52		Seal, 3/8 " ID x 5/8 " OD	1	●	339375 (22b)
53	338500	Valve, Foot	1		339412 (32)
54	338070	Seat	1		339413 (22)
55	338502	Disc, Primer	1		339425 (22a)
56		Pin, Roll, 3/32 " Dia. x 3/8 " Long	1	●	339429 (25)
57	338499	Body, Primer	1		339513 (23)

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

Repair Kits

Part No.	Kit Symbol	Description
393714	●	Kit, Major Repair (Includes tube of 393590 Teflon Grease)
393708	<input type="checkbox"/>	Kit, Keeper
393530-24		Kit, Seal [includes five (5) of item number 33]
393530-25		Kit, Seal [includes five (5) of item number 48]
393530-26		Kit, Seal [includes five (5) of item number 35]
393530-33		Kit, Seal [includes five (5) of item number 52]

Accessories

Model Number	Container Size	Follower	Cover	Bung Adapter
9940	120 lbs	338802	338371	
	50 kg	338993	338983 *	326750
9949	400 lbs	338801	338163	
	180 kg	338994	338984 *	326750

* These Covers are designed to be used with a Bung Adapter.

Table 2 Pump Model 9940 Series Accessories

Performance Chart

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 three different air pressures. The curves relate delivery in ounces (grams) 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).

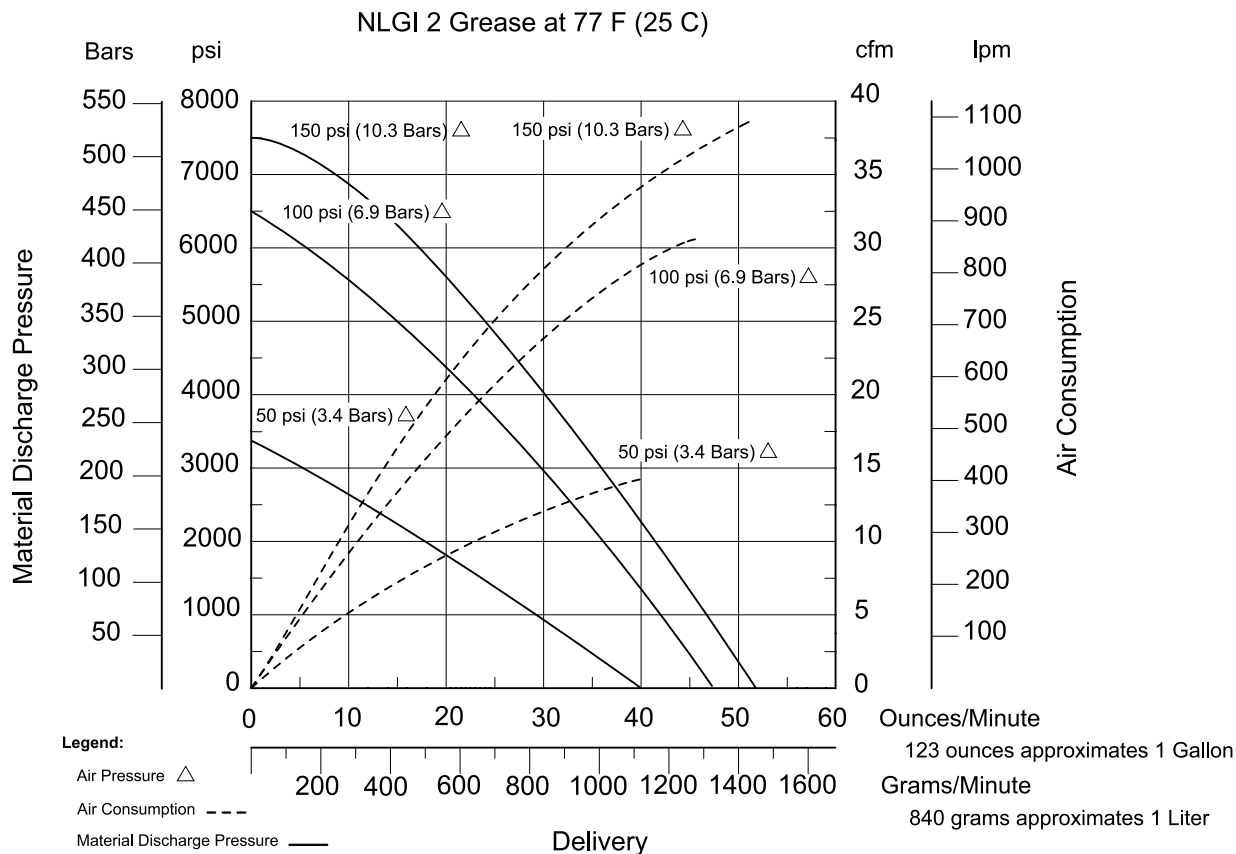
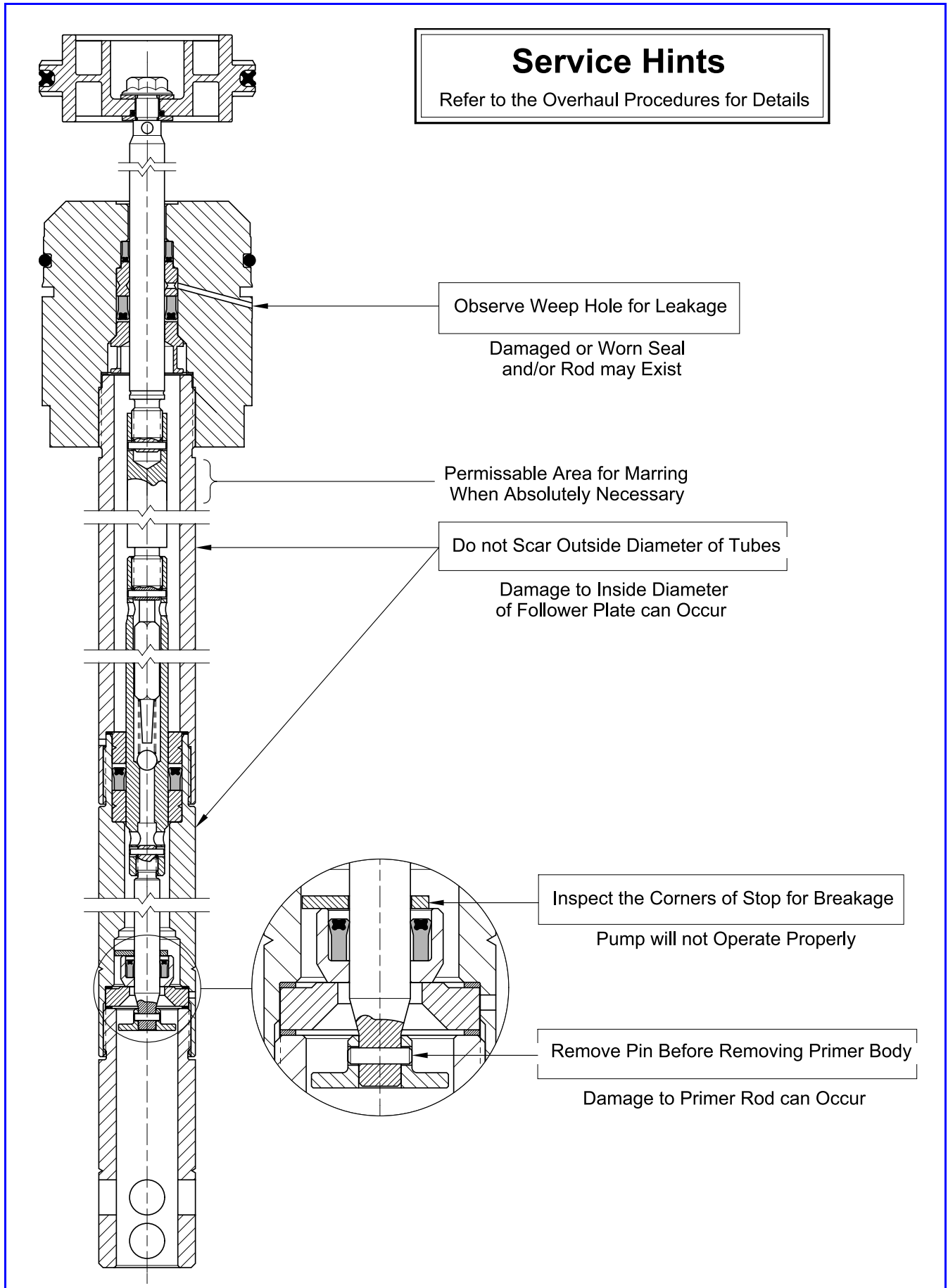


Figure 3 Delivery versus Discharge Pressure and Air Consumption



IMPORTANT: 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 within an enclosed device capable of containing pressure 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.

Overhaul

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

Disassembly

NOTE: The following procedures consider the pump assembly removed from its container.

Separate Pump Tube from Air Motor

Step for Model 9941 Only

1. Remove Hose (9) from Adapter (8) as required.
2. Loosen Connector (4) that secures Tube (5).

3. Remove Nuts (22b) that secure the Body to the Air Motor Assembly.

NOTE: The bottom end cap of the Air Motor Assembly remains on the pump tube during the next procedure.

4. With a side-to-side motion, pull the Air Motor Assembly from the Body.
5. Remove Keepers (32) from the Body.
6. Remove the bottom end cap from the Body.

Pressure Control

7. Unscrew Pressurtrol (3) from Adapter (2).
 - Remove the Adapter from Air Motor Assembly (22) as needed.
8. Unscrew Connector (4) from the Pressurtrol as needed.
9. Remove Tube (5) from Fitting (6) as required.
10. Unscrew Fitting (6) from Adapter (7) as needed.

Step for Model 9941 Only

11. Unscrew Adapter (8) from Adapter (7) as needed.
12. Unscrew the Adapter from Body (30) as needed.

Pump Tube Assembly

Air Piston

13. Remove Nut (23) and Washer (24) that secures Air Piston (25) to Upper Rod (37).
 - Remove the Air Piston from the Rod.

NOTE: Place an appropriate size punch or other suitable tool into the hole of the Upper Rod. See **Figure 2-B**.

14. Remove O-Ring (27) and Washer (28) from the Upper Rod.
15. Remove Quad-Ring (26) from the Air Piston.

Pump Tube (Outer Components)

16. Remove Roll Pin (56) that secures Primer Disc (55) to Primer Rod (49).
 - Use an appropriate size punch.

NOTE: Position the rod assembly as required to align the Roll Pin with the top hole in Primer Body (57).

17. Remove the Primer Disc from the Primer Rod.
18. Unscrew the Primer Body from the Tube.

- Use a solid round bar or other suitable tool.

NOTE: The pump tube will break at one of three places. Unscrew the separated portion from the inner components of the pump tube assembly.

19. Pull the entire rod assembly from the pump tube.
20. Unscrew the remaining sections of the pump tube.
 - Use a strap wrench.

Pump Tube (Inner Components)

21. Remove Gasket (46), Seat (54), additional Gasket (46), Foot Valve (53) [with Seal (52)], and Stop (51) from the bottom of Lower Tube (50).
 - Remove the Seal from the Foot Valve.
22. Remove Bearing (47), Seal (48), and additional Bearing (47) from the top of the Lower Tube.
23. Remove Gasket (46) from Tube (45).

Rod Assembly

24. Remove Roll Pin (44) that secures Primer Rod to Piston (43).
 - Use a punch and a small hammer.
25. Unscrew the Primer Rod from the Piston.
26. Remove Roll Pin (38) that secures Extension (39) to the Piston.
 - Use a punch and a small hammer.
27. Unscrew the Extension from the Piston.
28. Remove Spring Guide (40), Spring (41), and Ball (42) from the Piston.
29. Remove Roll Pin (38) that secures Upper Rod (37) to the Extension as required
 - Use a punch and a small hammer.
30. Unscrew the Upper Rod from the Extension.

Body

31. Remove Gasket (31) from the Body.
32. Remove Bearing (36), Seal (35), Lantern Ring (34), and Seal (33) from the Body.
33. Remove O-Ring (29) from the Body.

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 cleaning solvent. The solvent should be environmentally safe.
2. Inspect all parts for wear and/or damage.
 - Replace as necessary.
3. Inspect Air Piston (26) for fatigue cracks.
 - Replace as necessary.
4. Inspect Upper Rod (37), Piston (43), and Primer Rod (49) closely. Use a magnifying glass to detect any score marks on the components.
 - Replace as necessary.
5. Closely inspect the mating surfaces of Foot Valve (53) and Seat (54) for any imperfections.
 - Ensure a smooth and clean contact is obtained.
6. Install Ball (42) into Piston (43). Fill the Piston with solvent.
 - Make sure no leakage occurs.
7. Inspect the corners of Stop (51) for breakage. Place the Stop into the bottom of Lower Tube (50).
 - Make sure the Stop is secure within the Tube when pressure is applied.

Assembly

NOTE: Prior to assembly, certain components require lubrication. Refer to **Table 3** for details.

Item No.	Description	Type of Lubricant
26	Quad-Ring, 2-5/8 " ID x 3 " OD	Teflon Grease
29	O-Ring, 2-3/4 " ID x 3 " OD	
27	O-Ring, 3/8 " ID x 1/2 " OD	Oil
33	Seal, 1/2 " ID x 3/4 " OD	
35	Seal, 1/2 " ID x 7/8 " OD	
48	Seal, 5/8 " ID x 1 " OD	
52	Seal, 3/8 " ID x 5/8 " OD	

Table 3 Lubricated Components

Pump Tube Assembly

Body

NOTE: Refer to **Figure 4** for a section view of the pump tube assembly.

1. Install and seat Seal (33) [heel end first], Lantern Ring (34) [small end first], Seal (35) [heel end first], and Bearing (36) [small inside diameter first] into Body (30).
2. Install O-Ring (29) onto the upper groove of the Body.

Rod Assembly

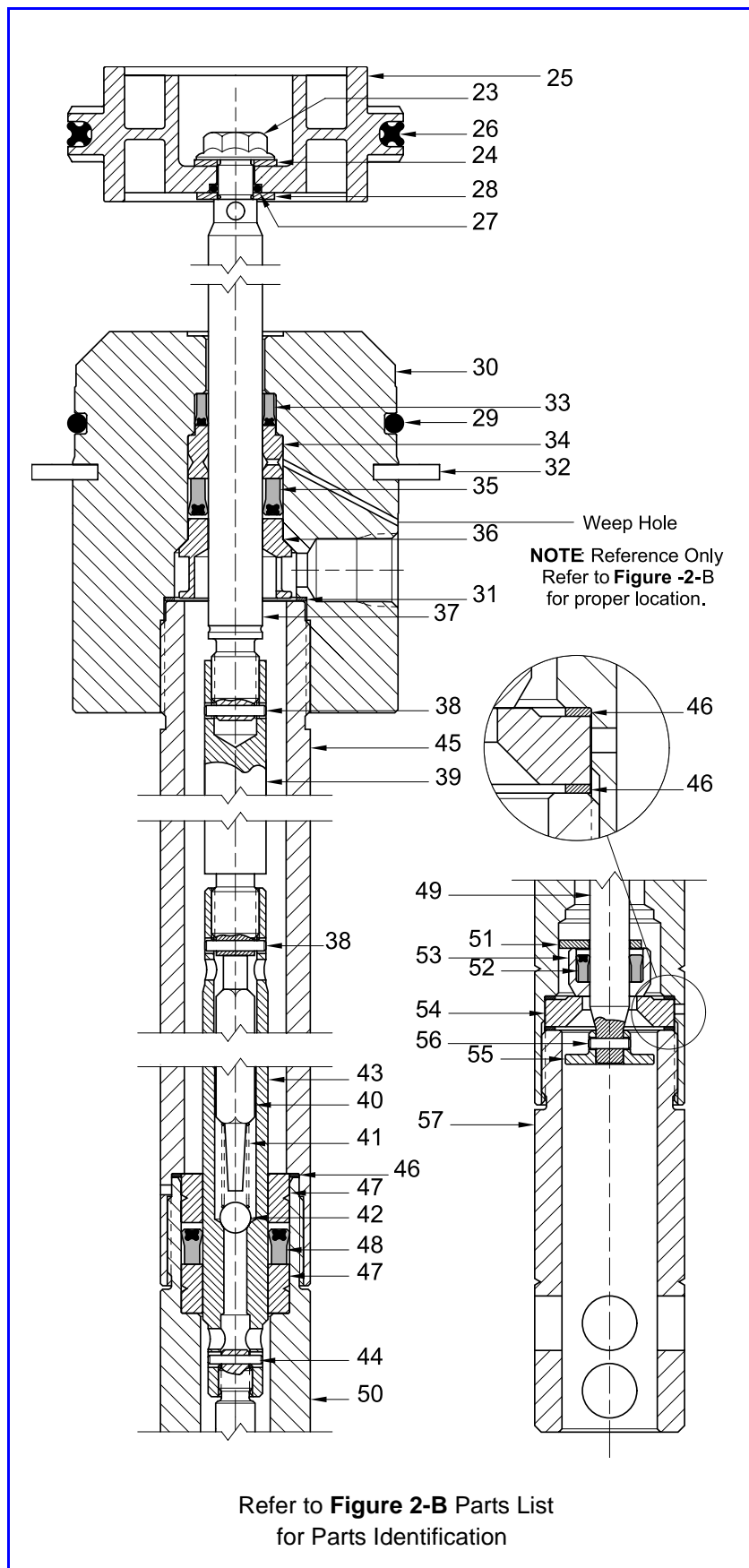
3. Place Ball (42), Spring (41), and Spring Guide (40) [pointed end first] into the Piston.
4. Screw Extension (39) into the top of the Piston until the pin holes align.
 - Install Roll Pin (38).
5. Push on the Ball to ensure it operates properly.
6. Screw Primer Rod (49) into Piston (43) until the pin holes align.
 - Install Roll Pin (44).
7. Screw Upper Rod (37) into the Extension until the pin holes align.
 - Install Roll Pin (38).

Pump Tube (Inner Components)

8. Install and seat Bearing (47), Seal (48) [heel end first], and additional Bearing (47) into the male threaded end of Lower Tube (50).
9. Install and seat Gasket (46) into Tube (45).

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

10. Screw the Lower Tube (with Loctite 222) into the Tube.
 - Make sure the Gasket remains seated.
 - Do not tighten at this time.



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

Figure 4 Pump Tube Assembly (w/o Air Motor) - Section View

CAUTION

Use care during the installation of the rod assembly. Damage to the Seal can occur.

11. Install the rod assembly (Upper Rod first) into the bottom of the Lower Tube.
 - Allow half of the Upper Rod to protrude from the top of the Tube.
12. Install Stop (51) onto Primer Rod (49).
13. Install and seat Seal (52) [heel end first] into Foot Valve (53).
14. Install and seat the Foot Valve assembly (Seal first) onto the Primer Rod.
15. Install and seat Gasket (46), Seat (54), [stepped end first], and additional Gasket (46) into the Lower Tube.
16. Install Primer Disc (55) onto the Primer Rod.
 - Make sure the Pin holes align and install Roll Pin (56).
17. Screw Primer Body (57) [with Loctite 222] into the Lower Tube.
 - Make sure the internal components remain seated.
 - Do not tighten at this time.

Pump Tube to Body

18. Install and seat Gasket (31) into the Body.

CAUTION

Use care during the installation of the pump tube assembly. Damage to the Seals can occur.

19. Install the Upper Rod of the pump tube assembly into the Body.
 - Make sure to apply Loctite 222 to the threads of the Tube.
20. Screw the Tube into the Body.
21. Clamp the Body securely in a soft-jaw vise.

22. Place an appropriate size punch or other suitable tool into the hole of Primer Body (57).
 - Tighten all the components of the assembly securely.
 - Crush all Gaskets.

Air Piston

CAUTION

Use care not to switch Washers (24 and 28). Component damage can occur.

23. Install Washer (28) [brass color] and O-Ring (27) onto the Upper Rod.
24. Install Quad-Ring (26) onto Air Piston (25).
25. Place the Air Piston (observe THIS SIDE UP) on top of the Upper Rod.
26. Install Washer (24) [silver color] and Nut (23) that secures the Air Piston to the Upper Rod.
 - Tighten the Nut securely.

NOTE: Place an appropriate size punch or other suitable tool into the hole of the Upper Rod to tighten the Nut. See **Figure 2-B**.

Pressure Control

27. Screw Connector (4) [with thread sealant] into Pressurtrol (3).
 - Tighten the Connector securely.
28. Screw Adapter (2) [with thread sealant at each end] into the Air Motor Assembly.
 - Tighten the Adapter securely.
29. Screw the Pressurtrol assembly into Adapter (2).
30. Screw Adapter (7) [with thread sealant] into Body (30).
 - Tighten the Adapter securely.
 - Make sure to orient the outlet of the Adapter properly.
31. Screw Fitting (6) [with thread sealant] into the Adapter.
 - Tighten the Fitting securely.
 - Make sure to orient the Fitting properly.

Step for Model 9941 Only

32. Screw Adapter (8) [with thread sealant] into Adapter (7).
-
33. Install Tube (5) into Fitting (6).
 - Do not tighten the Fitting at this time.

Attach Air Motor to Pump Tube

IMPORTANT: The Air Motor Assembly must be secured with at least one Carriage Bolt (22a) and Flange Nut (22b) [preferably at the front].

34. Clamp Body (30) securely in a soft-jaw vise.

CAUTION

Install the RAM Air Motor Assembly with care. Damage to Quad-Ring (26) and/or O-Ring (29) can occur.

HINT: Angle the Air Motor Assembly onto the Quad-Ring and at the same time guide Connector (4) into the Tube. Press the exposed portion of the Quad-Ring into Air Piston (25) with your thumb or finger.

35. Install and seat the Air Motor Assembly onto the Body.
36. Attach the Air Motor Assembly to the Body of the pump tube with Keepers (32), Carriage Bolts, and Flange Nuts.

CAUTION

Do not overtighten Flange Nuts (22b). Component damage can occur.

37. Torque the Flange Nuts in a crisscross pattern from 60 to 70 inch-pounds (6.8 - 7.9 Nm).
38. Tighten Connector (4) and Fitting (6) securely to the Tube.

Operation

WARNING



Do not exceed the lowest pressure rating of any component in the system.

Never point a control valve at any portion of your body or another person. Lubricant discharged at high velocity can penetrate the skin and cause severe injury. Should any fluid appear to puncture the skin, get medical care immediately.

Ensure all components are in operable condition. Replace any suspect parts prior to operation. Personal injury can occur.

NOTE: The following procedures consider the pump to be stripped.

1. Make sure air pressure at the regulator reads zero.
2. Slowly supply air pressure [recommended minimum of 25 psi (1.7 Bars)] to the pump's motor.
 - The pump assembly should cycle.

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

With air pressure at zero:

3. Connect a product hose to Adapter (8) [with thread sealant].
 - Direct the hose into an appropriate container.
4. Place the pump in the product to be dispensed.
5. Slowly supply air pressure to the pump's motor.
6. 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.

WARNING



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

With air pressure at zero:

7. Attach a control valve to the outlet hose of the pump.
8. Slowly supply 25 psi (1.7 Bars) air pressure to the pump's motor.
9. Operate the control valve into a container.
10. Allow the pump to cycle until the system and product is once again free of air.
11. Shut off the control valve.
12. Set the air pressure to 100 psi (6.9 Bar).
13. Visually inspect the pump for external leaks.
 - The pump should not cycle.

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

14. Check the motor for air leakage.

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

Installation

Additional items that should be incorporated into the air piping system are listed in **Table 4**.

Part Number	Description
5604-2	Moisture Separator
7604-B	Regulator and Gauge

Table 4 *Air Line Components*

Troubleshooting Chart

Pump Indications	Possible Problems	Solution
Pump does not cycle	<ol style="list-style-type: none"> Air motor not operating properly Pump tube jammed and/or contains loose components Insufficient air pressure 	<ol style="list-style-type: none"> Inspect air motor and rebuild or replace as necessary. Refer to SER 339413 Rebuild pump tube Increase air pressure
Pump will not prime	<ol style="list-style-type: none"> Excessive cycling speed Pump leaking internally Primer Disc (56) missing 	<ol style="list-style-type: none"> Reduce air pressure See Internal Leaks Install Primer Disc (56)
Pump cycles rapidly	Product source empty	Replenish product
Pump will not stall (cycles more than once or twice per hour)	<ol style="list-style-type: none"> Pump requires break-in period Pump leaking internally Pump leaking externally Distribution system leaking 	<ol style="list-style-type: none"> Operate the pump against moderate fluid pressure for up to one hour See Internal Leaks See External Leaks Correct leak
External Leaks		
Product leakage visible at bottom of Body (30)	<ol style="list-style-type: none"> Tube (45) not sufficiently tight Damaged Gasket (31) 	<ol style="list-style-type: none"> Tighten Tube (45) into Body (30) Separate Tube (45) from Body (30) and replace Gasket (31)
Product leakage visible at weep hole Body (30)	<ol style="list-style-type: none"> Worn or damaged Seal (35) Worn or damaged Upper Rod (37) 	<ol style="list-style-type: none"> Replace Seal (35) Replace Upper Rod (37)
Product leakage visible at weep hole in Lower Tube (50)	<ol style="list-style-type: none"> Primer Body (57) not sufficiently tight Damaged Gasket(s) (46) 	<ol style="list-style-type: none"> Tighten Primer Body (57) into Tube (45) Separate Primer Body (57) from Tube (45) and replace Gasket(s) (46)
Product leakage visible at weep hole in Tube (45)	<ol style="list-style-type: none"> Lower Tube (50) not sufficiently tight Damaged Gasket (46) 	<ol style="list-style-type: none"> Tighten Lower Tube (50) into Tube (45) Separate Lower Tube (50) from Tube (45) and replace Gasket (46)
Internal Leaks		
Pump does not prime or cycles continuously, or slowly (once or twice/hour)	<ol style="list-style-type: none"> Foreign material between Foot Valve (53) and Seat (54) Foreign material between Ball (42) and seat in Piston (43) Worn or damaged Foot Valve (53) Worn or damaged Seat (54) Worn or damaged Ball (42) Worn or damaged Piston (43) Worn or damaged Seal (48) Worn or damaged Seal (52) Worn or damaged Primer Rod (49) Primer Disc (55) missing 	<p>Locate and eliminate source of foreign material.</p> <p>Disassemble pump tube, clean, inspect, and replace worn or damaged components.</p>
Product leakage visible at Air Motor Assembly (22) exhaust	<ol style="list-style-type: none"> Worn or damaged Seals (33 and 35) Worn or damaged Upper Rod (37) 	Separate Tube (45) from Body (30) and replace worn or damaged component(s).

Changes Since Last Printing

Changed Bench Test Air Pressure Setting