Service Guide

9911-1, 9911-R1
9950-1, 9950-B1
9950-C1, 9950-D1

High-Pressure Stripped Pump

Description

The major components of these stripped pump models consist of an air-operated motor that connects directly to a double-acting reciprocating pump tube. The pump tube is equipped with a dynamic primer. See **Figure 2-B**.

These high-pressure stripped pumps (50:1 ratio) are designed to deliver a range of greases [up to NLGI # 2] 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 x Stroke		Air Inlet	Maximum Air Pressure	
Inches	Centimeters		psi	Bars
3 x 3-5/16	7.6 x 8.4	1/4 " NPTF (f)	150	10.3
For details on the air motor, refer to Service Guide SER **339413**				

Pump Tube

Material Outlet	Max. Material Pressure		Delivery/Minute (Approximate)*		Displacement per Cycle	
	psi	Bars	Pounds	Kilograms	In ^{3}	Cm ^{3}
3/8 " NPTF	7500	517	4.7	2.1	0.76	12.5
* For detailed information, refer to **Figure 3**						

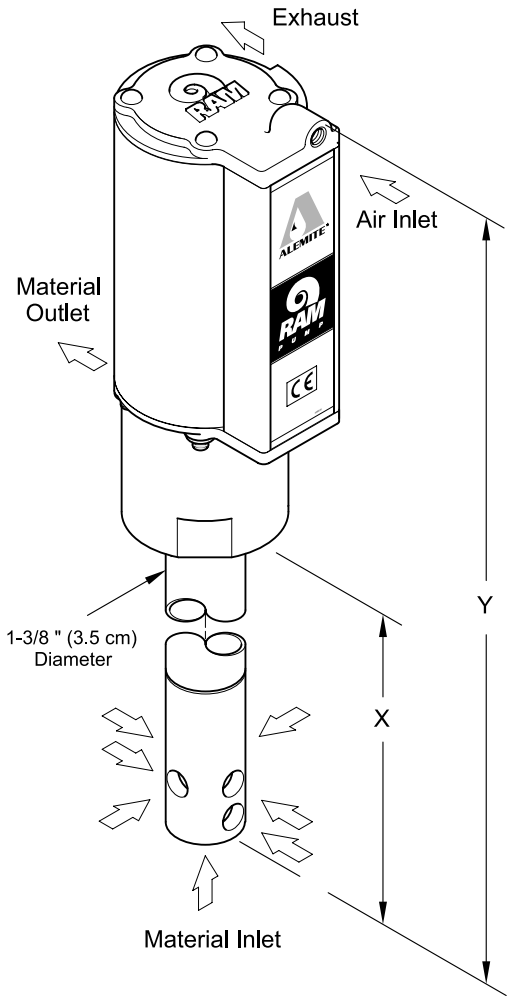
Table 1 *High-Pressure Stripped Pump Specifications*

Package Models

The usage for each model of stripped pump is indicated below.

Pump Model	Package Model	Pump Model	Package Model
9911-1	9911-H1, 9911-Z1	9950-1	9950-A1, -HC1, 9951-1, -S1, -T1
9911-R1	9911-A1, 9911-B1	9950-B1	9911-HA1
		9950-C1	9911-HB1

Table 2 *High-Pressure Stripped Pump Usage*



Stripped Pump Model	Container Size		X		Y	
	lbs	kg	Inches	Cm	Inches	Cm
9911-1	35	-	13.75	34.9	23.6	59.9
9911-R1	70	-	17.68	44.9	27.53	69.9
9950-1	120	50	27.75	70.5	37.6	95.4
9950-B1	-	12.5	15.50	39.4	25.35	64.3
9950-C1	-	20	19.00	48.3	28.85	73.2
9950-D1	400	180	37.06	94.1	46.91	119

Figure 1 *High-Pressure Stripped Pump Models 9911-1, 9950-1 Series*

Alemite Corporation
PO Box 473515, Charlotte, North Carolina 28247-3515
www.alemite.com

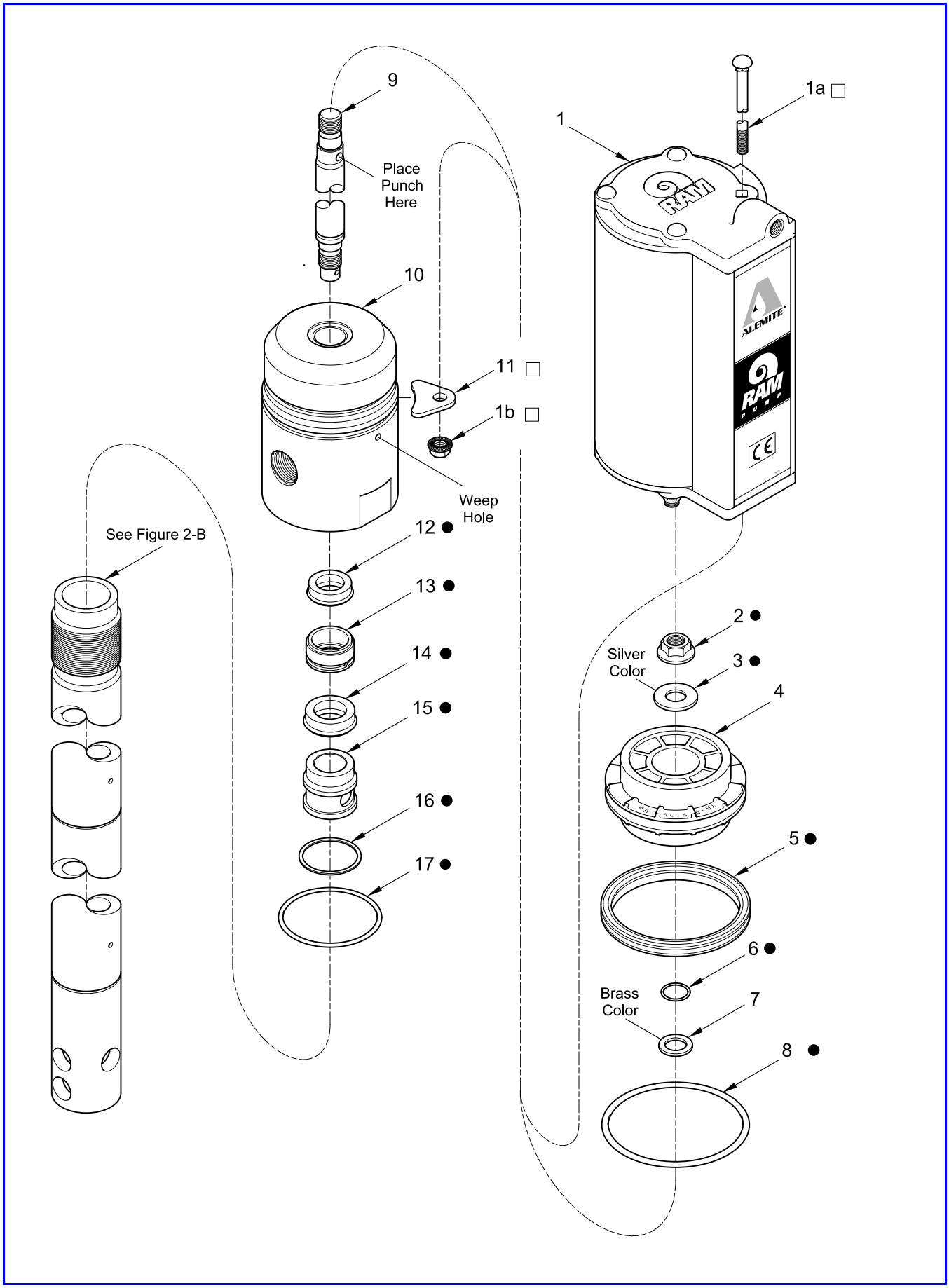


Figure 2 *High-Pressure Stripped Pump Models 9911-1 and 9950-1 Series - Exploded View*

Item No.	Part No.	Description	Qty	Notes		Numeric Order Part # (Item #)
1		Motor Assembly, Air	1		See SER **339413**	*14536* (3)
1a		Bolt, Carriage, 1/4 " -20 x 7-1/2 "	4	□	Included w/ Motor Assembly	X171000-7 (6)
1b		Nut, Serrated Flange, 1/4 " -20	4	□		X171003-10 (8)
2	339513	Nut, Flange, 3/8 " -24	1	●		X171008-37 (5)
3		Washer, 3/8 " ID x 7/8 " OD	1	●		X171009-45 (17)
4	339429	Piston, Air	1			*172190-24* (12)
5	X171008-37	Quad-Ring, 2-5/8 " ID x 3 " OD	1	●	Pack of Ten (10)	*172190-26* (14)
6	X171000-7	O-Ring, 3/8 " ID x 1/2 " OD	1	●		*338072* (13)
7	339109	Washer, 3/8 " ID x 3/4 " OD	1			*338073* (15)
8	X171003-10	O-Ring, 2-3/4 " ID x 3 " OD	1	●	Pack of Ten (10)	*338074* (16)
9	338509	Rod	1			338083 (10)
10	338083	Body	1	□		338109 (7)
11	339412	Keeper	4			338509 (9)
12		Seal, 1/2 " ID x 3/4 " OD	1	●		*339375* (1b)
13		Ring, Lantern (Brass)	1	●		339412 (11)
14		Seal, 1/2 " ID x 7/8 " OD	1	●		*339413* (1)
15		Bearing (Brass)	1	●		*339425* (1a)
16		Gasket (Aluminum)	1	●		339429 (4)
17	X171009-45	O-Ring, 2-9/16 " ID x 2-3/4 " OD	1	●	Pack of Ten (10) Model 9930	339513 (2)

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
393709	●	Kit, Major Repair [Includes tube of 393590 Teflon Grease]	Contains items on **Figures 2-A** and **2-B**
393708	□	Kit, Repair, Air Motor Keeper	
393530-24		Kit, Seal [includes five (5) of item number **14**]	
393530-26		Kit, Seal [includes five (5) of item number **16**]	

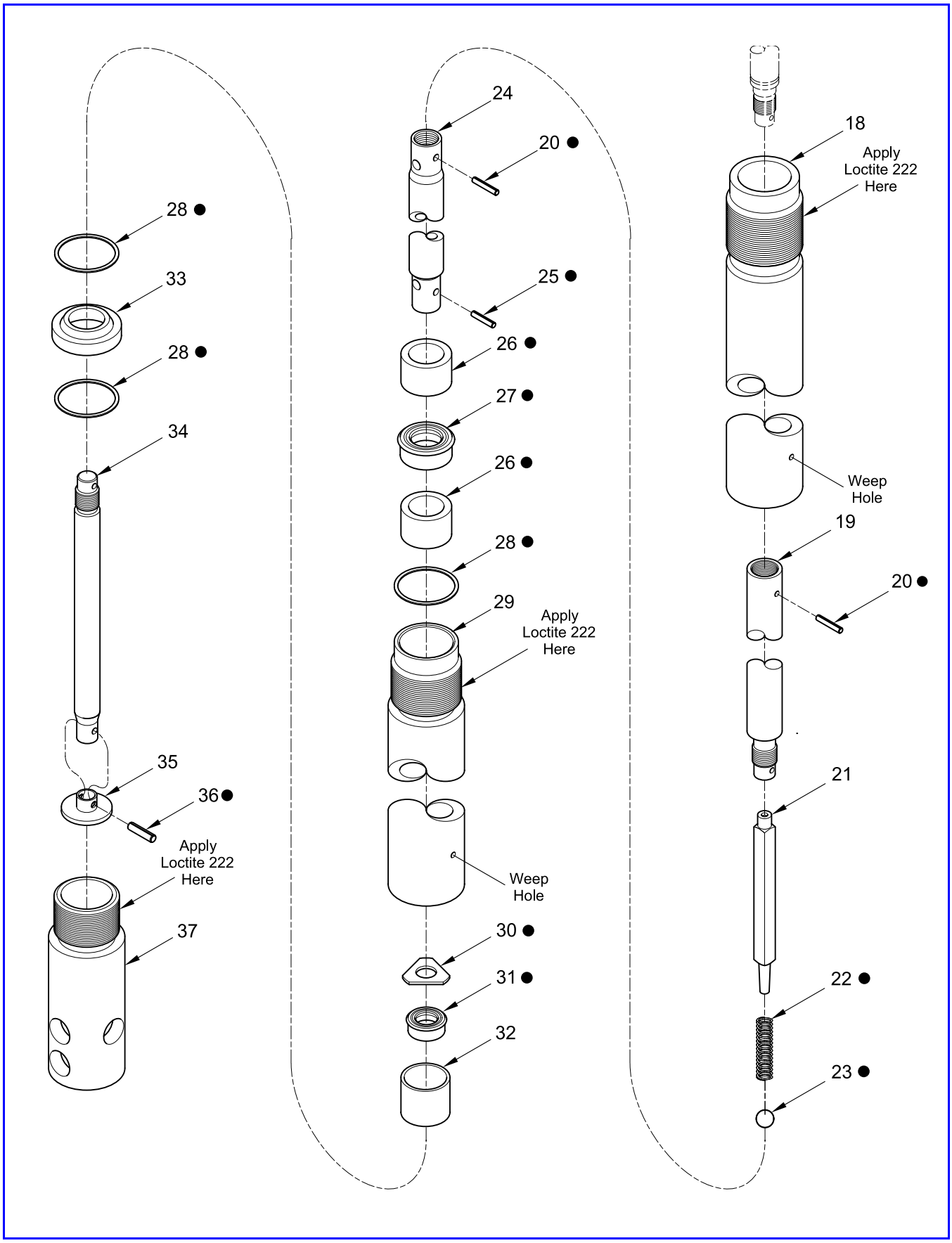


Figure 2-B *High-Pressure Grease Pump Model 9911-1 and 9950-1 - Exploded View (Sheet 2 of 2)*

Item No.	Part No.	Description	Qty	Notes		Numeric Order Part # (Item #)
18	338508-3	Tube, Upper, 5.78 " Long	1		9911-1	*171031-5* (25)
	338508-1	Tube, Upper, 19.78 " Long	1		9950-1	*171032-3* (36)
	338508-7	Tube, Upper, 7.53 " Long	1		9950-B1	171032-6 (20)
	338508-5	Tube, Upper, 11.03 " Long	1		9950-C1	*171700-18* (23)
	338508-9	Tube, Upper, 29.09 " Long	1		9950-D1	*172190-10* (31)
	338508-4	Tube, Upper, 9.71 " Long	1		9950-R1	*172190-25* (27)
19	338055-1	Extension, 14.62 " Long	1		9950-1	338055-1 (19)
	338055-6	Extension, 2.37 " Long	1		9950-B1	338055-3 (19)
	338055-4	Extension, 5.87 " Long	1		9950-C1	338055-4 (19)
	338055-8	Extension, 23.93 " Long	1		9950-D1	338055-6 (19)
	338055-3	Extension, 4.55 " Long	1		9950-R1	338055-8 (19)
20	171032-6	Pin, Roll, 3/32 " Dia. x 5/8 " Long	2	●	Except 9911-1	*338056* (30)
			1		9911-1 Only	338069 (37)
21	338080	Guide, Spring	1			338070 (33)
22		Spring	1	●		338071 (32)
23		Ball	1	●		338075 (34)
24	338084	Piston	1			*338077* (28)
25		Pin, Roll, 5/64 " Dia. x 1/2 " Long	1	●		338078 (35)
26		Bearing (Brass)	2	●		*338079* (22)
27		Seal, 5/8 " ID x 1 " OD	1	●		338080 (21)
28		Gasket (Aluminum)	3	●		*338081* (26)
29	338085	Tube, Lower	1			338084 (24)
30		Stop	1	●		338085 (29)
31		Seal, 0.282 " ID x 0.532 " OD	1	●		338508-1 (18)
32	338071	Valve, Foot	1			338508-3 (18)
33	338070	Seat	1			338508-4 (18)
34	338075	Rod, Primer	1			338508-5 (18)
35	338078	Disk, Primer	1			338508-7 (18)
36		Pin, Roll, 3/32 " Dia. x 3/8 " Long	1	●[1]		338508-9 (18)
37	338069	Body, Primer	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	Notes
393709	●	Kit, Major Repair (Includes tube of 393590 Teflon Grease)	Contains items on **Figures 2-B** and **2-A**
393530-10		Kit, Seal [includes five (5) of item number **36**]	
393530-25		Kit, Seal [includes five (5) of item number **32**]	

Accessories

Part Number	Description
326750-F1	Bung Adapter, 2 " NPTF (m)

Table 3 *High-Pressure Stripped Pump 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 4 *High-Pressure Stripped Pump 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 three 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).

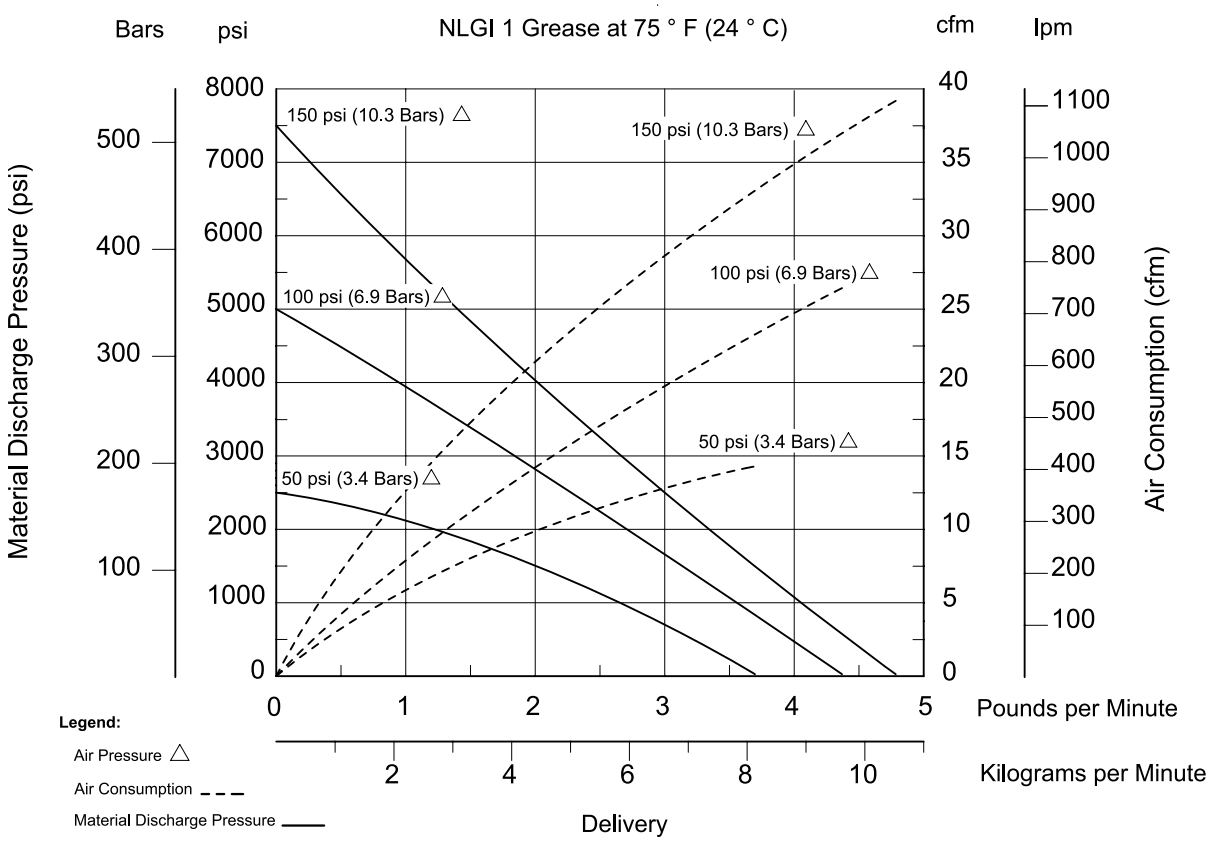


Figure 3 *Delivery versus Discharge Pressure and Air Consumption*

Overhaul

NOTE: Refer to **Figures 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.

Disassembly

Separate Air Motor from Pump Tube

1. Clamp the pump assembly in a soft-jaw vise at Body (**10**).
2. Remove Nuts (**1b**) that secure the Body to Air Motor Assembly (**1**).

   NOTE: The bottom end cap (339416) of the Air Motor Assembly remains on the pump tube during the next procedure.

3. With a side-to-side motion, pull the Air Motor Assembly from the Body.
4. Remove Keepers (**11**) from the Body.
5. Remove the bottom end cap from the Body.

Pump Tube Assembly

Air Piston

6. Remove Nut (**2**) and Washer (**3**) that secures Air Piston (**4**) to Rod (**9**).
   - Place a punch or similar tool into the Rod to prevent its rotation. See **Figure 2-A**.
   - Remove the Air Piston from the Rod.
7. Remove Quad-Ring (**5**) from the Air Piston.
8. Remove O-Ring (**6**) and Washer (**7**) from the Rod.

Body Assembly

9. Remove O-Ring (**8**) from the Body.
10. Unscrew Upper Tube (**18**) from the Body.
11. Remove the Body assembly from the Rod.
12. From inside the Body remove:
    - Gasket (**16**)
    - Bearing (**15**)
    - Seal (**14**)
    - Lantern Ring (**13**)
    - Seal (**12**)

Tube Assembly

13. Push the Rod assembly downward through Upper Tube (**18**) until Primer Disk (**35**) protrudes from Primer Body (**42**).
14. Remove Roll Pin (**36**) that secures the Primer Disk to Primer Rod (**34**).
    - Remove the Primer Disk from the Primer Rod.
15. Remove the entire Rod assembly from the top of the Upper Tube.
16. Remove Roll Pin (**25**) that secures the Primer Rod to Piston (**24**).
    - Unscrew the Primer Rod from the Piston.

Model Dependent Step

Model 9911-1

17. Remove Roll Pin (**25**) that secures Rod (**9**) to the Piston.
    - Unscrew the Piston from the Rod.

All Models Except 9911-1

Remove Roll Pin (**25**) that secures Rod (**9**) to the Extension.
- Unscrew the Extension from the Rod.

18. From inside the Piston remove:
    - Spring Guide (**21**)
    - Spring (**22**)
    - Ball (**23**)

19. Unscrew the Upper Tube from Lower Tube (**29**).
    - Use a strap wrench.

Lower Tube

20. Remove Gasket (**28**), Bearing (**26**), Seal (**27**), and additional Bearing (**26**) from the Lower Tube.

Primer Body

21. Unscrew Primer Body (**37**) from the Lower Tube.

22. From inside the Lower Tube remove:
    - Gasket (**28**)
    - Seat (**33**)
    - additional Gasket (**28**)
    - Foot Valve (**32**) [with Seal (**31**)]
    - Stop (**30**)

23. Remove the Seal from the Foot Valve.

Clean and Inspect

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 (**4**) for fatigue cracks.
    - Replace as necessary.

4. Inspect Rod (**9**), Piston (**24**), and Primer Rod (**34**) closely. Use a magnifying glass to detect any score marks.
    - Replace as necessary.

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

    EXAMPLE: Place Ball (**23**) into Piston (**24**). Fill the Piston with solvent. Make sure no leakage occurs.

Assembly

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

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

Pump Tube Assembly

1. Install and seat Seal (**12**) [heel end first] into the bottom of the Body.

2. Install and seat Lantern Ring (**13**) [small diameter end first] into the Body.

3. Install and seat Seal (**14**) [heel end first] into the Body.

4. Install and seat Bearing (**15**) [small diameter end first] into the Body.

5. Install and seat Gasket (**16**) into the Body.

Step for all Models except 9911-1

6. Screw Rod (**9**) into Extension (**19**) until the Pin holes align.
    - Secure the Extension to the Rod with Roll Pin (**20**).

---

7. Install Ball (**23**), Spring (**22**), and Spring Guide (**21**) [pointed end first] into Piston (**24**).

Item No.	Description	Item No.	Description
Clean Oil			
5	Quad-Ring, 2-5/8 " ID x 3 " OD	14	Seal, 1/2 " ID x 7/8 " OD
6	O-Ring, 3/8 " ID x 1/2 " OD	17	O-Ring, 2-9/16 " ID x 2-3/4 " OD
8	O-Ring, 2-3/4 " ID x 3 " OD	27	Seal, 5/8 " ID x 1 " OD
12	Seal, 1/2 " ID x 3/4 " OD	31	Seal, 0.282 " ID x 0.532 " OD
Magnalube-G Teflon Grease *			
Coat the Bore of the Air Motor Assembly			
* Part number 393590 is a 0.75 ounce (21.8 gm) tube of Magnalube-G Teflon grease			

Table 3 *Lubricated Components*

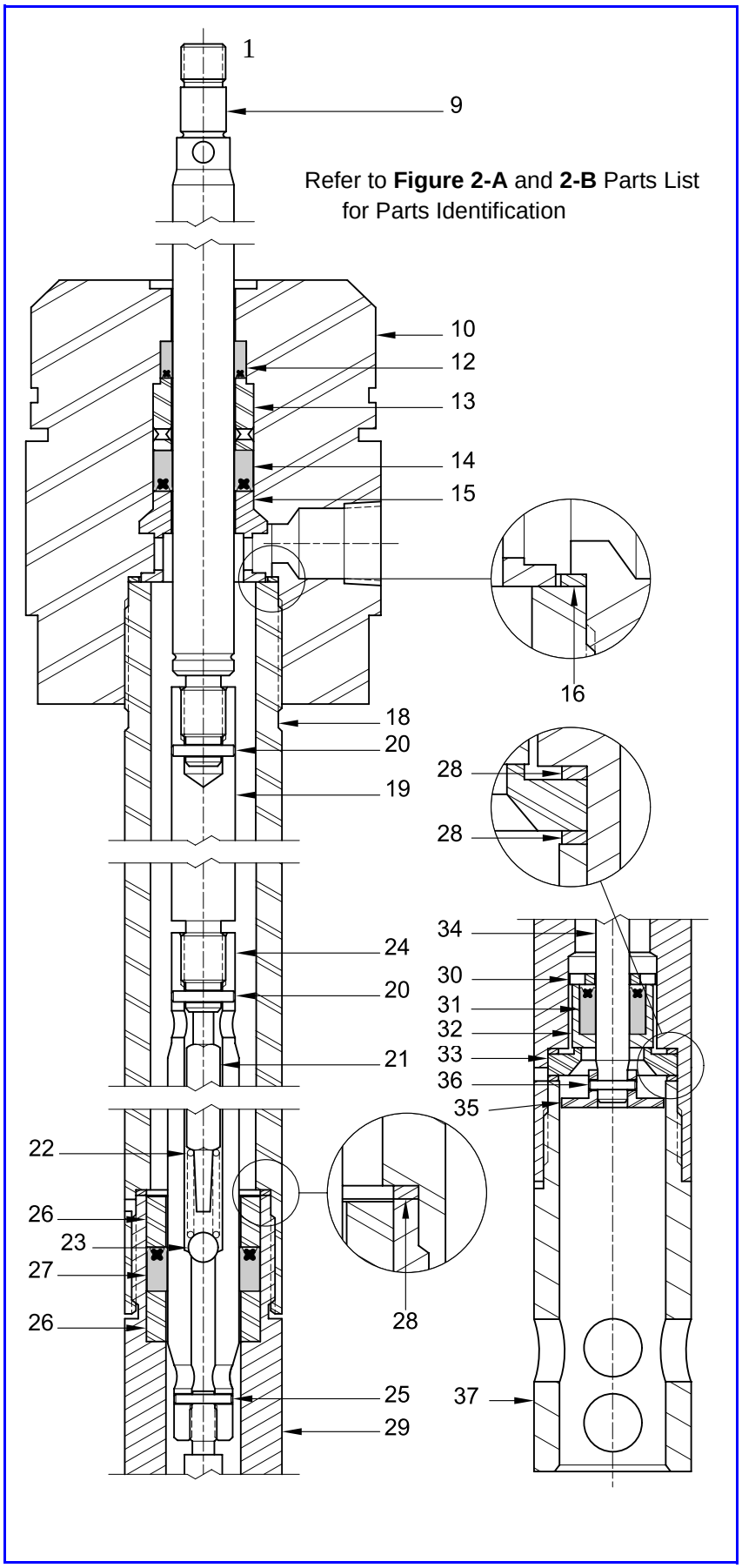


Figure 4 *Pump Tube Assembly - Section View*

Model Dependent Step

Step for all Models except 9911-1

8. Screw the Piston assembly onto the Extension until the Pin holes align.
   - Secure the Piston to the Extension with Roll Pin (**20**).

Step for Model 9911-1 Only

Screw the Piston assembly onto the Rod until the Pin holes align.
- Secure the Piston to the Rod with Roll Pin (**20**).

---

9. Screw Primer Rod (**34**) into the Piston assembly until the Pin holes align.
   - Secure the Piston assembly to the Primer Rod with Roll Pin (**25**).

10. Install and seat Bearing (**26**), Seal (**27**) [heel end first], and additional Bearing (**26**) into the externally threaded end of Lower Tube (**29**).

11. Install and seat Gasket (**28**) into the internally threaded end of Upper Tube (**18**).

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

12. Screw the Lower Tube [with Loctite 222] into the Upper Tube.
    - Follow the thread sealant manufacturer's recommendations.
    - Do not tighten at this time.

13. Install the Rod assembly into the Upper Tube until it protrudes from the Lower Tube.
    - Use care not to damage the Seal.

14. Install Seal (**31**) [heel end first] into Foot Valve (**32**).

15. Install Stop (**30**), the Foot Valve assembly [Seal end first], Gasket (**28**), Seat (**33**) [small diameter end first], and additional Gasket (**28**) over the Primer Rod and into the Lower Tube.

16. Install Primer Disk (**35**) onto the Primer Rod.
    - Make sure the hole align.

17. Install Roll Pin (**36**) that secures the

Primer Disk to the Primer Rod.

18. Screw Primer Body (**37**) [with Loctite 222] into the Lower Tube.
    - Follow the thread sealant manufacturer's recommendations.
    - Do not tighten at this time.

CAUTION

Install the Rod and Tube assembly into the Body with a twisting motion. Use care not to damage the Seals.

19. Install the Rod and Tube assembly into the Body and at the same time screw the Upper Tube [with Loctite 222] into the Body.
    - Follow the thread sealant manufacturer's recommendations.

20. Tighten all the threaded pump tube components into one another.
    - Place a bar or other suitable tool in the holes of the Primer Body for leverage.
    - Tighten sufficiently to properly crush all Gaskets.

21. Install O-Ring (**8**) onto the upper groove of Body (**10**).

Air Piston

CAUTION

Use care not to switch Washers (3 and 7). Component damage can occur.

22. Install Washer (**7**) [brass color] and O-Ring (**6**) onto the Rod.

23. Install Quad-Ring (**5**) onto Air Piston (**4**).

24. Place the Air Piston (observe THIS SIDE UP) on top of the Rod.

25. Install Washer (**3**) [silver color] and Nut (**2**) that secures the Air Piston to the Rod.
    - Tighten the Nut securely.

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

Attach Air Motor to Pump Tube

*IMPORTANT: The Air Motor Assembly must be secured with at least one Carriage Bolt (**1a**) and Flange Nut (**1b**) [preferably at the front].*

26. Clamp the Body of the pump securely in a soft-jaw vise.

CAUTION

Install the RAM Air Motor Assembly with care. Damage to Quad-Ring (5) and/or O-Ring (8) can occur.

HINT: Angle the Air Motor Assembly onto the Quad-Ring and press the exposed portion into Air Piston (**4**) with your thumb or finger.

27. Install and seat the Air Motor Assembly onto Body (**10**).
    - Make sure the outlet of the Body orients properly with the inlet of the Air Motor.

28. Attach the Air Motor Assembly to the Body of the pump tube with Keepers (**11**), Carriage Bolts, and Flange Nuts.

CAUTION

Do not overtighten Flange Nuts (1b). Component damage can occur.

29. Torque the Flange Nuts in a crisscross pattern from 60 to 70 inch-pounds (6.8 - 7.9 Nm).

Bench Test and Operation

1. Slowly supply air pressure [not to exceed 35 psi (2.4 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:

2. Connect a product hose to the pump's material outlet.
   • Direct the hose into an appropriate collection container.

3. Place the pump in grease.

4. Slowly supply air pressure to the pump's motor.

5. Allow the pump to cycle slowly until the grease 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:

6. Attach a control valve to the outlet hose of the pump.
   • Make sure the nozzle on the control valve is open.

7. Slowly supply air pressure to the pump's motor.

8. Allow the pump to cycle slowly until the grease is once again free of air.

9. Set the air pressure to the normal operating pressure.

10. Operate the control valve into a container.

11. Shut off the control valve.
    • Visually inspect the pump for external leaks.
    • The pump should not cycle more than once or twice in one hour.

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

12. Check the motor for air leakage.

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

Installation

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

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

Table 5 *Air Line Components*

Troubleshooting Chart

Pump Indications	Possible Problems	Solution
Pump does not cycle	1. Air motor not operating properly 2. Pump tube jammed and/or contains loose components 3. Insufficient air pressure	1. Inspect air motor and rebuild or replace as necessary 2. Rebuild pump tube 3. Increase air pressure
Pump will not prime	1. Excessive cycling speed 2. Pump leaking internally	1. Reduce air pressure 2. See **Internal Leaks**
Pump cycles rapidly	Product source empty	Replenish product
Pump will not stall (cycles more than once or twice/hour)	1. Pump requires break-in period 2. Pump leaking internally 3. Pump leaking externally 4. Distribution system leaking	1. Operate the pump against moderate fluid pressure for up to one hour 2. See **Internal Leaks** 3. See **External Leaks** 4. Correct leak
External Leaks		
Product leakage visible at weep hole in Body (**10**)	1. Damaged Seal (**14**) 2. Damaged Rod (**9**)	1. Replace Seal (**14**) 2. Inspect Rod (**9**) and replace as necessary
Product leakage visible at bottom of Body (**10**)	1. Upper Tube (**18**) not sufficiently tight 2. Damaged Gasket (**16**)	1. Tighten Upper Tube (**18**) into Body (**10**) 2. Replace Gasket (**16**)
Air leakage at weep hole in Body (**10**)	1. Damaged Seal (**12**) 2. Damaged Rod (**9**)	1. Replace Seal (**12**) 2. Inspect Rod (**9**)
Product leakage visible at weep hole in Upper Tube (**18**)	1. Lower Tube (**29**) not sufficiently tight 2. Damaged Gasket (**28**)	1. Tighten Lower Tube (**29**) into Upper Tube (**18**) 2. Replace Gasket (**28**)
Product leakage visible at weep hole in Lower Tube (**29**)	1. Primer Body (**37**) not sufficiently tight 2. Damaged Gasket(s) (**28**)	1. Tighten Primer Body (**37**) into Lower Tube (**29**) 2. Replace Gasket(s) (**28**)
Internal Leaks		
Pump does not prime or cycles continuously, or slowly (once or twice/hour)	1. Foreign material between Ball (**23**) and Piston (**24**) 2. Foreign material between Foot Valve (**32**) and Seat (**33**) 3. Worn or damaged Ball (**23**) 4. Worn or damaged Piston (**24**) 5. Worn or damaged Foot Valve (**32**) 6. Worn or damaged Seat (**33**) 7. Worn or damaged Seal (**27**) 8. Worn or damaged Seal (**31**) 9. Worn or damaged Primer Rod (**34**)	Locate and eliminate source of foreign material Disassemble pump tube, clean, inspect, and replace worn or damaged components

Changes Since Last Printing

Initial Release