Service Guide

339359-A1
339359-B1
339359-C1

High-Pressure Stripped Pump

Description

The major components of the 339359 series pumps 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 (50:1 ratio) pumps are designed to deliver a range of light to heavy lubricants directly from their original container in centralized lubrication systems.

The follower tube contains a 1/4 " NPTF (f) inlet to allow the return of lubricant to the container when relieving system pressure.

Models 339359-A1, B1, and C1

Each pump model is designed with a pump tube length to accommodate different size containers. See **Figure 1**.

Specifications

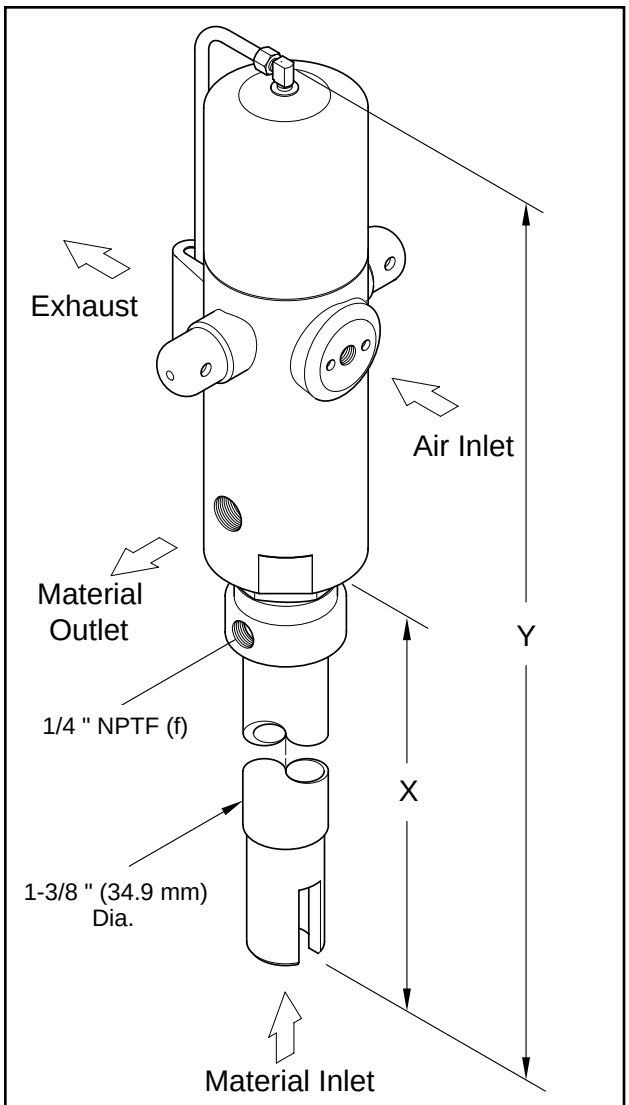
Air Motor

Piston Diameter x Stroke		Air Inlet	Max. Air Pressure	
Inches	Centimeters		psi	Bars
2-7/16 x 1-5/8	6.2 x 4.1	1/4 " NPSI (f)	150	10.3
For information on the air motor, refer to Service Guide SER **324300-5**				

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	40	1136	0.277	4.54
* For detailed information, refer to **Figure 3**						

Table 1 *Model 339359 Series Specifications*



Pump Model	Container Size		X		Y	
	lbs	kg	Inches	Cm	Inches	Cm
339359-A1	-	20	19	48.3	29-1/2	75
339359-B1	120	50	27-3/4	70.5	38-1/4	97.2
339359-C1	400	180	37	94	47-1/2	120.7

Figure 1 *High-Pressure Stripped Pump Model 339359 Series*

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

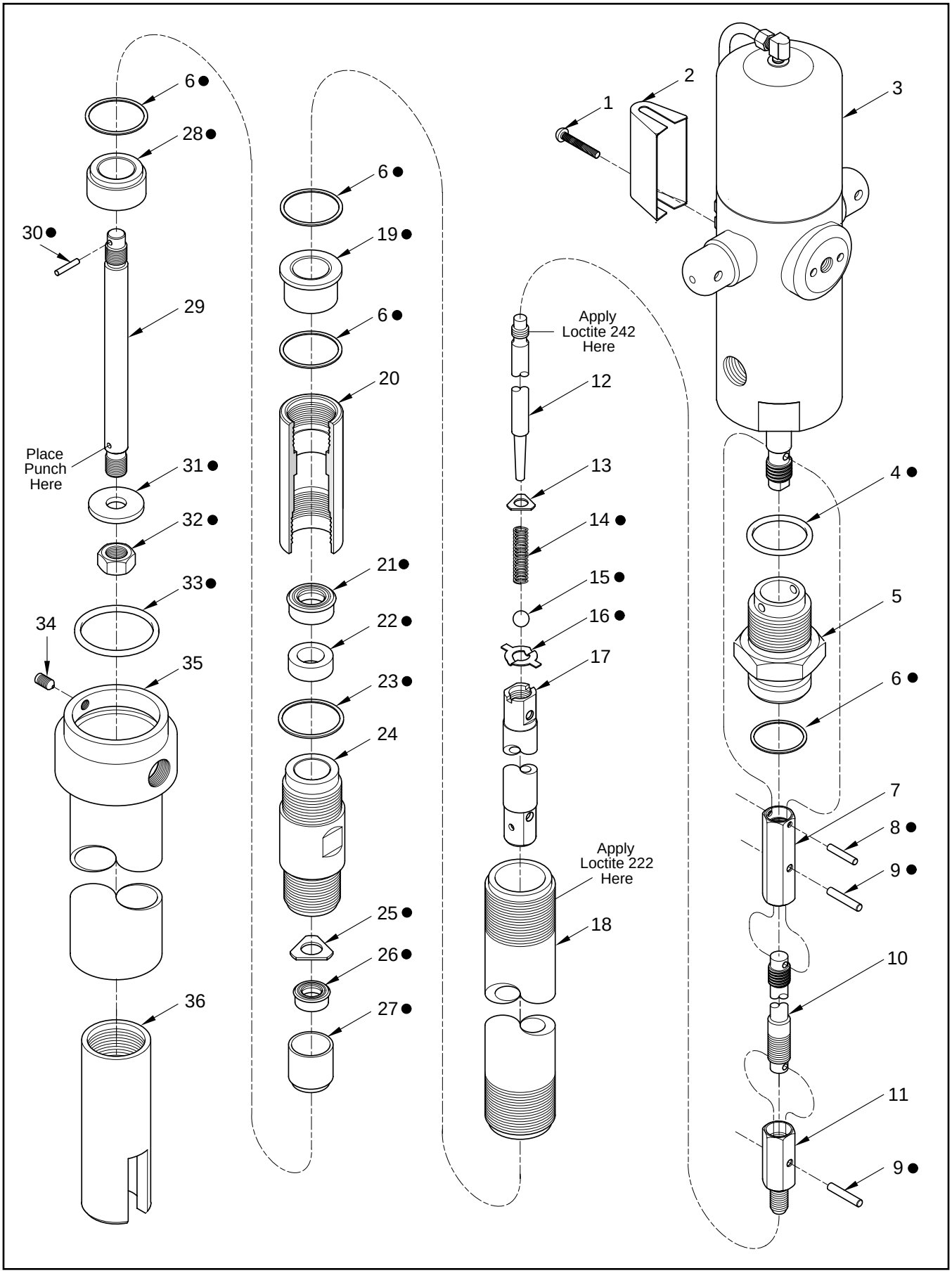


Figure 2 *High-Pressure Pump Models 339359 Series - Exploded View*

Item No.	Part No.	Description	Qty	Notes		Numeric Order Part # (Item #)
1	170292	Screw, Machine 8-32 x 1-1/4 " Long	1			51017 (6)
2	321085	Muffler	1			131168 (30)
3		Motor Assembly, Air	1		See SER **324300-5**	170292 (1)
4	171013-12	O-Ring, 1-1/8 " ID x 1-1/4 " OD	1	●		*170772* (34)
5	324805	Adapter	1			171001-23 (33)
6	51017	Gasket (Aluminum)	4	●		171013-12 (4)
7	320974	Coupling	1			171700-12 (15)
8	320971	Pin, 0.088 " Dia. x 41/64 " Long	1	●		*172190-9* (21)
9	320975	Pin, 0.120 " Dia. x 41/64 " Long	2	●		*172190-10* (26)
10	320704-9	Rod, 9 " Long	1		Model 339359-A1	317536 (16)
	320704-1	Rod, 17-3/4 " Long	1		Model 339359-B1	317549 (25)
	320704-3	Rod, 27 " Long	1		Model 339359-C1	320704-1 (10)
11	320705	Coupling	1			320704-3 (10)
12	320718	Stop, Ball	1			320704-9 (10)
13	321605	Washer	1			320705 (11)
14	320719	Spring, 0.75 " Long	1	●		320706 (36)
15	171700-12	Ball, 3/16 " Dia.	1	●		320712 (32)
16	317536	Washer, Locking	1	●		320713 (31)
17	330332	Piston	1	●		320716 (28)
18	337392-4	Tube, 12-1/2 " Long	1		Model 339359-A1	320718 (12)
	337392	Tube, 21-1/4 " Long	1		Model 339359-B1	320719 (14)
	337392-2	Tube, 30.42 " Long	1		Model 339359-C1	320971 (8)
19		Bearing (Brass)	1	●		320974 (7)
20	337391	Retainer	1			320975 (9)
21		Seal, 0.540 " ID x 0.914 " OD	1	●		321085 (2)
22		Bearing (Brass)	1	●		321605 (13)
23		Gasket (Aluminum) 1.08 " ID	1	●		*324300-5* (3)
24	337388	Extension	1			324805 (5)
25	317549	Washer, Stop	1	●		330329 (29)
26		Seal, 0.282 " ID x 0.532 " OD	1	●		330332 (17)
27	337995	Body, Valve	1	●		*330334* (23)
28	320716	Seat, Valve	1	●		337388 (24)
29	330329	Rod, 3.91 " Long	1			*337389* (22)
30	131168	Pin, 1/16 " Dia. x 0.50 " Long	1	●		337391 (20)
31	320713	Disc, Primer	1	●		337392 (18)
32	320712	Nut, Elastic Stop, 12- 28	1	●		337392-2 (18)
33	171001-23	O-Ring, 1-1/4 " ID x 1-1/2 " OD	1	●		337392-4 (18)
34		Setscrew, 10-32 x 3/16 "	1			*337393* (19)
35	382723-C1	Tube, Follower, 17-7/16 " Long	1		Model 339359-A1	337995 (27)
	382723-A1	Tube, Follower, 26-1/4 " Long	1		Model 339359-B1	382723-A1 (35)
	382723-B1	Tube, Follower, 35-1/2 " Long	1		Model 339359-C1	382723-B1 (35)
36	320706	Body, Primer	1			382723-C1 (35)

Legend:

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

● designates a repair kit item

Repair Kits

Part No.	Kit Symbol	Description
393514	●	Kit, Major Repair
393530-9		Kit, Seal [includes five (5) of item number **21**]
393530-10		Kit, Seal [includes five (5) of item number **26**]

Accessories

Model Number	Container Size	Follower	Cover
339359-A1	20 kg	338992	338982
339359-B1	120 lbs	338802	338371
	50 kg	338993	338983
339359-C1	400 lbs	338911	318040-4
	180 kg	338994	338984

Table 2 *339359 Model 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).

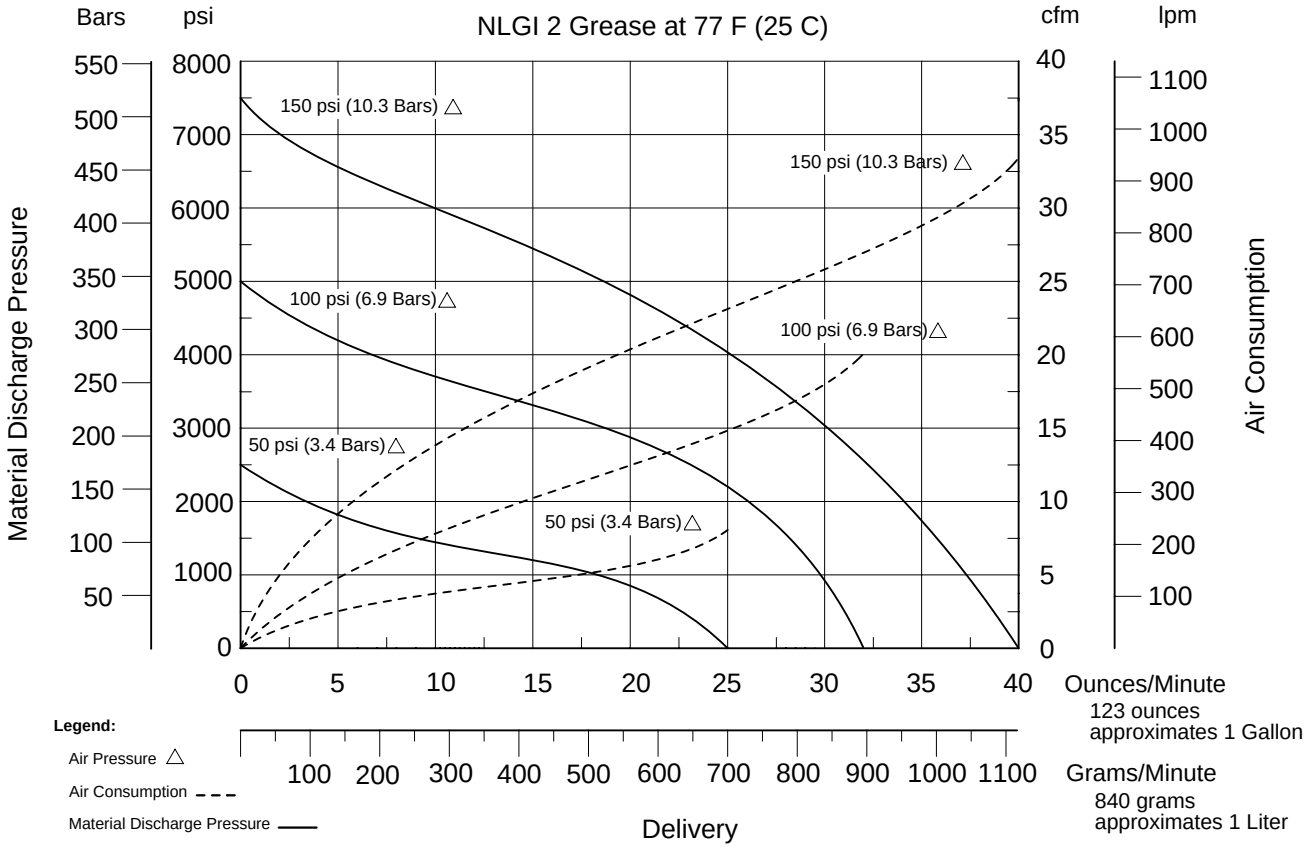
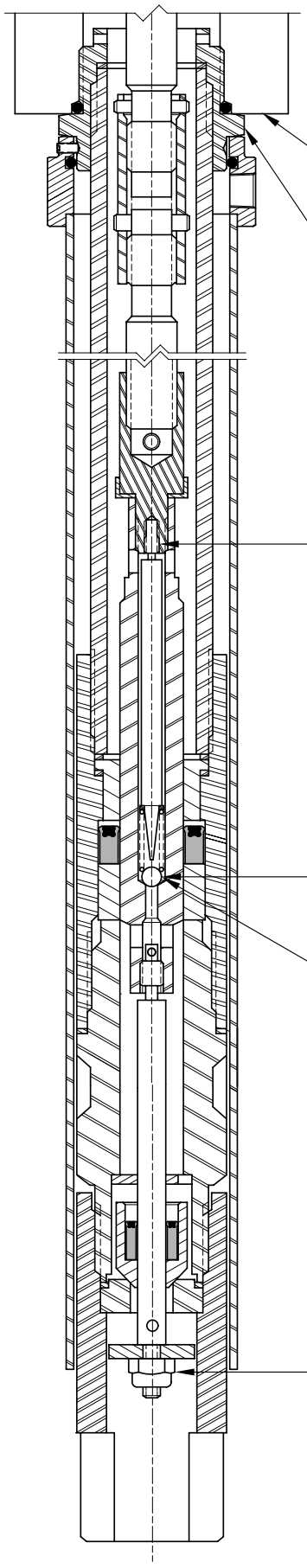


Figure 3 *Delivery versus Discharge Pressure and Air Consumption*



Service Hints

Refer to the Overhaul Procedures for Details

Replace Air Motor Packing Group at Pump Overhaul

Refer to Air Motor Service Guide for Details

Make Sure Adapter is Flush with Air Motor Base

Air Motor Packing Group
may Contain Improper Components

Apply Loctite 242 to Ball Stop at Initial Assembly

Ball Check may not Operate Properly

Check to Ensure Ball Seats Properly in Piston

Leakage can Occur

Check to Ensure Ball Moves a Minimum of 1/8 " (3.2 mm)

Pump may not Prime

Do not Overtighten the Nut

Damage to the Pin may Occur

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 **Figure 2** for component identification on all overhaul procedures.

Disassembly

1. Loosen Setscrew (**34**) that secures Follower Tube (**35**) to Adapter (**5**).
   - Remove the Follower Tube from the Pump.
2. Remove O-Ring (**33**) from the Follower Tube.
3. Secure the pump assembly in a soft-jaw vise at Adapter (**5**).
4. Extend Rod (**29**) from Primer Body (**36**).
   - Apply air to the motor as necessary.
5. Gently remove Nut (**32**) from the Rod.
   - Use an appropriate size punch in the hole of the Rod to prevent rotation. See **Figure 2**.
6. Remove Primer Disc (**31**) from the Rod.
7. Push the Rod into the Primer Body.

Pump Tube (Outer Components)

8. Rotate the Primer Body.
   - Use a large wrench or other suitable tool.

   NOTE: The pump tube will break at one of three places. Unscrew the separated portion from the fastened components of the pump tube assembly.
9. Unscrew the air motor from Adapter (**5**).
   - Rotate the air motor assembly.
10. Remove O-Ring (**4**) from the Adapter.

    NOTE: If the pump was not leaking at the top of Tube (**18**), do not separate the Adapter from the Tube. Components are locked with Loctite 222.
11. Unscrew Tube (**18**) from the Adapter as required.
    - Remove Gasket (**6**).
12. Clamp Retainer (**20**) horizontally in a soft-jaw vise.
13. Unscrew the Primer Body from Extension (**24**).

    *IMPORTANT: Remove Valve Seat (**28**) squarely from the Primer Body. Should the Valve Seat cock during removal, realign and start again. Gasket (**6**) may interfere.*
14. Remove Valve Seat (**28**) from the Primer Body.
15. Remove Gasket (**6**) from the Valve Seat.
16. Unscrew the Extension from the Retainer.
17. Remove Gasket (**23**) from the Extension.
18. Remove Valve Body (**27**) from the Extension.
    - Remove Stop Washer (**25**).
19. Remove Seal (**26**) from the Valve Body.
20. Remove Bearing (**22**) and Seal (**21**) from the Retainer.
21. Unscrew Tube (**18**) from the Retainer.
22. Remove Gasket (**6**), Bearing (**19**), and additional Gasket (**6**) from the Retainer.

Pump Tube (Inner Components)

23. Remove Pin (**8**) that secures Coupling (**7**) to the air motor rod.
    - Unscrew the Coupling assembly from the air motor rod.
24. Clamp Coupling (**11**) in a soft-jaw vise.
25. Remove upper Pin (**9**) that secures Coupling (**7**) to Rod (**10**).
    - Unscrew the Rod from the Coupling.
26. Remove lower Pin (**9**) that secures Coupling (**11**) to the Rod.
    - Unscrew the Rod from the Coupling.
27. Remove Pin (**30**) that secures Piston (**17**) to Rod (**29**).
    - Unscrew the Rod from the Piston.
28. Straighten the tabs on Locking Washer (**16**).
29. Unscrew Piston (**17**) from the Coupling.
30. Remove the Locking Washer from the Piston.
31. Remove Ball (**15**) from the Piston.
32. Remove Spring (**14**) and Washer (**13**) from Ball Stop (**12**).

    NOTE: Separate the Ball Stop from the Coupling only if the connection is loose.

33. Unscrew the Ball Stop from the Coupling as needed.

Clean and Inspect

NOTE: Use the appropriate repair kit for replacement parts. Make sure all the components are included in the kit and in good condition 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 Piston (**17**) 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 (**15**) into Piston (**17**). Fill the Piston with solvent. Make sure no leakage occurs.

Assembly

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

Pump Tube (Inner Components)

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

1. Place Ball (**15**) into Piston (**17**).

   NOTE: If the Ball Stop was previously locked with Loctite 242, skip procedure 2.

2. Screw and seat Ball Stop (**12**) [with Loctite 242] into Coupling (**11**) as needed.
   - Follow the thread sealant manufacturer's recommendations.
   - Tighten securely.
3. Install Washer (**13**) and Spring (**14**) onto the Ball Stop.
4. Position Locking Washer (**16**) into the groove on the Piston.
5. Screw the Coupling assembly into the Piston.
   - Tighten from 19 to 21 foot pounds (25.4 - 28.3 Nm).
   - Continue to tighten and align the nearest flat of the Coupling with the tabs on the Locking Washer as necessary.

   IMPORTANT: Press on the Ball to ensure it moves a minimum of 1/8 " (3.2 mm) prior to contact with the Ball Stop. Should the value be less, check to ensure the Ball Stop is fully seated in the Coupling.

6. Bend the tabs of the Locking Washer upward onto the Coupling.
7. Screw Rod (**29**) into the Piston until the pin holes align.

   NOTE: Use a spot of grease on all pins to prevent movement.

8. Install Pin (**30**).

Item No. on **Figure 2**	Description
4	O-Ring, 1-1/8 " ID x 1-1/4 " OD
21	Seal, 0.540 " ID x 0.914 " OD
26	Seal, 0.282 " ID x 0.532 " OD
33	O-Ring, 1-1/4 " ID x 1-1/2 " OD

Table 3 *Lubricated Components*

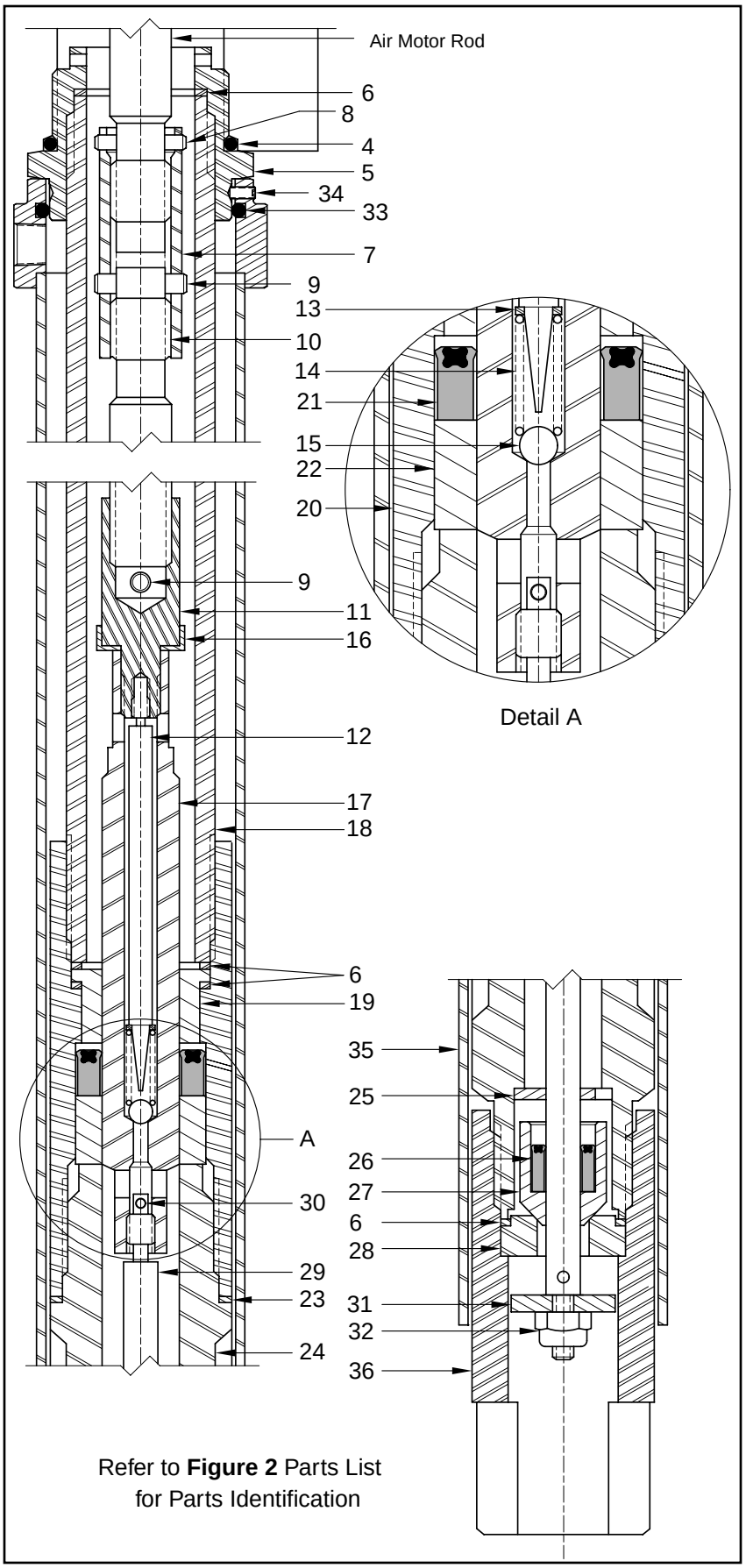


Figure 4 *Pump Tubes 337384-H1, -D1, and -E1 - Section View*

9. Screw Rod (**10**) into Coupling (**11**) until the pin holes align.
   - Install Pin (**9**).
10. Screw Coupling (**7**) [center hole first] onto the Rod until the pin holes align.
    - Install additional Pin (**9**).
11. Secure the air motor assembly in a soft-jaw vise.
12. Screw the Coupling assembly onto the air motor rod until the pin holes align.
    - Install Pin (**8**).

Pump Tube (Outer Components)

13. Install and seat Seal (**21**) [lips first] into the bottom of Retainer (**20**). See **Figure 2**.
14. Install and seat Bearing (**22**) into the bottom of the Retainer.
15. Install Gasket (**23**) onto the top of Extension (**24**).
16. Screw the Extension (Gasket end first) into the bottom of the Retainer.
    - Do not tighten at this time.
17. Install Gasket (**6**) into the top of the Retainer.
18. Install and seat Bearing (**19**) [small diameter first] and additional Gasket (**6**) into the top of the Retainer.
19. Screw Tube (**18**) into the top of the Retainer.
    - Do not tighten at this time.
20. Install and seat Gasket (**6**) into Adapter (**5**).

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

21. Screw the Tube assembly [with Loctite 222] into the Adapter.
    - Follow the thread sealant manufacturer's recommendations.
    - Do not tighten at this time.
22. Install O-Ring (**4**) onto the Adapter.

23. Apply grease to Piston (**17**).
    - This will aid the installation process.

CAUTION

Install the outer component assembly onto the inner assembly with care. Damage to Seal (21) can occur.

24. Install the outer component assembly onto the inner assembly.
    - Use a slight twisting motion to pass the Seal.
    - At the same time thread the Adapter into the base of the air motor.

    IMPORTANT: Make sure the flange portion of the Adapter seats flush against the base of the air motor. Should a gap exist, inspect the components of the air motor packing group.

25. Install Stop Washer (**25**) into the Extension.

26. Install and seat Seal (**26**) [heel end first] into Valve Body (**27**).

27. Install the Valve Body assembly (Seal first) onto Rod (**29**).
    - Make sure the Valve Body assembly seats properly in the Extension.

28. Install and seat Valve Seat (**28**) [large diameter first] into Primer Body (**36**).

29. Install and seat Gasket (**6**) into the Primer Body.

30. Screw the Primer Body onto the Extension.

31. Place a large wrench or other suitable tool into the slot of the Primer Body.
    - Tighten all the components of the assembly securely.
    - Crush all Gaskets.

32. Extend Rod (**29**) from the Primer Body.
    - Apply air to the motor as necessary.

33. Install Primer Disc (**31**) onto the Rod.

34. Gently screw Nut (**32**) onto the Rod.
    - Use an appropriate size punch in the hole of the Rod to prevent rotation. See **Figure 2**.
    - Do not overtighten.

35. Install O-Ring (**33**) into Follower Tube (**35**).

36. Install the Follower Tube onto the Pump.

37. Tighten Setscrew (**34**) that secures the Follower Tube to the Adapter.

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.

1. Make sure air pressure at the regulator reads zero.
2. Install air Connector (**4**) to the inlet of the air motor.
3. Connect Air Coupler (**5**) to the Connector.
4. Slowly supply air pressure [not to exceed 20 psi (1.4 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:

5. Connect a product hose to the pump's material outlet.
   - Direct the hose into an appropriate collection container.
6. Place the pump in grease.
7. Slowly supply air pressure to the pump's motor.
8. Allow the pump to cycle slowly until the system and 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:

9. Attach a control valve to the outlet hose of the pump.
10. Set the air pressure to 100 psi (6.9 Bar).
11. Operate the control valve into a container.
12. Allow the pump to cycle until the system and grease is once again free of air.
13. Shut off the control valve.
    - 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 **Air Motor Service Guide** for detail**s.**

Installation

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

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

Table 4 *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

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 cycles continuously, or slowly (once or twice/hour)	1. Pump leaking internally 2. Pump leaking externally 3. Distribution system leaking	1. See **Internal Leaks** 2. See **External Leaks** 3. Correct leak
External Leaks		
Product leakage visible at top of Adapter (**5**)	1. Initial tightening of Adapter (**5**) to Air Motor Assembly (**3**) not sufficient 2. Damaged O-Ring (**4**)	1. Tighten Adapter (**5**) into Air Motor Assembly (**19**) 2. Replace O-Ring (**4**)
Product leakage at the sections of the pump tube [This requires the removal of Follower Tube (**35**)]	1. Initial tightening of Tube (**18**) to Adapter (**5**) not sufficient 2. Initial tightening of Tube (**18**) to Retainer (**20**) not sufficient 3. Initial tightening of Extension (**24**) to Retainer (**20**) not sufficient 4. Initial tightening of Extension (**24**) to Primer Body (**36**) not sufficient 5. Gasket(s) (**6**) worn or improperly crushed 6. Gasket (**23**) worn or improperly crushed	1. Tighten Tube (**18**) into Adapter (**5**) 2. Tighten Tube (**18**) into Retainer (**20**) 3. Tighten Extension (**24**) into Retainer (**20**) 4. Tighten Extension (**24**) into Primer Body (**36**) 5. Replace Gasket(s) (**6**) 6. Replace Gasket (**23**)
Internal Leaks		
Pump does not prime or cycles continuously, or slowly (once or twice/hour)	1. Foreign material between Ball (**15**) and seat in Piston (**17**) 2. Foreign material between Valve Body (**27**) and Valve Seat (**28**) 3. Worn or damaged Ball (**15**) 4. Worn or damaged Piston (**17**) 5. Worn or damaged Spring (**14**) 7. Worn or damaged Valve Body (**27**) 8. Worn or damaged Valve Seat (**28**) 9. Worn or damaged Seal (**21**) 10. Worn or damaged Seal (**26**) 11. Worn or damaged Rod (**29**)	1. Locate and eliminate source of foreign material. 2. Disassemble pump tube, clean, inspect, and replace worn or damaged components.

Changes Since Last Printing

Initial Release


ALEMITE