

Material Pump

DESCRIPTION

Model 9618 is designed for pumping petroleum products from the original container to a desired location. Due to its non-corrosive (aluminum and stainless steel) "wetted" parts, teflon seals, and nylon 11 piston, the pump is capable of handling a wide range of petroleum products. On later models the teflon seals have been replaced by Urethane and Buna-N seals to reduce leakage problems.

The pump's double-action, reciprocating pump tube is powered by an air-operated spool valve motor providing a constant delivery of material on both the upstroke and downstroke. This design features a 3:1 material-to-air pressure ratio. Maximum operating air pressure of 150 psi would, therefore, create 450 psi maximum material pressure.

Used with an extension (not included), the pump can be mounted directly onto a remote tank or drum having 2" threads. Furthermore, the pump can also be mounted onto a 1 1/2" standpipe or secured by a wall bracket and used with a suction hose.

NOTE: Included with Model 9618, but shipped loose, is an adapter 328034 and female coupler 328030 (see Figure 1).

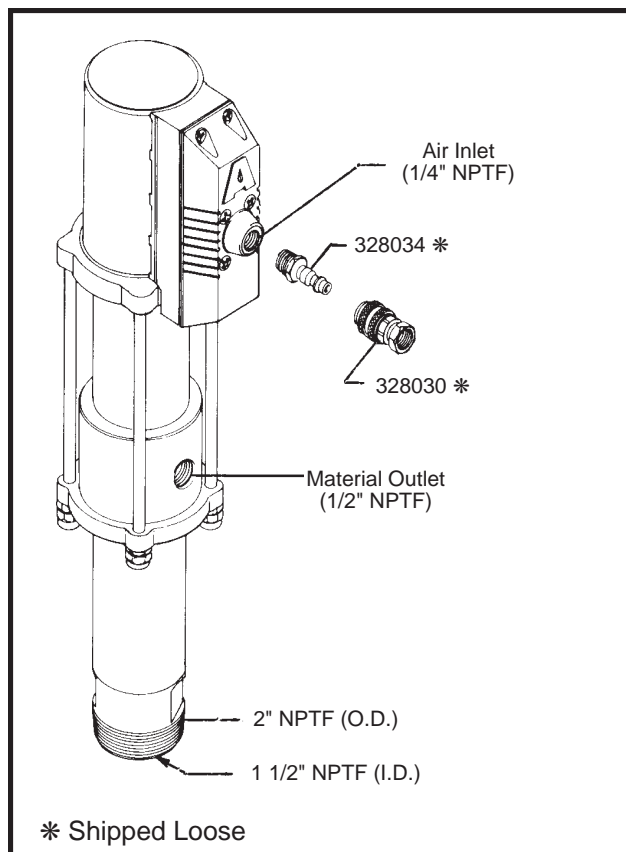


Figure 1

AIR-MOTOR SERVICE

For Service on air motor 338066-A1,
refer to SER 338066-A1.

SPECIFICATIONS

PUMP:

Ratio 3:1
 Maximum Operating Air Pressure 150 psi
 Maximum Material Pressure 450 psi
 Material Outlet 1/2" NPTF (I.D.)
 Material Inlet.....1-1/2" NPTF (O.D.)

AIR MOTOR:

Air Inlet 1/4" NPFT
 Piston Diameter..... 2-15/16"

Piston Stroke 3"

OPTIONAL EQUIPMENT

Description	Part No.
Low-Level Cutoff Valve	321206
Wall Bracket	325749
Siphon Kit	SWA-306
Metal Discharge Hose (4 Feet)	338360
Extension Tube for 16-Gallon Drum	338361-1
Extension Tube for 55-Gallon Drum	338361-2
Extension Tube for 16-Gallon Drum	338361-3
(For use with low-level cutoff valve)	
Extension Tube for 55-Gallon Drum	338361-4
(For use with low-level cutoff valve)	
Extension Tube for 275-Gallon Tank	338361-5

FOR FURTHER SERVICE, CONTACT YOUR LOCAL ALEMITE DISTRIBUTION CENTER



ALEMITE CORPORATION
PO BOX 473515 CHARLOTTE NC 28247-3515



GENERAL SAFETY REQUIREMENTS

Observe the following safety precautions before operating the unit:

1. DO NOT exceed the pressure rating of any component in the system.
2. Read all instruction sheets, and any other explanatory material, thoroughly before attempting to assemble, disassemble, or operate the system.
3. Protect all material and air supply lines from damage or puncture. Especially note places where lines or hoses may be damaged when flexing or twisting, or by hot machinery or moving parts.
4. Check all lines for weak or worn condition prior to daily work operations.
5. Disconnect air and material supply lines and relieve any remaining pressure before attempting to service any component in the system.



DO NOT use Halogenated Hydrocarbon Solvents, such as methylene chloride or 1,1,1-trichloroethane, in this pump. An explosion can result when aluminum parts within an enclosed device capable of containing pressure come in contact with Halogenated Hydrocarbon Solvents.

DO NOT TAKE ANY CHANCES! CONSULT YOUR MATERIAL SUPPLIER TO BE SURE.

The use of pressure relief devices or chemical “stabilizers” WILL NOT provide the necessary safety to eliminate the explosion hazard!

OPERATION

1. With pump suitably mounted, attach material outlet line (1/2" NPTF) to lower body 338288.
2. Thread adapter 328034 into air motor inlet and connect female coupler 328030 to air supply line (1/4" NPTF).
3. Connect female coupler 328030 to adapter 328034.
4. Gradually turn on air supply.

CAUTION: Maximum operating air pressure is 150 psi. DO NOT EXCEED THIS LIMIT.

5. Allow pump to operate until it stalls out against built-up pressure.
6. Inspect system for air and material leaks.
7. System is now ready for use.

AIRLINE ACCESSORIES:

This air motor is lubricated at the factory with a teflon grease (Alemite #393590) and requires no additional lubrication except when servicing.

CAUTION: Do not use an airline oiler on this pump. Lubricated air can cause the motor to malfunction.

A filter/water separator should be used. Wet air can washout the lubricant in the pump.

An air-pressure regulator should be used to provide safe, regulated air pressure.

SERVICE

CAUTION: Before beginning service or attempting to disassemble any part of the unit, shut off air supply, reduce material pressure to zero, disconnect air and material supply lines, and remove entire pump from container or system.

A. SERVICE ON AIR MOTOR 338066-A1:

Refer to Instruction Sheet SER 338066-A1 for service information.

B. SERVICE ON PUMP ASSEMBLY:

(Refer to Figure 2 unless noted otherwise):

NOTE: Kit 393586 contains two different sets of “O” rings and seals. The teflon set is used on the older models of the pump and the Urethane/Buna-N set is used on the newer models of the pump. However, either set can be installed in this pump, depending on the specific application of the pump.

DISASSEMBLY:

1. Remove female coupler 328030 and adapter 328034 from air motor assembly (see Figure 1).
2. Unthread and remove four stop nuts 171147 and four jam nuts 77696 from tie rods 338289.

NOTE: Tie rods may become separated from air motor assembly when removing nuts. If so, remove tie rods from pump.

3. Slide ring 338283 from tie rods and remove from pump.

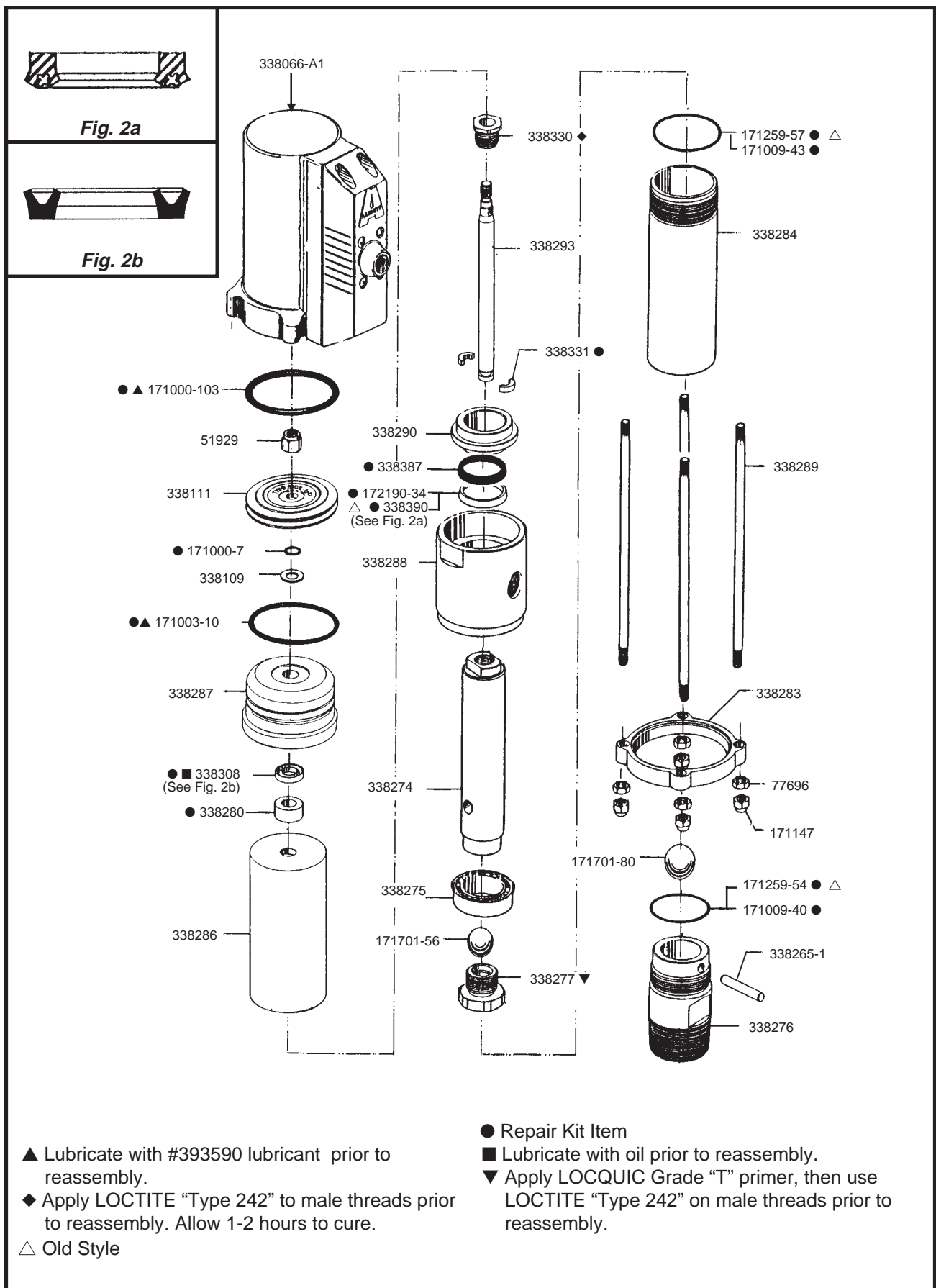


Figure 2: Model 9618 Material Pump

4. Pry air motor assembly 338066-A1 away from upper body 338287 and pull off of piston 338111.

NOTE: If necessary, lubricate “O” ring 171003-10 by applying oil between cylinder of air motor assembly and upper body 338287 to ease separation.

5. Gripping flats of lower body 338288 in a vise, unthread cylinder 338284 and slide downward and off pump.

6. Unthread and remove stop nut 51929 from upper rod 338293.

NOTE: Insert an appropriately sized punch (or similar tool) into hole in top of upper rod to prevent it from turning while removing stop nut.

7. Remove piston 338111 (with “O” ring 171000-103), “O” ring 171000-7, and washer 338109 from upper rod.

8. Remove “O” ring 171000-103 from piston 338111.

9. Slide upper body 338287 upwards and off upper 338293. Remove “O” ring 171003-10 from upper body.

10. From inside upper body 338287, remove bearing 338280 and seal 338308.

11. Slide guard 338286 upwards and off upper rod 338293.

12. Pull rod 338274, with attached parts, downward and remove from lower body 338288.

13. Remove bearing retainer 338290, bearing 338387, seal 172190-34 and “O” ring 171009-43 from lower body 338288.

14. Gripping flats of rod 338274, unthread and remove bushing 338330.

15. Remove upper rod 338293 and two split washers 338331 from rod 338274.

16. Unthread and remove valve seat 338277 from rod 338274. Remove ball 171701-56 and piston 338275 from rod.

17. Unthread and remove foot valve body 338276 from cylinder 338284.

18. Remove “O” ring 171009-40 from tube 338284.

19. Tap out pin 338265-1 from foot valve body and remove ball 171701-80.

20. Clean and inspect all parts.

CAUTION: Worn or damaged parts may present a threat to personnel and property. NEVER reuse worn or damaged parts.

REASSEMBLY:

1. Install two split washers 338331 into groove in bottom end of upper rod 338293 and insert into top end of rod 338274.

2. Slide bushing 338330 over upper rod and thread into rod 338274.

NOTE: Apply LOCTITE “Type 242” to male threads of bushing prior to installation. Allow 1-2 hours to cure before operating pump.

3. Install nylon piston 338275 onto bottom end of rod 338274.

4. Insert ball 171701-56 and thread valve seat 338277 into rod.

NOTE: Apply LOCQUIC Grade “T” primer, then LOCTITE “Type 242” to male threads of valve seat prior to installation.

5. Install seal 172190-34 (“lipped” side first, see Fig. 2a), bearing 338387 and bearing retainer 338290 into top of lower body 338288 until bottomed out.

NOTE: Lubricate seal with oil prior to installation.

6. Install “O” ring 171009-43 into bottom end of lower body 338288.

NOTE: Lubricate “O” ring with oil prior to installation.

NOTE: If using teflon “O” ring, bend “O” ring to install into lower body, then reshape to fit after installation.

7. Insert upper rod 338293 up through bottom end of lower body 338288 and gently push rod 338274 through until it protrudes from the top end of lower body.

NOTE: It may be necessary to hold bearing 338290 in place while pushing rod up through lower body.

8. Slide guard 338286, hollow end first, over upper rod 338293 and into lower body.

9. Install seal 338308 (“lipped” end first, see Fig. 2b) and bearing 338280 into bottom end of upper body 338287 until bottomed out.

NOTE: Lubricate seal with oil prior to installation.

10. Slide upper body 338287 over upper rod 338293 and install onto guard 338286.

11. Install "O" ring 171003-10 into groove in upper body 338287.

NOTE: Lubricate "O" ring with #393590 lubricant prior to installation.

12. Install washer 338109, "O" ring 171000-7, and piston 338111 (with side labeled "THIS SIDE UP" facing upward) onto end of upper rod 338293.

13. Thread stop nut 51929 onto upper rod 338293 securing piston in place.

NOTE: Insert an appropriately sized punch (or similar tool) into hole in top end of upper rod to prevent it from turning while installing nut.

14. Install "O" ring 171000-103 onto piston 338111.

IMPORTANT: Lubricate "O" ring with #393590 lubricant prior to installation. DO NOT USE ANY OTHER LUBRICANT!

15. Install "O" ring 171009-40 into bottom end of cylinder 338284.

NOTE: Lubricate "O" ring with oil prior to installation.

NOTE: If using teflon "O" ring, bend "O" ring to install into cylinder, then reshape to fit after installation.

16. Insert ball 171701-80 into foot valve body 338267 and install pin 338265-1.

17. Thread foot valve body 338267 into cylinder 338284.

18. Slide cylinder 338284 over piston 338275 and thread into lower body 338288.

19. Install air motor assembly 338066-A1 over piston 338111 and firmly onto upper body 338287.

NOTE: If necessary, apply a thin layer of #393590 lubricant to inside wall of cylinder (from air motor assembly) to aid in installation.

20. Align holes of ring 338283 with tie rods and slide ring upwards until counterbore is properly seated on bottom of lower body 338288.

NOTE: If tie rods were separated from air motor assembly during disassembly, reinstall into mounting ring making certain to thread in tie rods completely.

21. Secure pump by threading a jam nut 77696 and stop nut 171147 onto end of tie rods.

NOTE: Make certain tie rods are threaded into mounting ring completely, then gradually tighten jam nuts in an alternate pattern to avoid misalignment of ring.

22. Thread adapter 328034 into air inlet (see Figure 1) and attach female coupler 328030 from air supply line to adapter.

Major Repair Kit

393586 For use on 9618 Material Pump		
Part No.	Description	Qty
171000-7	"O" Ring, 3/8" I.D. x 1/2" O.D.	1
171000-103	"O" Ring, 2-5/8" I.D. x 3" O.D.	1
171003-10	"O" Ring, 2-3/4" I.D. x 3" O.D.	1
171009-40	"O" Ring, 2-1/4" I.D. x 2-7/16" O.D.	1
171009-43	"O" Ring, 2-7/16" I.D. x 2-5/8" O.D.	1
▼ 171259-54	"O" Ring, 2-1/4" I.D. x 2-7/16" O.D. (Teflon)	1
▼ 171259-57	"O" Ring, 2-7/16" I.D. x 2-5/8" O.D. (Teflon)	1
172190-34	Seal, 1-5/8" I.D. x 1-7/8" O.D.	1
338280	Bearing, 3/4" O.D. x 11/32" Thick (Brass)	1
338308	Seal, 1/2" I.D. x 3/4" O.D. (Nitril 80 Duro)	1
338331	Split Washer, 13/32" I.D. x 3/4" O.D.	2
338387	Bearing, 1-3/8" I.D. x 1-3/4" O.D. (PTFE)	1
▼ 338390	Seal, 1-7/8" Diameter (PTFE)	1
338590	Lubricant	1
▼ Teflon Seals for older models		

PARTS LIST - Model 9618 Material Pump (Figure 2)

Part No.	Description	Qty
51929	Elastic Stop Nut, 3/8-24	1
+ 77696	Hex Jam Nut, 5/16-18	4
● 171000-7	"O" Ring, 3/8" I.D. x 1/2" O.D.	1
+ ● 171000-103	"O" Ring, 2-5/8" I.D. x 3" O.D.	1
● 171003-10	"O" Ring, 2-3/4" I.D. x 3" O.D.	1
+ ● 171009-40	"O" Ring, 2-1/4" I.D. x 2-7/16" O.D.	1
+ ● 171009-43	"O" Ring, 2-7/16" I.D. x 2-5/8" O.D.	1
+ 171147	Elastic Stop Nut, 5/16-18	1
171701-56	Ball, 7/8" Diameter	1
171701-80	Ball, 1-1/4" Diameter	1
172190-34	Seal, 1-5/8" I.D. x 1-7/8" O.D.	1
328030	Female Air Coupler, 1/4" NPTF	1
328034	Male Adapter, 1/4" NPTF	1
+ 338066-A1	Air Motor	1
338109	Washer, 3/4" O.D.	1
338111	Piston (Glass Reinforced Nylon)	1
338265-1	Pin, 2-1/16" Long x 1/4" Diameter	1
338274	Piston Rod, 7-1/4" Long	1
338275	Nylon Piston	1
338276	Foot Valve Body	1
338277	Valve Seat (Stainless Steel)	1
+ ● 338280	Bearing, 3/4" O.D. x 11/32" Thick (Brass)	1
338283	Ring (Nickel Steel)	1
338284	Cylinder, 6-1/4" Long x 2-5/8" Diameter	1
338286	Guard, 4-13/16" Long x 2-5/8" Diameter	1
338287	Upper Body (Aluminum)	1
338288	Lower Body (Aluminum)	1
338289	Tie Rod, 8-5/8" Long x 7/32" Diameter (Steel)	4
338290	Bearing Retainer (Aluminum)	1
338293	Upper Rod, 6-1/2" Long x 17/32" Diameter (Steel)	1
+ ● 338308	Seal, 1/2" I.D. x 3/4" O.D. (Nitril 80 Duro)	1
338330	Bushing, 7/8" Long (Steel)	1
+ ● 338331	Split Washer, 13/32" I.D. x 3/4" O.D.	2
+ ● 338387	Bearing, 1-3/8" I.D. x 1-3/4" O.D. (PTFE)	1

- Repair Kit Part
- + Not available as a separate purchased part

NOTE: The parts listed in this instruction sheet are for reference identification in the instructions and illustrations. Some of them are not available as separate parts and these are noted in the parts list. Standard items such as nuts, bolts, etc. should be purchased at a hardware store. Refer to the current parts price list and bulletins before ordering parts, and always give the part number, quantity, description and model where used when ordering parts. Parts availability and prices are subject to change without notice.

PARTS CHANGES SINCE LAST PRINTING

Changed: 171009-40 was 171259-54, 171009-43 was 171259-57, 172190-34 was 338390