Instructions, Parts

GRACO

Divorced Design, 2” npt Bung Mounting

5:1 Ratio Monark® Pump

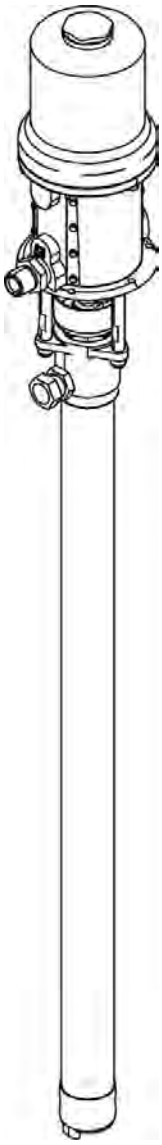
307044U

EN

For transfer and supply of solvent-borne and waterborne finishing materials. For professional use only.

900 psi (6.2 MPa, 62 bar) Maximum Fluid Working Pressure
180 psi (1.2 MPa, 12 bar) Maximum Air Input Pressure

218956, 55 gallon drum, Series D
25N584, hopper feed pump, Series A



Important Safety Instructions

Read all warnings and instructions in this manual and in your Monark® Air Motor manual before using the equipment. Be familiar with the proper control and usage of the equipment. Save these instructions.

CE 2575

II 1/2 G Ex h IIB T2 Ga/Gb
CML 24ATEX6021X

PROVEN QUALITY. LEADING TECHNOLOGY.

Contents

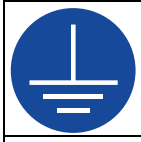
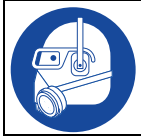
Related Manuals

English Manual Number	Description
307043	Monark® Air Motor, Instructions

Safety Symbols

The following safety symbols appear throughout this manual and on warning labels. Read the table below to understand what each symbol means.

Symbol	Meaning
	Amputation Hazard
	Equipment Misuse Hazard
	Fire and Explosion Hazard
	Moving Parts Hazard
	Skin Injection Hazard
	Skin Injection Hazard
	Toxic Fluid or Fumes Hazard
	Eliminate Ignition Sources

Symbol	Meaning
	Do Not Stop Leaks with Hand, Body, Glove or Rag
	Do Not Place Hands or Other Body Parts Near Fluid Outlet
	Follow Pressure Relief Procedure
	Ground Equipment
	Read Manual
	Ventilate Work Area
	Wear Personal Protective Equipment

Safety Alert Symbol
This symbol indicates: Attention! Become Alert! Look for this symbol throughout the manual to indicate important safety messages.

Warnings

The following warnings apply throughout this manual. Read, understand, and follow the warnings before using this equipment. Failure to follow these warnings can result in serious injury.

⚠ WARNING

FIRE AND EXPLOSION HAZARD

Flammable fumes, such as solvent and paint fumes, in **work area** can ignite or explode. Paint or solvent flowing through the equipment can cause static sparking. To help prevent fire and explosion:

- Use equipment only in well-ventilated area.
- Eliminate all ignition sources, such as pilot lights, cigarettes, portable electric lamps, and plastic drop cloths (potential static sparking).
- Ground all equipment in the work area. See **Grounding** instructions.
- Never spray or flush solvent at high pressure.
- Keep work area free of debris, including solvent, rags and gasoline.
- Do not plug or unplug power cords, or turn power or light switches on or off when flammable fumes are present.
- Use only grounded hoses.
- Do not operate a gasoline engine in the spray area.
- **Stop operation immediately** if static sparking occurs or you feel a shock**.** Do not use equipment until you identify and correct the problem.
- Keep a working fire extinguisher in the work area.

SKIN INJECTION HAZARD

High-pressure fluid from gun, hose leaks, or ruptured components will pierce skin. This may look like just a cut, but it is a serious injury that can result in amputation. **Get immediate surgical treatment.**

- Do not spray without tip guard and trigger guard installed.
- Be sure the trigger lock operates before spraying.
- Engage trigger lock when not spraying.
- Do not point gun at anyone or at any part of the body.
- Do not put your hand over the spray tip.
- Do not stop or deflect leaks with your hand, body, glove, or rag.
- Do not “blow back” fluid; this is not an air spray system.
- Follow the **Pressure Relief Procedure** when you stop dispensing and before cleaning, checking, or servicing equipment.
- Tighten all fluid connections before operating the equipment.
- Check hoses and couplings daily. Replace worn or damaged parts immediately. Permanetly coupled hoses cannot be repaired; replace the entire hose.
- Use only Graco approved hoses. Do not remove any spring guard that is used to help protect the hose from rupture cause by kinks or bends near the couplings.

⚠ WARNING

EQUIPMENT MISUSE HAZARD

Misuse can cause death or serious injury.

- Do not operate the unit when fatigued or under the influence of drugs or alcohol.
- Do not exceed the maximum working pressure or temperature rating of the lowest rated system component. See **Technical Specifications** in all equipment manuals.
- Use fluids and solvents that are compatible with equipment wetted parts. See **Technical Specifications** in all equipment manuals. Read fluid and solvent manufacturer's warnings. For complete information about your material, request Safety Data Sheets (SDSs) from distributor or retailer.
- Do not leave the work area while equipment is energized or under pressure.
- Turn off all equipment and follow the **Pressure Relief Procedure** when equipment is not in use.
- Check equipment daily. Repair or replace worn or damaged parts immediately with genuine manufacturer's replacement parts only.
- Do not alter or modify equipment. Alterations or modifications may void agency approvals and create safety hazards.
- Make sure all equipment is rated and approved for the environment in which you are using it.
- Use equipment only for its intended purpose. Call your distributor for information.
- Route hoses and cables away from traffic areas, sharp edges, moving parts, and hot surfaces.
- Do not lift pressurized equipment.
- Do not kink or over bend hoses or use hoses to pull equipment.
- Keep children and animals away from work area.
- Comply with all applicable safety regulations.

MOVING PARTS HAZARD

Moving parts, such as the air motor piston, can pinch, cut or amputate fingers and other body parts.

- Keep clear of moving parts.
- Do not operate equipment with protective guards or covers removed.
- Equipment can start without warning. Before checking, moving, or servicing equipment, follow the **Pressure Relief Procedure** and disconnect all power sources.

TOXIC FLUID OR FUMES HAZARD

Toxic fluids or fumes can cause serious injury or death if splashed in the eyes or on skin, inhaled, or swallowed.

- Read Safety Data Sheets (SDSs) to know the specific hazards of the fluids you are using.
- Store hazardous fluid in approved containers, and dispose of it according to applicable guidelines.

PERSONAL PROTECTIVE EQUIPMENT

Wear appropriate protective equipment when in the work area to help prevent serious injury, including eye injury, hearing loss, inhalation of toxic fumes, and burns. Protective equipment includes but is not limited to:

- Protective eyewear, and hearing protection.
- Respirators, protective clothing, and gloves as recommended by the fluid and solvent manufacturer.

Installation

Typical Installation

The installation shown in FIG. 1 is only a guide for selecting and installing system components and accessories. Contact your Graco distributor for assistance in designing a system to meet your needs.

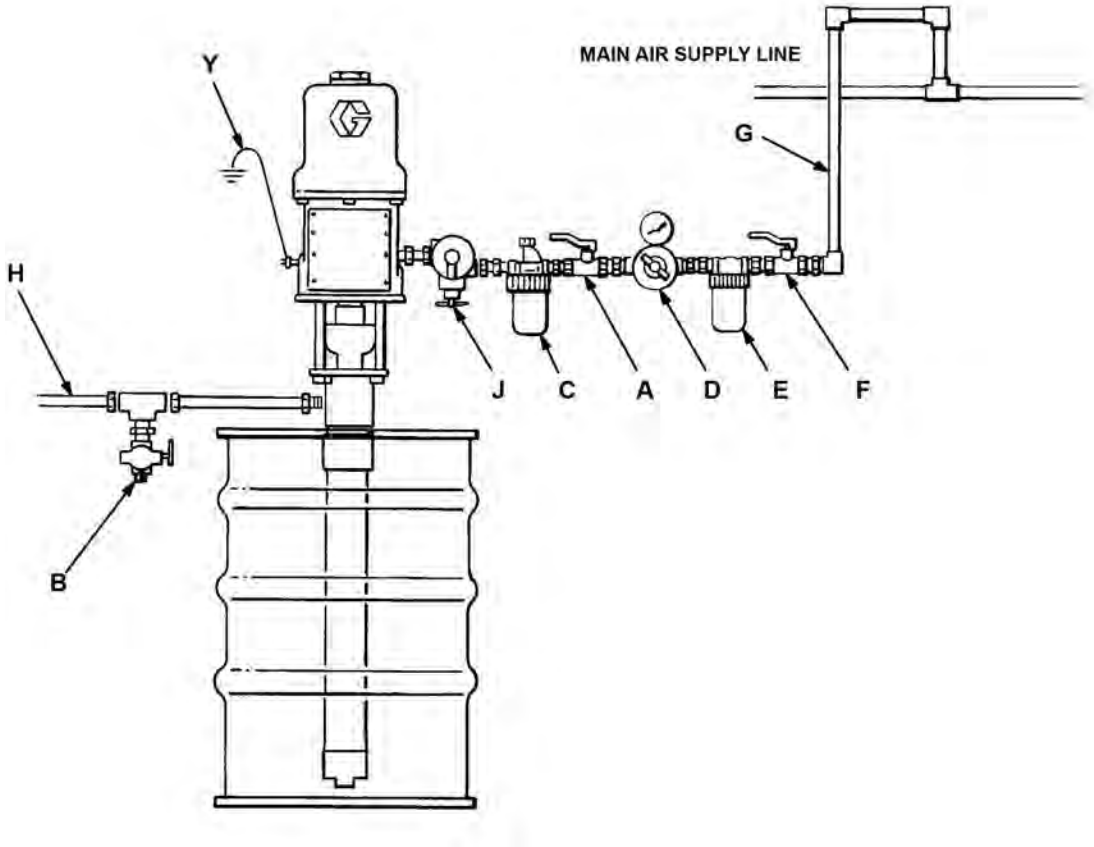


FIG. 1 Typical Installation

Key:

A Bleed-Type Master Air Valve (required, for pump)
B Fluid Drain Valve (required)
C Air Line Lubricator
D Pump Air Regulator (required)
E Air Line Filter
F Bleed-Type Master Air Valve (for accessories)
G Electrically Conductive Air Line
H Electrically Conductive Fluid Line
J Pump Runaway Valve
Y Ground Wire (required)

Grounding

The equipment must be grounded to reduce the risk of static sparking. Static sparking can cause fumes to ignite or explode. Grounding provides an escape wire for the electric current.

Pump: loosen the grounding lug locknut (W) and washer (X). Insert one end of a 12 ga. (1.5 mm^2) minimum ground wire (Y) into the slot in lug (Z) and tighten the locknut securely. See Fig. 2. Connect the other end of the wire to a true earth ground.

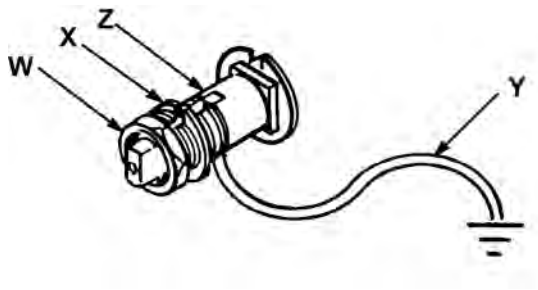


FIG. 2

Air and fluid hoses: use only electrically conductive hoses.

Air compressor: follow manufacturer's recommendations.

Spray gun / Dispense valve: ground through connection to a properly grounded fluid hose and pump.

Fluid supply container: follow local codes and regulations.

Object being sprayed: follow local codes and regulations.

Solvent pails used when flushing: follow local code. Use only conductive metal pails, placed on a grounded surface. Do not place the pail on a nonconductive surface, such as paper or cardboard, which interrupts grounding continuity.

To maintain grounding continuity when flushing or relieving pressure, hold metal part of the spray gun/dispense valve firmly to the side of a grounded metal pail, then trigger the gun/valve.

Accessories

Two accessories are required in your system: a bleed-type master air valve (A) and a fluid drain valve (B). These accessories help reduce the risk of serious injury including fluid injection, splashing in the eyes or on the skin, and injury from moving parts if you are adjusting or repairing the pump.

The bleed-type master air valve relieves air trapped between this valve and the pump after the air regulator is shut off. Trapped air can cause the pump to cycle unexpectedly. Locate the valve close to the pump.

The fluid drain valve assists in relieving fluid pressure in the displacement pump, hose, and gun. Triggering the gun to relieve pressure may not be sufficient.

Mounting Accessories

Mount the pump to suit the type of installation planned. The pump dimensions and mounting hole layout are shown on page 16.

The bung adapter has 2” npt threads. Install the pump in the drum cover until it is 1/2” (13 mm) from the bottom of the drum, then tighten the bung adapter.

Air and Fluid Hoses

Be sure all air and fluid hoses are properly sized and pressure-rated for your system. Use only electrically conductive air and fluid hoses. Fluid hoses must have spring guards on both ends.

Connect an electrically conductive fluid hose (H) to the pump’s 3/4 npt(f) fluid outlet.

Connect an electrically conductive 3/8 in. ID (minimum) air hose (G) to the pump’s 3/8 npt(f) air inlet.

Air Line

Install the following accessories in the order shown in FIG. 1, using adapters as necessary.

- **Pump runaway valve (J):** senses when the pump is running too fast and automatically shuts off the air to the motor. A pump which runs too fast can be seriously damaged. Install closest to the pump air inlet.
- **Air line lubricator (C):** provides automatic air motor lubrication.
- **Bleed-type master air valve (A):** is required in your system to relieve air trapped between it and the motor when the valve is closed. Be sure the bleed valve is easily accessible from the pump, and is located downstream from the air regulator.
- **Air regulator (D)**: is required to control pump speed and outlet pressure by adjusting the air pressure to the pump. Locate the regulator close to the pump, but upstream from the bleed-type master air valve.
- **Air line filter (E):** removes harmful dirt and moisture from compressed air supply.
- **Second bleed-type air valve (F):** isolates air line accessories from servicing. Locate upstream from all other air line accessories.

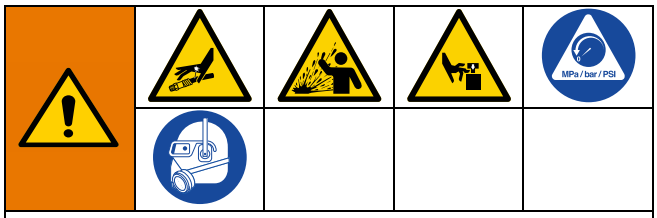
Fluid Line

- **Fluid drain valve (B):** required in your system, to relieve fluid pressure in the hose and gun. Install the drain valve pointing down, but so the handle points up when opened).

Operation

Pressure Relief Procedure

Follow the Pressure Relief Procedure whenever you see this symbol.



This equipment stays pressurized until pressure is manually relieved. To help prevent serious injury from pressurized fluid, such as skin injection, splashing fluid and moving parts, follow the Pressure Relief Procedure when you stop spraying and before cleaning, checking, or servicing the equipment.

1. Lock the spray gun/dispense valve trigger safety.
2. Close the pump air regulator.
3. Close the bleed-type master air valve (required in your system).
4. Unlock the spray gun/dispense valve trigger safety.
5. Hold a metal part of the spray gun/dispense valve firmly to the side of a grounded metal pail, and trigger the spray gun/dispense valve to relieve pressure.
6. Lock the spray gun/dispense valve trigger safety.
7. Open the fluid drain valve (B) (required in your system), having a container ready to catch the damage.
8. Leave the drain valve open until you are ready to spray/dispense again.
9. If you suspect the spray tip or hose is clogged or that pressure has not been fully relieved:
    a. VERY SLOWLY loosen the tip guard retaining nut or the hose end coupling to relieve pressure gradually.
    b. Loosen the nut or the coupling completely.
    c. Clear the obstruction in the hose or tip.

Flush Pump Before Use

The pump was tested with lightweight oil, which is left in to protect the pump parts. To avoid contaminating your fluid with oil, flush the pump with a compatible solvent before using the equipment.

Fill the wet-cup 1/2 full with Graco Throat Seal Liquid (TSL) or a compatible solvent. Keep the cup half-filled at all times to help prevent the fluid you are pumping from drying on the exposed displacement rod and damaging the throat packings.

Starting and Adjusting the Pump

1. See the **Typical Installation**, page 6. Be sure the air regulator (D) and bleed-type master air valve (A) are closed. Do not install the spray tip yet.
2. Hold a metal part of the spray gun/dispense valve firmly to the side of a grounded metal pail and hold the trigger open. Then open the pump's bleed-type master air valve (A). Now slowly open the air regulator (D) until the pump starts, about 40 psi (0.26 MPa, 2.8 bar).
3. Cycle the pump slowly until all air is pushed out and the pump and hoses are fully primed. Release the gun/valve trigger and engage the trigger lock. The pump should stall against pressure when the trigger is released.
4. Perform **Pressure Relief Procedure**, page 9.
5. With the pump and lines primed, and with adequate air pressure and volume supplied, the pump will start and stop as the gun/valve is opened and closed. In a circulating system, the pump will run continuously and will speed up or slow down as the system demands until the air supply is shut off. Always use the lowest air pressure necessary to get the desired results. Higher pressures waste fluid and cause premature wear of the pump packings and spray tip.

Never exceed the Maximum Working Pressure of the lowest rated component in the system, to reduce the risk of component rupture which can cause serious injury, including fluid injection or splashing in the eyes or on the skin.

6. Never allow the pump to run dry of the fluid being pumped. A dry pump will quickly accelerate to a high speed, possibly damaging itself. A pump runaway valve (J), which shuts off the air supply to the pump if the pump accelerates beyond the pre-set speed is available. If your pump accelerates quickly or is running too fast, stop immediately and check the fluid supply. If the supply container is empty and air has been pumped into the lines, refill the container and prime the pump and the lines with fluid, or flush and leave it filled with a compatible solvent. Be sure to eliminate all air from the fluid system.

Maintenance

Check Valve Adjustment

The piston and intake check valves are set for medium viscosity fluids. To adjust the valves, first perform the **Pressure Relief Procedure**, page 9, then disassemble the pump as described in the Service section on page 12.

Remove the ball stop pin (17) from the intake valve seat (30). Move the pin to a higher set of holes to increase the ball travel for heavier fluids, or to a lower set of holes to decrease the ball travel for lighter fluids.

To adjust the piston ball travel, loosen the locknut (3) and turn the piston (11) counterclockwise to increase the ball travel and clockwise to decrease the ball travel. For medium viscosity fluid, the ball travel should be 0.19” (4.8 mm). See Fig. 3.

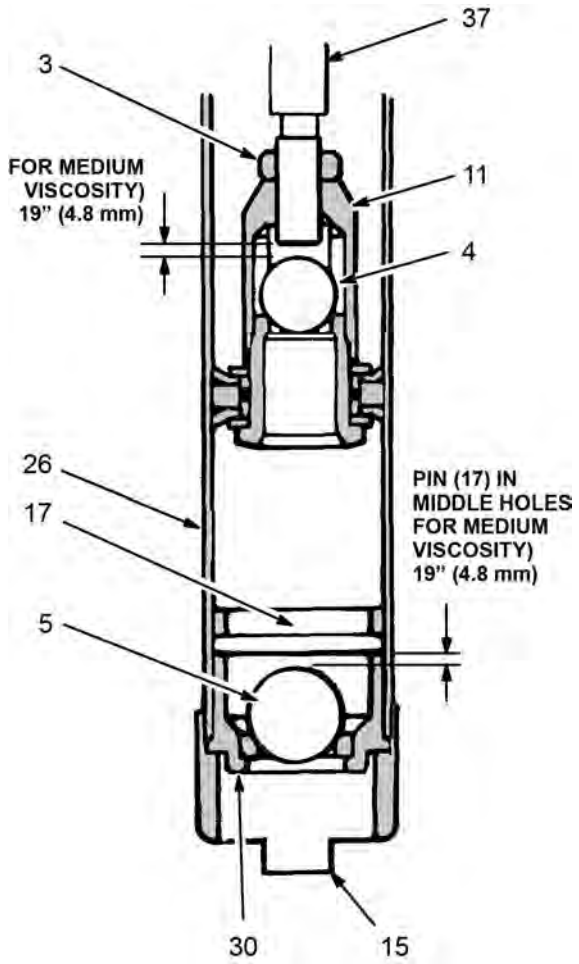


FIG. 3

Shutdown and Care of the Pump

For overnight shutdown, always perform the **Pressure Relief Procedure**, page 9. Stop the pump at the bottom of its stroke to prevent the fluid from drying on the exposed displacement rod and damaging the throat packings.

Keep the packing nut/wet-cup 1/2 filled with Graco Throat Seal Liquid (TSL) or compatible solvent to help prolong packing life. Adjust the packing nut (35) weekly so it is just tight enough to prevent leakage; do not over tighten. Perform the **Pressure Relief Procedure**, page 9, before adjusting the packing nut. Then use a spanner wrench or a 0.25” (6.3 mm) diameter rod to tighten the nut. See Fig. 4.

FIG. 4

If you are pumping fluid which dries, hardens, or sets-up, flush the system with a compatible solvent as often as necessary to prevent buildup of the fluid in the pump or hoses.

NOTICE

Never leave the pump or hoses filled with water or air. To help prevent corrosion, flush the water and all air out of the system and leave it filled with mineral spirits or an oil-based solvent. Be sure to perform the **Pressure Relief Procedure**, page 9, after flushing.

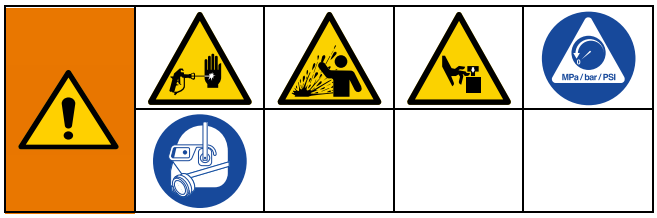
Flushing

To reduce the risk of fluid injection injury, static sparking, or splashing, perform **Pressure Relief Procedure**, page 9, and remove the spray tip (airless spray guns or spray valves only) before flushing. Hold a metal part of the gun/valve firmly to the side of a grounded metal pail and use the lowest possible fluid pressure when flushing.

Lubrication

The accessory air line lubricator (C) provides automatic air motor lubrication. For daily, manual lubrication, disconnect the regulator, place about 15 drops of light machine oil in the pump air inlet, reconnect the regulator and turn on the air supply to blow oil into the motor.

Troubleshooting



Follow **Pressure Relief Procedure**, page 9, before checking or repairing the equipment.

NOTE: Check all possible problems and causes before disassembling the pump.

Problem	Cause	Solution
Pump fails to operate	Restricted line or inadequate air supply	Clear line; increase air supply.
	Insufficient air pressure; closed or clogged air valves, etc.	Open air valve, clean if necessary.
	Exhausted fluid supply	Refill; purge all air from the pump and fluid lines.
	Damaged air motor	Service air motor. See manual 307043.
Pump operates, but output low on both strokes	Restricted line or inadequate air supply	Clear line; increase air supply.
	Insufficient air pressure; closed or clogged air valves, etc.	Open air valve, clean if necessary.
	Exhausted fluid supply	Refill; purge all air from pump and fluid lines.
	Clogged fluid line, valves, gun, etc.	Clear.*
	Fluid check valves needs adjustment	Adjust. See page 11.
	Loose packing nut or worn throat packings	Tighten packing nut. Replace throat packings.
	Damaged cylinder o-ring	Clear; service.
Pump operates, but output low on down stroke	Held open or worn intake valve	Clear; service.
	Damaged cylinder o-rings	Replace.
Pump operates, but output low on up stroke	Help open or worn fluid piston valve or packings	Clear; service.
Erratic or accelerated operation	Exhausted fluid supply	Refill; purge all air from pump and fluid lines.
	Fluid check valves need adjustment	Adjust. See page 11.
	Held open or worn intake valve	Clear; service.
	Held open or worn fluid piston valve or packings	Clear; service.

* To determine if the fluid hose or gun is obstructed, first perform **Pressure Relief Procedure**, page 9. Disconnect the fluid hose and place a container at the pump fluid outlet to catch any fluid. Turn on the air just enough to start the pump (about 20-40 psi [0.14-0.28 MPa, 1.4-2.8 bar]). If the pump starts when the air is turned on, the obstruction is in the fluid hose or gun.

Repair

Before Repairing the Pump

- Be sure you have all the necessary repair parts on hand to reduce down time.
- Packing repair kit 208520 is available. Refer to the Parts List on page 17. For the best results, use all the new parts in the kit. Reference numbers with and dagger, for example (13†), indicate that a part is included in the repair kit.
- Always be sure to replace the glands when replacing the packings.
- Clean all parts as you disassemble the pump, and inspect them for wear or damage. Replace parts as needed. Scoring or irregular surfaces on the displacement rod or polished inner wall of the cylinder cause premature packing wear and leaking. Check these parts by rubbing a finger on the surface and by holding the parts up to a light at an angle.

Repairing the Pump

1. Flush the pump, if possible. Stop the pump at the bottom of its stroke. Perform the **Pressure Relief Procedure**, page 9. Disconnect the hoses and remove the pump from its mounting.
2. Unscrew the intake valve housing (15). Remove the valve seat (30), pin (17), and ball (5). See Fig. 5.
3. Apply very low air pressure to the motor to force the piston to the bottom of the stroke.

NOTE: For air motor parts and service information, refer to manual 307043.

4. Unscrew the cylinder (26) and slide it down just past the coupling nut (25). See Fig. 7.
5. Unscrew the coupling nut (25) and push the piston assembly through the bottom of the cylinder.
6. Hold the piston housing (11) with a wrench and screw the piston seat (10) out of the housing.
7. Remove the ball, washers, packings, spacers, and o-ring from the piston seat.
8. Assemble a washer (29), packing (13†), o-ring (8†), spacer (14), packing (13†), and washer (29) onto the piston seat (10). See the piston detail in Fig. 5 for proper direction of the parts.
9. Place the ball (4) on the piston seat (10) and screw the seat firmly into the piston housing (11).
10. Check the piston ball travel. For medium viscosity fluid, the clearance should be 0.19” (4.8 mm). See Fig. 5. Refer also to **Check Valve Adjustment**, page 11.

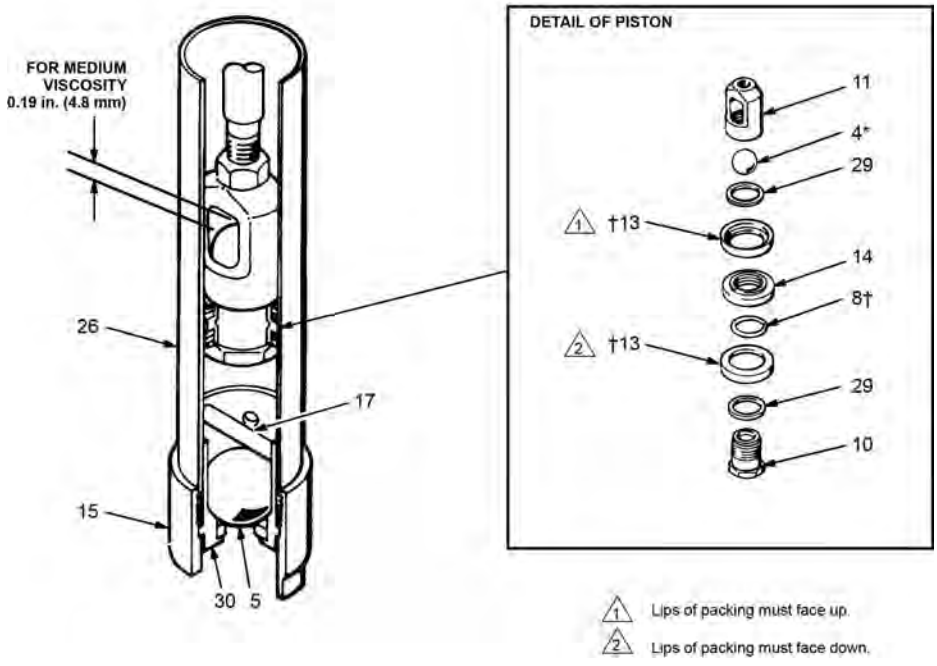


FIG. 5

11. Remove the cotter pin (2) from the top of the displacement rod (27) and unscrew the rod. Remove the tie rod nuts (6) and pull the pump housing (36) off the tie rods (24). See Fig. 7.

12. Loosen the packing nut (35) and push the rod (27) through the bottom of the pump housing (36). Check the outer surface of the rod for scoring or wear.

13. Remove the packing nut (35), glands (23, 21), bearings (22) and packings (19) from the pump housing.

14. See Fig. 7. Install the male gland (21†). Then install the v-packings (see page 16), making sure the lips of the v-packings are facing down. Install the female gland (23†) and the two bearings (22†). The bearings should have a gap of 0.020-0.050 in. (0.508-1.27 mm) when installed. Install the packing nut (35) loosely.

15. Lubricate the displacement rod (27) and slide it down through the top of the pump housing (36).

16. Clamp the pump cylinder (26) in a vise. Inspect the inner surface for scoring or wear. Lubricate the top inside diameter of the cylinder with light machine oil.

17. A special assembly tool, Part No. 168085, should be used to install the piston assembly into the cylinder. This tool is made from 0.016" (0.41 mm) shim stock and helps protect the edges of the packings from damage during reassembly. Place the tool around the piston packings as shown in Fig. 6. Start the bottom packings (13a) into the cylinder and then remove the tool.

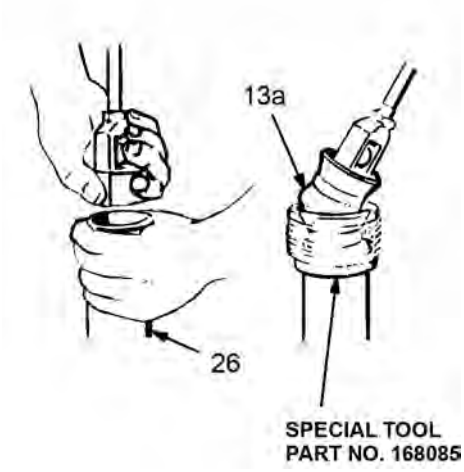


FIG. 6

18. Join the coupling nut (25) and displacement rod (27) and tighten securely.

19. Install the o-ring (9) around the top of the displacement rod (27). Position the pump housing (36) on the tie rods (24). Screw the rod (27) into the motor and install the pin (2). Screw the tie rod nuts (6) onto the tie rods (24) and torque to 10-15 ft-lbs (14-20 N·m).

20. Install a new o-ring (20) in the bottom of the pump housing (36), then screw the cylinder (26) into the housing.

21. Install the intake valve ball (5) in the valve seat (30). Insert the pin (17) in the proper set of holes (see **Check Valve Adjustment**, page 11). Place the seat in the valve housing (15) and screw the housing firmly onto the cylinder.

22. Reconnect the pump grounding wire if it was disconnected during service. Fill the wet-cup 1/2 full with TSL or compatible solvent.

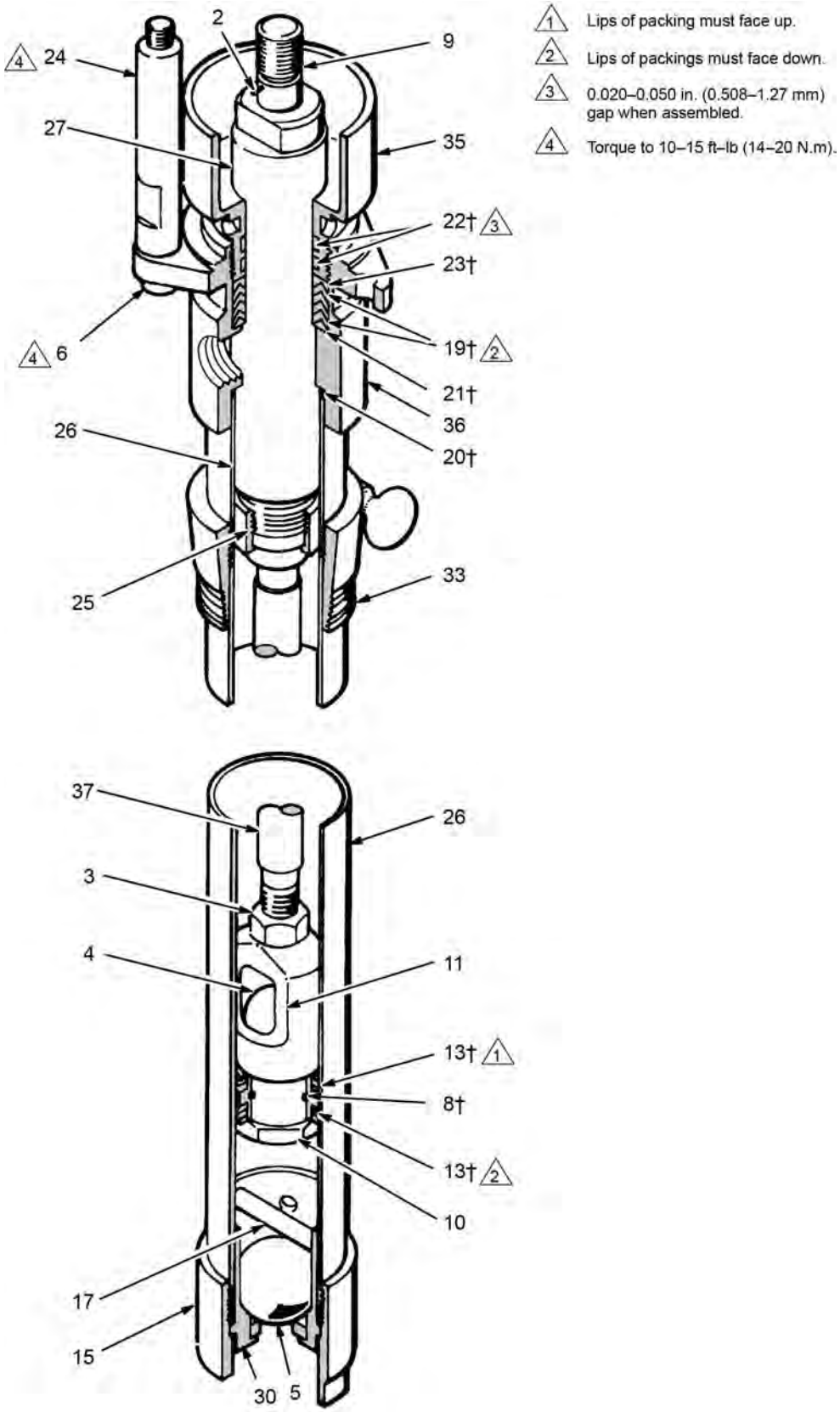
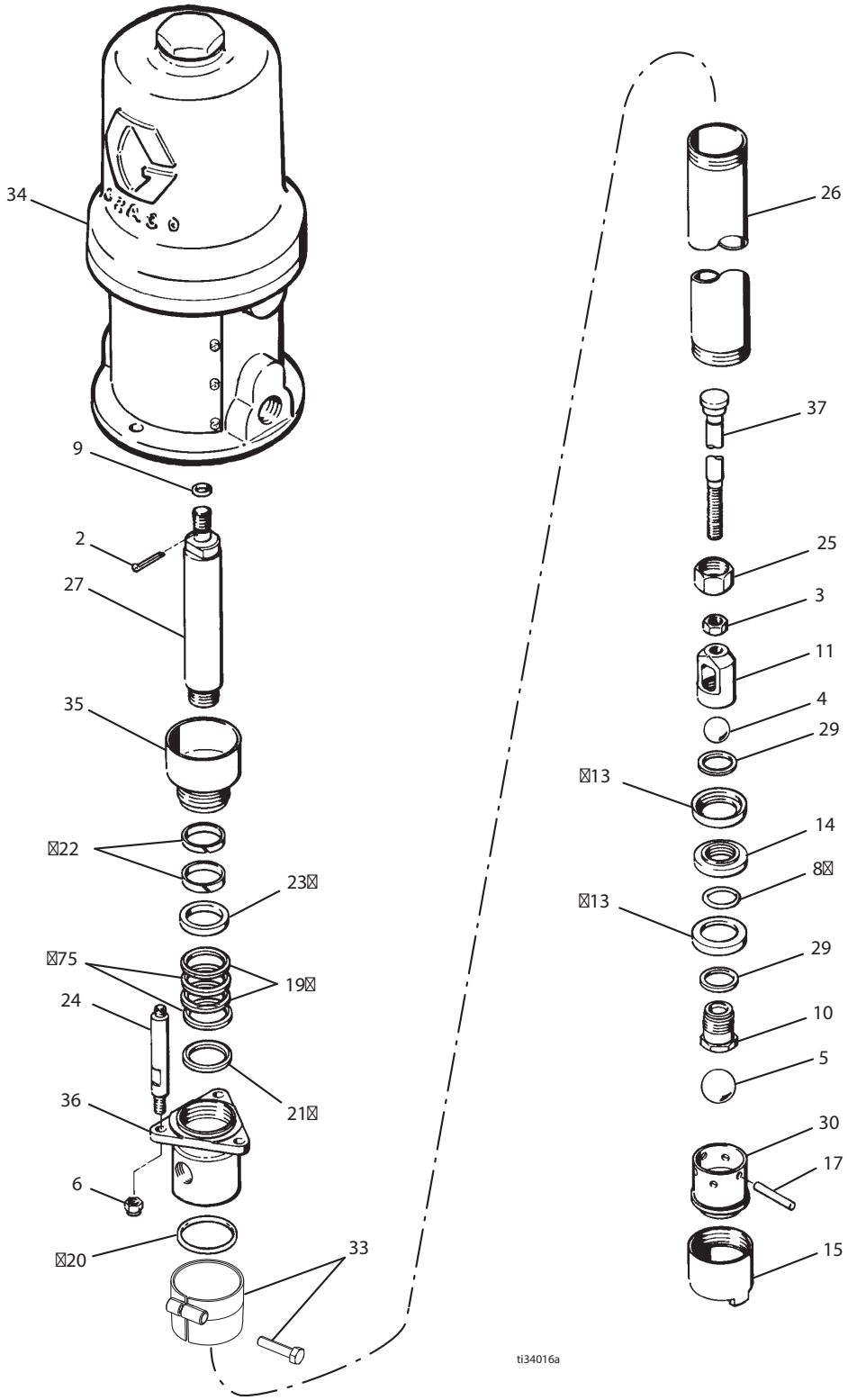

1 Lips of packing must face up.
2 Lips of packings must face down.
3 0.020–0.050 in. (0.508–1.27 mm) gap when assembled.
4 Torque to 10–15 ft–lb (14–20 N.m).
2
9
4 24
27
35
22† 3
23†
4 6
19† 2
21†
36
26
20†
25
33
37
26
3
4
11
13† 1
8†
13† 2
10
17
15
30
5

FIG. 7

Parts


34
9
2
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26
37
25
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4
29
13
14
8
13
29
10
5
30
17
15
ti34016a

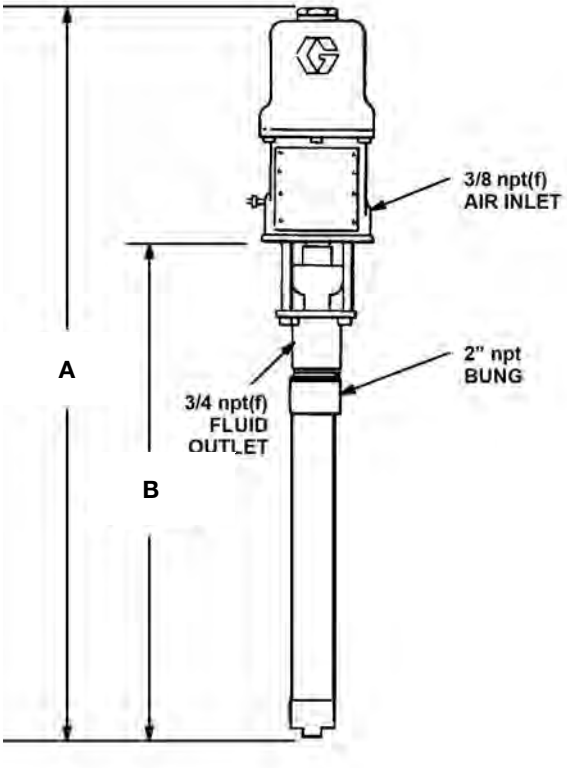
Parts List

Ref.	Part	Description	Qty.	
			218956	25N584
2	100103	PIN, cotter	1	1
3	100111	NUT, jam, 1/2-20	1	1
4	100279	BALL, steel .875” dia	1	1
5	101178	BALL, steel; 1.25” dia	1	1
6	101566	NUT, lock	3	3
8†	164623	O-RING, PTFE	1	1
9	156082	O-RING, nitrile	1	1
10	156989	SEAT, piston	1	1
11	157184	HOUSING, piston	1	1
13†	162871	PACKING, cup	2	2
14	158857	SPACER, packing	1	1
15	159839	HOUSING, intake valve	1	1
19†	162866	V-PACKING, PTFE	4	2
20†	164782	O-RING, PTFE	1	1
21†	164837	GLAND, male	1	1
22†	165287	BEARING, PTFE	2	2
23†	165288	GLAND, female	1	1
24	24B189	KIT, tie rod	3	3
25	166033	NUT, swivel	1	1
26	24C504	CYLINDER, pump, 55 gallon drum	1	
	17V984	CYLINDER, pump, 25 gallon hopper		1
27	24C496	ROD, displacement	1	1
29	171594	WASHER, backup	2	2
30	204762	SEAT, intake valve	1	1
33	222308	ADAPTER, bung	1	1
34	205997	AIR MOTOR, *see manual 307043 for parts*	1	1
35	208312	NUT, packing	1	1
36	192188	HOUSING, outlet, 3/4 npt(f)	1	1
37	208314	ROD, displacement, 55 gallon drum	1	
	25E043	ROD, displacement, 25 gallon hopper		1
75†	176639	V-PACKING, UHMW		2
▲	241650	LABEL, muffler, warning plate (not shown)	1	1
▲	180233	LABEL, safety, warning, amputation (not shown)	1	1

† *Included in Repair Kit: 208520 (for 218956)*
25N586 (for 25N584)

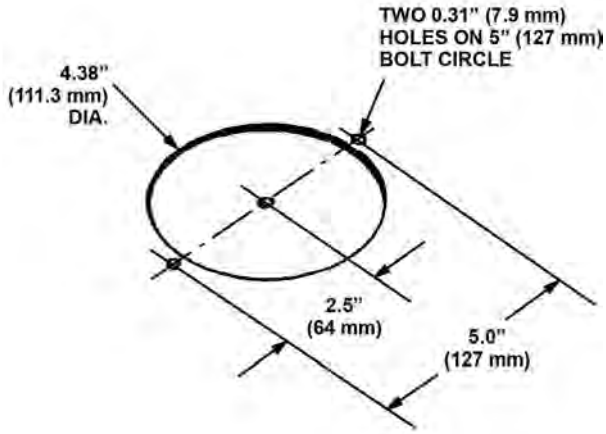
▲ *Replacement safety labels, tags, and cards are available at no cost.*

Dimensions



	218956	25N584
A	54.3” (1379 mm)	39.9” (1013 mm)
B	42.8” (1086 mm)	28.4” (721 mm)

Mounting Hole Layout



Technical Specifications

5:1 Ratio Monark Pump		
	US	**Metric**
Maximum fluid working pressure	900 psi	6.2 MPa, 62 bar
Maximum air input pressure	180 psi	1.2 MPa, 12 bar
Pump cycles per gallon (3.8 liters)	28	
Maximum recommended pump speed (66 cycles per min)	2.5 gpm	9.5 lpm
Recommended speed for optimum pump life (12-25 cycles per min)	0.5-0.9 gpm	1.9-3.3 lpm
Air consumption	approximately 8 scfm (0.23 m^3/min) at 1 gpm (3.8 liters/min) at 100 psi (0.7 MPa, 7 bar) air pressure	
Maximum displacement pump operating temperature	250°F	121°C
Maximum air motor operating temperature	200°F	93°C
Wetted Parts	Carbon Steel; 304 Grade Stainless Steel; Chrome Plating; PTFE	

California Proposition 65

CALIFORNIA RESIDENTS

⚠ **WARNING:** Cancer and reproductive harm – www.P65warnings.ca.gov.

Graco Standard Warranty

Graco warrants all equipment referenced in this document which is manufactured by Graco and bearing its name to be free from defects in material and workmanship on the date of sale to the original purchaser for use. With the exception of any special, extended, or limited warranty published by Graco, Graco will, for a period of twelve months from the date of sale, repair or replace any part of the equipment determined by Graco to be defective. This warranty applies only when the equipment is installed, operated and maintained in accordance with Graco's written recommendations.

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This warranty is conditioned upon the prepaid return of the equipment claimed to be defective to an authorized Graco distributor for verification of the claimed defect. If the claimed defect is verified, Graco will repair or replace free of charge any defective parts. The equipment will be returned to the original purchaser transportation prepaid. If inspection of the equipment does not disclose any defect in material or workmanship, repairs will be made at a reasonable charge, which charges may include the costs of parts, labor, and transportation.

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Original instructions. This manual contains English. MM 307044
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