

## 50:1 Fire-Ball® 425 Pumps

306674U

**For pumping non-corrosive and non-abrasive greases and lubricants only.**

*7500 psi (51.7 MPa, 517 bar) Maximum Working Pressure  
150 psi (1.0 MPa, 10 bar) Maximum Air Input Pressure*

**Model 205394, Series E**

**Model 205395, Series N**

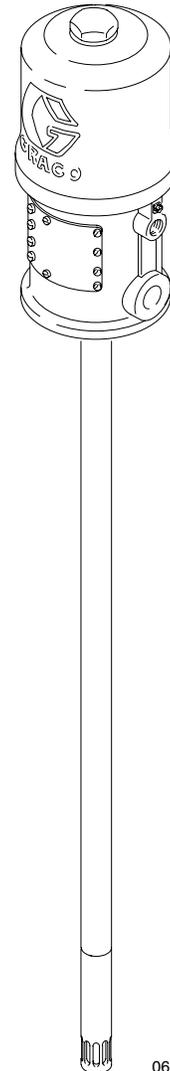


### **Important Safety instructions**

Read all warnings and instructions in this manual.  
Save these instructions.

### **! WARNING**

This pump is designed to be used only in pumping non-corrosive and non-abrasive oils and lubricants. Any other use of the pump can cause unsafe operating conditions and component rupture, which can result in fluid injection or other serious injury or fire or explosion.



06306B

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# Table of Contents

Warnings .....	2	Parts Drawing .....	16
Installation .....	5	Parts List .....	17
Operation .....	7	Dimensions .....	18
Maintenance .....	7	Technical Data .....	19
Troubleshooting .....	8	Graco Standard Warranty .....	20
Displacement Pump Service .....	10	Graco Phone Numbers .....	20
Air Motor and Throat Service .....	12		

## Symbols

### Warning Symbol



This symbol alerts you to the possibility of serious injury or death if you do not follow the instructions.

### Caution Symbol



This symbol alerts you to the possibility of damage to or destruction of equipment if you do not follow the instructions.

## ⚠ WARNING



### EQUIPMENT MISUSE HAZARD

Equipment misuse can cause the equipment to rupture or malfunction and result in serious injury.

- This equipment is for professional use only.
- Read all instruction manuals, tags, and labels before operating the equipment.
- Use the equipment only for its intended purpose. If you are not sure, call your Graco distributor.
- Do not alter or modify this equipment.
- Check equipment daily. Repair or replace worn or damaged parts immediately.
- Do not exceed the maximum working pressure stated on the equipment or in the **Technical Data** for your equipment. Do not exceed the maximum working pressure of the lowest rated component in your system.
- Use fluids and solvents which are compatible with the equipment wetted parts. Refer to the **Technical Data** section of all equipment manuals. Read the fluid and solvent manufacturer's warnings.
- Handle hoses carefully. Do not pull on hoses to move equipment.
- Route hoses away from traffic areas, sharp edges, moving parts, and hot surfaces. Do not expose Graco hoses to temperatures above 66°C (150°F) or below -40°C (-40°F).
- Wear hearing protection when operating this equipment.
- Do not move or lift pressurized equipment.
- Comply with all applicable local, state, and national fire, electrical, and safety regulations.

# ⚠ WARNING



## SKIN INJECTION HAZARD

Fluid from the gun, leaks, or ruptured components can inject fluid into your body and cause extremely serious injury, including the need for amputation. Fluid splashed in the eyes or on the skin can also cause serious injury.

- Fluid injected into the skin is a serious injury. The injury may look like just a cut, but it is a serious injury. **Get immediate surgical treatment.**
- Do not point the dispensing valve at anyone or any part of the body.
- Do not put your hand or fingers over the end of the dispensing valve.
- 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.
- Use only extensions and couplings that are designed for use with your dispensing valve.
- Follow the **Pressure Relief Procedure** on page 7 before you clean, check, or service the equipment.
- Tighten all fluid connections before operating the equipment.
- Check the hoses, tubes, and couplings daily. Replace worn or damaged parts immediately. Do not repair high pressure couplings; you must replace the entire hose.



## MOVING PARTS HAZARD

Moving parts can pinch or amputate your fingers.

- Keep clear of all moving parts when starting or operating the pump.
- Before checking or servicing the equipment, follow the **Pressure Relief Procedure** on page 7 to prevent the equipment from starting unexpectedly.

# WARNING



## FIRE AND EXPLOSION HAZARD

Improper grounding, poor ventilation, open flames, or sparks can cause a hazardous condition and result in a fire or explosion and serious injury.

- Ground the equipment and the object being dispensed to. Refer to **Grounding** on page 5.
- If there is any static sparking or you feel an electric shock while using this equipment, **stop dispensing immediately**. Do not use the equipment until you identify and correct the problem.
- Provide fresh air ventilation to avoid the buildup of flammable fumes from solvents or the fluid being dispensed.
- Keep the dispensing area free of debris, including solvent, rags, and gasoline.
- Do not smoke in the dispensing area.
- Do not turn on or off any light switch in the area while dispensing if fumes are present.
- Never use 1.1.1-trichloroethane, methylene chloride, other halogenated hydrocarbon solvents, or fluids containing such solvents in pressurized aluminum equipment. Such use could result in a chemical reaction, with the possibility of explosion.



## TOXIC FLUID HAZARD

Hazardous fluid or toxic fumes can cause serious injury or death if splashed in the eyes or on the skin, inhaled, or swallowed.

- Know the specific hazards of the fluid you are using.
- Store hazardous fluid in an approved container. Dispose of hazardous fluid according to all local, state, and national guidelines.
- Always wear protective eyewear, gloves, clothing, and respirator as recommended by the fluid and solvent manufacturer.
- The air motor exhausts any fluids added to the input air.
- Graco does not manufacture or supply the reactive chemical components that may be used in this equipment and is not responsible for injury or property loss, damage, expense, or claims (direct or consequential) that arise from the use of such chemical components.

# Installation

**NOTE:** Reference numbers and letters in parentheses in the text refer to the callouts in the figures and the parts drawing.

**NOTE:** Always use Genuine Graco Parts and Accessories, available from your Graco distributor.

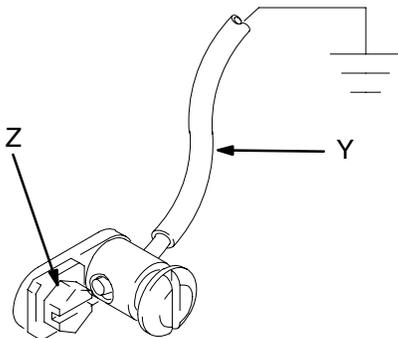
## Grounding

**⚠ WARNING**

**FIRE AND EXPLOSION HAZARD**  
Before operating the pump, ground the system as explained below. Also read the section **FIRE OR EXPLOSION HAZARD** on page 4.



- *Pump:* Use a ground wire and clamp as shown below.



**Fig. 1**

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- *Air and fluid hoses:* Use only electrically conductive hoses.
- *Air compressor:* Follow manufacturer's recommendations.

- *Dispensing valve:* Ground through connection to a properly grounded fluid hose and pump.
- *Object being dispensed to:* Follow your local code.
- *Solvent pails used when flushing:* Follow your local code. Use only metal pails, which are conductive, placed on a grounded surface. Do not place the pail on a nonconductive surface, such as paper or cardboard, which interrupts the grounding continuity.
- *To maintain grounding continuity when flushing or relieving pressure,* hold a metal part of the dispensing gun firmly to the side of a grounded *metal* pail, then trigger the gun.

**To ground the pump,** remove the ground screw (Z) and insert through the eye of the ring terminal at end of ground wire (Y). Fasten the ground screw back onto the pump and tighten securely. Connect the other end of the ground wire to a true earth ground. See Fig. 1. *To order a ground wire and clamp, order Part No. 222011.*

## Mounting the Pump

**⚠ WARNING**

Mount the pump securely so that it cannot move around during operation. Failure to do so could result in personal injury or equipment damage.

- Select a convenient location for the equipment to ensure easy operator access to the pump air controls, sufficient room to change supply containers, and a secure mounting platform.
- If you are mounting the pump directly on the supply tank, position the pump so its intake valve is no more than 1 in. (25 mm) from the bottom of the container. Mount the pump to the cover or other suitable mounting device.

# Installation

Mount the pump to suit the type of installation planned. Very heavy lubricants may require an inductor plate. See page 18 for the mounting hole layout and dimensions

Install the air line accessories in the approximate order shown in the Typical Installation. Install a bleed-type master air valve (B) within easy reach of the pump, upstream from the air regulator. Install an air filter (C) to remove harmful dirt and moisture from your compressed air supply. For automatic air motor lubrication, install an air line oiler (D) close to the pump air inlet. Install an air regulator (E) to control pump speed.

## ⚠ WARNING

A bleed-type master air valve (B) is required to shut off and relieve air pressure that may be trapped in the air motor. Trapped air could cause the pump to cycle unexpectedly and cause serious bodily injury, including amputation.

Be sure the air hose is properly sized to deliver an adequate supply of air to the motor. Refer to the Technical Data on page 19.

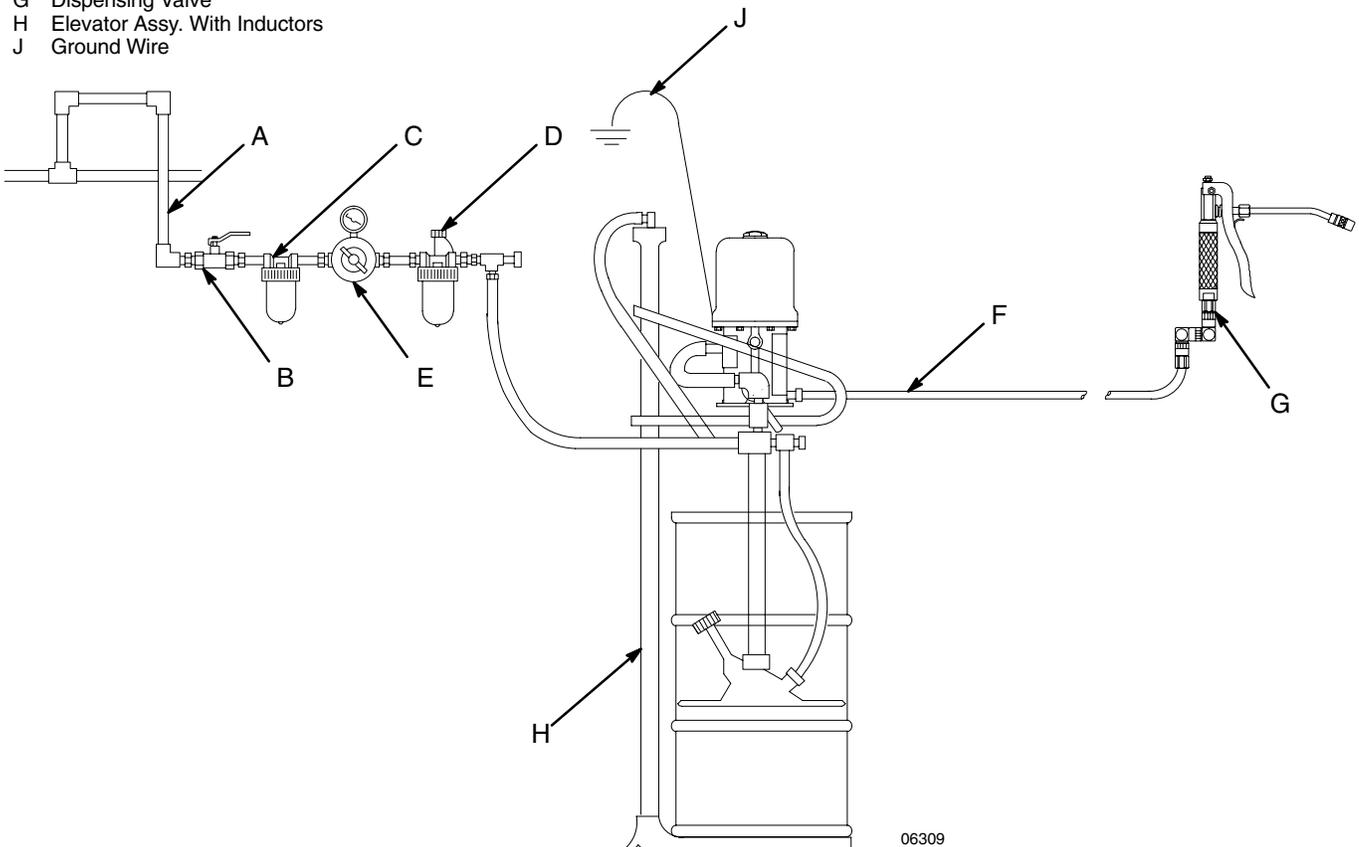
Connect a dispensing hose to the 3/8 npt(f) pump outlet. Install an appropriate gun or dispensing valve to the hose.

Ground the pump as explained on page 5.

## Typical Installation

### Key

- A Grounded Air Line
- B Bleed-type Master Air Valve
- C Air Filter
- D Air Line Oiler
- E Air Regulator
- F Grounded Dispensing Hose
- G Dispensing Valve
- H Elevator Assy. With Inductors
- J Ground Wire



06309

Fig. 2

# Operation

## ⚠ WARNING

- This pump is designed to be used **ONLY** in pumping non-corrosive and non-abrasive lubricants and greases. Any other use of this pump can cause unsafe operating conditions and result in component rupture, fire, or explosion, which can cause serious bodily injury, including injection.
- Moving parts can pinch or amputate your fingers or other body parts. When the pump is operating, the priming piston (located at the pump intake) and the air motor piston (located behind the air motor plates) move. **NEVER** Operate the pump with the air motor plates removed, and keep your fingers and hands away from the priming piston.

### Pressure Relief Procedure

## ⚠ WARNING



### SKIN INJECTION HAZARD

Fluid under high pressure can be injected through the skin and cause serious injury. To reduce the risk of an injury from injection, splashing fluid, or moving parts, follow the **Pressure Relief Procedure** whenever you

- Are instructed to relieve the pressure
- Stop dispensing
- Check or service any of the system equipment
- Install or clean the dispensing nozzles

1. Close the air regulators.
2. Close the supply pump's bleed-type master air valve (required in this system).
3. Open the dispensing valve until pressure is fully relieved.

*If you suspect that the dispensing valve, extension, or grease fitting coupler is clogged, or that pressure has not been fully relieved after following the steps above, VERY SLOWLY loosen the coupler or hose end coupling and relieve pressure gradually, then loosen completely, then clear the clog.*

### Startup and Adjustment

Open the bleed-type master air valve. Open the dispensing valve, and slowly open the air regulator until the pump is running smoothly. After all the air is purged, close the dispensing valve. The pump will start and stop as the valve is opened and closed.

## ⚠ CAUTION

Never allow the pump to run dry of the fluid being pumped. A dry pump quickly accelerates to a high speed and may damage itself. If your pump accelerates quickly or is running too fast, stop it immediately and check the fluid supply. If the supply container is empty and air has been pumped into the lines, prime the pump and lines with fluid, or flush the pump and leave it filled with a compatible solvent. Be sure to eliminate all air from the fluid system.

Use the air regulator (E) to control the pump speed and fluid pressure. See Fig. 2. Always use the lowest pressure necessary to obtain the desired results.

When you are finished using the pump for the day, always follow the **Pressure Relief Procedure** at left.

## Maintenance

The Accessory air line oiler (D) provides automatic air motor lubrication. For daily manual lubrication, disconnect the air hose, place about 15 drops of light machine oil in the air inlet, reconnect the hose, and turn on the air supply to blow oil into the motor.

# Troubleshooting

## WARNING

To reduce the risk of serious injury whenever you are instructed to relieve pressure, always follow the **Pressure Relief Procedure** on page 7.

Before servicing this equipment always make sure to **Relieve the Pressure**.

**Note:** Check all possible problems and solutions before disassembling the pump.

Problem	Cause	Solution
Pump fails to operate.	Inadequate air supply pressure or restricted air lines	Increase air supply; clear
	Closed or clogged valves	Open; clean
	Clogged fluid lines, hoses, valves, etc.	Clear*
	Damaged air motor	Service air motor
	Exhausted fluid supply	Refill and reprime, or flush
Continuous air exhaust	Worn or damaged air motor gasket, packing, seal, etc.	Service air motor
Erratic pump operation	Exhausted fluid supply	Refill and reprime, or flush
	Held open or worn intake valve or piston packings	Clear; service
Pump operates, but output low on upstroke	Held open or worn piston or packings	Clear; service
Pump operates, but output low on downstroke	Held open or worn intake valve	Clear; service
Pump operates, but output low on both strokes	Inadequate air supply or restricted air lines	Increase air supply; clear
	Closed or clogged valves	Open; clean
	Exhausted fluid supply	Refill and reprime, or flush
	Clogged fluid lines, hoses, valves, etc.	Clear*
	Packing nut too tight	Loosen
	Loose packing nut or worn packings	Tighten; replace

\* Follow the **Pressure Relief Procedure**, and disconnect the fluid line. If the pump starts when the air is turned back on, the fluid line, hose, valve, etc. was clogged.



# Displacement Pump Service

- △ 1 Lips of v-packings must face up
- △ 2 Torque to 50 to 70 ft-lb (68 to 95 N-m).

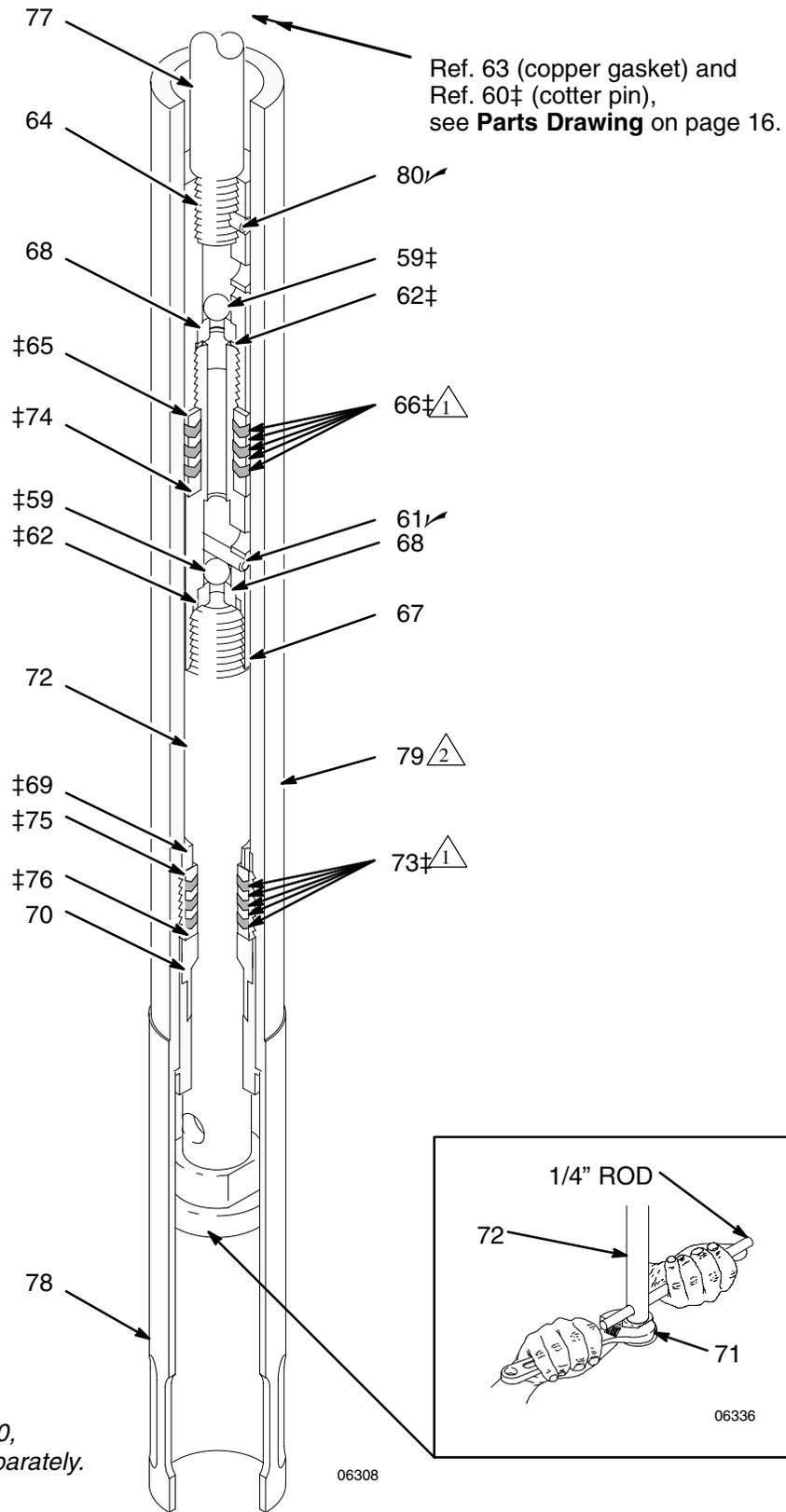


Fig. 3

# Displacement Pump Service

## WARNING

To reduce the risk of serious injury whenever you are instructed to relieve pressure, always follow the **Pressure Relief Procedure** on page 7.

### Before you start:

- To reduce down time, be sure you have all necessary repair parts available. Recommended spare parts are listed in the parts list with a check mark, for example ( 80✓)
- The balls (59) in the intake and piston valves cannot be resealed on the hardened seats (68).
- Repair Kit 239320 is available. If you have a repair kit, use all the new parts for the best results. Throat seal parts included in the kit are marked with a dagger (†) and pump lower parts are marked with a double dagger (‡).
- Whenever you replace the packings, also replace the glands and bearing.
- When cleaning parts, use a compatible solvent. Inspect parts for wear or damage and replace as necessary. Scoring or irregular surfaces on the priming tube (72) or polished inner wall of the riser tube (79) causes premature packing wear and leaking. Check these parts by rubbing a finger on the surface and by holding the parts up to the light at a slight angle.

Use light, waterproof grease wherever grease is mentioned.

### Disassembly

1. Flush the pump if possible. Follow the **Pressure Relief Procedure** on page 7. Disconnect all air and fluid hoses.
2. Clamp the motor base in a vise. Unscrew the priming cylinder (78).
3. Hold the priming tube (72) with a 1/4 in (6mm) diameter rod through the holes in the tube. Grip the flats of the priming piston (71) with a wrench, and unscrew the piston.
4. Loosen the packing housing (70). Unscrew the riser tube (79) from the air motor.
5. Remove the packing housing (70) from the riser tube (79), and remove the packings from the housing.
6. Hold the intake valve housing (67) with a wrench, and unscrew the priming tube (72) by inserting a 1/4 in (6 mm) diameter rod through the holes in the tube. Handle the tube carefully to avoid marring the surface. Remove the ball, seat, and gasket.
7. Unscrew the intake valve housing (67) from the piston valve housing (64). Remove the ball and packings.
8. Clean all parts thoroughly. Grease all parts except threads when reassembling.

### Reassembly

1. One at a time, place the female gland (74‡), five leather v-packings (66‡) *with the lips of the packings facing up*, and the male gland (65‡) on the intake housing (67). Place the gasket (62‡), seat (68), and ball (59‡) on the housing (67).
2. If the pins (80) were removed from the piston valve housing (64), replace them. Hold the piston valve housing with a wrench and screw in the intake valve housing.
3. Place a gasket (62‡), seat (68), and ball (59‡) on the priming tube (72). Holding the piston valve housing (67) with a wrench, screw the priming tube into it, using a 1/4 in. diameter rod through the tube for leverage.
4. Guide the riser tube (79) over the priming tube and screw it into the motor base, making sure the gasket (63) is in place. Torque to 50 to 70 ft-lb (68 to 95 N-m).
5. One at a time, place the female gland (76‡), five leather v-packings (73‡) *with lips of packings facing up*, a male gland (75‡), and a bearing (69‡) in the packing housing (70). Screw the housing firmly into the riser tube (79).
6. Screw the priming piston (71) firmly onto the priming tube (72). Screw the intake cylinder (78) firmly onto the riser tube.
7. Reconnect the ground wire if it was disconnected during repair.

# Air Motor and Throat Service

## Before you Start

- Be sure you have all necessary parts on hand. **Air Motor Repair Kit 207385** includes repair parts for the motor. **Pump Repair Kit 239320** includes repair parts for the pump and the air motor throat area. Use all the parts in the kits for the best results. Parts included in the kits are marked with an asterisk (\*), a dagger (†), or a double dagger (‡) in text and drawings. See the parts drawing and list (pages 16 and 17) for further information.
- Two accessory tools should be used. **Padded pliers, 207579** is used to grip the trip rod without damaging its surface. **Gauge, 171818**, is used to ensure the proper clearance between the poppets and seat of the transfer valve.

## Disassembly

1. Flush the pump. Follow the **Pressure Relief Procedure Warning**, at left, before proceeding.
2. Disconnect the air hose from the motor. If necessary, disconnect the motor from the pump. Clamp the air motor base in a vise.
3. Manually push up on the piston rod to move the piston assembly to the top of its stroke. Unscrew the cylinder cap nut (31) from the cylinder (32). Pull up on the cap nut. Grip the trip rod (1) with padded pliers 207579 and screw the cap nut off the trip rod. See Fig. 4.

## CAUTION

**Do not** damage the plated surface of the trip rod. Damaging the surface of the trip rod can result in erratic air motor operation. Use the special padded pliers, 207579, to grasp the rod.

4. Remove the eight screws (7) holding the cylinder (32) to the base (56). Carefully pull the cylinder *straight up* off the piston. See Fig. 4.

## CAUTION

To avoid damaging the cylinder wall, **ALWAYS** lift the cylinder **straight up** off of the piston. **Never** tilt the cylinder as it is being removed.

## WARNING

**Always** keep fingers clear of the toggle assemblies (K), to avoid pinching or amputating them. See Fig. 5.

5. Use a screwdriver to push down on the trip rod yoke (14) and snap the toggle assemblies (K) down. See Fig. 5. Remove the lockwires (28\*) from the adjusting nuts (27\*) of the transfer valves (M). Screw the top adjusting nuts (27\*) off. Screw the valve stems (30\*) out of the grommets (18\*) and lower adjusting nuts (27\*). Take the valve poppets (37\*) off the stems and squeeze them firmly to check for cracks.

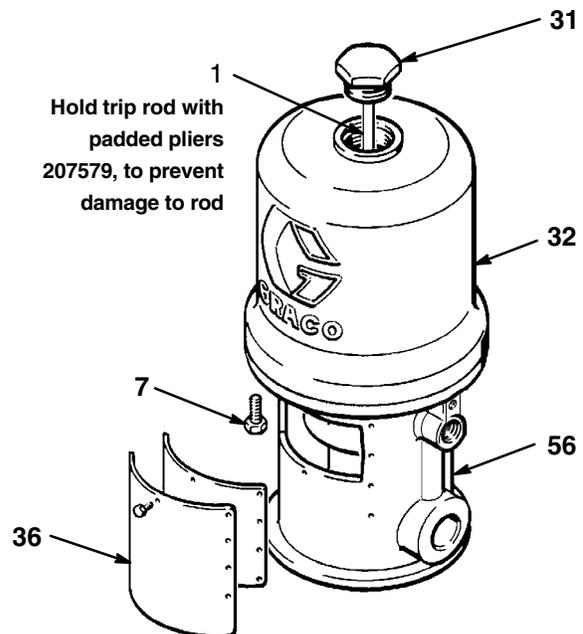


Fig. 4

# Air Motor and Throat Service

- Grip the toggle rockers (16) with a pliers. Compress the springs (17) and swing the toggle assembly (K) up and away from the piston lugs (L), and remove the parts. Check that the valve actuator (13) is supported by the spring clips (4), but slides easily into them. See Fig. 5.
- Remove the trip rod yoke (14), valve actuator (13) and trip rod (1). Check the exhaust valve poppets (38\*) for cracks.

**NOTE:** To remove the exhaust valve poppets (38\*), stretch them out and cut with a sharp knife.

- Pull the piston (5) up out of the base (56) and inspect the piston o-ring (20\*) and the o-ring in the base casting.

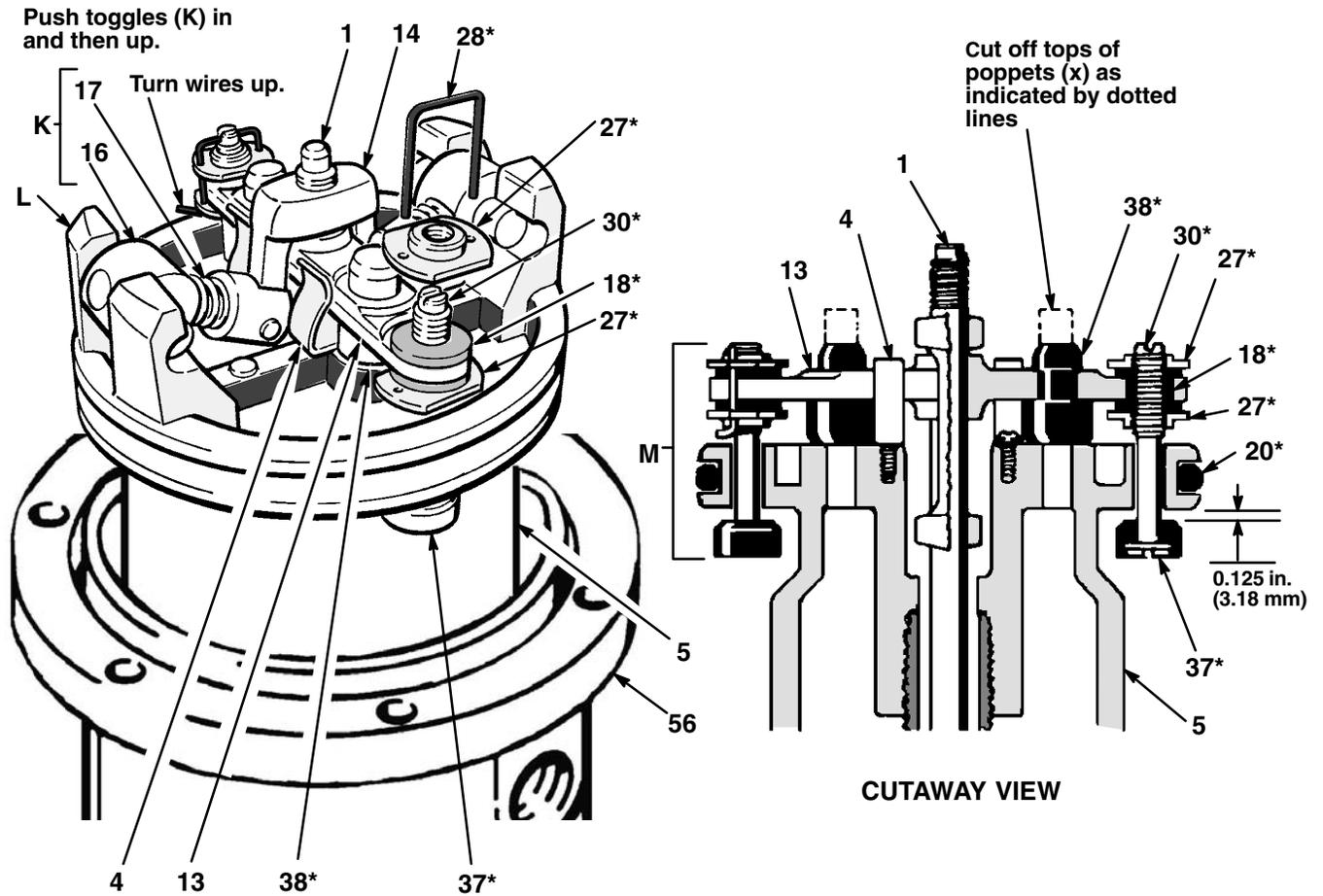


Fig. 5

# Air Motor and Throat Service

## Reassembly

1. Clean all the parts carefully in a compatible solvent and inspect for wear or damage. Use all the repair kit parts during reassembly and replace other parts as necessary.
2. Check the polished surfaces of the piston, piston rod and cylinder wall for scratches or wear. A scored rod will cause premature packing wear and leaking.
3. Lubricate all parts with a light, waterproof grease.
4. Be sure the o-rings are in place. Slide the piston rod down through the throat bearing and lower the piston (5) into the air motor base (56).
5. Pull the exhaust valve poppets (38\*) into the valve actuator (13) and clip off the top part shown with dotted lines. See Fig. 5.
6. Install the transfer valve poppets (37\*) onto the valve stems (30\*), then reassemble the valve stems (30\*), bottom adjusting nuts (27\*), grommets (18\*), and top adjusting nuts (27\*) on the piston (5). Assemble the trip rod (1), valve actuator (13), trip rod yoke (14) and toggle assemblies (K) on the piston. See Fig. 5.
7. Before installing the lockwires (28\*) in the adjusting nuts (27\*), use the special gauge 171818 to adjust the transfer valve (M) so there is 0.125 in. (3.68 mm) clearance between the poppets (37\*) and the piston (5) when the toggle assemblies are in the *down* position. See Fig. 5.
8. Snap the toggle assemblies (K) to the *up* position. Reinstall the cylinder (32) and cap nut (31). Reassemble the air motor to the displacement pump.
9. Before remounting the pump, connect an air hose and run the pump slowly, at about 40 psi (0.28 MPa, 2.8 bar) to ensure that it operates smoothly.
10. Reconnect the ground wire before regular operation of the pump.

## Throat Packing Service

### **WARNING**

The piston in the air motor, located behind the air motor plates, moves when air is supplied to the motor. Moving parts can pinch or amputate your fingers or other body parts. Therefore, **never** operate the pump with the air motor plates removed.

See Fig. 6 on page 15 and the parts drawing and list (pages 16 and 17) for further information.

1. Clamp the pump in a vise and unscrew the riser tube (80) from the air motor base (56). Pull the riser tube away from the air motor until the cotter pin (60†) which secures the displacement pump connecting rod to the air motor piston rod (52) is visible. See Fig. 6.
  2. Remove the cotter pin (60†) and unscrew the pump connecting rod (79) from the air motor piston rod (52). See Fig. 6. Remove the cylinder (32) from the air motor base (56) as described under **Disassembly** on page 12.
  3. Remove one louvered air exhaust plate (36) and unscrew the throat packing nut (45†), using a spanner wrench or a 0.22 in. (5.6 mm) diameter rod. See Fig. 6.
  4. Remove the packing nut (45†), male and female glands (47†, 48†), v-packings (49†), washer (44†), bearing (46†), retainer (24†), wiper (22†), o-ring (23†), u-cup (25†), and washer (26†) from the base.
  5. Clean the throat packing area in the base and the packing nut. Clean and inspect all parts, and replace as necessary.
  6. Lubricate the packings, piston rod and piston flange with a light waterproof grease.
  7. Install the washer (26†) into the base. Assemble the packing (25†) and the wiper (22†) into the retainer (24†). Install the o-ring (23†) onto the retainer, and insert the retainer assembly into the base.
- NOTE:** Make sure the packing (25†) lips face down, and make sure the wiper (22†) lips face up.
8. Insert the bearing (46†) and the washer (44†) into the base. Assemble the female gland (48†), v-packings (49†), and the male gland (47†) into the packing nut (45†).

# Air Motor and Throat Service

9. Reinstall the spacer and packing in the base and packing nut (45†). Screw the packing nut into the base, and tighten it securely. Carefully slide the piston rod (52) down through the throat packing, and lower the piston into the base. Reinstall the plate (36) and cylinder (32). Reassemble the air motor to the displacement pump.
10. Torque the outlet adapter (42) to 45 to 55 ft-lb (61 to 75 N-m).

## ⚠ CAUTION

When reinstalling cotter pin (60†), **always** spread and flatten the pin (both the head and prongs) around the rod to within a 1 in. (25 mm) total diameter. See Detail A of Fig. 6.

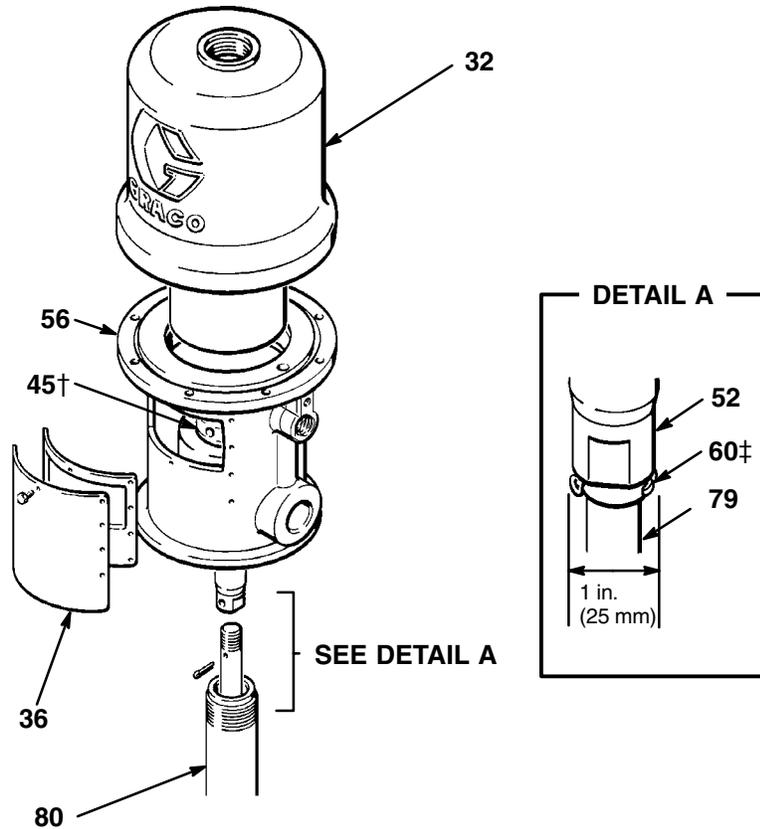
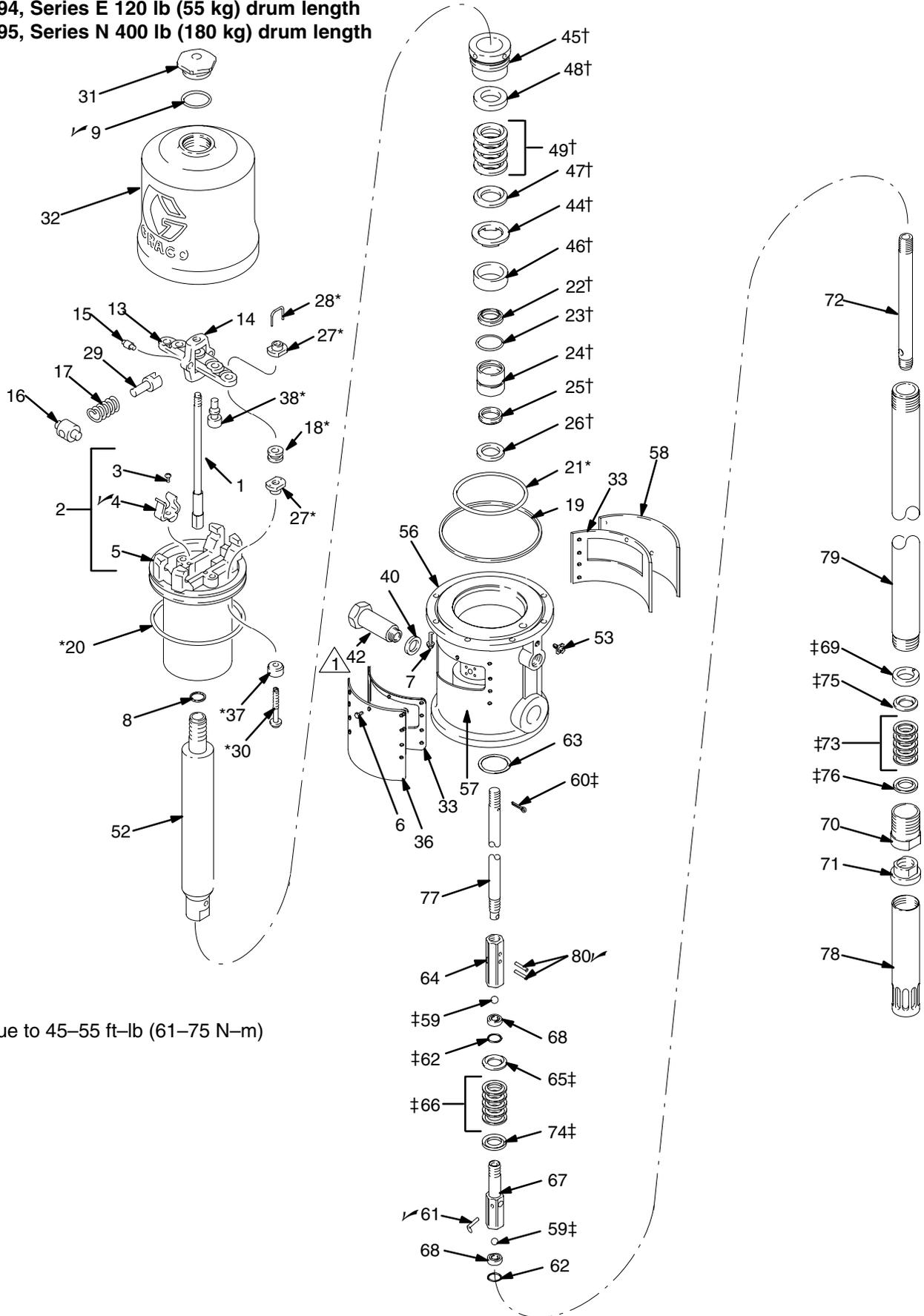


Fig. 6

# Parts Drawing

Model 205394, Series E 120 lb (55 kg) drum length  
 Model 205395, Series N 400 lb (180 kg) drum length



 Torque to 45–55 ft-lb (61–75 N-m)

# Parts List

Model 205394, Series E 120 lb (55 kg) drum length  
 Model 205395, Series N 400 lb (180 kg) drum length

## Air Motor

Ref No.	Part No.	Description	Qty.
1	207150	TRIP ROD	1
2	207391	PISTON <i>includes items 3 to 5 (also includes 207385 repair kit (** items) when ordered as a replacement part)</i>	1
3	102975	.SCREW, rd hd mach; 6–32 x 1/4 in.	2
4✓	158361	.CLIP, spring	2
5		.BARE PISTON ( <i>not sold separately</i> )	1
6	100078	SCREW, hex head; 8–32 x 3/8 in.	20
7	101578	SCREW, hex head Nylock; 8–32 x 3/8 in.	8
8	150647	GASKET; copper	1
9✓	156698	O-RING; Buna–N	1
13	158359	ACTUATOR, valve	1
14	158360	YOKE, rod, trip	1
15	158362	PIN, toggle	2
16	158364	ROCKER, toggle	2
17	167585	SPRING, helical compression	2
18*	158367	GROMMET; rubber	2
19	158377	SEAL, flat ring; nitrile rubber	1
20*	158378	SEAL, o-ring; nitrile rubber	1
21*	158379	SEAL, o-ring; nitrile rubber	1
22†	113935	WIPER, rod	1
23†	113944	PACKING, o-ring	1
24†	192172	RETAINER, packing	1
25†	113936	PACKING, u-cup	1
26†	192173	WASHER, packing	1
27*	160261	NUT, adjusting	4
28*	160618	LOCKWIRE, transfer valve	2
29	160623	ARM, toggle	2
30*	160896	STEM, valve	2
31	161435	NUT, cylinder cap	1
32	15E954	CYLINDER, motor, air	1
33	178270	PLATE, muffler	2
36	15E555	PLATE, identification	1
37*	170708	POPPET, valve; urethane	2
38*	170709	POPPET, valve; urethane	2
40	150461	GASKET; copper	1
42	158409	ADAPTER, outlet	1
44†	158697	WASHER, thrust	1
45†	159047	NUT, packing	1
46†	159048	BEARING, brass	1
47†	159306	GLAND, male	1
48†	159307	GLAND, female	1
49†	159308	V-PACKING; nitrile rubber	4
52	162553	ROD, piston	1
53	116343	SCREW, grounding	1
56	165362	BASE, motor, air	1
58	177843	PLATE, warning	1

## Pump

Ref No.	Part No.	Description	Qty.
59‡	100170	BALL, steel; 3/8" dia.	2
60‡	100579	PIN, cotter; 7/64" dia.; 1" long	1
61✓	108513	PIN, roll; 0.135" dia.; 7/8" long	1
62‡	150451	GASKET, copper	2
63	158314	GASKET, copper	1
64	162555	HOUSING, piston valve	1
65‡	162556	GLAND, male	1
66‡	162557	V-PACKING, leather	5
67	162558	HOUSING, intake valve	1
68	162559	SEAT, valve	2
69‡	162560	BEARING, brass	1
70	162561	HOUSING, packing	1
71	162562	PISTON, priming	1
72	162564	TUBE, priming	1
73‡	162566	V-PACKING, leather	5
74‡	162568	GLAND, female	1
75‡	162602	GLAND, male	1
76‡	162603	GLAND, female	1
77	164234	ROD, connecting; 12.47" (317 mm) long <b>for Model 205394</b>	1
	164231	ROD, connecting; 19–13/32" (493 mm) long <b>for Model 205395</b>	1
78	164233	CYLINDER, intake primer	1
79	165381	TUBE, riser; 21.31" (541 mm long) <b>for Model 205394</b>	1
	165382	TUBE, riser; 28–1/4" (718 mm long) <b>for Model 205395</b>	1
80✓	102180	PIN, spring; 0.135" dia.; 1" long	2

\* Included in Air Motor Repair Kit 207385, which may be purchased separately.

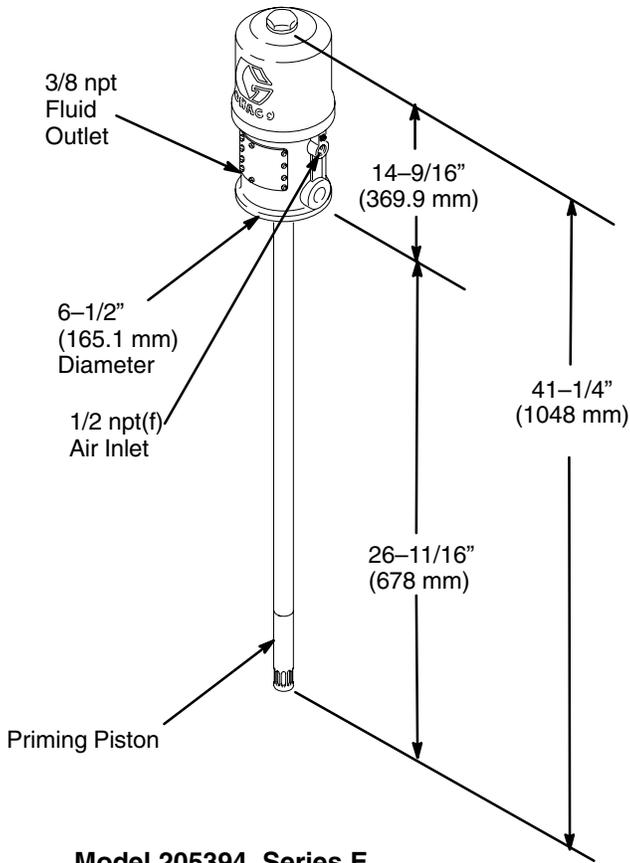
Repair Kit 239320, which may be purchased separately, includes parts to service the air motor throat area and the pump lower.

† Parts marked with a dagger are for the air motor throat area.

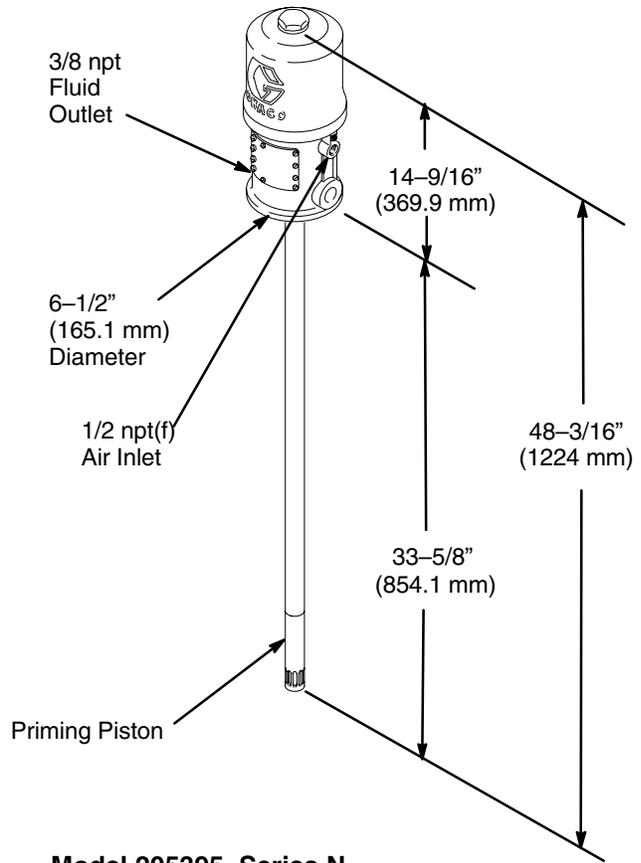
‡ Parts marked with a double dagger are for the pump lower.

✓ Recommended "tool box" spare parts. Keep on hand to reduce down time.

# Dimensions



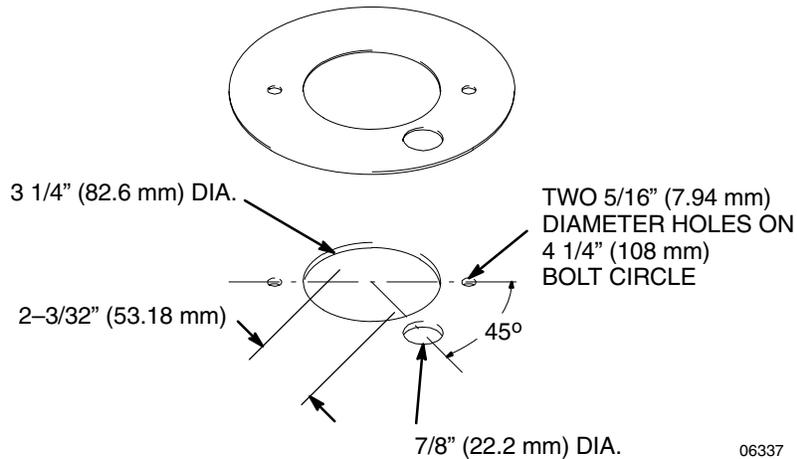
**Model 205394, Series E**  
Weight 36 lb (16 kg)



**Model 205395, Series N**  
Weight 36 lb (16 kg)

06306B

# Mounting Hole Layout



06337

# Technical Data

Fluid pressure ratio .....	50:1
Air pressure operating range .....	40 to 150 psi (0.3 to 1.0 MPa, 3 to 10 bar)
Maximum working pressure .....	7500 psi (51.7 MPa, 517 bar)
Maximum delivery .....	0.5 gpm (1.9 lpm)
Cycles per gallon (per liter) .....	110 (28)
Max. recommended pump speed .....	60 cycles per minute
Air motor effective diameter .....	4.25 in (108 mm)
Stroke .....	4 in. (102 mm)
Air consumption .....	approx. 19 cfm (0.53 m <sup>3</sup> /min)
	at 1 gpm (3.8 lpm) at 70 psi (0.48 MPa, 4.8 bar)
Wetted parts .....	steel, brass, aluminum, leather
Weight .....	Model No. 205394: 34 lb (15 kg)
	Model No. 205395: 37 lb (17 kg)

## Sound Pressure Level (measured at 1 meter from unit)

Input Air Pressures at 15 cycles per minute		
40 psi (0.28 MPa, 2.8 bar)	70 psi (0.48 MPa, 4.8 bar)	100 psi (0.7 MPa, 7 bar)
73.6 dB(A)	78.34 dB(A)	80.85 dB(A)

## Sound Power Level (tested in accordance with ISO 9614-2)

Input Air Pressures at 15 cycles per minute		
40 psi (0.28 MPa, 2.8 bar)	70 psi (0.48 MPa, 4.8 bar)	100 psi (0.7 MPa, 7 bar)
87.4 dB(A)	92.09 dB(A)	94.62 dB(A)

# Graco Standard Warranty

Graco warrants all equipment 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 user. 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.

This warranty does not cover, and Graco shall not be liable for general wear and tear, or any malfunction, damage or wear caused by faulty installation, misapplication, abrasion, corrosion, inadequate or improper maintenance, negligence, accident, tampering, or substitution of non-Graco component parts. Nor shall Graco be liable for malfunction, damage or wear caused by the incompatibility of Graco equipment with structures, accessories, equipment or materials not supplied by Graco, or the improper design, manufacture, installation, operation or maintenance of structures, accessories, equipment or materials not supplied by Graco.

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.

**THIS WARRANTY IS EXCLUSIVE, AND IS IN LIEU OF ANY OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO WARRANTY OF MERCHANTABILITY OR WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE.**

Graco's sole obligation and buyer's sole remedy for any breach of warranty shall be as set forth above. The buyer agrees that no other remedy (including, but not limited to, incidental or consequential damages for lost profits, lost sales, injury to person or property, or any other incidental or consequential loss) shall be available. Any action for breach of warranty must be brought within two (2) years of the date of sale.

Graco makes no warranty, and disclaims all implied warranties of merchantability and fitness for a particular purpose in connection with accessories, equipment, materials or components sold but not manufactured by Graco. These items sold, but not manufactured by Graco (such as electric motors, switches, hose, etc.), are subject to the warranty, if any, of their manufacturer. Graco will provide purchaser with reasonable assistance in making any claim for breach of these warranties.

In no event will Graco be liable for indirect, incidental, special or consequential damages resulting from Graco supplying equipment hereunder, or the furnishing, performance, or use of any products or other goods sold hereto, whether due to a breach of contract, breach of warranty, the negligence of Graco, or otherwise.

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# Graco Phone Numbers

**TO PLACE AN ORDER**, contact your Graco distributor, or call one of the following numbers to identify the distributor closest to you:

**1-800-533-9655 Toll Free**

**612-623-6928**

**612-378-3590 Fax**

*All written and visual data contained in this document reflects the latest product information available at the time of publication. Graco reserves the right to make changes at any time without notice.*

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