

## MID-RANGE

# HIGH-FLO<sup>®</sup> Pump Accessories

### **PUMP MOUNTING ADAPTER KITS** (pages 2-3)

Provides adapter plate and tie rods for mounting specified motor to a High-Flo displacement pump.

#### **Part No. 220-579**

For all series Bulldog<sup>®</sup> motors, Part No. 208-356, and Series A Senator<sup>®</sup> motors, Part No. 217-540.

#### **Part No. 221-159**

Required for all Viscount<sup>®</sup> and President<sup>®</sup> motors.

### **RISER TUBE KITS** (pages 4-5)

Adapts displacement pump outlet to motor level when the pump is drum mounted.

#### **Part No. 220-580**

For President<sup>®</sup> and Viscount<sup>®</sup> pumps.

#### **Part No. 916-517**

For Senator<sup>®</sup> and Bulldog<sup>®</sup> pumps.

### **PUMP FLOOR STAND 220-581** (page 6)

For mounting pump in a suction-feed system.

### **HYDRAULIC OIL COLLECTOR KIT 222-356** (page 7)

For collecting hydraulic oil leakage on Viscount<sup>®</sup> pumps.

# Pump Mounting Adapter Kits

## Pressure Relief Procedure

### WARNING

#### **PRESSURIZED EQUIPMENT HAZARD**

The system pressure must be manually relieved to prevent the system from starting or spraying accidentally. To reduce the risk of an injury from accidental spray from the gun, splashing fluid, or moving parts, follow the **Pressure Relief Procedure** whenever you:

- are instructed to relieve the pressure,
- stop spraying,
- check or service any of the system equipment,
- or install or clean the spray tips.

1. Shut off the power to the pump.
2. **In an air-powered system**, close the air regulator and close the bleed-type master air valve.  
  
**In a hydraulic-powered system**, close the hydraulic supply line shutoff valve first, then the return line shutoff valve. In a multi-pump system, do this at each pump to isolate the pumps.
3. Close the fluid shutoff valves from the supply tanks.
4. Trigger the gun at the last gun station to relieve fluid pressure. Maintain firm metal-to-metal contact between the gun and a grounded metal pail. Repeat for all gun stations.
5. Open the pump drain valve to relieve fluid pressure which may be trapped in the pump or hose.

*If you suspect that pressure has not been fully relieved after following the steps above, **very slowly** loosen the hose end coupling and relieve pressure gradually, then loosen completely. Now clear the nozzle or hose.*

## Installation

### WARNING

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

1. **Relieve the pressure.** Remove the pump from its mounting. Disconnect the old displacement pump and the tie rods from the motor.
2. Loosely install the screws (2) and lockwashers (5, kit 221–159 only) from the motor (A) to the adapter plate (1).
3. Torque the tie rods (3) into the adapter plate (1) to 68–75 N.m (50–55 ft–lb).
4. **For Kit 220–579 only:** Insert the o-ring (8) into the groove on the inside of the coupling (6), just above the pin hole. Place the coupling (6) through the nut (5). Screw the nut onto the motor shaft (B). Screw the piston rod (C) into the coupling (6) until the pin holes align. Install the pin (7).  
  
**For Kit 221–159 only:** Fill the cavity in the bottom of the motor shaft with grease. Install the o-ring (8) on the coupling (6) and screw the coupling into the motor shaft (D) until the pin holes align. Install the pin (7).
5. Align the tie rods (3) with the displacement pump and loosely install the locknuts (4).
6. **For Kit 221–159 only:** Screw the coupling (6) onto the displacement pump rod (E) and torque to 102–109 N.m (80–85 ft–lb).
7. Torque the screws (2) from the motor to the adapter plate to 20–23 N.m (15–17 ft–lb). Torque the tie rod locknuts (4) to 68–75 N.m (50–55 ft–lb).

# Pump Mounting Adapter Kits

## Model 220-579

For Bulldog and Senator Pumps

Ref No.	Part No.	Description	Qty
1	183-343	PLATE, adapter	1
2	108-764	CAPSCREW, hex soc hd; 5/8-11 unc-2a x 2.5" long	3
3	183-348	ROD, tie; 12.505" (318 mm) shoulder-to-shoulder	3
4	108-683	NUT, lock, hex; 9/16-12 unc	3
5	183-042	NUT, coupling	1
6	183-084	COUPLING	1
7	100-103	PIN, cotter	1
8	158-674	O-RING; buna-N	1

## Model 221-159

For Viscount I and President Pumps

Ref No.	Part No.	Description	Qty
1	183-342	PLATE, adapter	1
2	100-450	CAPSCREW, hex hd; 5/16-18 unc-2a x 1" long	3
3	183-089	ROD, tie; 6.875" (175 mm) shoulder-to-shoulder	3
4	108-683	NUT, lock, hex; 9/16-12 unc	3
5	100-214	LOCKWASHER; 0.318"	1
6	220-883	COUPLING	1
7	101-946	PIN, cotter	1
8	156-082	O-RING; buna-N	1

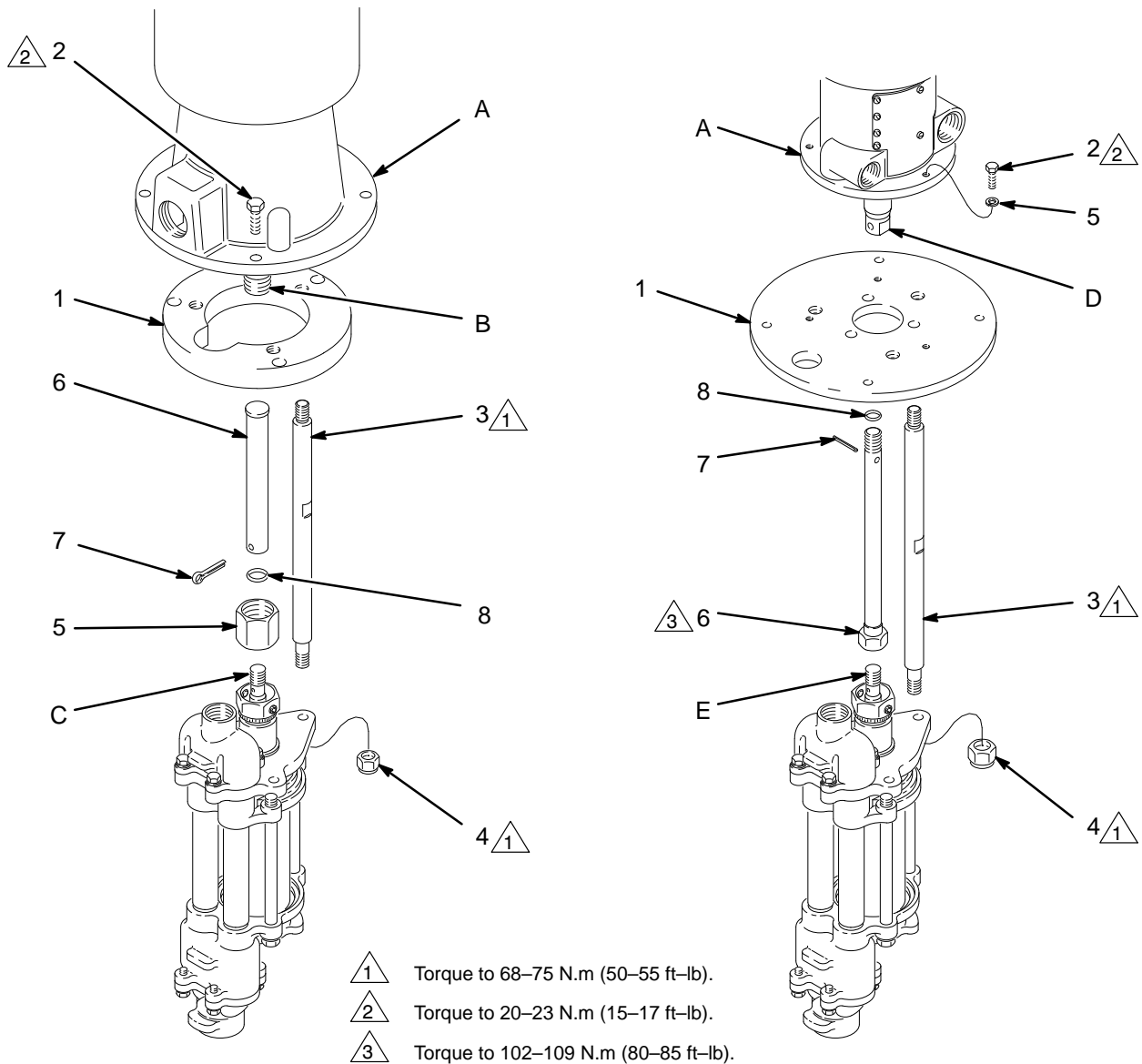


Fig. 1

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# Riser Tube Kits

## Installation

### **WARNING**

To reduce the risk of serious injury whenever you are instructed to relieve pressure, always follow the **Pressure Relief Procedure** on page 2.

1. **Relieve pressure** before installing these kits.
2. **For Kit 220–580** (President and Viscount pumps), assemble the parts as shown.

3. **For Kit 916–517** (Senator and Bulldog pumps), disconnect the displacement pump (A) from the motor. If installing these parts on a stainless steel pump, use Loctite® No. 408 anti-galling lubricant on all male threads.

Screw one adapter (1) into the pump's fluid outlet (B). Connect the other adapter (1) to one end of the tube (2), then screw the elbow (3) onto the adapter (1). Install the tube (2) into the first adapter (1). Tighten all connections securely.

Reconnect the displacement pump (A), maneuvering the elbow (3) into the motor base outlet (C). Install the collet nut (4) in the outlet (C). Install the riser tube adapter (5) through the collet nut (4) and screw it tightly into the elbow (3) until the collet nut (4) seals against the outside of the motor base outlet.

**NOTE:** Only those parts listed in the parts lists are included in the kits.

# Riser Tube Kits

## Kit 220-580

For President and Viscount Pumps

## Kit 916-517

For Senator and Bulldog Pumps

Ref No.	Part No.	Description	Qty	Ref No.	Part No.	Description	Qty
1	108-763	CONNECTOR, male; sst	1				
2	220-885	TUBE, riser; sst	1				
3	108-762	CONNECTOR, blkhd (f); sst	1	1	515-747	ADAPTER; 1" npt(m) x 1-1/4" OD tube; sst	2
4	108-761	ELBOW, street, 90°; 1-1/2" npt (m x f); sst	1	2	515-748	TUBE, riser; 1-1/4" OD; 7" long; sst	1
5	108-773	LOCKNUT, bulkhead; sst	1	3	618-674	ELBOW, 90°	1
6	185-466	NIPPLE, half; 1-1/2" npt (for 55 gal. [200 liter] drum mountings)	1	4	166-153	NUT, collet	1
				5	618-675	ADAPTER, riser tube	1

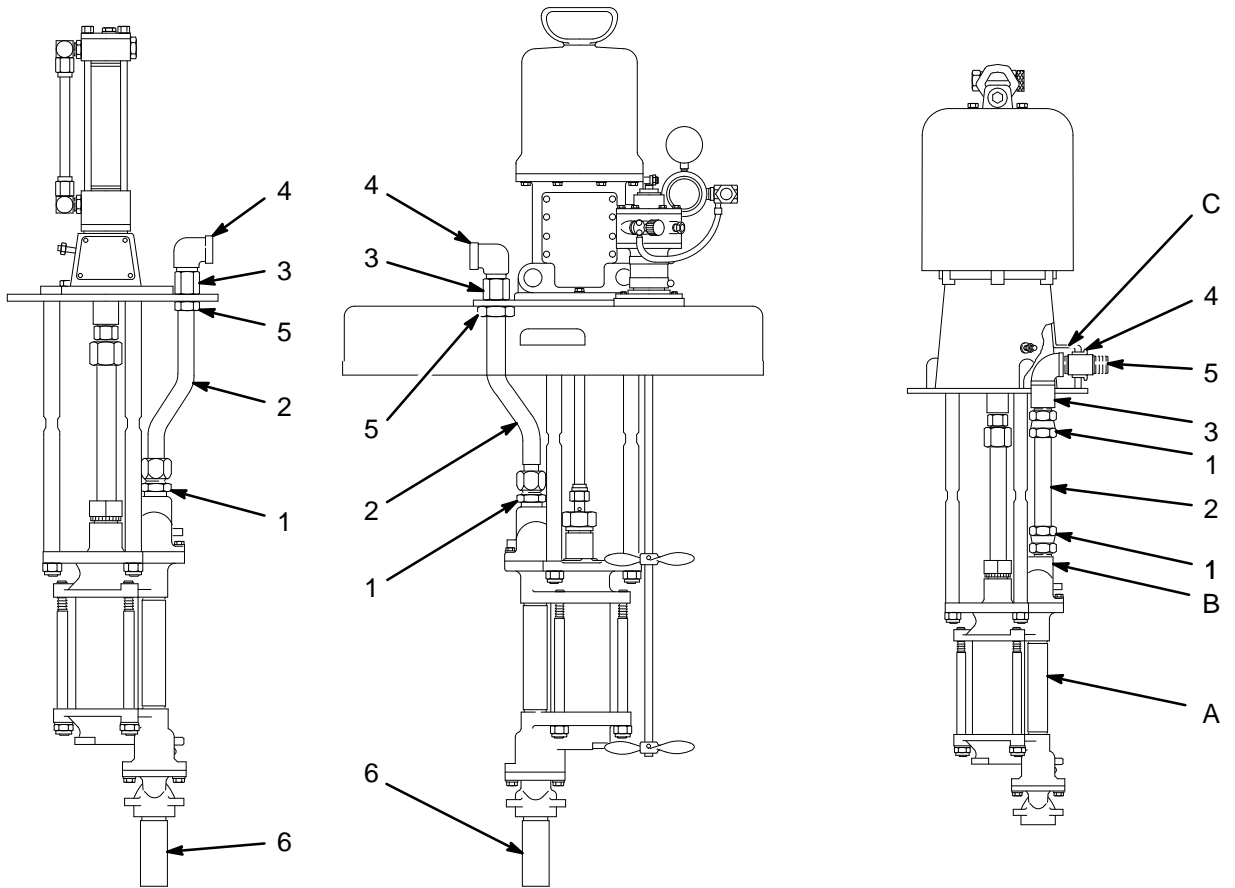


Fig. 2

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# Pump Floor Stand 220-581

## Installation

1. Assemble the stand as shown in the parts drawing.
2. Secure the stand to the floor. The bolts should extend about 6 in. (152 mm) into the concrete floor to prevent the pump from tipping.
3. Use a hoist or elevator to lower the pump into the stand. Secure the pump to the stand.

## Parts

Ref No.	Part No.	Description	Qty
1	183-319	BASE, mounting	1
2	183-321	SUPPORT, leg	4
3	220-846	LEG	4
4	100-469	CAPSCREW, hex hd; 3/8-16 unc-2a x 0.75" long	16
5	100-133	LOCKWASHER; 0.382"	16
6	100-307	NUT, hex full; 3/8-16 unc-2b	16

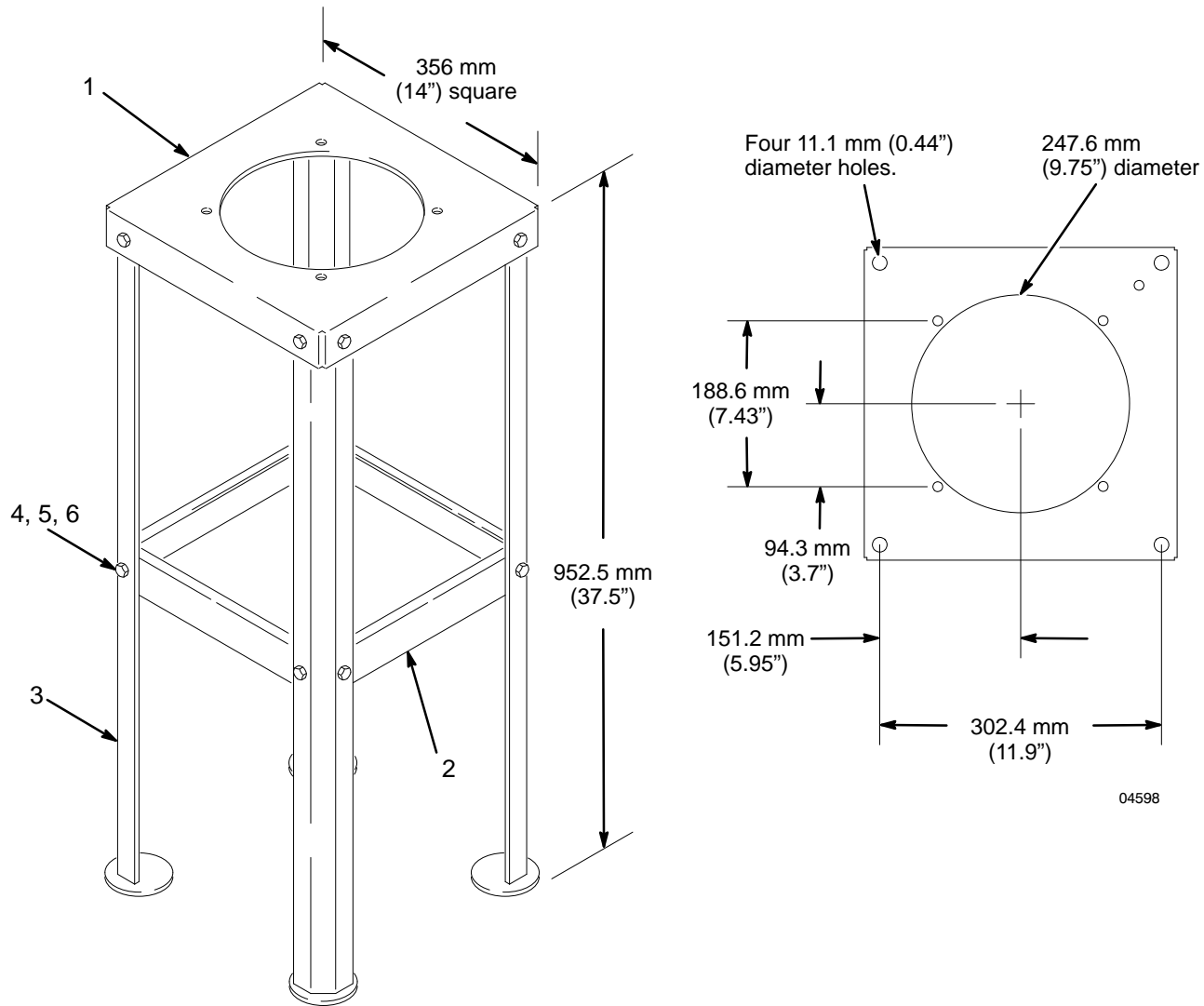


Fig. 3

# Hydraulic Oil Collector Kit 222–356

## Installation

### **⚠ WARNING**

To reduce the risk of serious injury whenever you are instructed to relieve pressure, always follow the **Pressure Relief Procedure** on page 2.

1. **Relieve the pressure.**
2. Remove the locknuts (A) from the three tie rods (B). Unscrew the nut on the lower end of the connecting rod (C) from the displacement rod (D) and pull the displacement pump (E) away from the motor (F).
3. Pull out the cotter pin (G) and unscrew the connecting rod (C) from the shaft of the motor (F).
4. Install the o-ring (5) in the inner slot of the oil deflector (2), and slide the deflector onto the connecting rod (C). Screw the connecting rod into the motor shaft and secure with the cotter pin (G).
5. Position the oil deflector (2) so the distance from the end of the motor shaft to the bottom of the deflector is 79.2 mm. Secure with the two setscrews (4).
6. Install the oil collector (1) so the clamp (H) on the collector slides up onto the tie rod (B) which is on the same side of the motor as the hydraulic fluid tube (J).
7. Position the oil collector (1) so that its top edge is 22.4 mm from the bottom of the adapter plate (K). Secure the collector to the tie rod by tightening the capscrew (3) in the clamp (H).
8. Reconnect the displacement pump (E) to the motor (F) by screwing the nut of the connecting rod (C) onto the displacement rod (D). Screw the locknuts (A) onto the tie rods (B) and torque to 68–75 N.m (50–55 ft-lb).
9. Install the adapter (6) in the tube (7). Screw the adapter into the drain port (L) at the base of the oil collector (1).

## Parts

Ref No.	Part No.	Description	Qty
1	222–358	COLLECTOR, oil	1
2	185–162	DEFLECTOR, oil	1
3	101–682	CAPSCREW, socket hd; 1/4–20 unc–3a	1
4	102–279	SETSCREW, socket, cup point; 8–32 unc–3a	2
5	104–130	PACKING, o-ring; buna-N	1
6	103–875	ADAPTER, hose barb; 1/8 npt	1
7	054–104	TUBE; PVC; 1/4" ID; 1.8 m (6 ft) long	1

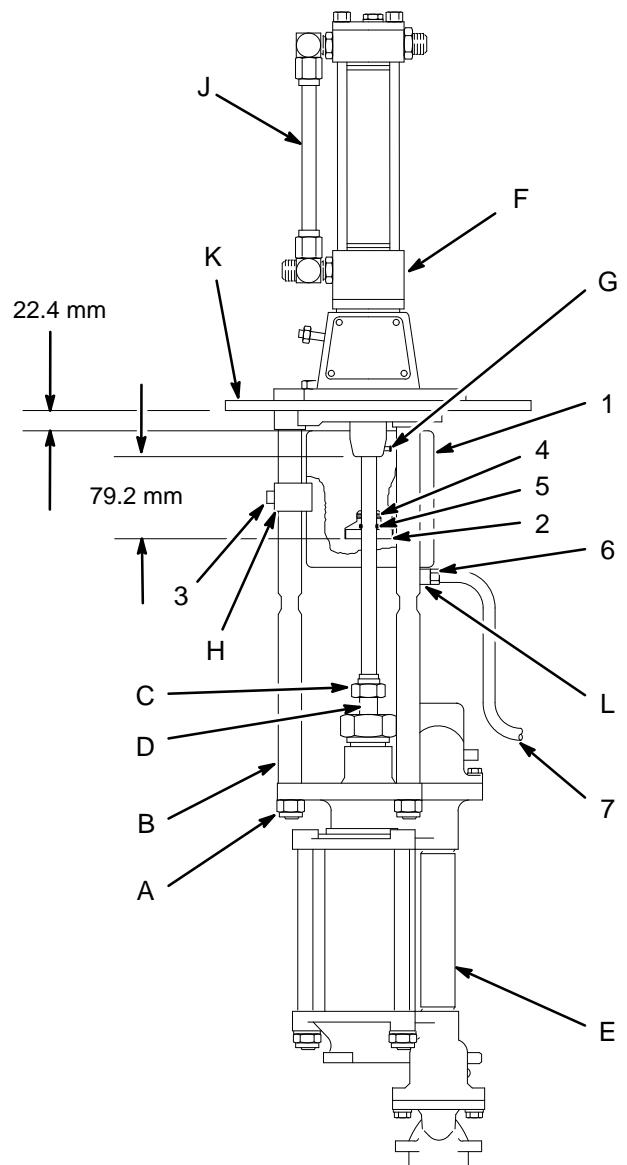


Fig. 4

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# The Graco Warranty and Disclaimers

## WARRANTY

Graco warrants all equipment manufactured by it and bearing its name to be free from defects in material and workmanship on the date of sale by an authorized Graco distributor to the original purchaser for use. As purchaser's sole remedy for breach of this warranty, Graco will, for a period of twelve months from the date of sale, repair or replace any part of the equipment proven 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, 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 with Graco equipment of 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 claim. 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.

## DISCLAIMERS AND LIMITATIONS

The terms of this warranty constitute purchaser's sole and exclusive remedy and are in lieu of any other warranties (express or implied), **including warranty of merchantability or warranty of fitness for a particular purpose**, and of any non-contractual liabilities, including product liabilities, based on negligence or strict liability. Every form of liability for direct, special or consequential damages or loss is expressly excluded and denied. In no case shall Graco's liability exceed the amount of the purchase price. Any action for breach of warranty must be brought within two (2) years of the date of sale.

## EQUIPMENT NOT COVERED BY GRACO WARRANTY

Graco makes no warranty, and disclaims all implied **warranties of merchantability and fitness for a particular purpose**, with respect to accessories, equipment, materials, or components sold but not manufactured by Graco. These items sold, but not manufactured by Graco (such as electric motor, 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.

## Graco Phone Numbers

**TO PLACE AN ORDER**, contact your Graco distributor, or call this number to identify the distributor closest to you: **1-800-367-4023 Toll Free**

**FOR TECHNICAL ASSISTANCE**, service repair information or assistance regarding the application of Graco equipment: **1-800-543-0339 Toll Free**

## Manual Change Summary

All 208-356 air motors require an adapter plate.

**Sales Offices:** Atlanta, Chicago, Detroit, Los Angeles  
**Foreign Offices:** Belgium; Canada; England; Korea; Switzerland; France; Germany; Hong Kong; Japan

**GRACO INC. P.O. BOX 1441 MINNEAPOLIS, MN 55440-1441**

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