

# Stainless Steel Air Motor Conversion Kits

309643D

## Conversion Kit 246450

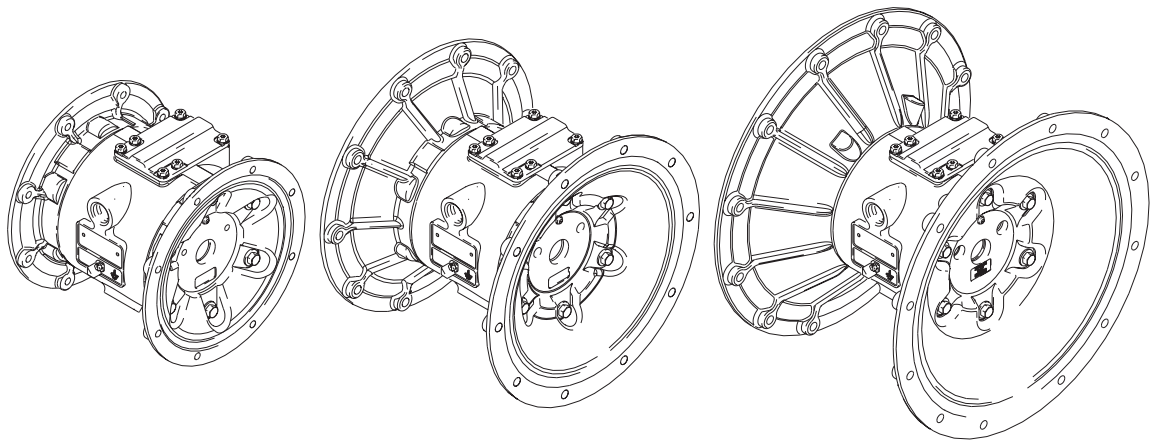
For 1040 Pumps

## Conversion Kit 246451

For 1590 Pumps

## Conversion Kit 246452

For 2150 Pumps



Model 246450

Model 246451

Model 246522

# Installation

## Pressure Relief Procedure

**WARNING**

**PRESSURIZED EQUIPMENT HAZARD**

The equipment stays pressurized until pressure is manually relieved. To reduce the risk of serious injury from pressurized fluid, accidental spray from the gun or splashing fluid, follow this procedure whenever you:

- Are instructed to relieve pressure
- Stop pumping
- Check, clean, or service any system equipment
- Install or clean fluid nozzles

1. Shut off the air to the pump
2. Open the dispensing valve, if used
3. Open the fluid drain valve to relieve all fluid pressure, having a container ready to catch the drainage

## Record Pump Information

Before you install the new stainless steel conversion kit, record the information from the existing pump in the box below. Refer to this information when you need to purchase repair kits or file a warranty claim.

PART NO.	SERIES	MADE IN
+	MAX GPM- l /MIN	+
Plate No. 290-045 Rev. C	WEIGHT LB - kg    MAX FLUID & AIR PSI-bar	

## Installation Tools Required

- Torque wrench
- 10 mm socket wrench (1040)
- 13 mm socket wrench (1590 & 2150)
- 15 mm socket wrench (metal fluid section)
- adjustable wrench (plastic fluid section)
- 19 mm open end wrench
- O-ring pick

## List of Parts in Kit

- Stainless steel air motor, with stainless steel air covers
- Small PTFE o-ring - used with center shaft, Qty 2
- Large PTFE o-ring - used with seats if applicable, Qty 4
- Thread locking compound (blue) - tube
- Lithium-based Grease - tube

# Metal Fluid Section Pumps

## Disassembly of Inlet and Outlet Manifolds

1. **Relieve the pressure**, see page 2. Disconnect all hoses.
2. Remove the pump from its mounting.
3. Remove the bolts (106) holding the outlet manifold (103) to the fluid covers (101). See FIG. 1.
4. Remove the o-rings (202, not used on some models), seats (201), and balls (301) from manifold (103).
5. Turn the pump over and remove the inlet manifold (102). Remove the o-rings (202, not used on some models), seats (201), and balls (301) from fluid covers (101).

- ⚠ 1 Apply medium-strength (blue) Loctite or equivalent to the threads, and torque to 120-150 in-lb (14-17 N.m).
- ⚠ 2 Arrow (A) must point toward outlet manifold (103).
- ⚠ 3 Beveled seating surface must face the ball (301).
- ⚠ 4 Not used on some models.

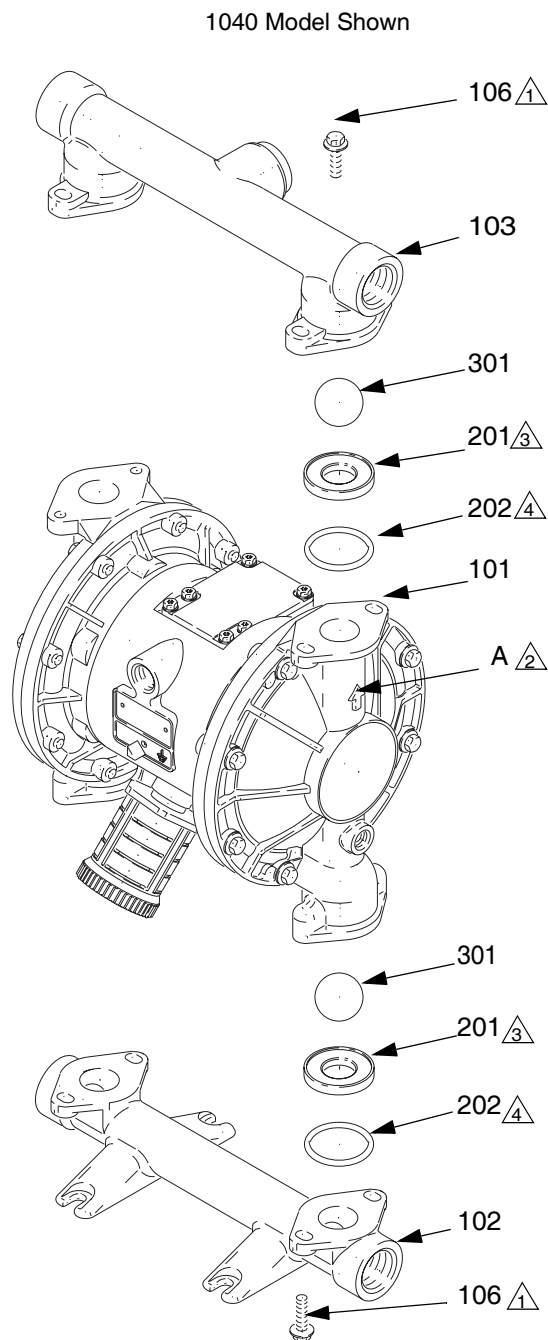


FIG. 1

### Disassembly of Fluid Covers

1. Remove the screws (106) holding the fluid covers (101) to the air covers (23). Pull the fluid covers (101) off the pump. See FIG. 2.
2. Loosen but do not remove the diaphragm shaft bolts (107) on both ends.
3. Unscrew one bolt from diaphragm shaft (24) and remove the o-ring (108), fluid side diaphragm plate (105), PTFE diaphragm (403, used on PTFE models only), diaphragm (401), and air side diaphragm plate (104). See FIG. 3
4. Pull the other diaphragm assembly and the diaphragm shaft (24) out of the center housing (1). Hold the shaft flats with a open end wrench, and remove the bolt (107) from the shaft. Disassemble the remaining diaphragm assembly.
5. Clean and check all parts for wear or damage. Replace parts as needed.

- ⚠ Apply medium-strength (blue) Loctite or equivalent to the threads, and torque:  
1040 models -120-150 in-lb (14-17 N.m.)  
1590/2150 models - 190-220 in-lb (22-25 N.m.)
- ⚠ Arrow (A) must point toward air valve (B).

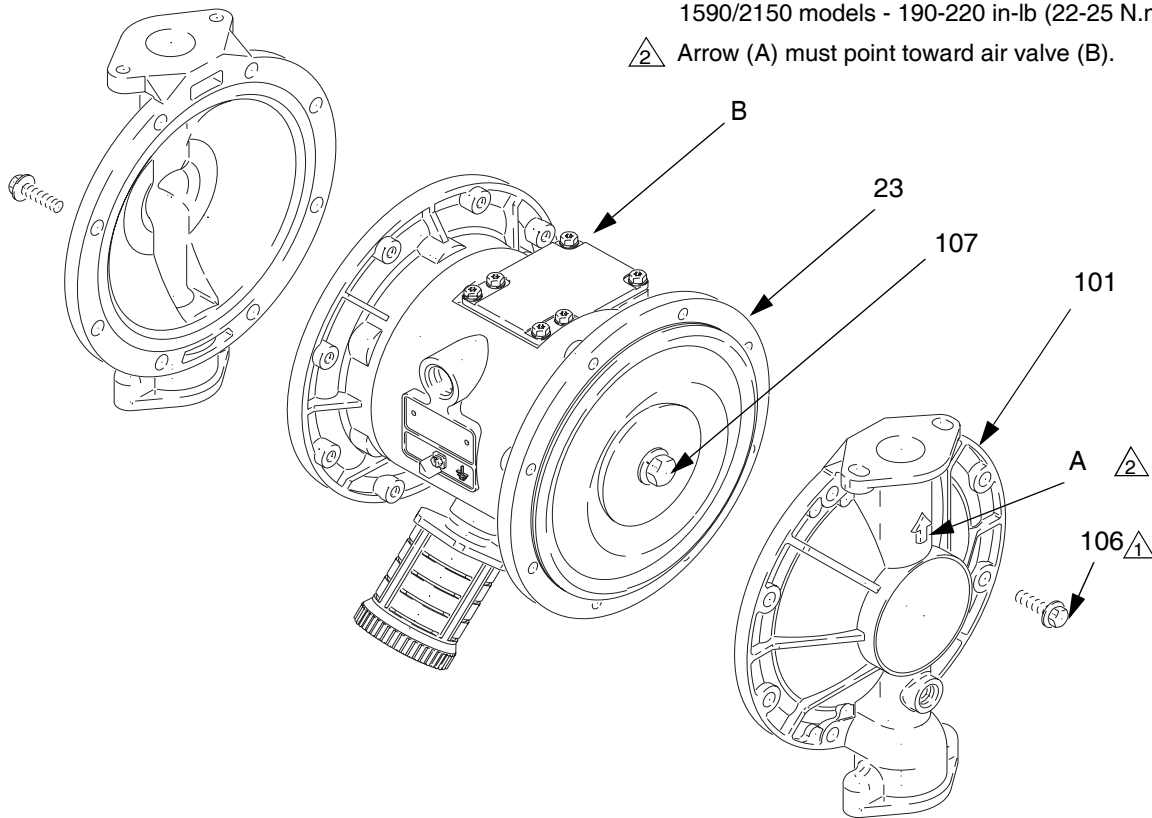
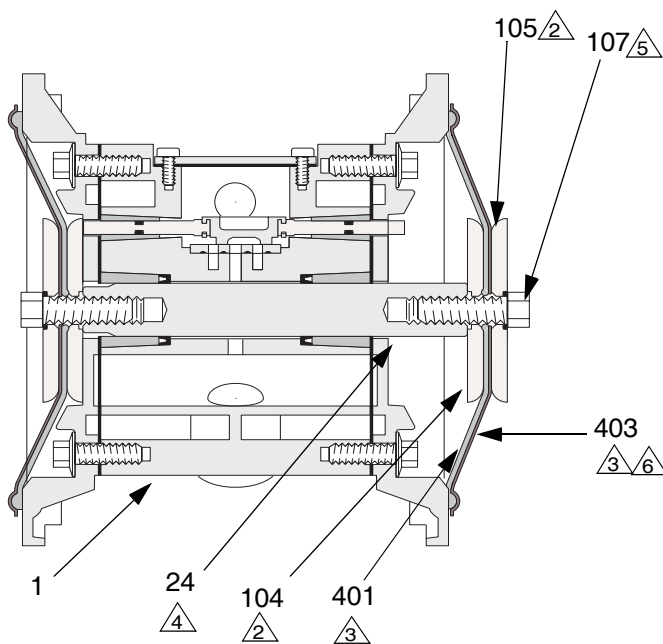
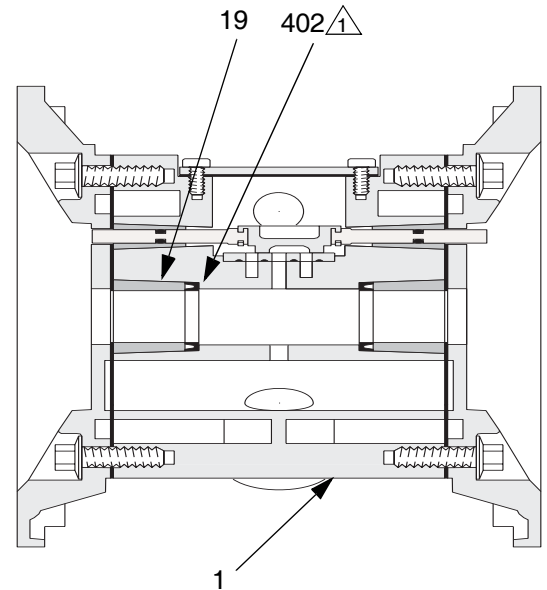


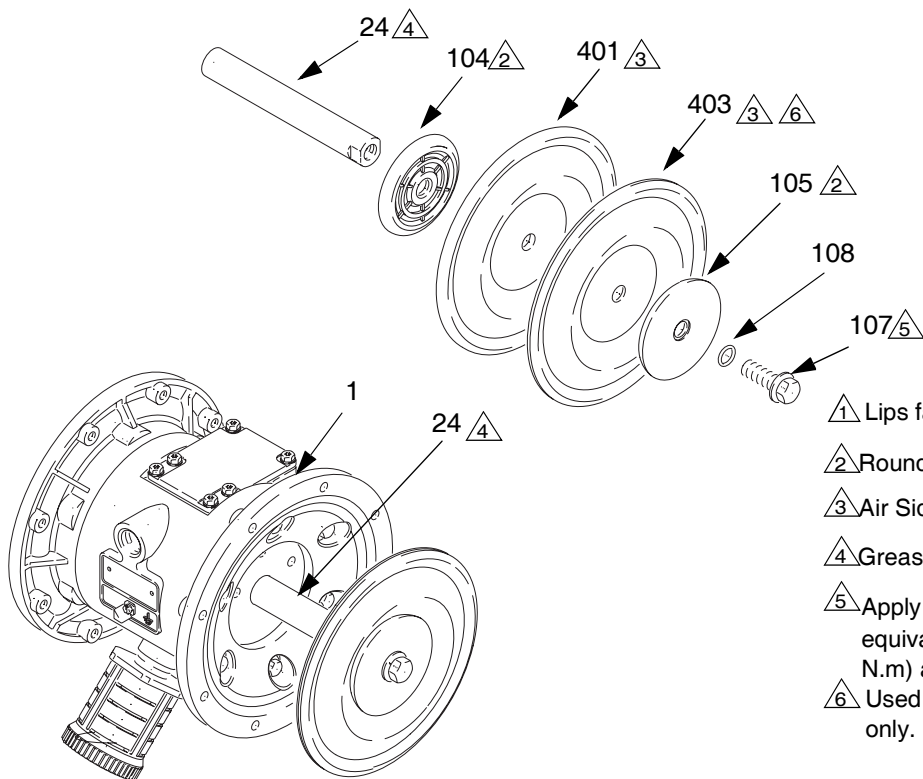
FIG. 2



Cutaway View, with Diaphragms in Place



Cutaway View, with Diaphragms Removed



- ① Lips face out of housing (1).
- ② Rounded side faces diaphragm (401).
- ③ Air Side must face center housing (1).
- ④ Grease.
- ⑤ Apply medium-strength (blue) Loctite® or equivalent. Torque to 20-25 ft-lb (27-34 N.m) at 100 rpm maximum.
- ⑥ Used on pumps with PTFE diaphragms only.

FIG. 3

## Reassembly of Fluid Covers

1. Install the diaphragm assembly on one end of the shaft as follows:
  - a. Install new o-ring (108), provided with kit, on the shaft bolt (107).
  - b. Install the fluid side diaphragm plate (105) on the bolt so the rounded side faces the diaphragm (401).
  - c. On PTFE models only, install the PTFE diaphragm (403) with the side marked AIR SIDE facing the center housing (1).
  - d. Install the diaphragm (401) on the bolt with the side marked AIR SIDE facing the center housing (1).
  - e. Install the air side diaphragm plate (104) so the rounded side faces the diaphragm (401). This plate is used on all models, and is stamped with its part number.
  - f. Apply medium-strength (blue) Loctite or equivalent to the bolt (107) threads. Screw the bolt into the shaft (24) hand tight.
  - g. Inspect the wrench flats on the shaft (24) for burrs that could damage the air motor seals (402). Use a file to remove any burrs.
2. Grease the length and ends of diaphragm shaft (24), and slide it through the new Stainless Steel Plus housing (1).
3. Assemble the other diaphragm assembly to the shaft as explained in step 1.
4. Hold one shaft bolt (107) with a wrench and torque the other bolt to 20-25 ft-lb (27-34 N.m) at 100 rpm maximum.
5. Align the fluid covers (101) and the center housing (1) so the arrows (A) on the covers face the same direction as the air valve (B). Apply medium-strength (blue) Loctite or equivalent to the threads of the screws (106). Secure the covers with the screws handtight. See FIG. 2.
6. Torque the screws oppositely and evenly to:
  - 1040 models -120-150 in-lb (14-17 N.m.)
  - 1590/2150 models - 190-220 in-lb (22-25 N.m.)

## Reassembly of the Inlet and Outlet Manifolds

1. Reassemble in reverse order, following all notes in FIG. 1.
2. If o-rings (202) are used, replace with new ones to assure the pump will seal properly. Be sure the ball checks and manifolds are assembled exactly as shown. The arrows (A) on the fluid covers(101) must point toward the outlet manifold (103).

# Plastic Fluid Section Pumps

## Disassembly of Inlet and Outlet Manifolds

1. **Relieve the pressure**, page 2. Disconnect all hoses.
2. Remove the pump from its mounting.
3. Remove the bolts (106) holding the outlet manifold (103) to the fluid covers (101). See FIG. 4.
4. Remove the o-rings (202, not used on some models), seats (201), and balls (301) from manifold (103).
5. Turn the pump over and remove the inlet manifold (102). Remove the o-rings (202, not used on some models), seats (201), and balls (301) from fluid covers (101).

- ⚠️ 1 Torque to 80 to 90 in-lb (9 to 10 N.m)
- ⚠️ 2 Arrow (A) must point toward outlet manifold (103).
- ⚠️ 3 Not used on some models.
- ⚠️ 4 Beveled seating surface must face the ball (301).

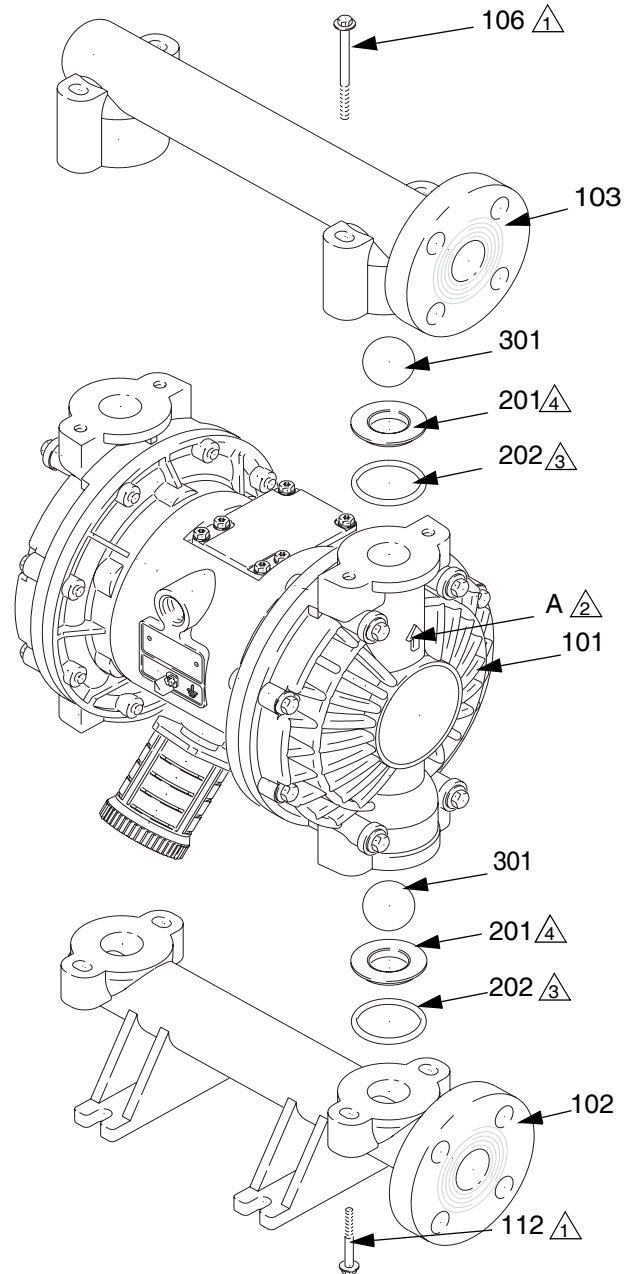


FIG. 4

### Disassembly of Fluid Covers

1. Remove the screws (106) and (112) holding the fluid covers (101) to the air covers (23). Pull the fluid covers (101) off the pump. See FIG. 5.
2. Unscrew one outer plate (105) from diaphragm shaft (24), diaphragm (401), and air side diaphragm plate (104). See FIG. 6.
3. Pull the other diaphragm assembly and the diaphragm shaft (24) out of the center housing (1). Hold the shaft flats with a open end wrench, and remove the other outer plate (105) from the shaft. Disassemble the remaining diaphragm assembly.
4. Clean and check all parts for wear or damage. Replace parts as needed.

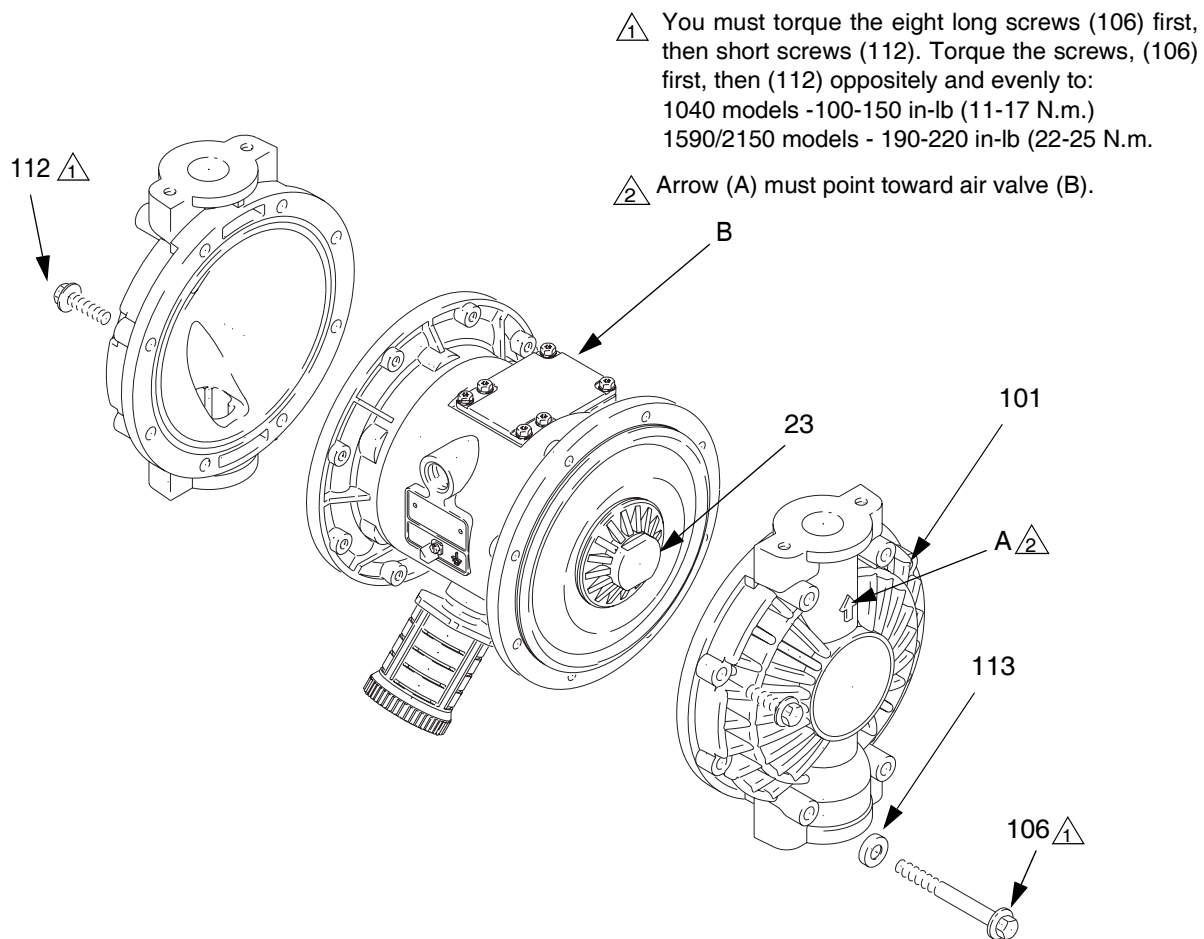


FIG. 5



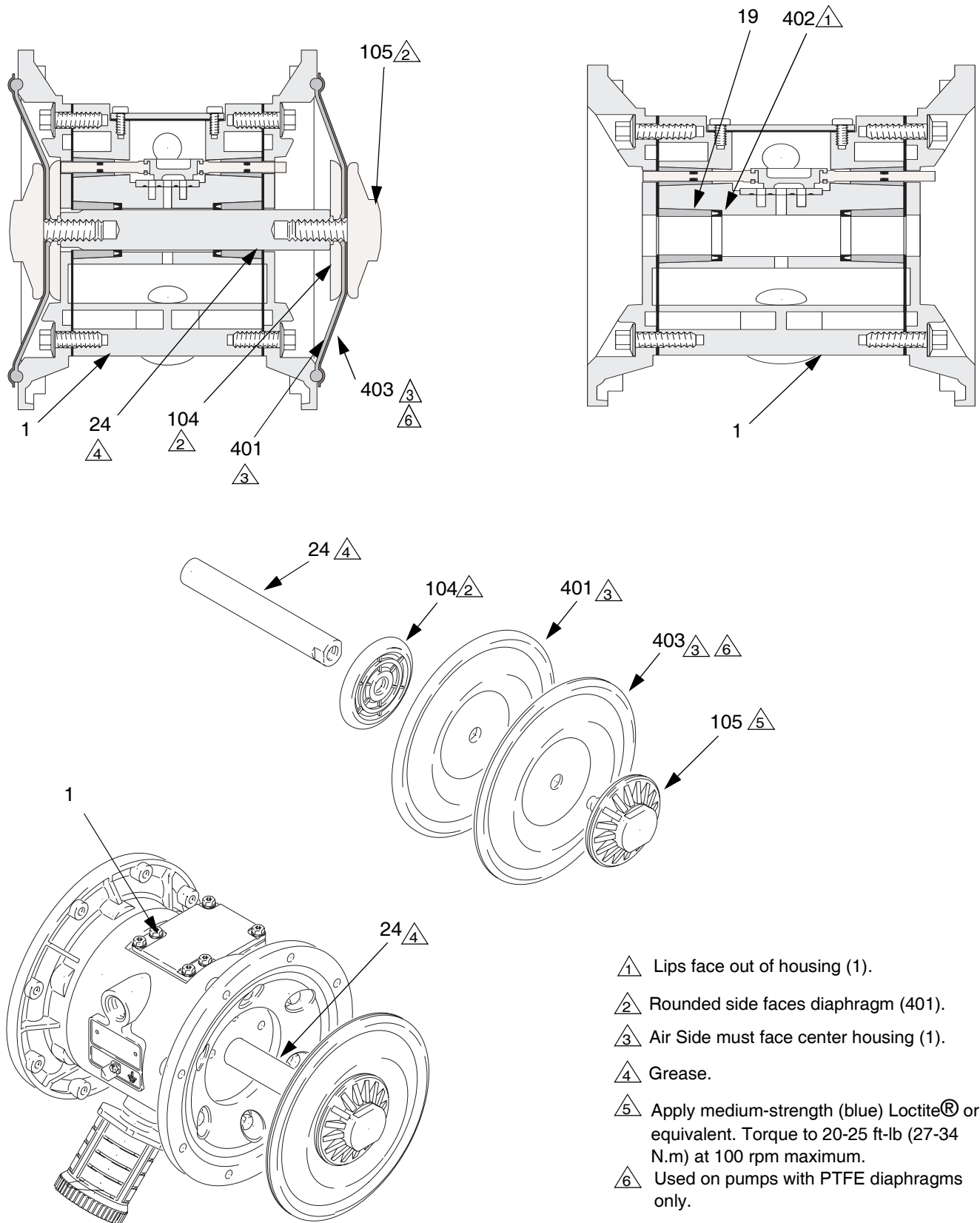


FIG. 6

## Reassembly of Fluid Covers

1. Inspect the wrench flats on the shaft (24) for burrs that could damage the air motor seals (402). Use a file to remove any burrs.
2. Grease the length and ends of diaphragm shaft (24), and slide it through the new Stainless Steel Plus housing (1).
3. Assemble the inner diaphragm plates (104), diaphragms (401), PTFE diaphragms (403, if present), and outer diaphragm plates (105) exactly as shown in Fig. 6. These parts **must** be assembled correctly.
4. Apply medium-strength (blue Loctite or equivalent to the threads of the fluid-side plate (105). Hold one of the outer plates (105) with a wrench, and torque the other outer plate to 20-25 ft-lb (27-34 N.m.) at 100 rpm maximum. **Do not over-torque.**
5. Align the fluid covers (101) and the center housing (1) so the arrows (A) on the covers face the same direction as the air valve (B). Apply

medium-strength (blue) Loctite or equivalent to the threads of the screws (106) and (112). Place the bolt caps (113) on the longer screws (106). Secure the covers with the screws handtight. See FIG. 2.

6. Torque the screws, (106) first, then (112) oppositely and evenly to:  
1040 models -100-150 in-lb (11-17 N.m.)  
1590/2150 models - 190-220 in-lb (22-25 N.m.)

## Reassembly of the Inlet and Outlet Manifolds

1. Reassemble in reverse order, following all notes in FIG. 4.
2. If o-rings (202) are used, replace with new ones to assure the pump will seal properly. Be sure the ball checks and manifolds are assembled exactly as shown. The arrows (A) on the fluid (101) must point toward the outlet manifold (103).



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# Graco Standard Husky Pump Warranty

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Original instructions. This manual contains English. MM 309643

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