

# Heavy-Duty PTFE Diaphragm Kits

24N321, 289224, 289225, and 289226 (with new air-side plate)  
 24N320, 253626, 253627, and 253628 (without new air-side plate)  
 For all 515, 716, 1040, 1590, 2150, and 3150 Diaphragm Pumps

406647D

EN



### Important Safety Instructions

See your pump manual for complete instructions including parts drawings and lists.

Ref.	Description	Qty.
104	PLATE, air side	2
402	PACKING, u-cup	2
403	DIAPHRAGM ASSEMBLY	2
	ADHESIVE, blue thread lock (not shown)	1

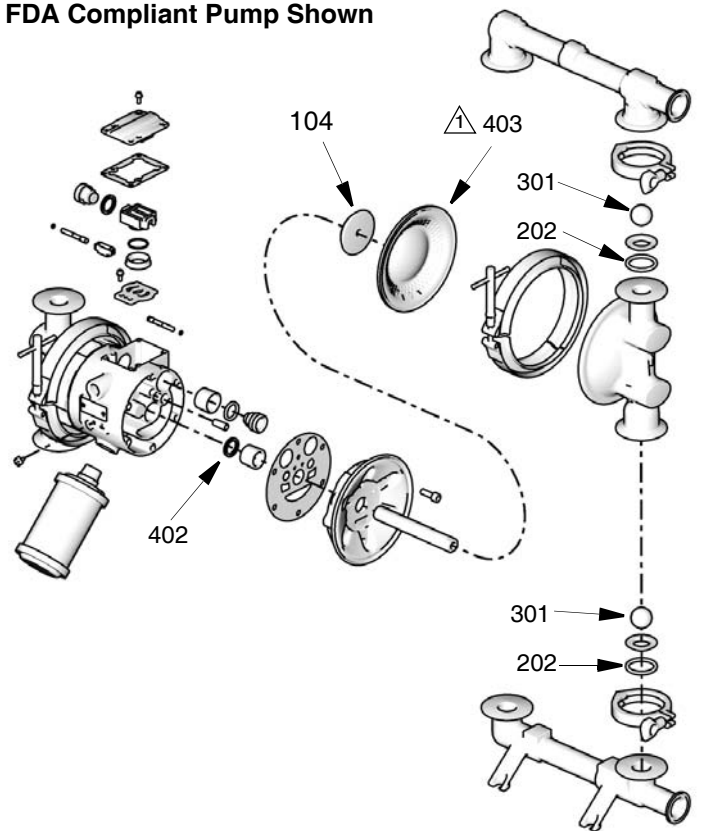
### Disassembly

**NOTE:** Heavy-duty diaphragms must use new plate. If a bolt-through diaphragm was in use you must purchase the kit that includes the new plate.


1. Remove and discard used diaphragms. (For kits with new air-side plates, used plates also can be discarded.) Retain the shaft to reuse if it is undamaged.
2. Remove and discard used u-cup packings (402).

See reverse for assembly instructions.

### FDA Compliant Pump Shown

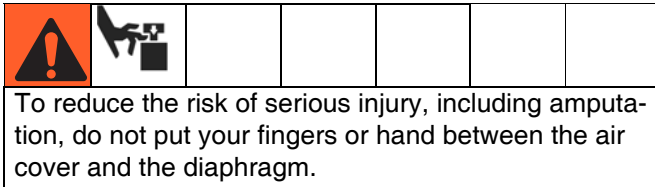


ti10632a

 Apply blue thread locking adhesive to shaft bolt threads

## Reassembly

**NOTE:** See your pump manual for complete instructions including parts drawings and lists.



1. Lubricate and install the shaft u-cup packings (402\*). Lips face *out* of the housing.
2. Assemble the air-side plate (104) onto the diaphragm (403). The wide, radiused side of the plate must face the diaphragm. Apply medium-strength (blue) thread locking adhesive to the threads of the diaphragm assembly. Screw the assembly into the shaft (24) hand tight.
3. Grease the length and ends of the diaphragm shaft (24). Insert the shaft/diaphragm assembly into one side of the pump. (**Non-FDA 515 pumps:** proceed directly to Step 4.) Assemble the fluid cover (101) and clamp (or bolts on non-FDA pumps) so the arrow (A) on the cover faces the same direction as the air valve (B). Securely tighten the clamp or torque bolts per specifications.
4. Assemble the other diaphragm assembly to the shaft as explained in step 2. This diaphragm will be lifted off the air cover at this point.

**Non-FDA 515 Pumps:** The air cover bolts make it difficult to assemble the overmolded diaphragms. Two people are needed.

- a. Use a flat surface that fits within the bolt pattern to apply pressure on the diaphragm that has already been assembled. Apply pressure until the diaphragm shaft sticks out of the other end of the center housing far enough to attach the second diaphragm assembly.
- b. Apply medium-strength (blue) thread locking adhesive to the threads of the second diaphragm assembly, and screw the assembly into the shaft (15) hand tight.
- c. Assemble the fluid cover (101) and bolts/nuts.

5. Supply the pump with low pressure air (less than 7 psi [.05 MPa, 0.5 bar]). The diaphragm will very slowly pull onto the air cover (23). Find the pressure that keeps the diaphragm close enough to attach, but does not let it contact the pilot pin.

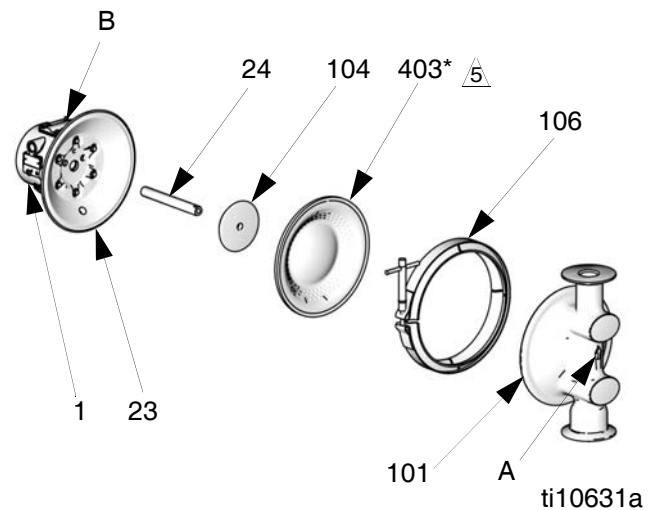
### NOTICE

Do not deform the diaphragm manually. The diaphragm needs uniform pressure to deform properly for maximum life.

6. Assemble the fluid cover (101) and clamp (106) (or bolts on non-FDA pumps) so the arrow (A) on the cover faces the same direction as the air valve (B). Securely tighten the clamp or torque bolts per specifications.

**NOTE:** If the diaphragm contacts the pilot pin and is forced away from the air cover, try Step 5 again. If necessary, return to Step 3.

7. Reassemble the ball check valves and manifolds as explained in your pump manual.



Apply medium strength (blue) thread locking adhesive to bolt (not shown).

*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.*

*Original instructions. This manual contains English. MM 406647*

**Graco Headquarters:** Minneapolis

**International Offices:** Belgium, China, Japan, Korea

**GRACO INC. AND SUBSIDIARIES • P.O. BOX 1441 • MINNEAPOLIS MN 55440-1441 • USA**

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