

# Urethane Booster Pump Seal Kit (Zenith or Nordson® -Type)

## 1. Introduction

Use this instruction sheet to install a urethane booster pump seal kit. There are three kits available depending on what maintenance you need to perform on your urethane booster pump. Refer to Table 1 for a description of the different seal kits.

Table 1

Kit Type	Contains	Used to
Basic	Essential repair parts	Replace the seals and spacers only
Complete (Non-Heated)	Seal housing, seals, snap ring, and spacers	Replace the seals and housing for non-heated applications
Complete (Heated)	Seal housing, seals, snap ring, and spacers	Replace the seals and housing for heated applications

**NOTE:** Refer to the *Parts* section for a complete listing of seal kit parts.

**NOTE:** To replace the seals and spacers only, one basic kit is needed. To replace the seals and housing for each end of the pump, you will need a complete kit or a complete heated kit depending on your application needs.

## 2. Seal Housing Designs

See Figure 1. The back end seal housing may have one of three different designs. Refer to Table 2 for a description of the different back end housing designs.

Table 2

Housing	Description
First seal housing (9)	Has a threaded housing and end cap with no internal snap ring required.
Second seal housing (5)	Use this seal housing on the drive end or the back end of the pump as they share they same design. There is a thru-hole in the design but no internal snap ring.
Third seal housing (5)	Use this seal housing on the drive end or back end of the pump as they share they same design. There is a thru-hole and an internal snap ring to isolate the first seal from the second seal.

**2. Seal Housing Designs**  
(contd.)

**NOTE:** The lack of an internal snap ring in the first and second housing designs will not affect seal performance.

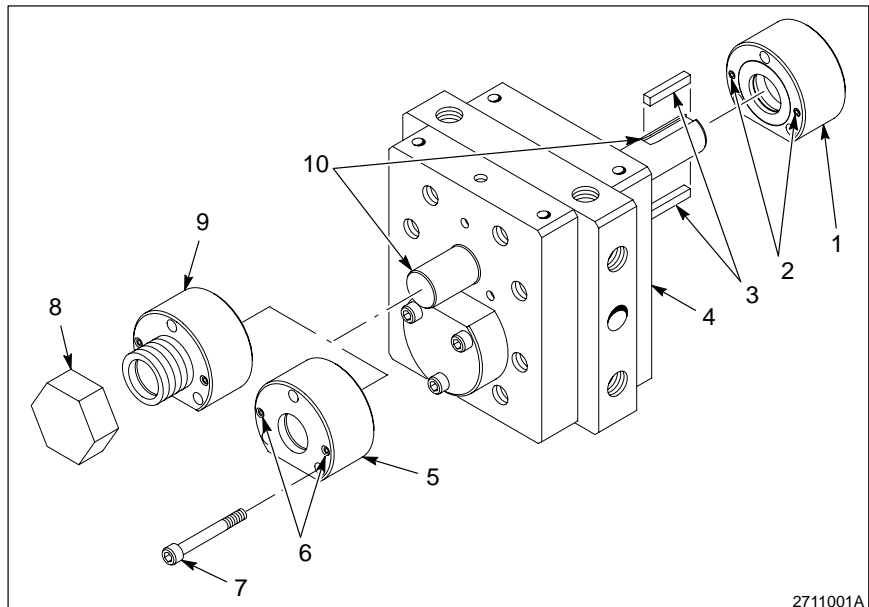


Fig. 1 Seal housings

- |  |                                     |
|--|-------------------------------------|
| 1. Seal housing, drive end                 | 6. Jacking set screw hole, back end |
| 2. Jacking set screw hole, drive end       | 7. Cap screw                        |
| 3. Key                                     | 8. End cap                          |
| 4. Pump                                    | 9. First seal housing, back end     |
| 5. Second and third seal housing, back end | 10. Shaft                           |

**NOTE:** The second and third seal housings (5) appear similar except that the third seal housing requires a snap ring.

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### 3. Seal Replacement

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See Figure 1. Follow these procedures to replace the urethane booster pump seals.

**NOTE:** When using the second and third housing designs, it is recommended that both sets of seals be replaced at the same time if possible. This will limit down time since seal wear is often identical on both ends of the pump. The complete kit and the heated complete kit contain two sets of seals and spacers for the drive end and back end housings.



**WARNING:** Use protective clothing and gloves to protect against contact with pump material. Contact with material may cause injury from chemical reaction or burns.

1. Shut down the pump and bleed all pressure from the system.



**WARNING:** Extremely high pressure is normally present in the booster and must bleed off before servicing. Injury or death may result if pressure is not bled from the supply and discharge hoses.

2. Remove the pump coupling, hub, and key from the drive end of the pump. Refer to the *Urethane Booster Pump Manual* for removal procedures.

**NOTE:** Replacing the seals does not normally require that you remove the pump from its base. If accessibility is a problem, perform a quick alignment procedure and remove the pump. Refer the *Urethane Booster Pump Manual* for alignment procedures.

3. Remove the housing end cap (8), if present, from the back end of the pump. If you are reusing this end cap, clean the inside diameter of the end cap.
4. Remove the three cap screws (7) from the seal housings (1,5, 9). Find the two jacking set screws (2, 6) in the seal housings and tighten them to remove the seal housings from the pump.
5. Carefully clean the pump shaft (10) and the surface where the seal housing mates with the pump. If you are reusing the seal housing, clean them thoroughly.

**3. Seal Replacement** (contd.)

6. See Figures 2, 3, and 4. Remove the spacers (1, 2), seals (3) and snap ring (4) (if required). Clean the spacers and the inside diameter of the housing. Discard the seals.
7. Place a small amount of grease in the inside diameter of the seal housing and on the inside diameter of the new seals.
8. Using a small three-cornered file, carefully break the edges on each of the keyways of the pump shaft. Rounding off corners allows the seals to be installed on the pump shaft without fear of damage to the inside diameter of the seals.
9. Note the proper orientation of the seals, spacers, and snap ring (if required) in the inside diameter of the seal housing.

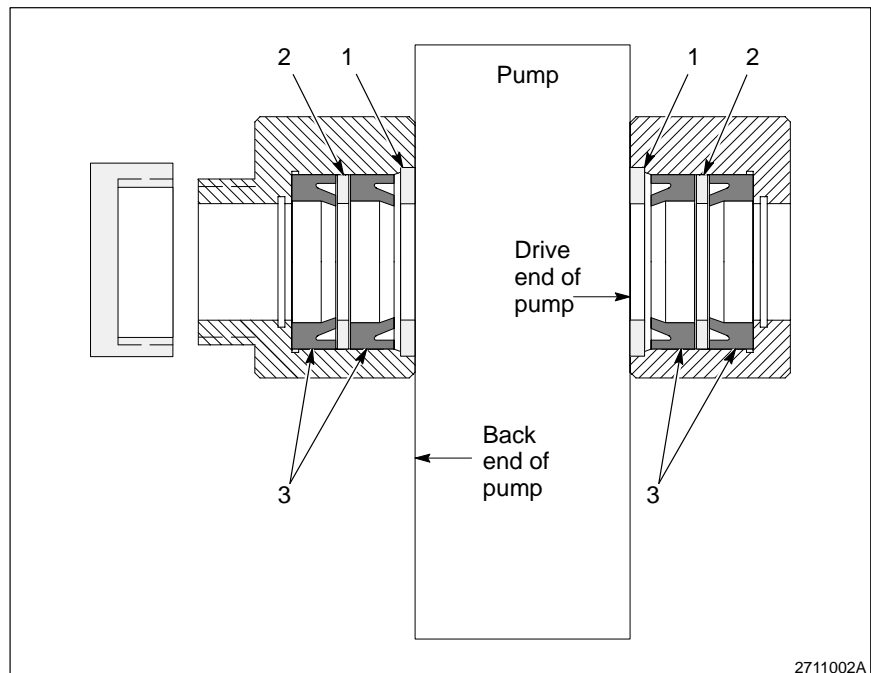
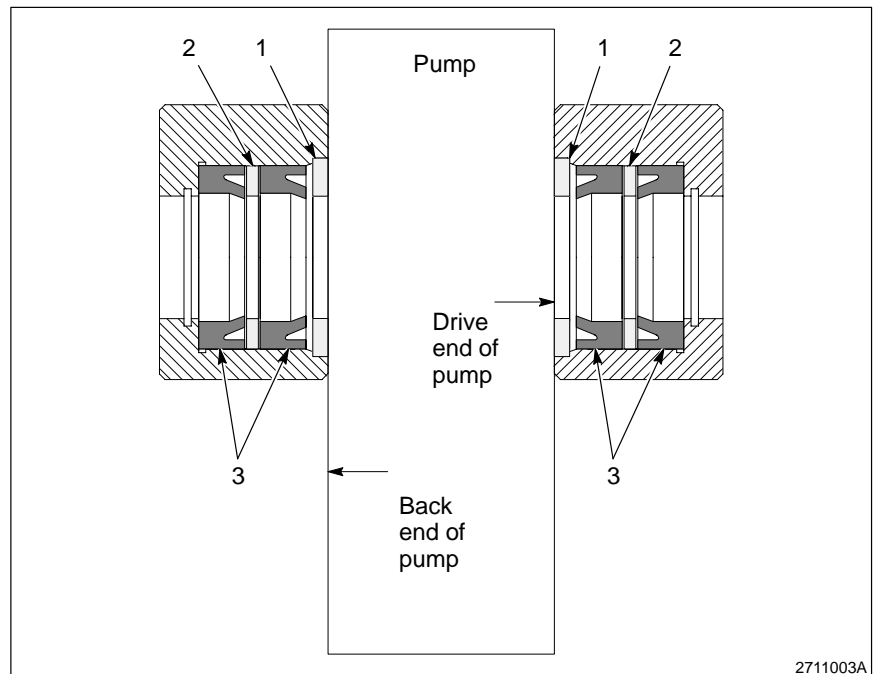


Fig. 2 First seal housing design

- |                             |         |
|-----------------------------|---------|
| 1. 1.62 in. diameter spacer | 3. Seal |
| 2. 1.50 in. diameter spacer |         |

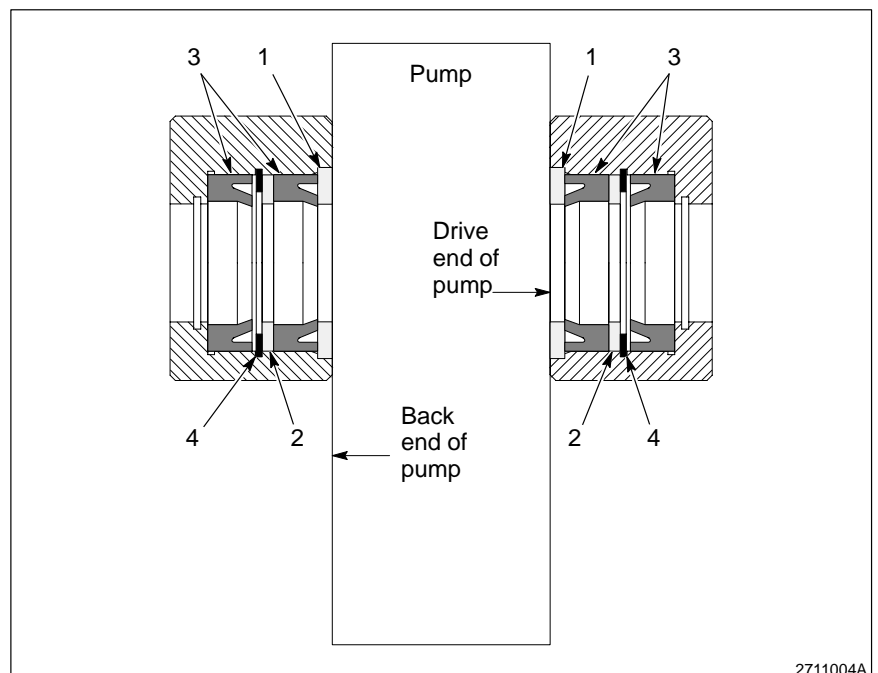


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Fig. 3 Second seal housing

- 1. 1.62 in. diameter spacer
- 2. 1.50 in. diameter spacer

3. Seal



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Fig. 4 Third seal housing

- 1. 1.62 in. diameter spacer
- 2. 1.50 in. diameter spacer

3. Seal

4. Snap ring

**3. Seal Replacement** (contd.)

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**NOTE:** If you are using the complete or heated seal kit that includes the seal housings, verify the seals are oriented properly and the spacers are present.

10. [See Figure 1](#). Make sure the jacking set screws (2, 6) of the seal housings (1, 5, 9) are screwed back into the seal housing so they do not contact the pump (4) when the seal housing is installed. Install the seal housing onto the shaft (10) and tighten the cap screws (7) to 16.27 N•m (12 ft-lb).
11. Replace the pump if it was removed in step 2. Refer to the *Urethane Booster Pump Manual* for details on this procedure.
12. Install the keys, hub, and coupling assembly. Refer to the *Urethane Booster Pump Manual* for details on these procedures.
13. Power up the pump assembly and make sure proper pump and seal operation. A small amount of leakage is often present when the pump is fully pressured. Disregard this leakage unless it interferes with pump operation.

**4. Parts**

Use the following lists to order the Urethane Booster Pump Seal Kits.

**Basic Seal Kit**

See Figure 5.

Item	Part	Description	Quantity	Note
—	138 843	Service kit urethane pump, basic	1	
2	135 658	• Seal, 1 in. x 1 x 1/2 in. x 3/8, poly U-cup	4	
4	986 706	• Retaining ring, internal, 150, basic	2	
NS	900 223	• Lubricant, O-ring, Parker	1	
NS: Not Shown				

**Complete Seal Kit**

See Figure 5.

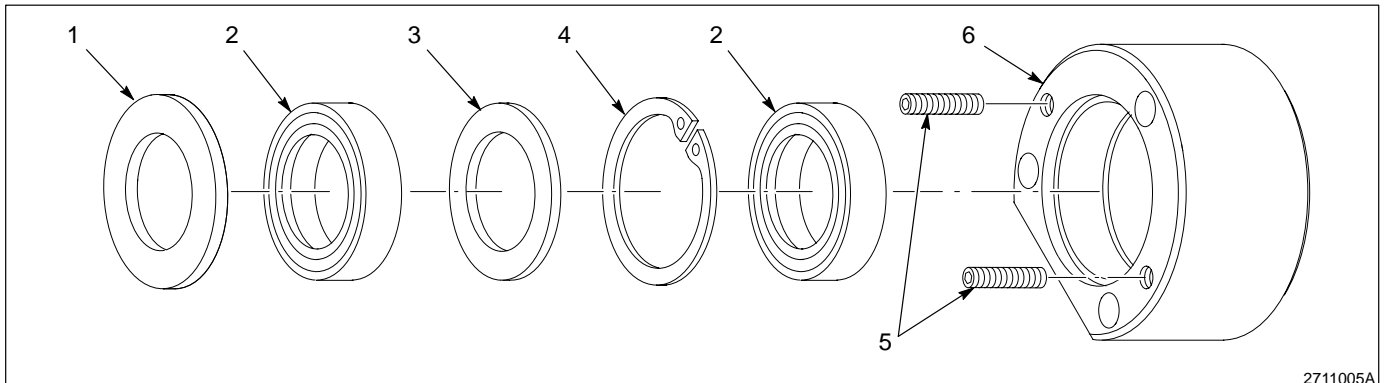
Item	Part	Description	Quantity	Note
—	138 727	Service kit urethane pump, complete	1	
1	136 331	• Spacer, diameter 1.62 x 0.125	2	
2	135 658	• Seal, 1 in. x 1 x 1/2 in. x 3/8, poly U-cup	4	
3	136 332	• Spacer, diameter 1.5 x 1 x 0.10	2	
4	986 706	• Retaining ring, internal, 150, basic	2	
5	981 202	• Screw, socket set, 1/4-29 x 1.0, cup	4	
6	138 728	• Housing, seal, drive end	2	
NS	900 223	• Lubricant, O-ring, Parker	1	
NS: Not Shown				

**Complete Heated Seal Kit**

See Figure 5.

Item	Part	Description	Quantity	Note
—	184 213	Service kit urethane pump, heated	1	
1	136 331	• Spacer, diameter 1.62 x 0.125	2	
2	182 127	• Seal, 1 in. x 1 x 1/2 in. x 3/8, U-cup	4	
3	136 332	• Spacer, diameter 1.5 x 1 x 0.10	2	
4	986 706	• Retaining ring, internal, 150, basic	2	
5	981 202	• Screw, socket set, 1/4-29 x 1.0, cup	4	
6	138 728	• Housing, seal, drive end	2	
NS	900 223	• Lubricant, O-ring, Parker	1	

NS: Not Shown



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Fig. 5 Seal housing kits

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