Rebuilding the Injector

The Rheodyne 7725i Manual Injector may require rebuilding when:

- Reproducibility problems occur
- The vent tube is leaking
- The injector is leaking between the stator and stator ring and the operating pressure is <5000 psi

Premature rotor seal failure can be caused by any of the following:

- Abrasive particles in the sample or mobile phase that scratch the rotor seal surface.
- A wrong needle tip that chips the ceramic stator face, causing deep scratching of the rotor seal surface.
- Buffer or salt crystallization, caused by a failure to flush the flow passages and needle port with water after the use of aqueous buffers or salt solutions. The abrasive particles scratch the rotor seal surface, resulting in leakage. (After using buffer solutions, flush the valve.)
- Over-tightening the pressure-adjusting ring.

Parts Required

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<tr>
<th>Part Number</th>
<th>Description</th>
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<tr>
<td>201000119</td>
<td>Rheodyne 7725I PM Kit</td>
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Tools/Materials Required

- 9/64-inch Allen wrench
- 5/16-inch open-end wrench
- Flat-blade screwdriver

Procedure

Rebuilding the injector involves replacing both the rotor seal and stator face assembly. The procedure consists of two parts:

1. Changing the rotor seal
2. Reassembling the injector

**WARNING:** To avoid chemical and electrical hazards, always wear safety glasses and turn off the Breeze system before performing this procedure.
Changing the Rotor Seal

1. Leave the injector attached to the front panel of the pump, and leave the knob on. If you need to remove the injector from the front panel, remove the knob (Figure 1).

2. Using a 5/16-inch wrench, disconnect all tubing from the front of the valve.
3. Using a 9/64-inch Allen wrench, remove the three stator screws (Figure 2).
4. Remove the following by pulling axially (Figure 2):
   - Stator and stator face assembly (remove together)
   - Stator ring
5. Using a flat-blade screwdriver, pry the rotor seal off the four seal pins. Leave the isolation seal and bearing ring in place.
Reassembling the Injector

1. Loosen the pressure adjusting ring 1/2 turn. Note the original position of the two red dots (Figure 2).

2. Orient the new rotor seal as shown in the figure below, with rotor seal slots facing the stator (Figure 3).

3. Replace the stator ring so the pin in the 60° stop-ring enters the mating hole in the stator ring (Figure 3).

4. Install the new stator face assembly on the stator. The three pins on the assembly fit into the mating holes in the stator only one way.

5. Install the stator and stator face assembly on the valve so that the pin in the stator ring enters the mating hole in the stator.

6. Tighten each of the three stator screws a little at a time to keep the stator surface parallel to the stator ring surface until all parts are held firmly in place.

7. Retighten the pressure adjusting ring until the red dots align as noted in step 1.

8. Replace the knob and tighten the two setscrews against the two flat areas of the shaft.

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