Please follow your company’s safety procedures whenever working on Kadant Johnson rotary joints. Read all of the instructions completely before proceeding.

Please refer to the assembly drawings supplied with your Kadant Johnson rotary joint for part identification. If you have any questions, contact your representative or Kadant Johnson.

Tighten all fasteners in a star pattern. See rotary joint assembly drawing for torque specifications.

NOTE: Do not use anti-seize or petroleum-based products on O-rings. Only lubricate the O-rings with the silicone lubricant supplied with the Kadant Johnson repair kit. Prior to handling lubricants, consult MSDS information.

### REPAIR KITS ARE AVAILABLE CONSISTING OF:

<table>
<thead>
<tr>
<th>Item #</th>
<th>Qty</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>6</td>
<td>1</td>
<td>Seal Ring</td>
</tr>
<tr>
<td>12</td>
<td>1</td>
<td>Cup Seal</td>
</tr>
<tr>
<td>22</td>
<td>1</td>
<td>Cup Seal</td>
</tr>
<tr>
<td>79</td>
<td>1</td>
<td>Energized Seal</td>
</tr>
<tr>
<td>*</td>
<td>1</td>
<td>Wear Plate Gasket</td>
</tr>
<tr>
<td>*</td>
<td>1</td>
<td>CSS800-3, Seal Ring Fluid</td>
</tr>
<tr>
<td>*</td>
<td>1</td>
<td>CSS800-1, O-Ring Lube</td>
</tr>
<tr>
<td>2B</td>
<td>6</td>
<td>CSF246-044-1, Disc Spring</td>
</tr>
</tbody>
</table>

* Refer to Kadant Johnson assembly drawing.

### REMOVAL AND DISASSEMBLY:

**STEP 1.**
Release residual pressure in the system. Disconnect the inlet and outlet piping from the rotary joint.

**STEP 2.**
Make sure the syphon adjusting screw (Figure 1, Item 13) is tight. This will prevent making adjustments to the syphon after the rotary joint is rebuilt. Loosen the horizontal tube nut (9) approximately two turns and give it a sharp hit with a hammer. This will disengage the horizontal tube (5). Remove the head bolts (2A), spring washers (2B), and the head retaining ring (21). Once this is done, remove the horizontal tube nut, cup seal (22), head (2), and cup seal (12). Discard the cup seals and spring washers. Let the horizontal tube rest. Leave it in this position and work around it.

**STEP 3.**
Remove the nuts (1A) that secure the body (1) to the ring bracket (19). While this is being done, the body will push away from the ring bracket. Holding onto the seal ring (6), remove body by sliding it over the horizontal tube (5).

### SERVICING THE ROTARY JOINT:

**STEP 4.**
Inspect the sealing surface of the wear plate (3). If it is scored, steam cut, or otherwise damaged, it must be replaced. Do so by removing the bolts (3A) that fasten the wear plate to the journal. Remove and discard the old gasket or O-ring and clean the surface. Install a new gasket or O-ring and reattach the wear plate. Tighten the bolts evenly using a star pattern and the proper torque. The wear plate, gasket, and O-ring are not part of the repair kit. They are purchased separately.

**STEP 5.**
Be aware that there is spring force present during this operation. Place the body (1) and nipple (4) assembly into a press with the flat face of the nipple facing up. Place a block of wood on the flat face
of the nipple to protect it. Push the nipple into the body and remove the retaining ring (8). Release the press, spring force will push the nipple out of the body most of the way. Once the spring force is relaxed, separate the nipple from the body.

**STEP 6.**
Clean the body (1) using solvent and a Scotch Brite® pad. Inspect the following areas for wear: the bore where the cup seal (12) rides, the inlet and outlet connections, and the groove pins (14). If any area is worn or steam cut, the body should be replaced. The body is not part of the repair kit. It is purchased separately.

**STEP 7.**
Remove the energized seal (79) from the nipple (4). Clean the nipple using a Scotch Brite pad and solvent. Inspect the energized seal groove for wear, scoring, or steam cuts. Inspect the flat faced sealing area of the nipple for wear, scoring, or steam cuts. If either surface is damaged, the nipple must be replaced. The nipple is not part of the repair kit. It is purchased separately.

**STEP 8.**
Install a new energized seal (79) onto the nipple (4) with the cup or U shaped portion facing the end of the nipple. See Figure 2 for orientation.

![Figure 2.](image)

**STEP 9.**
Inspect the springs (7). The free length should be no less than 1.75˝ (45 mm). Replace if too short or damaged.

**STEP 10.**
Place the body (1) back into the press with the body flange facing up. Install springs (7) into the spring guide holes. Lubricate the cup seal (12) and bore of the body with silicone lubricant. Place the nipple/energized seal (4 and 79) into the body and guide into position with the press aligning the groove pins (14) with the appropriate holes in the nipple flange. Make sure the lip of the energized seal does not fold during this operation. Install the retaining ring (8) and release the press. The energized seal can be viewed from the back side of the body to make sure it is not folded. If the energized seal is damaged during installation, replace it with a new one. Do not reuse the damaged part.

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**REASSEMBLY AND REINSTALLATION:**

**STEP 11.**
Place three drops of seal ring installation fluid (supplied), equally spaced, on the spherical face of the seal ring (6). The installation fluid will allow the seal ring to stick to the wear plate (3) long enough to install the body. Place the seal ring onto the wear plate making sure that it is centered. **CAUTION:** Make sure the seal ring does not fall from the wear plate.

**STEP 12.**
Place the body assembly (1) over the horizontal tube (5) and up to the bracket (19) making sure that the nipple inside of the body lines up with the flat face of the seal ring. Line up the holes in the body with the studs on the bracket. Make sure that the inlet connection is in the desired orientation. Fasten the body to the bracket. Tighten fasteners to 110 to 130 ft-lbs (149 to 176 Nm).

**STEP 13.**
Make sure the groove on the body (1) for the cup seal (12) is clean. Lubricate a new cup seal (12) with O-ring lubricant and install it in the groove.

**STEP 14.**
Using a new cup seal (22), apply a thin film of O-ring lubricant and install it into the cup seal groove (22) on the head (2).

**STEP 15.**
Apply never seize to the tapered portion of the horizontal tube (5). Orient the outlet connection in the desired position and slide the head (2) over the horizontal tube, making sure that the key (98) on the pipe engages the groove in the head. Apply never seize to the horizontal tube nut (9) threads and install into the end of the horizontal tube. Do not fully tighten the nut at this time.

**STEP 16.**
Slide the retaining ring bolts (2A) into the head retaining ring (21). Slide the new spring washers (2B) over the retaining ring bolts. Make sure that the washer is installed with the cone facing the ring as shown in Figure 1. Install the retaining ring in a manner so that the head is sitting on the adjusting screw (13). Pushing down on the head to ensure that it is in the lowest position, tighten the retaining ring bolts and the horizontal tube nut. Tighten the retaining ring bolts to 30 to 42 ft-lbs (41 to 57 Nm) and the horizontal tube nut to 175 to 200 ft-lbs (237 to 271 Nm).

**STEP 17.**
Turn the roll to make sure the syphon is not touching the shell. If it is, loosen the retaining ring bolts that secure the head and turn the adjusting screw to raise the syphon. Maximum adjustment is 0.250˝ (6 mm). When finished, make sure all fasteners are tightened in a star pattern using the proper torque. Reattach the inlet and outlet piping.

Dimensions are for reference only and subject to change. Certified drawings are available on request. Please refer to Kadant Johnson Drawing Number A37640 for torque specifications.