Follow your company's safety procedures whenever working on Kadant Johnson products. Read all of the instructions before proceeding with the installation or repair.

Please refer to the Kadant Johnson assembly drawing for part identification. Assembly drawings are available on request from Kadant Johnson.

Lubricate all fasteners with anti-seize compound. Tighten all fasteners in a star pattern. Torque specifications are listed on the product assembly drawing and are available from Kadant Johnson.

**NOTE:** For applications using thermal oil, see “General Guidelines for Using Rotary Joints Used with Thermal Oil”.

Please consult Kadant Johnson if you have any questions.

**REPAIR KITS ARE AVAILABLE CONSISTING OF:**

<table>
<thead>
<tr>
<th>Item #</th>
<th>Qty</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>1</td>
<td>Nipple</td>
</tr>
<tr>
<td>6</td>
<td>1</td>
<td>Seal Ring</td>
</tr>
<tr>
<td>6A</td>
<td>1</td>
<td>Front Guide</td>
</tr>
<tr>
<td>6B</td>
<td>1</td>
<td>Back Guide</td>
</tr>
<tr>
<td>7</td>
<td>1</td>
<td>Spring</td>
</tr>
<tr>
<td>8</td>
<td>1</td>
<td>Head Gasket</td>
</tr>
<tr>
<td>8A</td>
<td>2</td>
<td>Gaskets</td>
</tr>
<tr>
<td>8Q</td>
<td>1</td>
<td>Metal Gasket</td>
</tr>
<tr>
<td>8R</td>
<td>1</td>
<td>Gasket</td>
</tr>
<tr>
<td>16</td>
<td>1</td>
<td>Wear Plate</td>
</tr>
<tr>
<td>16B</td>
<td>1</td>
<td>Retaining Ring</td>
</tr>
</tbody>
</table>

**NOTE:** Nipple (4), seal ring (6) and wear plate (16) must be replaced as a matched set.

Thermal oil rotary joints should only be serviced by factory trained personnel.

**REMOVAL:**

**STEP 1.**
Close the inlet and outlet valves and allow the rotary joint to cool down. Disconnect the flexible hose from the rotary joint.

**STEP 2.**
Remove the elbow (2A) from the head (2) by removing the hex nuts (2C).

**STEP 3.**
Remove the hex nuts from the studs at the "Q" nipple flange (5). The rotary joint is now free to be removed from the machine. Separate the split wedges (55) and remove the "Q" nipple flange. Set the split wedges and flange aside for reuse later. Remove metal gasket (8Q) and discard.

**SERVICING THE ROTARY JOINT:**

**STEP 4.**
If equipped with a horizontal pipe (99), unthread it from the head (2) and set aside.

**STEP 5.**
Set the rotary joint upright on a work bench as shown in Figure 1.

**STEP 6.**
Remove the head (2) from the rotary joint by removing the cap screws (2D).

**STEP 7.**
Loosen and remove the two round head screws (31A) with lock washers (31B), freeing assembly plate (31). Caution: there is spring tension behind this plate. The assembly plate gasket (8A) may be holding the plate in place.

**STEP 8.**
Lift the assembly plate (31) off and remove the front carbon guide (6A), nipple (4) assembly consisting of the spring shoulder (3), spring (7), and the seal ring (6).

**STEP 9.**
Slide the spring shoulder (3) off the nipple (4). Set the spring shoulder aside for reuse. Replace the spring shoulder if it is worn. Discard the nipple, front guide (6A), and spring (7).
STEP 10.
Remove the wear plate (16) from the body (1) by removing the hex head cap screws (16A). Discard the wear plate, retaining ring (16B), and back guide (6B).

STEP 11.
Clean all gasket surfaces and parts to be reused.

STEP 12.
Install a new back guide (6B) into the new wear plate (16). Install a new retaining ring (16B) into the groove to secure the back guide. Clean the sealing surfaces with acetone. Install the wear plate on to the body (1) using a new gasket (8R). Secure wear plate with hex head cap screws (16A).

STEP 13.
Turn the body (1) with the wear plate (16) attached upright and install a new seal ring (6), flat side down, concave side facing outward. Caution: the seal ring is brittle and should be handled with care.

STEP 14.
Install the nipple (4) into the body (1) through the back guide (6B). Install a new spring (7).

STEP 15.
Align the key on the nipple (4) with the keyway on the spring shoulder (3) and slide the spring shoulder onto the nipple.

STEP 16.
Set the front guide (6A), with the two pin holes facing outward, over the nipple (4).

STEP 17.
Place a new gasket (8) on the end of the body (1).

STEP 18.
Place the assembly plate (31) onto the front guide (6A) engaging the pins with the holes located on the front guide. Align the keys on the nipple (4) with the keyways on the spring shoulder (3). Continue pushing the assembly plate down onto the body (1) compressing the spring (7). Secure the assembly plate with the round head screws (31A) and lock washers (31B).

STEP 19.
Place a new gasket (8A) onto the head (2) and secure the head to the body (1) using the cap screws (2D) provided. Place a new gasket (8) on to the head and secure elbow (2A) to the head using cap screws.

STEP 20.
Thread the horizontal pipe (99) into the head (2).

REINSTALLATION:

STEP 21.
For quick release style connections to your journal; place a new metal gasket (8Q) into the journal flange. Slide the quick release nipple flange (5) over the nipple (4) with its taper facing outward. Place the two split taper wedges (55) into recess of the nipple and then slide the quick release flange over them. Lift the rotary joint up and slide the nipple into the journal flange recess and secure to the studs with nuts provided, tightening evenly. Note that the quick release nipple flange (5) will not seat tightly against the face of the journal flange. When tight, there will be a 1/8” to 3/16” (3 mm to 5 mm) space between the two flanges.

STEP 22.
Connect piping to rotary joint using Kadant Johnson flexible metal hose. The hose(s) should be long enough so there is no binding or tension causing the rotary joint to move off the centerline of the roll. The rotary joint must be free to move outward to compensate for carbon seal ring wear.

IMPORTANT: Connect the hose directly to the rotary joint. Minimize the use of fittings and pipe, as the increased weight can affect the performance of the rotary joint. Provide suitable support for the pipe and fitting beyond the hose.

STEP 23.
Install anti-rotation rods in the anti-rotation rod holes using Schedule 80 pipe. It is recommended that no more than two rotary joints be joined with one rod. Secure the rod in the rod hole of one rotary joint using cotter pins and let the rod float in the rod hole of the second rotary joint. This will absorb the torque generated by the rotary joint, and prevent premature hose failure by reducing stresses.

STEP 24.
The seal must be run “dry” to establish a matched fit with the metal parts. Run the rotary joint for five minutes, with no fluid or pressure, at 50 RPM. Do not exceed 100 RPM or damage will result.

NOTE: Never apply oil or grease to Kadant Johnson rotary joints. The saturated steam, condensate, or liquid passing through it is the only lubrication required.

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