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.

**REPAIR KITS ARE AVAILABLE CONSISTING OF:**

<table>
<thead>
<tr>
<th>Item #</th>
<th>Qty.</th>
<th>Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>6</td>
<td>2</td>
<td>Seal Ring</td>
</tr>
<tr>
<td>8</td>
<td>4</td>
<td>Gasket</td>
</tr>
<tr>
<td>8Q</td>
<td>1</td>
<td>Copper Gasket</td>
</tr>
<tr>
<td>35</td>
<td>3</td>
<td>Packing</td>
</tr>
</tbody>
</table>

**REMOVAL:**

**STEP 1.**
Before performing this step make sure that any residual pressure is released from the system. Close the inlet and outlet valve. Allow the rotary joint to cool sufficiently. Disconnect the inlet and outlet piping from the rotary joint.

**STEP 2.**
Remove hex head nuts (2B), remove head (2), and gasket (8A). Remove safety wire (44). Remove socket head cap screws (45), pressure plate (43), and split wedges (42). Set aside. Remove socket head cap screws (47), packing gland (46) and packing (35). Set aside.

**STEP 3.**
Remove support plate (31B) and gasket (8B). Allow the horizontal pipe (99) to rest in the nipple (4).

**STEP 4.**
Remove hex nuts allowing the quick release nipple flange (5) to slide away from the journal flange, exposing two tapered split wedges (55).

**STEP 5.**
Remove the hex nuts (A and B) from the end of each support rod or remove the support stands that hold the rotary joint in place. Remove the rotary joint from the roll.

**DISASSEMBLY AND INSPECTION:**

**STEP 6.**
Please use caution while performing this step. There is spring force present under assembly plate (31). Position the rotary joint so the nipple (4) passes through a hole in a press and the rotary joint is in an upright position.

Using the press, contain the spring force by holding the assembly plate in position. Remove two screws (31A) that secure the assembly plate. Release the press and the assembly plate should move away from the body (1). **NOTE:** The gasket (8C) may cause the assembly plate to stick. Carefully loosen the assembly plate with a pry bar if this occurs.

**STEP 7.**
Remove seal ring (6A), thrust collar (3), spring (7), nipple (4), and seal ring (6B) from the rotary joint body (1).

**STEP 8.**
Clean all parts and gasket surfaces.

**STEP 9.**
Inspect the seal ring contact area on the thrust collar (3) and the nipple (4). The contact area should be smooth, not scored or steam cut. Inspect the keyways on the thrust collar and keys on the nipple. Inspect the area of the nipple where it passes through the wear plate (16). If the nipple indicates contact with the wear plate, replace the nipple. This is also an indication that the rotary joint is not aligned correctly. Replace either component if worn.

**STEP 10.**
Inspect the seal ring contact area on the wear plate (16). The contact area should be smooth, not scored or steam cut.
Inspect the area of the wear plate where the nipple (4) passes through it. If the wear plate indicates contact with the nipple, replace the wear plate. This is also an indication that the rotary joint is not aligned correctly. If the wear plate is damaged, replace it by removing the hex head cap screws (16A) and hex nuts (2C). Install a new wear plate using a new gasket (8D).

**STEP 11.**
Inspect the inside of the body (1) for wear. If the rotary joint was run while out of alignment, the rotating nipple (4) may have contacted the body. Inspect the holes on the lugs where the support rods pass through the body. Inspect the gasket surfaces for steam cutting. If the body is worn in either area or steam cut, replace it.

**STEP 12.**
Replace the spring (7) if it is broken or has hairline cracks. **Note:** The spring may have taken a set while in use and be shorter than a new one. This condition is considered normal and the spring may be reused.

**STEP 13.**
Inspect the assembly plate (31). The seal ring contact area should be smooth, not scored or steam cut. Inspect the gasket surfaces for steam cutting. If either area is damaged, replace the assembly plate.

**REASSEMBLY:**

**STEP 14.**
Place the body (1) back into the press, resting on the wear plate (16). Place a seal ring (6B) with its flat face against the wear plate. Carefully place the nipple (4) into the body against the seal ring's spherical face. Place the spring (7) over the nipple. Place the thrust collar (3) into the spring and align the keyways with the keys in the nipple. Place a seal ring (6A) with its spherical face against the thrust collar's spherical face. Position a new gasket (8C) on to the body and place the assembly plate (31) with its flat face against the seal ring. Using the press, compress the assembly plate, seal ring, and thrust collar into the body while aligning the keyways of the thrust collar with the keys on the nipple. Secure the assembly plate using screws (31A).

**STEP 15.**
Mount the rotary joint to a suitable support arrangement. Make sure the rotary joint components are in alignment. The rotary joint body (1) should be level and square with the journal face. The nipple (4) should be centered in the wear plate (16) and centered in the assembly plate (31). Refer to Table 2 for clearance specifications. Adjust the support structure as required to align the rotary joint. When the rotary joint is properly aligned, install a set of wear indicator hex nuts (A and B) on each support rod to the specified distance. See Table 3 for specification. As the seal ring (6B) wears this gap will decrease.

**STEP 16.**
Install gasket (8B) and support plate (31B) while passing the horizontal pipe (99) through the hole in the center of the support plate. Make sure the pipe extends 1˝ (25 mm) past the end face of the support plate and the pipe is in the correct position inside the roll. Install new packing (35) around the pipe and into the pocket of the support plate. Position the packing gland (46) over the pipe and secure with socket head cap screws (47). Tighten cap screws evenly to 15 ft-lbs (20 Nm). Place two split wedges (42) into the recess in the packing gland and secure with pressure plate (43) and cap screws (45). Tighten the cap screws evenly to 15 ft-lbs (20 Nm), tapping the pressure plate occasional with a hammer to ensure that the split wedges are seated. Thread safety wire (44) through cap screws (45) to prevent them from coming loose.

**STEP 17.**
Reinstall the head (2) using gasket (8A). Secure the head using hex nuts (2B).

**STEP 18.**
Connect piping to rotary joint using Kadant Johnson flexible metal hose. Two hoses should be installed in the inlet and two in the outlet piping. See Flexible Hose Piping Recommendations, IS-Flexible Hose. The hose(s) should be long enough to minimize any piping loads on the rotary joint. The rotary joint must be free to move outward to compensate for seal ring wear. See recommended flexible metal hose length chart in Table 1.

**NOTE:** Connect the hose directly to the rotary joint. Minimize the use of fittings and pipe between the rotary joint and flexible hose. This increased weight can affect the performance of the rotary joint. Provide suitable support for the pipe and fittings beyond the hose.

Never apply oil or grease to Kadant Johnson rotary joints. Saturated steam, condensate, or liquid passing through is the only lubrication required for the carbon-graphite parts.

Minimize running Kadant Johnson rotary joints dry. Excessive seal wear may occur.

Reattach the piping and open the valves. The Kadant Johnson joint is now ready to be placed back in service.

**TABLE 1**

<table>
<thead>
<tr>
<th>Hose Diameter</th>
<th>Minimum Length</th>
</tr>
</thead>
<tbody>
<tr>
<td>4˝</td>
<td>28˝ 711 mm</td>
</tr>
<tr>
<td>5˝</td>
<td>30˝ 762 mm</td>
</tr>
<tr>
<td>6˝</td>
<td>33˝ 838 mm</td>
</tr>
</tbody>
</table>

**TABLE 2**

<table>
<thead>
<tr>
<th>Size</th>
<th>A (Inboard) Nipple Wear Plate</th>
<th>B (Outboard) Thrust Collar/Assembly Plate</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Gauge Size</td>
<td>Gauge Size</td>
</tr>
<tr>
<td></td>
<td>inches mm</td>
<td>inches mm</td>
</tr>
<tr>
<td>8˝</td>
<td>1100</td>
<td>1/4 6.0</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3/16 5.0</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1/4 6.5</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3/16 5.0</td>
</tr>
</tbody>
</table>

**TABLE 3**

<table>
<thead>
<tr>
<th>Rotary Joint Size</th>
<th>Seal Wear</th>
</tr>
</thead>
<tbody>
<tr>
<td>8˝</td>
<td>13/16˝ 21 mm</td>
</tr>
</tbody>
</table>

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The Kadant Johnson Warranty
Kadant Johnson products are built to a high standard of quality. Performance is what you desire: that is what we provide. Kadant Johnson products are warranted against defects in materials and workmanship for a period of one year after date of shipment. It is expressly understood and agreed that the limit of Kadant Johnson's liability shall, at Kadant Johnson's sole option, be the repair or resupply of a like quantity of non-defective product.