Installation Instructions
for Type 1000LN Rotary Joints

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.

STEP 1.
Check to make sure that all debris has been removed from the piping, roll, dryer, or cylinder before installing the rotary joint. This will help eliminate seal ring scoring and damage to internal rotary joint parts which could cause unnecessary downtime and maintenance.

STEP 2.
Loosen and remove the cap screws (2A), hex nuts (2C), and remove the head (2) from the body (1) leaving the assembly plate (31) in position.

Remove the packing gland cap screws (10A) and remove the packing gland (10) and packing (35).

Make sure the horizontal pipe is clean and smooth where it seals in the packing gland.

IMPORTANT: The horizontal pipe must be straight, true, and attached within the roll so it rotates without wobbling. This will prevent straining internal rotary joint parts which could cause it to leak and the seal rings to break.

STEP 3.
Place a new metal gasket (8Q) into the recess of the journal flange.

STEP 4.
Slide the quick release nipple flange (5) onto the rotary joint nipple (4) with its taper facing outward.

STEP 5.
Slide the rotary joint over the horizontal pipe, being careful when the pipe passes through the opening in the nipple (4). Do not damage either part. The horizontal pipe should extend beyond the packing gland approximately 3/8” (9.5 mm).

STEP 6.
Place the two split taper wedges (55) into the recess of the nipple (4). Slide the quick release nipple flange (5) over the split taper wedges and secure to the journal flange studs with the hex nuts provided. Note: The quick release nipple flange will not seat tightly against the face of the journal flange. When tight, there will be approximately 1/8” to 3/16” (3 to 5 mm) gap between the flanges. Measure the gap in several places to make sure the flange is tightened evenly.

IMPORTANT: The rotary joint must be free to move outward along the pipe to compensate for seal ring wear.

STEP 7.
Reinstall the packing (35) around the horizontal pipe protruding from thrust collar (3). Install the packing gland (10) and cap screws (10A). Tighten the cap screws evenly to 30 ft-lbs (41 Nm). Install safety wire through bolts if equipped or use lockwashers provided.

STEP 8.
Using a suitable support, mount the rotary joint. Make sure components are in alignment, and that the rotating nipple (4) is aligned squarely with the wear plate (16). If necessary, loosen supports and re-align rotary joint. Check for clearance at two locations: between the nipple and wear plate and between the thrust collar (3) and assembly plate (31). The nipple should be centered in the wear plate and centered in the assembly plate. The clearance should be 1/4” +/- 0.060” (6 mm +/- 1.5 mm) around the entire circumference of the parts in each location.

STEP 9.
Reattach the head (2) to the rotary joint, using new gasket (8) between the head and assembly plate (31). Tighten cap screws (2A) and hex nuts (2C) to 60 ft-lbs (81 Nm).
STEP 10.
Connect piping to rotary joint using flexible metal hose. The hose(s) should be long enough so there is no binding or tension tending to move the rotary joint off the journal centerline of the roll. The rotary joint must be free to move outward to compensate for seal ring wear. When a flanged hose is used, spool pieces in place of the hose are recommended for fabrication purposes. See Table 1 for recommended minimum hose lengths.

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

Never apply oil or grease to this series of Kadant Johnson rotary joints. The 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.

PROCEDURE FOR DETERMINING SEAL RING WEAR

STEP 1.
The LN rod-supported rotary joint allows for the use of hex nuts on each support rod to provide a visual seal ring wear indicator. See Figure 1.

STEP 2.
Set the location of the hex nut such that the wear indicator distance is 0.44” (11 mm). Using a lock washer and second hex nut, tighten the hex nuts in place. Measure the wear indicator distance again to confirm the measurement is 0.44” (11 mm).

STEP 3.
As the seal rings wear, the rotary joint assembly will move away from the roll to compensate for seal wear. When the rotary joint lug reaches the hex nut, it will no longer be able to move away from the roll, and any additional seal wear will result in a minor steam leak from the back of the rotary joint. When the rotary joint lug reaches the hex nut, the seal ring should be replaced.

<table>
<thead>
<tr>
<th>Hose Size</th>
<th>Minimum Length</th>
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<tbody>
<tr>
<td>4”</td>
<td>28”</td>
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<tr>
<td>5”</td>
<td>30”</td>
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<tr>
<td>6”</td>
<td>33”</td>
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<tr>
<td>8”</td>
<td>36”</td>
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