Disassembly and Repair of Type LJX™ Rotary Joints with Cantilevered Syphon Assembly

**NOTE:** Please follow your company’s safety procedures whenever working on Kadant Johnson products. Read all the instructions before proceeding with the disassembly and repair.

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

**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 joint to cool sufficiently. Disconnect the inlet and outlet piping from the joint.

**STEP 2.**
Remove the hex nuts (10A), and the lock washers (10B) from the support rods (100). Remove the retaining plate (10) and the remaining nuts from the support rods. Slide the spacers (100A) off of the support rods and set aside.

**STEP 3.**
Remove the cap screws (2A) freeing the head (2) from the body (1).

**STEP 4.**
Bend tab (99B) outward and loosen the retention nut (99A) that secures the horizontal pipe (99) to the retention plate (31). Do not remove the retention nut from the pipe. Strike the retention nut with a soft faced hammer to dislodge the horizontal pipe from the retention plate.

**STEP 5.**
Remove the hex nuts (55A) from the studs at the quick release nipple flange (5).

**STEP 6.**
The rotary joint should now be free to slide away from the roll. Discard the metal gasket (8Q) from the journal flange.

**STEP 7.**
Remove the retention nut (99A) and the multi-tab lock washer (99B) from the horizontal pipe (99) and slide the syphon assembly out of the retention plate (31). Set the horizontal pipe aside for reuse.

**STEP 8.**
Remove the quick release nipple flange (5) and split wedges (55) from the nipple (4). Set the flange and wedges aside for reuse.

**DISASSEMBLY:**

**STEP 9.**
Position the body (1) (see Figure 2) with the nipple (4) placed through a piece of pipe or a hole in a work bench.

**NOTE:** Use caution before proceeding with Step 10. A spring force is contained by the retention plate (31).

**STEP 10.**
Using a small press, apply pressure on the retention plate (31). Remove the two retention plate screws (31A) from the retention plate. Release the press.

**STEP 11.**
Remove the retention plate (31) exposing the internal parts. If the parts are stuck together, there may still be a spring force present.

**Figure 1.**

**Figure 2.**
STEP 12. Remove the first seal ring (6), thrust collar (3), spring (7), nipple (4), and the second seal ring (6).

STEP 13. Inspect the following parts for damage (scratches, cracks, pitting, steam cutting, grooving etc.). They are the retention plate (31), thrust collar (3), spring (7), nipple (4), and the seal ring wear surface of the body (1). Replace any damaged components with new parts.

STEP 14. Clean all gasket surfaces.

REASSEMBLY:

STEP 15. Place a new seal ring (6) (concave side facing outward) into the body (1).

STEP 16. Set the nipple (4) into the body (1) resting it on the seal ring (6). Install the spring (7) and thrust collar (3) onto the nipple.

STEP 17. Place the gasket (8) on the body (1) opening.

STEP 18. Place the seal ring (6) on top of the thrust collar (3) followed by the retention plate (31).

STEP 19. Using the body inlet opening as a viewing port, make sure the keyways in the thrust collar (3) are aligned with the keys on the nipple (4). Using the press, compress the spring. Attach the retention plate (31) to the body (1) with two screws (31A).

REINSTALLATION:

STEP 20. Slide the quick release nipple flange (5) over the nipple (4) with its taper facing outward. Place two split wedges (55) into the recess of the nipple and slide the quick release nipple flange over the wedges to hold wedges in place.

STEP 21. Refer to Figure 1. Care must be taken during the assembly of the horizontal pipe so damage does not occur to the internal parts of the rotary joint. Apply anti-seize compound onto the threads and the taper of the horizontal pipe (99). Insert the horizontal pipe through the nipple (4) while engaging the key (99C) into the retention plate (31). The retention plate allows for multiple syphon locations, refer to the assembly drawing to obtain correct location. Install the multi tab lock washer (99B) and the retention nut (99A) onto the horizontal pipe. Do not fully tighten the nut.

STEP 22. Place a new metal gasket (8Q) into the recess in the journal flange. Lift the syphon vertical leg (99D) so that it is straight and in-line with the horizontal pipe.

STEP 23. Install the rotary joint and syphon assembly by positioning the syphon into the roll’s journal and aligning the lug support holes on the body (1) with the support rods (100). As the assembly is moved towards the roll, the syphon vertical leg (99D) will fall downward locking into place.

STEP 24. Slide nipple (4) into the journal flange recess. Slide the quick release nipple flange (5) over the journal flange studs and secure with hex nuts (55A) provided.

NOTE: The quick release nipple flange (5) will not seat tightly against the journal flange. When tight there will be approximately 1/8” to 3/16” (3 to 5 mm) space between the flanges. Make sure this gap is equal around the circumference of the flanges.

STEP 25. Check the rotary joint components for alignment. The rotary joint body (1) should be level and square with the journal face. The nipple (4) should be centered in the rotary joint body. Adjust the support structure as required to align the rotary joint.

STEP 26. Tighten the retention nut (99A) and torque to 75 ft-lbs. Bend multi-tab lock washer (99B) over the retention nut locking the nut in place.

STEP 27. Reinstall the head (2) using gasket (8). Secure the head using cap screws (2A).

NOTE: Some installations require the use of a retaining plate (10) on the rotary joint assembly. If installation requires a retaining plate, proceed with Step 28. For installations without retaining plate, proceed with Step 29.

STEP 28. Install hex nuts (10A) onto each of the support rods (100). Position the hex nuts on the support rods to the specified dimension referenced on the assembly drawing. Install the retaining plate (10) onto the support rods and seat the plate on the hex nuts. Install a lock washer (10B) and the remaining hex nuts onto each of the support rods and tighten. Check the retaining plate set-up dimension and readjust the hex nuts as necessary. As the seal ring wears, this dimension will decrease.

STEP 29. Slide a spacer (100A) onto each of the support rods (100). Thread two seal ring wear indicator hex nuts (10A) onto each of the support rods. Adjust the hex nuts to the set-up dimension referenced on the rotary joint drawing. Lock the nuts together and reconfirn the set-up dimension. As the seal ring wears, this dimension will decrease.

STEP 30. Connect the piping using Kadant Johnson flexible metal hose. Two hoses should be used on both the inlet and outlet piping connections. The hoses(s) should be long enough to minimize piping loads on the rotary joint. The rotary joint must be free to move outward to compensate for seal ring wear.

NOTE: Connect the hose directly to the rotary joint. Minimize the use of fittings and pipe between the rotary joint and the 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 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.