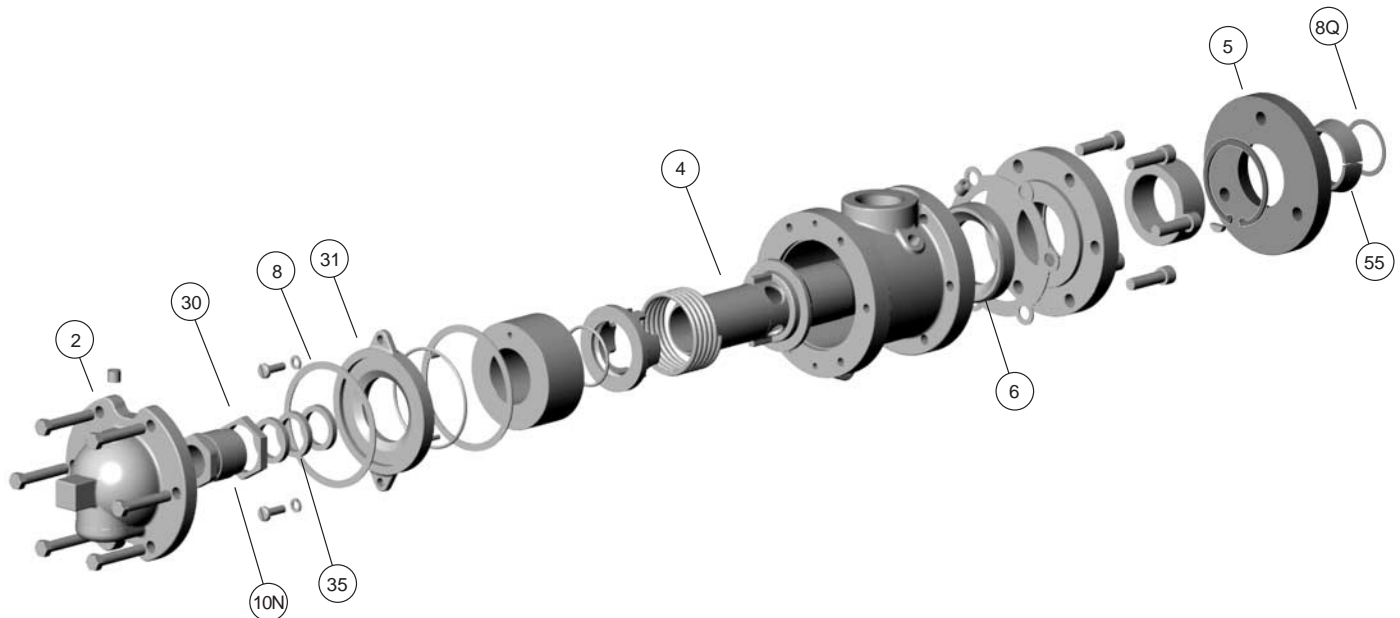


# Installation Instructions for Type ELSN Joints



## Type ELSNARQ

**NOTE:** Please follow your company's safety procedures whenever working on Kadant Johnson Rotary Joints and 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 further questions, please contact your Representative or Kadant Johnson.

### STEP 1.

Check to make sure that all core sand, dirt, weld beads, pipe turnings, metal dust and other foreign matter has been removed from the piping, roll, dryer or cylinder before installing joint. This will help eliminate carbon seal ring scoring and damage to internal joint parts which could cause unnecessary downtime and maintenance.

### STEP 2.

Remove the head (2) from the joint, leaving the assembly plate (31) attached. Remove packing gland (10N), locknut (30) and packing (35).

Make sure the 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.

### STEP 3.

Slide the quick release nipple flange (5) onto the rotary joint nipple (4) with its taper facing outward. Place the two split taper wedges (55) into the recess of the nipple and slide the quick release nipple flange over the wedges.

### STEP 4.

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

### STEP 5.

Slide the joint over the rotating horizontal pipe, being careful when the pipe passes through the opening in the nipple end. The inner rotating pipe should extend slightly beyond the gland when installed (approximately 3/8").

### STEP 6.

Secure the quick release nipple flange to the journal flange studs with nuts provided. Tighten evenly. Note that 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" space between the flanges.

### STEP 7.

Reinstall the packing (35), packing gland (10N) and locknut (30). Apply approximately 30 ft. lbs. of torque to the gland and tighten the locknut (30).

### STEP 8.

Reattach the head casting to the joint body using head gasket (8).

### STEP 9.

Connect piping to joint using Kadant Johnson stainless steel flexible metal hose. The hose(s) should be long enough so there is no binding or tension crowding the joint towards the roll or moving the joint off the journal centerline. The joint must be free to move outward to compensate for seal ring wear. (See recommended flexible metal hose length chart in Table 2).

**IMPORTANT:** CONNECT THE HOSE AS CLOSE TO THE JOINT AS POSSIBLE. MINIMIZE THE USE OF FITTINGS AND PIPE, AS THIS INCREASED WEIGHT CAN AFFECT THE PERFORMANCE OF THE JOINT. PROVIDE SUITABLE SUPPORT FOR THE PIPE AND FITTING BEYOND THE HOSE.

**STEP 10.**

Install anti-rotation rod in the anti-rotation rod hole using Schedule 80 pipe. No more than two joints should be joined with one anti-rotation rod. Secure the rod to the rod hole of one joint and let it float in the second joint. This will absorb the torque generated by the joint, and prevent premature hose failure by reducing stresses.

**NEVER APPLY OIL OR GREASE TO THIS SERIES OF JOHNSON JOINTS. THE SATURATED STEAM, CONDENSATE OR LIQUID PASSING THROUGH IS THE ONLY LUBRICATION REQUIRED FOR THE CARBON-GRAPHITE PARTS.**

**MINIMIZE RUNNING JOHNSON JOINTS DRY. EXCESSIVE CARBON SEAL WEAR MAY OCCUR.**

**CAUTION**

Check the rotary joint regularly to determine seal ring wear. As shown in the diagram, the shoulder on the nipple will move outward as seal ring wear takes place. Should the seal ring (6) wear away completely, the metal nipple can contact the joint body, and eventually wear through it. This will result in significant leakage, possibly creating a hazardous condition. Metal to metal contact of these parts may require replacement of the entire joint instead of just the seal rings.

**PROCEDURE FOR DETERMINING CARBON SEAL RING WEAR.**

**STEP 1.**

Determine the location of a shoulder that is machined into the shaft of the rotary joint nipple (see "shoulder" on drawing).

**STEP 2.**

Reference Table 1 for your particular joint size. Remember that as the carbon seal ring begins to wear the joint moves (due to pressure) away from cylinder.

**STEP 3.**

When the body moves out from the shoulder to meet the dimension you found in Table 1, you should replace the carbon seal ring.

*Dimensions and specifications 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.*

**TABLE 1**

Joint Size	Seal Wear
2"	3/8"
2-1/2"	3/8"
3"	7/16"
3-1/2"	7/16"
4"	9/16"
5"	9/16"

**TABLE 2**

**RECOMMENDED MINIMUM HOSE LENGTHS**

Hose Size	Minimum Length
1/4"	8"
3/8"	10"
1/2"	10"
3/4"	12"
1"	15"
1-1/4"	18"
1-1/2"	18"
2"	21"
2-1/2"	24"
3"	27"

**TABLE 3**

**RECOMMENDED SIZES FOR ANTI-ROTATION RODS**

Joint Size	Model Number	Rod Size	
		Up To 200 psi (14 bar)	Over 200 psi (14 bar)
2"	2550	3/8" Sch. 80	5/8" Rd. 4140
2-1/2"	2600	1/2" Sch. 80	13/16" Rd. 1018
3"	2700	3/4" Sch. 80	3/4" Sch. XXS

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.



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