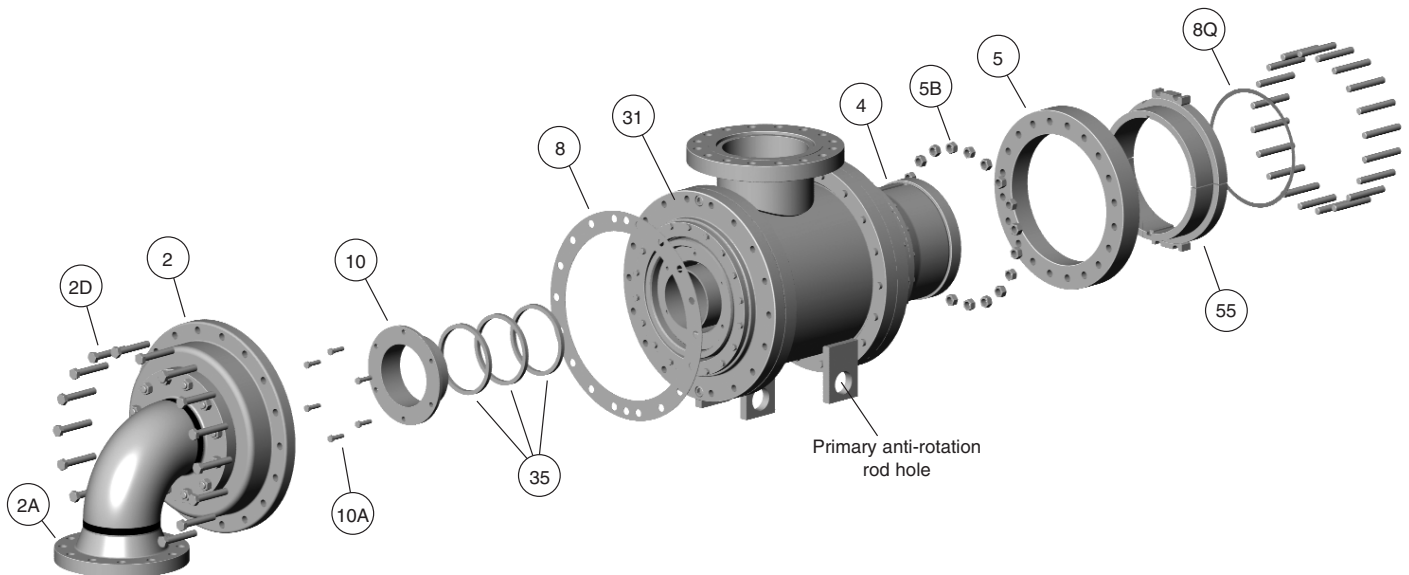


## Installation Instructions for Type ELSN Joints (6½" to 12")



Follow your company's safety procedures whenever working on Kadant Johnson products. Read all of the instructions before proceeding with 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 and roll before installing joint. This will eliminate carbon seal ring scoring and damage to internal joint parts which could cause unnecessary downtime and maintenance.

### STEP 2.

Remove the elbow and head assembly (2A and 2) from the joint. Remove packing gland (10), lock wire and bolts (10A) 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 secured within the roll so it rotates without run out.

### STEP 3.

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

### STEP 4.

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

### STEP 5.

Position the joint with quick release flange/nipple assembly (4, 5, and 55) pointed towards the journal flange or roll end. Slide the joint over the horizontal pipe until the pipe passes through the hole in the nipple for the packing gland. Insert the nipple into the journal flange counter bore. Slide the quick release nipple flange (5) over the journal flange studs and secure flange with hex nuts (5B). Tighten hex nuts evenly. The end of the horizontal pipe should extend 3/8" (10 mm) past the packing gland (10) after it is installed.

**Note:** The quick release nipple flange (5) will not seat tightly against the face of the journal flange. When tight there will be approximately a 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 6.

Install packing (35) around the horizontal pipe. Install packing gland (11). Secure packing gland using bolts (11A). Tighten bolts evenly to 30 ft-lbs (41 Nm) using a star pattern. Install stainless steel lock wire to prevent bolts from loosening.

### STEP 7.

Make sure gasket (8) is in position between the body (1) and head assembly (2 and 2A). Install head assembly over gasket and secure into position using bolts (2D).

### STEP 8.

Connect piping to 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 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 fitting beyond the hose.

**STEP 9.**

Install anti-rotation rod in the primary anti-rotation rod hole. See Table 2 for recommended rod size. 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.

**NOTE:** Never apply oil or grease to Kadant Johnson joints. The saturated steam, condensate, or liquid passing through it is the only lubrication required for the carbon-graphite parts.

**NOTE:** Minimize running Kadant Johnson joints dry. Excessive seal wear may occur.

**PROCEDURE FOR DETERMINING SEAL RING WEAR**

Check the rotary joint regularly to determine seal ring wear. As shown in Figure 1, 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 (4) can contact the joint body (1) and the wear plate (16), eventually wearing through it. This will result in a significant leak and create a hazardous condition. Metal to metal contact of these parts may require replacement of the entire joint instead of just the seal ring.

**STEP 1.**

Determine the location of a shoulder that is machined into the shaft of the rotary joint nipple (see Figure 1).

**STEP 2.**

As the seal ring begins to wear, the joint moves (due to pressure) away from cylinder. Reference Table 3 for maximum seal ring wear.

**STEP 3.**

When the body moves out from the shoulder to meet the dimension found in Table 3, replace the 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		
RECOMMENDED MINIMUM HOSE LENGTHS		
Hose Diameter	Minimum Length	
4"	28"	700 mm
5"	30"	750 mm
6"	33"	850 mm
8"	36"	900 mm
10"	40"	1000 mm

TABLE 2		
RECOMMENDED SIZES FOR ANTI-ROTATION RODS		
Joint Size	Model Number	Rod Size Up To 250 psi (17 bar)
6.50"	1050	1.25" 4140 Steel Bar
8.75"	1150	2.38" 4140 Steel Bar
10"	1200	1.75" 4140 Steel Bar
12"	1400	2.50" 4140 Steel Bar

*For pressures over 150 psi, two anti-torque rods are recommended.*

TABLE 3		
MAXIMUM SEAL RING WEAR		
Joint Size	Model Number	Seal Wear
6.50"	1050	0.70" 18 mm
8.75"	1150	0.75" 19 mm
10"	1200	1.00" 25 mm
12"	1400	1.00" 25 mm

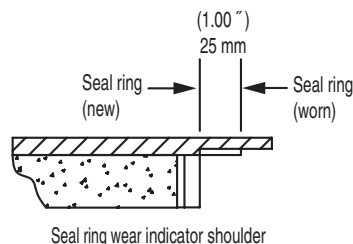


Figure 1

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.

