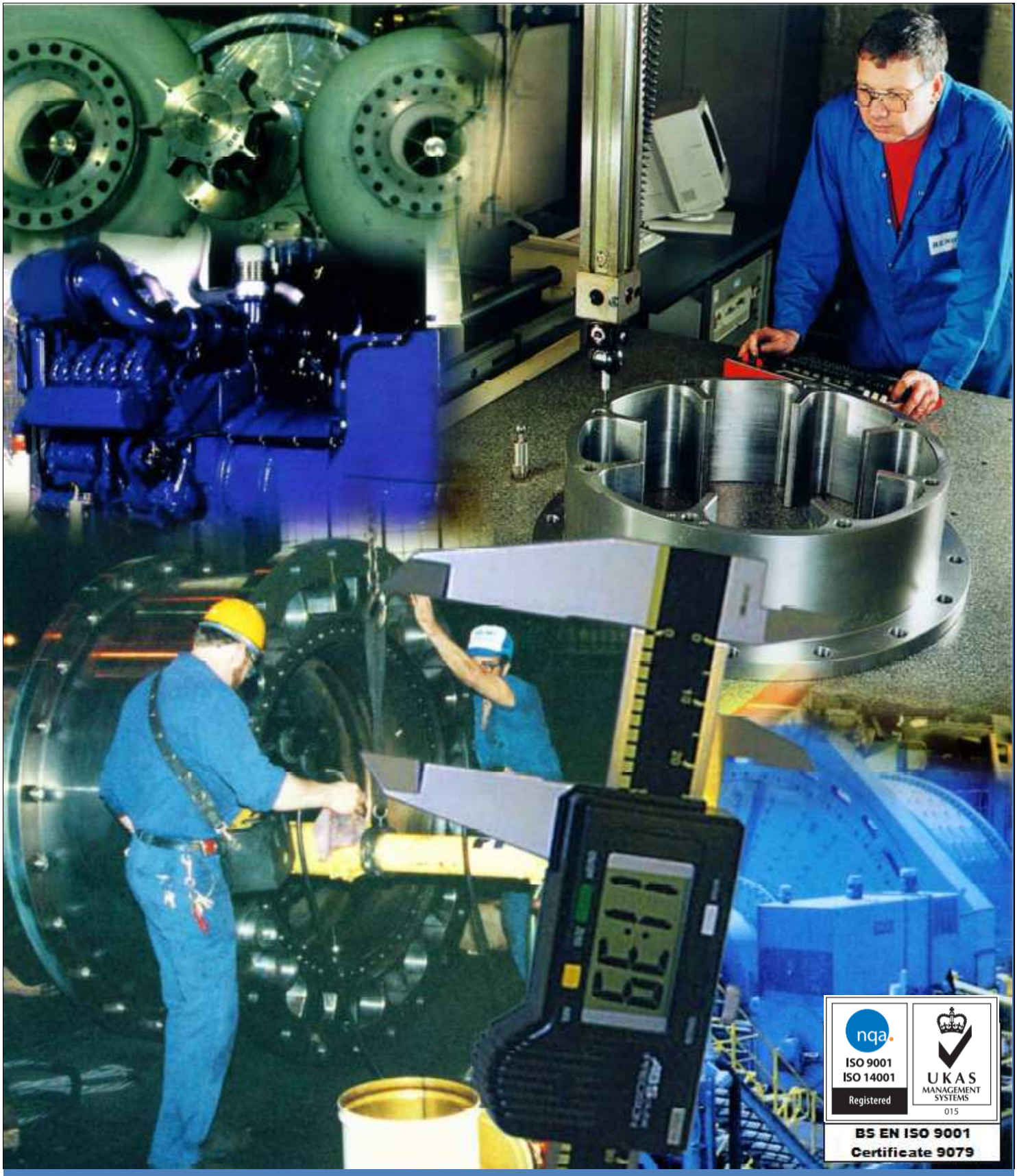
RENOLD

HiTec Couplings

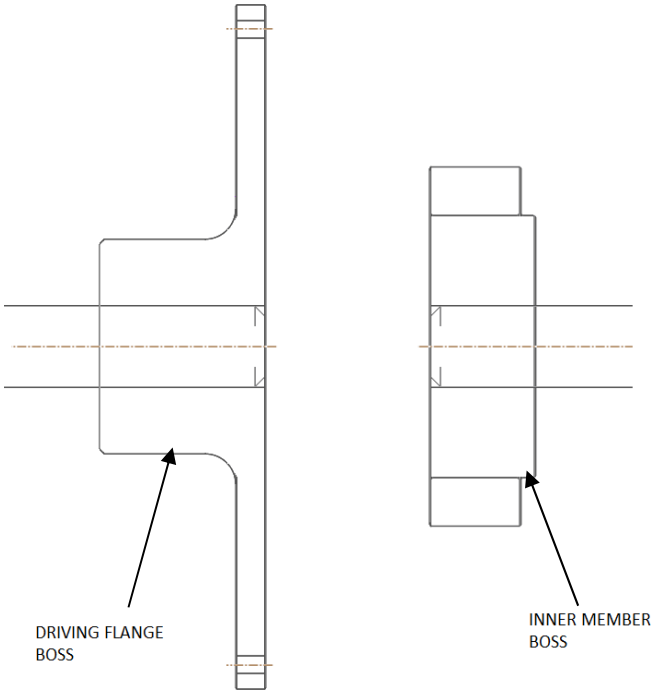
RBI Flexible Couplings Assembly & Maintenance Instructions



The complete solution

Overview of Installation – Fitting Hubs and Blocks

1. Mount Hubs to Shafts

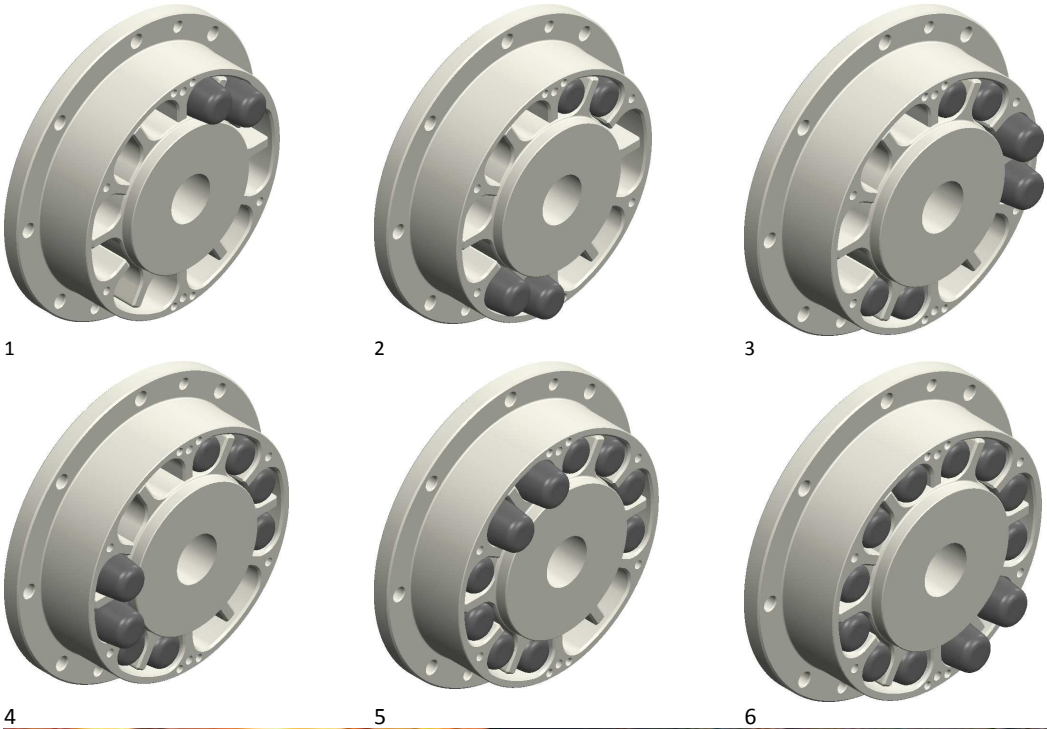


Heat inner member and driving flange to give sufficient clearance on the shaft.
Fit Key to shaft.
Place cover over shaft.
Fit hubs.
See page 4 for details.

It is important that the driving flange and inner member are fitted onto the shaft with the boss end leading as shown.

2. Fit Rubber Elements

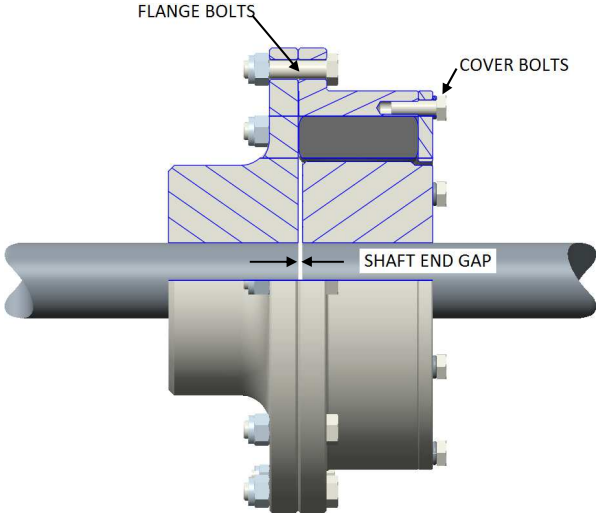
Brush coupling cavities and rubber elements with silicone fluid.
Fit elements in sequence shown in these diagrams.



WARNING:
On no account should mineral oil or grease be used as this will seriously damage the rubber elements.
If silicone fluid is unavailable, vegetable oil may be used.

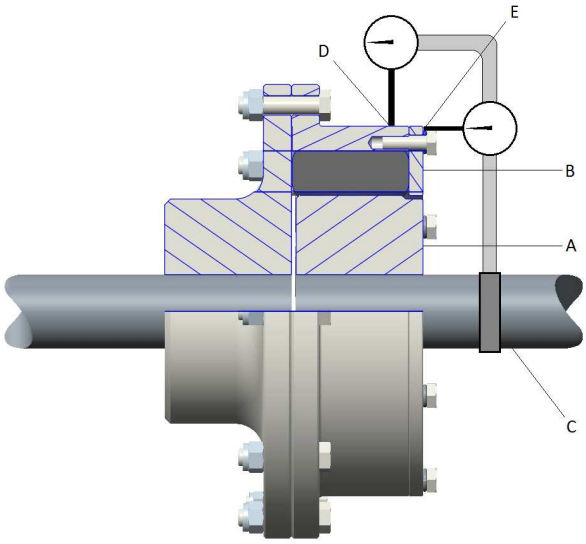
Alignment – Shaft to Shaft

1. Bolt Up Flanges



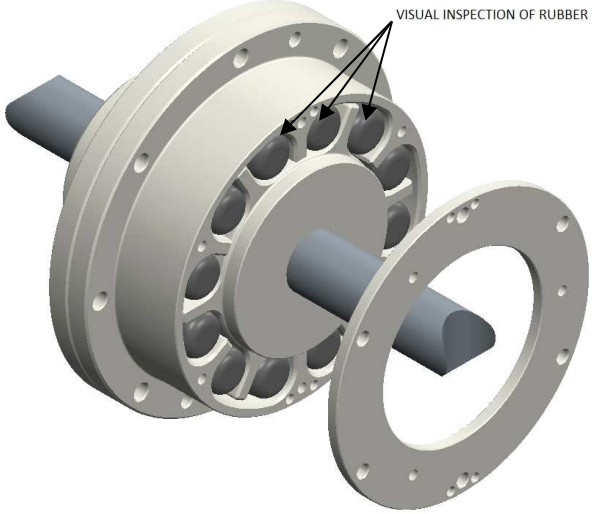
Set shaft end gap and tighten cover and flange bolts. For shaft gap, wrench size and tightening torque values, see page 5.

2. Check Shaft Alignment



Check the axial, radial and angular alignment of the coupling. Allowable values and the measuring procedures are given on page 6.

3. Inspect Annually



Check the alignment of the coupling. Remove the cover and examine the rubber elements for signs of damage. See page 7 for details.

Mount Hubs to Shafts

Keyed Shafts

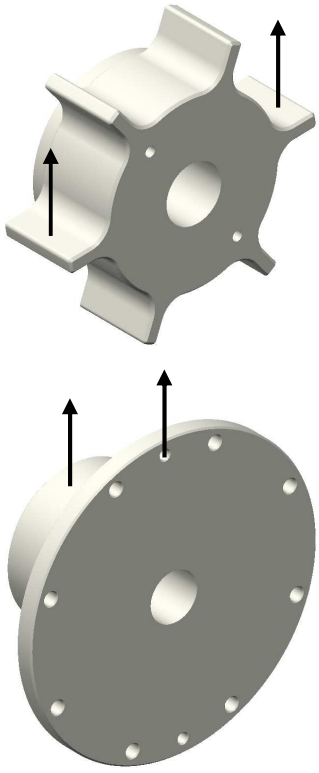
Completely disassemble the coupling. If the coupling has limited end float pads (circular pads located in the inner member of the coupling) remove them. Check the shaft diameters and coupling bores against the drawings.

Inner Member

Heat the inner member to 120°C (250°F) in either an oil bath or an oven. Lift the coupling from the heating device using steel lifting chains wrapped around the blades of the inner member. ***Handle hot components with extreme care.*** Make sure that the lifting chains hold the inner member securely. Refer to the Renold Hi-Tec drawing or catalogue for the weight of the inner member. **(Do not use lifting equipment rated at less that the weight of the inner member).**

Unless a split cover is supplied with the coupling, fit the cover of the shaft BEFORE fitting the inner member to the shaft.

With the key in place in the shaft fit the inner member to the shaft. The end face of the inner member should be flush with the end of the shaft.



Driving Flange

Heat the driving flange to 120°C (250°F) in either an oil bath or an oven. Lift the coupling from the heating device using steel chains and shackles inserted through the bolt holes, taking care not to damage the surface of the holes. ***Handle hot components with extreme care.*** Make sure that the lifting chains hold the driving flange securely. Refer to the Renold Hi-Tec drawing or catalogue for the weight of the driving flange. **(Do not use equipment rated at less than the weight of the driving flange.)** With the key in place in the shaft fit the driving flange to the shaft. The end face of the driving flange should be flush with the end of the shaft.

Keyless Fits

Specific instructions are supplied with couplings which have high interference keyless fits. Please refer to these instructions when mounting hubs.

Bolting up the Coupling - Shaft to Shaft

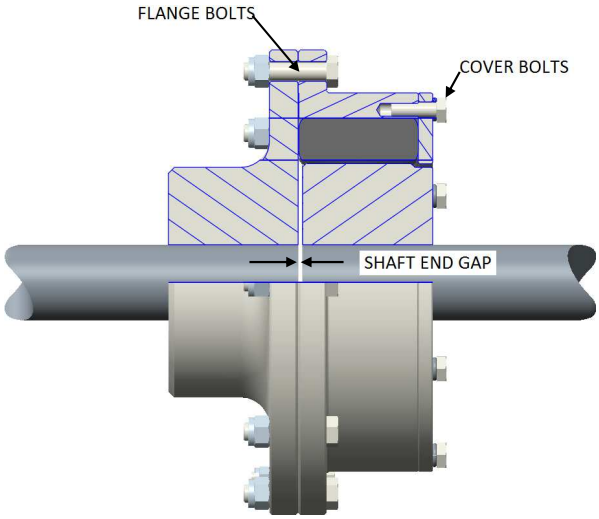
At this stage all the rubber blocks should be in place and the driving and driven machinery should be brought together with the correct gap between the ends of the shafts. The shaft end gap is shown on the Renold Hi-Tec drawing and in the table given below.

Fit the cover and secure with the bolts. Do not force the rubber elements into their cavities by tightening the cover bolts.

Connect the two halves of the coupling using the bolts supplied.

The bolt sizes are shown below along with the torque values to which the bolts should be tightened.

For alignment details please refer to pages 3 and 6.



Coupling Size	Shaft End Gap (mm)	Shaft End Gap (inch)
RBI 1.4	3.2	0.12
RBI 2.1	3.2	0.12
RBI 2.6	3.2	0.12
RBI 4	3.2	0.12
RBI 8	3.2	0.12
RBI 12	3.2	0.12
RBI 23	4.8	0.18
RBI 40	6.4	0.25
RBI 60	6.4	0.25

Coupling Size	Flange Bolt		Cover Bolt		Flange Bolt		Cover Bolt	
	Size	Torque	Size	Torque	Size	Torque	Size	Torque
RBI 1.4	M8	23Nm	M8	23Nm	M8	17.0 ft lb	M8	17.0 ft lb
RBI 2.1	M8	23Nm	M8	23Nm	M8	17.0 ft lb	M8	17.0 ft lb
RBI 2.6	M10	45Nm	M8	23Nm	M10	33.2 ft lb	M8	17.0 ft lb
RBI 4	M10	45Nm	M10	45Nm	M10	33.2 ft lb	M10	33.2 ft lb
RBI 8	M12	85Nm	M10	45Nm	M12	62.7 ft lb	M10	33.2 ft lb
RBI 12	M12	85Nm	M12	85Nm	M12	62.7 ft lb	M12	62.7 ft lb
RBI 23	M12	85Nm	M12	85Nm	M12	62.7 ft lb	M12	62.7 ft lb
RBI 40	M16	220Nm	M12	85Nm	M16	162 ft lb	M12	62.7 ft lb
RBI 60	M16	220Nm	M12	85Nm	M16	162 ft lb	M12	62.7 ft lb

The following section describes how to verify that the alignment of the coupling is sufficient to prevent premature deterioration of the rubber elements. Note that the values given in the table are in both millimetres and inches.

Axial Alignment

Use a straight edge held on face “A” and a depth gauge to measure the distance between faces “A” and “B”. Check the measurement with the allowable values given in the table.

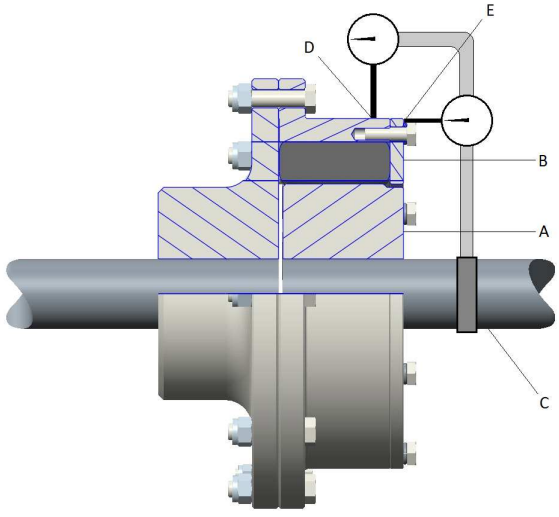
Radial Alignment

Mount the dial indicator to shaft “C” with pointer at “D” as shown in the diagram below.
Total reading on the dial indicator for one complete turn of the drive (maximum reading minus minimum reading) should be less than the value in the table.

Angular Alignment

Mount the dial indicator to the shaft “C” with the pointer at “E” as shown in the diagram below.
Total reading on the dial indicator for one complete turn of the drive (maximum reading minus the minimum reading) should be less than the value shown in the table.

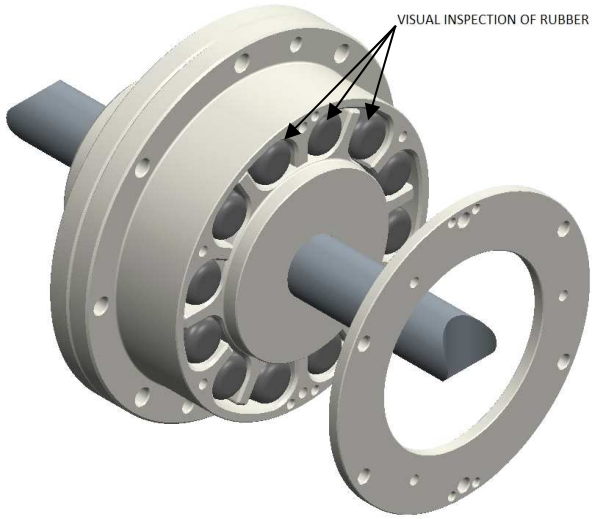
Coupling Size	Axial (mm)	Radial (mm)	Axial (inch)	Radial (inch)	Angular (degrees)
RBI 1.4	0.75	0.30	0.030	0.012	0.1
RBI 2.1	0.75	0.30	0.030	0.012	0.1
RBI 2.6	0.75	0.30	0.030	0.012	0.1
RBI 4	0.75	0.30	0.030	0.012	0.1
RBI 8	0.75	0.50	0.030	0.020	0.1
RBI 12	0.75	0.75	0.030	0.030	0.1
RBI 23	1.0	0.75	0.040	0.030	0.1
RBI 40	1.5	0.75	0.060	0.030	0.1
RBI 60	1.5	0.75	0.060	0.030	0.1



Rubber Element Inspection

Check the alignment of the coupling and the condition of the rubber elements annually.

The alignment of the coupling should be checked as described on page 6.



To inspect the rubber elements, unbolt the cover of the coupling so that the faces of the rubber block can be seen. It is not necessary to remove the rubber elements of the coupling, though, the rubber elements should be replaced if any of the following are found:-

Evidence of small amounts of rubber dust is normal but in large quantities lubrication is required by use of silicone fluid.

Blocks loose in their cavities need to be changed as quickly as possible.

Deep cuts, over 10% of the width of the rubber elements which reveal excessive torque loadings.

Physical deterioration where the surface of the rubber element is cracked or has a sticky surface.

The rubber blocks should always be replaced in the same way as they were initially installed fitting the elements one in each cavity, filling opposite cavities first. See page 2 for details.

*Large amounts of rubber dust and an impression of the coupling inner member on the cover are signs of excessive misalignment.

Identification of rubber element

Each rubber element has a coloured sticker on it. The colour indicates the type of rubber and the number is the shore hardness. Each coupling has a serial number stamped onto the outer member flange face or onto a name plate. This is a nine digit number. The first seven digits are our order number; the next two are the line number. We can identify the rubber element from this number.

Renold Couplings has been established since the 1940's, manufacturing the widest range of couplings worldwide, including the Hi-Tec product range.

Renold is recognised throughout the industry for its capability to create specific solutions to customer's unique requirements. International companies and industries, from steel to food processing to escalators to rubber and plastics machinery, have chosen Renold to solve their problems.

Renold Couplings
Newlands Road
Wentloog Corporate Park
Cardiff
CF3 2EU
t: +44 (0) 161 498 4500
e: sales@hitec.renold.com

www.renold.com **sales@hitec.renold.com**

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