

R-Flex HBSX-8-RH Series Assembly Instructions



THESE INSTRUCTIONS ARE FOR THE STANDARD SERIES COUPLINGS WITH NORMAL RUNNING CONDITIONS. SPECIAL COUPLING DESIGNS MAY HAVE DIFFERENT INSTRUCTIONS.

TOOLS REQUIRED

- Torque Wrench and Sockets for coupling hex bolts and nuts (see table 1)
- Open end wrench
- Straight edge, dial indicator or laser alignment equipment

COUPLING ASSEMBLY NOTES

Reich USA recommends starting the coupling assembly by mounting the hubs and/or adapters that are bolted to the center spacer assembly onto the input and output shafts first. Most of the time this will provide accurate perpendicular and concentric surfaces for aligning the parts connected by the R-Flex coupling.

For standard bore and keyway hubs, the hubs have to be assembled so that the hub flange face is aligned with the shaft end. The distance between shaft ends (DBSE) will then be the width of the recommended space between the assembled coupling halves for the HBSX-RH configuration (see dimension L2 in Figure 1 and Table 1).

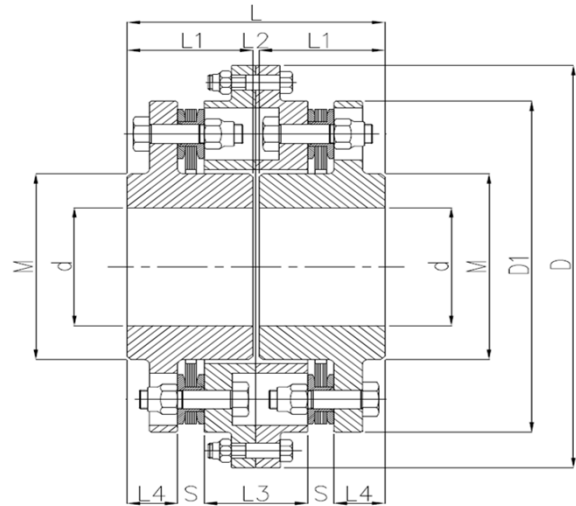


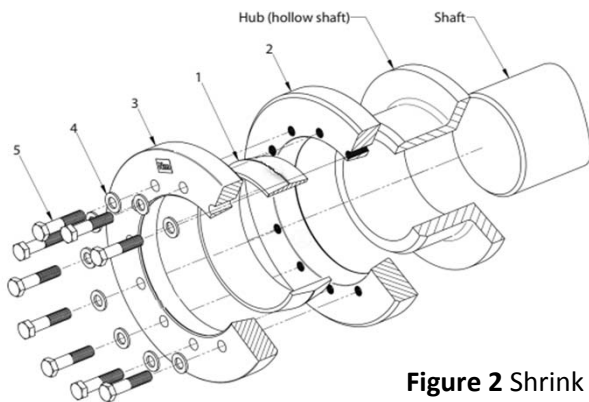
Figure 1 Two-disc pack HBSX-RH coupling dimensions

HUB ATTACHMENT TO THE SHAFT – BORE AND KEYWAY

1. Inspect the shaft, hub bores, and keyways to make sure that they are clean and free of burrs. Lightly oiling the shaft will make it easier to assemble the hub on the shaft.
2. Place the hub on the shaft. Be sure to slide the hub far enough onto the shaft so the shaft end is even with the hub face. This should not be changed without consulting Reich USA Corp. The distance between shaft ends (DBSE) will then be the width of the recommended space between the assembled coupling halves for the HBSX-RH configuration (see dimension L2 in Figure 1 and Table 1).
3. Standard hubs are supplied with a slight clearance fit. It is recommended for hubs with bores larger than 3" (76mm), using an interference fit or special torque transmitting locking devices. For hubs with interference fits, uniformly heat the hub to a maximum of 248 – 266°F (120-130°C) and quickly assemble on the shafts. The use of torches or rosebuds is not recommended because this can cause high stresses and permanent distortions.
4. Fit the key into the hub. If supplied with a set screw, turn the set screw until the top of the key is contacted in the hub.
5. After following the coupling instructions for axial alignment, use the correct 'Hub Installation instructions' for the second hub.

HUB ATTACHMENT TO THE SHAFT – SHRINK DISC

1. Inspect the shaft and hub bores that they are clean and free of burrs. DO NOT place any grease on the shaft or inside of the hub as this will not allow the needed coefficient of friction between the hub and shaft. The contact surface between the hub and inner ring of the shrink disc can be lightly oiled for assembly. For larger shrink discs, the inner ring is protected with oiled paper, which must be removed before assembly. Make a quick inspection that the Shrink Disc screw threads /head and tapered inner ring are coated with grease. If not, please lubricate these surfaces only with Molykote Grease.
2. Place the shrink disc onto the hub before installing the hub on the shaft.
3. Assemble the shrink disc/hub onto the shaft. Slide the hub far enough onto the shaft so the shaft end is even with the hub face or to the minimum recommended shaft depth per the supplied coupling assembly drawing. The minimum shaft depth should not be changed without consulting Reich USA. The distance between shaft hubs will then be the width of the recommended space between the assembled coupling halves for the HBSX-RH configuration (see dimension L2 in Figure 1 and Table 1).
4. Hand-tighten the clamping screws (figure 2, item 5) until the shrink disc sits on the hub and the gap between the pressure rings (figure 2, items 2 and 3) are even.
5. Set the torque wrench to the recommended shrink disc screw torque. Begin torquing the screws in a clockwise or counterclockwise manner. Do not turn any screws more than 90 degrees at one time. This will help insure that the gap between the outer rings remains as even as possible. Installation is complete when all screws are at the recommended shrink disc bolt torque.
6. After following the coupling instructions for axial alignment, use the correct 'Hub Installation instructions' for the second hub.



Part	Quantity	Description
1	1	Inner ring
2	1	Pressure ring with threaded bore
3	1	Pressure ring with through bore
4	See assembly drawing	Washer - only as needed
5	See assembly drawing	Clamping screw

Figure 2 Shrink disc components

MACHINERY ALIGNMENT

Reich USA R-flex couplings can tolerate misalignments that vary with the number of disc pack bolts. For example, a 4-bolt coupling allows a maximum angular misalignment of 1°, whereas an 8-bolt coupling allows a maximum angular misalignment of 0.5°. Misalignment under working conditions can change due to many factors, such as thermal growth, magnetic centering, and settling of the coupled components. Careful initial alignment will permit the coupling to operate at full capacity and allow for some future operational misalignments. The initial misalignment values in Table 1 are for general use and can vary in specific cases. After having properly aligned the coupling, make sure that all the bolts and nuts are tightened to their proper torque. If possible, it is a good idea to check the torque after some hours of operation as well.

Axial Alignment

In order to ensure proper coupling operation and coupling life, it is recommended not to exceed the limits in Table 1 unless other specific instructions are given for special coupling applications.

To perform the axial alignment:

1. Bring the equipment into the best visual alignment possible.
2. Position the hubs axially so that the distance between shaft ends is within the minimum and maximum dimensions $L2 \pm \Delta a$ See Figure 1 and Table 1 for reference.

For non-standard couplings, see instructions on the corresponding coupling drawing.

Angular Alignment

1. With a dial indicator or laser system measure the angular misalignment by determining the parallelism of the coupling flange faces.
2. Dimension $\Delta\alpha$, as shown in Figure 3, should be measured in at least three points, equally spaced, to determine the maximum value for $\Delta\alpha$. This must not exceed the maximum allowable dimension stated in Table 1.
3. Adjust or shim the equipment to bring either the indicator reading or the measured and calculated flange gap within the maximum allowable angular misalignment $\Delta\alpha$.

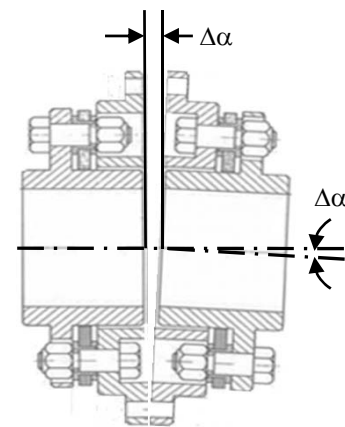


Figure 3 Angular misalignment measurement

Parallel (Radial) Alignment

1. Initial parallel misalignment can be checked by using a straight-edge across the hub flanges (see Figure 4) to measure the approximate distance Δp . A more precise method is to use a dial indicator or laser system and measure the parallel off-set in at least two locations 90 degrees apart while rotating the hub (see Figure 5).
2. Adjust or shim the equipment to bring the indicator or laser reading within the maximum allowable parallel misalignment Δp per Table 1.

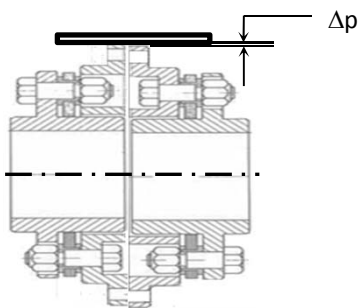


Figure 4 Parallel misalignment measurement

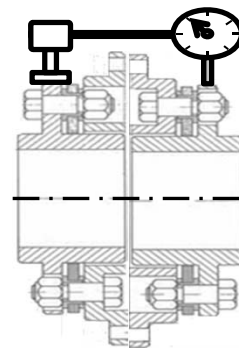


Figure 5 Coupling with dial indicator

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INSTALLING DISC PACKS

Figure 6 shows the disc pack assembly and disassembly for the coupling series HBSX-RH. The required tightening torques for the disc pack nuts and any spacer or hub adapter bolts are shown in Table 1. Reich USA recommends checking the tightening torques of all disc pack, spacer and adapter bolts after the first few cycles of operation.

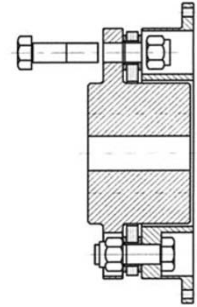


Figure 6 Disc pack assembly for short bolt configuration, series HBSX-RH

Table 1 - HBSX-8-RH maximum allowable misalignments and required tightening torques

HBSX-8-RH Size	D1 (inches) (mm)	S (inches) (mm)	L2 (inches) (mm)	L3 (inches) (mm)	Δa	$\Delta \alpha$	Δp	T1	T2
					(inches) (mm) Axial	(inches) (mm) Angular	(inches) (mm) Parallel	(ft-lbs) (Nm) Hub	(ft-lbs) (Nm) Disc Packs
170-8	6.10	0.32	0.12	1.6	0.020	0.012	0.004	17	17
	155	8.2	3	40	0.5	0.31	0.10	23	23
330-8	7.28	0.37	0.12	1.9	0.020	0.015	0.005	17	33
	185	9.5	3	48	0.5	0.37	0.12	23	45
650-8	10.2	0.51	0.12	2.01	0.020	0.020	0.005	33	59
	260	13	3	51	0.5	0.52	0.13	45	80
1260-8	11.6	0.59	0.20	2.80	0.020	0.023	0.007	33	133
	295	15	5	71	0.5	0.59	0.17	45	180
2010-8	13.0	0.75	0.20	3.11	0.020	0.026	0.008	59	280
	330	19	5	79	0.5	0.66	0.20	80	380
2700-8	13.0	0.91	0.24	3.94	0.020	0.026	0.010	59	369
	330	23	6	100	0.5	0.66	0.25	80	500
3160-8	14.4	0.93	0.24	4.61	0.020	0.029	0.011	59	479
	365	23.5	6	117	0.5	0.73	0.28	80	650
4630-8	16.3	0.98	0.32	5.35	0.020	0.033	0.013	133	701
	415	25	8	136	0.5	0.83	0.32	180	950
8770-8	18.7	1.1	0.32	5.43	0.020	0.037	0.013	133	1254
	475	28	8	138	0.5	0.95	0.33	180	1700
13850-8	21.1	1.4	0.32	6.30	0.020	0.042	0.015	280	1549
	535	36	8	160	0.5	1.07	0.39	380	2100
14840-8	22.0	1.4	0.32	7.48	0.020	0.044	0.018	280	1549
	560	36	8	190	0.5	1.12	0.45	380	2100
19700-8	26.6	1.4	0.39	9.13	0.020	0.053	0.021	369	3098
	675	36	10	232	0.5	1.35	0.54	500	4200

