

⚠ WARNING

- Read and follow all instructions carefully.
- Disconnect and lock-out power before installation and maintenance. Working on or near energized equipment can result in severe injury or death.
- Do not operate equipment without guards in place. Exposed equipment can result in severe injury or death.

⚠ CAUTION

- Periodic inspections should be performed. Failure to perform proper maintenance can result in premature product failure and personal injury.

NOTICE

- Only the hardware supplied by Kop-Flex should be used. Use of other hardware could result in malfunction or reduced service life.
- Components should be cradled or supported and wrapped during handling to avoid damage.
- Flanges and pilot surfaces should be kept free of nicks and burrs to ensure a proper installation.

1.0 General Instructions

Prior to installation, inspect the coupling for any signs of damage that may have occurred during shipment. Check that all parts are on hand and are as ordered.

2.0 Installation of Coupling Hubs - Keyed Mounting

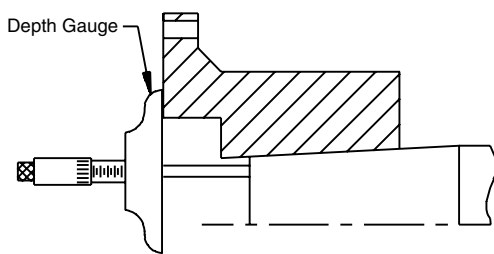
2.1 Check the hub for bore and shaft for nicks and burrs, dress if necessary. Make sure the bore and shaft are clean

2.2 For tapered bores, check the fit of the bore to the shaft.

2.3 Keys must be precisely fitted to the keyways in the shaft and hub. Each key should have a tight fit on the sides with a slight clearance on top. To maintain dynamic balance, the keys should fill the keyways exactly and not be too short or too long.

2.4 Clean the hub bore and shaft. For straight bores, proceed to step 2.6. For taper bores, mount the hub handtight on the shaft and lightly tap it with a soft mallet to establish the initial line-to-line fit. This is the start position. With a depth gauge, measure the amount the hub overhangs the shaft end and record this value. See Figure 1.

Figure 1. Measuring Hub Overhang



2.5 Taper bores only: A recommended method to measure the hub advance is to install a split collar on the shaft, away from the hub by the amount of the specified advance. Use feeler gauges for accurate spacing. See Figure 2. The amount of hub draw is dependent upon the desired interference and taper angle as specified by the machine manufacturer or as given on the coupling drawing. See Figure 3.

Figure 2. Using Split Collar to Set Advance

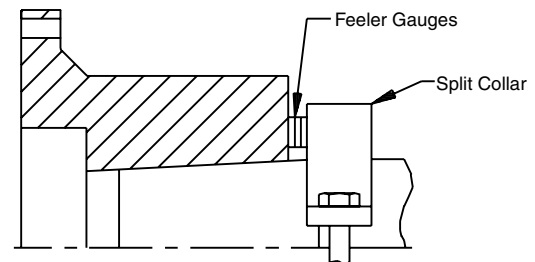
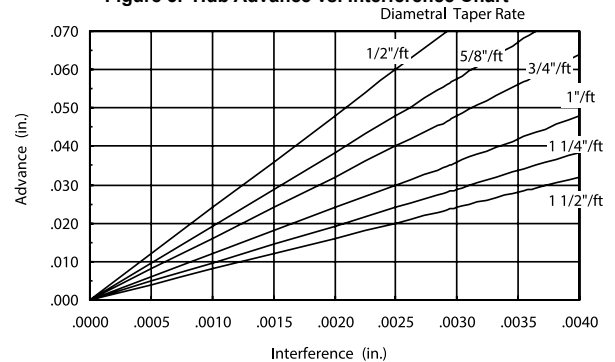


Figure 3. Hub Advance vs. Interference Chart



2.6 Heat the hub to expand the bore;

Do not allow the hub temperature to exceed 600 degrees F (300 degrees C). Higher temperatures will damage the hub.

WARNING! To avoid the risk of explosion, fire, property damage, and personal injury, do not use an open flame or an oil bath to heat the hub. An oven is recommended.

2.7 Place the hub in the proper position on the shaft. Hold the hub in place as it cools. For taper bores, verify the hub advance (see Figures 1 and 2) and install the shaft retaining nut. Remove the split collar from the shaft.

3.0 Alignment

Exact values and procedures for aligning equipment are normally specified by the equipment manufacturers. Good initial alignment to the minimum possible values will promote improved machinery performance and reduce potential operating problems. After securely tightening the foundation bolts, the hub separation and alignment should be rechecked and adjusted if necessary.

The coupling alignment should be checked periodically. Even when a coupling is well aligned at installation, subsequent settling of foundations, shifting of equipment, etc., may cause the alignment to deteriorate.

Offset and Angular Alignment

3.1 Reverse dial indication or optical methods of alignment (such as laser) are recommended. A cold alignment and a hot check (with corrections if necessary) are required. The hub flange O.D. can be used to mount the alignment equipment. The hub flange O.D. is machined to be concentric to the coupling bore and can be used as the reference diameter.

3.2 The maximum recommended operating misalignment is:

- 0.10 degrees per disc pack
- (0.0035 in./in. TIR equivalent parallel offset)

Important: Total misalignment is the combination of equipment parallel offset and angular misalignment.

Note that improving the alignment below these values will promote improved machinery performance.

Axial Alignment

3.3 Align the hubs until they are at the correct hub separation. The hub separation is measured from the two flange faces, not from the pilot face.

$$\text{Hub Separation} = \text{Center Assembly Length}$$

4.0 Final Assembly

Kop-Flex 023 KD2 center sections are supplied pre assembled for easy installation. However, prior to installation it is good practice to check the tightening torque of all disc pack fasteners to ensure proper coupling performance.

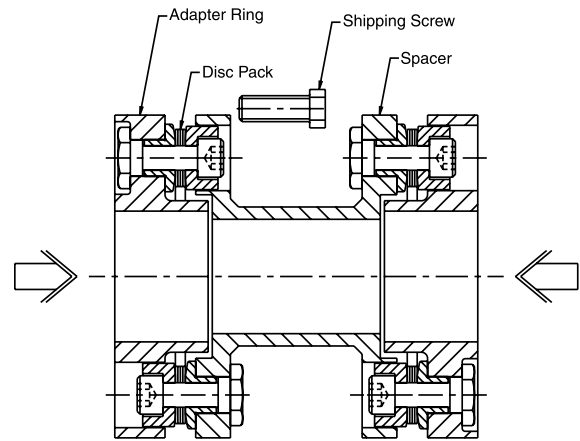
If any disc pack fastener is not tightened to 10 ft.-lbs. (13 N-m), all should be reinstalled according to the following procedure:

- 1) Remove all disc pack bolts and wipe the threads of excess oil or grease.
- 2) Apply thread-locking adhesive to the disc pack bolts (Loctite® # 266 or equivalent).
- 3) Tighten nuts evenly and in successive steps to 10 ft.-lbs. (13 N-m).

4.1 After installing both hubs, remove all red plastic sleeves found between the adapter rings and spacer. These plastic sleeves can be discarded, but the shipping screws will be used to collapse the center section.

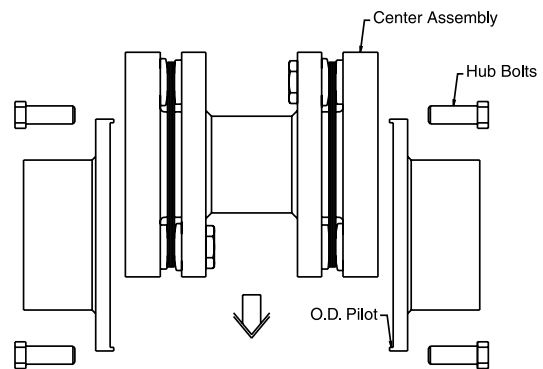
4.2 Insert the shipping screws through the spacer clearance holes and into the tapped holes in the adapter ring (see Figure 4). Do this on both sides of the center section.

Figure 4. Collapse center section.



4.3 Collapse the disc packs by tightening each shipping screw evenly and in successive steps, only enough to allow the center section to drop into place (see Figure 5).

Figure 5. Install center section.



4.4 Put the center section between the rigid hubs, keep it supported and remove all shipping screws to engage both pilots.

4.5 Wipe the hub bolt threads of excess oil or grease.

4.6 Apply thread-locking adhesive (Loctite #266 or equivalent) to the hub bolts and tighten evenly and in successive steps to 10 ft.-lbs.(13-Nm).

4.7 With the hub bolts installed, remove the center section support. Be sure all 6 hub bolts on each end of the coupling are tightened to the specified torque.

Notice: Prior to equipment start-up all shipping screws and plastic sleeves must be removed.

5.0 Removal

5.1 Disassemble the coupling in the reverse order as per the applicable assembly procedure.

5.2 Keyed hubs - install a puller on the hub using the tapped holes provided in the hub face. Pull the hub off the shaft.

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Power Transmission Solutions cannot and does not represent or warrant the accuracy of this information.

6.0 Disc Pack Replacement

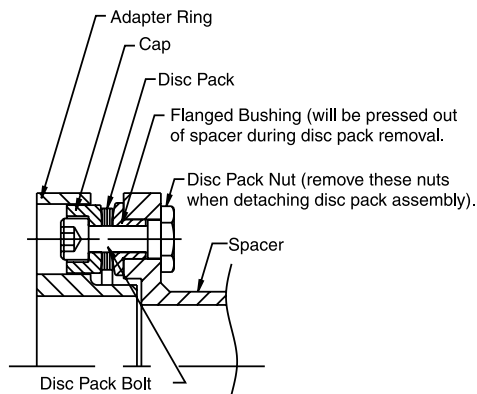
Kop-Flex 023 KD2 replacement disc packs are supplied pre-assembled with three disc pack nuts tightened to the adapter ring for easy installation. However, prior to installation, it is good practice to check the tightening torque of those three fasteners to ensure proper coupling performance. If any disc pack fastener is not tightened to 10 ft.-lbs. (13 N-m), all should be reinstalled according to the following procedure:

- 1) Remove all disc pack bolts and wipe the threads of excess oil or grease.
- 2) Apply thread-locking adhesive to the disc pack bolts (Loctite® # 266 or equivalent).
- 3) Tighten nuts evenly and in successive steps to 10 ft.-lbs. (13 N-m).

6.1 Remove the center section in reverse order as per the applicable assembly procedure.

6.2 Unbolt the disc pack assembly from the spacer. Flanged bushings were pressed into the spacer and will need to be lightly pressed out (see Figure 6).

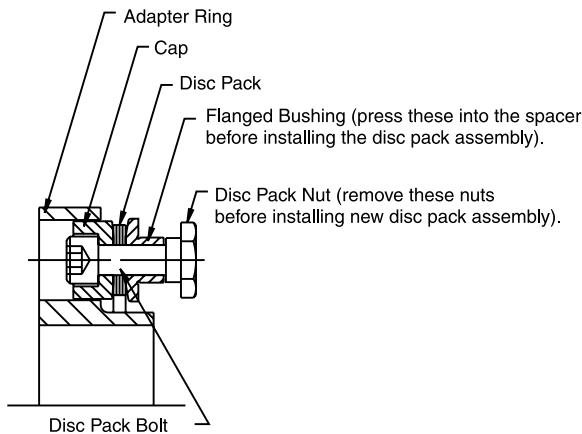
Figure 6. Disc pack assembly.



6.3 Clean and de burr all of the coupling parts.

6.4 On the new disc pack assembly locate the three disc pack fasteners that will connect to the spacer. Remove the three disc pack bolts, nuts and flanged bushings found on these fasteners (see Figure 7).

Figure 7. Replacement disc pack assembly.



6.5 Place the three flanged bushings into the bushing clearance holes on the outside of the spacer flange and lightly press them into place.

6.6 Locate the disc pack assembly on the spacer, ensuring that the flanged bushings receive the loose disc pack bolts (see Figure 6).

6.7 Wipe the disc pack bolt threads of excess oil or grease.

6.8 Apply thread-locking adhesive (Loctite #266 or equivalent) to disc pack bolts and tighten evenly and in successive steps to 10 ft.-lbs. (13-Nm).

6.9 Be sure all six disc pack bolts, on each end of the coupling, are tightened to the specified torque.

7.0 Dynamic Balance

Balanced parts will be marked with the letter "B." The couplings may be component balanced (hubs and center assembly) with no match marks, or assembly balanced as a complete coupling with match marks of the hub to ring connections. If the coupling is supplied with match marks, it must be assembled with the match marks in line.

Note: For balanced couplings, disconnecting the disc packs from the center assemblies disturbs the balance of the coupling. When disc packs are replaced in balanced couplings, the couplings must be balanced before placing back in operation.

8.0 Finish Boring and Keyways

Coupling hubs are often furnished with a "rough stock bore." This rough bore is not necessarily concentric to other hub diameters. To prepare for boring, set-up and indicate the hub as shown in Figure 8.

9.0 Bore Sizing and Recommended Fit

The finish bore size should be based on the actual measured shaft dimension, regardless of whether straight or taper shaft. For keyed shafts, a light interference fit based on a nominal interference rate of 0.0005 inch per inch of shaft diameter is suggested, or refer to published AGMA standards.

Notice: Do not exceed an interference fit of 0.001 inches/inch of shaft diameter. Greater interferences could damage the hub.

For straight bores, the rigid hub diameter should be chucked in the boring lathe and dial indicated as shown of Figure 8. For taper bores, chuck and indicate as shown on Figure 8. Machine the counterbore and skim a reference diameter on the hub body. Then chuck the hub as shown on Figure 9, and indicate using the reference diameter before final boring. Run-outs should be as near zero as possible. It is essential that the finished bore be concentric and square with the two indicating surfaces.

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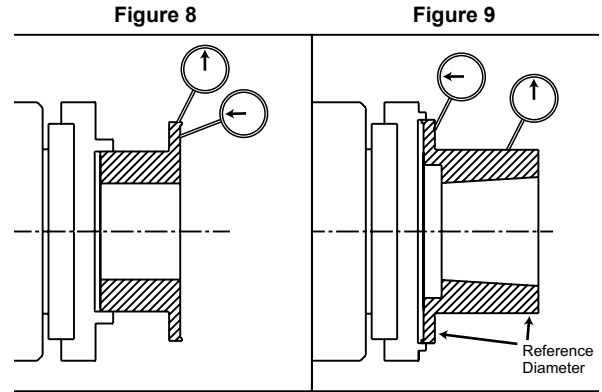
10.0 Keyways

Keyways should be cut to give a tight fit on the sides and slight clearance over the key. Keyways should not have sharp corners. Refer to published AGMA standards for specific dimensioning of coupling bores and keyways.

11.0 General Recommendations

11.1 Kop-Flex KD2 disc couplings are designed to operate for extended periods without the need for lubrication or maintenance. Visual inspection of the disc packs is sufficient to assess the operational condition of the coupling.

11.2 All machinery should be monitored to detect unusual or changing vibration levels. Kop-Flex KD2 couplings, under normal conditions, have no wearing parts and will retain their original balance quality. Any change in vibration levels should be investigated and remedial action should be taken immediately.



5 Year Warranty Registration Card

Name (Last, First) _____

Title: _____

Company name: _____

Location: _____

Phone: _____

Application Data

Coupling type: _____

HP: _____

RPM: _____

Application: _____

Shaft Size(s): Driving: _____ Driven: _____

Distance between shaft ends _____

Plant identification Pump # _____ Motor # _____

Send Warranty Card To: Attention Marketing Department

Kop-Flex, Inc.

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Baltimore, MD 21203-1696

or Fax to: 410-787-8424

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www.regalbeloit.com