ZERO-MAX

CD® Power-Series Composite Disc Coupling



Installation Instructions For Clamp Hub x Shrink Disc Hub Double-Flex Couplings

Tools Required

- Calibrated torque wrench
- Hex socket set
- Shaft alignment tools
- Cleaning cloth
- Caliper

- These instructions are for standard series couplings with normal running conditions. Special couplings may have different instructions or drawings.
- When initially mounting the coupling, the misalignment may be one and one half times the maximum permissible misalignment shown in the catalog. Inspect hub bores, shafts, and keyways making sure there are no burrs. Clean hub bores and shafts. Standard CD coupling hub bores are supplied with slight clearance fit (see catalog).
- Install the coupling onto the shafts. It is recommended that the ends of both shafts be flush with the end of each hub. At the minimum each shaft should extend past the hub clamp slot and extend into one third of the hub flange (non-slotted) area. If the shaft extends past the hub face verify there is enough clearance between shaft and disc pack and the shaft (and key, if applicable) will not contact the disc pack during operation.
- Tighten the clamp hub socket head cap screw to lock the hub onto the shaft. See the Table on page 3 for the proper tightening torque.
- NOTE: If Clamp Hub is a Two-Bolt (C2) Split Clamp Hub, hand-tighten both bolts initially making sure the gap is even on both sides of the shaft. **Do not apply lubricant to the screw threads.** Next, tighten fasteners half turn in a continuous sequence until fasteners reach tightening torque. After each fastener has been tightened to the proper torque, repeat tightening sequence at tightening torque.
- Adjust hub separation to dimension “C” specified in the Table on page 3.
- The contact surfaces between the shrink disc outer ring, hub and fasteners are greased at the factory. Hubs and outer rings to be relaxed before installation, if necessary loosen screws by several turns.
- Install shrink disc hub onto shaft. It is recommended that the ends of the shaft be flush with the end of each hub. At the minimum the shaft should extend past the hub clamp slot and extend into one third of the hub flange (non-slotted) area. If the shaft extends past the hub face verify there is enough clearance between shaft and disc pack and the shaft.
- Using a properly calibrated torque wrench set to 5% higher than the specified torque (see Table on page 3), start tightening the locking screw closest to the clamp slot and moving in a direction away from the clamp slot tightening the screws in a circular pattern, using no more than a quarter turn for each screw. Repeat this circular pattern until a quarter turn can no longer be achieved on any screw while verifying the outer ring face and hub flange face are parallel. If there is sudden movement of the outer ring during tightening, the outer ring may not be parallel to the hub causing binding.
- Verify the outer ring face and hub flange are parallel and apply the 5% over torque for two more complete times around the pattern.
- Reset the torque wrench to the correct tightening torque (see Table on page 3). Check that none of the fasteners turn at this tightening torque value. If they turn, reset the torque wrench to the higher torque and repeat previous step.
- Align the shafts within the limits for axial, parallel, and angular misalignment specified on the Table on page 3. For best alignment results, use a laser alignment tool or dial indicator. If not available, a straight edge and feeler gauges can be used.

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Note: Aligning the shafts as closely as possible at the time of initial installation will reduce noise and allow the coupling extra capacity for misalignments and loads which will occur during operation over the life of the connected equipment. Installing and operating coupling at higher degrees of misalignment is possible (see catalog ratings), but will generally reduce the life of the composite disc pack.

⚠ **Note:** Coupling and shaft alignment should be checked periodically due to foundation settling, equipment shifting, etc. Alignment should be re-checked after the first several hours of operation.

Caution: Rotating equipment is potentially dangerous and should be properly guarded. It is the responsibility of the machine builder, user, or operator to follow all applicable safety codes and provide a suitable guard. Make sure the machine is "locked out" and cannot be accidentally started during installation or maintenance of coupling.

Shrink disc hub removal

- Verify axial movement of shrink disc outer ring(s) are not restricted. Axial movement is needed to properly remove hub assembly.
- Loosen, but do not remove, all locking screws gradually in sequentially in a circular pattern. Turn each locking screw a quarter turn at a time several times. The outer ring may come loose from hub taper. If not, remove two screws and thread them into the two threaded holes next to the clearance holes.
- Tighten the two screws evenly and sequentially, and a quarter turn at a time, until the shrink disc outer ring is completely disengaged from hub taper.
- Once the hub and shrink disc are completely loosened the locking screws may be removed if desired. Tighten the clamp hub socket head cap screw to lock the hub onto the shaft. See the Table on page 3 for the proper tightening torque.

Shrink disc hub reinstallation

- In relatively clean operating conditions, the shrink disc hub assembly can be reused without prior cleaning or re-lubrication.
- Shrink disc hub assemblies that are dirty or have been removed more than once may require thorough cleaning and re-lubrication. Relubricate using Molykote G Rapid + paste, Molykote D-321 R or equivalent.
- Repeat installation instructions after checking lubricant condition.

⚠ Warning

Do not remove locking screws until it can be verified outer ring and hub are fully disengaged from tapers. Failure to do so may result in permanent injury or death.

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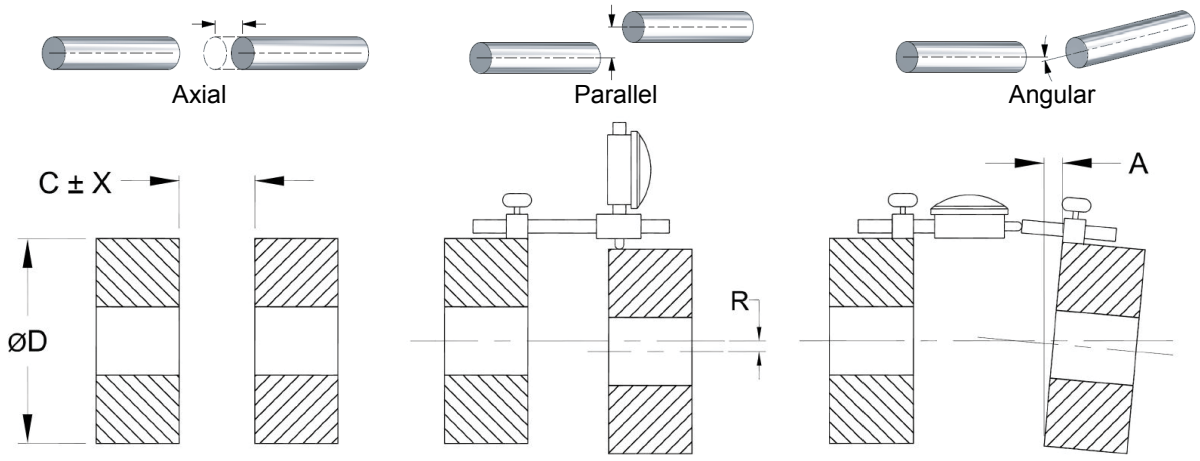


DIAGRAM 1
CHECK HUB SEPARATION

DIAGRAM 2
CHECK PARALLEL MISALIGNMENT

DIAGRAM 3
CHECK ANGULAR MISALIGNMENT

Table 1: Alignment and Assembly Specifications for Double-Flex Clamp Hub x Shrink Disc Hub

	C±X Axial Separation and Misalignment	R Parallel Misalignment	A Angular Misalignment		Shrink Disc Fasteners		Clamp Hub Socket Head Cap Screw C1 Hub = 1 Fastener C2 Hub = 2 Fasteners		Disc Pack Socket Head Cap Screw	
Model	**Inch (mm)**	**Inch (mm)**	**Inch (mm)**	**Angle (degrees)**	**Fastener Size**	**Tightening Torque**	**Wrench Size**	**Tightening Torque**	**Wrench Size**	**Tightening Torque**
8P55	1.142 ± 0.006 (29.00 ± 0.15)	0.0016 (0.0041)	0.009 (0.24)	0.25	M5	71 in lbs (8 Nm)	5 mm	140 in lb (16 Nm)	2.5 mm	13 in lb (148 Ncm)
8P67	1.332 ± 0.008 (33.83± 0.20)	0.0021 (0.0053)	0.012 (0.29)	0.25	M5	71 in lbs (8 Nm)	6 mm	190 in lb (21 Nm)	3 mm	28 in lb (320 Ncm)
12P85	1.349 ± 0.006 (34.28 ± 0.15)	0.0015 (0.0038)	0.010 (0.25)	0.17	M5	71 ft lbs (8 Nm)	6 mm	30 in lb (41 Nm)	4 mm	59 in lbs (7 Nm)
12P95	1.518 ± 0.006 (38.56 ± 0.15)	0.0016 (0.0041)	0.011 (0.28)	0.17	M5	71 ft lbs (8 Nm)	8 mm	60 in lb (81 Nm)	4 mm	71in lbs (8 Nm)
12P105	1.836 ± 0.008 (46.63 ± 0.20)	0.0002 (0.051)	0.012 (0.31)	0.17	M5	71 ft lbs (8 Nm)	8 mm	60 in lb (81 Nm)	5 mm	119 in lb (13 Nm)
12P120	2.074 ± 0.008 (52.68 ± 0.20)	0.0021 (0.053)	0.014 (0.35)	0.17	M6	133 ft lbs (15 Nm)	10 mm	100 in lb (135 Nm)	6 mm	188 in lb (21 Nm)
12P140	2.232 ± 0.010 (56.69 ± 0.25)	0.0025 (0.064)	0.016 (0.41)	0.17	M8	27 ft lbs (36 Nm)	12 mm	145 in lb (197 Nm)	6 mm	298 in lb (34 Nm)
12P165	2.664 ± 0.012 (67.67 ± 0.30)	0.0003 (0.076)	0.019 (0.48)	0.17	M8	27 ft lbs (36 Nm)	14 mm	240 ft lb (325 Nm)	8 mm	48 ft lb (65 Nm)
12P190	3.184 ± 0.014 (80.87 ± 0.35)	0.0036 (0.091)	0.022 (0.56)	0.17	M10	51 ft lbs (70 Nm)	14 mm	300 ft lb (407 Nm)	10 mm	78 ft lb (105 Nm)
12P215	3.779 ± 0.014 (95.97 ± 0.35)	0.0043 (0.109)	0.025 (0.63)	0.17	M12	93 ft lbs (125 Nm)	17 mm	380 ft lb (515 Nm)	12 mm	118 ft lb (160 Nm)

Note: The above misalignment specifications are recommended values for installation.They allow for extra capacity from operation over time. Refer to the catalog for maximum allowable misalignment specifications.

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