

B-LOC® Keyless Bushings provide a high capacity, zero-backlash shaft/hub or coupling connection by means of a mechanical interference fit. Please follow these **INSTALLATION AND REMOVAL INSTRUCTIONS** carefully to ensure proper performance of this **B-LOC®** unit.

ⓘ WARNING ⓘ

When installing or removing **B-LOC®** products, always adhere to the following safety standards:

1. Be sure that the system is de-energized using proper lockout tagout procedures.
2. Wear proper personal protective equipment.

INSTALLATION

(Refer to Figures 1 and 2)

B-LOC® Keyless Bushings are supplied lightly oiled and ready for installation. The frictional torque capacity of these devices is based on a particular coefficient of friction resulting from lightly oiled tapers, shaft and bore contact areas. Therefore, it is important to not use Molybdenum Disulfide (or similar lubricants) on any of the BLOC components.

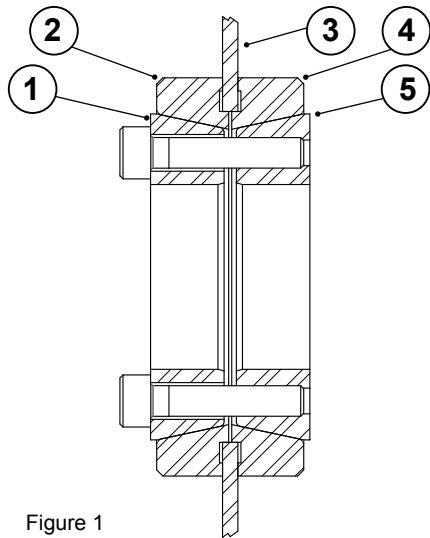


Figure 1

1. Make sure that the locking device, taper, shaft and hub contact areas are clean and lightly oiled.
2. Loosen and remove all locking screws
3. Grasping the front outer ring item 2, lift the front outer ring and front inner ring off the assembly (items 1 and 2).
4. Add the hub plate (item 3) to the assembly by aligning the bore of the hub plate with the pilot surface of the rear outer ring (item 4). This should be a close clearance fit, so care should be taken to ensure alignment.
5. Place the front outer ring (item 2) and front inner ring (item 1) on the assembly by aligning the hub plate bore with the pilot surface.
6. Rotate the front inner ring (item 1) until the slit is aligned with the slit in the rear inner ring item 5, then insert the locking screws thru the clearance holes in the front inner ring (item 1).
7. Thread the screws into the corresponding holes in the rear inner ring (item 5). Hand-tighten each screw, and confirm that the faces of the hub plate (item 3) are flush with the contacting face of the outer rings (items 2 and 4).
8. Set a torque wrench to approximately 5% higher than the specified installation torque M_a . Using only $\frac{1}{4}$ (i.e., 90°) turns, tighten locking screws in either a clockwise or counterclockwise sequence (a diametrically opposite pattern can also be used, but is not required). Continue the tightening sequence until the torque wrench clicks on each screw before $\frac{1}{4}$ turns can be achieved.
9. Continue to apply 5%-overtorque for one to two more passes. This is required to compensate for a system-related relaxation of locking screws since tightening of a given screw will always relax adjacent screws. (Without the 5% overtorque, an infinite number of passes would be needed to reach the specified installation torque.)
10. Reset torque wrench to specified torque (M_a) and check all locking screws. No screw should turn at this point. Otherwise, repeat Steps 9 and 10.

**INSTALLATION OF B-LOC® KEYLESS BUSHING
OVER SHAFT KEYWAYS**

The Keyless Bushing should be positioned so that slits in Keyless Bushing collars that contact the shaft are located approximately opposite the keyway. In addition, a locking screw should be centered directly over the keyway.

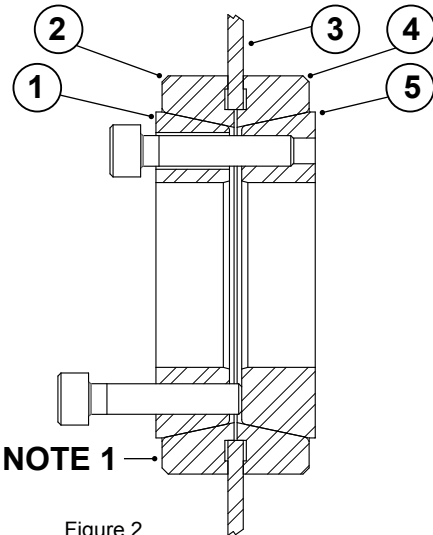
When tightening locking screws, it is important to follow the installation procedure outlined above, which specifies equal $\frac{1}{4}$ turns of each locking screw. Failure to follow these instructions could result in excessive tightening of the screw over the keyway, possibly causing permanent deformation of the Keyless Bushing collars.

REMOVAL

(Refer to Figure 2)

Prior to initiating the following removal procedure, check to ensure that no torque, thrust, or radial loads are acting on the Keyless Bushing, shaft or any mounted components

IMPORTANT! Make sure ends of locking screws used for removal are ground flat and are slightly chamfered to prevent damage to screw and collar threads during push-off.



NOTE 1

Figure 2

1. Check to ensure that axial movement of clamp collars and hub plate (necessary for release of connection) are not restricted. Likewise, ensure that push-off threads are in good condition.
2. Loosen all locking screws in sequence by $\frac{1}{4}$ turns until screws can be turned by hand. Loosen by hand for several more turns.
3. Remove completely two locking screws approximately 180 degrees apart. **IMPORTANT!** All other locking screws should be left in place.
4. Grind a chamfer on the ends of the two screws. Transfer these screws into the push-off threads of front inner ring (item 1) (see Figure 2).
5. Release the assembly by progressively tightening the two push-off screws using $\frac{1}{4}$ turns. Typically, the push-off screws appear to be completely tight after just one pass of tightening without any noticeable separation of clamp collars. Although it seems that the screws cannot be tightened further, several more rounds of torquing will increase the push-off force in the system and ultimately release the tapers.

NOTES:

- 1: If the tapers do not release after the assembly is jacked apart for several revolutions of the push-off screws, a brass punch or similar tool can be used to exert an impact force on the front outer ring (item 2).
- 2: In installations subjected to extreme corrosion, the slits in clamp collars (items 1 and 5), as well as in center collars, should be sealed with a suitable caulking compound or sealant. Likewise, push-off threads should also be protected from corrosion.

LOCKING SCREW SIZES AND SPECIFIED TIGHTENING TORQUE M_a					
Screw Size	M4	M5	M6	M8	M10
Tightening Torque M_a (ft lb)	3.7	7	12	30	60
Hex Key Size (mm)	3	4	5	6	8