

## INSTALLATION AND REMOVAL INSTRUCTIONS FOR B-LOC® KEYLESS BUSHING SERIES B400

**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 all power switches are locked out before installing or removing **B-LOC®** products.
2. Eye protection is required when installing or removing **B-LOC®** products. Please wear safety glasses and protective clothing.

### INSTALLATION

(Refer to Figure 1)

**B-LOC®** Keyless Bushings are supplied lightly oiled and ready for installation. The frictional torque capacity of these devices is based on a coefficient of friction of 0.12 for lightly oiled screw, taper, shaft and bore contact areas.

Therefore, it is important **not** to use Molybdenum Disulfide (e.g., Molykote, Never-Seeze or similar lubricants) in any Keyless Bushing installation.

1. Make sure that locking screw, taper, shaft and bore contact areas are clean and lightly oiled.

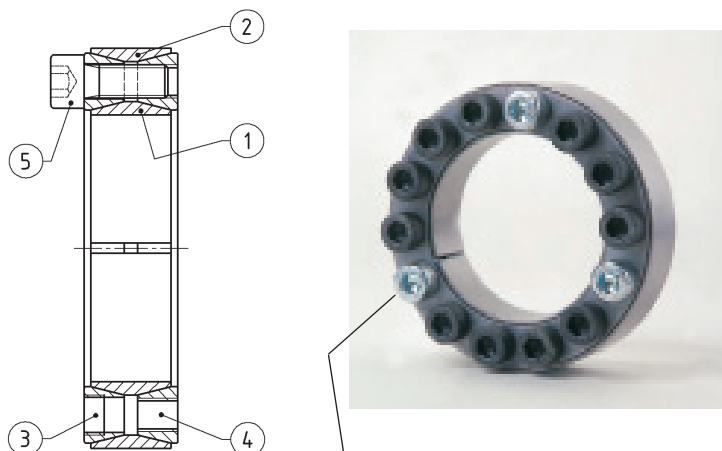


Figure 1

Cadmium plated screws

2. Insert Keyless Bushing into hub counterbore prior to shaft installation.
3. After confirming correct hub position, hand-tighten three (3) or four (4) equally spaced locking screws until initial contact with shaft and hub bore is established.
4. Use torque wrench and set it approximately 5% higher than specified tightening torque  $M_a$ . Tighten locking screws in either a clockwise or counterclockwise sequence (it is not necessary to tighten in a diametrically opposite pattern), using only 1/4 (i.e., 90°) turns for several passes until 1/4 turns can no longer be achieved.
5. Continue to apply overtorque for 1 to 2 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 overtorquing, an infinite number of passes would be needed to reach specified tightening torque.
6. Reset torque wrench to specified torque ( $M_a$ ) and check all locking screws. No screw should turn at this point, otherwise repeat Step 5 for 1 or 2 more passes. It is not necessary to re-check tightening torque after equipment has been in operation.

**NOTE:** In applications subject to extreme corrosion, the slits in all collars can be sealed with a suitable caulking compound or equivalent.

## 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 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. Even after 1/4 turns can no longer be achieved, it is important to continue to use equal turning angles for every screw until the specified tightening torque is reached.

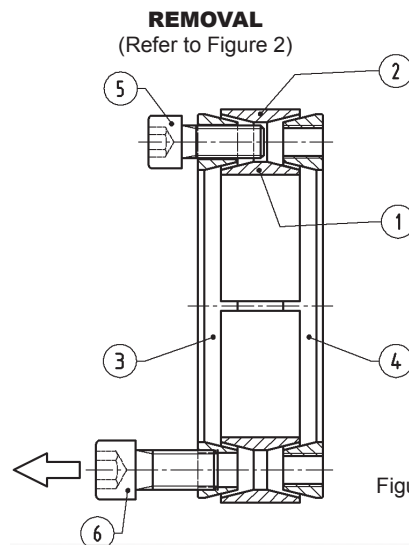


Figure 2

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

1. Loosen locking screws in several stages by using approx. 1/4 turns, following either a clockwise or counterclockwise sequence.

**NOTE:** **B-LOC®** Series B400 Keyless Bushings feature self-releasing tapers, meaning collars should release during Step 1. However, if for some reason the thrust collars jam, a light tap on three (3) equally spaced heads of loosened locking screws will positively release the connection.

2. Hub and Keyless Bushing are normally removed together. Removal of Keyless Bushing only from deep counterbores is accomplished by inserting pull-off screws (not provided) into threads located under cadmium plated locking screws. These threads are NOT to be used for high pulling forces, as thrust collar is only partially threaded.

### LOCKING SCREW SIZES AND SPECIFIED TIGHTENING TORQUE $M_a$ - B400 KEYLESS BUSHINGS

Metric Series	Inch Series	$M_a$ ft-lb	S mm	K	dB
20 x 47 to 40 x 65	3/4 to 1-1/2	11	M 6	5	M 8
42 x 75 to 65 x 95	1-5/8 to 2-9/16	26	M 8	6	M 10
70 x 110 to 95 x 135	2-5/8 to 3-3/4	51	M 10	8	M 12
100 x 145 to 160 x 210	3-7/8 to 6	91	M 12	10	M 14
170 x 225 to 200 x 260	6-7/16 to 8	138	M 14	12	M 16
220 x 285 to 260 x 325		214	M 16	14	M 20
280 x 355 to 300 x 375		293	M 18	14	M 22
320 x 405 to 340 x 425		420	M 20	17	M 24
360 x 455 to 420 x 515		565	M 22	17	M 27
440 x 545 to 1000 x 1110		725	M 24	19	M 30

$M_a$  = Tightening Torque

S = Screw Size

K = Hex Key Size

dB = pull-off thread, located only under cadmium plated screws of front thrust collar