

INSTALLATION INSTRUCTIONS

IMPORTANT INFORMATION



Wear protective clothing and eye shields when installing or maintaining unit and machine.



Make certain that the power supply is disconnected before attempting to service or install the unit, or remove or install any components. Lock out the power supply, and tag it to prevent unexpected application of power.



The shafts of gear drives rotate at high speeds and can cause severe bodily injury. Use proper guards for all rotating parts at all times during operation. The user is responsible for checking and complying with all applicable safety codes in his area and providing suitable guards. Failure to do so may result in bodily injury and/or damage to equipment.



Check to verify that the torque required by the application does not exceed the torque rating of the gear drive published in the current catalog. Use of the HubLoc™ Keyless Bushing System in man lift or people moving applications or any application where slipping between the solid customer shaft and gearbox hollow shaft could cause personal safety hazards without written authorization from HUB CITY is prohibited.



DO NOT use protective covers as step or support of any kind. Protective covers are intended to prevent incidental contact with rotating components only. Any tampering with the covers or removal of covers during operation can result in severe bodily injury and is strictly prohibited. Use additional shields and guards as required by applicable safety regulations.



Make certain that all tools and other items are clear from rotating parts before starting machine. Stand clear, and start machine slowly to be sure all components are secure and operating properly.

HUBLOC™ BUSHING KIT CONTENTS

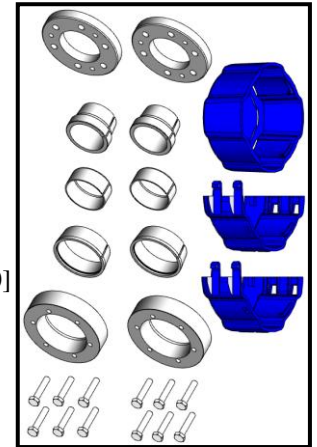
Each HubLoc™ keyless bushing kit includes:

- (2) Bushing Sets*
- (1) Closed Cover
- (2) Open Cover Halves

*Each bushing set includes:

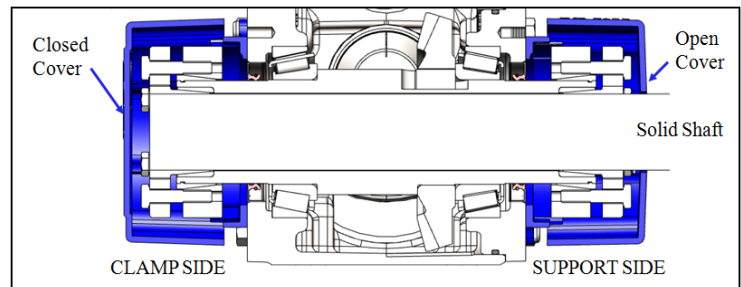
- (1) External Clamp Ring
- (1) External Tapered Ring
- (1) Tapered Bushing
- (1) Threaded Bushing
- (1) Threaded Flange
- (6) Capscrews [HL10 – HL30]

OR (8) Capscrews [HL40]



Note: Each gear drive intended for use with HubLoc™ Keyless Bushing System has (2) cover receiver flanges installed at factory.

Note: Bushings used on clamp side and support side are identical.



SHAFT AND GEAR DRIVE PREPARATION

Prior to installation, clean the customer shaft, gear drive hollow shaft, and bore of threaded bushing to remove all grease and oil prior to assembly.



Grease or oil on shaft will lower torque capacity of bushing/shaft interface. Verify that the solid customer shaft diameter is within the nominal diameter +0/ -.005”.

Ensure that the External Clamp Ring, External Tapered Ring, Tapered Bushing, and **external surface only** of the Threaded Bushing are lightly oiled. If necessary, clean the components and apply oil using a clean cloth.



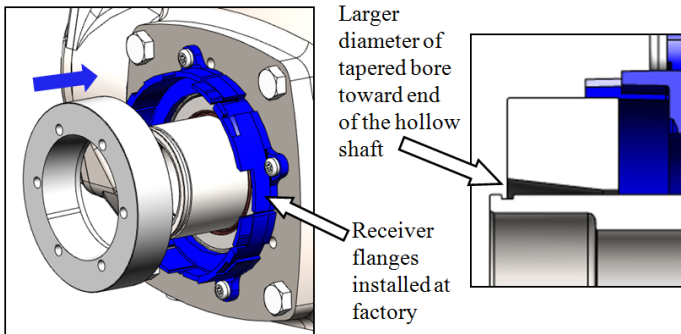
Use of Molybdenum Disulfide lubricants is prohibited.

INSTALLATION – BUSHINGS

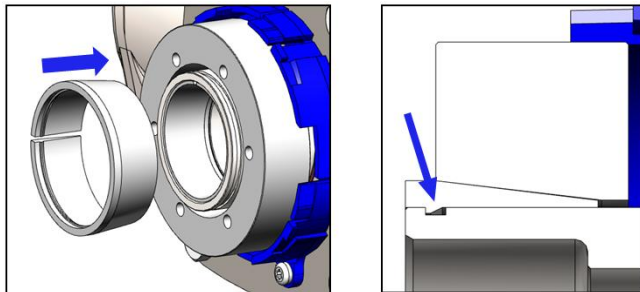
1. Remove Bushing Sets from boxes and disassemble.
2. Install the External Clamp Ring onto the Support side of the hollow shaft with larger diameter of tapered bore facing the end of the hollow shaft.

CAUTION

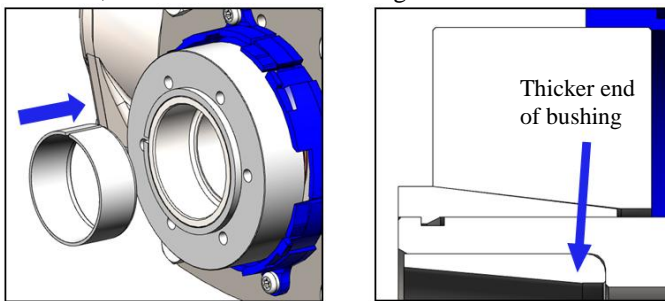
If External Clamp Ring is installed in wrong direction, the External Tapered Ring cannot be installed.



3. Install the External Tapered Ring over the hollow shaft with the internal ridge toward the end of the hollow shaft. Push External Tapered Ring onto hollow shaft until there is an audible “click.” When properly installed, External Tapered Ring will be seated flush with or past the end of hollow shaft. If unable to push External Tapered ring until properly seated, lightly tap end of External Tapered Ring with rubber hammer until click is heard, signaling the internal ridge is seated in groove on hollow shaft.



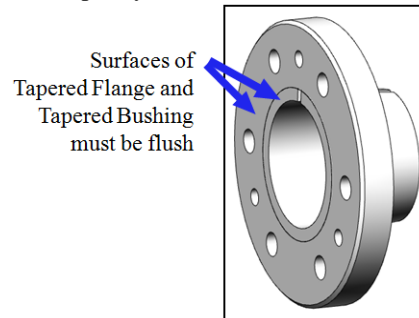
4. Insert the Tapered Bushing into the bore of the hollow shaft, with thicker end of bushing inserted into bore first.



5. Ensure that the Threaded Bushing is turned into the Threaded Flange and that the ends of the two components are flush.

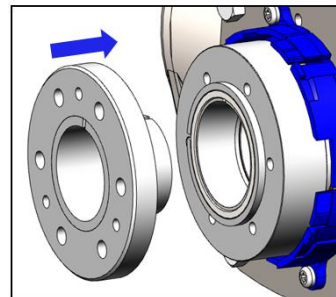
CAUTION

If the ends of the Threaded Bushing and Threaded Flange are not properly aligned, the Threaded Flange could bottom out on the External Clamp Ring or hollow shaft, which can prevent proper clamping and reduce torque capacity of the connection.



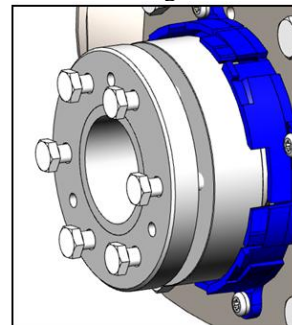
6. Install Threaded Bushing/Threaded Flange assembly into hollow shaft.

NOTE: Be sure that the slot in the Threaded Bushing is **NOT** aligned with the slot in the Tapered Bushing from Step 4.



7. Thread capscrews into flange. **DO NOT** tighten screws.

Begin threading,
DO NOT tighten



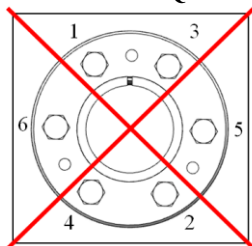
8. Repeat Steps 2-7 on Clamp side.
9. Install gear drive onto customer shaft. Shaft should not extend past Threaded Flange on Clamp side.

10. Tighten capscrews on **CLAMP** side first. **TIGHTEN IN ROTATING SEQUENCE** to torque listed in Table 1 using torque wrench.

CAUTION

Proper tightening will require multiple tightening rotations. If significant screw rotation is needed to achieve specified tightening torque during initial rotations, tightening can be done at up to 10% higher torque than that listed in Table 1. As less rotation is needed to achieve specified torque, tighten only to the torque listed in Table 1. Final rotation should always be tightened to specified torque.

INCORRECT SEQUENCE



CORRECT SEQUENCE

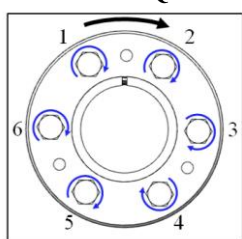


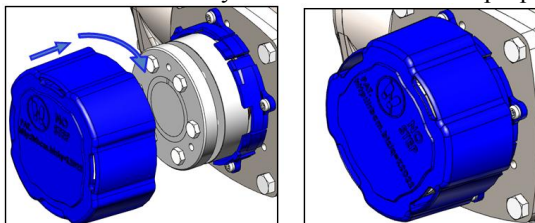
Table 1: Bolt Tightening Torque

HubLoc™ Model	Tightening Torque	
	in-lb	N-m
Carbon Steel	126	14.2
Stainless Steel	84	9.5

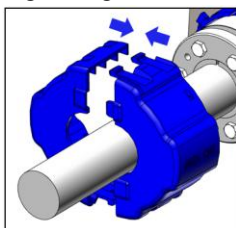
11. Repeat Step 10 on **SUPPORT** side.
NOTE: After operating the gear drive for (2) hours minimum, check capscrew torque on Clamp and Support sides and re-torque if necessary.

INSTALLATION - COVERS

12. Install closed cover on clamp side. Cover is installed by pushing cover onto receiver flange and turning approx. 45°. Cover will audibly “click” when installed properly.



13. Install open cover on support side. Assemble open cover by joining two open cover halves around customer shaft. Halves will audibly “snap” together when properly assembled. Open cover is then installed onto receiver flange using same method as Step 14.



REMOVAL INSTRUCTIONS

IMPORTANT INFORMATION

WARNING

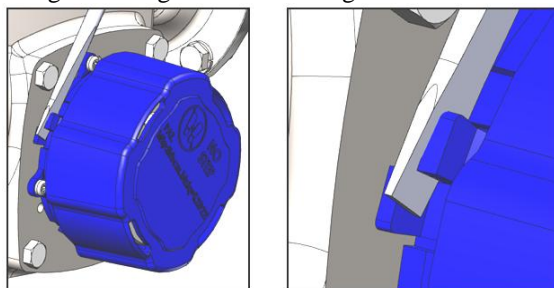
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REMOVAL – COVERS

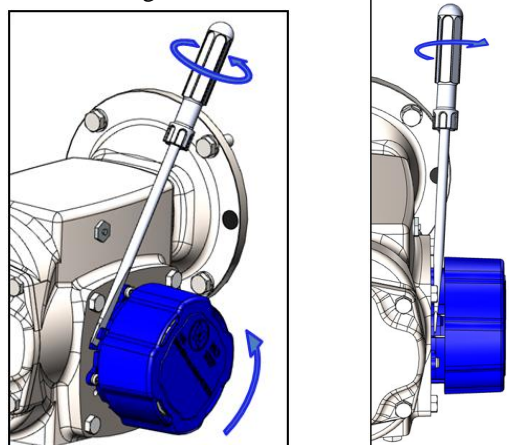
1. Insert long flat tool (such as a wide flat head screwdriver) between the two tabs on outside surface of **CLOSED** cover receiver flange until engaging the flat face of the tab against the gear drive housing as shown.



2. Twist the handle of the tool so that the top of the front tab (toward the cover) is pushed down and away from the gear drive, slowly increasing force while simultaneously rotating the cover in a counterclockwise direction.

CAUTION

Applying excessive force can damage the cover and/or receiver flange, which can render the cover unusable or damage the tamper-resistant feature of the covers. If any portion of cover is broken off at any time, the piece can be identified using metal detectors.

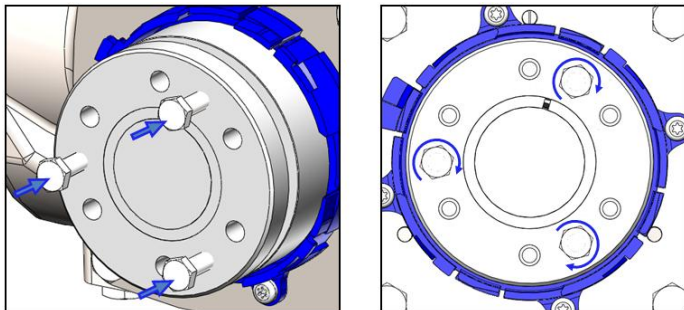


3. Repeat Steps 1 and 2 to remove **OPEN** cover.

REMOVAL – KEYLESS BUSHINGS

4. Loosen and remove all hex bolts of locking device on **CLAMP** side.

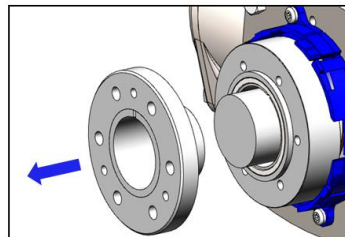
5. Insert (3) bolts removed in Step 4 into the threaded push-off holes on the flange. Tighten the bolts slowly and alternate between bolts. The bushing will likely give a “pop” sound when released.


CAUTION

DO NOT exceed bolt torque specified in Table 1 during bushing push-off. Excessive torque can twist off bolt head. If bushing does not break loose by pushing off with bolts, place wedge between External Clamp Ring and Threaded Flange and tap the wedge with a hammer. If bushing still does not break loose, retighten bolts in push-off holes and tap wedge again as needed.

6. Repeat Steps 4 and 5 to release the **SUPPORT** side bushing.

7. Remove remaining bolts from **CLAMP** side bushing. Remove Threaded Bushing/Threaded Flange assembly from **CLAMP** side.



8. Remove gear drive from shaft.

