



ASSEMBLY INSTRUCTIONS

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ASSEMBLY INSTRUCTIONS - BEARLOK

1. Check to make sure the BEARLOK ring is squarely seated on the BEARLOK nut. If not, loosen the cap screws, seat the ring with light finger pressure, and thread the cap screws into the ring until slight resistance occurs. **DO NOT TIGHTEN!**
2. Assemble onto the shaft threads so the BEARLOK threads are fully engaged for its full length. **FAILURE TO DO THIS WILL DISTORT THE BEARLOK DURING TIGHTENING AND PREVENT PROPER ASSEMBLY.** Do not bring the BEARLOK against the bearing components as it must be able to rotate on the shaft.
3. Centralize the BEARLOK retaining device relative to the shaft thread by tightening each cap screw 1/6 turn (60 degrees or one flat) with a hex wrench in an alternating sequence (see FIGURE 1). Initially the #3 and #4 screws may become loose because of the load placed on the #1 and #2 screws. Rotate the BEARLOK back and forth on the external thread to check for a slight drag. Repeat this process (beginning again with the #1 screw) until the BEARLOK rotates with a drag. BEARLOK sizes 15 and larger which have 8 cap screws may be effectively centralized using only 4 of the screws (90° apart). After rotational drag is felt, the other 4 screws can be lightly tightened but not so much as to change the drag.
4. The centralized and best balanced BEARLOK retaining device can be adjusted and/or preloaded against the adjoining components. This is done with a Whittet-Higgins BEARLOK Assembly Socket (BLAS) or your designated tool. For accurate and effective assembly, ensure that the tool engages the slots in the BEARLOK body section and not just the ring slots.
5. Adjust or preload the BEARLOK against the assembly, and secure the BEARLOK by tightening the cap screws using a torque screwdriver or torque wrench. Follow the same procedure as in sequence 3 above, tightening the screws 1/6 turn (60 degrees or one flat of the wrench) at a time in numerical sequence (For larger sizes, tighten all screws 1 thru 8 in sequence, FIGURE 2). You will not reach the required torque the first time. Repeat until the correct cap screw torque from TABLE 1 is reached. Do not tighten any one screw more than 1/6 turn at a time.
6. **Double check** the torque reading on each cap screw. If accurate, a proper and effective assembly is completed.

FIGURE 1

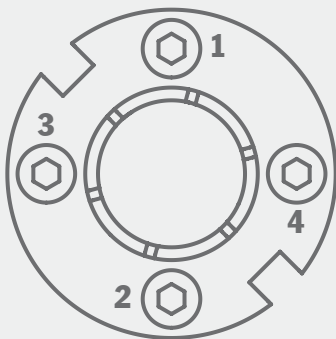
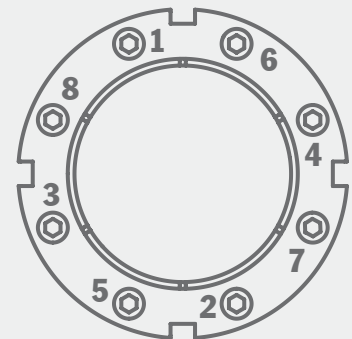


TABLE 1

BEARLOK SIZE	CAP SCREW	TORQUE (IN-LB)
02-03	M3	17
04-08	M4	24
09-13	M5	35
14-30	M6	70
32-40	M8	100

FIGURE 2





ASSEMBLY INSTRUCTIONS - SHOELOK

1. Check the SHOELOK retaining device. If an anaerobic compound is desired on the set screws, remove the screws, apply the adhesive, and replace them in the SHOELOK.
2. Ensure the three set screws are seated against the brass shoes by rotating them with light finger pressure on hex wrench until contact is made. Do not apply any torque to the screws at this time as the brass shoes could be forced out of position and interfere with the assembly.
3. Assemble the SHOELOK onto the shaft threads. The bearings or other retained components can be adjusted or preloaded using a spanner wrench or socket and torque wrench.
4. After the assembled components are correctly adjusted or preloaded, begin to secure the SHOELOK by tightening each of the set screws using approximately one half of the torque (see TABLE 1). Then tighten each set screw up to or slightly less than the maximum torque listed. Do not over-torque.
5. Check the torque reading on each set screw. If accurate, a proper and effective assembly is completed.

DISASSEMBLY INSTRUCTIONS

1. Remove the torque on the set screws by loosening them 1/2 of a turn.
2. Re-set the brass keys into the SHOELOK by tapping the SHOELOK in three places just above each set screw, using a non-marring hammer (see FIGURE 1).
3. The SHOELOK should be able to rotate freely and can be removed from the shaft threads by hand. If the SHOELOK does not freely rotate, repeat steps 2 and 3 above until the SHOELOK rotates easily. This free rotation is critical in order to ensure that the SHOELOK retaining device can be re-used.

FIGURE 1

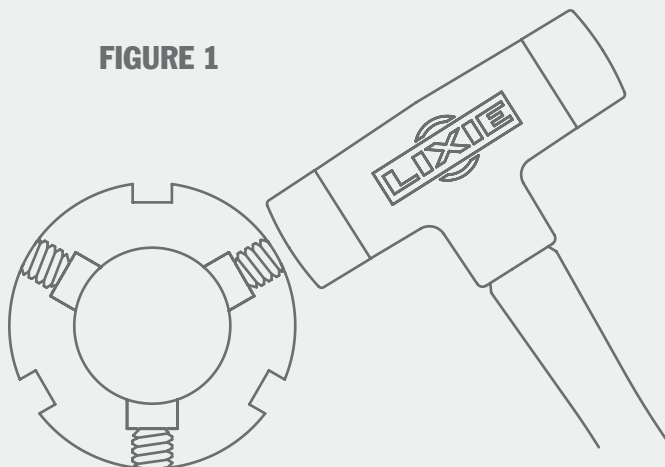


TABLE 1

SHOELOK SIZE	SET SCREW	TORQUE (IN-LB)
04-05	#8-32	20
06-12	#10-24	35
13-16	1/4-20	80
17-22	5/16-18	150
24-30	3/8-16	270
32-40	7/16-14	400



ASSEMBLY INSTRUCTIONS - TANGENTLOK

1. Check the TANGENTLOK retaining device. If an anaerobic compound is desired on the set screws, remove the screws, apply the adhesive, and replace them in the TANGENTLOK.
2. Ensure the three set screws are seated against the segments above the bearing thread by rotating them with light finger pressure on hex wrench until contact is made. Do not apply any torque to the screws at this time as the threads will be deformed and interfere with the assembly.
3. Assemble the TANGENTLOK onto the shaft threads. The bearings or other retained components can be adjusted or preloaded using a spanner wrench or socket and torque wrench.
4. After the assembled components are correctly adjusted or preloaded, begin to secure the TANGENTLOK by tightening each of the set screws using approximately one half of the torque (see Table 1). Then tighten each set screw up to or slightly less than the maximum torque listed. Do not over-torque.
5. Check the torque reading on each set screw. If accurate, a proper and effective assembly is completed.

DISASSEMBLY INSTRUCTIONS

1. Remove the torque on the set screws by loosening them 1/2 to 1 turn.
2. The TANGENTLOK should be loose and easily removed. If it does not rotate easily, lightly tap the TANGENTLOK in three places just above each set screw using a non-marring hammer and it should be able to rotate freely (see FIGURE 1).

FIGURE 1

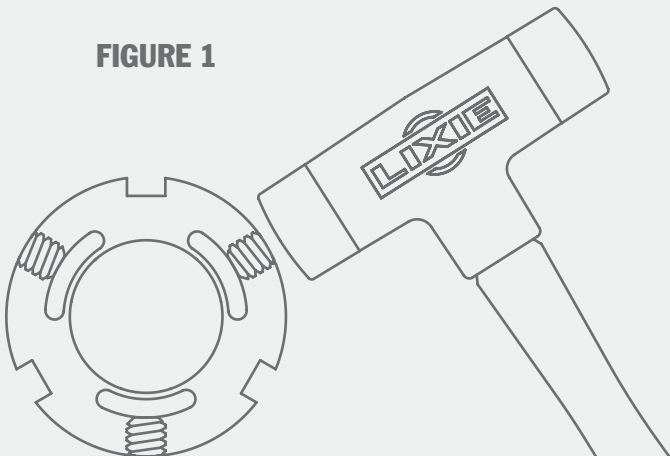


TABLE 1

TANGENTLOK SIZE	SET SCREW	TORQUE (IN-LB)
00-06	#10-32	24
065-14	1/4-28	48
15-18	5/16-18	96
19-24	3/8-16	173
26-32	7/16-14	256
34-40	1/2-13	432

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ASSEMBLY INSTRUCTIONS - CLAMPNUT

1. Check that the protruding hub of the CLAMPNUT is facing the bearing or other component. The protruding hub of the CLAMPNUT is the side with the best thread to face squareness and is designed to be placed against bearings or other components. The use of an anaerobic compound on the socket head cap screw is dependent on the customer's requirements and is applied just before assembly.
2. With the cap screw loose, assemble the CLAMPNUT onto the shaft threads until the CLAMPNUT threads are fully engaged.
3. Hand tighten the cap screw while rotating the CLAMPNUT back and forth until a light drag is felt. This is essential to eliminate the pitch diameter differential between the threads. Failure to snug the cap screw could result in the opening of the CLAMPNUT threads during preloading and subsequent loss of holding power. It also pulls the CLAMPNUT central on the threads.

WARNING!

Never use an impact wrench or other automated device to initially start the CLAMPNUT onto the shaft threads as it may cause cross-threading due to the inherent flexibility of the split design.

4. The lightly snugged CLAMPNUT is now ready to be rotated into position against the bearing/ components, preload applied, and cap screw tightened to the recommended torque. Do not over-torque the cap screws as the CLAMPNUT may close up completely with a possible loss of holding power.

METRIC SCREW SIZE	TORQUE (IN-LB)	TORQUE (N-M)	UNIFIED NATIONAL SCREW SIZE	TORQUE (IN-LB)
M4	24	2.7	#4-40	14
M6	70	7.9	#6-32	25
M8	150	17.0	#10-32	60
M10	300	34.0	1/4-28	150
M12	510	57.0	5/16-24	260

REDUCE STAINLESS STEEL CAP SCREW TORQUE BY 30%



ASSEMBLY INSTRUCTIONS - SPLITNUT

1. Check that the protruding hub of the SPLITNUT is facing the bearing or other component. The protruding hub of the SPLITNUT is the side with the best thread to face squareness and is designed to be placed against bearings or other components. The use of an anaerobic compound on the socket head cap screws is dependent on the customer's requirements and is applied just before assembly.
2. Remove the (2) cap screws to separate the SPLITNUT halves and re-assemble the halves (with the hubs are on the same side) over the shaft thread.
3. Lightly tighten the cap screws to bring the halves together, keeping the gaps between the two slits uniform to each other, until a light drag is felt when rotating the SPLITNUT back and forth. This is essential to eliminate the pitch diameter differential between the threads. Failure to snug the cap screw could result in the opening of the SPLITNUT threads during preloading and subsequent loss of holding power. It also pulls the SPLITNUT central on the threads.

WARNING!

Never use an impact wrench or other automated device to initially start the SPLITNUT onto the shaft threads as it may cause cross-threading due to the inherent flexibility of the split design.

4. The lightly snugged SPLITNUT is now ready to be rotated into position against the bearing/ components, preload applied, and cap screws alternately tightened to the recommended torque while maintaining the slit gap uniformity. Do not over-torque the cap screws as the SPLITNUT may close up completely with a possible loss of holding power.

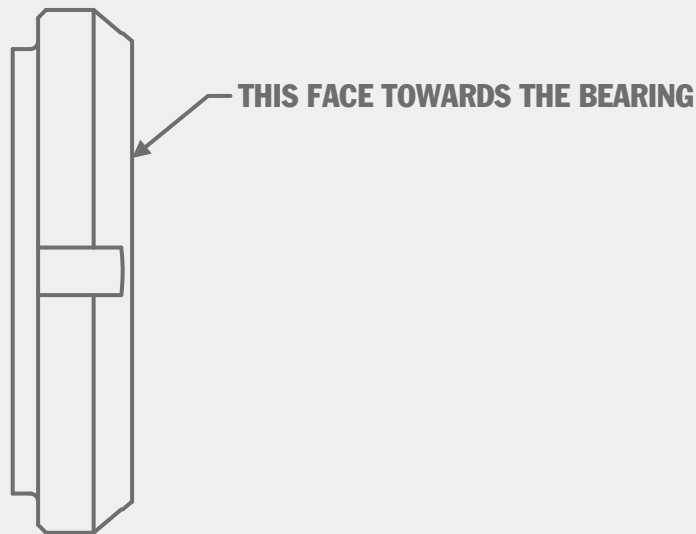
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REDUCE STAINLESS STEEL CAP SCREW TORQUE BY 30%



ASSEMBLY INSTRUCTIONS - BEARHUG

1. The shaft must be lubricated prior to installing the BEARHUG. The Whittet-Higgins Company suggests ISO grade 150 synthetic lubricating oil.
2. Rotate the BEARHUG retaining nut onto the shaft thread with the smaller bevel face towards the bearing. A BEARHUG should never be used as an assembly tool to push the components along a shaft or to seat them against a shoulder.
3. Tighten the BEARHUG by hand until encountering the resistance of the locking collar in the BEARHUG.
4. Using an assembly tool such as a spanner wrench or socket, tighten the BEARHUG until entirely on the threaded portion of spindle or shaft.
5. Use a soft face dead blow hammer to tap the BEARHUG circumferentially on the outside diameter to better center itself from the prevailing torque collar.
6. With the assembly tool, continue to tighten firmly or torque to a preload as recommended by the bearing manufacturer. In emergencies, if proper tools are not available, the BEARHUG can be tightened by use of a drift pin and light tapping of a hammer, but care must be taken to avoid damage to the nut or other components.





ASSEMBLY INSTRUCTIONS - LOCKNUT/LOCKWASHER

1. Place the LOCKWASHER on the shaft with the key in the shaft keyway and the partially bent LOCKWASHER tangs pointing away from the bearings.
2. Rotate a LOCKNUT onto the shaft thread with the smaller bevel face towards the bearing. A LOCKNUT should never be used as an assembly tool to push the components along a shaft or to seat them against a shoulder.
3. Hand tighten the LOCKNUT so that the bearing, LOCKWASHER, and LOCKNUT are in contact.
4. using an assembly tool such as a spanner wrench or socket, tighten the LOCKNUT firmly or torque to a preload as recommended by the bearing manufacturer. In emergencies if proper tools are not available, the LOCKNUT can be tightened by use of a drift pin and light tapping of a hammer, but care must be taken to avoid damage to the nut or other components. In no case should a chisel be used.
5. Once the LOCKNUT is tightened, examine the LOCKWASHER to see if one of the tangs is in position where it can be bent over into one of the LOCKNUT slots. If not, then the LOCKNUT must be slightly backed off until one of the tangs is lined up with one of the slots. The LOCKWASHER tang is then bent over into the LOCKNUT slot using a drift pin and hammer, being careful not to damage any of the assembly components.



ASSEMBLY INSTRUCTIONS - LOCKPLATE

1. Assemble the LOCKNUT onto the shaft thread.
2. Tighten the LOCKNUT to the required preload.
3. Place the LOCKPLATE against the back of the LOCKNUT with the key in the shaft keyway.
4. Rotate the LOCKPLATE counter-clockwise so the key contacts the keyway side.
5. Look through the LOCKPLATE holes to find the 2 holes that best line up with the tapped holes in the LOCKNUT. The 2 LOCKPLATE holes will be 4 holes apart.
6. Reverse (flip) the LOCKPLATE and repeat steps 3-5 to see if the tapped hole alignment is closer. Choose the LOCKPLATE side with the best alignment. (Repeat 3-5 if necessary)
7. In the best alignment, rotate the LOCKNUT so that the 2 hex head screws can be inserted into the tapped holes. Apply supplied thread-locking compound onto the threads of the hex head screws before inserting them into the tapped holes. Clockwise (tightening) of the LOCKNUT will add preload while counter-clockwise (loosening) of the LOCKNUT will decrease preload.
8. Tighten the hex head screws to the recommended torque listed in the tables below.

METRIC SCREW SIZE	TORQUE (N-M)	UNIFIED NATIONAL SCREW SIZE	TORQUE (FT-LB)
M8	2.7	5/16-18	10
M10	7.9	3/8-16	18
M12	17.0	1/2-13	45
		5/8-11	90