



Gear Torqueing Procedure

Lovejoy®/Sier-Bath® Flanged Gear Couplings

Introduction

Carefully follow these instructions for optimum performance and trouble free service.

These instructions apply to ALL standard Flanged Sleeve 'F' series couplings. Lovejoy has calculated the bolt stress and their tightening recommendations, which should always be followed.

There are numerous reasons why the bolts should be properly torqued:

- Couplings resist misalignment and the resulting "force and moments" put a strain on the equipment and connecting fasteners
- If fasteners are loose, they are subject to alternating forces and may fail through fatigue
- A bolt that is not properly preloaded, may become loose after a short period of operation
- The Lovejoy gear coupling design requires 100% of the torque to be transmitted through friction
- If the bolts are not tightened properly, there is less clamping force, less friction and the torque will be transmitted through shear

Because of the combined shear and tensile stresses in the bolts, recommendations for bolt tightening vary from coupling to coupling.

Consult all applicable Federal, State and local laws and regulations covering the safe operation and maintenance of equipment, including, without limitation, the USDOL-OSHA "Lockout / Tagout" procedure set forth in 29 CFR 1910.147.

Hub Size	Shrouded Bolts No. & Size	Tightening Torque (Dry) in-lbs	Tightening Torque (Dry) N-m	Tightening Torque (Dry) ft-lbs
1	6 1/4-28	130	15	11
1.5	8 3/8-24	425	48	35
2	10 3/8-24	425	48	35
2.5	10 1/2-20	940	106	78
3	12 1/2-20	940	106	78
3.5	12 5/8-18	1750	198	146
4	14 5/8-18	1750	198	146
4.5	14 5/8-18	1750	198	146
5	14 3/4-16	2650	299	221
5.5	16 3/4-16	2650	299	221

Warning!
Before beginning coupling installation make sure the machinery is made safe. Discount all power.

Procedure

Bolts should be tightened to the recommended torque specification in the following steps:

1. All bolts should be tightened to one half of the torque tightening values in a crisscross fashion as shown in Tables 1 & 2.
2. Once all bolts have been tightened to half of the torque tightening value, follow the same crisscross pattern and torque to the final torque value as shown in Tables 1 & 2.
3. Finally, check the first bolt tightened to assure it has maintained its torque value after all bolts have been tightened, if it does not meet the torque value in Tables 1 & 2 follow the same crisscross pattern and torque all bolts again.

Note: If room permits, always tighten the nut, not the bolt since part of the tightening torque is needed to overcome friction.

As there is additional friction when turning the bolt, more of the effort goes into friction than in to stretching the bolt. Always remember to properly seat a bolt before tightening the nut. Drawing the bolt through the flange by tightening the nut could result in insufficient preloading of the bolt.

Hub Size	Exposed Bolts No. & Size	Tightening Torque (Dry) in-lbs	Tightening Torque (Dry) N-m	Tightening Torque (Dry) ft-lbs
1	6 1/4-28	130	15	11
1.5	8 3/8-24	425	48	35
2	6 1/2-20	940	106	78
2.5	6 5/8-18	1750	198	146
3	8 5/8-18	1750	198	146
3.5	8 3/4-16	2650	299	221
4	8 3/4-16	2650	299	221
4.5	10 3/4-16	2650	299	221
5	8 7/8-14	3650	412	304
5.5	14 7/8-14	3650	412	304
6	14 7/8-14	3650	412	304
7	16 1-14	4850	548	404
8	16 1-1/8-12	6300	712	525
9	18 1-1/4-12	8300	938	692