

# Turnbuckle Torque Arm Installation Procedure

Figure 1. Turnbuckle Type Torque Arm Parts

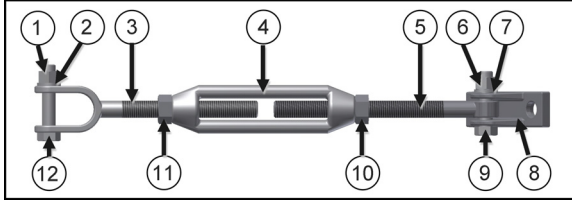
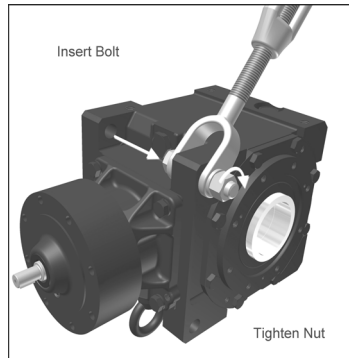


Table 1. Turnbuckle Type Torque Arm Parts

Item	Description	Item	Description
1	Hex Nut	7	Lock Washer
2	Lock Washer	8	Fulcrum Mounting Bracket
3	Threaded Extension Rod	9	Hex Bolt
4	Turnbuckle	10	Locking Nut (if supplied)
5	Threaded Arm	11	Locking Nut (if supplied)
6	Hex Nut	12	Hex Bolt



**1**

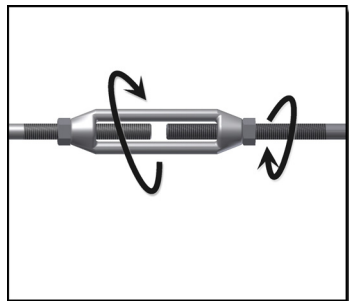
Attach the torque arm threaded extension rod to the bevel housing, as shown in Figure 1, at the housing corner eyelet, using the appropriate nut, bolt and lockwasher.

- Insert the bolt through the brackets, torque arm sleeve (if supplied) and reducer housing eyelet.
- Place the lockwasher on the bolt and secure with nut.

Table 2 Bolt Tightening Torques

Unit Size	Bolt Size <sup>[1]</sup>	ft·lb <sub>r</sub>	(N·m)
A	M16 x 75	152 - 167	(206 - 227)
B	M20 x 100	290 - 319	(392 - 431)
C	M24 x 105	507 - 558	(686 - 755)
D	M24 x 125	507 - 558	(686 - 755)
E	M24 x 125	507 - 558	(686 - 755)
F	Consult Factory		

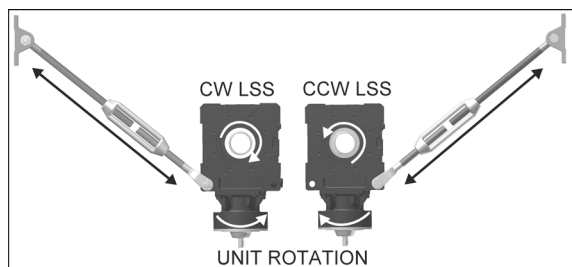
Note<sup>[1]</sup> Bolt class equal to ISO/JIS Class 8.8



**2**

Install the turnbuckle onto the threaded extension rod (gearbox side) and then threaded arm (foundation side) to the turnbuckle

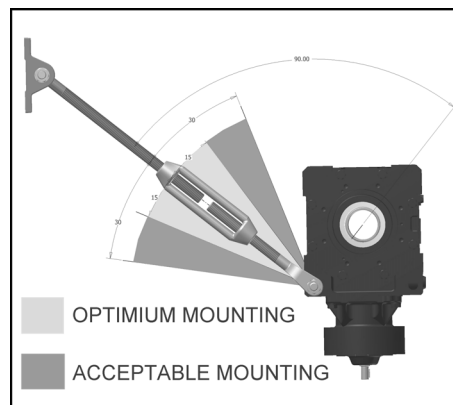
If the assembly was supplied with hex nuts to secure the turnbuckle, install the nuts loosely, ensuring the left hand nut is used on the threaded arm, prior to installing the turnbuckle and threaded arm



**3**

Position the torque arm so it will be in tension during unit operation and mount the fulcrum mounting bracket to suitable structure or foundation. Consider installing two torque arms for reversing applications to allow torque arm to be in tension for each direction of rotation.

Mounting hardware for fulcrum mounting bracket are NOT supplied by Sumitomo.

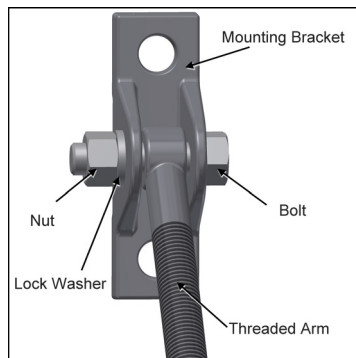


**4**

Position the torque arm as close as possible to 90° relative to the unit output bore / driven equipment shaft.

Sumitomo does not recommend combining torque arm assemblies to achieve a greater overall length.

## Tie Rod Torque Arm Installation Procedures (Continued)

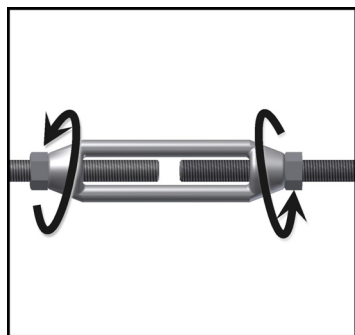


### 5

- Assemble the threaded arm to the fulcrum mounting bracket, as shown.  
Some adjustment of the turnbuckle may be required to lengthen or shorten the overall length.  
Secure it with the appropriate nut, bolt and lockwasher.
- Insert the bolt through the brackets and threaded arm eyelet.
  - Place the lockwasher on the bolt and secure with nut.

Table 5 Bolt Tightening Torques

Unit Size	Bolt Size[1]	ft•lb <sub>r</sub>	(N•m)
A	M16 x 65	152 - 167	(206 - 227)
B	M16 x 80	152 - 167	(206 - 227)
C	M16 x 80	152 - 167	(206 - 227)
D	M16 x 80	152 - 167	(206 - 227)
E	M16 x 80	152 - 167	(206 - 227)
F	Consult Factory		



### 6

- If turnbuckle hex nuts were supplied, secure the turnbuckle position by adjusting the previously installed turnbuckle nuts.

Table 6 Nut Tightening Torques

Unit Size	Nut Size[1]	ft•lb <sub>r</sub>	(N•m)
A	M20	290 - 319	(392 - 431)
B	M24	507 - 558	(686 - 755)
C	M24	507 - 558	(686 - 755)
D	M24	507 - 558	(686 - 755)
E	M24	507 - 558	(686 - 755)
F	Consult Factory		