

POWER-LOCK TF SERIES INSTRUCTION MANUAL

NOTICE FOR SAFETY

Read this instruction manual and other attached documents thoroughly before installing and using the POWER-LOCK.

Use the POWER-LOCK only after having full knowledge of the equipment and all applicable safety procedures.

Keep this instruction manual where the user can always refer to it.

In this instruction manual, safety notices are divided into two levels: WARNING and CAUTION.

WARNING : Death or serious injury may result if the POWER-LOCK is installed incorrectly.

CAUTION : Injury or physical damage may result if the POWER-LOCK is installed incorrectly.

Note: Even if an item is marked **CAUTION**, there is a possibility of serious injury depending on the situation. For safe operation, it is important to comply with the contents of this instruction manual.

WARNING

(Overall)
If the device is used on equipment for transporting people, install the appropriate protection devices to the transportation equipment to provide the required safety.
If the device is used on elevation equipment, install the appropriate safety devices to the elevation equipment to prevent the falling of materials. The falling of materials may cause injury to personnel or damage to the equipment.
Comply with all applicable safety standards of the country where the device is used. When revisions are published, those updated revisions shall apply.

CAUTION

(Delivery)
Verify that you received exactly what you ordered. Use of the incorrect item may cause injury or equipment damage.

(Installation)
Always use a torque wrench when installing the tightening bolts and adhere to the procedure and torque values listed in this instruction manual. If the bolts are tightened without the use of a torque wrench, the correct torque may not be obtained causing slippage or deformation of the POWER-LOCK and result in an accident.

Never use oils containing silicone or molybdenum disulfide lubricants when lubricating the connecting surfaces (e.g. shaft or hub inner surface) for the POWER-LOCK.

Only use the bolts that came with the POWER-LOCK. If bolts are missing or damaged, contact our sales office or our dealers from whom you purchased for replacement. Use of other bolts may result in breakage of the bolt and cause an accident.

Never strike the POWER-LOCK with a hammer or other such tool when mounting the POWER-LOCK to the shaft and hub. Doing so may deform the POWER-LOCK and cause an accident.

(Removal)
Always confirm that there are no torque or thrust loads on the hub or shaft before removing the POWER-LOCK. If torque or thrust loads are present, the POWER-LOCK may suddenly release and allow the device to spin or come off when the tightening bolts are loosened. Especially for elevator applications, never loosen the tightening bolts while a load is being held. Doing so may cause the load to drop.

(Repeated use)
Completely inspect each part of the POWER-LOCK prior to reusing. If any damage is found, replace the unit.

Thank you for your purchase of the TF series POWER-LOCK.

The POWER-LOCK is a frictional, keyless shaft-hub locking device for connecting hubs and shafts subject to large torque variations. Fitting is simply made by tightening bolts after installing the POWER-LOCK between the shaft and hub. Since torque is transmitted by the contact pressure and friction between the surfaces in contact with the hub and shaft, the condition of the contact surfaces and proper tightening of the bolts are of great importance. Read first and then follow all of the instructions carefully so as to ensure satisfactory performance.

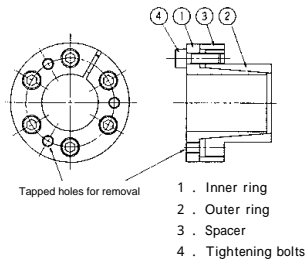


Fig. 1: Configuration

Mounting

- Clean the inner surface of the hub and surface of the shaft, and apply a slight amount of oil to both surfaces. (Never use lubricants containing silicone or molybdenum disulfide.)
- Remove the tightening bolts from the POWER-LOCK and clean and slightly oil or grease them. Threads and seats of the tightening bolts must be sufficiently lubricated. (If the POWER-LOCK is not sufficiently lubricated at all locations, excess friction will result and prevent the specified torque from being obtained.)
- Insert the POWER-LOCK into the hub and shaft and tighten the bolts by hand until a slight positive contact is obtained and bring them to desired position. (Never strike the POWER-LOCK with a hammer or other such tool during the mounting.)
- Set a torque wrench to approximately 1/4 of the torque MA (refer to the table given below for torque MA) and tighten each of the tightening bolts evenly in the sequence shown in figure 3.

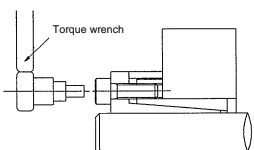


Fig. 2

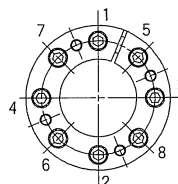


Fig. 3 Tightening sequence for bolts

- Raise the torque wrench setting to 1/2 of the torque MA and repeat the procedure given in step 4 above.
- Raise the torque wrench setting to the full torque MA and repeat the procedure given in step 4 above.
- Finally confirm that all tightening bolts have been tightening to torque MA. To do this, moving clockwise across the bolts, tighten each one until none can be turned by a torque wrench set at MA.

Table 1 : Tightening bolt size and torque MA

POWER-LOCK shaft dia. mm	Tightening bolt size	Tightening torque MA
		N·m {ft·lbs.}
6 - 7	M 3	2.25 { 1.66}
8 - 14	M 4	4.80 { 3.54}
15 - 16	M 5	9.80 { 7.22}
18 - 42	M 6	16.7 { 12.3}
45 - 65	M 8	40.2 { 29.7}
70 - 90	M10	81.3 { 60.0}

Removal

- Confirm that there is no torque or thrust loads on the hub or shaft. When the tightening bolts are loosened, the POWER-LOCK may suddenly release and allow the device to spin or come off. After ensuring safety, slowly loosen and remove the tightening bolts.
- Remove hub and the POWER-LOCK from the shaft.
- If the POWER-LOCK still locks even after loosening bolts, tighten bolts into the tapped holes for removal. (see Fig.4)

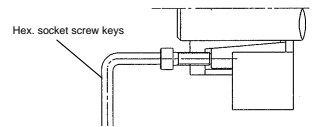


Fig. 4 Removal

Important

- Never use lubricants containing silicone or molybdenum disulfide.
- When installing the tightening bolts, always use a torque wrench.
- Do not use any bolts other than the bolts that were supplied with the POWER-LOCK. (The bolts required for the POWER-LOCK are special bolts of a high tensile strength and only those supplied with the POWER-LOCK should be used.)
- Use the spacer on a mounting, otherwise the rated transmissible torque may not get properly.

Limited Warranty

Range of warranty

With regard to any troubles happened to our products, replacement or repair of such troubled parts will be provided for free of charge during the effective period of warranty, provided that installation and maintenance/management of said products have been performed properly pursuant to the description of this instruction manual and said products have been used under the condition described in the brochures or agreed separately through mutual consultations. The content of warranty is limited only to the POWER-LOCK itself delivered to you and the judgment thereof will be made by our selection because such judgment pertaining to the range of warranty is often complex.

Items falling under any of the following points shall be excluded from our warranty:

- when used under other conditions than the same described in the brochures or agreed separately,
- when any failure is found in the installation, wiring or coupling with other equipment,
- in case either the customer or supplier has altered the structure of our products by undertaking remodeling, etc.,
- in case the product is repaired by other facility than our company or our designated factory,
- in case the customer's maintenance /management has been insufficient and operational environment is not appropriate,
- when damaged by such unavoidable situations as an act of God or disaster,
- when our product has suffered from secondary damage owing to the failure of customer's equipment,
- when damaged owing to the parts which were supplied by the customer and built-in our product, or the parts which were designated by the customer and used in our product, or
- when any damage other than the above has been caused by reason we shall not be held

Warranty period

The warranty period shall be either 18 months after shipment from our factory or 12 months after starting operation, whichever is shorter. Any and all inspection/repair undertaken by us after the above warranty period has passed will be charged. We will be willingly accepting at cost your request for any inspection and repair arising by reasons outside our warranty as above even during the warranty period. Please do not hesitate to contact our dealers from whom you purchased.

Miscellaneous

Any matters described in this instruction manual may be changed without notice, to which your understanding is appreciated. We have tried our best in preparing the contents of this instruction manual so that any mistakes or oversights may be minimized. Should any mistake or oversight be found, we will be more than happy if you would advice us of them.

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