

# POWER-LOCK ML SERIES ML TYPE / MG TYPE 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 ML 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 nuts 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 nut is of great importance. Read first and then follow all of the instructions carefully so as to ensure satisfactory performance.

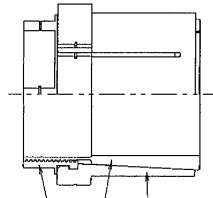
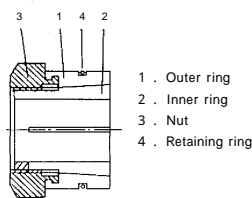


Fig. 1: Configuration

## Mounting

- Clean off the shaft and hub bore with a clean rag dampened with an alcohol or a commercial solvent. Never use oil and / or grease.
- Insert the POWER-LOCK into the hub and shaft and tighten the nut lightly by hand.
- Position the POWER-LOCK and hub to desired position on the shaft. (Never strike the POWER-LOCK with a hammer or other such tool.)
- Tighten the nut to the specified tightening torque MA listed in the table 1 by using torque wrench. (See Fig.2 or Fig. 3) Keep the gap when mounting on the stepped shaft as shown in Fig.4.

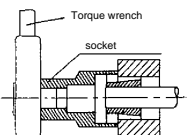


Fig. 2

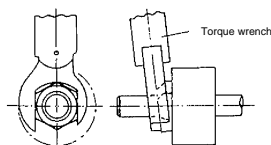


Fig. 3

## Removal

- Confirm that there is no torque or thrust loads on the hub or shaft. When the nut is loosened, the POWER-LOCK may suddenly release and allow the device to spin or come off. After ensuring safety, slowly loosen and remove the nut.
- Remove hub and the POWER-LOCK from the shaft.

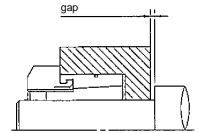


Fig. 4

Table 1 : Locking nut size and torque MA

	POWER-LOCK shaft dia. (mm)	Width across flats of nut (mm)	Tightening torque MA N·m {ft·lbs.}
ML TYPE	5 - 6	17	5.39 { 3.98 }
	7 - 9	22	16.7 { 12.3 }
	10 - 12	24	24.5 { 18.1 }
	14 - 16	32	60.8 { 44.9 }
	17 - 19	36	104 { 76.7 }
	20 - 24	41	129 { 95.2 }
MG TYPE	25 - 28	46	178 { 131 }
	30 - 32	50	274 { 202 }
	34 - 38	50	260 { 192 }
	40 - 45	60	316 { 234 }
	48 - 50	65	554 { 408 }
	55	70	600 { 443 }
	60	75	635 { 469 }
	65 - 70	82	680 { 502 }
	75	90	750 { 554 }

## Important

- Never use oil and / or grease. Dry use only.
- Always use a torque wrench, when tightening the nut.
- Never strike or hit the POWER-LOCK. Damage may result.
- If the hub length is longer than dimension  $L_1$  ( $B=L_1$ ), set one of hub end to contact with the nut as shown in Fig.5. If the hub length is shorter than dimension  $L_1$  ( $L_1=B$ ), set the hub approximately in the center of the retaining as shown in Fig.6.

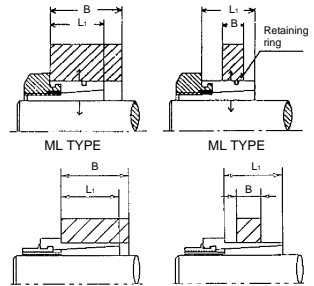


Fig. 5

Fig. 6

## 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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