

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.

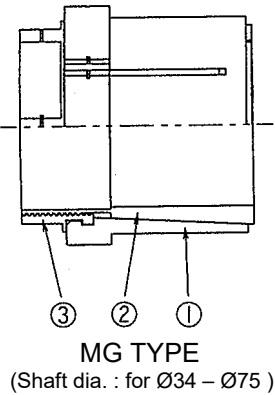
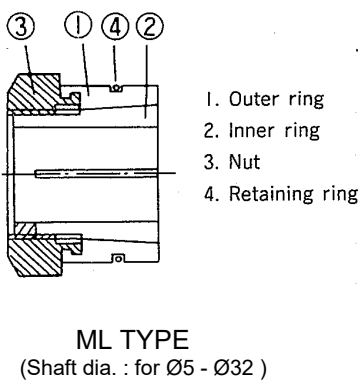


Fig. 1: Configuration

Installation

- 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.) (Never tighten the tightening bolts unless the hub and shaft are fully inserted into the POWER-LOCK. If the tightening bolts are tightened with the POWER-LOCK alone, the POWER-LOCK may deform and become unusable.)
- Tighten the nut to the specified

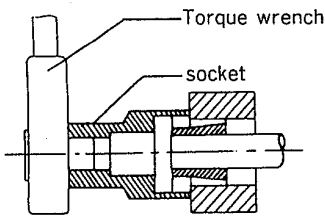


Fig. 2

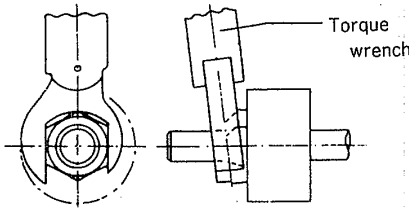


Fig. 3

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.

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.

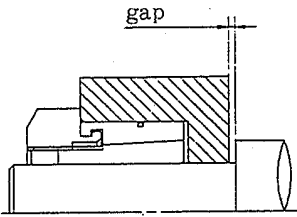


Fig.4

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}
	25 – 28	46	178 {131}
MG TYPE	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 L1 ($B \geq L1$), set one of hub end to contact with the nut as shown in Fig.5. If the hub length is shorter than dimension L1 ($L1 \geq B$), set the hub approximately in the center of the retaining as shown in Fig.6.

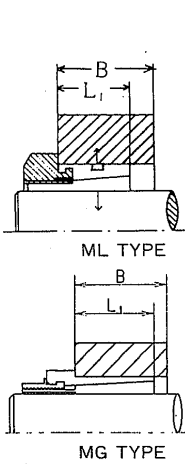


Fig. 5

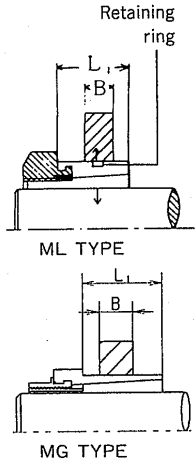


Fig.6

Warranty

TSUBAKIMOTO CHAIN CO.: hereinafter referred to as “Seller”

Customer: hereinafter referred to as “Buyer”

Goods sold or supplied by Seller to Buyer: hereinafter referred to as “Goods”

- Warranty period without charge
Effective 18 months from the date of shipment or 12 months from the first use of Goods, including installation of Goods to Buyer’s equipment or machines - whichever comes first.
- Warranty coverage
Should any damage or problems with the Goods arise within the warranty period, given that the Goods were operated and maintained according to the instructions provided in the manual, Seller will repair and replace at no charge once the Goods are returned to the Seller. This warranty does not include the following:
 - Any costs related to removal of Goods from the Buyer’s equipment or machine to repair or replace parts.
 - Costs to transport Buyer’s equipment or machines to the Buyer’s repair shop.
 - Costs to reimburse any profit loss due to any repair or damage and consequential losses caused by the Buyer.
- Warranty with charge
Seller will charge a fee for any investigation and repair of Goods caused by:
 - Improper installation due to not properly following the procedures in the instruction manual.
 - Insufficient maintenance or improper operation by the Buyer.
 - Incorrect installation of Goods to other equipment or machines.
 - Any modifications or alterations of Goods by the Buyer.
 - Any repair by engineers other than the Seller or those designated by the Seller.
 - Operation in an inappropriate environment not specified in the manual.
 - Force Majeure or forces beyond the Seller’s control such as natural disasters and injustices committed by a third party.
 - Secondary damage or problems incurred by the Buyer’s equipment or machines.
 - Defective parts supplied, or specified by the Buyer.
 - Incorrect wiring or parameter setting by the Buyer.
 - The end of life cycle of the Goods under normal usage.
 - Loss or damage not liable to the Seller.
- Dispatch service
Service to dispatch a Seller’s engineer to investigate, adjust or trial test Seller’s Goods is at the Buyer’s expense.
- Disclaimer
 - In our constant efforts to improve, TSUBAKIMOTO CHAIN may make changes to this document or the product described herein without notice.
 - Considerable effort has been made to ensure that the contents of this document are free from technical inaccuracies and errors. However, any such inaccuracies or errors reported will be gladly examined and amended as necessary.



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