# INSTALLATION MANUAL

# *MINI KEEPER*

**MK08**

**MK10**

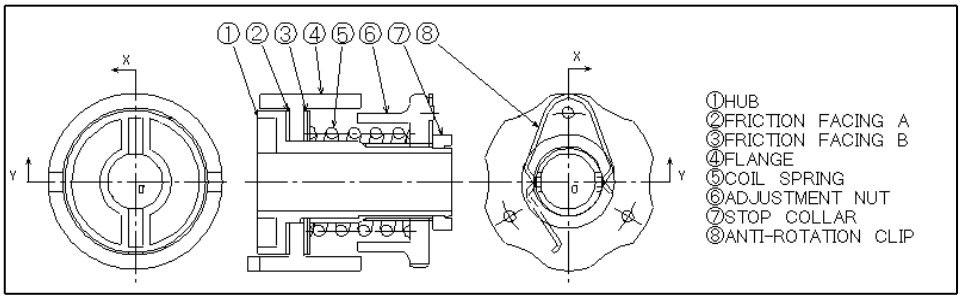
**MK12**

Ⅰ. STRUCTURE

Ⅱ. INSTALLLATION

Ⅲ. TORQUE SETTING

# I .STRUCTURE




# II .INSTALLATION

Before installation

The structure of MINI KEEPER cannot be disassembled.

If you disassemble by force, parts will be damaged or MK will not achieve a function.

(1)Install to a shaft

①All bores of MK are finished.

Recommended tolerance of shaft is h7 or h8.

②Connection on a shaft use the pin pocket on the end.

As shown in the Fig. 1, a pin is inserted in a shaft and it sets to a pin pocket.

Give clearance between a pin and pin pocket as about 0.5mm.

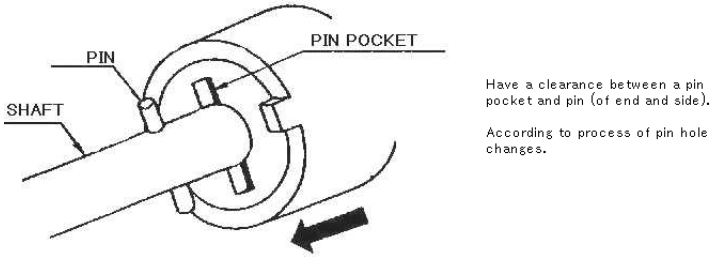



Fig. 1

③Refer to Table 1 for a pin and an application hole.

| Model | Diameter | Strength | Application hole |
|---|---|---|---|
| MK08 | 2.5 | 14 | $\phi 2.5^{+0.09}_{0}$ |
| MK10 | 2.5 | 20 | |
| MK12 | 2.5 | 24 | |

Table 1　Pin　Size

(2)Attachment with a driven member

Attachment with a driven member (gear, pulley or etc.) uses a jaw of flange.

Refer to Fig. 2.

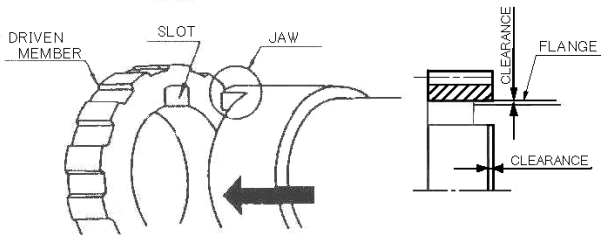



Fig. 2

Cut slots to the end face of driven member and insert a jaw.

At this time, be sure to make clearance so that thrust and radial load do not act to the end face of flange with jaws.

Give a clearance of about 0.5mm.

When there is no clearance, a load will be applied to a friction face, and it will result in unusual wear and torque.

(3) Caution on installation

①Driven member

The set to a shaft use a ball bearing with small rotational resistance.

If you use metal etc., there is a possibility that slip torque may increase.

②Positioning

Ensure positioning to driven member and jaws of flange by color, snap ring and the stage of shaft, so that thrust is not applied or MK does not fall out.

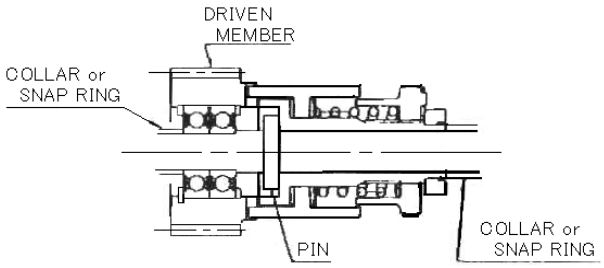



Fig. 3

# Ⅲ.TORQUE SETTING

①At this time, the scale on the perimeter of the adjustment nut is as shown on the following fig. 4.

Please confirm.

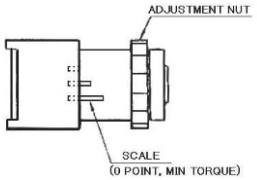



Fig. 4

②A setup of torque should bind tight and perform an adjustment nut.

Refer to the torque curve for torque adjustment.

Give a torque scale as a standard at the time of carrying out a torque setup.

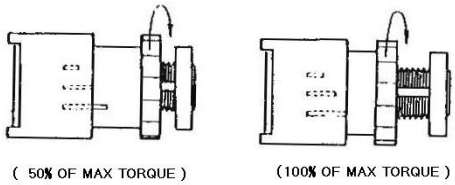
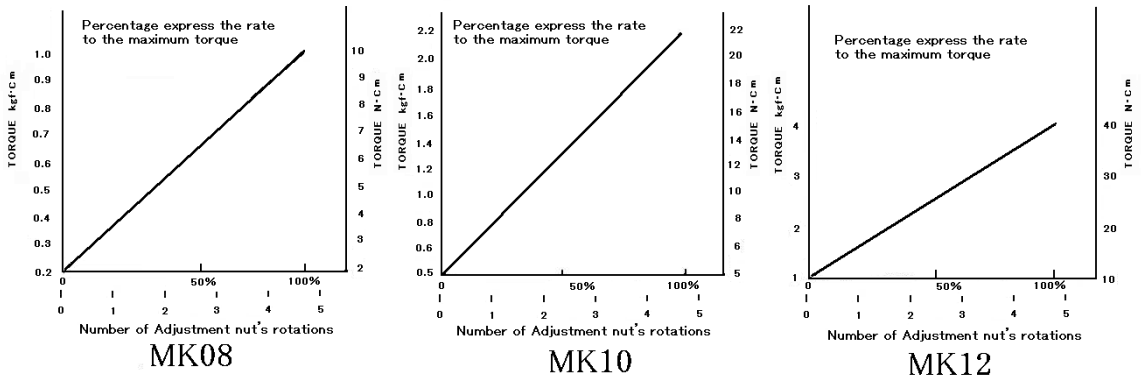



Fig. 5




Graph 1　(Torque curve)

③Prevent rotation of an adjustment nut, after torque setting.

Prevent rotation by setting attached clip between an adjustment nut and a stop collar, as following figure.

Be sure to check that the projection of a clip is contained in the slot (both sides) on the Hub.

It becomes a prevention of rotation because a clip hits the stop button (convex part) of an adjustment nut.

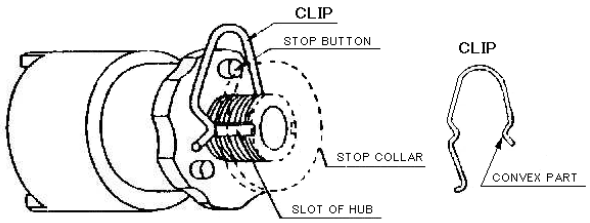


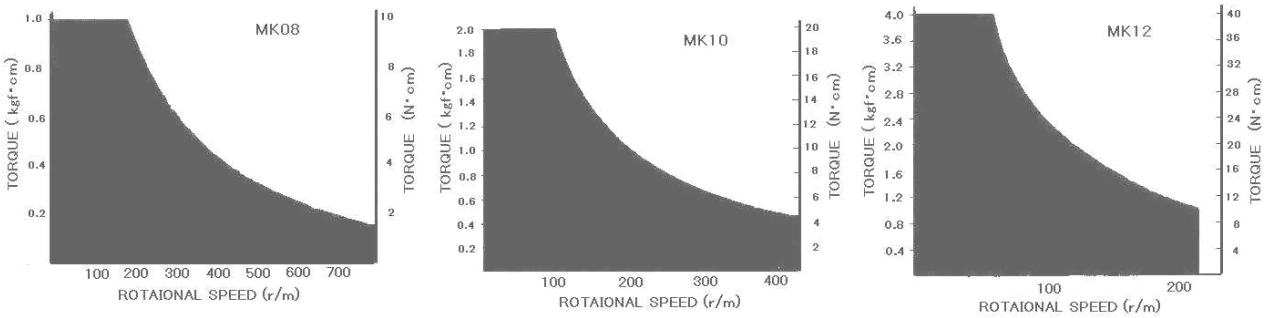

Fig.　5

1．If water, oil, etc. adhere to a friction face, strange torque occurs and can not apply stabilized torque.

2．The circumference temperature of MK is based on 35 degree or　less.

When you exceed this temperature, please consult to our company.

3．The use range is determined by the relation between slip torque and number of rotation.




Graph 2　(Relation of torque and rotational speed)

# WARNING

**USE CARE TO PREVENT INJURY.**

**COMPLY WITH THE FOLLOWING TO AVOID SERIOUS PERSONAL INJURY.**

[WHOLE]

Do not use in atmosphere of oil and inflammable gas due to fear of ignition and explosion.
High temperature is possible, as it is a friction type Clutch & Brake.

Be sure to install a safe cover in order that the Clutch & Brake cannot be touched.
When you open a safe cover, establish a safe mechanism in order to stop the revolution immediately.

When used in the elevator for staff or materials, establish safeguard in the elevator system side.
There is fear of accident resulting in injury or death, or breakage of equipment by reckless-run, fall, or object falling

[TRANSPORTATION]

Do not enter under the product, when you hang for conveyance.
There are fears of accident resulting in injury or death by falling.

[INSTALL]

Be sure to tighten bolt and prevent loosing bolt by adhesives and spring washers.

[OPERATION]

Do not carry out operation beyond specifications, as it is the product selected by the condition that determines the selection.

[CHECK & MAINTENANCE]

After a slip, the product has a possibility of having high temperature by internal frictional heat.
If you touch, burns are possible.

## 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”

1. Warranty period without charge
   18 months effective the date of shipment or 12 months effective the first use of Goods, including installation of Goods to Buyer’s equipment or machine - whichever comes first.
2. Warranty coverage
   Should any damage or problem 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:
   1) Any costs related to removal of Goods from the Buyer’s equipment or machine to repair or replace parts.
   2) Cost to transport Buyer’s equipment or machines to the Buyer’s repair shop.
   3) Costs to reimburse any profit loss due to any repair or damage and consequential losses caused by the Buyer.
3. Warranty with charge
   Seller will charge any investigation and repair of Goods caused by:
   1) Improper installation by failing to follow the instruction manual.
   2) Insufficient maintenance or improper operation by the Buyer.
   3) Incorrect installation of Goods to other equipment or machine.
   4) Any modifications or alterations of Goods by the Buyer.
   5) Any repair by engineers other than the Seller or those designated by the Seller.
   6) Operation in an inappropriate environment not specified in the manual.
   7) Force Majeure or forces beyond the Seller’s control such as natural disasters and injustices done by a third party.
   8) Secondary damage or problem incurred by the Buyer’s equipment or machine.
   9) Defected parts supplied, or specified by the Buyer.
   10) Incorrect wiring or parameter setting by the Buyer.
   11) The end of life cycle of the Goods under normal usage.
   12) Loss or damage not liable to the Seller.
4. Dispatch service
   Service to dispatch a Seller’s engineer to investigate, adjust or trial test Seller’s Goods is at the Buyer’s expense.
5. Disclaimer
   1) In our constant efforts to improve, TSUBAKIMOTO CHAIN may make changes to this document or the product described herein, without notice.
   2) 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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DATE 2020/09/10 Bulletin No. 05L00TS00E1