

INSTALLATION MANUAL

TORQUE KEEPER

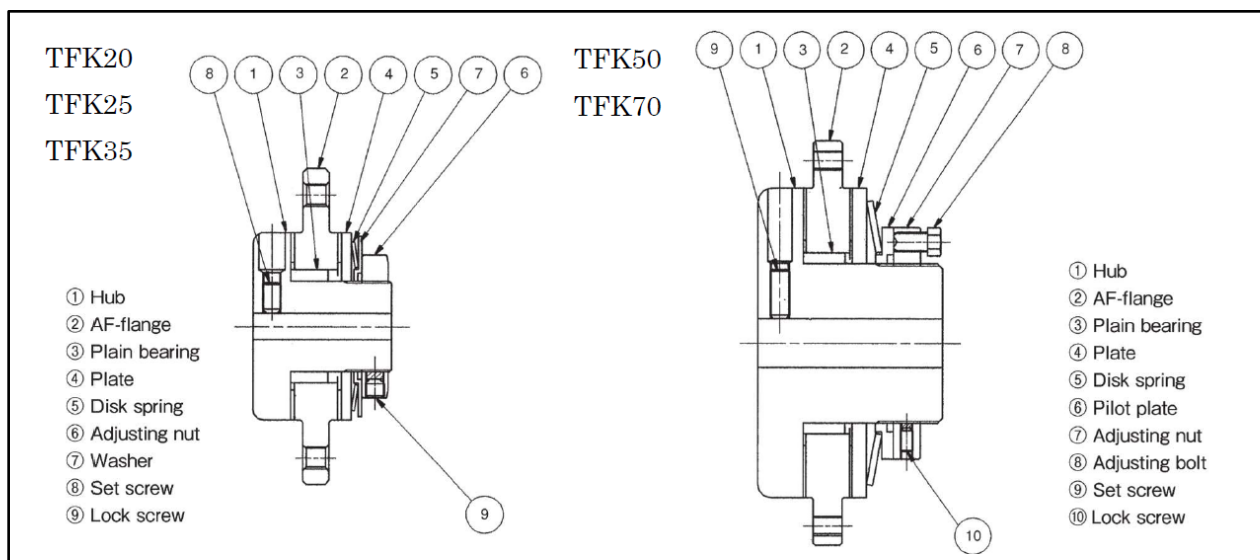
TFK20、TFK25、TFK35、TFK50、TFK70

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TSUBAKIMOTO CHAIN CO.

I . STRUCTURE



II . GENERAL

①Torque keepers are shipped in rough bore, please rebore after disassembling.

Boring Hub after taking parts.

②When disassembling two or more units, do not exchange component parts each other.

③When reboring Hub, be careful of keeping concentricity.

④Keep the friction face of Torque keeper dry from water and oil, in order to obtain the stabilized torque.

⑤Install the Torque keeper on a machine, handle with care. Don't shock Adjustment nut and bolts.

⑥Using Timing belt or Roller chain, be careful of over tension, which cause unstabilizes slipping torque.

⑦Torque keepers are shipped with torque setting at 50% of maximum torque.

III. DISASSEMBLING

When disassembling two or more units, do not exchange component parts each other.

If component parts are exchanged, torque curve and real slip torque are not in agreement.

①TFK20,25,35

Loosen the Adjustment nut by hook spanner, Remove all component parts from Hub.

Choose the hook spanner from table 1.

②TFK50,70

Loosen 3 Adjustment bolts, remove all component parts from Hub.

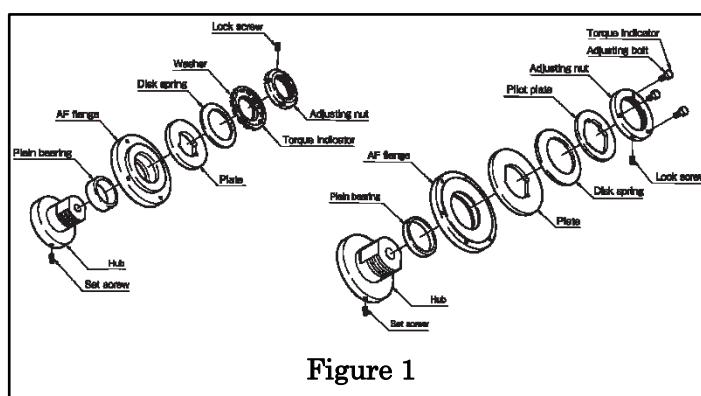


Figure 1

Table 1

Model	Hook spanner size
TFK20	34/38
TFK25	52/55
TFK35	58/65

IV. REBORING AND KEY WAY MACHINING

Chuck the flange of the Hub and check the concentricity as Fig.2

①rebore

Reboring Hub, be careful of alignment of chucking.

②keyway

Place the key way on the tapping hole.

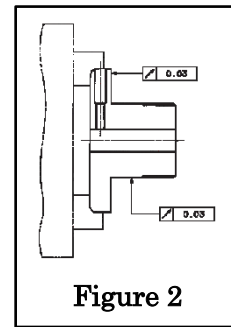


Figure 2

V. ASSEMBLING

Before assembly, component parts shall be clean and free from oil, grease, dust and dirt.

Assemble as the procedure below.

If there are oil, dust and dirt on the friction face, slip torque is not stabilized.

PROCEDURE

1. TFK20,25,35 (Refer to Fig.1 and Fig.3)

①Set Plane bearing, AF flange, Plate, and Disc spring onto Hub.

Note) The grinding face of Plate is united with friction face.

②Set Washer, as “0” of Torque scale and Set screw of Hub become the same position.

Note) If Washer becomes reverse, slip torque is not stabilized.

③Set Adjustment nut onto Hub.

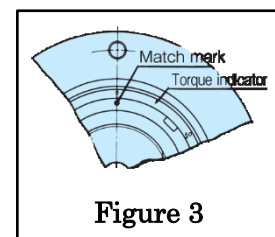


Figure 3

2. TFK50,70 (Refer to Fig.1 and Fig.4)

①Set Plane bearing, AF flange, Plate, Disc spring, and Pilot plate onto Hub.

Note) The grinding face of Plate is united with friction face.

②Set Adjustment nut that turned up match mark side.

Tighten it by hand, put to Hub's mark together.

③Set Adjustment bolts onto Adjustment nut.

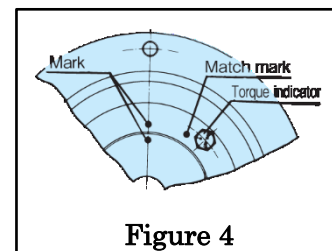


Figure 4

VI. INSTALL TO PULLEY, TORQUE ARM etc.

1. If you install Torque keeper to pulley, sprocket etc.

use the diameter of AF flange as a pilot.

And attach Torque keeper by bolts.

Recommend the tolerance of pilot is H7 or H8.

2. If you install Torque keeper to a torque arm, attach

Torque keeper by bolts.

Tip of torque arm supports to the radial direction, and the axial direction is given to match flexibility.

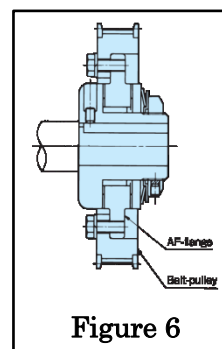


Figure 6

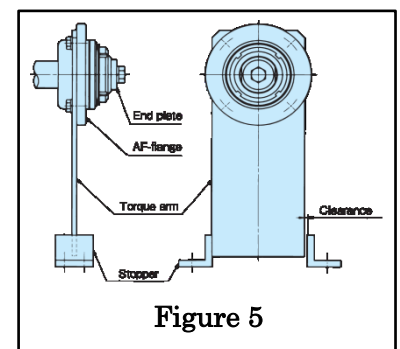


Figure 5

VII. INSTALL TO MACHINE

Attaching Torque keeper to a shaft, push on the end face of Hub.

Certainly, tighten a Set screw.

VIII. TORQUE SETTING

All Torque keepers are set at the 50% of maximum torque. Shipped with torque curve peculiar to each product. This torque is called zero point, and it's marked as a match mark on this position of an Adjustment nut. Torque setting is based on zero point. For getting stabilized slip torque, recommend doing tame and operate.

1. TFK20,25,35 (Photo 1)

(1)When use torque is lower than zero point.

①Tame and operate

Tighten an Adjustment nut by hand, and then tighten it to zero point by hook spanner.

Do tame and operate during 2~3 minutes at this condition.

②Setting slip torque

Loosen an Adjustment nut, and tighten it to the adjusting torque again.

Ex.) When set torque at -30° of Torque scale.

Loosen an Adjustment nut from zero point to -60° , and then tighten it to -60° .

(2)When use torque is higher than zero point.

①Tame and operate

Tighten an Adjustment nut by hand, and then tighten it to zero point by hook spanner. And then tighten it to the adjusting torque by hook spanner. Do tame and operate during 2~3 minutes at this condition.

②Setting slip torque

Loosen an Adjustment nut to zero point, and tighten it to the adjusting torque again.

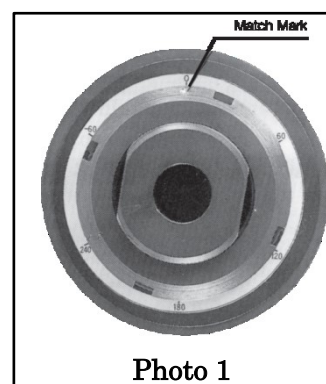


Photo 1

2. TFK50,70 (Photo 2)

(1)When use torque is lower than zero point.

①Tame and operate

Tighten three Adjustment bolts by hand, and then tighten it to zero point by hook spanner or wrench.

Do tame and operate during 2~3 minutes at this condition.

②Setting slip torque

Loosen three Adjustment bolts, and tighten it to the adjusting torque again.

Ex.) When set torque at -60° of torque scale.

Loose three Adjustment bolts from zero point to -90° , and then Tighten them to -60° .

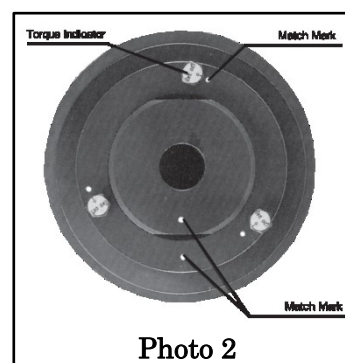


Photo 2

(2) When use torque is higher than zero point.

① Tame and operate

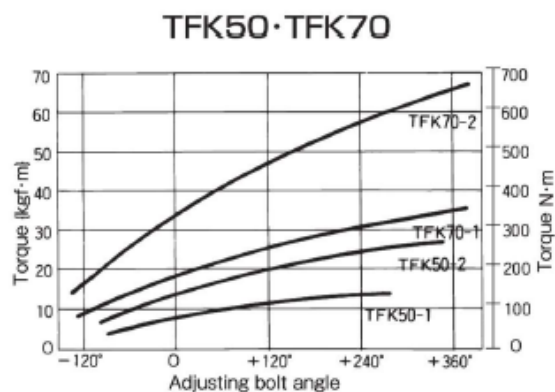
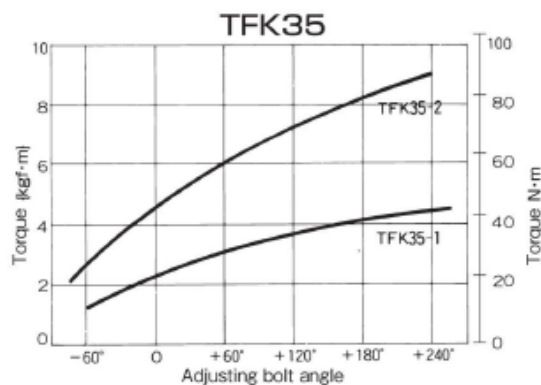
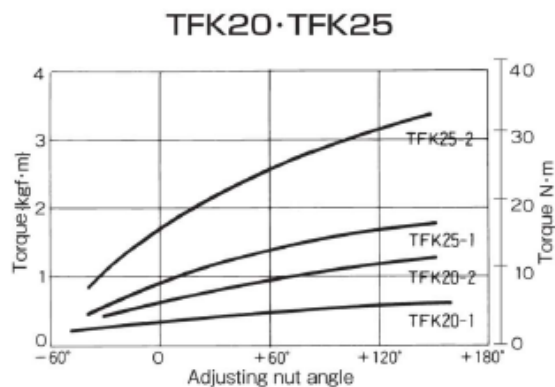
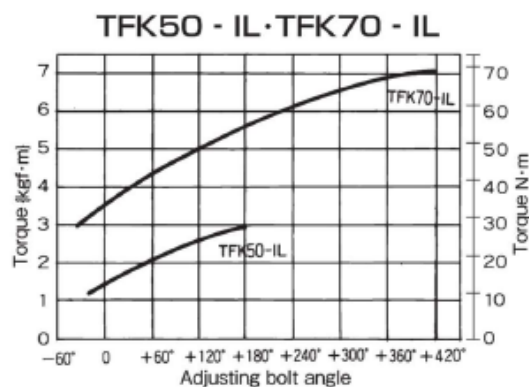
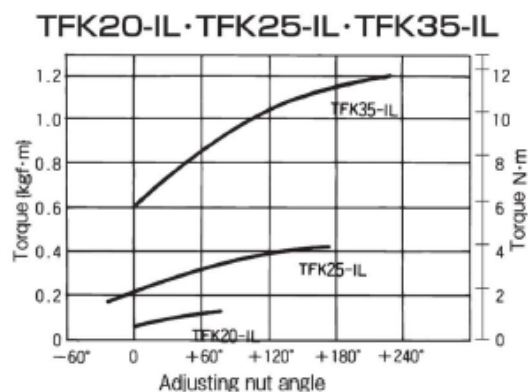
Tighten three Adjustment bolts by hand, and then tighten it to zero point by hook spanner.

And then tighten them to the adjusting torque by hook spanner. Do tame and operate during 2~3 minutes at this condition.

② Setting slip torque

Loosen three Adjustment bolts to zero point, and tighten it to the adjusting torque again.

For reference of torque setting





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 loosening 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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