

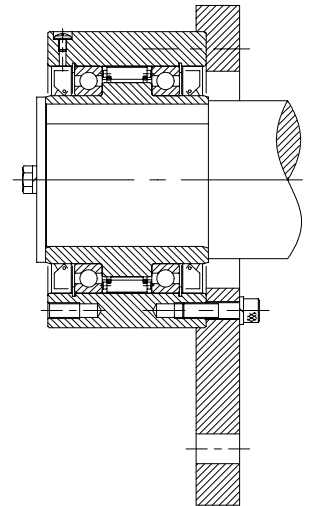
Cam Clutch Manual

MI300, MI400, MI500, MI600, MI700
MI750, MI800, MI900, MI1000, MI1100, MI1200, MI1300

- Thank you for buying Cam Clutch products.
- Before installing or working on the product, confirm it is the correct size by checking its label and make sure you have the complete set of parts. If any part is missing, contact your distributor immediately.
- This manual should be considered an essential part of the unit and remain with the unit when redistributed.

1. Installation

1. Inner race shaft bore is finished at H7. The recommended shaft tolerance is h6 or h7.
2. In case of interference fit when installing Cam Clutch. The maximum interference is up to 0.025. In this case, put the Cam Clutch in the recommended oil at temperature of 80°C or less and heat it.
3. Attach the swing arm to the outer race by using the outer circumference of the outer race as a spigot facing, and fix to the tap holes at the end face of the outer race by the bolts which have a strength class of 10.9 and above. Recommended tolerance of spigot facing is H6 or H7.
4. Use the key in accordance with the JIS B1301-1959(Old JIS) parallel key: second grade. (The MI750 and above include a special dimension hardened key. Make the depth of the shaft keyway according to JIS.) Shaft diameter and key dimensions may not correspond with JIS. Align the key to slide through the keyway smoothly before installation.
5. Allow a clearance between the top of the key and keyway, and fix the Cam Clutch axially using an end-plate or snap ring. Never use a tapered key.
6. When fitting the Cam Clutch to the shaft, apply pressure to the end face of Cam Clutch's inner race. (Do not strike the outer race.)
7. Make sure the rotational direction of the Cam Clutch corresponds with that of equipment before installation.
8. In case the thrust load is applied to the Cam Clutch, set up the structure to receive the thrust load separately.
9. The Cam Clutch is not shipped packed in grease, so apply the appropriate grease to the Cam Clutch before use.
10. In order to enhance feeding accuracy, make sure to carry out the following:
 - 1) Use an end plate on the shaft end, sufficiently tighten the end face of inner race and fit the key and keyway.
 - 2) Combine the brake and backstop Cam Clutch.



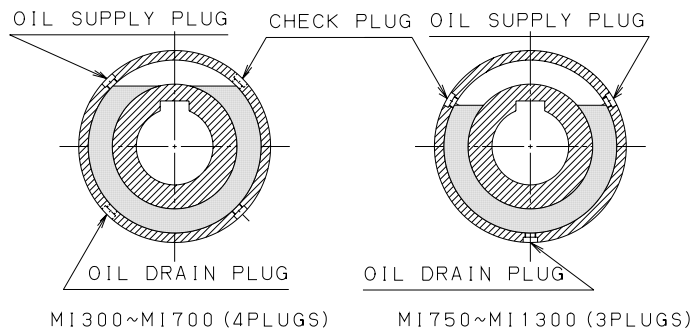
2. Lubrication

Recommended oil

Brand	Sanwa Kasei Kogyo	Idemitsu Kosan
Indexing	Samic Arctic Oil Light	Daphne Oil CR10

1. Use the brand of lube oil listed below or its equivalent.
 - 1) Do not use oil with extreme pressure additives as it will shorten the life of the Cam Clutch.
 - 2) For the Cam Clutch to be able to function correctly with the above oil: the ambient temperature must be between -5°C ~ +40°C. If you intend to run the Cam Clutch at a temperature that exceeds this ambient temperature, contact TSUBAKI for a consultation.

- 3) Genuine oil (for indexing:1 liter can)for cam clutch is available. Contact our distributor.
2. Follow the directions below for lube oil amount and lubrication method.



- 1) Remove two of the plugs out of three to four plugs on the outer race of the Cam Clutch
- 2) Place the plugs on their face at the same height.
- 3) Lubricate from one of the plug hole at upper portion, and continue until oil comes out from the other plug hole. then, make sure to tighten the plugs to prevent oil leakage

- (Note) 1) Ensure that the proper amount of oil has been filled.
- 2) Replenish oil after 100 hours of operation or every two weeks, whichever is sooner. Once every three months, drain old oil and wash out the inside, then replace it with new oil. Locate the plug hole at the bottom and drain old oil.
- 3) When lubricating or washing the Cam Clutch, do not allow any foreign matter to enter the inner portion of the Cam Clutch as this may cause it to function incorrectly

Safety

	WARNING	Death or serious injury may result from misusing the product without following the instructions.
	CAUTION	Minor or moderate injury, as well as damage to the product may result from misusing the product without following the instructions.

Notice that although categorized under “CAUTION”, subjects discussed may lead to serious results depending on the situation.

WARNING	
● Make sure turning forces are not applied to Cam Clutch or turning shaft of the equipment when conducting inspection or maintenance. Pay special attention to the back stopping application to prevent accidents. ● Frequent starting and stopping will apply excessive force on the mounting. Verify mounting strength. ● Inaccurate installation and mounting, various load conditions, wear and tear of parts, and life expectancy can all affect the performance of a Cam Clutch. Inspect and maintain periodically and install a safety devise on your equipment. ● Comply with Ordinance on Labor Safety and Hygiene 2-1-1 general standards.	
CAUTION	
● To ensure safety and optimal performance, carefully read this instruction manual in its entirety. ● Confirm rotational direction prior to installing.	

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 machines - 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 under instructions provided in the manual, Seller would repair and replace at no charge once the Goods are returned to Seller. The following are excluded from the warranty.
 - 1) Any costs related to removing Goods from the Buyer's equipment or machines to repair or replace parts.
 - 2) Costs 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 machines.
 - 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 injustice done by a third party.
 - 8) Secondary damage or problem incurred by the Buyer's equipment or machines.
 - 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 CO. may change the contents of this document without notice.
 - 2) Considerable effort has been made to ensure that the contents of this document are free from errors. However, TSUBAKIMOTO CHAIN CO. makes no warranties with respect to the accuracy of information described herein. In the meantime, we would appreciate comments or reports on any inaccuracies or omissions found in this document to help us make timely amendments as necessary. Your cooperation is greatly appreciated.



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