

Cam Clutch Installation and Maintenance Instruction

MGUS Series / MIUS Series

MGUS300, MGUS400, MGUS500, MGUS600, MGUS700, MGUS750, MGUS800, MGUS900, MGUS1000

MIUS300, MIUS400, MIUS500, MIUS600, MIUS700, MIUS750, MIUS800, MIUS900, MIUS1000

Thank you for choosing Tsubaki E&M 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.

SAFETY

1. Your Cam Clutch is a high quality, sophisticated unit which should be handled by experienced engineers only.
2. For safety purposes, make sure this manual is easily accessible by the user at all times.
3. To ensure safety and optimal performance, carefully read this instruction manual in its entirety.



WARNING

Death or serious injury may result from misuse, improper installation and/or improper maintenance of this product. Please refer to the detailed instructions provided in this manual for installation and maintenance specifications.



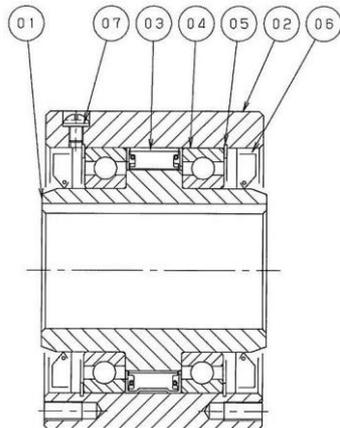
WARNING

USE CARE TO PREVENT INJURY COMPLY WITH THE FOLLOWING TO AVOID SERIOUS PERSONAL INJURY:

1. Guards must be provided on all chain and sprocket installations in accordance with provisions of ANSI/ASME B15.1 - 2000 "Safety Standards for Mechanical Power Transmission Apparatus," and ANSI/ASME B20.1 - 2012 "Safety Standards for Conveyors and Related Equipment," or other applicable safety standards. When revisions of these standards are published, the updated edition shall apply.
2. Always lock out the power switch before installing, removing, lubricating or servicing a system which uses PTUC product.
3. When connecting or disconnecting PTUC products, eye protection is required. Wear safety glasses, protective clothing, gloves and safety shoes.
4. Improper installation or mounting, as well as operating conditions and maintenance, can affect the performance of a cam clutch. The cam clutch should be inspected regularly.

"PTUC is used by U.S. Tsubaki to designate "Power Transmission Unit Components." PTUC products include Cam Clutch DISCO, POWER-LOCK[®], Shock Relay, Gearmotor, HF Drive, Shock Damper, Power cylinder[™], Couplings, SCR variable speed motor and other like products manufactured by/for Tsubaki.

Construction



- ① Inner race
- ② Outer race
- ③ Cam cage
- ④ Bearing
- ⑤ Snap ring
- ⑥ Oil seal
- ⑦ Plug

Installation

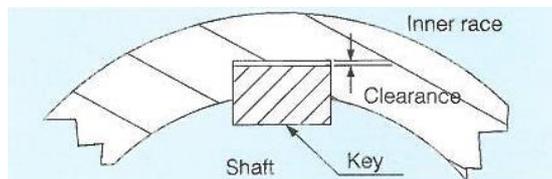
- MGUS series Cam Clutches are used for inner race overrunning applications. MIUS series Cam Clutches are used for indexing applications.
- For attaching a pulley, a gear, or sprocket to the clutch for both series, insert the clutch into the hub of device, and screw the bolts (high tension) into the tapped holes on the clutch end. The tolerance of hub bore should be as following table.

| Size | 300 | 400 | 500 | 600 | 700 | 750 | 800 | 900 | 1000 |
|----------------|----------------------------------|----------------------------------|------------------------------------|------------------------------------|------------------------------------|----------------------------------|------------------------------------|------------------------------------|------------------------------------|
| Tolerance (in) | 3.0000/3.0015 (76.200/76.238) | 3.5000/3.5015 (88.900/88.938) | 4.2500/4.2520 (107.950/108.001) | 5.3750/5.3770 (136.525/136.576) | 7.1250/7.1270 (180.975/181.026) | 8.750/8.752 (222.250/222.301) | 10.001/10.003 (254.025/254.076) | 12.001/12.003 (304.825/304.876) | 15.001/15.003 (381.025/381.076) |

- Recommended shaft tolerances are as follows.

| Clutch Bore | Shaft Fit Guide |
|---|--|
| 0 to 1.20 inches dia. (0 to 30mm dia.) | Line fit to 0.0008 inches loose (0.020mm) |
| 1.20 to 2.00 inches dia. (30mm to 50mm dia.) | Line fit to 0.0010 inches loose (0.025mm) |
| 2.00 to 3.15 inches dia. (50mm to 80mm dia.) | Line fit to 0.0012 inches loose (0.030mm) |
| 3.15 to 4.70 inches dia. (80mm to 120mm dia.) | Line fit to 0.0014 inches loose (0.036mm) |
| 4.70 to 7.10 inches dia. (120mm to 180mm dia.) | Line fit to 0.0016 inches loose (0.041mm) |

- The key should be in accordance with ANSI B17, 1-1967 (R 1998).
- Use only a parallel key to secure the clutch. Never use a tapered key.
- It is better to use a hardened key and shaft if the clutch receives shock loads or is designed for use at full torque capacity.
- Allow for a clearance between the top of clutch keyway and the top of key for pressure ventilation of the clutch in the case of MGUS series. A pressure ventilation hole is provided on the keyway of clutch inner race.
- Apply pressure to the inner race, but never to the outer race when mounting the clutch on the shaft.
- Thrust load should be taken up by other devices, not by Cam Clutch.
- When using MGUS series at medium and high speeds, pay attention to heating. Life is shortened if the temperature of Cam Clutch outer race rises to over 158°F (70°C). In case of continuous overrunning, please contact Tsubaki. In this case, use a different model or provide an oil bath or forced lubrication. During continuous overrunning, generally use MGUS series at approximately 1/3 or less of the maximum overrunning rotation speed.
- Oil is not sealed in at the time of shipment. Supply an appropriate amount of oil before use.
- When placing an order for MGUS series model MGUS750 and above, please inform TSUBAKI of the overrunning speed you use.
- Please consult TSUBAKI for vertical mounting.



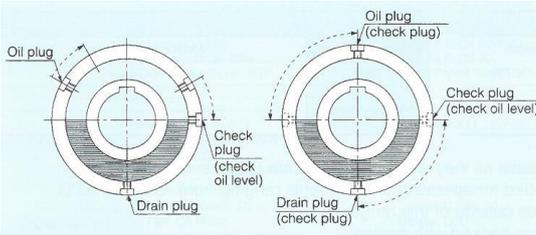
Lubrication and Maintenance*

- Use the brand of lube oil listed on the next page or its equivalent. Do not use oil with extreme pressure additives as it will shorten the life of the Cam Clutch.
- Follow the directions below for lube oil amount and lubrication method.
 - Replenish oil after 100 hours of operation or every two weeks, whichever is sooner. Once every three months, old oil and wash out the inside, then replace it with new oil. Locate the plug hole at the bottom and drain old oil.
 - 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 it to cause it to function incorrectly.

*Actual maintenance may vary depending on usage and operating condition.

MGUS Series

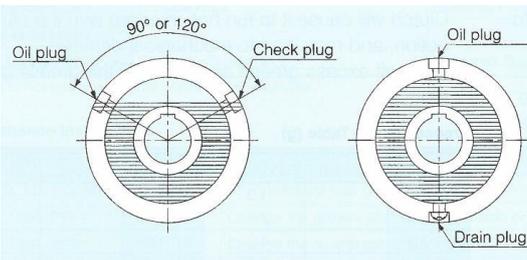
| Ambient temperature in Overrunning and Backstopping Applications | |
|---|---|
| +14°F to +86°F (-10°C to +30°C) | -86°F to +122°F (+30°C to +50°C) |
| Any Automatic Transmission Fluid (ATF) Shell turbo Oil T32, Turbo Oil 68, Rimulla D oil 10W Exxon Mobil DTE Oil Light, Delvac Hydraulic 10W, ATF220 Teresstic Oil 68, DTE Heavy Medium Texaco Regal Oil R&O 68, Chevron GST Oil 68 BP Rnergol THB32, Gulf Harmony 32 | Exxon Mobil Delvac 1330 Essolube XT1 10W-30 Shell Rimulla D Oil 20W/20 Rimulla D Oil 30 White Parrot Super S-3-20W-20, 30 |



1. As a general rule, the level of lubricant should be equal to the height of center of shaft.
2. On every model, on the outer race, there are two to four plugs.
3. On models that have four plugs, place them so that one is at the top, one is at each side, and one is at the bottom. Then remove the plugs from the top and the sides and insert oil into the top hole until it begins to spill out from the side holes.
4. On models that have three plugs, place one plug at the bottom and have the other two near the top. Remove the two upper plugs and insert oil into either side. Check the level by slowly turning the clutch until one of the upper plugs reaches the height of the center of shaft.
5. Add oil every 100 hours.
6. Change the oil and clean the inside of clutch every three months.

MIUS Series

| Ambient temperature in Indexing Application | |
|--|---|
| +20°F to +86°F (-7°C to +30°C) | -10°F to +20°F (-23°C to -7°C) |
| At 150 strokes per minutes or less | At 150 strokes per minutes or less |
| Any Transmission Fluid (ATF), Shell turbo oil 32 Exxon Mobil DTE Oil Light, Teresstic Oil 32 Texco Regal Oil R&O 32, Amoco Industrial Oil 32 | Any Transmission Fluid (ATF) Shell Clavus oil 15 Exxon Mobil Zerice 46, Sunoco Sunvis 916 |



1. The level of lubricant should be near the top of the inside of Cam Clutch.
2. On the outside surface or on the side surface, there are oil plugs for oil filling and draining.
3. On models with three plugs on the outside surface, slightly turn the clutch and insert oil into one hole
4. With four plugs, insert the tip of oil feeder into the plug and fill completely until oil begins to overflow out from one of its neighboring holes.
5. On the model with oil until overflows.
6. Add oil every 100 hours.
7. Change the oil and clean the inside of clutch every three months.



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