



"M" Series Clutches Installation and Maintenance Instructions for Models 750 – 1000

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FORM
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⚠ DANGER indicates a hazard which, if not avoided, will result in serious injury or death.

⚠ WARNING indicates a hazard which, if not avoided, could result in serious injury or death.

⚠ CAUTION indicates a hazard which, if not avoided, could result in minor or moderate personal injury.

NOTICE indicates information considered important, but not hazard-related (e.g. messages relating to property damage).

GENERAL SAFETY INSTRUCTIONS

⚠ WARNING

- Read and follow all instructions carefully.
- Disconnect and lock-out power before installation and maintenance. Working on or near energized equipment can result in severe injury or death.
- Do not operate equipment without guards in place. Exposed equipment can result in severe injury or death.

⚠ CAUTION

- Perform periodic inspections. Equipment may fail prematurely and could become unsafe if not properly inspected and maintained. Failure to follow this instruction could result in mild or moderate personal injury.

A. Preinstallation

1. It is very important that the clutch fit the shaft properly. The following are recommended shaft tolerances.

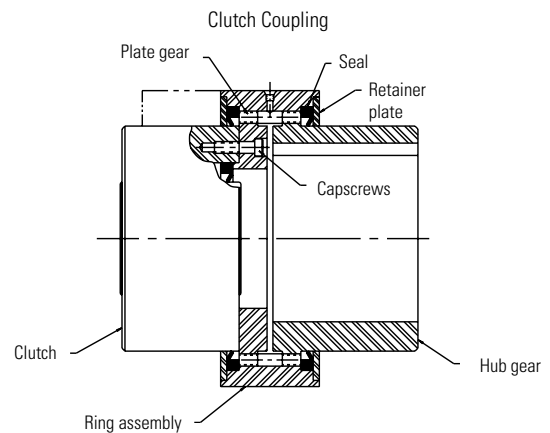
| Nominal Diameter | Bore | Shaft |
|------------------|-------------------|------------------|
| Over 2" to 4" | + .0000 / -.0015" | -.0015 / -.0025" |
| 4" to 6" | + .0000 / -.0020" | -.0020 / -.0030" |

2. On applications where a press fit is necessary, do not exceed .001 inch.
3. Should a .001 inch maximum press fit be required, immerse clutch in hot, clean oil (not to exceed 200° F) for several minutes before mounting.
4. To minimize critical stresses in the keyway area of the inner race, the clutch keyways have a radius in the corners. A key designed to match this keyway is furnished with each clutch. Use this key in mounting clutch on shaft, as key must support full length of clutch inner race. A tight fit on key width is necessary on indexing applications.
5. Orient clutch as though in operating position and check for proper rotation. Oil lubricated clutches should be mounted on horizontal shafts only. Refer vertical shaft applications to factory.

B. Installation

1. When mounting the clutch and key on the shaft, apply pressure to the end face of the inner race only as bearing damage could result from pressure being applied to the outer race. Note: Caution should be exercised in installing the clutch to prevent damaging the seals.
2. Since the key has a venting groove, make certain that the side of the key with the groove is at the top of the clutch keyway.
3. Secure clutch in position on shaft. Use lock washers, snap rings, collars, adjacent components or similar items to hold clutch in position.
4. Overrun (freewheel) the clutch by hand before subjecting to test operation. Before using the clutch fill with proper lubricant. (Refer to the lubrication section.)
5. This additional step is applicable to the cam clutch coupling only:
 - a. Never use the clutch as a coupling. When the connection of two shafts is required in conjunction with a clutch, use a clutch-coupling.
 - b. After mounting the clutch per the above steps, follow these steps to correctly install the coupling.
 1. Slide the ring assembly onto clutch.
 2. Attach the plate gear to clutch using capscrews provided.
 3. Place seal and retainer plate on hub gear.
 4. Mount hub gear on shaft.
 5. Position units to be connected allowing 11/16 inch between plate gear and hub gear.
 6. Align gears with straight edge or taper gauge. Align shafts as accurately as possible to obtain the maximum service life from the coupling.

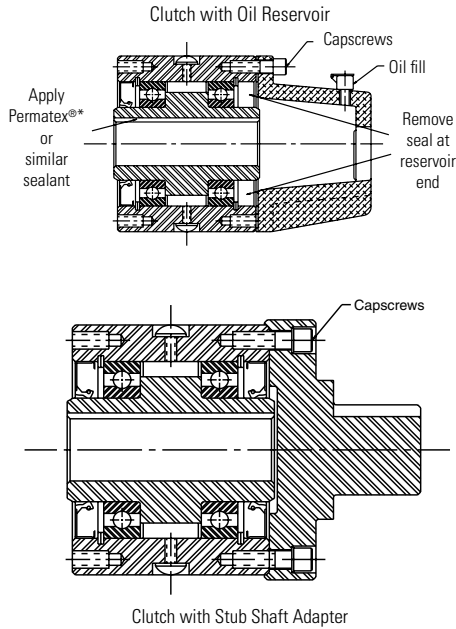
| Coupling Number | C-75 | C-8 | C-9 | C-10 |
|-------------------------------|-------|-------|-------|-------|
| Maximum Angular Misalignment | 1/2° | 1/2° | 1/2° | 1/2° |
| Maximum Parallel Misalignment | .010" | .010" | .010" | .010" |
| Allowable End Float From | +1/4" | +1/4" | +1/4" | +1/4" |
| Nominal 11/16" Gap | -5/8" | -5/8" | -5/8" | -5/8" |



7. Hand pack external gears with #1 or #2 ball bearing grease, forcing some grease between the faces to provide a lubricant reservoir. Repack these gears once a year.
8. Slide ring assembly over external gears and remove excess lubricant.
9. Press in seal with flat object. Gently tap-in seal exercising care not to damage.
10. Attach retainer plate with screws provided.
6. This additional step is applicable only when oil reservoir is used with clutch.
 - a. Reservoirs can only be used where the clutch outer race is held stationary as in backstop applications.
 - b. Clutches are shipped with oil seals in both ends of the clutch. Remove the oil seal on the reservoir side with a screwdriver or similar instrument being careful not to damage the clutch. Do this only after determining the proper direction of rotation of the clutch. This seal should not be reused because it is damaged by the removal process.
 - c. Prior to mounting clutch on shaft, apply Permatex®* or similar sealant to clutch key and keyway. This prevents loss of oil through keyway.

* Permatex is believed to be the trademark and/or trade names of Illinois Tool Works, Inc. and is not owned or controlled by Regal Rexnord Corporation.

- d. After mounting clutch on shaft per the above steps, attach reservoir to the clutch end from which the seal has been removed, using capscrews provided with reservoir. Position reservoir with oil fill on top side.



7. This additional step is applicable only when the Stub Shaft Adapter is used with clutch. After mounting clutch on shaft per preceding steps 1, 2, 3, & 4, attach stub shaft adapter to desired clutch end, using capscrews provided with adapter.

C. Oil Lubrication

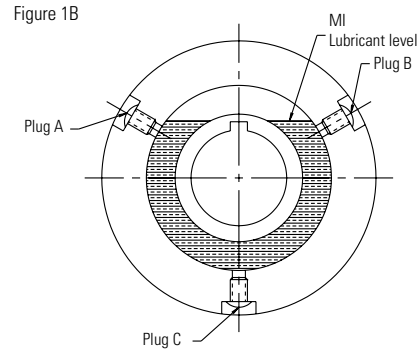
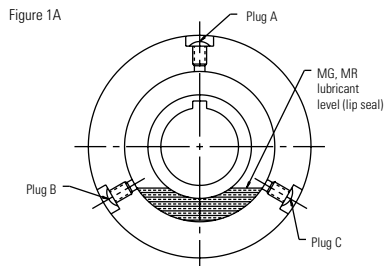
Use oil selected from table below according to the application and ambient temperature existing at the clutch. Do not use lubricants of the EP type (extreme pressure characteristics) or those containing slippery additives such as molybdenum disulfide and graphite.

1. Oil Recommendation

- a. Models MG & MR
 20° F. to 125° F. (Max. ambient temp.).....Socony®* Mobil®* D.T.E. Heavy Medium Oil
 -Below 15° F. to 125° F. Type A automatic transmission fluid
- b. Model MI
 30° F. to 125° F. (Max. ambient temp.)..... Socony* Mobil* D.T.E. Light Oil
 -15° F. to 125° F. Type A automatic transmission fluid
 Below -15° F. Consult Application Engineering

2. Oil Lubrication Procedures

- a. Stock MG & MR models with lip seal.
1. Rotate clutch outer race to locate filler plugs A, B, and C as shown in Figure 1A.
 2. Remove plug A and either B or C, adding oil through port A until fluid shows from port B or C. Clutch will then be one-third full.
- b. Stock Model MI with lip seal.
1. Rotate clutch outer race to locate two ports at positions A and B as shown in Figure 1B.
 2. Remove filler plugs A and B and add oil through port A until oil flows from B.
 3. Replace filler plugs, tightening to prevent leakage.



3. Oil Lubrication Maintenance (Primary Maintenance Factor).

- c. Add oil every one hundred (100) hours of operation or every two (2) weeks - whichever is first - using procedure as outlined in Section D. When clutch indexes at 150 or more cycles per minute, lubrication may be required at shorter intervals.
- d. FLUSHING

The "M" Series Cam Clutches should be flushed periodically (90-day average) with mineral spirits such as soluasol (Socony*-Mobil*) or equivalent solvents. Carbon tetrachloride should not be used. Flush more frequently if clutches are subjected to severe operation or abrasive dust.

Flushing Procedures:

1. Drain lubricant by rotating outer race so that one oil port is pointed down.
2. Fill clutch with prescribed flushing agent.
3. Rotate either clutch member slowly to break up and dissolve any oily residue.
4. Drain flushing agent from clutch.
5. Relubricate clutch according to recommended procedure.

NOTICE: Periodic flushing of grease lubricated clutches is usually unnecessary. When fresh grease is pumped in, old grease will be purged out from the seals.

D. Grease Lubrication

NOTICE: The following are general lubrication recommendations based on our experience and are intended as suggested or starting points only. For best results, specific applications should be monitored regularly and lubrication intervals and amounts adjusted accordingly.

1. Grease Recommendation

- a. Model MO
 20° F. to 125° F. (Max. ambient temp.) Mobil* SHC 100 Grease or equivalent

2. Grease Lubrication Procedure

- a. Stock Model MO with lip seal reversed.
1. Clean grease fitting located on the clutch outer race by wiping with cloth.
 2. Mobil* SHC 100 lubricant into clutch with grease gun until grease flows freely from the seals.

3. Grease Lubrication Maintenance (Primary Maintenance Factor) Regrease the clutch once a month following the procedure outlined in step number 2.

NOTICE: Clutch Couplings must have the gears repacked at least once a year.

4. Do not use any lubricants which contain EP additives or those containing slippery additives such as molybdenum disulfide and graphite.

E. General Information

1. Application Engineering: 1-800-626-2093.

CAUTION! Do not use the clutch above its torque or speed ratings. Do not attempt to take this clutch apart.

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