B Series Clutches - Models 200A and 500
Installation and Maintenance
Models B203A - B210A Models B501A - B513

Emerson Industrial Automation
7120 New Buffington Road
Florence, KY 41042
Application Engineering: 800 626 2093
www.emerson-ept.com

FORM
4046-004
Revised
April 2011

⚠ 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

- Periodic inspections should be performed. Failure to perform proper maintenance can result in premature product failure and personal injury.

A. Preinstallation

1. Morse® B200A and B500 Series clutches are designed to mount directly on shafting which forms the inner race. The shaft should be through hardened or carburized to a case depth of .050 - .060 inches after grinding, hardened to Rockwell C58-62, and ground to a finish of 16 microinches (max).

2. The shaft on which the clutch is mounted must be supported by a bearing. The B200A Series clutches are designed to be used with standard 200 series bearings. The outside diameter of the clutch is basically the same as the outside diameter of the bearing. The clutch outside diameter tolerance is held to insure a proper fit (without pressing) with housing bore. The tolerance on the housing bore should follow the bearing manufacturer's recommendation for the bearing used.

3. Taper on shaft and housing bore should not exceed .0002 inch per inch for both B200A and B500.

4. Shaft and housing bore should be concentric within .002 inch TIR (total indicator reading) for B200A and .003 for B500.

5. Required shaft diameters for each clutch model are as shown in **Table 1**.

Table 1

B200A		B500	
Model No.	**Shaft Dia.**	**Model No.**	**Shaft Dia.**
B203A	.649/.650	B501A	.6495/.6500
B204A	.739/.740	B502	.7378-.7383
B205A	.929/.930	B506	1.1325/1.1335
B206A	1.289/1.290	B507A	.9696/.9706
B207A	1.656/1.657	B509A	1.1325/1.1335
B208A	1.840/1.841	B510A	1.2955/1.2965
B210A	2.208/2.209	B511A	1.3776/1.3770
		B512A	1.5400/1.5410
		B513	2.0457/2.0447

B. Installation

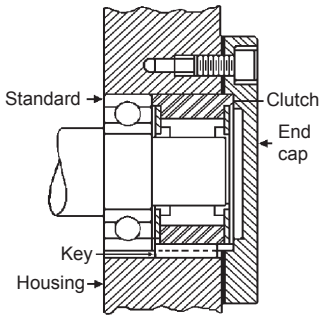
1. The clutches are prelubricated at the factory with Mobilth® SHC 100 grease and are ready for installation. Prior to installation, remove the plastic plug from clutch bore.

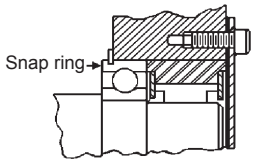
2. Determine direction of shaft rotation and match with direction of arrow on clutch. To put clutch on shaft, slowly rotate shaft in the direction of the arrow and push the outer race into the housing. Line up keyways by rotating shaft in opposite direction of clutch arrow. When done, insert key and install gasket and cover plate. Both housing and shaft must be clean and free of metal particles before installation.

3. Typical installations are illustrated in **Figure 1**:

Figure 1

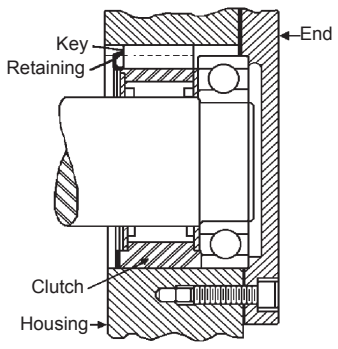
(For use with bearing sizes No. 203 through No. 205)





Optional use of snap ring bearing

(For use with bearing sizes No. 206 through No. 210)



MCIM09030 • Form# 4046-004 • Printed in USA

EMERSON
Industrial Automation

C. Lubrication and Maintenance

The only clutch maintenance required is lubrication.

1. Grease Lubrication
   a. Clutches are factory lubricated with Mobilith® SHC 100 Grease.
   b. Recommended greases are:

      Texaco Multifak AFB2
      Mobilith® SHC 100
      Shell Alvania® #2
      or equivalent grease

      Note: Do not use lubricants of the **EP type** or those containing slippery additives such as Molybdenum disulphide and graphite.

   c. Grease lubricated clutches should be operated within ambient temperature range of +20° F to +125° F (-7° C to +52° C). Consult Emerson for lubricant recommendations in applications operating below +20° F or above +125° F (-7° C or above +52° C).

   d. Grease Lubrication Schedule

      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, **See Table 2**.

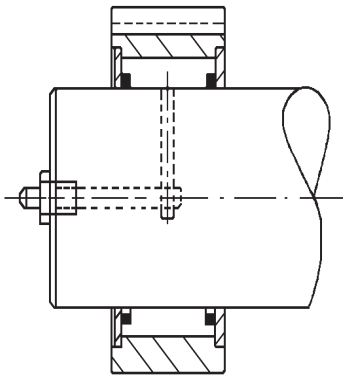
Table 2

Application	Add Grease	Add Grease Under Severe Conditions*
Overrunning	Every two months	Once per month
Backstopping	Every two months	Once per month
Indexing	Once per month	Every week

*24 hours per day or operation in severe abrasive dust conditions.

e. To facilitate greasing, drill and tap shaft for grease fitting and drill small grease channel to clutch cam area as shown in **Figure 2**.

Figure 2



2. Oil Lubrication

a. B200A Series clutches can be operated in ambient temperature range of -15° F to +125° F (-26° C to +52° C). Use multi-purpose automatic transmission fluid. Below -15° F or above +125° F (-26° C or above +52° C) consult Emerson.

b. Clutch should be at least halfway submerged in oil. Drain and refill every 1,000 hours of operation. If clutch is subjected to severe duty, high temperature or contaminants, refill more frequently.

D. General Information

1. Do not use the cam clutch above its torque or speed ratings.
2. Do not attempt to take this clutch apart.
3. Application Engineering: 1-800-626-2093.

MCIM09030 • Form# 4046-004 • Printed in USA

EMERSON™
Industrial Automation