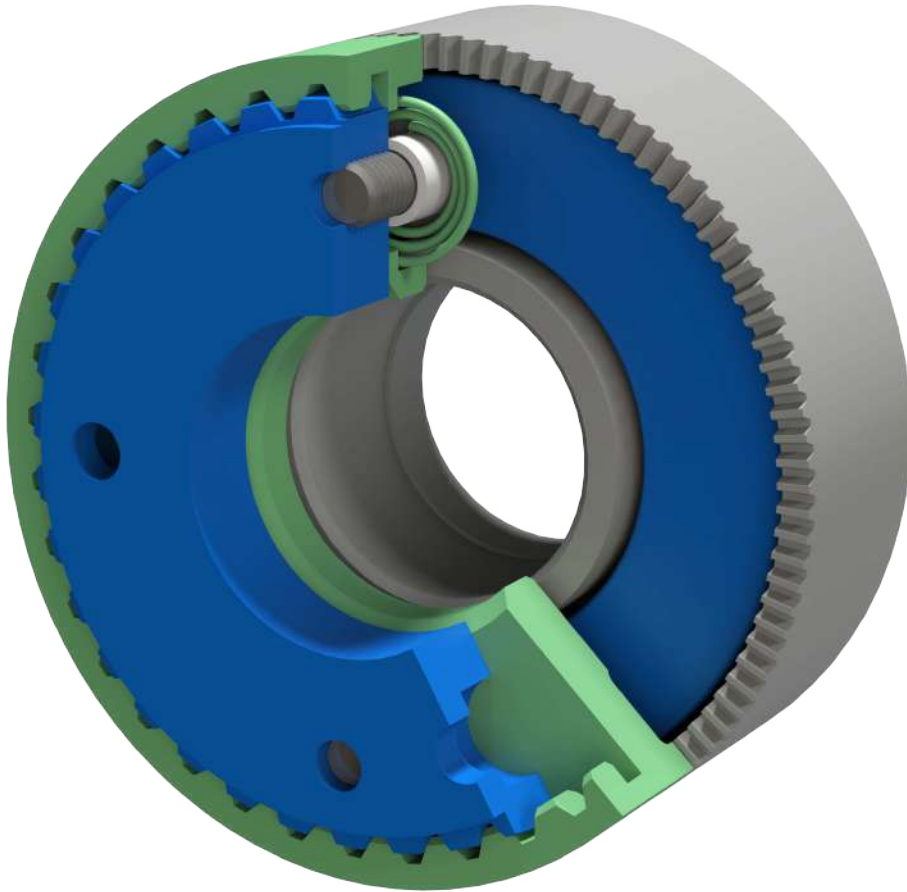


# METB INSTALLATION GUIDE

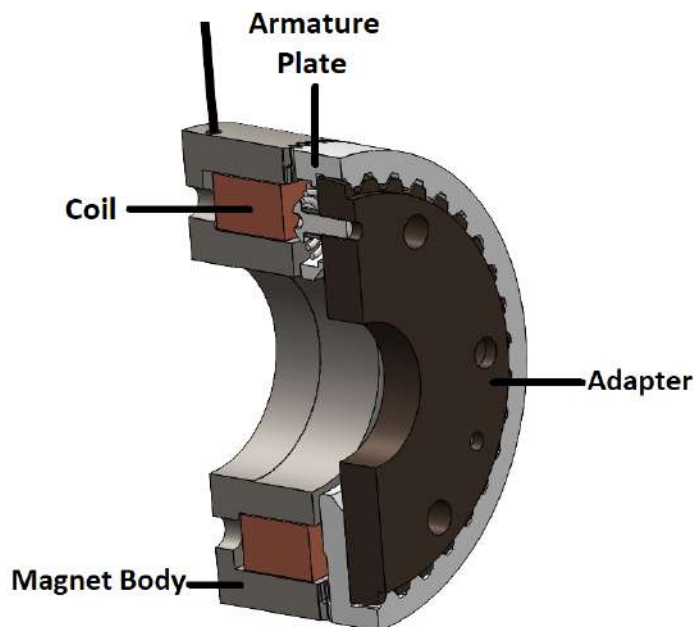
## MAGNETICALLY ENGAGED TOOTH BRAKE



# SEPAC Inc. Electromagnetic Tooth Brakes: *METB* *Magnetically Engaged Tooth Brake*

## ■ Uses.

The SEPAC magnetically engaged tooth brake is designed to operate both dry and in oil. It can be piloted either on the outside diameter or magnet body bore.



## ■ Operation.

When current is applied to the coil in the magnet body, a magnetic field is created which attracts the armature towards the magnet body, engaging the teeth. As the teeth engage the load is held. Springs between the armature and the adapter assist in disengagement.

## ■ Mounting the magnet body assembly.

Position the magnet body on the pilot and install the mounting screws into the tapped holes on the back of the magnet body. **CAUTION:** To avoid coil damage make sure the thread penetration does not exceed that allowable by the print.

## ■ Mounting the adapter and armature.

- The adapter or output plate should be piloted on and mounted to its mating part to be sure it is concentric with the shaft. The dowel holes provided should be line reamed with the mating part and have dowel pins pressed into them when assembled.
- The armature is then mounted on the splined adapter making sure the springs in the armature align with the screw holes in the splined adapter. The spacers and springs are placed over the screw and the screw is to be locked in place using a thread locker such as Loctite at assembly. Make sure the spring is not caught between the screw head and the spacer. See Figure 1.

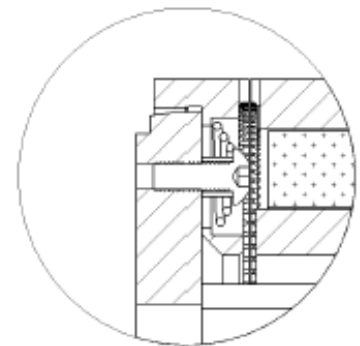


Figure 1

- A non-magnetic shaft spacer must be installed to provide the proper disengaged clearance between the tooth faces. Table 1 shows the nominal face tooth clearance for the different size units.

## ■ Electrical Connections.

Connect the magnetic coil wires to the proper DC power supply voltage.

**NOTE:** Control switching should be in the DC circuit. Switching in the AC circuit will cause slow disengagement. Arc suppressors should be used in all brake circuits.

## ■ Check-out.

- Observe the armature movement while turning the brake on and off. It should move freely.
- To check the face tooth clearance, the brake teeth should be disengaged. Check the space between the teeth with a feeler gauge of the proper thickness in at least 3 places around the circumference. The shaft spacer used in accordance with the instructions must be modified if the spacing is not correct.

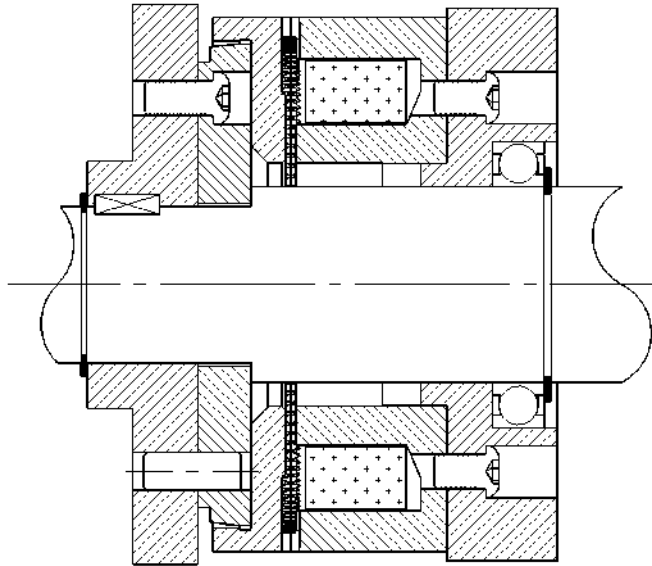
## ■ Wet application considerations.

- The unit should not be immersed more than 10% of its diameter in the oil. Oil levels higher than this will create excessive levels of idle torque and generate destructive heat. Too much oil can also delay engagement time. An oil mist or splash from gears, etc. is usually enough for lubrication.
- The viscosity of the oil used should not exceed 150 S.S.U. at 100°F.
- The oil used should be acid-free, anti-foaming and should not contain any additives or molybdenum. Some oils that have been used in applications successfully are: Gulf Harmony #44, Mobile DTE Light (10W), Pennzoil Pennbell #1 and Texaco Regal A (R&O).
- A magnetic filter or a permanent magnet should be in the oil reservoir to remove any steel particles which could affect bearing, slip ring and/or brush life.

## ■ Other Considerations.

- When two or more units are located on the same shaft, the coils should be wired so that the polarity is changed when switching from one to the other. This will reduce the residual magnetism in the idling unit.
- Units on a common shaft should be kept apart with a non-magnetic spacer 1/8" thick minimum.

## ■ Mounting.



Shown above is a model METB mounted to a rear mounting plate. The rear mounting surface is to be flat and perpendicular to rotating shaft within 0.003" total.

**CAUTION:** To avoid coil damage, make sure the thread penetration does not exceed that allowable by the print for that particular size brake.

## ■ Tables.

SIZE	320	375	450	525	630	760	895	1065
MAGNETICALLY ENGAGED	.010 (.254)	.012 (.305)	.014 (.356)	.016 (.406)	.018 (.457)	.020 (.508)	.024 (.610)	.028 (.711)

**TABLE 1 – Disengaged Tooth Clearance**

## ABOUT US

SEPAC Inc., in Elmira, NY, is a custom engineering company and manufacturer of motion control products including electromagnetic clutches and brakes. We provide innovative solutions of the highest quality and reliability to OEMs, distributors and end users around the world. Our brake and clutch applications range from aerospace and defense to outer space, robotics, energy, healthcare, and a wide variety of industrial markets.



**CONTACT US**

**RESOURCE LIBRARY**

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