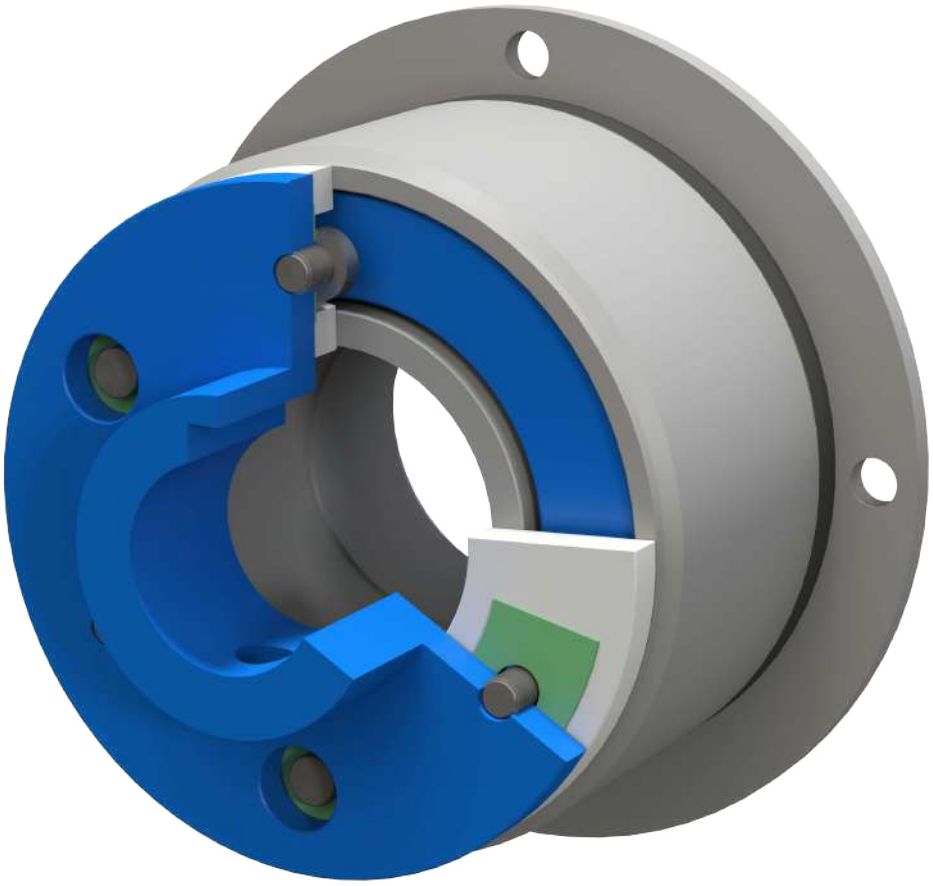
PMB INSTALLATION GUIDE

PERMANENT MAGNET BRAKE



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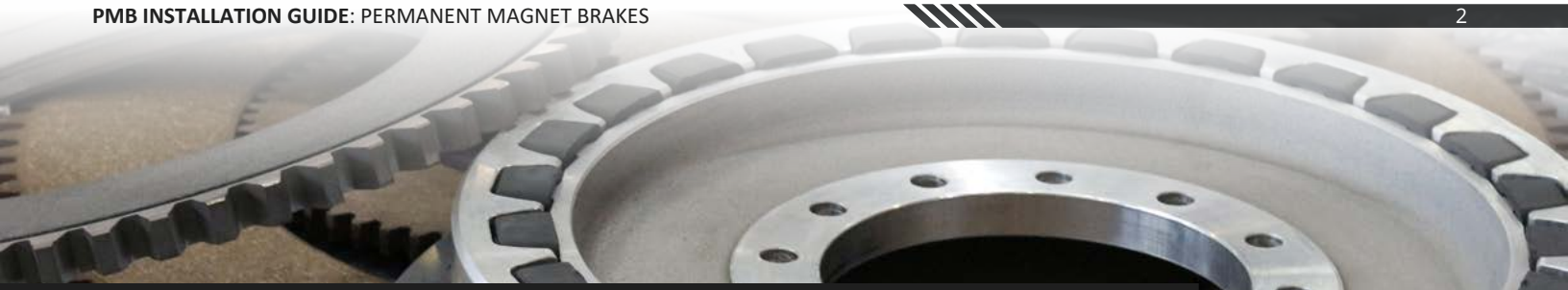


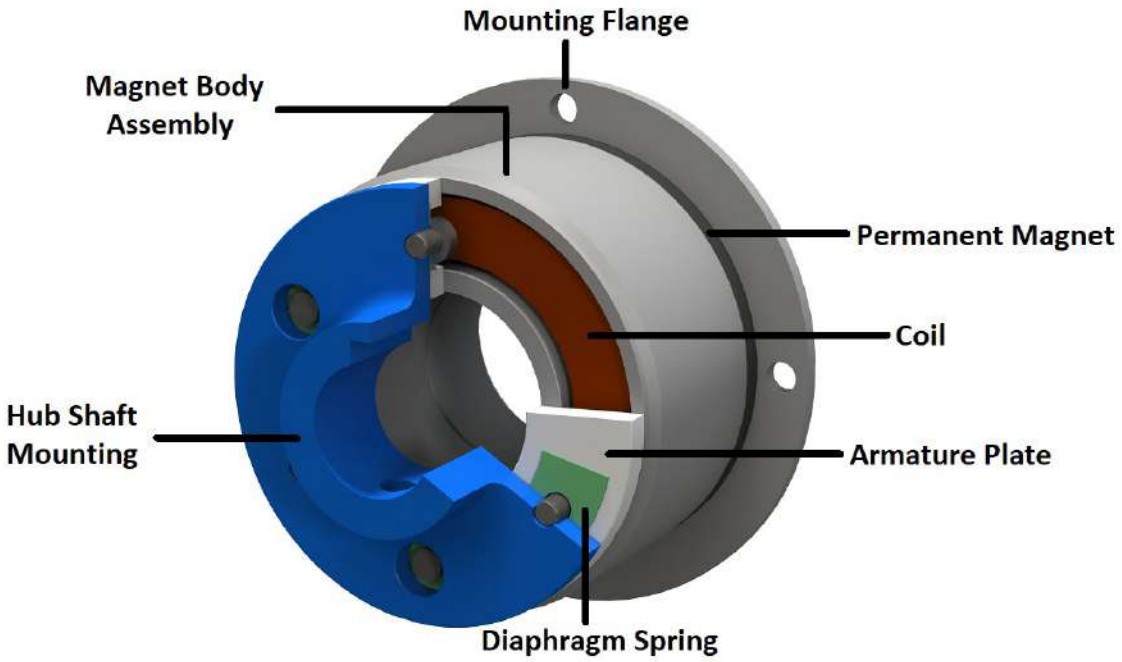
SEPAC Inc. Electromagnetic Friction Brakes:

PMB

Permanent Magnet Brake

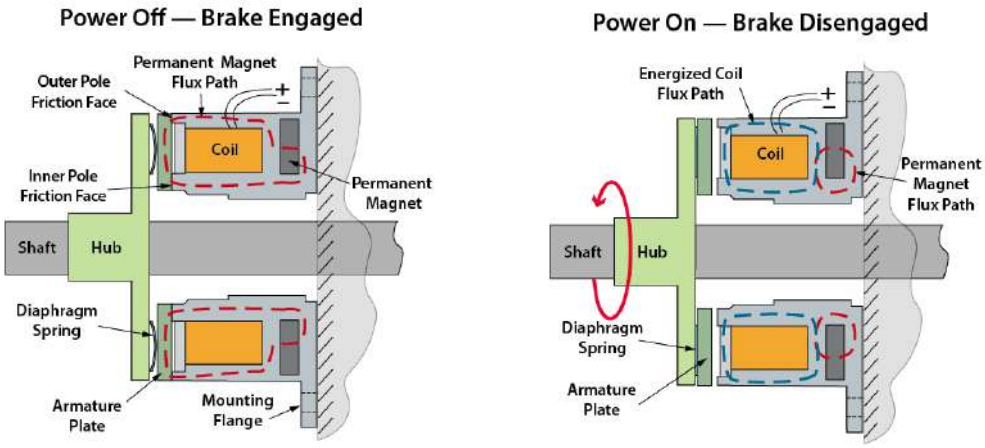
Uses.

SEPAC permanent magnet brakes are used to stop or hold a load. Permanent magnet power off brakes use permanent magnets to provide the normal magnetic force required for the magnet body assembly to attract the armature and produce torque.



Operation.

With no electrical power applied, the permanent magnet provides the normal force (magnetic strength within a flux path). When electrical current is applied to the coil with the proper polarity, it reverses the magnetic strength within the flux path of the permanent magnets. The force reduces to zero at the face and the diaphragm spring releases the armature therefore releasing the brake (when power is applied).

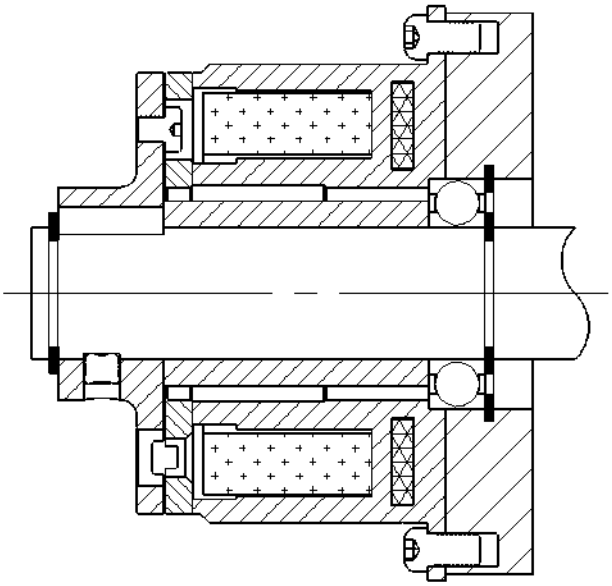


General.

SEPAC brakes must be mounted so they will be kept dry and protected from water, grease, oil and other contaminants. It can be piloted either on the outside of the mounting flange or the ID of the magnet body.

Mounting Interface.

- Shaft should be perpendicular to mounting surface within 0.005" TIR.
- Mounting surfaces should be flat and perpendicular to the shaft within 0.002".
- Shaft needs to be bearing supported.
- Mounting surface bolt circle should be in true position within 0.005" TIR.



Mounting.

- See figure above for configuration of suggested installation.
- Remove brake from packaging and separate the magnet body assembly from the armature assembly (energize if necessary).
  SAFETY NOTE: THE BRAKE WILL CLAMP TOGETHER WITH NO POWER APPLIED.
- The supply voltage should not vary more than +/- 10%. The positive electrode is in **RED** while the negative one is in **BLACK**.
- Install the magnet body to the mounting surface. Mounting hole bolt circle shall be concentric, parallel, and flat to shaft within .005" TIR.
- Slide the armature assembly onto the shaft while keeping the brake energized.
- See Table 1 to set the proper air gap (may adjust based on min/max range to release and engage properly). Attach/tighten the set screws located in the hub.

Mounting cont.

- Use pure DC power or full-wave rectified DC.
- Avoid any oil, water, or debris from contaminating friction surfaces.
- **NOTE:** Brakes are shipped without run-in/burnishing. You may have to turn by hand several revolutions to obtain proper torque.

Electrical Connections.

- Connect the magnetic coil wires to the proper DC power supply voltage.
  NOTE: Pay close attention to the polarity the **red wire** to positive terminal, and the **black wire** to negative terminal.
- Control switching should be in the DC circuit. Switching in the AC circuit will cause slow disengagement. Arc suppressors should be used in all circuits.

Check-out.

- Observe the armature movement while turning the brake on and off. When mounted properly with the proper air gap, the armature plate should be free from the magnet body.

Air Gap.

- See Table 1 on page 6 for specific air gap by brake model size.

Tables.

Model	Air Gap Set at Assembly			
	Min.		Max.	
	MM	Inches	MM	Inches
PMB-110-24-M06	0.150	0.006	0.250	0.010
PMB-126-24-M06	0.150	0.006	0.250	0.010
PMB-157-24-M10	0.150	0.006	0.250	0.010
PMB-197-24-M15	0.250	0.010	0.350	0.014
PMB-252-24-M18	0.250	0.010	0.350	0.014
PMB-319-24-M20	0.250	0.010	0.350	0.014
PMB-398-24-M30	0.250	0.010	0.380	0.015
PMB-496-24-M30	0.400	0.016	0.500	0.020
PMB-634-24-M40	0.750	0.030	0.850	0.033

TABLE 1 - Minimum and Maximum air gap for different models.

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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

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LOCATION
SEPAC Inc.
1580 Lake Street,
Elmira, NY 14901

CONTACT
Phone: 800.331.3207
607.732.2030
Fax: 607.732.0273

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