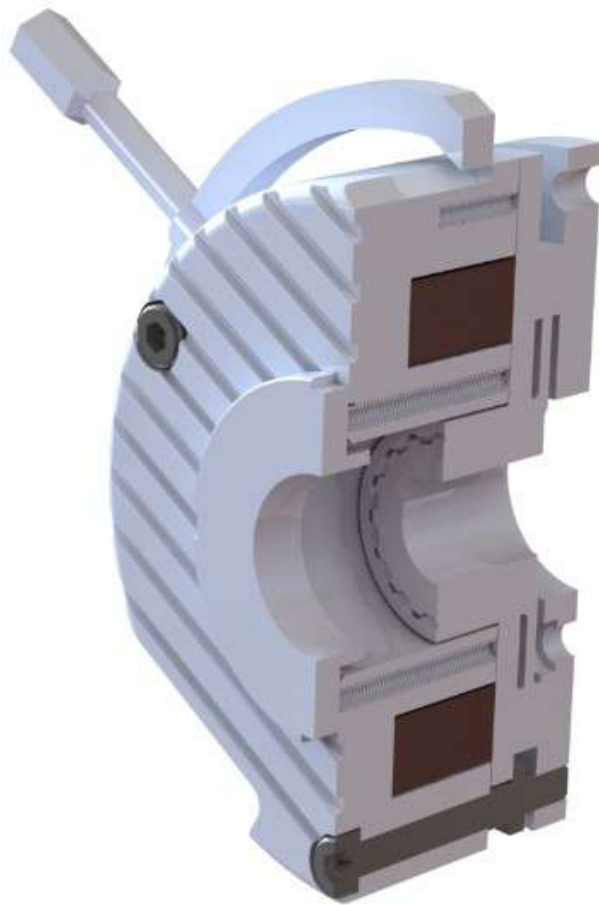


MSEB INSTALLATION GUIDE

MANUAL RELEASE SPRING ENGAGED FRICTION BRAKE

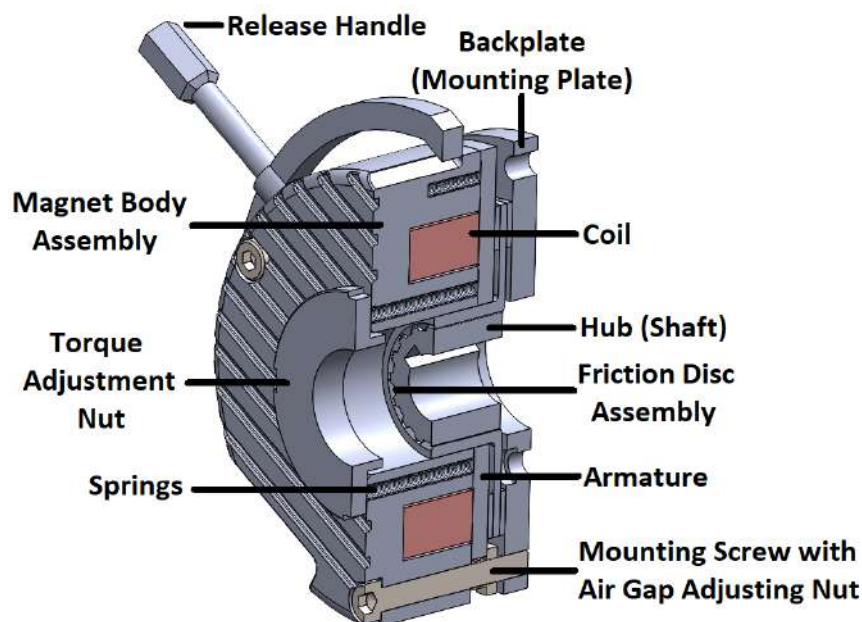


SEPAC Inc. Electromagnetic Friction Brakes:

MSEB Manual Release Spring Engaged Brake

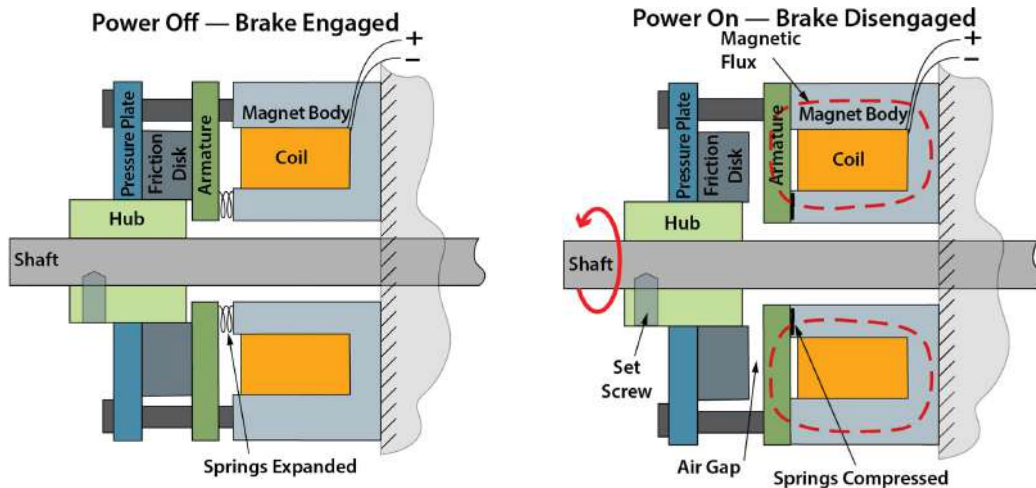
■ Uses.

The SEPAC manual release spring engaged brake is electromagnetically released and provides torque in the absence of power. The release handle provides the ability to disengage the brake in the absence of power allowing the shaft to rotate manually.



■ Operation.

When electrical current is supplied to the coil in the magnet body, a magnetic field is created which attracts the armature towards the magnet body, disengaging the friction disc. When the current is turned off springs push the armature to clamp the friction disc developing the rated torque.



■ General.

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

■ 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.

- Install hub as shown on the shaft in the figure below. Use the proper key (that fits keyway in hub). Be sure the hub will have full engagement in the friction disc (rotor) when mounted to the shaft (tighten set screw if applicable). The hub must be securely attached to the shaft with no movement.
- Remove the dust cover (if applicable). Disassemble the brake by loosening the three socket head cap screws. **NOTE:** The case assembly and armature plate will be held together by the manual release handle screws.
- Assemble the mounting plate to the end of the bell of the motor. There are two mounting bolt patterns available (3ØH or 3ØG). The mounting surface of the motor should be threaded to allow the proper screw to be used.
- **Air Gap Adjustment**—Reassemble the brake using the three socket head cap screws (mounting plate now assembled to the motor or mounting surface). Adjust air gap (see proper dimension below) using an open end wrench and the allen wrench with the socket head cap screws. The air gap measurement is between the armature plate and the case assembly (use a feeler gauge, see Figure 2). Measure and set the air gap in at least three locations (120° intervals) around the periphery of the brake. The air gap should not vary more than +/- 0.002" at any location.
- Be sure all fasteners are tight.
- Replace the dust cover (if applicable). The dust cover should be used to keep contaminants away from the braking surfaces.
- Hook up the leads to the correct power source. The voltage to be applied is determined by the model selected and the unit is marked with the operating voltage. When the power is turned on to the brake, the shaft should rotate freely.
- When the power is turned off to the brake, a negative voltage spike will occur at the switch. The supplied surge suppressor (blue electronic device supplied with unit) may be used to provide switch protection and improve response time (power off).
- **Torque Adjustment** —The brake is supplied with a torque adjustment nut (spring tension adjustment nut, see Figure 3). Brakes are set at the minimum torque rating per the brake specification. The torque may be adjusted down as much as 50% by turning the torque adjustment nut CCW. This allows the spring tension to be relieved which causes the holding torque to lower.

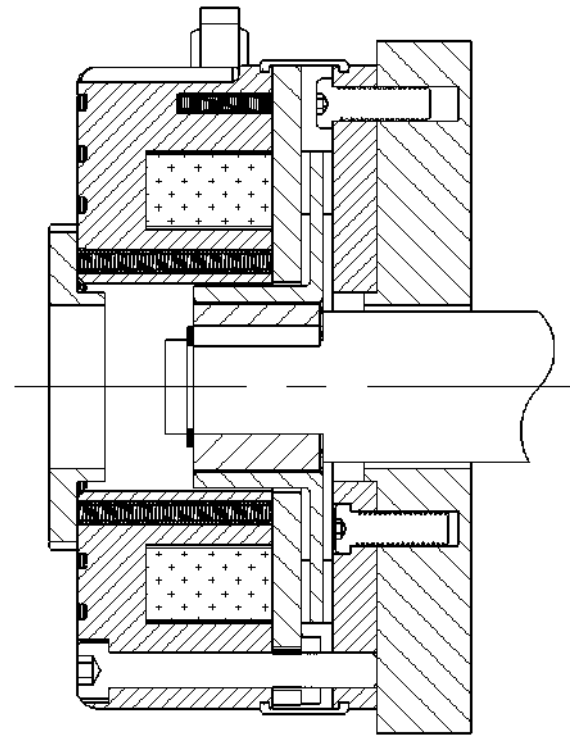


Figure 1: Mounting example of MSEB unit on customer shaft. Be sure the hub will have full engagement in the friction disc (rotor) when mounted to the shaft.

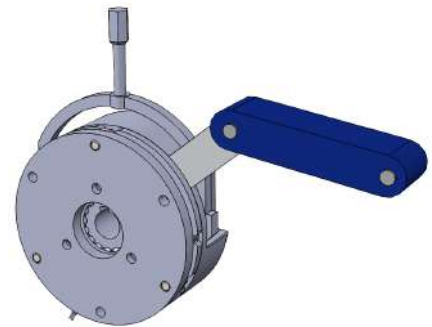


Figure 2: Feeler Gauge checking air gap

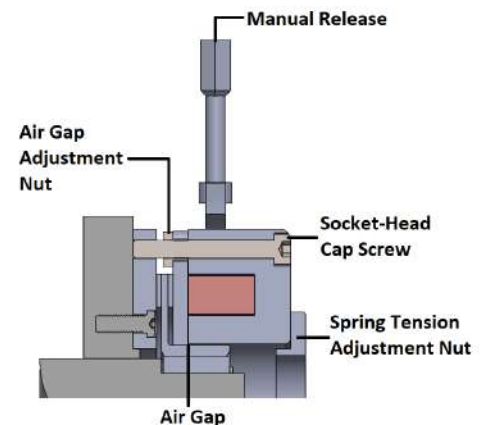


Figure 3: Manual Release diagram

■ Electrical Connections.

- Connect the magnetic coil lead 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 circuits.

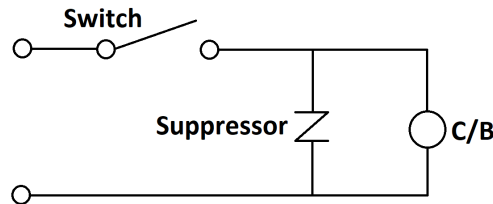


Figure 4: Supplied surge suppressor

■ Check-out.

- The brake surface must be kept free from debris, oil, water, contaminants. It is normal for brakes to get hot to the touch. The insulation rating of the brake is 155°C (311°F).
- The air gap may require re-adjustment at certain intervals depending on the application. Thus the air gap should be checked and adjusted to the listed specifications. Repeat air gap adjustment as necessary once the air gap increases (wears) to the following:

MSEB-326.....	over .012" (0.30 mm)
MSEB-402,500,579, 638.....	over .020" (0.50 mm)
MSEB-740.....	over .030" (0.76 mm)
MSEB-846,1000,1189.....	over .034" (0.86 mm)

■ 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.
- The manual release provides a means of releasing the brake by hand (normally done with the application of power or voltage). The manual release is attached to the case and the armature plate. Excessive wear may make it necessary to readjust the manual release screws to allow the proper function. The rotor and shaft will rotate freely with a movement of 8-10° of the manual release screws and hex nuts as necessary.

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.



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