

# ***Inertia Dynamics, Inc.***

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## **Instruction Manual for SAB Series Spring Applied Brakes**

**SAB series brakes** are designed to be engaged and disengaged in a static condition (at zero RPM). They are best used as a parking brake to hold a load in position.

### **Step 1, Pre-Assembly Inspection:**

All parts should be examined for damage from shipping and handling. Measurements should be taken to insure parts meet application requirements, such as shaft fits and applied voltage. All parts must be clean and free of foreign material before attempting assembly.

### **Step 2, Installation of Key:**

Install key in respective shaft. Key should fit keyseat with a tight fit on the sides and slight clearance over the key.

**Step 3:** Securely fasten the field coil assembly to a motor or other mounting surface. The hub is to be mounted using the appropriate methods listed below.

**Note:** The perpendicularity of the brake mounting surface with respect to the shaft is not to exceed 0.005 inches total indicated reading (TIR) at a diameter equal to the brake body outside diameter. The concentricity between the mounting holes or pilot diameter and the shaft should not exceed .010 inches T.I.R. for SAB 20 brakes and .020 inches T.I.R. for units SAB 90, 180, 400 and 1200 brakes.

**SAB 20 Hub mounting:** Install the hex hub with set screws outboard, being certain that the hex hub mates with the friction disc. With the brake coil not energized, slide the hub in towards the clapper plate until the set screws are

just accessible with a wrench. Tighten set screws to the recommended torque (see chart).

**SAB 90 Hub mounting:** Install the hub with set screws outboard, being certain that the hex hub mates with the friction disc. With the brake coil not energized, bottom out the hub on the clapper plate. Back the hub away from the clapper .010 to .025 inches and then tighten the set screws to the recommended torque (see chart).

**SAB 180, 400, & 1200 Hub mounting:** Install hub on shaft with the set screws opposite the mounting surface. Locate the hub relative to the pressure plate per dimension "A" in Figure 1 where  $A = 0.02$  " for the SAB 180 and  $0.07$  " for the SAB 400 and SAB 1200. Tighten the set screws to the recommended tightening torque (see chart ). With the brake coil not energized and being certain that the spline hub mates with the friction disc, slide the field assembly over the hub and fasten to the mounting surface. The field assembly can be mounted using the through holes or by utilizing the tapped holes in the field cup. Note: Where space allows, the hub can be installed with the set screws outboard similar to the SAB 20.

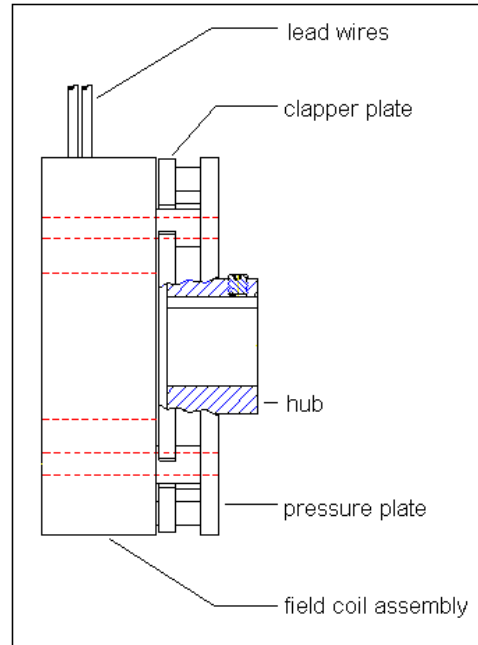
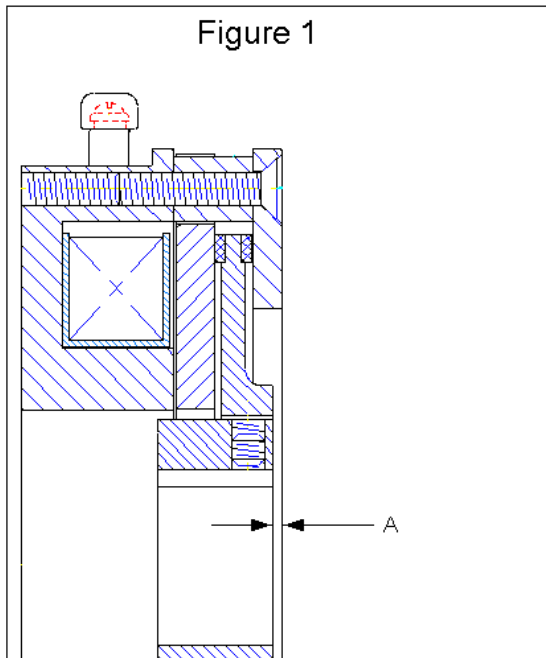
**Step 4:** Wire the two leads or screw terminals to the power supply. Inertia Dynamics power supplies are available with a wiring diagram showing the proper electrical connections.

**Step 5:** After the brake has operated for a short period of time check set screw torque and mounting screw torque.

**Replacement Parts for SAB Units**

Adjustments are made at the factory to ensure proper gaps, etc. Since virtually all components will wear during normal operation, it is suggested that when replacement is necessary, the entire unit be replaced.

| Recommended set screw torque |                 |
|------------------------------|-----------------|
| Screw size                   | Torque (in-lbs) |
| #4                           | 5               |
| #5                           | 9.5             |
| #6                           | 9.5             |
| #8                           | 19.4            |
| #10                          | 33.5            |
| 1/4                          | 78              |



**WARNING:** Because of the possible danger to person(s) or property from accidents, which may result from the improper use of products, it is important that correct procedures be followed: Products must be used in accordance with the engineering information specified in the catalog. Proper installation, maintenance and operation procedures must be observed. The instructions in the instruction manuals must be followed. Inspections should be made as necessary to assure safe operation under prevailing conditions. Proper guards and other suitable safety devices or procedures as may be desirable or as may be specified in safety codes should be provided, and are neither provided by Inertia Dynamics nor are the responsibility of Inertia Dynamics.