

FB Series Power on Brakes

Instruction Manual

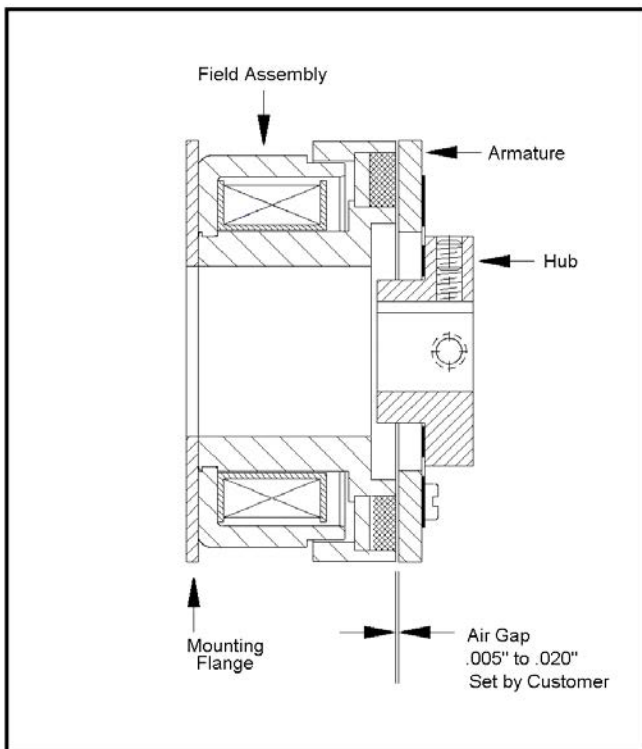
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Pre-Assembly Inspection

Step 1

All parts should be examined for damage from shipping and handling. Measurements should be taken to ensure parts meet application requirements. All parts must be clean and free of any foreign material before attempting assembly.

Note: Do not hi-pot clutches with AC operating voltages as that will damage the internal rectifier.



Installation of Keys

Step 2

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

Brake Installation

Step 3

Mount the field assembly using the mounting pilot and the four holes (or slots) located in the mounting flange. Models FB08 through FB15 have the mounting pilot located on the outside diameter of the flange. Models FB17 and larger have an inside mounting pilot diameter as well as an outside mounting pilot diameter also located in the mounting flange. Concentricity between the brake mounting pilot diameter and the shaft must be held to .010" (.25mm) T.I.R. The brake flange should be bolted securely to the bulkhead as it is the reaction member for the brake. The perpendicularity of the mounting surface with respect to the shaft is not to exceed 0.005" (.13mm) T.I.R. at a diameter equal to the bolt circle.

Step 4

Slide the armature & hub assembly onto the shaft. Do not force the armature as the armature springs may be damaged. Position the armature on the shaft to obtain a 0.005" to 0.020" (.13 to .51mm) air gap between the armature and field assembly. Tighten the set screws per chart 1. and recheck the air gap being certain the 0.005" to 0.020" (.13 to .51mm) air gap is maintained as the armature is rotated to any position.

Step 5

Wire the two leads to the power supply. INERTIA DYNAMICS Power Supplies are available with a wiring diagram showing the proper electrical connections.

Step 6

Burnish if required. See burnishing procedure for details. FB Series Brakes are not supplied burnished.

Step 7

After the brake has operated for a short period, recheck air gaps, drive component mounting, set screw torque.

Burnishing Procedure

For consistent engagement and full rated torque, it may be necessary to burnish the brake. However, burnishing may not be required in applications in which the brake is engaged while the load is at full speed. The normal slip that will occur when the load is engaged may cause the brake to become burnished. INERTIA DYNAMICS' power on brakes will produce 50-90% of rated torque "out of box" (without burnishing). The customer must determine if the "out-of-box" torque is adequate in their application. If burnishing is required, use the following procedure. Burnishing is a wearing in or mating process that ensures the rated torque will be obtained. Care must be taken to prevent contamination of the friction faces with oil or dirt particles during the burnishing process.

1. If possible, burnish the brake in the final application/location to ensure proper alignment of mated parts.
2. If the brake cannot be burnished in the final application/location; mount the brake in a test stand observing concentricity, alignment, and air gap (see step 3).
3. Using a filtered DC power supply, energize the brake at 100% of rated voltage for a minimum of five seconds to assure proper armature and field contact/engagement. Reduce the voltage to 30% to 40% of rated voltage.
4. Rotate the brake armature at the RPM from chart 2 while holding the brake field assembly stationary to obtain a forced slip while the unit is energized at 30% to 40% of rated voltage.
5. De-energize the unit after a three minute forced slip. Do not allow the brake to slip longer than three minutes. Excessive slipping will cause heat buildup

at the friction faces resulting in poor performance or failure.

6. Measure the static (break-away) torque of the brake with both friction members of the brake stationary with the coil energized at rated voltage.
7. The static torque should be at the rating shown in Chart 2. If the unit does not produce this rating, repeat Steps 3, 4, and 5 after a cool down period of five minutes (minimum).

Chart 1 Recommended Tightening Torque

Imperial		Metric	
Set Screw Size	Recommended Tightening Torque	Set Screw Size	Recommended Tightening Torque
#4	5 in-lbs.	M3	1.13 Nm
#5	9.5 in-lbs.	M4	2.67 Nm
#6	9.5 in-lbs.	M5	5.31 Nm
#8	19.4 in-lbs.	M6	9.10 Nm
#10	33.5 in-lbs.		
1/4"	78.0 in-lbs.		

Chart 2 Burnish Specification

Unit Size	Slip RPM +/- 10%	Imperial Standard Static Torque Rating	Metric Standard Static Torque Rating
8	250	2.5 in-lbs.	0.28 Nm
11	250	6 in-lbs.	0.68 Nm
15	190	10 in-lbs.	1.13 Nm
17	160	15 in-lbs.	1.70 Nm
19	150	25 in-lbs.	2.83 Nm
22	130	50 in-lbs.	5.65 Nm
26	60	80 in-lbs.	9.04 Nm
30	50	125 in-lbs.	14.12 Nm
42	30	250 in-lbs.	28.24 Nm

⚠ 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.



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