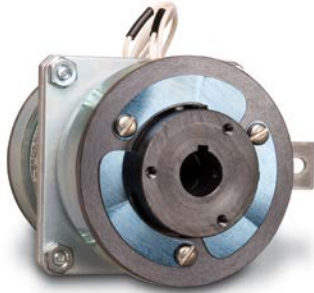


SOB Series Power-On Electric Clutch Brake Couplings

Installation Manual

P-8380-IDI
040-10243



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 such as hub bore, voltage, and mounting bolt circle. All parts must be clean and free of foreign material prior to assembly.

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

Shaft Alignment

Step 2

Clutch-brake-couplings are used to couple two in line shafts. The clutch-brake field assembly is mounted on one shaft and the clutch armature hub assembly on the other shaft. The two in-line shafts must be concentric to each other within 0.005" total indicated reading (TIR). Angular alignment must be within 0.5 degrees.

Installation of Keys

Step 3

Install keys (if applicable) in respective shafts. Keys should fit keyseat with a tight fit on the sides and slight clearance over the key.

Step 4

Slide the clutch-brake field assembly onto the shaft and tighten the set screws in the brake armature hub to the recommended torque - see chart 1. Slide the clutch armature hub assembly onto the shaft. Position the shafts and assemblies to achieve a normal operating air gap of .005" to .020". Tighten the set screws in the hub to the recommended torque - see chart 1. Note: After the unit has operated for a short period to time, recheck the air gap, set screws, etc.

Step 5

Anti-rotation tab on field assembly must be restrained by a loose fitting pin. Do not bolt tab to a bulkhead as it will bind and damage field bearings.

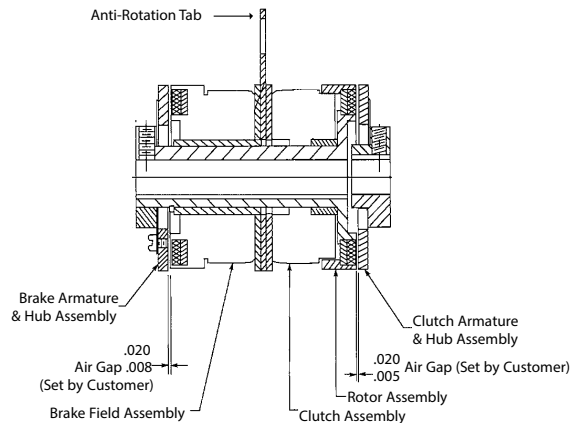
Step 6

Wire the four lead wires to control power supply. The two lead wires with black markers should be connected to the same polarity. Inertia Dynamics power supplies are available with a wiring diagram showing the correct electrical connections.

Note: After the unit has operated for a short period of time, recheck the air gap, set screws, etc.

Diagram 1

SOB



Burnishing Procedure

1. If possible, burnish the clutch-brake in the final application or location to insure alignment of the mated parts.
2. If the clutch-brake cannot be burnished in final application, mount the unit in a test stand observing concentricity, alignment, and air gap.
3. Using a filtered DC power supply, energize the clutch only at 100% of rated coil voltage (this assures proper armature engagement against field assembly). Then reduce the voltage to 30% to 40% of rated coil voltage.
4. Rotate one member of the clutch (either the rotor or armature) at the suggested RPM (see chart 2); while holding the other member stationary to obtain a forced slip while the unit is energized at 30% to 40% of rated coil voltage (repeat for brake end).
5. De-energize the unit after a three minute forced slip. Do not burnish a clutch longer than three minutes as excessive burnish duration will cause heat build-up on the friction faces resulting in poor performance.

6. Measure the static (break away) torque of the clutch-brake with both friction members stationary at 100% rated voltage.
7. Repeat steps 2 through 6 except energize and burnish the brake only.
8. The static torque of standard Inertia Dynamics clutch-brakes after burnishing should be equal to the catalog rating. If the unit does not measure the catalog rating, repeat step 2 after a cool down period of five minutes, until the rated torque is obtained.

Note: If the clutch or brake is required to accelerate a large inertia load, the normal slipping that will occur when the load is engaged is frequently sufficient to cause the unit to become burnished. Inertia Dynamics clutch-brakes typically produce 50% to 90% of their rated torque “out-of-box” (without burnishing). The customer should determine if the “out-of-box” torque is adequate for their application as the torque will increase with normal cycling (especially on high speed, high inertia load applications). Care must be taken to prevent contamination of the friction faces with oil or dirt particles during the burnishing process.

Chart 1

Recommended Tightening Torque		
Unit Size	Set Screw Size	Recommended Tightening Torque
11	#4	5 in-lbs.
17 - 19 - 22	#8	19.4 in-lbs.
26	#10	33.5 in-lbs.

Chart 2

Burnish Specification		
Unit Size	Slip RPM +/- 10%	Standard Static Torque Rating
11	250	6 in-lbs.
17	160	15 in-lbs.
19	150	25 in-lbs.
22	130	50 in-lbs.
26	60	80 in-lbs.

⚠ 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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