INSTALLATION AND MAINTENANCE

Installation of B Brakes

Installation Procedure

1. The complete unit consists of two major subassemblies: the field and the armature/hub assembly.

2. If the armature and hub are not assembled, the armature should be placed on a flat surface with the working face down. With the hub flange up, align the spline in the hub with the spline in the armature (figure 1). Then press the hub down into the armature. Care should be taken not to cock the hub. Turn the assembly over and push the armature down over the hub until the armature contacts the hub flange (figure 2).

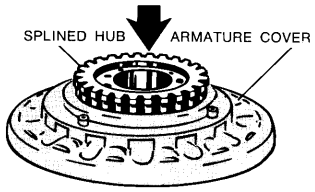

Figure 1.

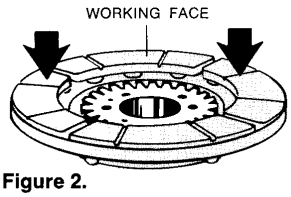

Figure 2.

3. Mount the field to the wall of the machine or support bracket via 4 customer-supplied screws and make sure the field is locked down solidly.

4. The shaft going through the field assembly should be concentric within 0.003” TIR and have an angular misalignment within 0.006” TIR at a 5” diameter.

5. Mount the armature/hub assembly onto the shaft.

A. Set-screw type: With the set screws loose in the hub, slide the armature/hub assembly onto the shaft and install the key. Slide the armature/hub assembly against the brake field, then pull back 0.030”~0.040” to set the gap. Verify that the gap is within proper range and tighten the set screws in the armature hub.

B. Taper-lock bushing type: With the screws loose in the taper-lock bushing, slide the armature/hub assembly onto the shaft and install the key. Slide the armature/hub assembly against the brake field, then pull back 0.030”~0.040” to set the gap. Verify that the gap is within proper range and tighten the screws in the taper-lock bushing.

6. Connect the lead wires to the power source and energize the field. If the armature is not pulled in by the magnetic force of the field, push the armature towards the brake field until the two faces make contact. Upon de-energizing the field, the armature release spring will

pull the armature away from the brake field and provide the required gap (0.024" is nominal). This gap will be automatically adjusted by the release spring mechanism as wear takes place in the unit.

7. In the first few engagements, the unit may not produce rated torque but will do so after the brake surfaces wear in. The unit may squeak during initial wear because there is only metal to metal contact. This will diminish as the unit wears itself in. If full torque is required immediately, contact Ogura or a sales representative for proper burnishing procedures.

Maintenance

This brake self-adjusts for wear. Under normal operating conditions, it should require no maintenance during its life. Depending on the duty cycle and load, the wear rate should be periodically inspected. Wear produces grooves on the two faces. This is normal and they should not be removed. Excessive wear will often initially result in loss of torque. When units are worn out, it is preferable and usually necessary to replace both the brake field and armature, as they tend to wear at about the same rate.

Air Gap

If the air gap between the armature and field has closed (allowing them to make contact when de-energized), first check to see that the armature hub or field assembly has not moved. If they have, they must be reinstalled as described in the installation instructions. If they are in the correct positions, pull back the armature and relocate as described above.

Loss of Torque

The most common service problem is loss of torque. The following quick checks can easily be made and will usually take care of the problem:

1. Check for wear: The unit may be worn out and need replacing.

2. Check the friction surfaces for contaminants: Remove if any are present (see Contamination).

3. Check for proper power input: Use a DC voltmeter across the field terminals and verify that normal voltage is being supplied. If the power control has a potentiometer, this should be turned to full power for this test. The voltage should also be read as the potentiometer is turned down and should be approximately proportional.

4. If the voltage is zero or low, the wiring should be checked for a grounded (shorted) or open coil.

A. Grounded coil: With the power off and one lead disconnected, measure the resistance between one field terminal and the field shell. The ohmmeter should register no change (infinite resistance) with a good unit. Repeat with other terminal. If the ohmmeter shows a reading, this means there is some grounding to the shell, and the field should be replaced.

B. Open coil: With the power off and both leads disconnected, measure the resistance between the two field terminals. The ohmmeter should give a reading very close to the following. An open coil would give no reading (infinite resistance) and must be replaced.

Table 1

Model	20	50	100	150
Coil Resistance [Ω] (DC 90V – 20°C)	1087	237	202	219

Contamination

Care should be taken so that contaminants such as oil, grease, etc. do not come in contact with the working faces of the unit. In some cases it may be necessary to provide a cover or baffle to prevent this. Oil and grease on the friction surfaces should be removed by wiping with a small amount of environmentally friendly grease solvent. However, depending on the permeability of the grease or oil, it may be impossible to remove completely, so if the unit shows signs of slippage it needs to be replaced.

Heat

If the unit appears to be running hot, first check the temperature on the outside of the field. The field temperature can be around 150°F in an ambient temperature of 72°F due to the heat generated by the coil and operation of the unit. Excessive heat may be a source of failure and can be corrected by:

- Insuring that the input voltage is correct.
- Providing ventilation of the unit.
- Reducing system inertia and/or cycle rate.