# INSTALLATION AND MAINTENANCE

## Installation of AMU Clutch/Brakes

### Installation Procedure

1. The unit is shipped ready for installation. However, before operating the unit, rotate both the input and output shafts to verify that no contact is felt and no noise is present. If contact or noise is noted, there is a possibility that the armature has moved on the spline hub and is dragging against either the clutch rotor face or brake face. In this case, remove the bolts holding the housing halves together and separate the unit in two. Apply slight even pressure to the face of the armature to move it back slightly away from the friction face. Reassemble the unit and apply power. Once the clutch and brake pull in, they will automatically set the air gap to the proper distance.

2. The maximum side load, as measured from the center of the input/output shafts, should be limited to the following to maintain bearing life.

**Table 1**

| Model | 2.5 | 5 | 10 | 20 | 40 | 80 |
|---|---|---|---|---|---|---|
| Max Side Load [lbs] | 27 | 27 | 43 | 65 | 79 | 92 |

3. In the first few engagements, the unit may not produce rated torque but will do so after the friction surfaces wear in. Care should be taken so that the temperature on the surface of the friction material will not exceed 176 F while burnishing. If full torque is required immediately, contact Ogura or a sales representative for proper burnishing procedures.

### Maintenance

As the friction surface wears, clutch/brake torque gradually declines. When the gap becomes greater than the following, the unit will require adjustment.

**Table 2**

| Model | 2.5 | 5 | 10 | 20 | 40 | 80 |
|---|---|---|---|---|---|---|
| Max Air Gap [inch] | 0.016 | 0.018 | 0.022 | 0.024 | 0.028 | 0.028 |

### 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 2**

| Model | 2.5 | 5 | 10 | 20 | 40 | 80 |
|---|---|---|---|---|---|---|
| Coil Resistance [Ω] (DC 24V - 20°C) | 192 | 144 | 96 | 94 | 64 | 50 |

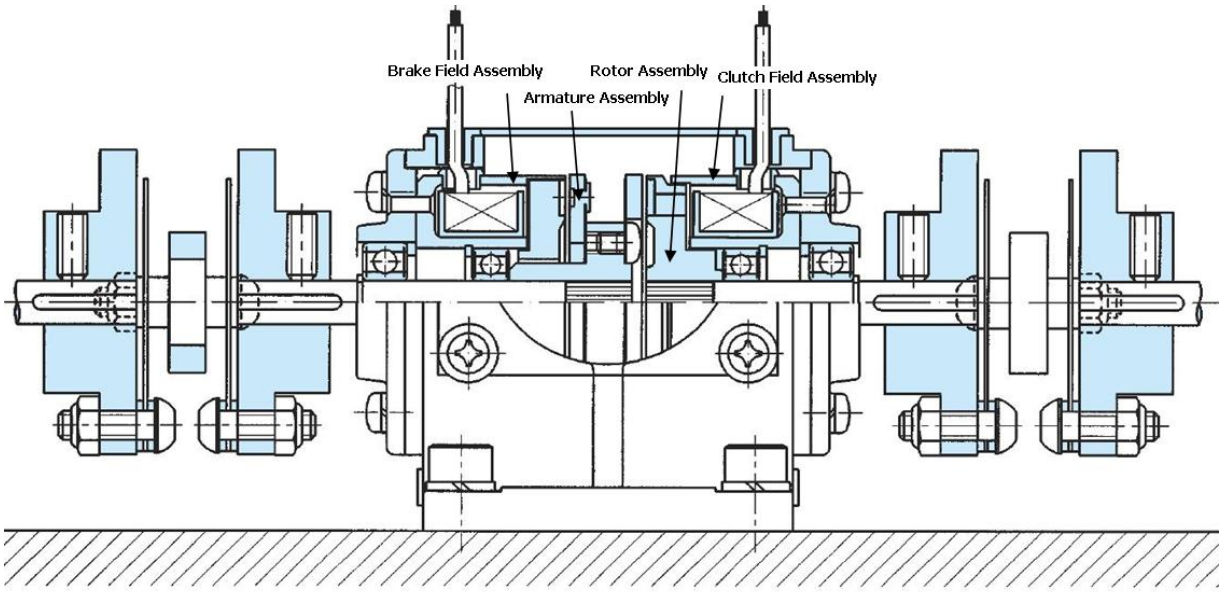
## Contamination

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.




The mounting surface should be made flat by machining.
When couplings are used, care should be taken to the shaft alignment.