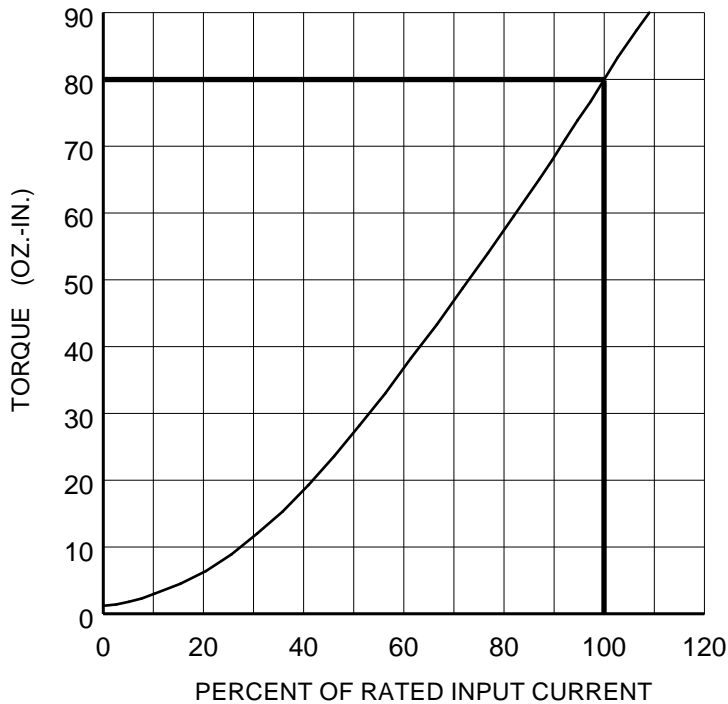


magnetic particle CLUTCH C5

2 to 80 oz.-in.

DATA SHEET



CHARACTERISTICS - With no electrical excitation, the input and output shafts freely rotate. With electrical excitation, the input shaft becomes coupled to the output shaft. Torque is proportional to input current (see torque graph), and independent of RPM. While the load torque is less than the output torque, the input shaft and output shaft are locked together. When the load torque is increased, the clutch will slip smoothly at the torque level set by the coil input current.

- Torque range 2 to 80 oz.-in.
- Maximum RPM 2000 RPM
- Maximum heat dissipation 10 watts
- Maximum case temperature 160 degrees F
- Maximum overhung load 20 lbs.
- Output shaft inertia 13×10^{-6} lb.-in.-sec²
- Response (unforced) 18 mSec.
- Response (forced) 8 mSec.
- Weight 3 lbs.

← 0% thru 100% of rated input current can be dialed in directly on a Placid Ind. 12 volt constant current power supply (P/N PS-12-MC). The output torque can be determined using the graph.

	6 V	12 V	24 V	90 V
COIL RESISTANCE (ohms)	8.5	34	135	1660
100% INPUT CURRENT (amps)	0.69	0.34	0.17	0.052

← Rated D.C. coil voltages available: 6 VDC (yellow leads), 12 VDC (green leads), 24 VDC (red leads), 90 VDC (blue leads).

CLUTCH PERFORMANCE

TORQUE: At the rated voltage, the clutch will draw 100% of the rated input current. Output torque will be 80 oz.-in.

POWER SUPPLY: A "constant-current" D.C. power supply is recommended for the best accuracy in open-loop control systems. This type of power supply will maintain a fixed (but adjustable) output current, regardless of the temperature of the clutch, so output torque is constant (but adjustable).

HEAT DISSIPATION: The clutch can dissipate 10 slip (thermal) watts continuously. For continuous slip, calculate the heat input by the formula :

$$\text{HEAT (watts)} = \text{SLIP RPM} \times \text{TORQUE (oz.-in.)} / 1356$$

Using the above formula: At rated torque, the maximum continuous slip RPM (input RPM - output RPM) is 169. The clutch can dissipate higher amounts of heat for short periods of time, but the average must not exceed 10 watts. The case temperature must never exceed 160 degrees F.

INSTALLATION INFORMATION

Do not drop, or strike with a hammer. Keep away from fine metal filings and fine metal chips. Shield from liquids.

Do not attempt to remove the clutch shafts.

All pulleys, sprockets, couplings, etc. must mount as slide fits. Use a puller to remove stuck components. Never pry or hammer to install or remove components.

Center your set-screw on the flat of the clutch shafts.

Always use a flexible coupling when connecting the shafts of a rigidly mounted clutch to the shaft of another rigidly mounted device. Precisely align both shafts.

Always electrically ground the clutch.



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