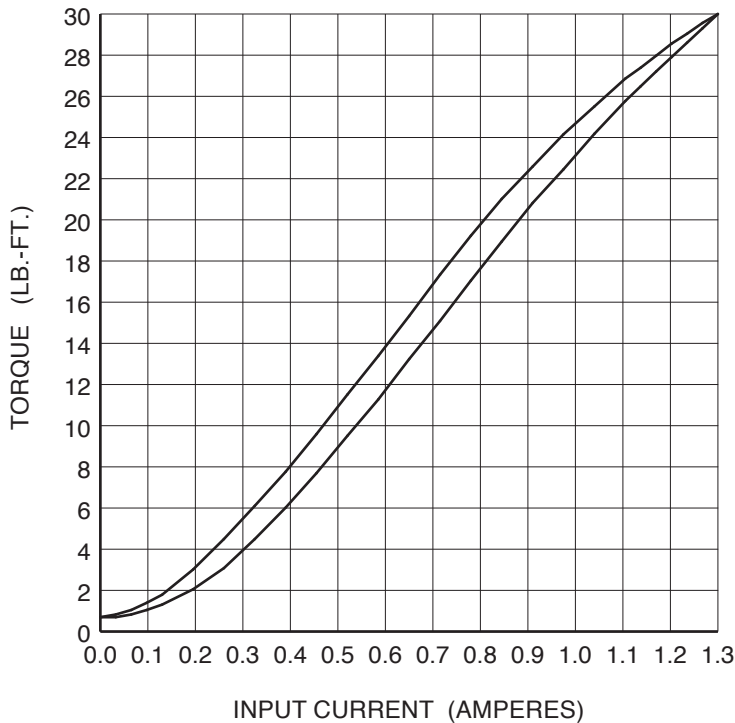


magnetic particle CLUTCH PHC-50

1 to 30 lb.-ft.

DATA SHEET



CHARACTERISTICS - With no electrical excitation, the input shaft & hollow output shaft 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 slip RPM. While the load torque is less than the output torque, the clutch drives without slip. When the load torque is increased, the clutch will slip smoothly at the torque level set by the coil input current.

Torque range	1 to 30	lb.-ft.
Maximum RPM	1000	RPM
Heat dissipation, @ 100 RPM	250	watts
Heat dissipation, @ 1000 RPM	400	watts
Maximum case temperature	160	degrees F
Maximum overhung load	120	lbs.
Output shaft inertia	0.05	lb.-in.-sec ²
Input shaft inertia	0.23	lb.-in.-sec ²
Weight	26	lbs.

TORQUE CURVE - Use the lower torque curve when an input current value is approached from 0 amperes. Use the upper torque curve when the input current value is approached from the 100% input current.

At Clutch Temperature :	68°F	160°F
COIL RESISTANCE (ohms)	15	19
INPUT D.C. VOLTAGE, @ 1.3 amps	20	25

Do not exceed 1.3 amperes or 30 lb.-feet torque.



Mount horizontally only.

CLUTCH PERFORMANCE

TORQUE: At 20 volts, the clutch will draw 100% of the rated input current, at 68°F. Output torque will be 30 lb.-ft.

POWER SUPPLY: A "constant-current" D.C. power supply is recommended for the best accuracy in open-loop control systems.

HEAT DISSIPATION: Fins on the body move air which increases cooling with increasing input RPM. A user supplied external electric fan increases cooling. For continuous slip, calculate the heat input by the formula :

$$\text{HEAT (watts)} = \text{SLIP RPM} \times \text{TORQUE (lb.-ft.)} \times 0.14$$

Using the above formula: At rated torque, the maximum continuous slip RPM (input RPM - output RPM) is 59. The clutch can dissipate higher amounts of heat for short periods of time, but the average must not exceed ratings. The case temperature must never exceed 160°F.

INSTALLATION INFORMATION

The finned body rotates with the input shaft (that has six M8 screw holes). Hold the 2 tabs, (with the electrical connector), stationary with a bracket. The hollow shaft is the output. Guard the rotating parts to prevent injury.

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 shaft or retaining rings.

Your through shaft & 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.

When used as a shaft-mounted brake, do not rigidly mount the clutch body. Use a torque arm, so the body can float.