



PSC, PSB, PSCB Magnetic Particle Units

Installation

Your SOFSTEP® clutch or clutch / brake combination is a precision-manufactured unit and requires special care during installation.

The clutch or brake will perform in any orientation. The units are unique in that output torque is directly proportional to applied current, regardless of mounting configuration.

In-Line Applications

Axial force applied to either the input or output shafts during installation could result in damage to the assembly.

Flexible couplings must be used to connect the input and output shafts to the driver and driven shafts to correct misalignment. Consult flexible coupling manufacturer for proper mounting procedure.

Parallel Shaft Applications

The mounting procedure for parallel shaft applications may incorporate outboard bearing supports to eliminate side loading. If an outboard bearing support is used, misalignment between shaft and support must be limited to .002 T.I.R. The following are recommended maximum overhung loads:

<u>Model</u>	<u>Side Load (lbs)</u>
PSB/PSC/PSCB-2	10 at 1"
PSB/PSC/PSCB-15	20 at 1"
PSB/PSC/PSCB-70	30 at 1 1/2"
PSB/PSC/PSCB-120	30 at 1 1/2"
PSB-240	40 at 2"

Mounting Method

The clutch or brake assembly is provided with convenient mounting holes located on the ends of each unit. The following brackets are recommended for clutch, brake, or clutch / brake with B.C. and tapped holes identified for convenience.

<u>Mounting Bracket</u>	<u>For Units with Basic P/N</u>	<u>B.C.</u>	<u>Tapped Holes</u>
PS15	15	2.000	8-32
PS70	70	4.228	10-32
PS120	120	4.812	1/4-20

*Factory supplied mounting brackets are not available for basic units 2 and 240.

Heat Dissipation

The heat sources in an electromagnetic clutch are: (1) electric excitation and (2) mechanical slip. The combined heat from these sources must be limited to the heat dissipation value tabulated for each unit. Mechanical heat is generated by:

- (a) the kinetic energy which must be imparted to an accelerated inertia load by a clutch or must be absorbed by a brake. The energy can be expressed as:

$$W = 2.67 \times I \times (\text{RPM}/10000)^2 \times F$$

Where: W = energy, watts
I = inertia or parts to be started or stopped, lb-in²
F = number of starts or stops per minute

- (b) continuous slip when a clutch or brake is used to limit or to produce torque at a given value. This energy can be expressed as:

W = .0118T x RPM
T = torque, in-lb
RPM = slip, speed

It is recommended that the maximum temperature as measured at the OD and the output shaft should not exceed 180°F under stabilized conditions.

If the temperatures are maintained within the limits specified. There is no long-term deterioration because of temperature. The limiting temperature-sensitive components are the winding, insulation, bearing lubrication, and shaft seals.

Voltage Identification

The clutch and break coil lead wires are individually color-coded for ease of identifying voltage. The following codes are provided to aid installation of your assembly.

Voltage	0-3	0-24	0-90
Lead wire 1	red	red	red
Lead wire 2:	white/blue stripe	white/green stripe	white/orange stripe

Specifications

Supply Voltage: 0-24vdc
Temperature Range:
 Operating 0°C to 40°C
 Storage -30°C to +80°C
Relative Humidity: 5% to 85%
Pollution Degree: 2 (IEC664-1)
Altitude: 0 to 2000 meters

Maintenance

Properly sized and installed, the clutch or brake is a self-contained unit and requires no maintenance. These units are considered unrepairable.



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