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INSTRUCTION MANUAL
SOFSTEP® Magnetic Particle Brake
24 vdc & 90 vdc Models: PSB2, PSB15, PSB70, PSB120 & PSB240

CAUTION: This product contains rotating parts which could cause injury. At time of installation, appropriate protective guards should be installed by the user according to his use of this product.

Theory of Operation

The brake construction consists of two stators, a rotor, a coil assembly, magnetic powder, and two bearings. The bearings support and align the rotor with the stators, and allow the rotor to rotate within the brake assembly. The magnetic powder occupies the space between the stators and the rotor disk, and represents the key element in the operation of the brake.

The stators are connected to the machine frame through a torque arm and remain stationary. The rotor is connected to a rotating machine shaft. The magnetic powder functions as the variable bond or link between the stators and the rotor. It is the medium for the transmission of torque.

An electric current in the coil creates a magnetic field (flux), which passes through the stators, magnetic powder, and the rotor disk. The flux aligns the powder particles, forming a bond or link between the stators and the rotor. The strength of the bonding action is proportional to the amount of current in the coil.

Mechanical Installation

Prior to installation, manually check the rotation of the rotor, and observe that it is smooth and free of binding or scraping.

PSB70, PSB120, PSB240

1. Mount the brake to the shaft.

2. Attach a torque arm between the extension bolt and the machine frame with a “loose” or “floating” mount to prevent binding forces on the brake bearings.

PSB2, PSB15

1. Unit can be rigidly mounted to frame with mounting holes provided.

2. For indirect drive, a sheave or sprocket can be mounted to the shaft. For direct drive, a flexible coupling must be used to connect the brake shaft with machine shafts.

Electrical Installation

For 24 vdc devices, connect the two wires to the 24 vdc power source.

For 90 vdc devices, connect the two wires to the 90 vdc power source.

	PSB2		PSB15		PSB70		PSB120		PSB240	
Supply Voltage (vdc)	0-24	0-90	0-24	0-90	0-24	0-90	0-24	0-90	0-24	0-90
Maximum Current (adc)	.37	.08	.54	.12	.50	.12	.85	.22	.56	.15

Environmental Specifications

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

Maintenance

These units require no scheduled maintenance.

The following units can be rebuilt at the factory: PSB70, PSB120 and PSB240. Unit rebuild includes replacement of bearings, seals and magnetic powder.

The following units cannot be economically rebuilt: PSB2 and PSB15.