MAGNETIC POWDER BRAKE AND CONTROLLER

MAGNETIC POWDER BRAKE PB80-03B
MAGNETIC POWDER BRAKE CONTRULLER PB80-03C

1. Safety rules

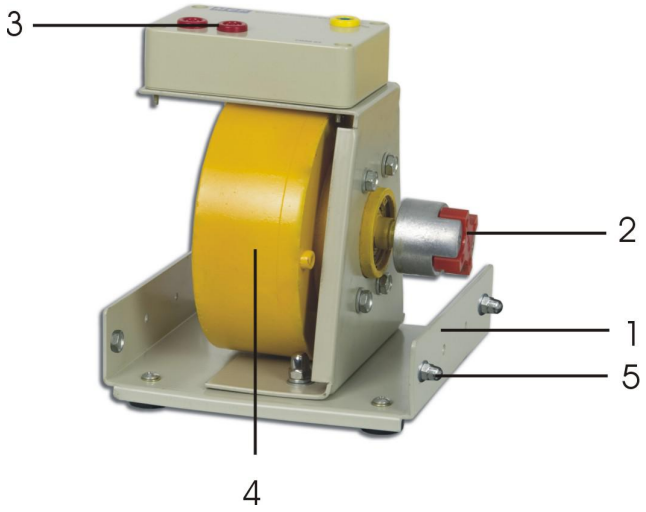
To ensure safe operation of the equipment and eliminate the danger of serious injury due to mechanical injury and short-circuits (arcing), the following safety precautions must be observed. Damages resulting from failure to observe these safety precautions are exempt from any legal claims whatever.

* Prior to connection of the equipment to the power supply, check that the available voltage correspond to the voltage setting of the equipment.
* Do not use this instrument for high-energy industrial installation measurement.
* Check connection leads for faulty insulation or bare wires before connection to the equipment. The connection leads must be double insulation.
* Do not place the equipment on damp or wet surfaces.
* Do not subject the equipment to direct sunlight or extreme temperatures, humidity or dampness.
* Do not exceed the maximum permissible input ratings.
* To avoid electric shock, do not operate this equipment in wet or damp conditions. Conduct using only in dry clothing and rubber shoes, i. e. on isolating mats.
* To avoid mechanical injury, fix the equipment steadily and couple to other machine suitably.
* Don’t operate in gloves.
* Comply with the warning labels and other info on the equipment.
* Do not cover the ventilations slots of the cabinet to ensure that air is able to circulate freely inside.
* Do not insert any objects into the equipment by the way of ventilation slots.
* Do not place water-filled containers on the equipment (danger of short-circuit in case of knock over of the container).
* Do not operate the equipment near strong magnetic fields.
* Do not subject the equipment to shocks or strong vibrations.
* Keep hot soldering irons or guns away from the motor.
* Do not modify the equipment in any way.
* Do not place the equipment face-down on any table or work bench to prevent damaging the controls at the front.
* Do not operate the equipment before the cabinet has been closed and screwed safely as terminal can carry voltage.
* Periodically wipe the cabinet with a damp cloth and mid detergent. Do not use abrasives or solvents.
* The equipment is suitable for indoor use only
* Do not store the equipment in a place of explosive, inflammable substances.
* Opening the equipment and service – and repair work must only be performed by qualified service personnel
* The equipment don’t belong to children hands.

2. Descriptions

A. Magnetic powder brake PB80-03B

The magnetic power brake comprises three main components: a coil, a stator and a rotor. When electricity is supplied to the brake, the magnetic field inside the coil begins to fluctuate depending on the ratio of the current intensity (get from magnetic power brake). In the end, these magnetic field fluctuations affect the viscosity of the magnetic powder between the rotor and the stator. When electrical power is applied to the coil, the powder particles line up along the lines of force of the magnetic field binding the rotor and stator together. This produces friction, and braking ensues as a motor load. However, when the current is disconnected, centrifugal force presses the powder against the stator. This subsequently releases the rotor, which can then turn freely once more.



PB80-03B

(1) Base: the base of the brake and it can be a media to connect to motor and torque sensor.
(2) CP14: it is a coupler which is using for connect motor and torque sensor.
(3) Connector: connect the brake with the controller for current input.
(4) Brake body: the main body of the brake.
(5) Connection screw: the connection screws for fixing to motor and torque sensor.

B. Magnetic powder brake controller PB80-03C

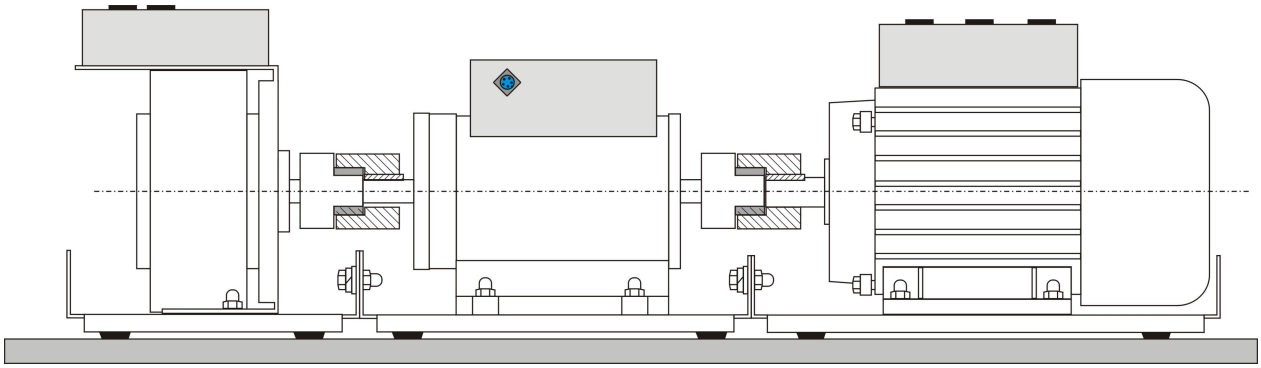
The magnetic powder brake controller is a constant current generator. The current will control the friction of the brake as well as control the torque.

PB80-03C

(1) Knob: adjust the output current.
(2) Power switch: Turn on/off the device.
(3) On LED: illumine when turn on.
(4) Connector: connect with magnetic powder brake

3. Installation

1. Set magnetic powder brake PB80-03B, dynamic torque sensor and motor on motor connection machine bed in proper order.
2. Use two sets of coupler to connect them.
3. Adjust them and make them equal center height and equal coaxiality.
4. Fix them by screws



4. Operation

1. Connect magnetic powder brake PB80-03B connector III and magnetic powder brake controller PB80-03C connector 4 with two test leads, confirm polarity red to red and black to black.
2. Turn on the power of motor and torque meter.
3. Power on magnetic powder brake controller.
4. Adjust knob 1 to get a certain torque.
5. After working turn the knob 1 to end of anticlockwise to avoid magnetic powder brake overheats.

5. Specifications

A. Magnetic powder brake PB80-03B

.Max. torque:	3 N.m
.Max input current:	0.5 ADC
.Shaft height:	63 mm
.Dimension:	150x130x145 mm
.Weight:	3 kg

B. Magnetic powder brake controller PB80-03C

.Output current:	0~0.5 ADC
.Max. output voltage	9 VDC
.Dimension:	170x135x70mm
.Weight:	0.5 kg