
Customized Test System for Small DC Motors

COMPONENTS

Magtrol has developed a customized test system dedicated to the automatic testing of small DC motors ranging from 7 to 75 W. This bench is equipped with 2 HD Hysteresis Dynamometers, DSP6001 High Speed Programmable Dynamometer Controller, 6510e Single-Phase Power Analyzer, temperature measuring module (able to monitor up to 8 thermocouples), 1.5 kW DC power supply and personal laptop computer. The hardware is integrated with Magtrol's MT-TEST 4.0 Motor Testing Software with Temperature Testing. All test parameters and test data are acquired and managed by the included software, which also allows the generation and printing of customized test reports.

TABLE

All of the components mentioned above are mounted on a versatile table. The stand is designed from lightweight aluminum with casters for smooth mobility, and is sturdy enough to support up to 3 Magtrol dynamometers. It is equipped with a built-in cabinet and locking drawer—ideal for a laptop computer—as well as an open shelf which can accommodate a printer or be used for other storage. The connection between the motor and the power supply, as well as the connection of the thermocouples, are made by fast clamping connections incorporated on the table surface.

MOTOR FIXTURING

The motor fixture is integrated with the dynamometer in the form of a sliding platform, allowing easy adjustment of the axial position of the motor to the dynamometer. X and Y positioning is made using precision screws having a resolution of 50 micrometers. The non-magnetic motor support allows fast clamping of the motor in the test position.

TESTING

This small DC motor CMTS conducts the following tests:

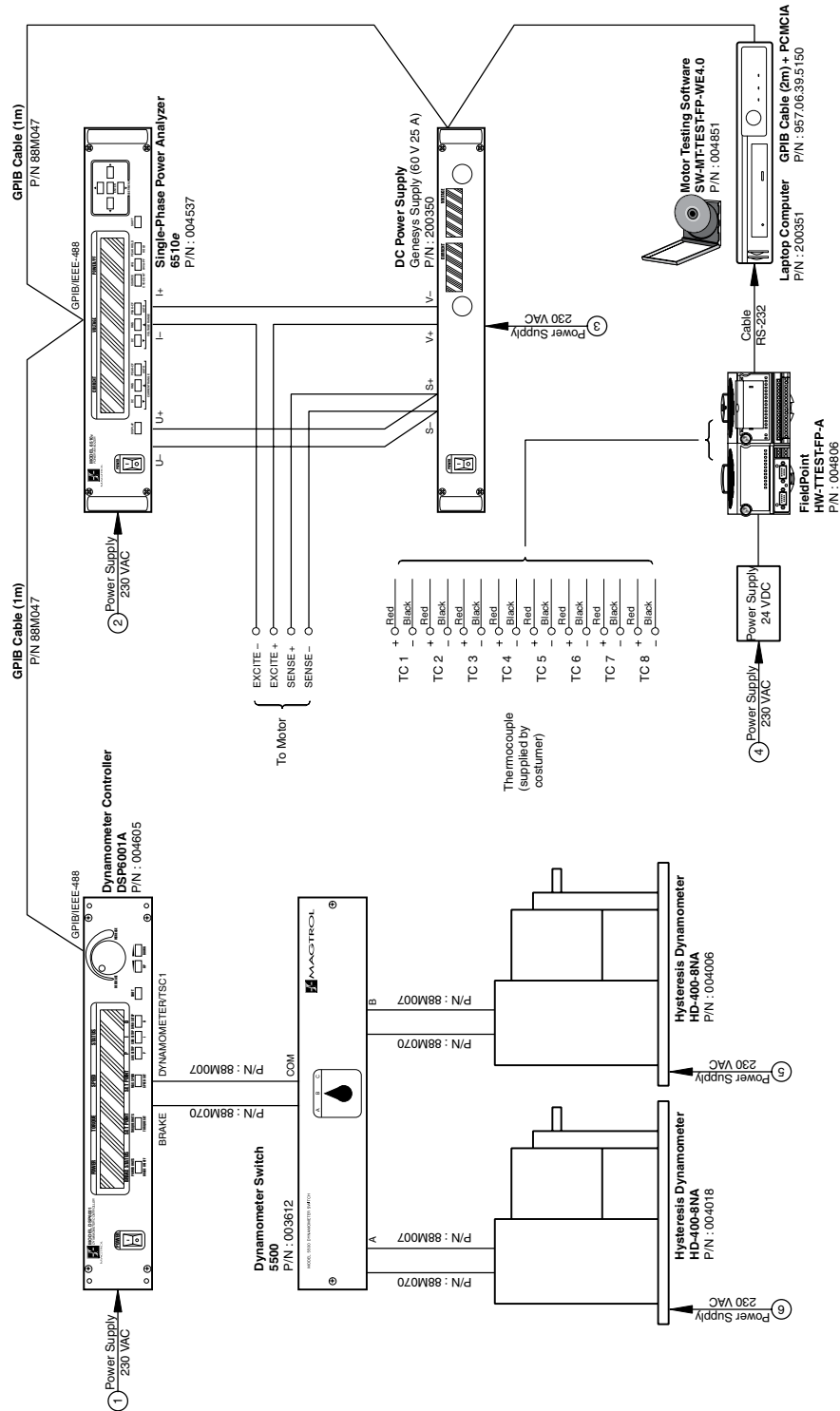
- With the motor being supplied by a constant DC voltage, an increasing breaking torque is applied from free run to lock rotor
- Characterization of starting torque
- Dynamic testing of the motor with repeated test cycles and data acquisition of measured parameters (torque, speed, input current, input voltage, temperature, input/output power, power factor and time)



Small DC Motor CMTS featuring 2 Magtrol HD-400 Hysteresis Dynamometers with custom motor fixturing, DSP6001 Dynamometer Controller, 6510e Single-Phase Power Analyzer, FieldPoint temperature testing module and MT-TEST 4.0 Motor Testing Software.



Custom motor fixture with sliding platform.



Due to the continual development of our products, we reserve the right to modify specifications without forewarning.



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