For Testing Electric, Hydraulic, Pneumatic Motors, Gas Engines, Gearboxes and Pumps

- Hysteresis, Eddy-Current and Powder Absorption Dynamometers
- Torque Transducers
- High Performance Dynamometer Controllers
- Power Analyzers
- Motor Testing Software
- Custom Motor Test Systems

www.magtrol.com
TM, TMHS & TMB In-Line Transducers

Magtrol’s In-Line Torque Transducers deliver precise torque and speed measurement over a very broad range. Each model has an integrated conditioning electronic module providing 0 to ±10 VDC torque output and an open collector speed output.

TF Torque Flange Sensors

Based on strain-gauge technology, the TF Sensor’s precise telemetry system enables highly accurate signal transmission between its measuring flange, HF transmitter and receiver/conditioner. Special designs available on request.

Torque Transducer Displays

Magtrol offers two different torque displays: Model 3411 for all TM/TMHS/TMB and TF Transducers and Model 6400 (for TM series only). Both units supply power to the transducer and display torque, speed and mechanical power.

Torque 7 Software

Magtrol’s Torque 7 Software is an easy-to-use Windows® executable program, used to automatically collect torque, speed and mechanical power data. The data can be printed, displayed graphically or quickly saved as a Microsoft® Excel spreadsheet.

Reaction Torque Sensor RT

With its compact and maintenance-free design, the RT Torque Meter has been designed to perform static torque measurement and small dynamic rotation (with limited angle) in both clockwise and counterclockwise direction. Main field applications include actuator and valve testing, fastener testing and automotive braking.

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### TORQUE TRANSDUCERS RATINGS

<table>
<thead>
<tr>
<th>Model</th>
<th>Nominal Rated Torque</th>
<th>TMB Series Basic Accuracy</th>
<th>TMB Series High Accuracy</th>
<th>TM Series High Speed &amp; Accuracy</th>
<th>TMHS Series High Speed &amp; Accuracy</th>
<th>TF Series Torque Flange Sensor</th>
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<tbody>
<tr>
<td>TM</td>
<td>TF</td>
<td>N·m</td>
<td>lb-ft</td>
<td>Accuracy Class</td>
<td>Max. Speed rpm</td>
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</table>

* High speed and higher torque versions available on request.
**CUSTOM MOTOR TEST SYSTEMS**

Magtrol’s Customized Motor Test Systems (CMTS) are PC-based, turnkey systems custom designed and built to meet your specific motor testing requirements. By integrating Magtrol’s motor test equipment with power supplies, adaptable fixtures, custom tables/cabinets, printers, etc., Magtrol’s engineering team can customize PC-based, turnkey systems and modular test benches for almost any motor test application.

**CMTS Component Options**
- Custom Test Stand, Table or Cabinet
- One or More Dynamometers
- Programmable Dynamometer Controller
- Power Analyzer
- Customized Software
- Motor Power Supply (AC and/or DC)
- Personal Computer and Printer
- GPIB Cards & Cables
- Motor Fixturing
- Safety Guards
- Multiple Point Temperature Measurement
- Cooling System

**4 Quadrant Dynamometer System**
The Magtrol 4 Quadrant Dynamometer System is not only capable of absorbing energy (like a typical dynamometer), it can also deliver energy. Speed, position and torque control modes allow for testing that would be difficult or impossible with a traditional dynamometer. It is available in a variety of torque ratings ranging from 1 N·m up to 20 N·m, with speed ratings up to 5000 RPM. Control software and data acquisition packages can be tailored to meet the customer’s needs.
Hysteresis Brake Dynamometers (HD)

Hysteresis Brake Dynamometers (HD series) are versatile and ideal for testing in the low to middle power range (max. 14 kW intermittent duty). Hysteresis Brakes do not require speed to create torque, and therefore can provide a full motor ramp from free-run to locked rotor. Brake cooling is provided by convection (no external source) or by air (compressed air or dedicated blower) depending on the model.

Eddy-Current Brake Dynamometers (WB)

Eddy-Current Brake Dynamometers (WB series) are ideal for applications requiring high speeds and also when operating in the middle to high power range. Eddy-Current Brakes provide increasing torque as the speed increases, reaching peak torque at rated speed. The Dynamometers have low inertia as a result of small rotor diameter. Brake cooling is provided by a water circulation system, which passes inside the stator to dissipate heat generated by the braking power.

Powder Brake Dynamometers (PB)

Powder Brake Dynamometers (PB series) are ideal for applications operating in the low to middle speed range or when operating in the middle to high torque range. Like Hysteresis Brakes, Powder Brakes provide full torque at zero speed. Like the Eddy-Current Brake Dynamometers, the PB series is water-cooled, allowing for power ratings up to 48 kW.

Tandem Dynamometer

Magtrol offers Eddy-Current and Powder Dynamometers mounted in tandem. In tandem, the unique features of each type of dynamometer brake are utilized, allowing nominal braking torque to be applied to the unit under test from zero speed to maximum rotation.
**MOTOR TESTING SOFTWARE**

**M-TEST 7**

Magtrol’s new M-TEST 7 is a state-of-the-art motor testing program for data acquisition. Used with a Magtrol Programmable Dynamometer Controller, M-TEST 7 works with any Magtrol Dynamometer or In-Line Torque Transducer to help determine the performance characteristics of a motor under test. Up to 63 parameters are calculated and displayed utilizing M-TEST 7’s feature-rich testing and graphing capabilities. Written in LabVIEW™, M-TEST 7 has the flexibility to test a variety of motors in a multitude of configurations. Magtrol can also make custom modifications to the software to meet additional motor testing requirements.

In addition to M-TEST 7, Magtrol offers EM-TEST 2.0 specifically designed for endurance motor testing and DUAL-TEST 7 fully independent dual channel control software.

**Standard Features**
- Graphical User Interface with tabbed pages for quick navigation.
- Optional Analog and Digital I/O.
- DSP7000 Programmable Controller Support.
- Expanded power analyzer and power supply selections.
- Additional test choices (coast and overload to trip).
- Two page report generates a five-axis graph on second page.

**DSP7000 High-Speed Programmable Controller**

Magtrol’s Model DSP7000 High-Speed Programmable Dynamometer Controller employs state-of-the-art Digital Signal Processing Technology to provide superior motor testing capabilities. Designed for use with any Magtrol Hysteresis, Eddy-Current or Powder Brake Dynamometer, Magtrol In-Line Torque Transducer or auxiliary instrumentation, the DSP7000 can provide complete PC control via IEEE-488 or USB interface.

**Standard Features**
- DSP7001 Single Channel: Easy to use plug & play solution
- DSP7002 Dual Channel: Enables the support of two testing instruments with independent or tandem configurations and two fully independent control loops
- Built-in Alarm System
- Speed & Torque Operating Modes
- Programmable Digital PID Values
- Built-in Current-Regulated Supply
- Adjustable Torque Units

**POWER ANALYZERS**

**Models 6510e and 6530 High-Speed Power Analyzers**

- Data transfer rates up to 100 per second
- Bandwidth: DC to 100 KHz
- Maximum current: 20 A
- Standard IEEE-488 (GPIB) and RS-232C interfaces
- Single phase (6510e) or three phase (6530)
For over 60 years, Magtrol Inc and Magtrol SA have been providing customers with high quality products to test, measure and control torque-speed-power, load-force-weight, tension and displacement. Magtrol Inc, headquartered in the USA, is a leading manufacturer of motor test equipment and hysteresis brakes and clutches. Magtrol SA, located in Switzerland, also offers motor test equipment as well as transducers to measure, monitor and control load, force, weight and displacement. Magtrol offers customers a wide array of test and measurement solutions, combined with excellent worldwide sales and service.

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E-mail: magtrol@magtrol.ch

Subsidiaries in:
Germany • France
China • India

For worldwide network of sales agents, visit our web site:
www.magtrol.com

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

For more information, contact your local sales agent:

Load-Force-Weight Measurement
- Nominal value: up to 2,500 kN
- Accuracy class: < 0.5%
- Overload at rupture: up to 500%
- Test and certificate for component to CE standards and material certificate on request
- Signal conditioner:
  - Analog or digital
  - Inputs: up to 2 channels
  - Outputs: 0 to 10 V, 4 to 20 mA or bus interface
- Digital display

Brakes and Clutches
Hysteresis
- Torque: up to 26 N·m
- Speed: up to 25,000 rpm
- Power: up to 5,300 W (AHB)
- Air-cooled version (AHB) available for basic motor test rig configuration
- Standard or customized brakes and clutches available
- Power supplies, matched brakes, torque curves

Powder
- Highest Torque per Volume
- Available Torque: 5, 10, 25 N·m
- Braking Power: up to 110 W
- Stable Braking Torque
- Low Moment of Inertia
- Low Residual Torque

Displacement Transducers
- Accuracy: 0.3%
- Range: 50 mm to 1 m
- High shock and vibration resistance
- Ability to withstand pressure up to 450 bar
- Operating temperature:
  -40 °C to +80 °C with active temperature compensation
- High temperature version, up to 200 °C, available