



Fastener Test Systems

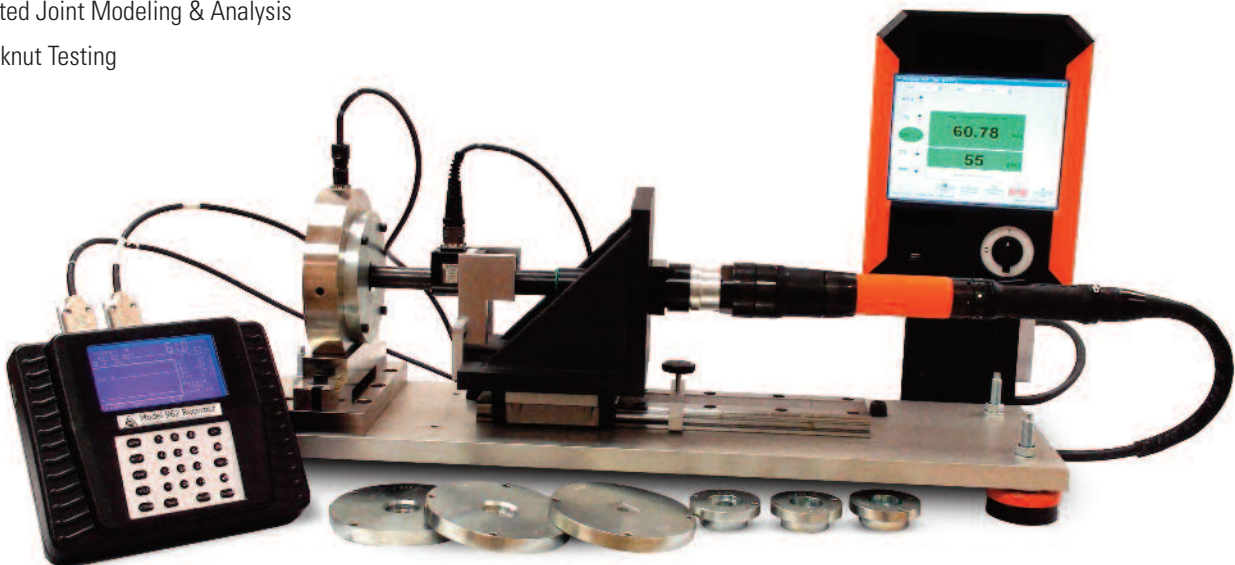
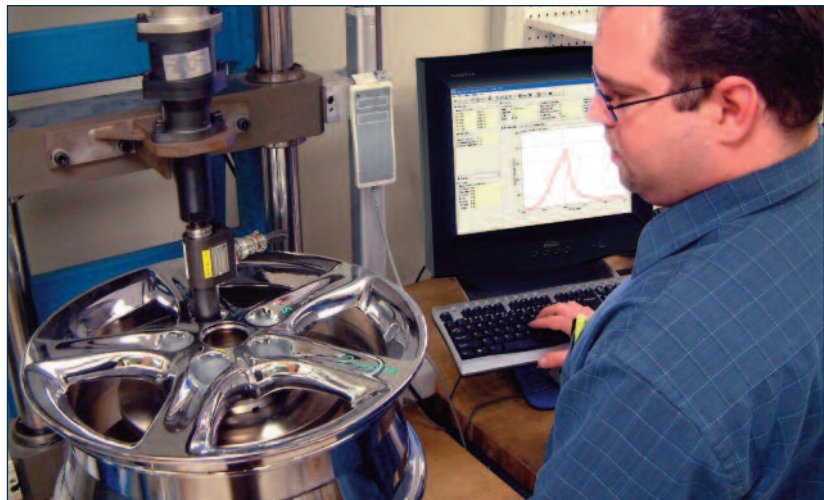
PCB Load & Torque Division's RS Technologies fastener test systems have been the industry standard for OEMs and suppliers alike for more than 20 years. Our comprehensive line of user-friendly products are custom-configured and ideal for a number of industry applications including automotive, aerospace & defense, and power generation. To complement our industry-leading fastener test systems, we offer expert technical support and services including testing, system maintenance and upgrades, and calibration in our A2LA accredited laboratory.

Products

- Data Acquisition
- Rotary Torque-angle Transducers
- Load Cells
- Fastener Drive System
- Fastener Testing Fixture Assembly

Applications

- Friction Coefficient Testing
- Torque Tension Testing
- Assembly Strategy Testing
- Yield Determination Testing
- Bolted Joint Modeling & Analysis
- Locknut Testing





The Nuts and Bolts

Whether a portable test system or a full laboratory system, our test systems are typically comprised of five components: data acquisition system, rotary torque transducer, clamp force load cell, drive system, and a fixture assembly.

Data Acquisition

The key component in a torque-tension test system is the data acquisition. We offer three levels of instrumentation, including:

- The portable Model 962 for basic torque-tension testing
- The Model 3200 LabMaster Professional for more complex laboratory and research testing
- The Model 3210 LabMaster Portable, the portable version of the Model 3200

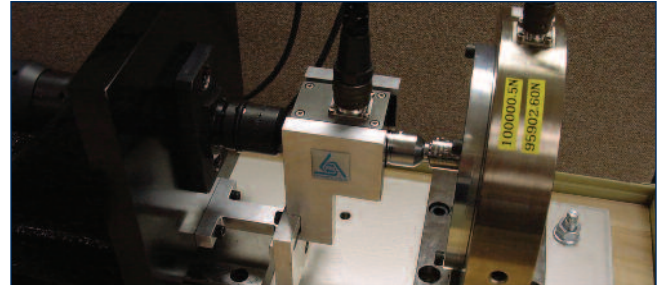
Rotary Torque-Angle Transducers

The second component measures the applied torque and the angle of fastener rotation. These accurate and durable sensors come in a variety of capacities, from 32 ozf-in up to 18,000 lbf-ft. They are fitted onto the “business end” of the drive tool to record the input torque and the angle of fastener rotation.

Load Cells

The third major component measures the clamp load or fastener tension that is developed when the fastener is tightened. These high accuracy load cells accept standard Skidmore-Wilhelm plate and bushing sets to accommodate most fastener sizes. Special fixturing can be designed to accommodate coupons machined from actual components to obtain laboratory level data using actual materials.

When calculating friction coefficients for the underhead and threaded area of the fastener, you need a special load cell that measures thread torque, called a Research Head. Similar to the clamp force load cell, these load cells can be used to measure the clamp load generated with a threaded fastener. They also measure the reaction torque as seen by the nut or threaded part.



A third type of load cell, called a fastener force washer, can be fitted onto actual bolted joint assemblies to obtain clamp force measurements. Although less accurate than the clamp force and torque-tension load cells, they can produce important clamp force data on actual assemblies.

Fastener Drive System

The fourth component is the drive system that supplies the applied torque to tighten the fastener. For the most basic system it might be a hand-held tool. For most standard torque-tension testing it's a DC electric drive motor and controller that are controlled by the operator. For the more advanced systems, the motor is controlled by the LabMaster Professional. The LabMaster testing software lets the operator specify the tool output torque and RPM, when the tool should be shut off, cycle the fastener multiple times, etc.

Fastener Testing Fixture Assembly

The fifth and final component is a fixture assembly that brings the entire system together. These come in a variety of configurations, including vertical, horizontal, tabletop, freestanding, or mobile cart. This assembly provides mounting for the drive motor, torque-angle transducer, clamp force or torque-tension load cells.

Call us today to find out how our team of experts can help you meet your ever-changing fastener test requirements.



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ISO 9001 CERTIFIED ■ A2LA ACCREDITED to ISO 17025

PCB's Line of Fastener Test Products (formerly the RS Technologies product line) includes test systems and threaded fastener torque/angle/tension systems ideal for use in the Automotive, Aerospace & Defense, Power Generation industries, and for product assembly by manufacturers or processors of threaded fasteners or other companies that use threaded fasteners to assemble their products. For more information, please visit www.pcb.com