



## Ground Vehicle Testing Solutions

be certain.

**WITH MORE THAN FOUR DECADES OF INDUSTRY EXPERIENCE, MTS**  
**PROVIDES INNOVATIVE TECHNOLOGY AND CONSULTATIVE PARTNERSHIPS**  
TO VEHICLE DEVELOPERS, SUPPLIERS AND CONTRACT TEST LABS WORLDWIDE.  
THESE CUSTOMERS DEPEND ON US TO HELP THEM BRING HIGHER-PERFORMING  
PRODUCTS TO MARKET FASTER WHILE MINIMIZING DEVELOPMENT COSTS.



## The preferred global testing solutions resource

The world expects high performance and absolute reliability from its vehicles — and as a vehicle developer, supplier or contract test lab, more is expected from you. How can you satisfy such elevated quality expectations while accelerating your time-to-market and reducing costs? By partnering with the testing technology leader: MTS.

### Expertise

Since 1966, MTS has been at the forefront of vehicle test technology development, working closely with the world's leading automotive developers. This experience has yielded many pioneering technologies that have become industry standards. Now we're engineering the next generation of solutions that promise even faster and more accurate testing, along with world-class consulting services that make our singular expertise readily available to you.

### Flexibility

New testing requirements frequently arise with little or no warning, and adaptability is essential for vehicle test programs to remain productive and efficient through the change. Our test systems, controllers, software and accessories are designed so that you can easily add new capabilities as your needs expand.

### Support

No matter where your vehicle testing occurs, MTS will deliver the ongoing support you need, when you need it. We surround our solutions with a vast service network, featuring a global reach and responsive representation. Combined with smart maintenance programs, MTS can help you keep productivity high and cost of ownership low.

### Solutions for a broad array of vehicle testing requirements

Find the perfect fit for your needs from the industry's most complete offering of hardware, software and global services and support. That includes a full range of high-performance solutions to meet your full-vehicle, subsystem and component testing needs. And nobody customizes like MTS. Simply tell us your needs and we'll meet them.

The comprehensive MTS testing offering includes solutions for:

- » Durability testing
- » Vehicle dynamics testing
- » Precise measurement and characterization
- » Noise, vibration and harshness (NVH) evaluation
- » Drivetrain testing
- » Tire testing
- » Aerodynamics

Our systems also support almost every vehicle type and size imaginable, including:

- » Motorcycles and recreational vehicles
- » Passenger vehicles
- » Light-to-medium-duty trucks
- » Heavy-duty trucks and other commercial vehicles
- » Tractors, construction vehicles and other off-highway vehicles
- » Motorsports vehicles
- » Rail vehicles and railway structures





Helping you test with confidence.

Whether you work for a manufacturer, a supplier or a contract test lab, MTS offers the technology and expertise you need to be certain about your testing and simulation.





## KEEPING MOTORSPORTS TEAMS IN A WINNING POSITION

The racing may be done on the track, but the winner is decided long before you get there. That's where MTS can help.

In the modern battle for hundredths-of-a-second gains in lap times, no detail is too small and no racing vehicle component overlooked. Suspension. Drivetrain. Aerodynamics. Tires. All must be optimized to the car, the track and the weather. And all of this complex work must occur within ever-shortening timeframes.

MTS delivers the solutions and expertise motorsports teams need to optimize their vehicle development and setups with certainty. Our testing systems are currently in use by top racing teams around the world, and MTS engineers and support teams are some of the most experienced in the racing industry. No other test solutions provider offers this depth of expertise or this breadth of products and services.

### Vehicle development

Thorough product characterization is an absolute must for vehicle developers. They must ultimately sign off on quality, performance and reliability, while also meeting business pressures to reduce time to market and control costs during development. In addition, many new materials require thorough evaluation as manufacturers develop lighter and more fuel-efficient vehicles.

Based directly on input from vehicle OEMs, MTS provides the technology and support that test professionals need to optimize vehicle performance. Our offering features the capabilities, flexibility and precision required to resolve almost any testing need that arises. That includes the efficient evaluation of every material, component and subsystem that developers incorporate into your designs.

### Component and subsystem development

Vehicle suppliers face high demands. Manufacturers award their business only to those suppliers that demonstrate the highest levels of product performance and affordability. As manufacturers continue to push responsibility down the supply chain, it is also becoming critical for suppliers to thoroughly understand how their products will perform over the long term in their intended applications.

That's why the world's leading component and subsystem suppliers insist on MTS. They leverage our unmatched industry experience and technology leadership to complete their required testing in the most reliable and cost-efficient manner possible.

### Contract vehicle testing

Throughput means everything to today's independent, third-party test labs. The more projects they accept and complete each week, the greater the profitability for the business. However, this speed must be accomplished without sacrificing testing precision or data integrity. These needs play directly into the strengths of MTS.

With its proven technology and services portfolio, MTS can help contract test labs accelerate their testing through increased productivity and uptime, while maintaining speed and accuracy to differentiate themselves in the marketplace.

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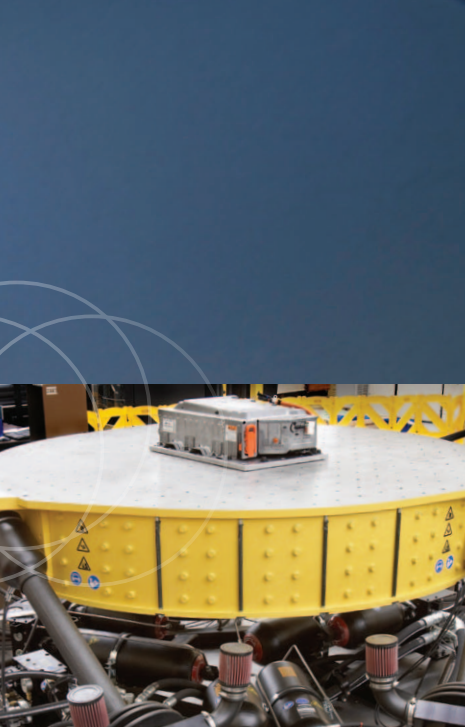
MTS offers reliable, affordable and easy-to-use tools for helping suppliers comply with global standards and confidently meet manufacturer testing requirements.



## The complete offering

Why look elsewhere? When you partner with MTS, you'll find all the products, expertise and service you need, from a single and highly reputable resource.





## ONE RESOURCE FOR EVERY COMPONENT TESTING NEED

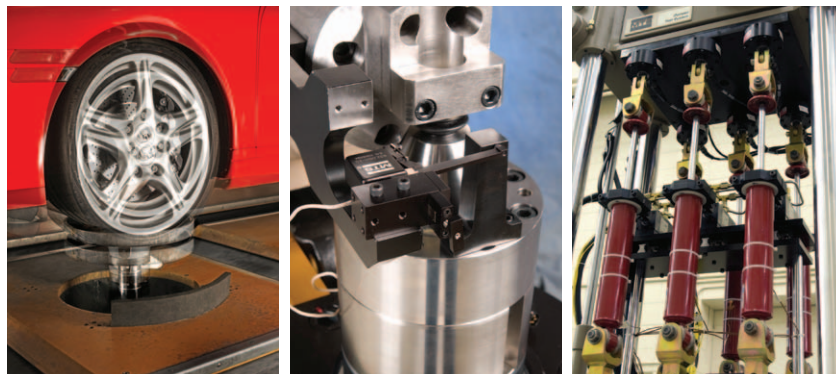
Our broad range of MTS vehicle component testing systems provides industry-leading capabilities for accurately characterizing the performance and durability of materials, components, subassemblies and structures.

- » MTS Multi-axial Simulation Table (MAST) systems allow accelerated simulations of proving grounds or service environments in the test lab. They are ideal for evaluating a broad range of vehicle components, systems and assemblies.
- » The family of MTS elastomer test systems includes single-axis elastomer test systems for low-, medium- and high-frequency tests, along with multi-axial test systems for accurately measuring static and dynamic component behavior during vehicle development.
- » Our flexible damper test systems repeatably determine the damping characteristics and service life of test specimens.
- » MTS ball joint test systems offer an efficient means of testing the durability of ball joints for passenger cars, trucks and SUVs.

## Durability assessment

Accelerate your development processes and achieve more reliable results with a complete scope of MTS durability testing solutions. Whether you're testing at the full-vehicle, subsystem or component level, all of these products can help you move more of your testing from the proving ground to the controlled and repeatable test lab. The MTS durability offering includes:

- » Spindle-coupled road simulators that provide efficient and accurate reproduction of proving ground road surfaces, maneuvers and events.
- » Tire-coupled road simulators, featuring exceptional accuracy and repeatability, allowing vehicle designers to conduct meaningful tests throughout vehicle development.
- » Multi-axial simulation tables (MAST™) that allow you to accurately reproduce proving ground vibrational or laboratory service environments.
- » Steer test solutions that efficiently determine steer component fatigue life.
- » Spinning Wheel Integrated Force Transducers (SWIFT®) for quickly and efficiently meeting the demands of road load data acquisition and laboratory testing.
- » Component test solutions for efficiently characterizing the performance, durability and safety of components (see sidebar).
- » Tire tread wear simulation systems, providing accurate indoor simulation of complex tire wear.





## The complete offering

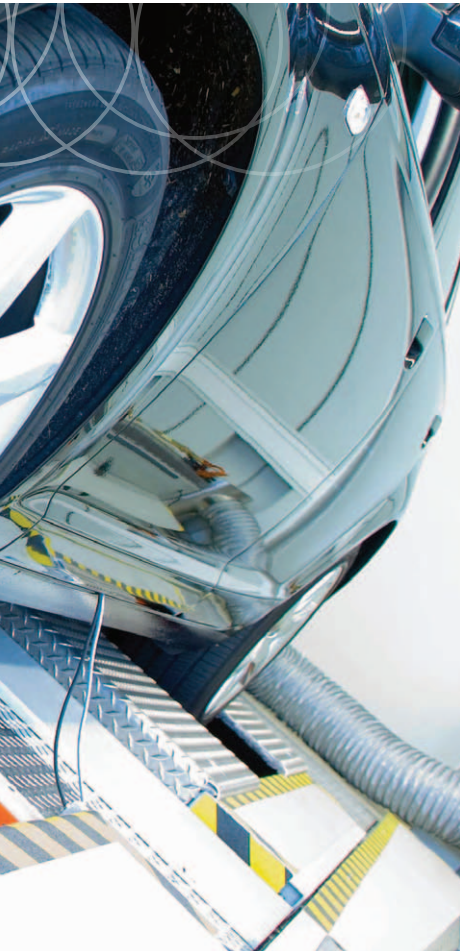


The MTS Flat-Trac® Dynamic Roadway combines proven tire-coupled road simulation and flat-belt roadway technologies for reliable and repeatable ride comfort testing.



The MTS Suspension K&C Deflection Measurement System maximizes throughput, delivers accurate and repeatable results, and manages large amounts of test data.





### Ride, handling and performance

Trusting your data and optimizing the performance of tires, suspensions and other vehicle dynamics is critical to sustaining a competitive advantage. MTS vehicle dynamics testing systems can help you make precise and confident measurements faster and earlier in the development cycle. MTS vehicle dynamics solutions include:

- » Chassis and suspension testing solutions that allow precise data to be gathered during the preliminary stages of development.
- » Tire test systems that provide detailed insight into how a tire contributes to overall vehicle dynamic behavior, including rolling resistance.
- » Elastomer and damper testing solutions renowned for their fast and highly precise characterization.

### Aerodynamic simulation systems

Cutting-edge MTS aerodynamics testing systems yield unmatched insight into vehicle aerodynamic performance, easily keeping pace with wind tunnel speeds up to 180 mph. You can choose a single-belt configuration for best aerodynamic simulation, or a five-belt system with MTS-exclusive dynamic platform balance for best measurement precision. Precision MTS model and wheel motion systems help further enhance simulation.

### Versatile material test systems

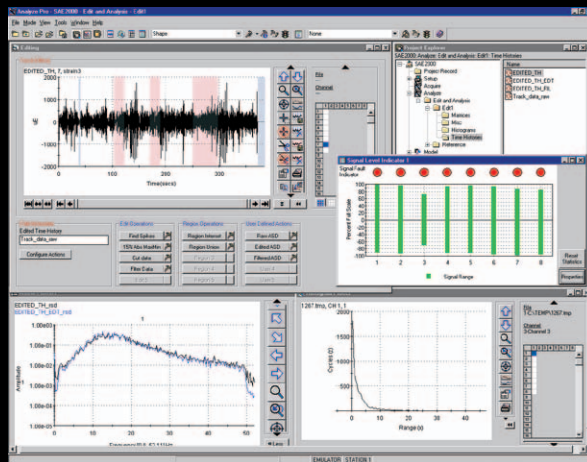
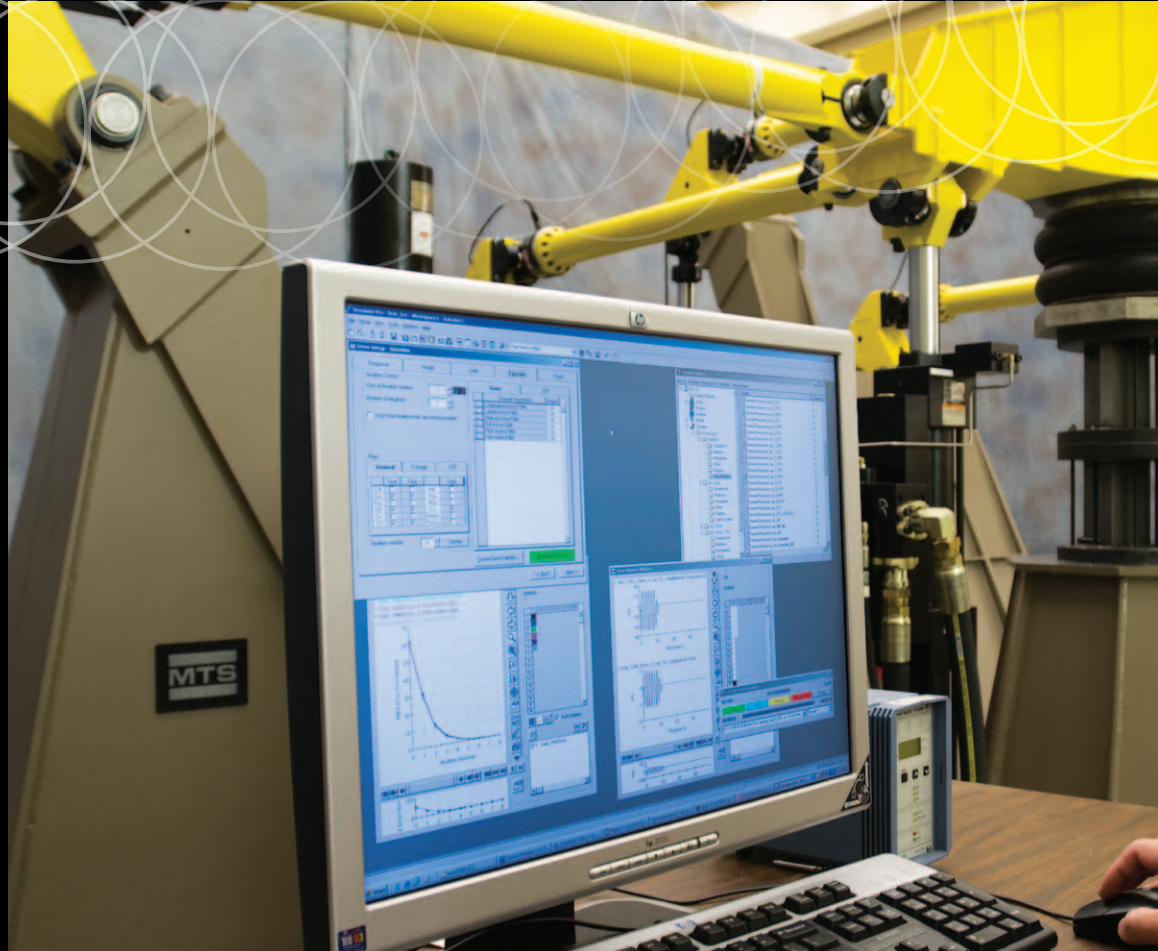
MTS offers the full spectrum of test systems to address your material testing needs — from simple tension/compression to fracture toughness and complex multiaxial fatigue evaluation. As the industry calls for the development of more lightweight and efficient materials, we can help you get the latest innovations to market with speed and certainty.

Combined with proven software and accessories, our complete families of material testing systems equip you with every capability required to support your research, product development, manufacturing optimization and quality control initiatives.



## The complete offering

MTS offers a powerful array of software products that produce highly accurate and repeatable test results, accelerating your product development processes.



Powerful, industry-leading MTS RPC Pro software provides the ultimate in data validation, analysis, simulation and test monitoring.





### Industry-leading application software

Find the most powerful, flexible and user-friendly application software available anywhere.

- » RPC® Pro (Remote Parameter Control™) Software provides advanced road simulation and analysis, fatigue analysis and signal processing capabilities. cRPC Pro™ Software is an affordable version of RPC Pro for automotive component simulation.
- » MTS Model 793 Software allows you to efficiently define new tests and analyze test results, even while other tests are in progress. The software also lets you easily modify existing tests to meet changing needs and standards.
- » MTS Elastomer and Damper Software are each engineered to specifically address every damper or elastomer performance, durability and quality-assurance testing requirement.

### Next-generation control technology

MTS FlexTest® digital controllers raise the bar for versatility and scalability. All models in the family share a common set of hardware and interface tools, and are easily reconfigured for a wide variety of testing applications. Upgrading to the MTS FlexTest control platform will help your vehicle test lab easily adapt to meet your evolving needs, while keeping your test engineers at peak productivity.

### Hydraulic power units (HPUs)

MTS SilentFlo™ HPUs are renowned for their superior performance, small footprint and extremely low noise. They are so compact and quiet that they can easily be installed almost anywhere in your laboratory. SilentFlo HPUs are up to 30 dB(A) quieter than conventional HPUs, and a “wall-hugging” design requires minimal floor space.



### Unmatched global service and training

With a proud history of maintaining laboratory test equipment, MTS service focuses on providing the timely and cost-effective preventive maintenance and repair support demanded by today's fast-paced vehicle, component and material development environment.

MTS provides the largest, most experienced worldwide service, support and consulting staff of any automotive testing solution provider. That includes complete lifecycle management services for all your test systems, which are a proven means of maximizing your uptime and helping you achieve the lowest cost of ownership.

As your vehicle testing solutions partner, we also offer in-depth training on the operation and maintenance of your MTS technology. That includes onsite presentations for all standard course offerings, along with the capability to develop custom courses on a broad range of test-related subjects not covered in our standard offering.

### Learn more today

Contact us for more information about how MTS can help you bring higher-quality products to market with greater speed and cost-efficiency.

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