MTS Durability Testing Solutions

be certain.

MTS DELIVERS UNMATCHED VEHICLE DURABILITY TESTING SOLUTIONS TO HELP YOU IMPROVE QUALITY, REDUCE COSTS AND ACCELERATE YOUR DEVELOPMENT PROCESSES. WHETHER YOU TEST AT THE FULL-VEHICLE, SUBSYSTEM OR COMPONENT LEVEL, WE CAN HELP YOU MOVE MORE OF YOUR TESTING FROM THE PROVING GROUND TO THE CONTROLLABLE AND REPEATABLE TEST LAB.

Helping you achieve fast, accurate vehicle durability assessments

Durability testing is an essential step to predicting the life of full-vehicle, subsystem and component designs. It also helps to reduce risk exposure by removing more unknowns at an earlier stage of the vehicle development process.

By moving more of your durability testing from the proving ground to the test lab, you can replace the expense and non-repeatability of the test track with the speed and repeatability of a controlled laboratory environment. MTS offers the technology and expertise you need to improve data handling, speed setup times, and manage your laboratory durability testing with confidence.

Whether you work for a vehicle manufacturer, supplier or contract test lab, MTS can help you accelerate your development processes and achieve more reliable test results.

Proven

MTS first transformed durability testing with the introduction of the MTS Tire-Coupled Road Simulator in 1964. Since then, we have been working closely with our key market-leading customers to develop new solutions to solve increasingly difficult problems, while continuing to invest in proven solutions that further enhance testing efficiency and test results. This ongoing effort has shaped the industry's most comprehensive portfolio of hardware, software, global service, training and support, proven to improve testing outcomes for test professionals like you.

Reliable

We understand the impact that durability testing can have on your business. That is why we make durability technology development a priority for our business. MTS solutions have a long history of delivering quality, performance and superior reliability, supported through preventive maintenance programs and an equally dependable network of people. Our industry-leading network of field service professionals provides responsive, expert local support across four continents.

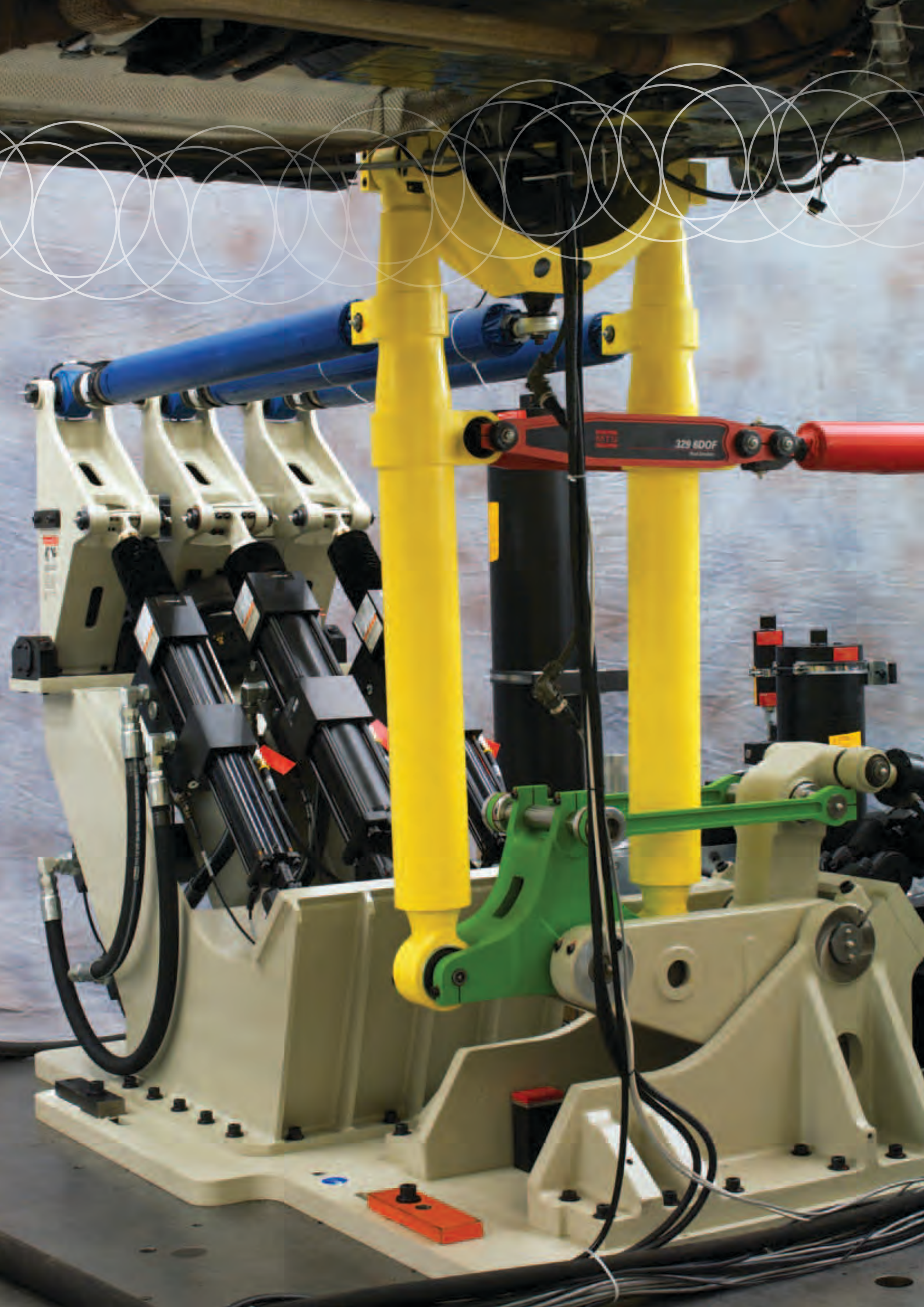
Innovative

MTS continues to pursue new technologies that promise to further enhance laboratory efficiency and reduce time to market. For example, MTS mechanical hardware-in-the-loop (mHIL™) advances are helping subsystem and component developers run accurate durability evaluations well before vehicle prototypes become available.

The complete offering

Find the perfect fit for your durability testing needs with the industry's most complete solutions portfolio, including:

- Spindle- and tire-coupled road simulators
- Spinning Wheel Integrated Force Transducers (SWIFT®)
- Multiaxial Simulation Tables (MAST™)
- Steer test systems
- Component testing solutions


329 6DOF

Gain greater insight into prototype durability

Whether your durability testing involves a full vehicle, body or chassis, you can depend on MTS road simulation systems to precisely reproduce the extreme dynamics associated with vehicle durability environments.

BENEFITS OF MTS DURABILITY TESTING SOLUTIONS

- Save money. Replace expensive drivers and track time with cost-effective, niche-focused testing in the laboratory.
- Increase repeatability. Remove driver, drive path and environmental variables from your testing by always using same control inputs.
- Improve throughput. With adverse weather and driver fatigue eliminated, you can run your tests 24 hours a day, seven days per week.

The MTS Model 329 Spindle-Coupled Road Simulator provides the most accurate and robust reproduction available of proving ground road surfaces, maneuvers and events, making it the preferred solution for body and chassis durability testing.

Spindle-coupled road simulation

The MTS Model 329 Spindle-Coupled Road Simulator provides a proven, easy-to-use and highly repeatable fatigue simulation approach to controlling force and motion in a full six degrees of freedom at the test vehicle spindles.

Featuring a patented kinematic design, the MTS Model 329 spindle-coupled road simulator produces the most accurate and repeatable reproduction of real-world vehicle operating environments. Equipped with such advanced simulation capabilities, you can quickly and accurately obtain complete simulation information for modeling, analysis, design and virtual testing.

MTS SWIFT Wheel Force Transducers

The MTS family of rugged spinning-wheel integrated force transducers (SWIFT) provides a fast and easy way to acquire accurate, high-fidelity road load data at the vehicle spindle. With a SWIFT sensor, no specialized instrumentation or calibration of suspension parts are required when collecting road load data for a vehicle test. You'll acquire complete spindle road load data within hours of preparation, as opposed to the weeks of preparation that are typically required when using traditional instrumentation.

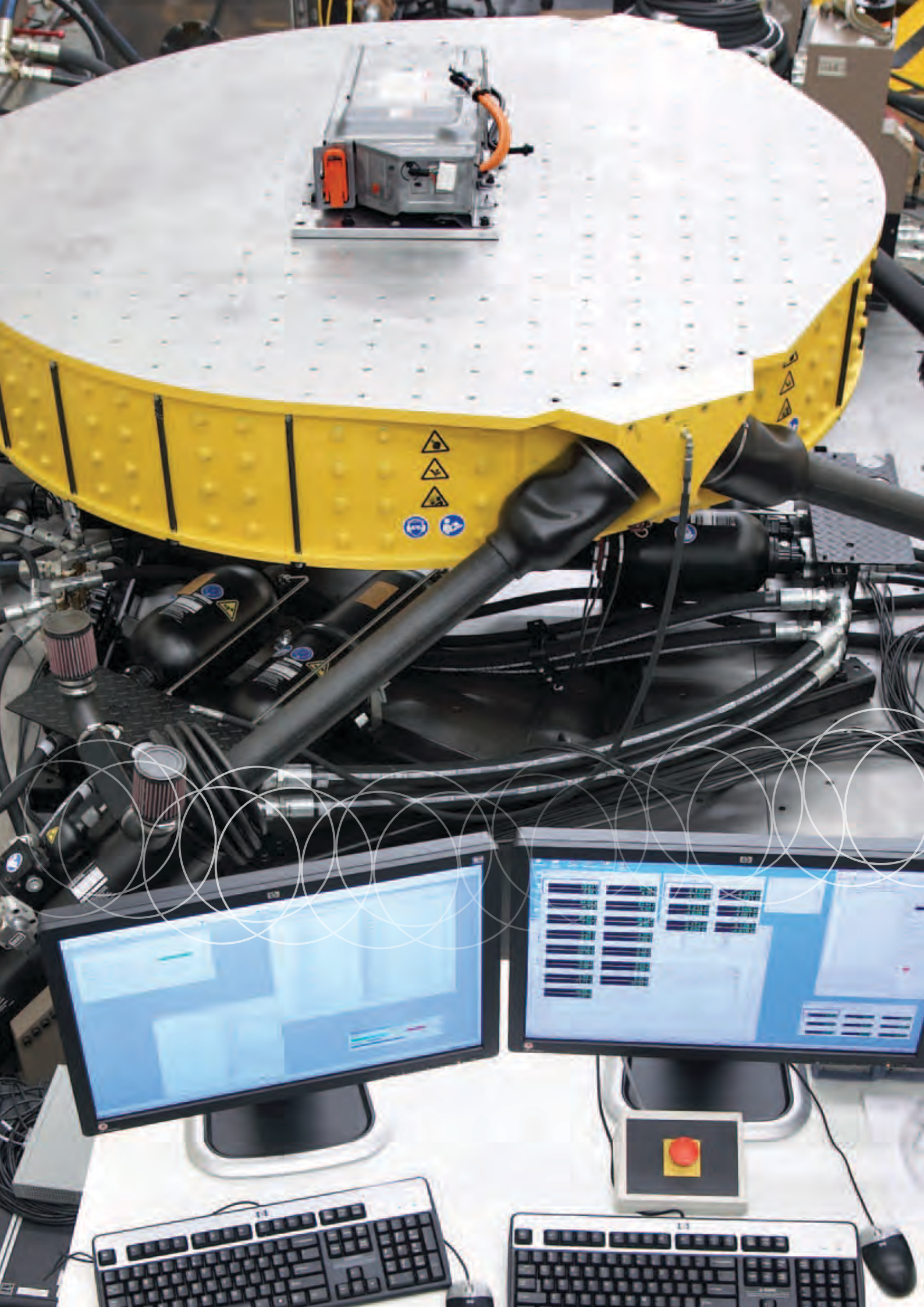
The SWIFT family accommodates the full range of vehicle types and sizes — everything from motorcycles and compact cars to heavy trucks and high-performance racing vehicles.

Tire-coupled road simulation

Tire-coupled road simulation provides an easier and more cost-efficient alternative to spindle-coupled road simulation, and is capable of providing actionable test results when only a portion of a vehicle's design has been completed. It is ideal for conducting quick analyses to make directional decisions while a vehicle is still under development.

The MTS Model 320 Tire-Coupled Road Simulator sets the industry standard for road simulation efficiency in the test lab, and more test labs worldwide use this test system than all other tire-coupled road simulation systems combined. The system applies vertical forces through the tire of the vehicle, making it possible to provide actuator displacements in the test lab that are nearly identical to the profile of the original road surface.

With its exceptional accuracy and repeatability, the MTS Model 320 test system allows you to conduct far more meaningful durability tests, beginning at the earliest stages of vehicle development and lasting throughout the process, concluding with end-of-line squeak-and-rattle evaluations.



Confidently evaluate vehicle subsystem durability

Reliably characterize drivetrain, suspension, steering and exhaust system durability by precisely replicating the real-world forces, motions and environmental conditions of their service environments.

The MTS Multiaxial Simulation Table (MAST) family brings highly accurate simulation of proving ground vibrational phenomena into the test lab.

Drivetrain testing

Car and truck buyers expect durable, quiet and vibration-free vehicles with brisk acceleration and solid, confident handling. The industry is rapidly changing as consumers increase their acceptance of fuel-saving drivetrain systems that incorporate diesel, ethanol, hydrogen, gas-electric and plug-in electric technologies. As demand for such systems increases, competition is intense to get to market first with products that offer the highest levels of durability and performance.

MTS has developed a complete set of drivetrain testing solutions to help you efficiently address today's challenges, including hydraulic actuators, electric dynamometers and mechanical fixtures developed specifically for drivetrain applications. You can depend on MTS to provide the testing expertise necessary to help you deliver drivetrain systems that meet your customers' expectations.

Suspension system durability evaluation

The MTS Model 329 spindle-coupled road simulator is most commonly used for highly accurate full-vehicle road simulations. However, this versatile system also provides the best possible means of testing suspension, suspension linkages and much of the steer systems.

By connecting the MTS Model 329 spindle-coupled road simulator to the axle spindles and attaching the axles to a fixed-reaction structure, you can run accurate and detailed durability tests on full suspension systems or on individual components such as shock towers, shocks, ball joints, and even steer linkage points. We also offer a full suite of testing solutions optimized to study the durability and performance of steer systems and subsystems.

Vibration analysis

MTS Multiaxial Simulation Tables (MAST) allow you to accurately subject vehicle subsystems to proving ground vibrational and acceleration phenomena in the test lab. Our patented mechanical designs, advanced controls and industry-leading software combine to deliver the ideal solution for testing subsystems such as dash panels, seats, exhaust systems, and even engine isolation systems. The exhaustive MTS MAST family accommodates a full range of specimen sizes, weights and dynamics.


MTS

A single resource for your component testing needs

By partnering with MTS, you can apply industry-leading capabilities toward characterizing the durability of a full range of vehicle components. A variety of environmental systems and other optional hardware packages will help you further customize your test setup.

VERSATILE TECHNOLOGY FOR MATERIALS TESTING

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

Our fully integrated material testing systems will equip you with all of the capabilities you need to confidently support your research, product development, manufacturing optimization and quality control initiatives.

Damper testing

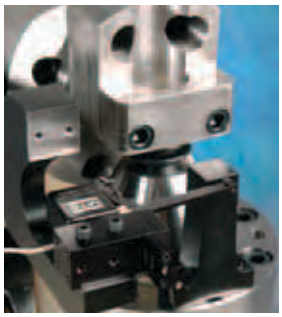
MTS damper testing systems allow you to determine service life and performance for a broad range of test specimens. To accurately simulate real-world service environments, these high-velocity test systems allow side-loading capabilities and test with short bursts, wide velocity ranges and various waveform inputs including remote parameter control (RPC®). Multiple-specimen setups are available to build design confidence faster and increase development speed.

Elastomer testing

Achieving your desired results with today's elastomer materials poses significant challenges, and MTS software and hardware have evolved to keep pace with the increasing requirements. You will find the perfect fit for your needs from an advanced solutions offering, which brings together our industry-leading software on a broad selection of uniaxial and multiaxial test systems.

Ball joint testing

MTS ball joint test systems provide an efficient means of accurately measuring the load and displacements of ball joints and seals for passenger cars, trucks and SUVs. This offering equips you to perform the full range of strength, performance and fatigue tests. Choose from three, four or five axes and oscillatory, rotational and lateral capabilities to meet your needs. Custom solutions can also include environmental chambers for salt or slurry spray as well as temperature.



Leveraging the latest servohydraulic load frame, digital control and application software technology, MTS Damper Test Systems provide exceptional accuracy and consistency for determining the damping characteristics and service life of a broad range of test specimens.


RPC® Pro

Technology and expertise to ensure your testing success

It's the sum of the parts that makes MTS your complete vehicle durability testing solutions partner. A full complement of quality software, state-of-the-art controls and global service and support will help you achieve your goals faster.

Industry-leading application software

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

- RPC Pro (Remote Parameter Control™) Software provides advanced road simulation and analysis, fatigue analysis and signal processing capabilities. cRPC Pro™ Software provides a more affordable subset of RPC Pro capabilities 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 your changing needs.
- MTS elastomer and damper software packages are each engineered to specifically address every elastomer or damper performance, durability and quality-assurance testing requirement.
- MTS MultiPurpose TestWare® (MPT™) Software offers powerful test design and automation capabilities to help you test at peak productivity. You can easily create your own test sequences, including any combination of command generation and data acquisition.

Next-generation digital controls

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.

Unmatched global service, consultation and training expertise

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, subsystem and component development environments.

MTS provides the largest, most experienced worldwide service, support and consulting staff of any automotive testing solution provider. That includes advanced 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.

MTS software makes it easy to generate the accurate, reliable and repeatable test data you need to accelerate your vehicle, subsystem and component development.

Learn more today

Contact MTS for more information about how MTS durability testing solutions can help you accelerate your vehicle, subsystem or component development.

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