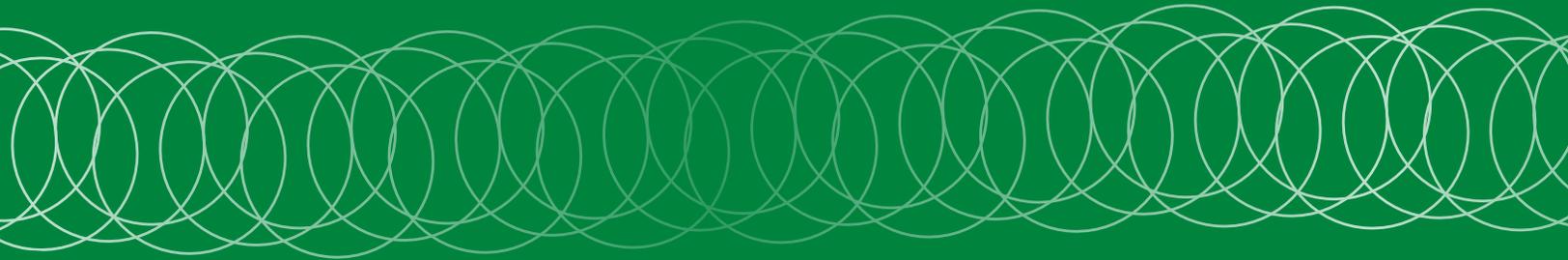




## Elastomer Testing Solutions

be certain.

**NOBODY KNOWS ELASTOMER TESTING LIKE MTS.** OUR UNMATCHED SOLUTIONS COVER EVERY STAGE OF THE PRODUCT LIFECYCLE AND SPAN THE FULL RANGE OF APPLICATIONS, SPECIMEN TYPES AND INDUSTRIES. WHETHER YOU ARE AN OEM, PARTS SUPPLIER OR DEVELOPMENT TEST LAB, WE CAN HELP YOU REACH YOUR PERFORMANCE, DURABILITY AND QUALITY GOALS WITH GREATER SPEED, EFFICIENCY AND CONFIDENCE.



## Create higher-quality elastomer products faster

Elastomer testing encompasses a wide variety of industries, applications and objectives. It includes the evaluation of compounds and material properties, and the performance of components and finished goods for research, product development or quality control environments. Elastomer testing is critical to industries ranging from automotive and rail to wind, aerospace and marine. And it must support an array of specimen types and testing complexities.

Central to these applications is the shared need for test professionals to conduct more meaningful elastomer evaluations in less time and for less money. By working with MTS, you will have access to the tools and expertise you need to conduct the most thorough and accurate testing possible under real-world conditions. MTS can help you accelerate development and improve your capabilities, all while maintaining the highest quality standards.

You will be well equipped to develop elastomer products that offer the durability required to repeatably transmit loads, as well as the performance required to dampen vibrations and quiet noise.

### Expertise

Drawing from decades of technical leadership and working closely with test professionals like you, MTS' dedicated elastomer team understands the unique demands of elastomer testing. We apply this experience toward developing solutions that offer the capabilities you need most, including assistance with selecting and integrating the best test configuration for your application. Our elastomer team actively engages with test professionals to ensure our systems keep pace with your continually evolving requirements.

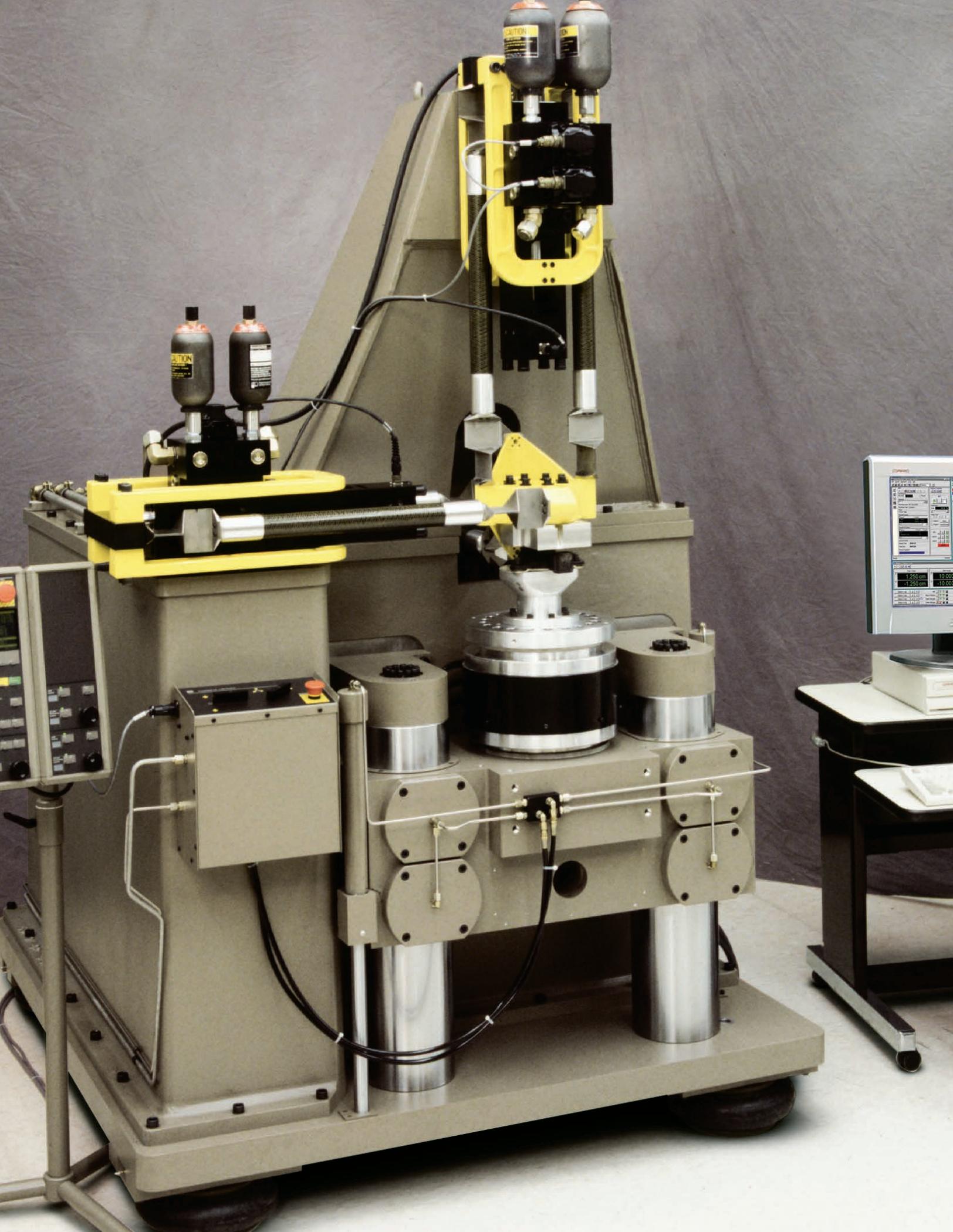
### Breadth

As elastomer products continue to increase in variety and sophistication, so too, has the MTS elastomer test solutions offering. You will not find a more comprehensive portfolio anywhere else. Our offering includes both standard and custom solutions for development, production or quality control, which can easily accommodate test specimens of every size, and evaluations of every degree of complexity.

### Support

When you choose MTS, you also benefit from unrivaled global service and engineering resources to help you improve efficiency and maximize your customer relationships. You will receive expert assistance beginning with project planning and extending through technology selection and system design, installation and calibration. This complete lifecycle support helps to ensure the lowest cost of ownership with every MTS technology investment you make. Look to our dedicated elastomer team for support of your testing goals.





## Proven solutions for every application

No matter what your requirements are for elastomer testing today or where you plan to be tomorrow, MTS is the only partner you need to achieve your performance, durability and quality objectives.

Our highly efficient solutions reduce costs and deliver reliable, repeatable performance to get your products to market faster. Combined, these capabilities give you a powerful means of exceeding your customers' expectations for quality, affordability and responsiveness.

### Technology for all stages of development

Elastomer product design is critically influenced by decisions made regarding the compounds from which they are manufactured, as well as by how compounds are shaped into components and incorporated into finished products. MTS offers solutions to maximize performance, speed development and achieve superior cost performance at all of these critical development stages.

The development of an elastomer product proceeds through three critical stages: selecting the appropriate compound; shaping the compound into components; and incorporating components into finished products. MTS offers testing solutions to maximize performance, speed development and achieve superior cost performance during each of these critical development stages.

Wherever your work resides on the testing continuum — from compounding to finished product validation — MTS can help you quickly and efficiently generate the accurate and repeatable test results necessary for creating outstanding products. Once a product has been developed and put into production, we can also provide testing solutions to help ensure ongoing manufacturing quality.

### Wide variety of specimen types and sizes

Elastomer test specimens can range from sample buttons that fit in your hand to cumbersome rubber vehicle track sections that must be moved with a forklift.

Regardless of specimen scale or geometric diversity, delivering fast and accurate performance, quality and durability assessments remain critically important.

That is why we designed MTS elastomer test systems to support the full array of specimen types and sizes. By combining versatile MTS load frames with our advanced application software, digital controls and accessories, you can configure the ideal solution and test everything from small and simple specimens to those that are massive and multifaceted. MTS offers a variety of test solutions that allow you to precisely simulate real-world service conditions in your test lab.

### From simple to complex testing

As elastomer testing proceeds from support of compound selection to component development, and ultimately, finished product validation, corresponding test specimens tend to feature increasing levels of complexity. Parts and systems that require performance or durability evaluations can range from a basic material sample to sophisticated, tunable active components. However simple or complex your testing may be, MTS can help you complete it with greater speed and precision.



## A complete array of elastomer test systems

A combination of great components, testing knowledge and integration skill makes MTS elastomer testing solutions a great value for your test lab. Use MTS advanced testing knowledge and select from our standard products or custom capabilities to arrive at a solution that best fits your needs.

- » MTS provides a full complement of electromechanical and servohydraulic systems for testing at frequencies up to 1000 Hz, all of which are designed to occupy minimal space in your laboratory or production floor.
- » MTS offers single-axis systems for low-, medium- and high-frequency tests, along with multiaxial solutions for accurate measurement of static and dynamic elastomer behavior during product research and development.
- » All MTS dynamic characterization solutions employ system compensation features that automatically correct for load frame characteristics, helping you attain the highest level of accuracy.

### Uniaxial test systems

- » The **C-Frame Elastomer Test System** is ideally suited for automated end-of-line quality testing.
- » A **100 Hz Tabletop Elastomer Test System** can be installed in an in-line production environment or in the laboratory for quality assurance or general lab applications.
- » A **200 Hz Floor-Standing Elastomer Test System** can be deployed within an in-line production environment, or in the laboratory for quality assurance or general lab applications.
- » Engineered for high-frequency operation and precise displacement resolution, the **400 Hz Elastomer Test System** is typically used for materials research and component development testing, but can also be employed for noise and vibration tests.
- » **MTS 700 Hz and 1000 Hz Elastomer Test Systems** are designed to meet the high-frequency, high-precision test requirements of the automotive and materials markets. These systems employ accelerometers and a load washer to accurately measure dynamic properties such as  $K^*$ , phase,  $E^*$ , tan delta, energy, and damping coefficient, over a wide range of frequencies.



### Multiaxial test systems

- » The **Elastomer Bushing Test System** provides precise, productive multiaxial durability testing of suspension bushings, including axial or radial torsion.



- » **MTS Durability or Performance Elastomer Triaxial Test Systems** are commonly configured for either durability or characterization testing of engine mounts, body mounts or suspension bushings, featuring a liquid-cooled load cell for precise measurement. These systems also accommodate an optional temperature chamber.

### Custom test systems

Whether you need higher forces and frequencies, more degrees of freedom, or have unique control and space requirements, MTS can develop the ideal elastomer testing solution for you. Our expert application engineers will work closely with you to develop a solution that addresses your specific testing needs.

### Easy-to-use software

Discover a complete selection of application software packages designed specifically for elastomer testing. These versatile packages deliver the functionality, flexibility and user-friendly operation you need to accelerate your research, product development or quality control objectives.

- » **MTS Elastomer Software** packages allow you to efficiently define new tests and analyze test results, even while other tests are in progress, and easily modify existing tests to meet your changing needs. Tests supported include advanced function generation, dynamic characterization, static deflection, resonant search remote parameter control (RPC®) road profile playback.
- » **MTS Elastomer Express™ Software** offers a simplified user environment for elastomer performance, durability and quality-assurance testing.
- » **cRPC® (Component Remote Parameter Control™) Pro Software** provides an affordable means of conducting highly accurate automotive component simulations. A modular design enables easy customization to meet your specific needs.

### 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.

### Hydromechanical components

MTS offers the integration expertise and technology necessary to deliver test systems with low hydraulic noise. Elastomer tests are highly sensitive to their operating environments; incorporating MTS hydraulic power and distribution components will protect the integrity of your test data and help you achieve your critical testing outcomes.

### High-performance accessories

Further enhance your testing solutions with a broad selection of MTS options and accessories.

MTS standard accessories, including environmental chambers for simulating extreme temperatures, are seamlessly integrated with and easily managed through MTS software. Our full complement of accessories also includes compression platens, bend fixtures, double-lap shear fixtures and quick-clamps, specifically designed for elastomer applications.

If you have an accessory need that falls outside our standard offering, MTS offers unmatched capabilities for customization. Simply tell us your needs and we'll help you to meet them.

### Unmatched global service and support

MTS fields the industry's largest, most experienced worldwide service, support and consulting staff of any test solutions provider. When you work with MTS, you'll be backed by a global network of engineers, consultants, trainers and field service representatives, all available when and where you need them.

You will also have access to the world's best calibration and routine maintenance programs to protect the integrity of your test data and the long-term value of your MTS investments.



## Regional Business Centers

### THE AMERICAS

#### **MTS Systems Corporation**

14000 Technology Drive  
Eden Prairie, MN 55344-2290  
USA

Telephone: 952-937-4000

Toll Free: 800-328-2255

Fax: 952-937-4515

E-mail: [info@mts.com](mailto:info@mts.com)

Internet: [www.mts.com](http://www.mts.com)

### EUROPE

#### **MTS Systems France**

BAT EXA 16  
16/18 rue Eugène Dupuis  
94046 Créteil Cedex

#### **France**

Telephone: +33-(0)1-58 43 90 00

Fax: +33-(0)1-58 43 90 01

E-mail: [contact.france@mts.com](mailto:contact.france@mts.com)

#### **MTS Systems GmbH**

Hohentwielsteig 3  
14163 Berlin

#### **Germany**

Telephone: +49-(0)30 81002-0

Fax: +49-(0)30 81002-100

E-mail: [euroinfo@mts.com](mailto:euroinfo@mts.com)

#### **MTS Systems S.R.L. a socio unico**

Strada Pianezza 289  
10151 Torino

#### **Italy**

Telephone: +39-(0)11 45175 11 sel. pass.

Fax: +39-(0)11 45175 00-01

E-mail: [mtstorino@mts.com](mailto:mtstorino@mts.com)

#### **MTS Systems Norden AB**

Datavägen 37  
SE-436 32 Askim

#### **Sweden**

Telephone: +46-(0)31-68 69 99

Fax: +46-(0)31-68 69 80

E-mail: [norden@mts.com](mailto:norden@mts.com)

#### **MTS Systems Ltd. UK**

Unit 9, Cirencester Office Park  
Tetbury Road  
Cirencester  
Gloucestershire

#### **GL7 6JJ**

#### **United Kingdom**

Telephone: +44-(0)1285-648800

Fax: +44-(0)1285-658052

E-mail: [mtsuksales@mts.com](mailto:mtsuksales@mts.com)

### ASIA/PACIFIC

#### **MTS Japan Ltd.**

ArcaCentral Bldg. 8F  
1-2-1 Kinshi, Sumida-ku  
Tokyo 130-0013

#### **Japan**

Telephone: 81-3-6658-0901

Fax: 81-3-6658-0904

E-mail: [mts-j-info@mts.com](mailto:mts-j-info@mts.com)

#### **MTS Korea, Inc.**

4<sup>th</sup> F., ATEC Tower, 289,  
Pankyo-ro, Bundang-gu  
Seongnam-si  
Gyeonggi-do 463-400,

#### **Korea**

Telephone: 82-31-728-1600

Fax: 82-31-728-1699

E-mail: [mtsk-info@mts.com](mailto:mtsk-info@mts.com)

#### **MTS China Hechuan Office**

Room 703 Building #B,  
Venture International Park,  
No. 2679 Hechuan Road,  
Minhang District,  
Shanghai 201103,  
P.R.China

Telephone: +86-21-5427 1122

Fax: +86-21-6495 6330

E-mail: [info@mtschina.com](mailto:info@mtschina.com)



#### **MTS Systems Corporation**

14000 Technology Drive  
Eden Prairie, MN 55344-2290 USA

ISO 9001 Certified QMS  
<http://www.mts.com>

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