


SERVOTEST

TEST AND MOTION SIMULATION



**A SPECIALIST SUPPLIER OF INNOVATIVE
SERVO-HYDRAULIC TESTING & SIMULATION
SOLUTIONS**

ESTABLISHED
1958



SPECIALIST SUPPLIER OF INNOVATIVE CUSTOM SERVO-HYDRAULIC MECHANICAL TESTING SOLUTIONS

WHY CHOOSE SERVOTEST?

The knowledge and experience to design and build completely unique test equipment for the most demanding applications.

- Equipment built to exactly meet customers requirements.
- The support of a dedicated team of service engineers with 100's of years of experience in the field of servo hydraulic testing.
- Global network to ensure speedy response and support.
- Superior quality at competitive prices.
- Reputation for equipment durability and consistently high system performance.

ABOUT SERVOTEST

Servotest has gained international recognition as a World leader in servohydraulic test and motion simulation. The Company offers a range of standard designs and advanced, highly customised, servohydraulic systems backed by innovative design and development to achieve our customers requirements.

COMPANY PROFILE

Founded in 1958 Servotest is built on a strong engineering base with more than 70% of the workforce being qualified engineers. Our engineers together boast over 300 years' experience in servohydraulic engineering with an unrivalled level of knowledge in this specialist industry. The Company has the resources to deliver and support a test system that will completely satisfy the customer.

MARKET POSITION

The Company has supplied Multi Axis systems since 1970. All types of applications have been covered from durability testing to earthquake simulation to human vibration research.

Our customers are wide ranging and we are proud to have been involved in the development of the space shuttle, Formula 1 cars, and the French Navy 'Le Triomphant' class of submarine.

This relationship brings a flexible approach and close co-operation from our team that distinguishes us from other companies. Servotest has formed alliances with a number of companies around the globe. Thus enabling continued high levels of support to our customers whatever the time zone or language. Servotest has shipped to every corner of the globe and its commitment to excellence and renowned quality of product has guaranteed an enviable presence in the global market. The headquarters situated in Egham, England close to Heathrow airport, allow rapid response to our customers worldwide.

FLEXIBLE APPROACH

Servotest specialise in providing tailored solutions, working closely with customers to achieve solutions which match their test requirements. Servotest can provide everything from a general purpose actuator to complex multi axis shake table systems for seismic testing of structures and bridges.

Servotest are continually breaking new ground to meet the testing requirements of its customers, and thus have an extensive portfolio of product designs. Quality of product and service is assured, and confirmed by the ISO9001 certification.

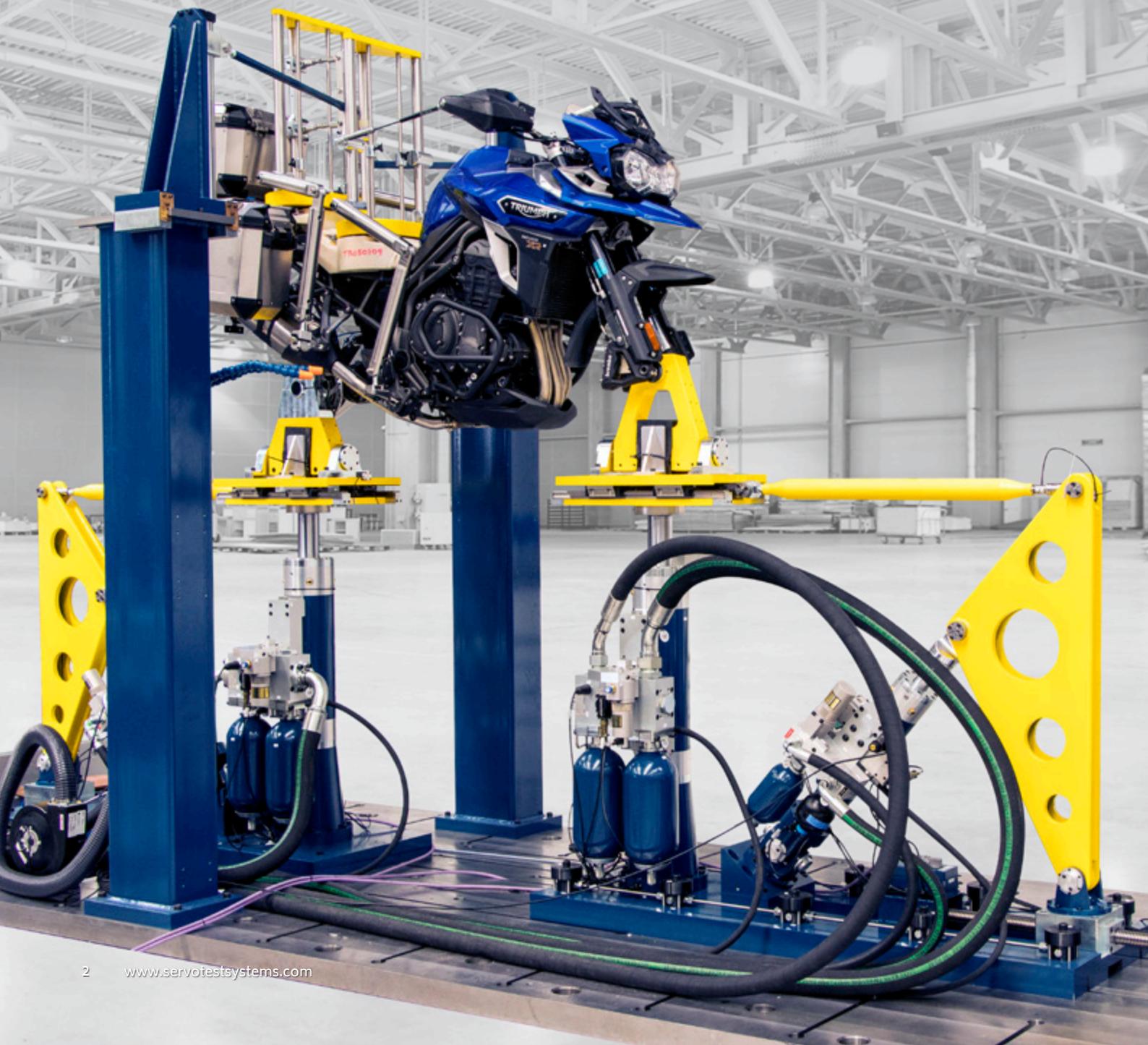
CUSTOMER SERVICE

Within the servohydraulic testing arena, quality and service are a prerequisite in establishing the success of our product. In recognising the value to our customers of a fast and efficient after sales service, Servotest has made significant investments in facilities and training within this area.

The company's products already carry an extendable 12 months full parts and labour warranty, which confirms our commitment to quality and continuing customer support. The company has expanded its service support to ensure rapid response, high work efficiency and enthusiasm thereby maximising customer investment and providing excellent value for money.

INDUSTRY PIONEERS THE FIRST TO BRING 4 POST MOTORCYCLE SIMULATION AND MECHANICAL RIDER TO MARKET

Working in response to a request from Triumph motorcycles in 2016, Servotest was the first company to bring mechanical rider & 4 axis simulation and actuation to market.



OUR AUTOMOTIVE SIMULATION PEDIGREE

Founded in 1958 as a test consultancy Servotest is a UK-based supplier of innovative motion simulation systems.

Based on high-performance actuation and control components Servotest offers tailored test system configuration for application including:



VEHICLE RIDE SIMULATION

- Motorcycle 2-post
- Automotive 4-post
- Heavy duty 6-post
- Motorsport 7 and 8-post



AUTOMOTIVE COMPONENT TEST

- Ball joint test
- Suspension component test
- Steering test rigs
- Multi-axis vehicle corner rigs



HIGH PERFORMANCE MULTI-AXIS TABLES

- Hexapod
- Octopod
- Custom Designs



HIGH PERFORMANCE DAMPER TESTING•

- High Performance
- Multi-station damper testing
- Multi-axis damper test systems
- Custom design



VIBRATION TEST

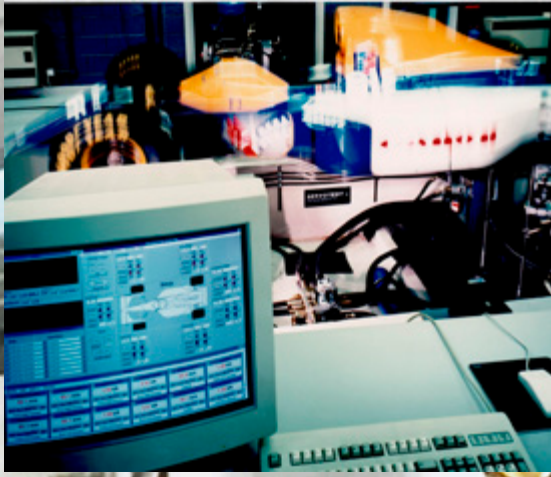
- Inertial vibrator system
- Single-axis systems and 'combo'
- Bi-axial vibration system
- Vibration mast and hexapod systems
- Man-rated test systems



ACTUATION AND CONTROL COMPONENTS

- Linear actuators
- Rotary actuators
- Control system H/W and S/W

INDUSTRY PIONEERS THE FIRST TO BRING DOWN-FORCE SIMULATION AND ACTUATION TO MARKET



Working in response a request from Williams F1 in the early 1990s Servotest was the first company to bring down-force simulation and actuation to market. The Servotest 'compliant link' was soon incorporated into 7-post rigs supplied to race-teams worldwide and remains the 'lowest-noise' mechanism on the market for this application.

AUTOMOTIVE RIDE SIMULATORS



4- & 6-post road simulator systems are designed to reproduce the vehicle responses experienced under both normal and extreme driving conditions. These systems are frequently used to test vehicle body, chassis and suspensions components to establish their performance characteristics and durability. Other specialist applications include quality control and 'squeak and rattle' assessment.

MOTORSPORT RIDE SIMULATORS WITH AERODYNAMIC DOWN-FORCE 7/8-POST

Servotest has extensive experience in configuring, supplying and commissioning 7-(& 8-) post rigs to race teams and performance vehicle manufacturers worldwide. Our powerful DSP-based Pulsar multi-channel digital servo-control system has a full suite of capabilities for advanced ride simulation work.



By offsetting the location of the down-force attachment, constant lateral forces associated with oval-track racing can also be simulated.

THE WORLD OF DAMPER TEST MACHINES

A WORLD OF EXPERIENCE

Servotest has been at the forefront of servo-hydraulic damper test machine development for over 35 years, and it continues to push the boundaries to deliver the ultimate in performance and accuracy. From top-level motorsport to tanks and trains, Servotest have a solution to suit all customers.

Current applications include research and development, quality auditing, and mass production. Each of these markets has specific needs. A production environment necessitates high throughput, repeatability, and exceptional durability, whereas a development laboratory focuses on accurate measurement of in-service characteristics. All machines are tailored to suit the customers needs, as optimal configuration forms an essential part of both the research and production environment.

Servotest is a World Class Test and Motion Simulation Company, with experience of operating around the globe, for multinational corporations, smaller specialist companies and Government Departments. Since the 1950's our engineers and equipment have been at the forefront of our industry. Product and Service quality is maintained by a program of continuous training and development of our people and equipment. We operate in all of the key industry sectors for our marketplace, including Automotive, Marine, Civil Engineering, Aviation, Defence, Aerospace and Rail. The company holds both ISO14001 and 9001 Quality accreditation marks and is a member of many national & international trade organisations.



FLEXIBLE, RELIABLE, ACCURATE HIGH-PERFORMANCE DAMPER TEST MACHINES

FLEXIBLE

- Customisable to individual needs with a wide range of actuators available.
- Actuator in base or crosshead, with inertia compensation option.
- Manual, or automated hydraulic "lift and unlock" crosshead.
- Multistation systems available
- Optional tilting frame for testing dampers in different orientations.
- Optional side-loading on 080 models for realistic testing of struts for endurance and characterisation.
- Optional climatic chamber for testing in the harshest of conditions.
- Optional air or water damper cooling for extended endurance testing.
- Optional remote control, with speed limiter, for local positioning of actuator when loading damper.

RELIABLE

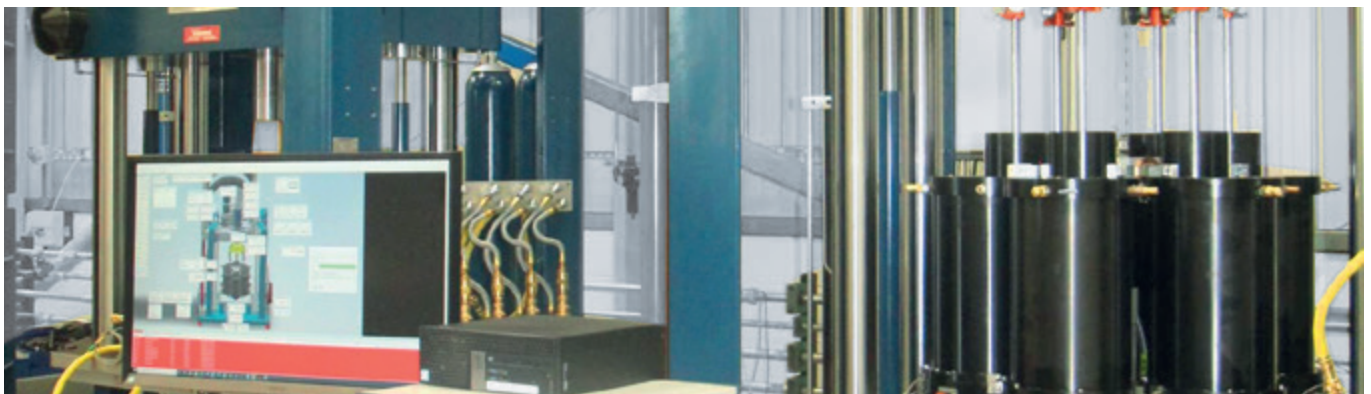
- Hydrostatic bearings for high side-load capability, minimal friction, and low maintenance.
- High reliability with actuator life rated at over one billion cycles at 100% duty.
- Low friction anti-rotation device.

HIGH PERFORMANCE

- Very high acceleration and velocities up to and over 5m/s possible.
- Custom-made, high response servovalves with close-coupled accumulation and filtering.
- Automatically switchable 2 to 3-stage servovalves for both characterisation and endurance testing.

ACCURATE

- Co-axially mounted velocity transducer for more accurate wide-band velocity measurement
- Differential pressure transducer to damp hydraulic oil column resonance, and provide feedback for loop gain compensation between bounce and rebound.
- Crosshead-mounted AC load cell, with optional dual-range calibration for accurate measurement of both breakout friction and kerb strikes.
- Adjustable low-pressure mode to reduce hydraulic noise effects at low velocities.
- Latest, PULSAR digital controller with optical-fibre data cables for minimal electronic noise.



LEADING EDGE SEISMIC SIMULATION

Servotest has continuously collaborated with researchers and institutions operating at the leading edge of the seismic simulation research field. This has led to substantial extension in the state-of-the-art to incorporate both large single-table systems and extremely versatile reconfigurable multi-table systems.



OUR SEISMIC SIMULATION PEDIGREE

Founded in 1958 as a test consultancy Servotest is a UK-based supplier of innovative physical simulation systems.

Based on high-performance actuation and control components Servotest offers tailored test system configuration for application including:



CIVIL AND SEISMIC SIMULATION

- Civil Structural Test
- Earthquake Simulation Systems
- Underwater Tables
- Hardware in the Loop
- Hybrid Simulation Options



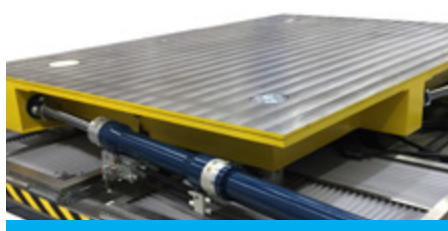
MULTI-AXIS SHAKE TABLES - ORTHOGONAL

- High Payload
- High Performance
- High Acceleration
- Civil Structural Testing
- Multi-table Systems
- Custom Designs



MULTI-AXIS SHAKE TABLES HEXAPOD

- Man rated
- High Performance
- High Acceleration
- Nuclear Validation Testing



CUSTOM SLIP TABLE SYSTEMS•

- Custom Low Friction Systems
- Man Rated Systems
- Motion Simulation Systems
- Other Custom Systems



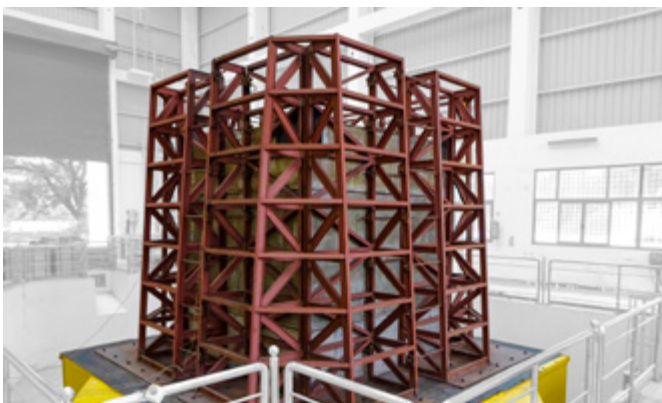
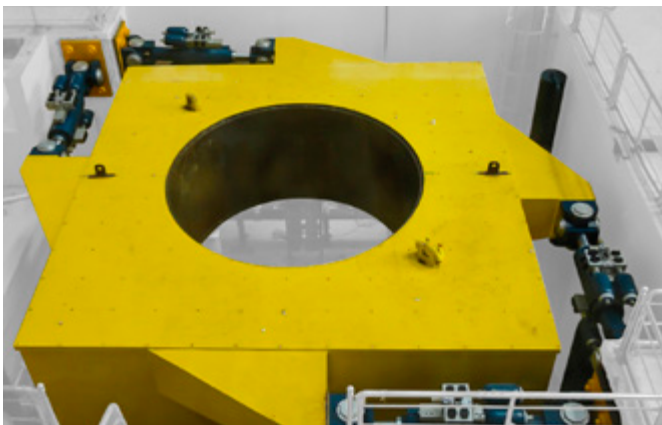
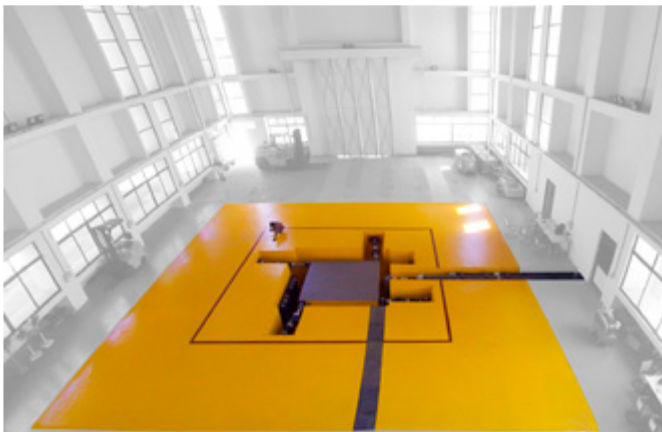
VIBRATION TEST

- Inertial vibrator system
- Single-axis systems and 'combo'
- Bi-axial vibration system
- Vibration mast and hexapod systems

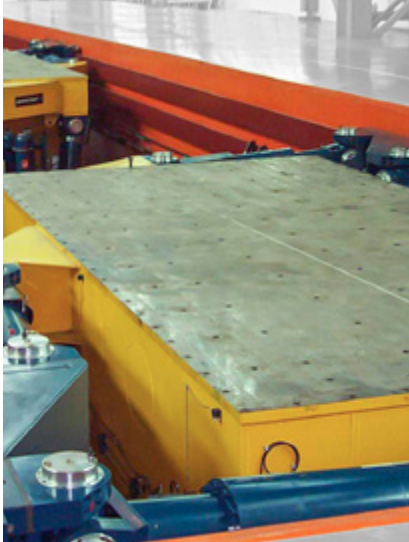


ACTUATION AND CONTROL COMPONENTS

- Linear Actuators
- Rotary Actuators
- Large Scale Hydraulic Pumps
- Control system H/W and S/W
- Hybrid Simulation Options



EARTHQUAKE SIMULATION

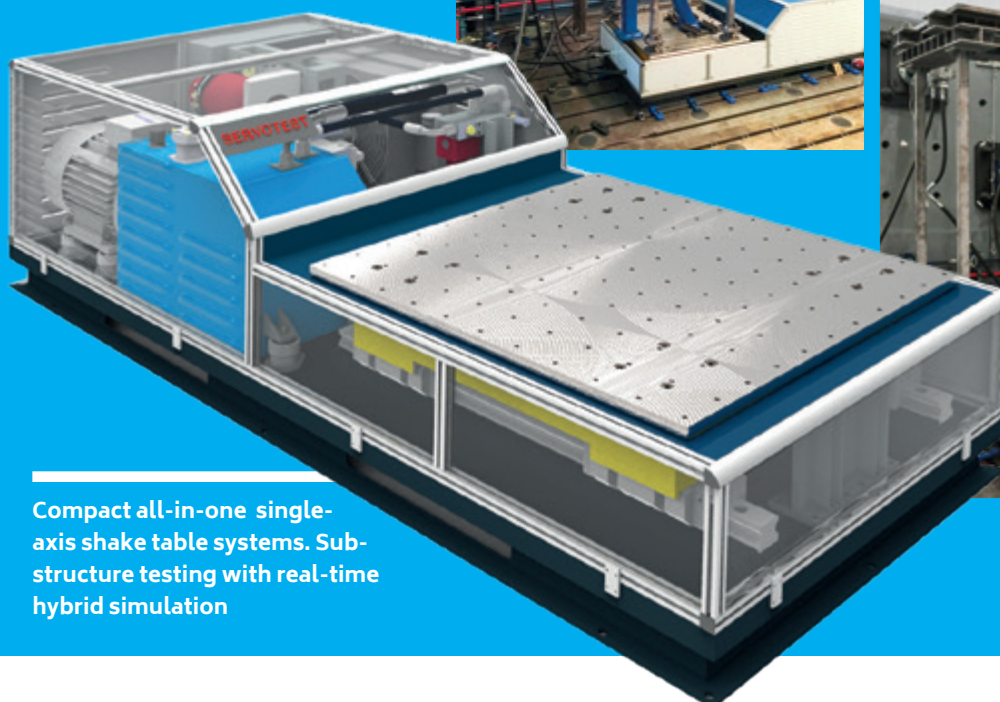
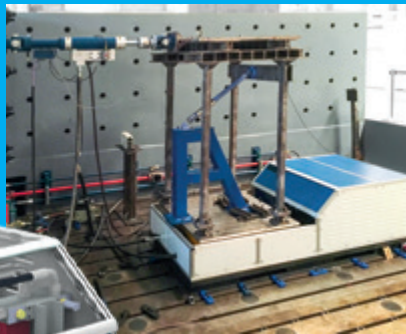


Single-Table Systems with up to six degrees-of-freedom and Multi-Table Systems with Independent or synchronised operation.

Servotest has been involved in the design and manufacture of large-scale Multi-Axis Simulation Table (seismic MAST) systems since the 1980s. Research in this field provides civil and structural engineers with invaluable insights into one of Mother Nature's greatest threats and the means to mitigate her effects.

CIVIL STRUCTURAL TEST

Servotest offers a range of hydro-mechanical and control system components used for civil structural testing by engineering organisations and research institutions worldwide.



Compact all-in-one single-axis shake table systems. Sub-structure testing with real-time hybrid simulation

INDUSTRY PIONEERS METALLURGY TESTING

The Thermo-Mechanical Treatment Simulator (TMTS) is a complex metal forming simulation system.

The first TMTS systems were developed in the 1980s in conjunction with the University of Sheffield & Hoogovens R & D. Since then multiple systems have been delivered to the world's leading industrial and academic research institutions.

THE WORLD OF THERMO-MECHANICAL TREATMENT

The Thermo-Mechanical Treatment Simulator (TMTS) was developed by Servotest in conjunction with Hoogovens R & D, in order to meet all foreseeable needs of the Metallurgy testing industry in investigating the effects of thermal and deformation processes on the final properties of a given material.

TMTS is capable of simulating industrial thermo-mechanical processing steps (Single and multi-pass), integrating complex annealing procedures into the test procedures, and specimen analyses with (for instance) the Stress Relaxation or the Creep facility. The control system allows the user to predefine an individual test sequence of up to 99 process steps (segments), including 31 deformation steps, for each of the 4 samples which may be tested in a given sequence. International service is reliably supplied through a series of satellite offices and partner organisations. Spare parts are stored and available locally to avoid long lead times for repairs and upgrades. Turnkey facilities including planning, updating, installation and maintenance are available and can be individually designed to suit specific needs.

SERVOTEST TMTS SYSTEMS DELIVER:

- 500 kN loading
- 3,000 mm/s displacement rate
- Induction heating
 - » Rapid controlled heating to 1,300 °C°
 - » Uniform temperature distribution
 - » Minimal thermal gradient
- Controlled cooling via integrated
 - » Forced air
 - » Combined forced air & water mist
 - » Full quench <0.5 s post-deformation
- Fully-programmable operator-interface
- Large inexpensive specimens suitable for test coupon extraction
 - » Plane strain to 50 mm wide
 - » Axisymmetric to Ø16 mm
- Tests include
 - » Uniaxial, plane strain, stress relax, creep, multi-stage

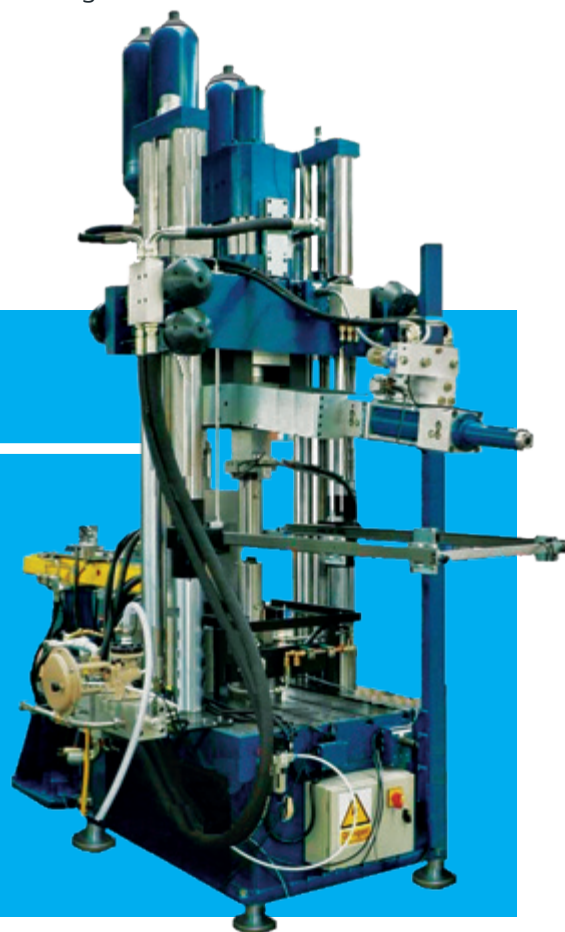
TMTS EXPERIENCE...

Discovery of new metal composites, material optimisation, and the need for modern simulation aids has driven the development of Thermo Mechanical



Treatment Simulators. Over the past three decades Servotest Systems have accumulated considerable experience in the design, manufacture and installation of Metal Forging Test Machines.

Advanced high-performance tools for industrial & academic research into process simulation.



SERVOTEST

TEST AND MOTION SIMULATION

Vibration test
Seismic qualification
Damper test machines
Linear actuators
Component test
Civil seismic
Hydraulic power supplies
Real-time control
Tailored software
Distributed hardware
Bespoke operator interfaces

Automotive
Earthquake simulation
Civil structural test
Advanced control
Squeak and rattle
Steering test systems
7 & 8 -post rigs
2-post rigs
Civil structure

Motorsport
Durability test

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