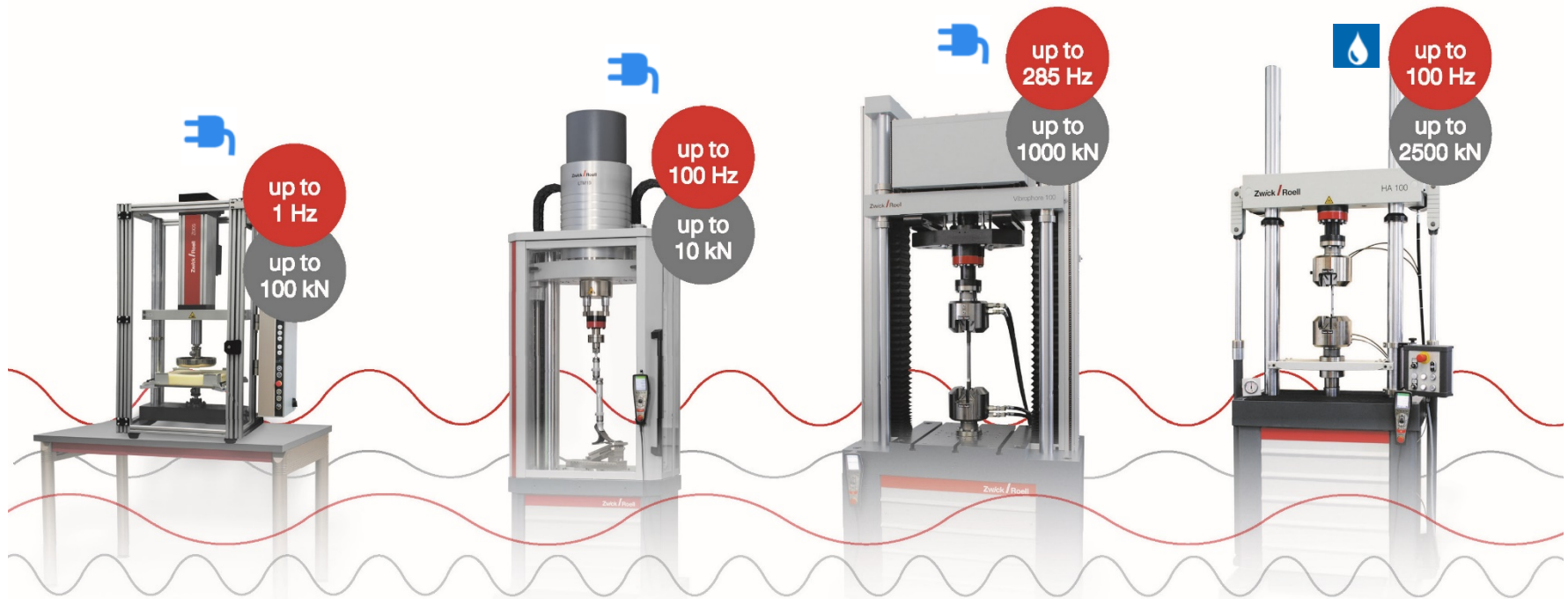




Fatigue Strength Testing Machines

Dynamic and Fatigue Testing Systems

Zwick offers the most comprehensive selection of drive technology for dynamic testing.



Electro-mechanical testing actuators

High test speed, precise control, simple handling For higher amplitudes and lower frequencies

Linear motor testing systems

The clean solution for test loads up to 10kN

Vibrophores

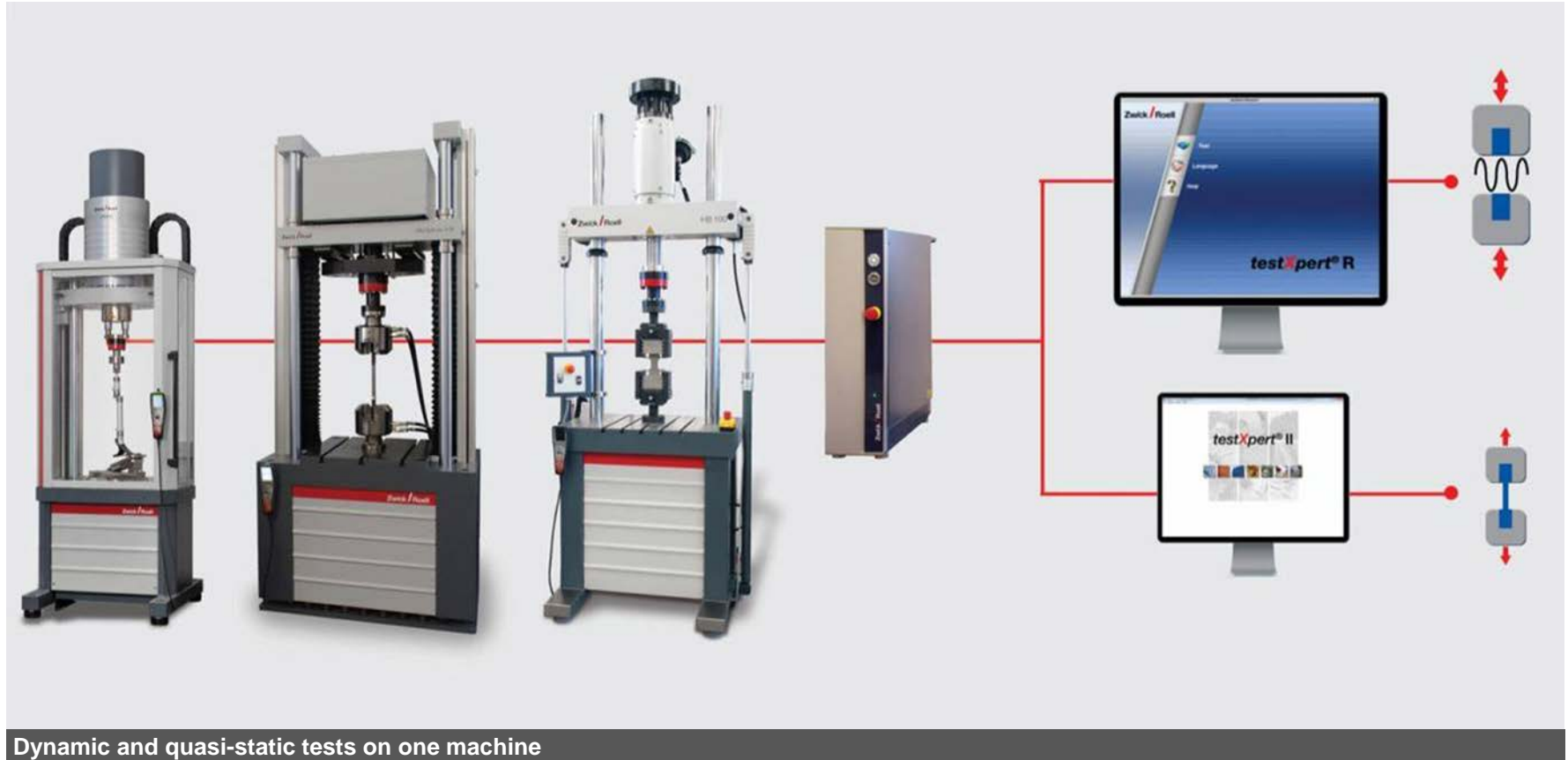
High testing frequencies for metal components and specimens with amplitudes <6mm

Servo-hydraulic testing machines

The all-rounder for maximum flexibility in everyday testing

Dynamic and Fatigue Testing Systems

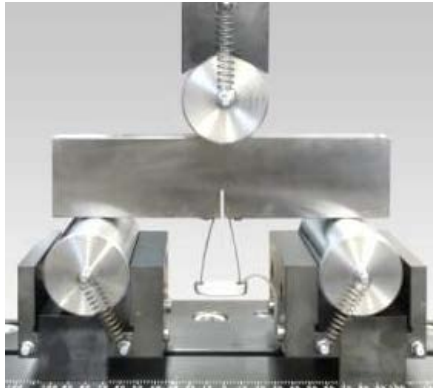
One testing system for dynamic and quasi-static tests.
testXpert II for static tests and testXpert Research for dynamic tests.



Dynamic and quasi-static tests on one machine

Servo-hydraulic testing machines

Zwick offers the right solution for uni- and multi-axial tests on components and structures.



SEB specimens



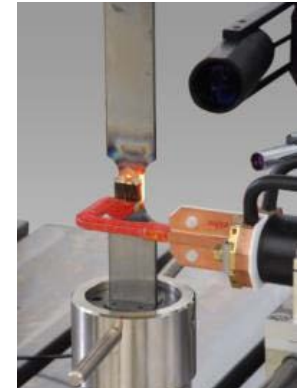
Rail mounting system



Adhesive bonds



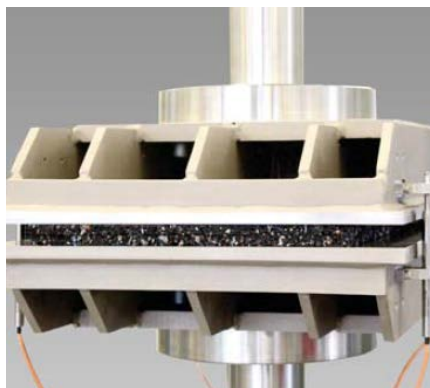
Rubber-metal



Steel/high temp.



Disc spring testing



Shock absorbing mats



Damper



CT specimens



Steel/corrosion

Servo-hydraulic testing machines

Zwick offers standard testing machines and systems for 10-2.500 kN for a range of applications.

50 - 500 kN



HA



HB - (selected models available with torsion)



HC and HC compact - (selected models available with torsion)

Servo-hydraulic testing machines

Zwick offers standard testing machines and systems for 10-2.500 kN for a range of applications.



HA



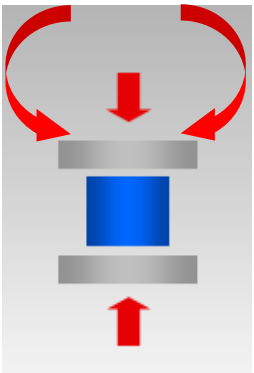
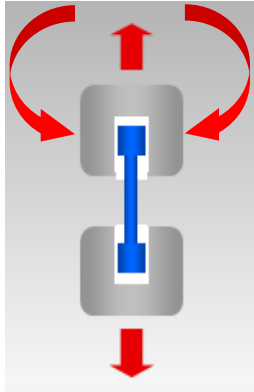
HB - (selected models available with torsion)



HC and HC compact - (selected models available with torsion)

Servo-hydraulic testing machines

HC-T / HB-T testing machines –
For combined tensile/compression/torsion loading.



HC-T table-top testing machine

- size 10 kN / 100 Nm
- size 25 kN / 250 N
- stroke 100 mm
- angle 100° or 270°C



HB-T floor-standing testing machine

- axial forces 100 - 500 kN
- torque 1000 – 4000 Nm
- stroke 100 mm
- angle 100°

Servo-hydraulic testing machines

Anything but standard—Zwick develops testing machines and test methods for specific customer requirements.



HB 100 kN + Torsion



100 kN



1000 kN

Servo-hydraulic testing machines

Zwick offers all components which are needed for a servo-hydraulic testing machine or testing rig.



Controller and software for uni- and multi axial tests



Servo valves



Connector units



Actuators



Hydraulic grips



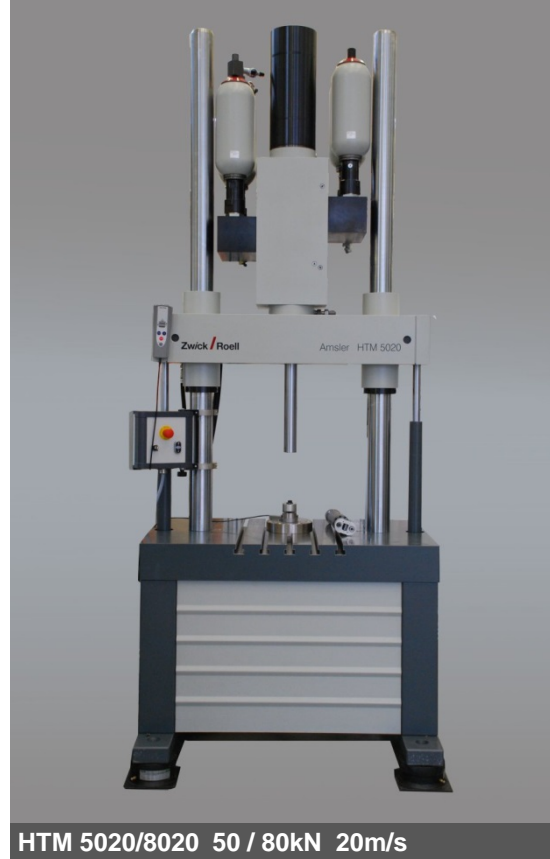
Hydraulic pumps



Cooling / Chiller

Servo-hydraulic testing machines

Zwick offers a comprehensive standard product range for high-speed testing.



Vibrohores

Zwick's Vibrohores are an economic solution for performing fatigue tests on metal specimens and components.



Standard specimens



Screw testing



Chain testing



Threaded head specimens



Conrod tests



Gear wheel testing



Fracture mechanics



Specimen overview



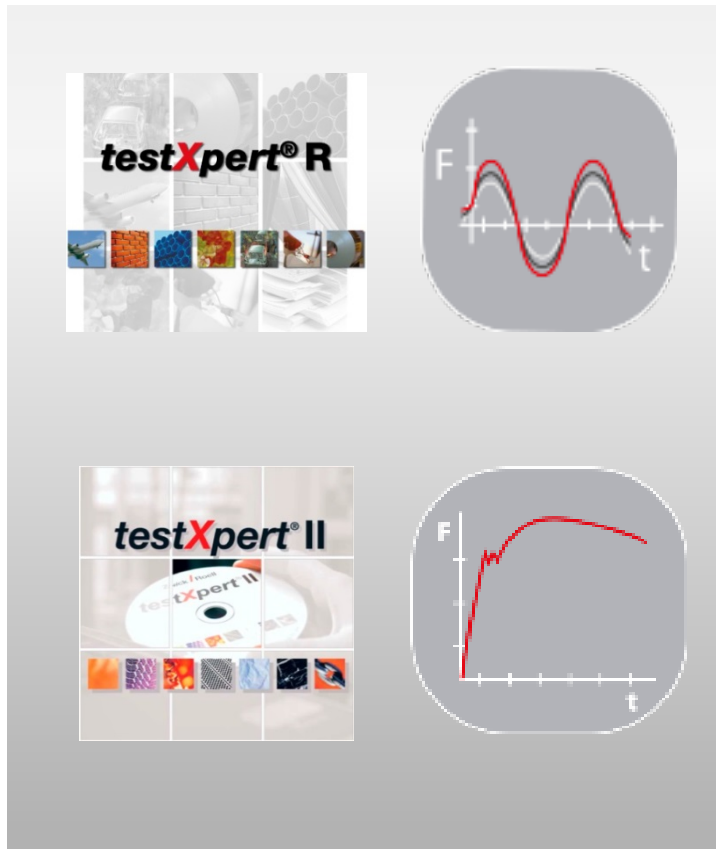
High temperature testing



3-point flexure test

Vibrophores

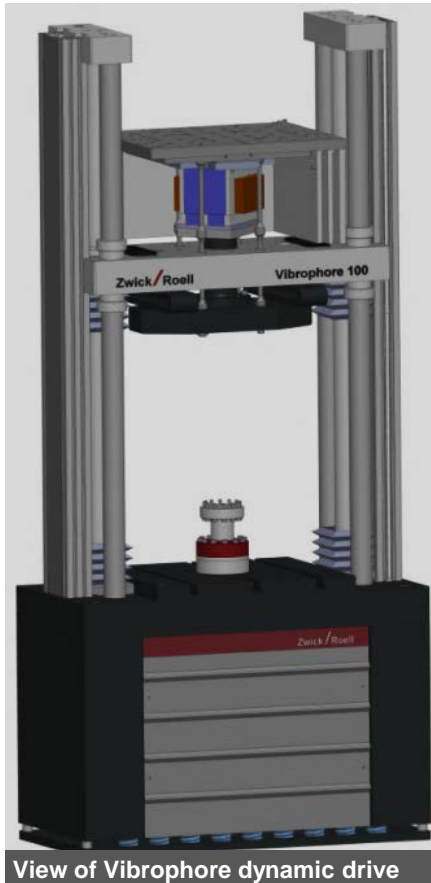
The wide application range includes fatigue tests and fracture mechanics investigations, as well as static tests.



- **Fatigue and durability tests on specimens and components with testXpert Research software**
 - determine fatigue properties shown by the Wöhler curve (S/N curve)
- **Static test with testXpert software**
 - With the two in one function and testXpert II the Vibrophore is a static testing machine
- **Fracture mechanics investigations**
 - pre-cracking of CT and SEB specimens (ASTM E 399)
- **Tests under various environmental conditions**
 - high / low temperatures, aggressive fluids

Vibrohores

Zwick's Vibrophore produces fast test results for dynamic tests while keeping operating costs to a minimum, saving time and money in everyday testing.



- **Short test times** and a high specimen throughput level for dynamic tests due to high frequencies
- **Low energy consumption** thanks to resonance principle (approx. 2% of the energy consumption of a servo-hydraulic test system)
- **Minimal maintenance** costs because there are no wear parts
- **Easy installation** without additional infrastructure, such as a hydraulic system, coolant, or compressed air
- Yet the Vibrophore is a full-fledged **static testing machine**

Vibrohores

The Vibrofore is available from 50 to 1.000 kN

Vibrofore 1000

Vibrofore 500

Vibrofore 250

Vibrofore 50 / 100



OVERVIEW 

Linear Motor Testing Systems

An LTM testing system can be used in all areas of materials testing quality control and component testing.



Medical



Dental implants



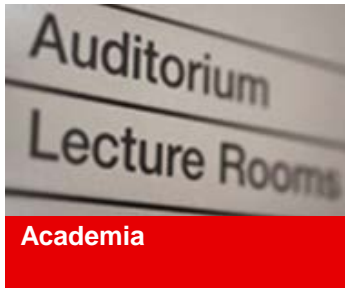
Hip implants



Spinal column implants



Vertebral body implants



Academia



3- and 4-point flexure test



Fracture mechanics for plastics - aluminum



Composites



TCU, HT, corrosion



Aerospace, automotive, plastics, composites



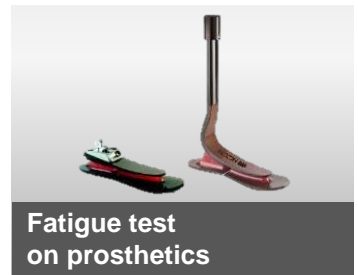
Rubber-metal



Adhesive bonds



Fatigue test on athletic shoes



Fatigue test on prosthetics

Linear Motor Testing Systems

The new linear motor testing system LTM is based on an internally developed and patented electro-dynamic drive system, which optimally fulfills the requirements of materials testing.



- Flexible use for static and dynamic tests
 - Optimal drive characteristics thanks to a wide speed range of 0.016 mm/s to 1.5 m/s
- Accurate test results thanks to optimal positioning of the travel measuring system
 - Force application and travel measuring system align with the test axis, preventing tilting and bending moments, and thus travel measurement errors
 - Minimization of heat drifts produces more accurate test results
- Minimization of stick/slip effects resulting in more accurate test results even with lower amplitudes
 - Lower friction thanks to piston rod with hydrostatic bearing
- No additional costs or downtime for maintenance and adjustments
 - Maintenance-free piston break system
 - Oil-free testing system

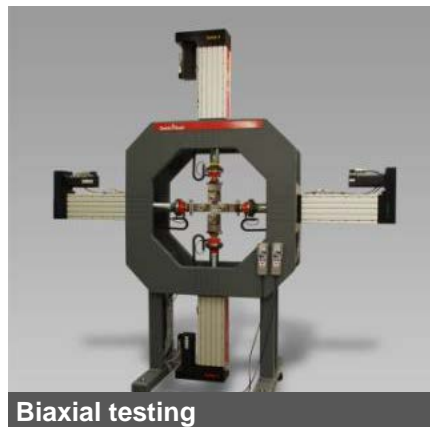
LTM 5

Electro-Mechanical Testing Actuators

High test speed, precise control, simple handling — the single testing actuator is ideal for flexible use in the lab and in production.

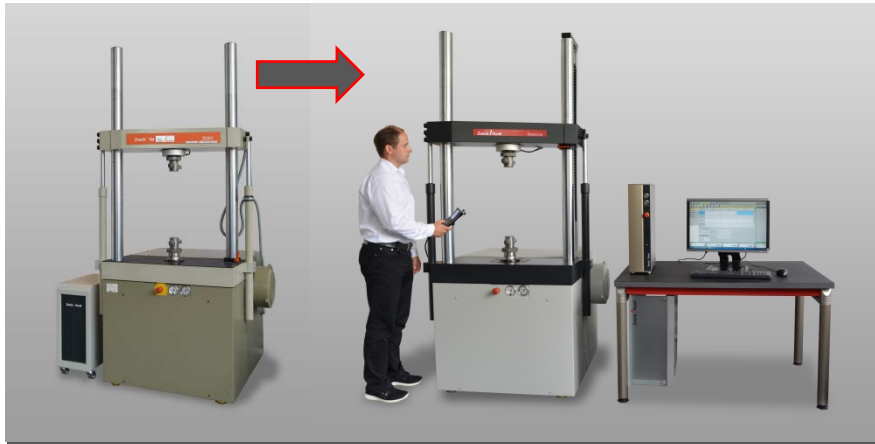


- Flexible mounting
- Compact size even at high forces
- Can be used in customized test arrangements
- **testXpert® II** and **testControl II**
- No hydraulic power pack
- Test loads from 1 to 100 kN



Modernizations

Modernization technology for dynamic testing systems. Reliable service and future upgradeability with this new technology.



Before and after modernization with testControl II & testXpert R

- State-of-the-art technology for uni-axial testing systems
- Highest degree of safety for the operator thanks to 2-channel safety circuits and operation mode switch for SETUP and TEST modes

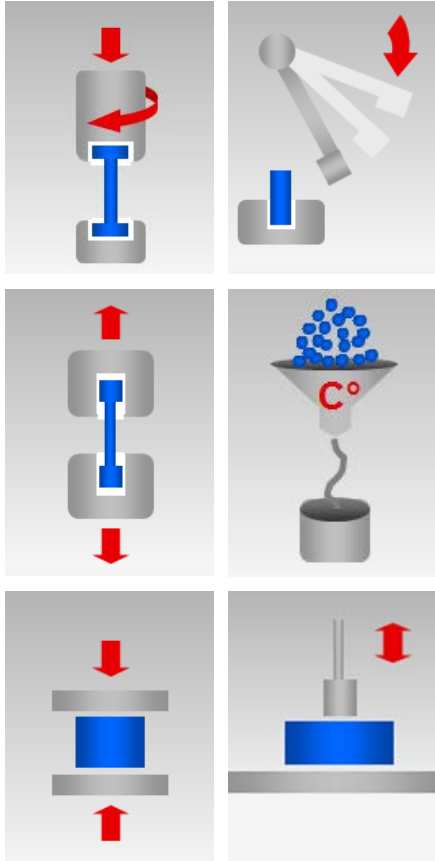


Control Cube & Cubus software for servo-controller

- Simple handling of complex testing system
- Modular software structure for optimum customization to the test requirements
- Highly suitable for multi-axial test benches
- Cascadable servo controller

Services for Materials and Component Testing **Zwick / Roell**

We perform all types of testing services on all static and dynamic materials testing machines.



Do you have a test to perform but no way of testing it?

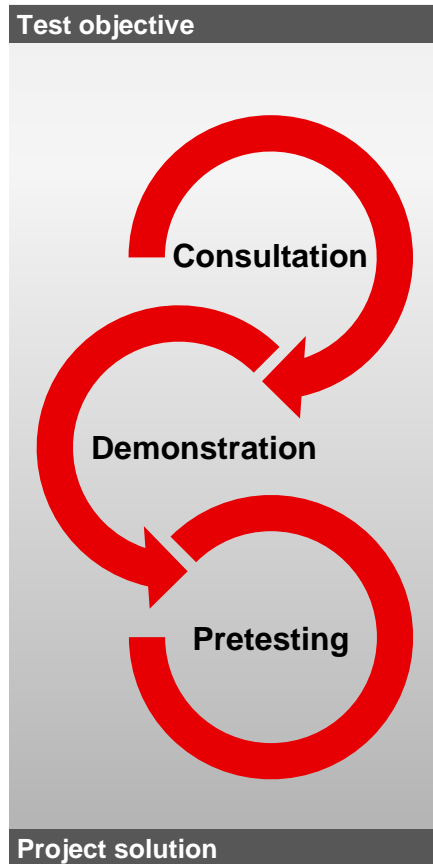
We offer

- State-of-the-art technology and modern testing machines
- Fast and standard-compliant testing
- Tests to factory standards
- Comparison testing
- Assistance in bridging your capacity bottlenecks
- Cost flexibility

Our trained engineers have many years of experience and sound expertise. Contact us.

OVERVIEW 

You have the test objective—we find the perfect material testing machine solution for the task.



You can rely on comprehensive consultation and support from Zwick experts in our dynamic application test lab.

- Let us demo our various dynamic testing machines for you, free of charge.
- We will pretest your materials to find the right machine and accessories.
- We offer customized training courses in our lab or at your location.
- We facilitate joint preacceptance of your solution at our headquarters in Ulm.

Dynamic Testing Service Portfolio

Zwick offers customized consultation and services. We support you throughout the entire lifecycle of your dynamic materials testing machine.

- Consultation
- Demonstration
- Pretesting

Procurement

- Preliminary acceptance
- Installation
- Instruction in two stages if needed
- Initial calibration as needed

Commissioning

- Inspection
- Hydraulic maintenance
 - Replacing the filter
 - Oil change
 - Hose change
- Calibration
- Retrofit
- Machine relocation

Operation of the machine

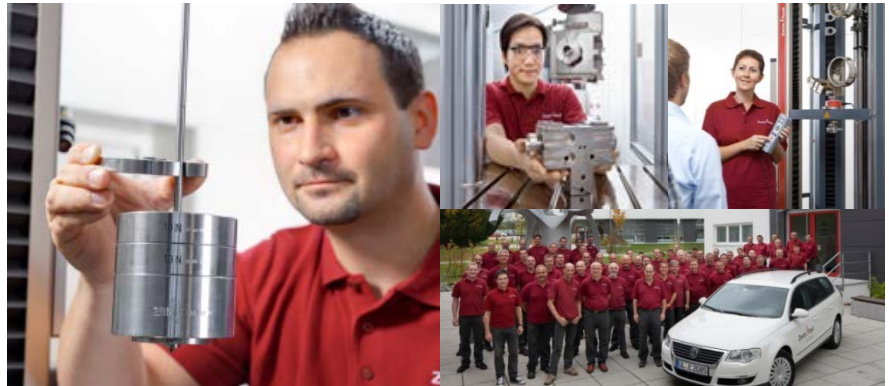
- Hotline support
- Repair work
- Spare parts
- Software services
- ZwickAcademy customer training courses
- Contract testing



LTM

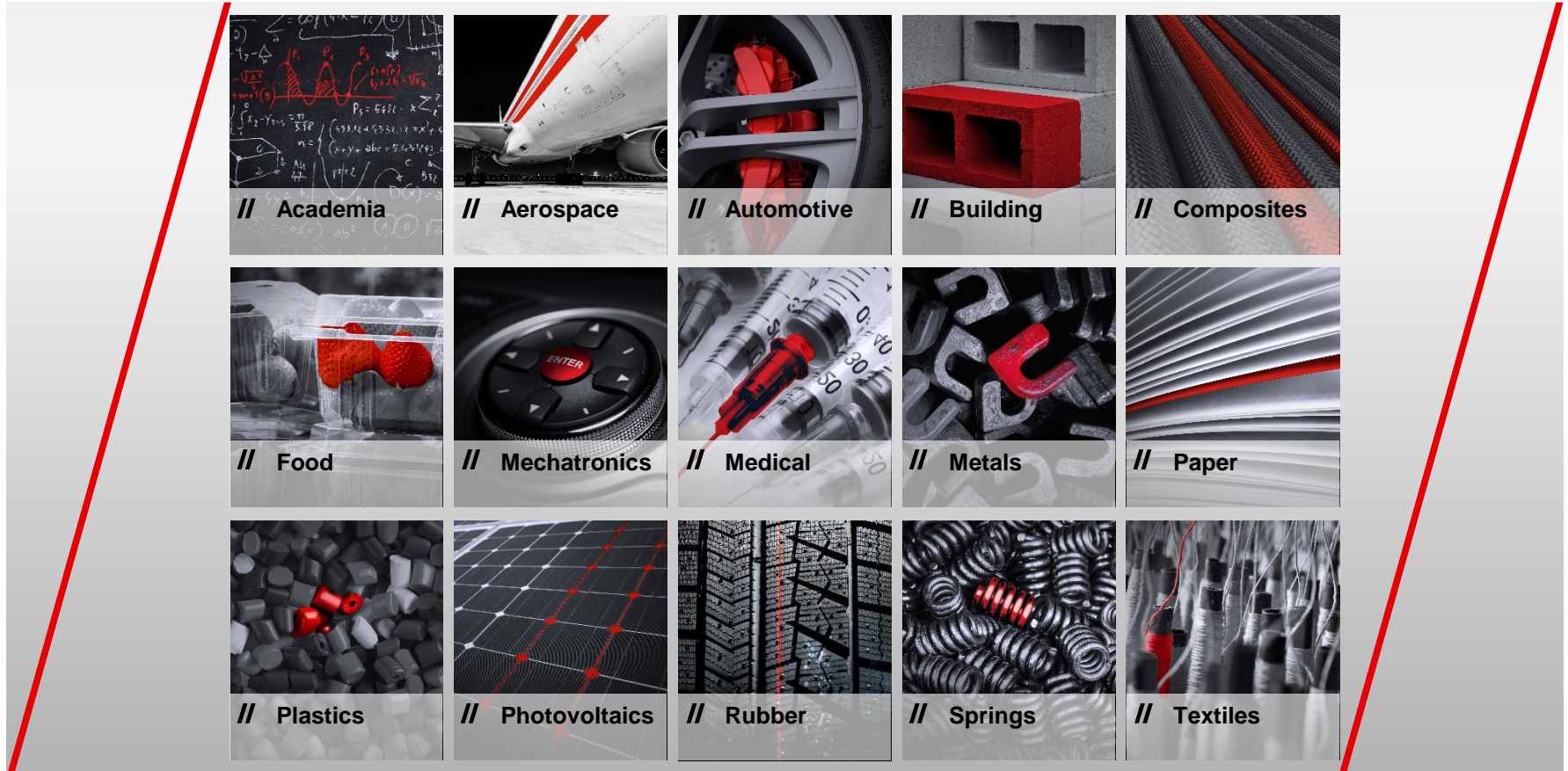


Vibrophone



ZwickService - expertise and reliability

The Zwick Roell Group serves major industries.



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// [testXpo in Ulm](#)

// [What is testing?](#)

// [SAFETY](#)

// [Reliable Test Results](#)