walter+bai

Years 50 Jahre

w+b

News & Applications
Materials and Components Testing

This year once again we look back on new altitudes we have reached by the development of sophisticated and complex testing solutions at w+b. Some of the shown testing systems, we cover within this news, are staying beyond the scope of standard realizations. This would not be possible without our highly qualified specialists and without diligent customers from another side that are constantly striving to the new horizons in materials science and testing techniques.

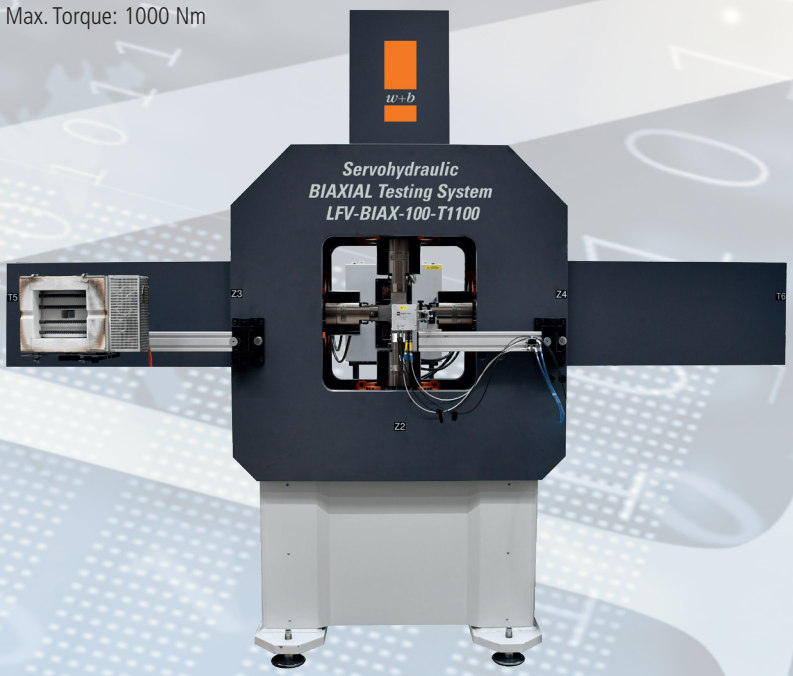
With pleasure, we are presenting you our novel solutions that we believe are the subject of your interest.

Planar Biaxial Testing Systems

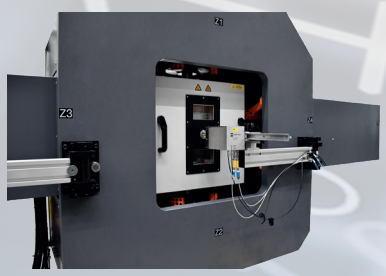
During service, components are often subjected to multiaxial stresses. For planar biaxial testing of materials, particularly composites, metals, textiles, biomaterials, or plastic under a wide range of biaxial stress states, typically a cruciform specimen in conjunction with a testing machine capable of bearing independently controlled loading on two orthogonal axes is used. The cruciform specimen avoids stress concentrations and provide a uniformly stressed test section. Load application for the cruciform can be accomplished in a robust frame supplied with separate drives (either electromechanical or servohydraulic) and separate load cell to check for off-axis or unbalanced loading.

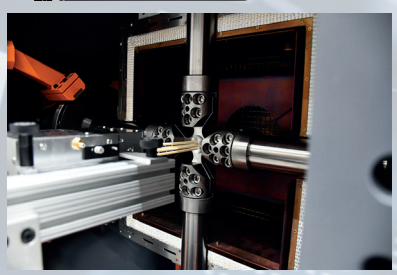
Depending on test conditions w+b offers Biaxial Testing Systems in different configurations adapted to multiaxial testing in creep, static strength, fatigue or high-speed modes in different force ranges.
Available are systems with Electromechanical Drives or Servohydraulic Actuators.

Example for a Planar Biaxial Servohydraulic System with additional 1000 Nm horizontal Torque Drives.
Max. Test Load: 100 kN
Max. Torque: 1000 Nm



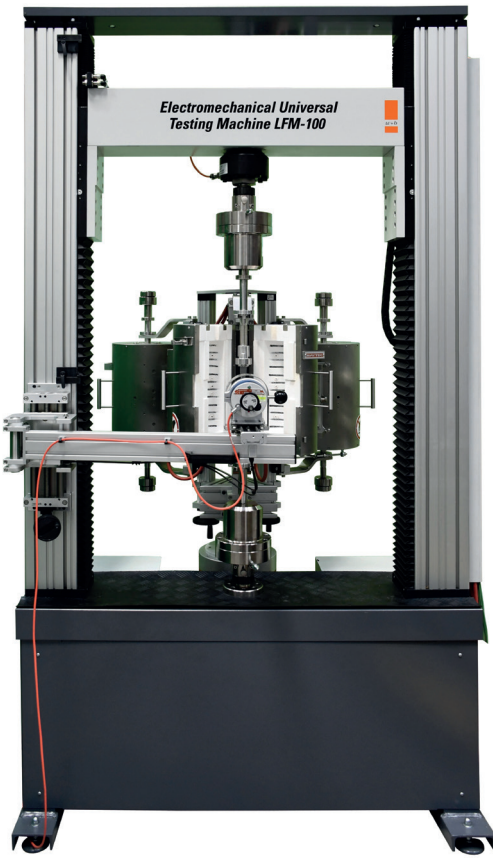
With integrated hydraulic grips, pull-push rods for tests in combination with environmental chamber and pull-push rods for tests in high temperature furnace.





Elevated Tensile Testing of Metallic Materials
Improving Efficiency

Hot Tension Testing Tension testing is a very common mechanical test for the evaluation of the mechanical material properties at elevated temperature. Most common test standards for tensile testing of metallic materials are ISO 6892-2 and ASTM E21.



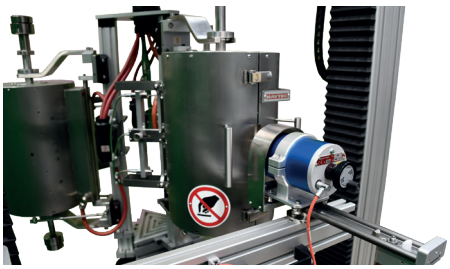
The test duration mainly depends on test specification that dictates the specimen heating rate and holding / soak time. Additionally one also needs time to cool down the furnace and specimen with pull-rod before one can remove the tested specimen from the furnace. With such wait times the throughput with one furnace is limited to few specimens per workday.

To improve productivity and to reduce specimen throughput time we are offering furnace carousel systems in place of a single furnace.
When working with more than one furnace, the specimen can be loaded, heated up and cooled down after the tensile test, outside of the testing machine.

Typically, carousel systems have three to six furnaces allowing the operator to install the specimen using pull rods outside of the testing machine.

After heating up and soak time the operator can rotate the specimen with related furnace in the load frame's test space to conduct the hot tensile test. Once the test is completed the operator can rotate the entire carousel assembly to mount the next specimen that is ready for testing.

That workflow will increase your test capacity considerably. Our carousel systems are available for all our testing machines.

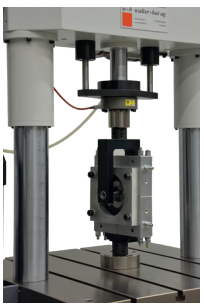


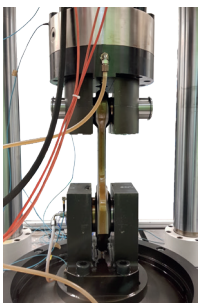
When you use our motorized high temperature extensometer PMA-12 for your hot tensile test you can reduce human touchpoints and simplify operator's workflow.

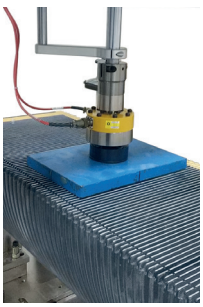
Customized and Application
Oriented Fatigue Test Systems

«Specific testing tasks demand appropriate testing equipment!»

This is our motto. Therefore, besides of our standardized model lines we have developed an extensive number of customized and application oriented solutions from miniature systems up to high-force applications.
Should you require a very specific and customized testing system, we are able to design, develop and produce such system for you. We deliver customized solutions and complete installations for physical and mechanical testing laboratories world-wide.







Modernization
of Testing Machines

A modernization brings your old testing machine back to the latest state of technology in terms of function, accuracy, user-friendliness, productivity, reliability, and safety.
w+b offers manufacturer-independent different levels of modernization for almost all static or dynamic, mechanical, or hydraulic testing machines

We are offering the full spectrum of modular modernization packages from inexpensive data acquisitions to full modernization.

By using modern data acquisition and control electronics together with the latest testing software for automated, standard-compliant test execution and evaluation, your static, dynamic, mechanical or servohydraulic test system can be adapted to the increased requirements in terms of accuracy, standard conformity, productivity and data handling.

With our **PCS8000** digital controller and the associated **DION7** test software, we offer you a powerful and flexible platform to extend the service life of your test system based on the latest test technology.
The required scope of modernization depends on the condition of your test system and your current and future requirements.

The performance of your existing test system will improve by installing the new digital controller for closed loop testing and high-speed data acquisition with PC running **Dion7** application software, and any additional tailored steps as revision or replacement of the drive technology and sensors, extensometers, grips or fixtures or accessories for simulating environmental conditions.

A modernization of your test system by w+b increases operational and service reliability.

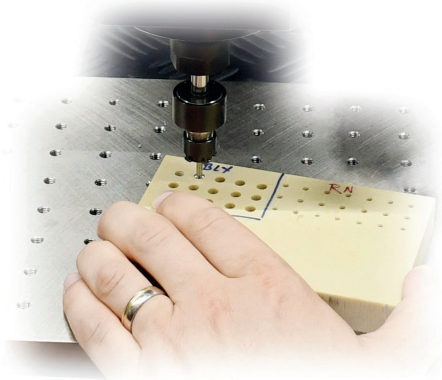
Thanks to our decades of experience in modernizing testing machines, we can offer you an all-round service for your testing system. This minimizes failures and ensures compliance with standards. By combining the calibration of your test system with maintenance and service work, you can also save costs in the future.

We carry out these services for our own testing machines, as well as for testing systems modernized by us and for third-party products. We also offer preventive maintenance, on-site repairs, overhauls and repairs in our factory, machine relocation, spare parts, software updates with training.

Biomedical Applications

Walter+Bai delivers an array of Biomedical Test Systems for biomedical, biomechanics, orthopaedics, medical devices and dental testing applications. Often these testing requirements includes beside of axial loading also torsional or simultaneous axial-torsional testing.

Our product portfolio includes axial-torsional systems with rotational speeds designed for drilling and tapping tests on implant materials or bones.



DION7 Multipurpose Software for Materials to Component Testing and Simulation

The One-For-All DION7 software platform maximize the value of your software portfolio with a single platform for static / monotonic, creep, relaxation, low cycle fatigue, fracture toughness, fatigue crack growth, high cycle fatigue to complex multi-axial, multi-channel testing and fully automatic test systems in the field of materials and component testing and simulation.

DION7 is grouped into:

- Static / Monotonic Testing
- Fatigue Materials Testing
- Fracture Mechanical Testing
- Thermo Mechanical Fatigue Testing
- Low Cycle Fatigue
- Free Programmable Block Programming
- Automated Test Systems
- Pendulum Impact Testing

Each of this groups includes a large and growing library of test templates that meets specific test standards for testing of materials as:

- Metals & Alloys
- Composites
- Plastics
- Rubber
- Biomedical Products
- Concrete and Cement
- Wood & Timber
- Textiles & Fibres
- Components
- Finished Goods and more…

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Testing Machines

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