walter+bai

News & Applications
Materials and Components Testing

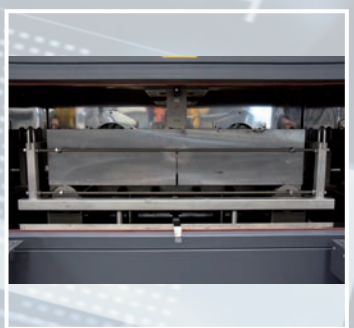
w+b

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. The testing systems we cover with this overview 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.

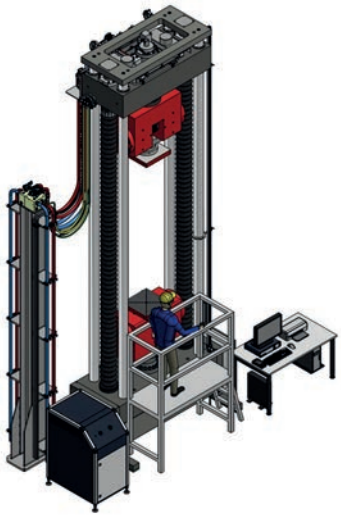
LFM-2000 kN for Fracture Mechanics Tests at Ambient and Low Temperature of -100°C

This test system is designed to determine fracture toughness (K1C), crack tip opening displacement (CTOD) and J-fracture toughness values of metallic materials.
Both specimen types, SE(B) Bend Specimens as well as Compact C(T) Specimens can be tested from ambient to low temperatures. The system can test C(T) specimens up to B=4" (W=8") and SE(B) specimens up to 200 x 200 x length 900 mm with weighs up to 290 kg. The large sample conditioning chamber is incorporated in the machine with sample handling system and Clevis Grips for easy sample loading. For the SE(B) Bend Test the support roller distance is adjusted automatically depending on selected specimen size. Two pre-conditioning chambers are used to pre-cool samples before moving them into the testing machine for increased productivity.



LFM-2500 kN with Additional 500 kN Fatigue Rated, Servohydraulic Actuator

This test system is designed for static testing of round and flat specimens, pillars, columns, beams, carriers made from Carbon, Concrete, Steel as well as Composite Materials. An additional, dynamic rated, servohydraulic actuator allows additionally to perform fatigue tests up to 500 kN.



The system features grip-to-grip separation of 3000 mm. Additionally, specific for testing of composite materials, the sample can extend behind the jaws into the grip on each side by 500 mm so that overall sample lengths of ≤4500 mm can be tested.

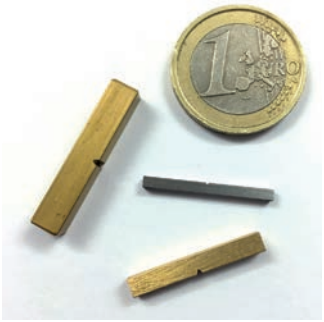
Accessories as compression platens can be fixed directly onto the parallel grips series SPG-3000 kN.

Dynamic Testing of Dental Implants after ISO 14801 with Electrodynamic Test System LFV-E

w+b offers fluid-free non-hydraulic fatigue rated test systems specifically designed for fatigue tests in accordance with ISO 14801. The state-of-the-art fluid-free non-hydraulic servoelectric drive represents the latest versatile and reliable fatigue rated drive technology providing backlash-free motion with no fluid compressibility to compromise position accuracy. The ideal solution for laboratories which desire a compact, space saving, clean and quite test system for dental implants testing that requires no environmental consideration and virtually no maintenance.

The LFV-E series of electrodynamic testing machines provide highly accurate force and motion measurement and closed-loop control in combination with our latest ultra-high-speed and high resolution Digital Control System PCS8000 with a closed-loop rate of 14.4 kHz and 24 Bit resolution. Tests can be performed in the full frequency range up to 15 Hz as specified in the ISO standard. The test systems are supplied complete with loading device, specimen holder, bath for testing in saline or physiologic medium and temperature control system. Specimen holders are available for fixed (30°) loading or with the ability to adjust the implant axis so that implants with or without angled connectors can be tested. With the DION7 application software an easy-to-operate intuitive and highly visual environment is offered, to run the tests with the possibility for statistical analysis. Predefined templates comply with the standard and makes the operation of the machine easy and user-friendly.

Fully Automated, Robotic Pendulum Impact Test System ENHANCEDCHARPY for Sub-Sized Samples 2x2, 3.3x3.3 and 5x5 mm



This robotic test system is designed for sub-size metallic samples to perform Charpy Impact Tests according to ISO 148-1, EN 10045, ASTM E23 and instrumented tests in accordance ISO 14556 and ASTM E2298-15 in the temperature range from -180°C to +300°C.

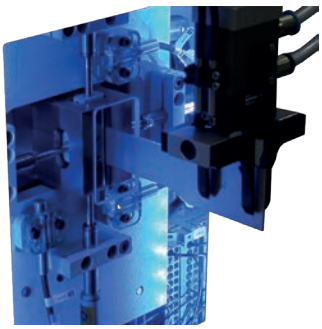
Additionally the impact tester can be used for IZOD tests in manual mode.

For each sample size the magazine can be loaded with up to 24 samples and tested in fully automatic made.

The typical system configuration includes a pendulum impact tester 25 or 50 Joules, selectable hammer with non-instrumented or instrumented striker, a sample conditioning chamber with integrated exchangeable sample magazines, a handling robot, DION7IMPACT software package and connection to customer HOST system for data transmission.

New Robotic Test Platform ENHANCEDSHEET with Increased Efficiency and Constant Process Reliability

This fully automatic test platform is designed for fully automated tensile testing of metallic sheets samples in accordance with international standards as ISO 6892-1 with additional r & n values determination.
The modular design of the robotic system enables it to be attached to floor standing electromechanical testing machines of LFM series with suitable force capacity.
The portal loading system is flexible and adaptable to specific samples length with different samples thickness.
There are four individually loadable sample magazines, each can carry up to 40 samples.



The samples dimensions (width and thickness) are measured in the cross-section measuring device as part of the test cycle.

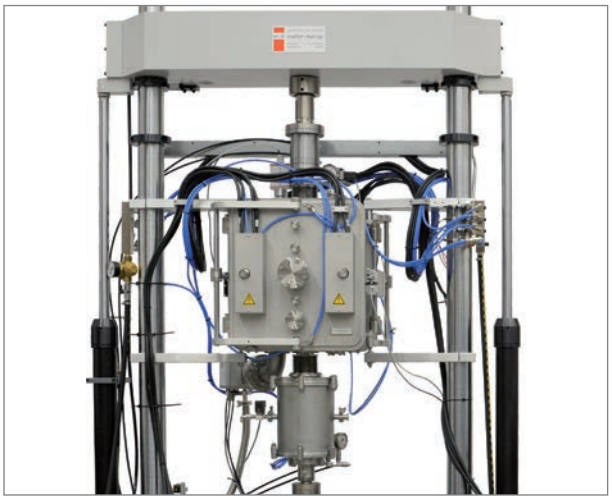
The typical system configuration includes an electromechanical load frame, the sample magazine, the sample handling system, hydraulic parallel grips, fully automatic contact or optical extensometer, axial and transversal extensometers, waste containers with selection of "good" and "bad" samples, protective device, ultra-high resolution digital controller PCS8000 and DION7 application software with date export to customers host computer. Optional the barcode scanner is available.

Closed-Loop Controlled Rotary Bending Fatigue Testing Machine series UBM with Frequency Range up to 250 Hz (15000 RPM)

Specially designed for applying of constant rotating load on standard specimen. In accordance with,

DIN 50113 and ISO 1143, for rotary bending tests for constant bending moment.

High Temperature Vacuum Systems for Metallic and Ceramic Based Materials now available up to 2000°C



Innovative materials are in demand in many sectors of industries and technology. In the file of Aerospace, Energy and others new high temperature and strength materials are of utmost importance to increase efficiency to extend the life of turbines, reactors etc.

We have increased the temperature range from 1800°C to 2000°C for the vacuum test system for stainless steel, titanium, nickel alloys and ceramic materials.

These systems offer beside of testing under vacuum also the possibility to perform tests in inertgas.

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Testing Machines

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