

Universal fatigue testing machine MTS 810



Technical description:

A two-column universal servohydraulic testing machine capable of conducting single-axis static and fatigue tests under the control of force, displacement, or any analogue sensor used during testing (e.g., strain gauge, extensometer, etc.).

Exemplary applications:

determination of engineering and true stress-strain curves,
determination of monotonic material parameters,
static tests of three-point and four-point bending,
conducting of fatigue tests (Wöhler curve, Coffin-Manson curve),
cyclic strain curve determination,
fatigue life testing of structural elements and structural joints under an arbitrary sequence of axial loading,
fatigue crack growth testing in engineering materials and structural elements,
determining the static and dynamic characteristic of machine components (in the range of deformation rate up to 150 mm/sec).

Trade name: Universal fatigue testing machine MTS 810

More details: </equipment/uniwersalna-maszyna-wytrzymosciowa-mts-810/>

Access type: External

Type of accreditation / certificate: Not applicable

Contact person: Machniewicz Tomasz

Contact person url: <https://skos.agh.edu.pl/osoba/tomasz-machniewicz-5212.html>

Responsible body: Department of Machine Design and Maintenance

Group / laboratory / team: Team of Strength of Materials and Structures

Last update date: Nov. 27, 2024, 6:22 p.m.

Year of commissioning: 2007

IDUB research areas:

(PRA 4) Technical solutions: from fundamental research, through modelling and design, to prototypes. The application of mathematical, information technology, and electronics tools to macro-, micro-, and nanoscale problems
(PRA 5) Materials, technologies, and processes inspired by nature: biotechnology, bioinspirations in engineering and materials science, biosensors, bioenergetics, biocatalysis, biocomputers, and biocomputation
(PRA 7) Design, production, and testing of modern materials and the technologies of the future based on a multidisciplinary approach combining materials engineering with chemistry, physics, mathematics, and medicine

Research capabilities:

1. Static tests: tension, compression, bending;
2. Dynamic tests:

low-cycle fatigue (LCF)
high-cycle fatigue (HCF),
crack propagation,
fatigue crack growing,
fracture toughness,
dynamic characterisation of materials and structures.

Measurement capabilities:

loading range: +/- 100 kN;
actuator stroke: +/- 75 mm;
maximum test speed: 150 mm/sec.;
distance between grips: 0 - 1000 mm,
diameter of the grip section (cylindrical specimen): 5.8-22.9 mm,
thickness of the grip section (flat specimen): 0-19 mm

Conditions for providing infrastructure:

To be agreed with the contact person