

## Universal fatigue testing machine DARTEC 250



### Technical description:

A two-column universal servohydraulic testing machine capable to conduct single-axis static and fatigue tests under the control of force, displacement, or any analog 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,

fatigue tests conducting (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.

**Trade name:** Universal fatigue testing machine DARTEC 250

**More details:** </equipment/maszyna-wytrzymaosciowa-dartec-250-nosnosc-250-kn/>

**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:** 1996

**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 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,

fracture toughness,

dynamic characterisation of materials and structures.

**Measurement capabilities:**

static load range: +/- 300 kN;
dynamic load range: +/- 250 kN;
actuator stroke: +/- 75 mm;
tensile test specimen length: 280 - 1100 mm,
diameter of the grip section (cylindrical specimen): 5-45 mm,
thickness of the grip section (flat specimen): 0-35 mm

**Conditions for providing infrastructure:**

To be agreed with the contact person