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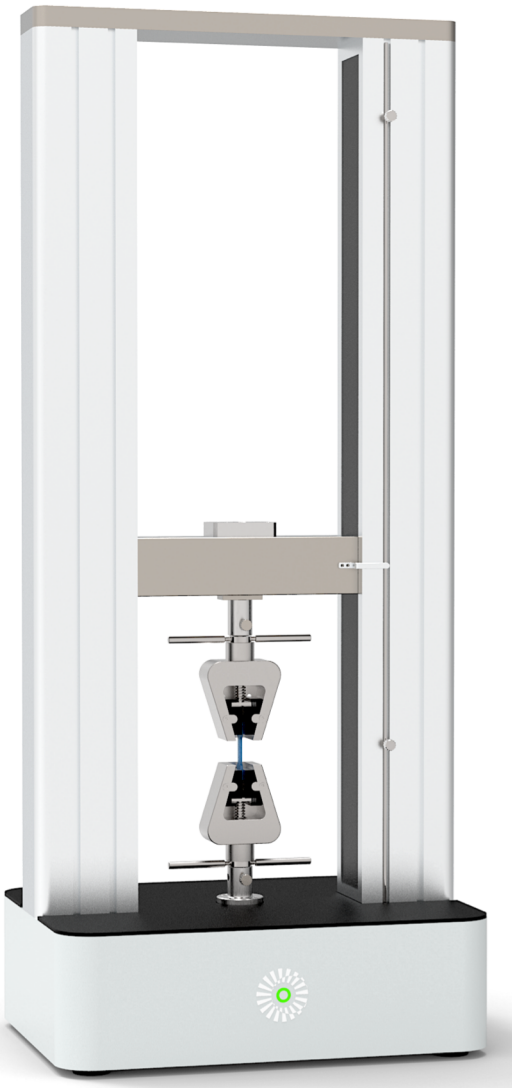
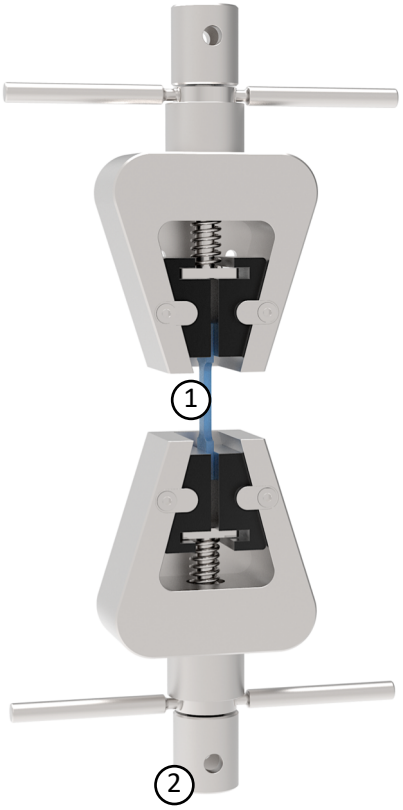
Application Note

ISO 6892-1 – Metals Tensile Testing



Background

DIN EN ISO 6892-1[1] standardizes tensile testing at room temperature and defines the measurement of mechanical properties. The tensile test is one of the most important and most frequent mechanical testing method, which determines strength and elongation characteristics for metallic materials. These characteristics are of importance for the design and construction of many products and components. The uniaxial tensile test is particularly used for the determination of yield strength, tensile strength and elongation at break.



Test Setup

The tensile test according to ISO 6892-1 is used to test a wide range of metallic materials. Primary specimen types include sheets, plates, wires, rods and tubes.

Yield strength and tensile strength can be determined by measuring the force during the test, while external strain measurements are also used to determine other characteristic values.

The specimen (1) is aligned and clamped in the fixture (2). It is then loaded in tensile direction until failure occurs or another termination criterion is met.

Equipment

Static tests in accordance with ISO 6892-1 can be carried out simply, reliably and reproducibly with servo-static testing systems from **THELKIN** and the corresponding specimen set-ups:

- **THELKIN servo-static load frame SSL-M-010** - complies with the specifications of the standard and enables easy and safe sample mounting, programming of the test as well as data acquisition and test execution.
- **Wedge Grips GR.WE** - enables fast and precise fixing of the specimen.
- **Extensometer** - with an extensometer (clip-on, video, laser) an external strain measurement can be realized.

[1]ISO 6892-1:2019: Metallic materials — Tensile testing — Part 1: Method of test at room temperature

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