
**Metallic materials — Calibration and
verification of static uniaxial testing
machines —**

**Part 1:
Tension/compression testing machines
— Calibration and verification of the
force-measuring system**

*Matériaux métalliques — Étalonnage et vérification des machines
pour essais statiques uniaxiaux —*

*Partie 1: Machines d'essai de traction/compression — Étalonnage et
vérification du système de mesure de force*



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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

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For an explanation on the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the WTO principles in the Technical Barriers to Trade (TBT) see the following URL: [Foreword - Supplementary information](#)

The committee responsible for this document is ISO/TC 164, *Mechanical testing of metals*, Subcommittee SC 1, *Uniaxial testing*.

This fourth edition cancels and replaces the third edition (ISO 7500-1:2004) which has been technically revised.

ISO 7500 consists of the following parts, under the general title *Metallic materials — Calibration and verification of static uniaxial testing machines*:

- *Part 1: Tension/compression testing machines — Calibration and verification of the force-measuring system*
- *Part 2: Tension creep testing machines — Verification of the applied force*

Metallic materials — Calibration and verification of static uniaxial testing machines —

Part 1:

Tension/compression testing machines — Calibration and verification of the force-measuring system

1 Scope

This part of ISO 7500 specifies the calibration and verification of tension/compression testing machines.

The verification consists of:

- a general inspection of the testing machine, including its accessories for the force application;
- a calibration of the force-measuring system of the testing machine;
- a confirmation that the performance properties of the testing machine achieve the limits given for a specified class.

NOTE This part of ISO 7500 addresses the static calibration and verification of the force-measuring systems. The calibration values are not necessarily valid for high-speed or dynamic testing applications. Further information regarding dynamic effects is given in the Bibliography.

CAUTION — Some of the tests specified in this part of ISO 7500 involve the use of processes which could lead to a hazardous situation.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 376, *Metallic materials — Calibration of force-proving instruments used for the verification of uniaxial testing machines*

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

3.1

calibration

operation that establishes the relationship between the force values (with associated uncertainties) indicated by the testing machine and those measured by one or more force-proving instruments

3.2

verification

confirmation, based on analysis of measurements in accordance with this standard, that the performance properties of the testing machine achieve the limits given for a specified class