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Assembly tools for screws and nuts — Hand torque tools —

Part 1: Requirements and methods for design conformance testing and quality conformance testing: minimum requirements for declaration of conformance

*Outils de manoeuvre pour vis et écrous — Outils dynamométriques à
commande manuelle —*

*Partie 1: Exigences et méthodes d'essai pour vérifier la conformité
de conception et la conformité de qualité: exigences minimales pour
déclaration de conformité*



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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).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation on the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT) see the following URL: www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/TC 29, *Small tools*, Subcommittee SC 10, *Assembly tools for screws and nuts, pliers and nippers*.

This first edition of ISO 6789-1, together with ISO 6789-2, cancels and replaces ISO 6789:2003 which has been technically revised with changes as follows.

- a) ISO 6789:2003 has been divided into two parts. This document specifies the requirements for design and manufacture including the content of a declaration of conformance. ISO 6789-2 specifies the requirements for traceable certificates of calibration. It includes a method for calculation of uncertainties and provides a method for calibration of the torque measurement device used for calibrating hand torque tools.
- b) The output drive designation of torque tools is expanded to include hexagonal and other output drives.
- c) The definition of the torque range of the tools has been changed.
- d) The rate of loading (shown by the time to achieve the last 20 %) has been changed.
- e) The importance of avoiding parasitic forces has been emphasized.
- f) Explanatory flowcharts for the measurement sequence of different torque tools have been added in [Annex C](#).
- g) The requirement for a "declaration of conformance" that the torque tool conforms with this document has been added.
- h) The requirement for a "certificate of calibration" has been removed, recognizing that manufacturers' calibration certificates have not previously contained enough information to be traceable calibration certificates.
- i) ISO 6789 has been editorially updated and restructured.

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j) [Figures B.2, B.3, B.5](#) and [B.6](#) have been changed.

A list of all parts in the ISO 6789 series can be found on the ISO website.

Introduction

The revision of ISO 6789:2003 has been designed to achieve the following improvements.

ISO 6789 has been split to provide two levels of documentation. It recognizes the different needs of different users of the standard.

This document continues to provide designers and manufacturers with relevant minimum requirements for the development, production and documentation of hand torque tools.

ISO 6789-2 provides detailed methods for calculation of uncertainties and requirements for calibrations. This will allow users of calibration services to more easily compare the calibrations from different laboratories. Additionally, minimum requirements for the calibration of torque measurement devices are described in ISO 6789-2:2017, Annex C.