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## **Assembly tools for screws and nuts — Attachments for hand-operated square drive socket wrenches — Torque testing**

*Outils de manœuvre pour vis et écrous — Adaptateurs pour douilles à main à carré  
conducteur — Essai de résistance à la torsion*

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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.

Draft International Standards adopted by the technical committees are circulated to the member bodies for approval before their acceptance as International Standards by the ISO Council. They are approved in accordance with ISO procedures requiring at least 75 % approval by the member bodies voting.

International Standard ISO 3316 was prepared by Technical Committee ISO/TC 29, *Small tools*.

This second edition cancels and replaces the first edition (ISO 3316 : 1975), clause 5 of which has been technically revised.

# Assembly tools for screws and nuts — Attachments for hand-operated square drive socket wrenches — Torque testing

## 1 Scope

This International Standard applies to attachments for hand-operated square drive socket wrenches listed under numbers 203, 204, 205 and 206 in ISO 1703 : 1983, *Assembly tools for screws and nuts — Nomenclature*. It specifies

- a) the minimum hardness value for their driving squares;
- b) the method of torque testing;
- c) the minimum torsional strength values.

## 2 Normative reference

The following standard contains provisions which, through reference in this text, constitute provisions of this International Standard. At the time of publication, the edition indicated was valid. All standards are subject to revision, and parties to agreements based on this International Standard are encouraged to investigate the possibility of applying the most recent edition of the standard listed below. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO 1174 : 1975, *Assembly tools for bolts and screws — Driving squares for power socket wrenches and hand socket wrenches*.

## 3 Driving squares

Driving squares shall be in accordance with ISO 1174, and have a minimum hardness of 39 HRC.

## 4 Torque testing

### 4.1 Procedure

Place the tool in a female test square and apply the corresponding torque.

Do not jerk or strike the tool when testing and apply the load gradually until the minimum testing torque (see clause 5) is reached. The torque is calculated as the product of the magnitude of the load by the distance measured between the point of application of the load and the axis of the female test square.

The across flats dimension of the female test square shall be equal to the minimum dimension of the corresponding female square (see ISO 1174) with a tolerance of H8; the female test square shall be hardened to not less than 55 HRC.

A device in which the female test square can be rotated at a certain torque, determined with an accuracy of  $\pm 2,5\%$ , may also be used for this test.

Following the application of the minimum test torque, the tool shall not show permanent deformation or other damage which could affect its usability.

### 4.2 Special requirements

#### 4.2.1 Test of adaptor socket wrench, extension bar and square drive universal joint

The torque shall be achieved by applying a load using a driving part the square of which has been treated for a minimum hardness of 55 HRC and the across flats dimension of which is equal to the maximum dimension of the corresponding male square (see ISO 1174) with a tolerance of h8.

The universal joint shall be tested in the position in which the two squares are on the same axis.

#### 4.2.2 Test of square drive bit for use with spiral ratchet drivers

The end opposite to the square shall be fixed and the load shall be applied to the square.