

Specification for

Open-ended wrenches

Part 1. Metric and unified

ICS 25.140.30

Confirmed
January 2011

NO COPYING WITHOUT BSI PERMISSION EXCEPT AS PERMITTED BY COPYRIGHT LAW

BSI
Documents



Document Sharing Hub

Committees responsible for this British Standard

The preparation of this British Standard was entrusted to Technical Committee MTE/15, Hand tools, upon which the following bodies were represented:

- British Telecommunications plc
- Consumer Policy Committee of BSI
- Federation of British Hand Tool Manufacturers
- Handle Manufacturers' Association
- Institute of Carpenters
- Institute of Trading Standards Administration

The following were also represented through a subcommittee:

- Ministry of Defence
- Coopted members

This British Standard, having been prepared under the direction of the Engineering Sector Board, was published under the authority of the Standards Board and comes into effect on 15 December 1996

© BSI 1996

The following BSI references relate to the work on this standard:
Committee reference MTE/15
Draft for comment 95/712069 DC

ISBN 0 580 26273 1

Amendments issued since publication

Amd. No.	Date	Text affected

Contents

	Page
Committees responsible	Inside front cover
Foreword	ii
Specification	
1 Scope	1
2 References	1
3 Hardness	1
4 Finish	1
5 Marking	1
6 Form and dimensions	1
7 Resistance to torque	1
Annexes	
A (normative) Unified inch series	5
B (informative) Guidance on safe usage	8
C (normative) Torque test	8
Tables	
1 Dimensions of wrenches for metric sizes	3
2 Test torque for metric wrenches	4
A.1 Dimensions of wrenches for unified inch sizes	5
A.2 Test torque for unified inch wrenches	7
Figures	
1 Wrench form	2
C.1 Torque test: location of test mandrel	8

Foreword

This British Standard has been prepared by Technical Committee MTE/15. It partially supersedes BS 192 : 1982 which will be withdrawn when a revision of the British Standard hexagon and Whitworth sizes has been undertaken.

In this edition the tolerances across flats of hexagons have been amended to align more closely with but not identically to practices of the International Organization for Standardization (ISO) in ISO 691 : 1983.

This standard is also related to but not identical with ISO 1085 : 1986, ISO 1711 : 1975, ISO 3318 : 1990 and ISO 10102 : 1990.

To meet continuing market needs, annex A gives dimensions of wrenches for unified inch sizes.

Consideration has been given to the relationship of blanks for metric and inch series wrenches. Where possible those used for metric wrenches have been adopted for unified inch series wrenches thereby reducing the overall number of blanks required to cover the complete range in this standard.

Apart from the nominal AF size, all dimensions for unified inch series wrenches are given in millimetres.

The material used for the manufacture of wrenches is not specified but torque requirements are specified to ensure a minimum level of performance.

Compliance with a British Standard does not of itself confer immunity from legal obligations.

Specification

1 Scope

This British Standard specifies design, dimensional and testing requirements for metric and unified wrenches.

It applies to wrenches in the range 3.2 mm to 60 mm and unified sizes in the range $\frac{3}{16}$ in to $2\frac{3}{8}$ in.

Guidance on safe usage of open-ended wrenches is given in annex B.

2 References

2.1 Normative references

This British Standard incorporates, by dated or undated reference, provisions from other publications. These normative references are made at the appropriate places in the text and the cited publications are listed on the inside back cover. For dated references, only the edition cited applies; any subsequent amendments to or revisions of the cited publication apply to this British Standard only when incorporated in the reference by amendment or revision. For undated references, the latest edition of the cited publication applies, together with any amendments.

2.2 Informative references

This British Standard refers to other publications that provide information or guidance. Editions of these publications current at the time of issue of this standard are listed on the inside back cover, but reference should be made to the latest editions.

3 Hardness

The hardness of the wrench shall be 39 to 48 HRC inclusive when determined in accordance with BS EN 10109-1.

4 Finish

All sharp edges shall be removed and wrenches shall be free from cracks, burrs or any other deleterious defects which may adversely affect the performance of the wrench or may during proper use of the wrench, give rise to the risk of injury to the user. Any protective finish shall be in accordance with the appropriate British Standard.

5 Marking

The wrenches shall be plainly and indelibly marked as follows:

- a) metric sizes shall be marked with the nominal AF size, e.g., 19;
- b) unified sizes shall be marked with the nominal AF size, e.g., $\frac{7}{16}$;
- c) wrenches shall be marked with the name or trade mark of the manufacturer (or responsible supplier);
- d) the manufacturer shall also include the number and date of this British Standard, i.e. BS 192 : Part 1 : 1996¹⁾.

6 Form and dimensions

The form and dimensions shall be as in figure 1 and in tables 1 and A.1.

7 Resistance to torque

When tested in accordance with the method described in annex C, wrenches shall be capable of meeting the minimum test torque requirements given in tables 2 and A.2.

After testing in accordance with annex C, the wrench shall show no permanent deformation or other damage which may adversely affect its safe use.

¹⁾ Marking BS 192 : Part 1 : 1996 on or in relation to a product represents a manufacturer's declaration of conformity, i.e. a claim by or on behalf of the manufacturer that the product meets the requirements of the standard. The accuracy of the claim is solely the claimant's responsibility. Such a declaration is not to be confused with third party certification of conformity, which may also be desirable