

**ASME B107.100-2010**  
**(Revision and Incorporation of ASME B107.6, B107.8,  
B107.9, B107.21, B107.39, B107.40, and B107.66)**

# Flat Wrenches

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# FOREWORD

The American National Standards Committee B107 on Socket Wrenches and Drives was originally under the sponsorship of The American Society of Mechanical Engineers (ASME). It was subsequently reorganized as an ASME Standards Committee, and its title was changed to Hand Tools and Accessories. In 1996, the Committee's scope was expanded to include safety considerations.

The purpose of B107.100 is to define essential performance and safety requirements specifically applicable to combination wrenches; box wrenches, double head; open end wrenches, double head; flare nut; adjustable wrenches; and ratcheting box wrenches. It specifies test methods to evaluate performance related to the defined requirements and safety, and indicates limitations of safe use.

This Standard was designated "Wrenches" when it was first issued in 2002. It superseded the following ASME standards: B107.6, Combination Wrenches; B107.9, Box Wrenches, Double Head; B107.39, Open End Wrenches, Double Head; and B107.40, Wrenches, Flare Nut.

This current edition has been redesignated as "Flat Wrenches" and incorporates the additional following standards:

(a) B107.8, Adjustable Wrenches, approved by the American National Standards Institute on November 8, 2007

(b) B107.21, Wrench, Crowfoot, approved by the American National Standards Institute on April 5, 2005

(c) B107.66, Ratcheting Box Wrenches, approved by the American National Standards Institute on November 8, 2007

In addition to the consolidation of these individual wrench standards into B107.100, principal changes are the uniform inclusion of performance requirements and test methods that evaluate both performance and safety as well as uniform format for sections on definitions, references, performance requirements, tests, and safety requirements and limitations of use.

Members of the Hand Tools Institute, Wrench Standards Committee through their knowledge and hard work have been major contributors to the development of the B107 Standards. Their active efforts in the promotion of these standards are acknowledged and appreciated.

The format of this Standard is in accordance with *The ASME Codes & Standards Writing Guide 2000*. Requests for interpretations of the technical requirements of this Standard should be expressed in writing to the Secretary, B107 Standards Committee, at the address below.

Suggestions for the improvement of this Standard are welcome. They should be addressed to The American Society of Mechanical Engineers, Secretary, B107 Standards Committee, Three Park Avenue, New York, NY 10016-5990.

The requirements of this Standard become effective at the time of publication.

This revision was approved as an American National Standard on March 11, 2010.



# ASME B107 COMMITTEE

## Hand Tools and Accessories

(The following is the roster of the Committee at the time of approval of this Standard.)

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# CORRESPONDENCE WITH THE B107 COMMITTEE

**General.** ASME Standards are developed and maintained with the intent to represent the consensus of concerned interests. As such, users of this Standard may interact with the Committee by requesting interpretations, proposing revisions, and attending Committee meetings. Correspondence should be addressed to:

Secretary, B107 Standards Committee  
The American Society of Mechanical Engineers  
Three Park Avenue  
New York, NY 10016-5990  
<http://go.asme.org/Inquiry>

**Proposing Revisions.** Revisions are made periodically to the Standard to incorporate changes that appear necessary or desirable, as demonstrated by the experience gained from the application of the Standard. Approved revisions will be published periodically.

The Committee welcomes proposals for revisions to this Standard. Such proposals should be as specific as possible, citing the paragraph number(s), the proposed wording, and a detailed description of the reasons for the proposal, including any pertinent documentation.

**Proposing a Case.** Cases may be issued for the purpose of providing alternative rules when justified, to permit early implementation of an approved revision when the need is urgent, or to provide rules not covered by existing provisions. Cases are effective immediately upon ASME approval and shall be posted on the ASME Committee Web page.

Requests for Cases shall provide a Statement of Need and Background Information. The request should identify the standard, the paragraph, figure or table number(s), and be written as a Question and a Reply in the same format as existing Cases. Requests for Cases should also indicate the applicable edition(s) of the standards to which the proposed Case applies.

**Interpretations.** Upon request, the B107 Standards Committee will render an interpretation of any requirement of the Code. Interpretations can only be rendered in response to a written request sent to the Secretary of the B107 Standards Committee.

The request for interpretation should be clear and unambiguous. It is further recommended that the inquirer submit his/her request in the following format:

Subject: Cite the applicable paragraph number(s) and the topic of the inquiry.  
Edition: Cite the applicable edition of the Code for which the interpretation is being requested.  
Question: Phrase the question as a request for an interpretation of a specific requirement suitable for general understanding and use, not as a request for an approval of a proprietary design or situation. The inquirer may also include any plans or drawings that are necessary to explain the question; however, they should not contain proprietary names or information.

Requests that are not in this format will be rewritten in the appropriate format by the Committee prior to being answered, which may inadvertently change the intent of the original request.

ASME procedures provide for reconsideration of any interpretation when or if additional information that might affect an interpretation is available. Further, persons aggrieved by an interpretation may appeal to the cognizant ASME Committee or Subcommittee. ASME does not "approve," "certify," "rate," or "endorse" any item, construction, proprietary device, or activity.

**Attending Committee Meetings.** The B107 Standards Committee regularly holds meetings, which are open to the public. Persons wishing to attend any meeting should contact the Secretary of the B107 Standards Committee.



# ASME B107.6

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# COMBINATION WRENCHES

## 1 SCOPE

This Standard provides performance and safety requirements for combination wrenches. Except where indicated, these requirements also apply to wrenches described in B107.9, Box Wrenches, Double Head; B107.39, Open End Wrenches, Double Head; and B107.40, Wrenches, Flare Nut.

Inclusion of dimensional data in this Standard is not intended to imply that all of the products described herein are stock production sizes. Consumers are requested to consult with manufacturers concerning lists of stock production sizes.

## 2 CLASSIFICATION

(a) B107.6 — Combination wrench, open end and 15 deg offset box opening

(b) B107.9 — Box wrench, double head

**Type I:** 15 deg offset each end

**Type II:** modified offset each end

**Type III:** deep offset each end

(c) B107.39 — Open end wrench, double head

**Type I:** engineer's wrench, 15 deg angle

**Type II:**

*Class 1:* 30 deg and 60 deg angle wrench

*Class 2:* 15 deg and 60 deg ignition wrench

*Class 3:* 15 deg and 60 deg angle wrench

**Type III:** tappet wrench, 15 deg angle

(d) B107.40 — Flare nut wrench

**Type I:** double head

**Type II:** combination, open end and 15 deg offset slotted box end

## 3 REFERENCES

The following is a list of publications referenced in this Standard. The latest available edition shall be used.

ASME B107.17M, Gages, Wrench Openings, Reference  
 Publisher: The American Society of Mechanical Engineers (ASME), Three Park Avenue, New York, NY 10016-5990; Order Department: 22 Law Drive, P.O. Box 2900, Fairfield, NJ 07007-2900 (www.asme.org)

ASTM B 117, Standard Practice for Operating Salt Spray (Fog) Apparatus

ASTM B 537, Standard Practice for Rating of Electroplated Panels Subjected to Atmospheric Exposure

ASTM B 571, Standard Practice for Qualitative Adhesion Testing of Metallic Coatings

ASTM D 968, Standard Test Methods for Abrasion Resistance of Organic Coatings by Falling Abrasive

ASTM E 18, Standard Test Methods for Rockwell Hardness and Rockwell Superficial Hardness of Metallic Materials

Publisher: American Society of Testing and Materials (ASTM International), 100 Barr Harbor Drive, P.O. Box C700, West Conshohocken, PA 19428-2959 (www.astm.org)

Guide to Hand Tools — Selection, Safety Tips, Proper Use and Care

Publisher: Hand Tools Institute (HTI), 25 North Broadway, Tarrytown, NY 10591 (www.hti.org)

## 4 PERFORMANCE REQUIREMENTS

The illustrations shown herein are descriptive and not restrictive, and are not intended to preclude the manufacture of wrenches that are otherwise in accordance with this Standard. Inch table values are in inches unless otherwise specified. Metric table values are in millimeters unless otherwise specified. Wrenches shall pass applicable tests in section 5. Conformance with marking and other requirements not determined by test shall be verified by visual examination.

### 4.1 Design

Wrenches shall provide a well proportioned comfortable handgrip and be similar to the figure to which reference is made. The engaging surfaces of the wrench openings shall be finished in a smooth and well-defined manner. Wrenches that have a box end design shall be chamfered on at least one side to provide a lead for the working surfaces. The tips of all open ends shall have no burrs.

**4.1.1 Wrench Openings.** Wrench openings shall be such as to ensure acceptance when gaged with gages conforming to ASME B107.17M, and shall conform to one of the following wrenching opening designs:

(a) *Standard Single or Double Hexagon Configuration.* This design consists of a simple geometric single (6-point) hexagon or a double (12-point) hexagon configuration having an across-flats and an across-corner shape for fitting with hexagon fasteners.

