

ASME B107.110-2012

**(Redesignation and Consolidation of ASME B107.1, B107.2, B107.5M,
B107.10, B107.12, B107.33M, and B107.34)**

Socket Wrenches, Handles, and Attachments

AN AMERICAN NATIONAL STANDARD



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FOREWORD

The American National Standards Committee B107, Socket Wrenches and Drives, under sponsorship of The American Society of Mechanical Engineers (ASME), was reorganized on June 28, 1967 as an ASME Standards Committee, and its title was changed to Hand Tools and Accessories. In 1996, its scope was expanded to include safety considerations.

In 1999, ASME initiated a project to consolidate hand tool standards by category of tool. The initial implementation included distinct standards within a single publication bearing a three-digit number corresponding to the responsible B107 subcommittee. Subsequent revisions are intended to integrate the component standards resulting in a more traditional document. In order to maintain continuity within the user community, the former component standard numbers are renamed as categories in the consolidated standard, and designations are provided in Nonmandatory Appendix A.

The purposes of this Standard are to define dimensional, performance, and safety requirements specifically applicable to socket wrenches, handles, and attachments for hand socket wrenches; to specify test methods to evaluate performance relating to the defined requirements; and to indicate limitations of safe use.

This Standard may be used as a guide by state authorities or other regulatory bodies in the formulation of laws or regulations. It is also intended for voluntary use by establishments that use or manufacture the tools covered.

This Standard supersedes, replaces, and renders obsolete the following standards:

ASME B107.1, Socket Wrenches, Hand (Inch Series)

ASME B107.2, Socket Wrenches, Extensions, Adaptors, and Universal Joints, Power Drive (Impact) (Inch Series)

ASME B107.5M, Socket Wrenches, Hand (Metric Series)

ASME B107.10, Handles and Attachments for Hand Socket Wrenches

ASME B107.12, Nutdrivers

ASME B107.33M, Socket Wrenches, Impact (Metric Series)

ASME B107.34, Socket Wrenches for Spark Plugs

Socket wrenches previously described in ASME B107.5M are included in Category 1. Socket wrenches and attachments previously described in ASME B107.33M are included in Category 2.

This Foreword is not a part of ASME B107.110, Socket Wrenches, Handles, and Attachments, and is included for information purposes only.

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 wrench 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 Secretary, ASME B107 Standards Committee, Two Park Avenue, New York, NY 10016-5990.

ASME B107.110-2012 was approved by the B107 Standards Committee on April 11, 2012 and by the Board on Standards and Testing on August 17, 2012. It was approved as an American National Standard on November 27, 2012.



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Hand Tools and Accessories

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

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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.

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Interpretations. Upon request, the B107 Committee will render an interpretation of any requirement of the Standard. 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 Standard 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 may 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 that are open to the public. Persons wishing to attend any meeting should contact the Secretary of the B107 Standards Committee.



SOCKET WRENCHES, HANDLES, AND ATTACHMENTS

1 SCOPE

This Standard provides performance and safety requirements for socket wrenches (sockets), handles used with these wrenches, nutdrivers, and attachments used with socket wrenches, hereinafter collectively referred to as tools. 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 and lengths.

2 REFERENCES

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

- ASME B46.1, Surface Texture, Surface Roughness Waviness and Lay
- ASME B107.4, Driving and Spindle Ends for Portable Hand, Impact, Air, and Electric Tools (Percussion Tools Excluded)
- ASME B107.17, Gages and Mandrels for Wrench Openings
- Publisher: The American Society of Mechanical Engineers (ASME), Two Park Avenue, New York, NY 10016-5990 (www.asme.org)
- ASTM B117, Standard Practice for Operating Salt Spray (Fog) Apparatus
- ASTM B537, Standard Practice for Rating of Electroplated Panels Subjected to Atmospheric Exposure
- ASTM B571, Standard Practice for Qualitative Adhesion Testing of Metallic Coatings
- ASTM D968, Standard Test Methods for Abrasion Resistance of Organic Coatings by Falling Abrasive
- ASTM E18, Standard Test Methods for Rockwell Hardness of Metallic Materials
- Publisher: The American Society for Testing and Materials (ASTM), 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 10591-3201 (www.hti.org)

SAE J1703, Motor Vehicle Brake Fluid

Publisher: Society of Automotive Engineers (SAE), 400 Commonwealth Drive, Warrendale, PA 15096 (www.sae.org)

3 CLASSIFICATION

(a) *Category 1: Hand Driven Socket Wrenches.* Detachable socket wrenches with square drive for hand use.

(b) *Category 2: Socket Wrenches, Extensions, Adaptors, and Universal Joints, Power Drive (Impact).* Detachable socket wrenches, extensions, adaptors, and universal joints for power drive impact use.

(c) *Category 10: Handles and Attachments for Hand Socket Wrenches.* The more generally used handles and attachments utilized by mechanics in repair and maintenance of vehicles, machinery, and other items.

(d) *Category 12: Nutdrivers.* With an integral socket and shaft that utilize a screwdriver-type handgrip.

(e) *Category 34: Spark Plug Socket Wrenches.* Detachable hand use socket wrenches with square drive for spark plugs.

Subclassifications are detailed in the classification section of each category.

4 PERFORMANCE REQUIREMENTS

The illustrations shown herein are descriptive and not restrictive, and are not intended to preclude the manufacture of tools that are otherwise in accordance with this Standard. Dimensions shall be in accordance with the applicable tables unless otherwise specified. Requirements unique to a category of tools are indicated in that section. Tools shall pass all of the applicable tests in section 5 and within category requirements as applicable.

4.1 Design

4.1.1 Nut-End Socket Opening. The internal wrench opening of a single hexagon (6-point) or a double hexagon (12-point) configuration, or a single square (4-point) or a double square (8-point) 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 hexagon (6-point) or a double hexagon (12-point) configuration having an across-flats and an across-corner shape for fitting with commercial hexagon fasteners.

