ASME B107.4-2019
[Revision of ASME B107.4-2005 (R2011)]

Driving and Spindle Ends for Portable Hand, Impact, Air, and Electric Tools (Percussion Tools Excluded)

AN AMERICAN NATIONAL STANDARD

The American Society of Mechanical Engineers

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Two Park Avenue • New York, NY • 10016 USA

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This Standard will be revised when the Society approves the issuance of a new edition.

ASME issues written replies to inquiries concerning interpretations of technical aspects of this Standard. Interpretations are published on the Committee web page and under http://go.asme.org/InterpsDatabase. Periodically certain actions of the ASME B107 Committee may be published as Cases. Cases are published on the ASME website under the B107 Committee Page at http://go.asme.org/B107committee as they are issued.

Errata to codes and standards may be posted on the ASME website under the Committee Pages to provide corrections to incorrectly published items, or to correct typographical or grammatical errors in codes and standards. Such errata shall be used on the date posted.

The B107 Committee Page can be found at http://go.asme.org/B107committee. There is an option available to automatically receive an e-mail notification when errata are posted to a particular code or standard. This option can be found on the appropriate Committee Page after selecting “Errata” in the “Publication Information” section.

The American Society of Mechanical Engineers
Two Park Avenue, New York, NY 10016-5990

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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), held its organizational meeting on June 28, 1967. Subcommittee 1 on Driving Ends for Portable Hand, Air, and Electric Tools and Subcommittee 3 on Spindle Ends for Portable Air and Electric Tools were subsequently organized. These two subcommittees took over the work that was originally handled by Technical Committee 28 of Standards Committee B5. The Standard produced by the subcommittees was designated ASME B107.4-1982. This document was reaffirmed in 1988.

The Committee subsequently undertook a revision of the 1982 standard. The revised standard was approved as an American National Standard on October 16, 1995.

The ASME Standards Committee title was changed to Hand Tools and Accessories, and in 1996 its scope was expanded to include safety considerations. Following review by the Committee, a revision, ASME B107.4-2005, was approved as an American National Standard on March 14, 2005. It was reaffirmed in 2011.

Principal changes in this edition are changes to Tables 7, 7M, 9, 9M, 10, 13, and 13M, which were subsequently renumbered as described below. Tolerances and dimensions in some SI unit tables were adjusted to align significant digits properly. Tables and figures in the B107 series were renumbered in 2017 in a manner consistent with the numbering system used in other ASME standards. The former and current table and figure numbers for ASME B107.4 are listed below.

Before 2017	After 2017	Before 2017	After 2017
Tables		Tables (Cont'd)	
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11A, 11AM	8-5	2	8-2
11B, 11BM	8-6	3	8-3
12, 12M	8-7		
13, 13M	9-1		

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 Foreword is not a part of ASME B107.4 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 is acknowledged and appreciated.

ASME B107.4-2019 was approved by the B107 Standards Committee on January 18, 2019 and by the Board on Standards and Testing on March 12, 2019. It was approved as an American National Standard on April 23, 2019. The requirements of the Standard take effect on the date of issue.

ASME B107 STANDARDS 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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W. C. Snyder, Wright Tool Co.
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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 or a case, and attending Committee meetings. Correspondence should be addressed to:

Secretary, B107 Standards Committee
The American Society of Mechanical Engineers
Two 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 to provide 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 and the paragraph, figure, or table number(s), and be written as a Question and Reply in the same format as existing Cases. Requests for Cases should also indicate the applicable edition(s) of the Standard to which the proposed Case applies.

Interpretations. Upon request, the B107 Standards 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.

Requests for interpretation should preferably be submitted through the online Interpretation Submittal Form. The form is accessible at http://go.asme.org/InterpretationRequest. Upon submittal of the form, the Inquirer will receive an automatic e-mail confirming receipt.

If the Inquirer is unable to use the online form, he/she may mail the request to the Secretary of the B107 Standards Committee at the above address. The request for an 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 in one or two words.
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. Please provide a condensed and precise question, composed in such a way that a "yes" or "no" reply is acceptable.
Proposed Reply(ies):	Provide a proposed reply(ies) in the form of "Yes" or "No," with explanation as needed. If entering replies to more than one question, please number the questions and replies.
Background Information:	Provide the Committee with any background information that will assist the Committee in understanding the inquiry. 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 the format described above may be rewritten in the appropriate format by the Committee prior to being answered, which may inadvertently change the intent of the original request.

Moreover, ASME does not act as a consultant for specific engineering problems or for the general application or understanding of the Standard requirements. If, based on the inquiry information submitted, it is the opinion of the Committee that the Inquirer should seek assistance, the inquiry will be returned with the recommendation that such assistance be obtained.

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 and/or telephone conferences that are open to the public. Persons wishing to attend any meeting and/or telephone conference should contact the Secretary of the B107 Standards Committee. Future Committee meeting dates and locations can be found on the Committee Page at http://go.asme.org/B107committee.

DRIVING AND SPINDLE ENDS FOR PORTABLE HAND, IMPACT, AIR, AND ELECTRIC TOOLS (PERCUSSION TOOLS EXCLUDED)

1 SCOPE

This Standard applies to portable power tools for drilling, grinding, polishing, sawing, and driving threaded fasteners, and hand tools for driving threaded fasteners. Other tools not classed as percussion tools belong in this category and may be added by revision or addition through the usual procedure.

This Standard includes dimensions and tolerances for both driving and driven elements where such coordination is important and not established by reference to the pertinent American National Standards. All dimensions are in inches and millimeters.

2 DEFINITIONS

percussion tools: hammers, chisels, scalers, tampers, clay diggers, and rock drills. Percussion tools are excluded from this Standard.

rounding: In this Standard, calculated values are rounded off as follows:

(a) if the next digit after the last digit to be retained is less than 5, the last digit to be retained is not changed

(b) if the next digit after the last digit to be retained is 5 or greater, the last digit to be retained is increased by one

tool: as used in this Standard, a portable device, either hand operated or powered by compressed air or electricity, for performing a mechanical operation.

3 REFERENCES

The following is a list of publications referenced in this Standard.

ANSI/ASME B1.1-1989 (R2001), Unified Inch Screw Threads (UN and UNR Thread Form)
ANSI B7.1-2000, Safety Requirements for the Use, Care and Protection of Abrasive Wheels
ANSI B92.1-1996, Involute Splines and Inspection, Inch Version
Publisher: American National Standards Institute (ANSI), 25 West 43rd Street, New York, NY 10036 (www.ansi.org)

ISO 1174-1:2011, Assembly tools for screws and nuts — Driving squares — Part 1: Driving squares for hand socket tools
ISO 1174-2:1996, Assembly tools for screws and nuts — Driving squares — Part 2: Driving squares for power socket tools
Publisher: International Organization for Standardization (ISO), Central Secretariat, Chemin de Blandonnet 8, Case Postale 401, 1214 Vernier, Geneva, Switzerland (www.iso.org)

4 ISO COMPATIBILITY

Italicization and bold type indicate ISO compatibility.
EXAMPLE: (***38.214***)

5 GAGE USE AND DESIGN

The illustrations shown herein are descriptive, not restrictive, and are not intended to preclude the manufacture of products or gages that are otherwise in accordance with this Standard.

Manufacturers may use gages with tighter dimensions or tolerances than shown herein to ensure product acceptance.

Tolerances on gage dimensions within the Standard represent new manufactured or purchased gage sizes. The extreme size for all limit (GO and NO GO) gages shall not exceed the extreme limits of products specified within the Standard. All variations (manufacturing tolerance, calibration error, wear allowance, etc.) in the gages, whatever their cause or purpose, shall bring these gages within the extreme limits of the gage size specified within this Standard. Thus, a gage that represents a minimum limit may be larger, but never smaller, than the minimum specified for the product standard; likewise, the gage that represents a maximum limit may be smaller, but never larger, than the maximum size specified for the product standard.