ASME B107.500-2010

(Incorporation and Revision of ASME B107.11, B107.13, B107.16, B107.18, B107.19, B107.20, B107.22, B107.23, B107.24, B107.25, B107.27, and B107.37)

Pliers

AN AMERICAN NATIONAL STANDARD

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Pliers

AN AMERICAN NATIONAL STANDARD

ASME
SETTING THE STANDARD

Three Park Avenue • New York, NY • 10016 USA

Date of Issuance: January 7, 2011

This Standard will be revised when the Society approves the issuance of a new edition. There will be no addenda issued to this edition.

ASME issues written replies to inquiries concerning interpretations of technical aspects of this Standard. Periodically certain actions of the ASME B107 Committee may be published as Cases. Cases and interpretations are published on the ASME Web site under the Committee Pages at http://cstools.asme.org as they are issued.

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

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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 B107.500 is to define essential performance and safety requirements for several types of pliers, including long nose pliers, shears, electronic pliers, and wire cutters. It specifies test methods to evaluate performance related to the defined requirements and safety and indicates limitations of safe use.

This Standard may also 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 instruments covered.

This Standard includes the following:

B107.11 Pliers: Diagonal Cutting and End Cutting, approved by the American National Standards Institute on December 4, 2008

B107.13 Pliers: Long Nose, Long Reach, approved by the American National Standards Institute on April 16, 2003

B107.16 Shears (Metal Cutting, Hand), approved by the American National Standards Institute on December 4, 2008

B107.18 Pliers: Wire Twister, approved by the American National Standards Institute on December 4, 2008

B107.19 Pliers: Retaining Ring, approved by the American National Standards Institute on May 25, 2004

B107.20 Pliers: Lineman's, Iron Worker's, Gas, Glass, Fence, and Battery, approved by the American National Standards Institute on October 5, 2004

B107.22 Electronic Cutters and Pliers, approved by the American National Standards Institute on December 4, 2008

B107.23 Pliers: Multiple Position, Adjustable, approved by the American National Standards Institute on February 19, 2004

B107.24 Pliers: Locking, Clamp, and Tubing Pinch-Off, approved by the American National Standards Institute on November 8, 2007

B107.25 Pliers: Performance Test Methods, approved by the American National Standards Institute on November 8, 2007

B107.27 Pliers: Multiple Position, Electrical Connector, approved by the American National Standards Institute on May 1, 2003 (R2008)

B107.37 Pliers: Wire Cutters/Strippers, approved by the American National Standards Institute on November 8, 2007

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

Members of the Hand Tools Institute Pliers 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 is 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 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, 3 Park Avenue, New York, NY 10016-5990.

This incorporation and revision was approved by the American National Standards Institute on June 14, 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 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.

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, which are open to the public. Persons wishing to attend any meeting should contact the Secretary of the B107 Standards Committee.

ASME B107.11

PLIERS: DIAGONAL CUTTING AND END CUTTING

1 SCOPE

This Standard provides performance and safety requirements for pliers suitable for cutting wire. Pliers shall have cutting edges diagonal to or at right angles to their longitudinal axis. Inclusion of dimensional data in this Standard does not mean that all products described herein are stock production sizes, nor that all production sizes are listed. Consumers should consult with manufacturers concerning lists of stock production sizes.

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 manufacture the tools covered.

2 DEFINITIONS

Definitions of terms used within this Standard may be found in ASME B107.25.

3 REFERENCE

The following publication is referenced in this Standard. The latest edition shall be used.

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

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

4 CLASSIFICATIONS

Type I: diagonal cutting, regular nose
Class 1: standard cutting edges
Class 2: semiflush cutting edges
Class 3: flush cutting edges

Type II: regular nose, compound action
Class 1: standard cutting edges
Class 2: semiflush cutting edges
Class 3: flush cutting edges

Type III: discontinued (designation retained for continuity with B107.11-2002)

Type IV: end cutting
Class 1: standard cutting edges
Class 2: semiflush cutting edges
Class 3: flush cutting edges

5 PERFORMANCE REQUIREMENTS

The illustrations shown herein are descriptive and not restrictive, and are not intended to preclude the manufacture of pliers that otherwise comply with this Standard. All figures are shown without comfort grips. Pliers shall withstand applicable tests without cracking or breaking.

5.1 Design

Pliers shall be similar to the figure to which reference is made and shall be proportioned in all parts so as to be strong, durable, and easy to operate. Cutting edges shall be designed to produce one of the severed wire profiles illustrated in Fig. 1.

5.1.1 Type I, Diagonal Cutting, Regular Nose. One side of the jaws shall be recessed to provide a suitable cutting edge clearance. Pliers shall be similar to Fig. 2, 3, 4, or 5 and shall conform to dimensions shown in Table 1 for the size specified. Type I pliers may have stripping notches (a W-shaped notch on the outside of each jaw) and/or a skinning hole (0.052 in. ± 0.005-in. diameter hole in the cutting edges for stripping insulation from wire) as shown in Fig. 4. Type I pliers may also have a cushion grip throat similar to that shown in Fig. 5.

5.1.2 Type II, Regular Nose, Compound Action. Pliers shall be of a compound leverage construction with spring-operated, self-opening handles. Pliers shall be similar to Fig. 6 and conform to the dimensions shown in Table 1 for the size specified.

5.1.3 Type IV, End Cutting. The cutting edges shall be at right angles to the plane of the handles. Pliers shall be similar to Fig. 7 and shall conform to dimensions shown in Table 1 for the size specified.

5.2 Materials

The materials used in the manufacture of pliers shall be such as to produce pliers conforming to this Standard.

5.3 Handles

5.3.1 Characteristics. Handles shall be shaped to provide a comfortable grip and shall be free from rough edges and sharp corners. Ends of handles shall not touch when the jaws are in a closed position. Outer hand gripping surfaces shall be smooth, knurled, impressed, or furnished with comfort grips.