ASME B18.2.5M-2009

Metric 12-Point Flange Screws

AN AMERICAN NATIONAL STANDARD

The American Society of Mechanical Engineers

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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 B18 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 B18 Standards Committee for the standardization of bolts, screws, nuts, rivets, and similar fasteners was organized in March 1922 as the B18 Sectional Committee under the aegis of the American Engineering Standards Committee (later the American Standards Association, then the United States of America Standards Institute and, as of October 6, 1969, the American National Standards Institute, Inc.), with the Society of Automotive Engineers and the American Society of Mechanical Engineers as joint sponsors. In subsequent years, the Committee came under the sole sponsorship of the American Society of Mechanical Engineers (ASME).

B18 Subcommittee 2 was established and charged with the responsibility for the technical content of standards covering wrench head bolts and nuts. In the late 1980s, a draft of B18.2.5M was created and revised for approval. However, in April of 1995, efforts to finalize a draft of this Standard were abandoned. At its meeting on November 28, 2006, B18 Subcommittee 2 again took up the development of this Standard. This Standard is the result of those efforts.

This Standard was approved as an American National Standard on April 16, 2009.

ASME B18 COMMITTEE
Standardization of Bolts, Nuts, Rivets, Screws, Washers, and Similar Fasteners

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

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CORRESPONDENCE WITH THE B18 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 meeting Correspondence should be addressed to:

Secretary, B18 Standards Committee
The American Society of Mechanical Engineers
Three Park Avenue
New York, NY 10016-5990

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 B18 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 B18 Standards Committee.

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.
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 B18 Standards Committee regularly holds meetings, which are open to the public. Persons wishing to attend any meeting should contact the Secretary of the B18 Standards Committee.

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METRIC 12-POINT FLANGE SCREWS

1 SCOPE

This Standard covers the complete dimensional and general data for metric series 12-point flange screws recognized as American National Standard. The inclusion of dimensional data in this Standard is not intended to imply that all products described are stock production items.

2 COMPARISONS WITH ISO STANDARDS

Letter symbols designating dimensional characteristics are in accord with ISO 225, except where capital letters have been used instead of lowercase letters in the ISO standards.

3 REFERENCED STANDARDS

The following is a list of publications referenced in this Standard. Unless otherwise specified, the standard(s) referenced shall be the most recent issue at the time of order placement.

ASME B1.3M, Screw Thread Gaging Systems for Dimensional Acceptability — Inch and Metric Threads (UN, UNR, UNJ, M, and MJ)

ASME B1.13M, Metric Screw Threads — M Profile

ASME B18.2.8, Clearance Holes for Bolts, Screws, and Studs

ASME B18.2.9, Straightness Gaging and Gaging for Bolts and Screws

ASME B18.12, Glossary of Terms for Mechanical Fasteners

ASME B18.18.1M, Inspection and Quality Assurance for General Purpose Fasteners

ASME B18.18.2M, Inspection and Quality Assurance for High-Volume Machine Assembly Fasteners

ASME B18.18.4M, Inspection and Quality Assurance for Highly Specialized Engineered Applications for Metric Fasteners

ASME B18.24, Part Identifying Number (PIN) Code System Standard for B18 Externally Threaded Fasteners

ASME Y14.5, Dimensioning and Tolerancing

Publisher: The American Society of Mechanical Engineers (ASME), Three Park Avenue, New York, NY 10016-5990; Order Department: 22 Law Drive, Box 2300, Fairfield, NJ 07007-2300 (www.asme.org)

ASTM A 574M, Standard Specification for Alloy Steel Socket-Head Cap Screws

ASTM F 468M, Standard Specification for Nonferrous Bolts, Hex Cap Screws, and Studs for General Use

ASTM F 568M, Standard Specification for Carbon and Alloy Steel Externally Threaded Metric Fasteners

ASTM F 738M, Standard Specification for Stainless Steel Metric Bolts, Screws, and Studs

ASTM F 788/F 788M, Standard Specification for Surface Discontinuities of Bolts, Screws, and Studs, Inch and Metric Series

Publisher: American Society for Testing and Materials (ASTM International), 100 Barr Harbor Drive, West Conshohocken, PA 19428-2559 (www.astm.org)

ISO 225, Fasteners — Bolts, Screws, Studs, and Nuts — Symbols and Designations of Dimensions

Publisher: International Organization for Standardization (ISO), 1 ch. de la Voie-Creuse, Case Postale 56, CH-1211, Genève 20, Switzerland/Suisse (www.iso.org)

4 TERMINOLOGY

For definitions of terms relating to fasteners or features thereof used in this Standard, refer to ASME B18.12.

5 DIMENSIONS

(a) All dimensions in this Standard are given in millimeters (mm), and apply before any coating, unless stated otherwise.

(b) Symbols specifying geometric characteristics are in accordance with ASME Y14.5.

6 TOP OF HEAD

The top of head shall be chamfered or rounded with diameter of chamfer circle or start of rounding being equal to maximum width across flats within a tolerance of –15% of maximum width across flats.

7 HEAD HEIGHT

The head height, *K*, is the distance, parallel to the axis of the screw, from the plane of the bearing circle to the top of the head, not including any raised markings (see section 21).