ASME B18.16.4-2008

Serrated Hex Flange Locknuts 90,000 psi (Inch Series)

REAFFIRMED 2013

FOR CURRENT COMMITTEE PERSONNEL
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AN AMERICAN NATIONAL STANDARD

The American Society of Mechanical Engineers

ASME
SETTING THE STANDARD

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Date of Issuance: October 7, 2008

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 document. 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

This 2008 edition was approved by the American National Standards Institute on August 25, 2008, and designated as ASME B18.16.4-2008.

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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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, 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, which 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.

SERRATED HEX FLANGE LOCKNUTS 90,000 psi (INCH SERIES)

1 SCOPE

This Standard covers the general, dimensional, and mechanical performance requirements for low strength carbon steel, case hardened, regular and large serrated flange locknuts (inch series), recognized as American National Standard.

2 COMPARISON TO ISO STANDARDS

There is no inch series ISO standard for these products at this time.

3 TERMINOLOGY

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

4 REFERENCE STANDARDS

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

ASME B1.1, Unified Inch Screw Threads

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

ASME B18.12, Glossary of Terms for Mechanical Fasteners

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

ASME Y14.5M, Dimensioning and Tolerancing

Publisher: The American Society Of Mechanical Engineers (ASME), Three Park Avenue, New York, NY 10016-5990, Order Department: 22 Law Drive, P.O. Box 2300, Fairfield, NJ 07007-2300

ASTM F 606, Test Methods for Determining the Mechanical Properties of Externally and Internally Threaded Fasteners, Washers, Direct Tension Indicators, and Rivets

ASTM F 812, Specification for Surface Discontinuities of Nuts, Inch Series

ASTM F 1941, Electrodeposited Coatings on Threaded Fasteners [Unified Inch Screw Threads (UN/UNR)]

ASTM F 2282, Standard Specification for Quality Assurance Requirements for Carbon and Alloy Steel Wire, Rods, and Bars for Mechanical Fasteners

ASTM F 2328, Standard Test Method for Determining Decarburization and Carburization in Hardened and Tempered Threaded Steel Bolts, Screws, and Studs

Publisher: ASTM International, 100 Barr Harbor Drive, P.O. Box C700, West Conshohocken, PA 19428-2959

5 DIMENSIONS

(a) Unless otherwise specified, all dimensions in this Standard shall be as specified in Tables 1 and 2, and sections 6 through 9. All dimensions in this Standard are in inches and apply before plating or coating is specified. When a plating or coating is specified, the finished product dimensions shall be agreed upon between the supplier and purchaser.

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

6 SERRATIONS

The configuration of the serrations shall be at the discretion of the manufacturer, provided the performance requirements as specified in para. 12.2 are met.

7 TOPS OF NUTS

Tops of nuts shall be flat and chamfered. The length of chamfer at hex corners shall be from 5% to 15% of the basic thread size. The surface may be slightly convex or rounded.

8 TRUE POSITION OF HEXAGON TO TAPPED HOLE

At maximum material condition (MMC), the axis of the hexagon shall be located at true position with respect to the axis of the thread pitch diameter within a tolerance zone having a diameter equivalent to 4% of the maximum width across flats.

9 COUNTERSINK

Tapped hole shall be countersunk on the bearing face and may be countersunk on the top. The maximum countersink diameter shall be the thread basic (nominal) major diameter plus 0.030 in. for $\frac{3}{8}$ in. nominal size nuts and smaller, and 1.08 times the basic major diameter for