ASME B18.2.8-1999

REAFFIRMED 2017

CLEARANCE HOLES FOR BOLTS, SCREWS, AND STUDS

AN AMERICAN NATIONAL STANDARD

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

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

FOREWORD

During its December 3, 1998 meeting, the ASME B18 Fastener Committee authorized preparation of a standard to establish clearance holes for inch- and metric-threaded fasteners. Some of the metric screw and bolt standards already had, as an appendix, the ISO 273 approved normal-, close-, and loose-clearance hole diameters. It was recognized that for inch standard fasteners there was no B18 standard size recommendation.

A draft standard was prepared using common industry inch clearance values selected to follow the general metric design of three degrees of clearance. The recommendations are all tabulated as minimum holes and tolerance is recommended using ISO 273 tolerance classes. The Standard also includes values for fasteners in each system using the standard drill sizes from the other system of measurement.

This Standard should provide consistent application design information for the fasteners and can be a step toward rationalization of the tooling for fastener assembly operations. Metric standards need not include the appended information in each threaded fastener standard and inch-threaded fastener standards will have standardized clearance hole recommendations.

ASME B18.2.8-1999 was approved by the American National Standards Institute (ANSI) on August 19, 1999.

ASME B18 STANDARDS 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 meetings. Correspondence should be addressed to:

Secretary, B18 Main Committee
The American Society of Mechanical Engineers
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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.

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

CONTENTS

CLEARANCE HOLES FOR BOLTS, SCREWS, AND STUDS

1 SCOPE

This Standard covers the recommended clearance hole sizes for #0 through 1.5 in. and M1.6 through M100 metric fasteners in three classes of clearance using a close-, normal-, and loose-fit category.

2 COMPARISON WITH ISO STANDARDS

2.1 Metric Fasteners

The hole sizes for metric fasteners are in agreement with ISO 273, Fasteners-Clearance Holes for Bolts and Screws, except the ISO 273 covers fastener sizes M1 through M150.

2.2 Inch Fasteners

The hole sizes for inch fasteners are patterned after USA common usage and the general clearances translated from the metric standard. The hole tolerances are based on the ISO System of Limits and Fits, as required by ISO 273.

3 DIMENSIONS

3.1 Inch Fasteners

The recommended drill sizes for inch fasteners are tabulated by nominal drill designation as letter, numbers, or fractional sizes. The drill sizes were selected to provide as nearly as practical a step-patterned clearance size for the minimum recommended hole (see Table 1). The maximum recommended hole size is based on standard hole tolerances. The tabulated drill and hole sizes of Table 2 list the inch fastener clearance hole recommendations.

3.2 Metric Fasteners

The recommended drill and hole sizes for metric fasteners are tabulated in Table 3. The minimum recommended hole is the drill size and the maximum recommended hole size is based on standard tolerances.

3.3 Tolerances

The clearance hole tolerances for both inch and metric holes are based on ISO 286, ISO System of Limits and Fits, using tolerance class H12 for close-fit, H13 for normal-fit, and H14 for loose-fit clearance holes.

3.4 Clearances

The clearances provided by the three classes of fit are based on regularly stepped clearances as listed in Table 1 for inch and Table 4 for metric.