AN AMERICAN NATIONAL STANDARD

Gages and Gaging for Metric M Screw Threads

ANSI/ASME B1.16M - 1984

(REVISION OF ANSI B1.16-1972)

REAFFIRMED 2016

SPONSORED AND PUBLISHED BY
THE AMERICAN SOCIETY OF MECHANICAL ENGINEERS
United Engineering Center 345 East 47th Street New York, N.Y. 10017

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Date of Issuance: April 30, 1985

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.

FOREWORD

(This Foreword is not part of ANSI/ASME B1.16M-1984.)

The first issue of ANSI B1.16 was approved and formally designated as an American National Standard on April 28, 1972. It was developed by Subcommittee 2 of the B1 Committee to serve as the American practice regarding the specifications and dimensions for gages applied to metric screw threads. As in the first issue, this Edition of ANSI B1.16M follows the American practice for the design and tolerances for gages of this type, except for the truncations of the HI/LO elements, which are more in line with the truncations specified in ISO 1502.

This new publication, designated ANSI/ASME B1.16M-1984, has had considerable new material added to cover the many options of gages and measuring equipment shown in ANSI B1.3M, Screw Thread Gaging Systems for Dimensional Acceptability. It has also retained HI and LO functional gages but has eliminated gages with pitch diameter outside product thread limits. It also includes tabulated values for the specifications of gage elements for the standard series of metric M screw thread sizes listed in ANSI B1.13M, Metric Screw Threads — M Profile.

ANSI/ASME B1.16M was approved by the ASME Standards Committee B1 on April 27, 1984. The proposed Standard was submitted by the ASME Board of Standardization to the American National Standards Institute. It was approved and formally designated an American National Standard on May 25, 1984.

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AN AMERICAN NATIONAL STANDARD

GAGES AND GAGING FOR METRIC M SCREW THREADS

1 INTRODUCTION

This Standard provides essential specifications and dimensions for the gages used on M series metric screw threads, and covers the specifications and dimensions for the thread gages and measuring equipment listed in Tables 1 and 2. The basic purpose and use of each gage are also described.

For easy reference, customary conversion of metric tables has been incorporated as part of Appendix D. Appendices A through D contain useful nonmandatory information that is supplementary to the required Sections of this Standard.

1.1 References

The latest editions of the following documents form a part of this Standard to the extent specified herein.

American National Standards

ANSI B1.2	Gages and Gaging for Unified Inch Screw Threads
ANSI B1.3M	Screw Thread Gaging Systems for Dimensional Acceptability
ANSI B1.7	Nomenclature, Definitions, and Letter Symbols for Screw Threads
ANSI B1.13M	Metric Screw Threads — M Profile
ANSI B46.1	Surface Texture
ANSI/ASME B47.1aM	Gage Blanks (Metric Translation of ANSI B47.1)
ANSI B89.1.6	Measurement of Qualified Plain Internal Diameters for Use as Master Rings and Ring Gages
ANSI B89.1.9	Precision Inch Gage Blocks for Length Measurement (Thru 20 Inches)
ANSI B89.3.1	Measurement of Out-of-Roundness

International Standard

ISO 1502-1978	General Purpose Metric Screw Threads — Gaging

1.2 Units of Measure

All dimensions in this Standard, including tables, are expressed in millimeters (mm) unless otherwise specified.

1.3 Classification

In this Standard, the terms H1 and LO are used to identify functional diameter thread gages, as per the practice of the previous B1.16 Standard. The terms apply to gages identified as NOT GO or minimum material (M/Mt), as described by their respective standards.

1.4 Federal Government Use

When this Standard is approved by the Department of Defense and federal agencies and is incorporated into FED-STD-H28/22, Screw Thread Standard for Federal Services, Section 22, the use of this Standard by the federal government will be subject to all requirements and limitations of FED-STD-H28/22.

2 BASIC PRINCIPLES

2.1 Accuracy in Gaging

Thread plug gages are controlled by direct measuring methods. Thread ring gages, thread snap limit gages, and indicating thread gages are controlled by reference to the appropriate setting gages or direct measuring methods or both.