AN AMERICAN NATIONAL STANDARD

Gages and Gaging for MJ Series Metric Screw Threads

ANSI/ASME B1.22M - 1985

(REVISION OF ANSI B1.22-1978)

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: December 31, 1986

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 B1.22M-1985.)

American National Standards Committee B1 for the standardization of screw threads was organized in 1920 as Sectional Committee B1 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. (ANSI)], with the Society of Automotive Engineers and the American Society of Mechanical Engineers as joint sponsors. As a result, a great deal of effort was expended through the years toward development of several inch screw thread standards, including the current inch gaging standard, ANSI/ASME B1.2-1983, Gages and Gaging for Unified Inch Screw Threads.

Recognizing the increasing need of industries in the United States for documentation of American gaging practice for metric screw threads, American National Standards Committee B1 charged its thread gaging Subcommittee 2 with the responsibility for producing such a standard. ANSI B1.16-1972 was developed as a standard for American gaging practice for metric screw threads; ANSI/ASME B1.16M-1984 is a revision of that standard.

With the development of the MJ series of metric screw threads, documented in ANSI B1.21, it became necessary to document the required thread gages that were not covered in the ANSI B1.16 standard. Committee B1 asked Subcommittee 2 to develop such a standard.

ANSI B1.22-1978 was developed by Subcommittee 2 to provide the essential specifications for gages and gaging practice necessary to fulfill the provisions of the product thread document ANSI B1.21, Metric Screw Threads — MJ Profile.

In 1982, Committee B1 was reorganized as the ASME Standards Committee B1, and it has operated under American Society of Mechanical Engineers procedures to produce and update standards which become ANSI Standards after final approval by the American National Standards Institute.

This publication, designated ANSI/ASME B1.22M-1985, does not have any references to conformance criteria, as Committee B1 has established B1.3M for all levels of acceptability for screw threads. A considerable amount of new material is added to cover the many options of gages and measuring equipment shown in B1.3M. Mn/Mt gages have been identified as NOT GO gages.

The proposed Standard was submitted by the ASME Board of Standardization to the American National Standards Institute. It was approved and formally designated as an American National Standard on September 26, 1985.

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AN AMERICAN NATIONAL STANDARD

GAGES AND GAGING FOR MJ SERIES METRIC SCREW THREADS

1 INTRODUCTION

1.1 General

This Standard provides essential specifications and dimensions for the gages used on MJ 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 in Appendix D. The Appendices contain useful information that is supplementary to the sections of this Standard.

1.2 References

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

American National Standards

ANSI/ASME B1.2
Gages and Gaging for Unified Inch Screw Threads

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

ANSI/ASME B1.7M
Nomenclature, Definitions, and Letter Symbols for Screw Threads

ANSI/ASME B1.16M
Gages and Gaging for Metric M Screw Threads

ANSI/ASME B1.21M
Metric Screw Threads — MJ Profile

ANSI/ASME B46.1
Surface Texture (Surface Roughness, Waviness, and Lay)

ANSI/ASME B47.1aM
Gage Blanks (Metric Translation of ANSI B47.1)

ANSI/ASME B89.1.6M
Measurement of Qualified Plain Internal Diameters for Use as Master Rings and Ring Gages

ANSI/ASME B89.1.9M
Precision Inch Gage Blocks for Length Measurement (Through 20 Inches and 500 mm)

ANSI/ASME B89.3.1
Measurement of Out-of-Roundness

International Standard

ISO 1502
General Purpose Metric Screw Threads — Gaging

1.3 Units of Measure

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

1.4 Classification

In this Standard the term NOT GO, previously known as Mn/Mt (for Maximum Material), is used to identify functional diameter thread gages.

1.5 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 and/or direct measuring methods.

2.2 Limitations of Gaging

2.2.1 Product threads accepted by a gage of one type may be verified by other types. It is possible, however, that parts which are near a limit may be accepted by one type and rejected by another. Also, it is possible for two individual limit gages of the same type to be at