

AN AMERICAN NATIONAL STANDARD

Gages and Gaging for Metric M Screw Threads

ANSI/ASME B1.16M - 1984

(REVISION OF ANSI B1.16-1972)

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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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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CONTENTS

Foreword		iii
Standards Committee Roster		v
1 Introduction		1
1.1 References		1
1.2 Units of Measure		1
1.3 Classification		1
1.4 Federal Government Use		1
2 Basic Principles		1
2.1 Accuracy in Gaging		1
2.2 Limitations of Gaging		10
2.3 Determining Size of Gages		10
2.4 Standard Temperature		10
2.5 Rounding Procedure for Converting Metric Gage Values to Inch Gage Values		10
3 General Practice		11
3.1 General Design		11
3.2 Types of Gages		11
3.3 Interpretation of Tolerances		11
3.4 Direction of Tolerances on Gages		11
3.5 Standard Thread Gage Tolerances		11
3.6 Tolerance on Lead		11
3.7 Tolerances on Half-Angle		12
3.8 Check of Effect of Lead and Flank Angle Variations on Product Thread		12
3.9 Calibration Requirements and Standards		12
4 Types of Gages for Product Internal Thread		12
4.1 GO Working Thread Plug Gages		12
4.2 HI Thread Plug Gages		14
4.3 Thread Snap Gages — GO Segments or Rolls		17
4.4 Thread Snap Gages — HI Segments or Rolls		17
4.5 Thread Snap Gages — Minimum Material: Pitch Diameter Cone and Vee		21
4.6 Thread Snap Gages — Minimum Material: Thread Groove Diameter Type		24
4.7 Thread-Setting Solid Ring Gages		25
4.8 Plain Plug, Snap, and Indicating Gages to Check Minor Diameter of Internal Thread		25
4.9 Snap and Indicating Gages to Check Major Diameter of Internal Thread		29
4.10 Functional Indicating Thread Gages for Internal Thread		29
4.11 Minimum-Material Indicating Thread Gages for Internal Thread		34
4.12 Indicating Runout Thread Gage for Internal Thread		34
4.13 Differential Gaging		38

4.14	Pitch Micrometers	40
4.15	Thread-Measuring Balls	40
4.16	Optical Comparator and Toolmaker's Microscope	40
4.17	Profile Tracing Instrument	41
4.18	Surface Roughness Equipment	41
4.19	Roundness Equipment	41
4.20	Miscellaneous Gages and Gaging Equipment	41
5	Types of Gages for Product External Thread	41
5.1	GO Working Thread Ring Gages	41
5.2	LO Thread Ring Gages	75
5.3	Thread Snap Gages — GO Segments or Rolls	76
5.4	Thread Snap Gages — LO Segments or Rolls	78
5.5	Thread Snap Gages — Cone and Vee	78
5.6	Thread Snap Gages — Minimum Material: Thread Groove Diameter Type	80
5.7	Plain Ring and Snap Gages to Check Major Diameter of Product External Threads	80
5.8	Snap Gages for Minor Diameter of Product — External Threads	80
5.9	Functional Indicating Thread Gages for External Thread	84
5.10	Minimum-Material Indicating Thread Gages for External Thread	84
5.11	Indicating Runout Gage for External Threads	88
5.12	Differential Gaging	88
5.13	W Tolerance Thread-Setting Plug Gages	91
5.14	Plain Check Plug Gages for Thread Ring Gages	94
5.15	Indicating Plain Diameter Gages — Major Diameter of Product External Threads	94
5.16	Indicating Gages to Check Minor Diameter of External Thread	95
5.17	Thread Micrometers	95
5.18	Thread-Measuring Wires	95
5.19	Optical Comparator and Toolmaker's Microscope	95
5.20	Profile Tracing Instrument	106
5.21	Electromechanical Lead Tester	106
5.22	Helical Path Attachment Used With GO Type Thread Indicating Gage	106
5.23	Helical Path Analyzer	106
5.24	Surface Roughness Equipment	107
5.25	Roundness Equipment	107
5.26	Miscellaneous Gages and Gaging Equipment	107

Figures

1	Maximum-Material GO Functional Limit	13
2	Partial End Threads and Chip Grooves	14
3	HI Functional Diameter Limit	16
4	Thread Snap Gages — Maximum-Material GO Functional Limit	20
5	Thread Snap Gages — HI Functional Diameter Limit	22
6	Thread Snap Gages — Minimum-Material Pitch Diameter Limit — Cone and Vee ...	23
7	Thread Snap Gages — Minimum-Material Thread Groove Diameter Limit	24
8	Thread Form of Solid Thread-Setting Ring Gages	27
9	Minor Diameter Limit — Cylindrical Plug Gages	28
10	Indicating Plain Diameter Gages — Max.-Min. Minor Diameter Limit and Size	30
11	Snap and Indicating Diameter Gages — Max.-Min. Major Diameter Limit and Size	31

12	Indicating Thread Gages — Maximum-Material GO Functional Limit and Size	32
13	Indicating Thread Gages — Minimum-Material Pitch Diameter Limit and Size — Cone and Vee	35
14	Indicating Thread Gages — Minimum-Material Pitch Diameter Limit and Size — Ball and Radius	36
15	Indicating Thread Gages — Diameter Runout — Minor to Pitch	37
16	Indicating Thread Gages — Differential Gaging	39
17	Inside Micrometer, Caliper Type	40
18	Maximum-Material GO Functional Limit	42
19	LO Functional Diameter Limit	76
20	Thread Snap Gages — Maximum-Material GO Functional Limit	77
21	Thread Snap Gages — LO Functional Diameter Limit	79
22	Thread Snap Gages — Minimum-Material Pitch Diameter Limit — Cone and Vee ...	81
23	Thread Snap Gages — Minimum-Material Thread Groove Diameter Limit	82
24	Major Diameter Limit	82
25	Minor Diameter Limit Snap Type	83
26	Indicating Thread Gages — Maximum-Material GO Functional Diameter Limit and Size	85
27	Indicating Thread Gages — Minimum-Material Pitch Diameter Limit and Size — Cone and Vee	86
28	Indicating Thread Gages — Minimum-Material Thread Groove Diameter Limit and Size	87
29	Indicating Thread Gages — Diameter Runout — Major to Pitch	89
30	Indicating Thread Gages — Differential Gaging	90
31	Thread Form of Truncated Thread-Setting Plug Gages	92
32	Thread Form of Full-Form Thread-Setting Plug Gages	93
33	Indicating Plain Diameter Gage — Max.-Min. Major Diameter Limit and Size	96
34	Indicating Diameter Gages — Max.-Min. Minor Diameter Limit and Size	97
35	Indicating Gages — Helical Path Attachment Used With GO Type Indicating Gage	106

Tables

1	Screw Thread Gages and Measuring Equipment for External Product Thread Characteristics	2
2	Screw Thread Gages and Measuring Equipment for Internal Product Thread Characteristics	6
3	Recommended Widths for Chip Grooves	14
4	Specifications and Format for Tables 10 and 12 — Limits of Size of Threaded and Plain Gages for Metric M External and Internal Threads	15
5	Specifications and Format for Tables 11 and 13 — Limits of Size of Thread-Setting Gages for Metric M Thread Working Gages	18
6	X Gage Tolerances for Thread Gages	19
7	W Gage Tolerances for Thread Gages	26
8	Gage Tolerances for Plain Cylindrical Gages	29
9	Constants for Computing Thread Gage Dimensions	33
10	Gages for Standard Thread Series, Classes 6g and 6H M Profile Screw Threads — Limits of Size	43
11	Setting Gates for Standard Thread Series, Classes 6g and 6H M Profile Screw Threads — Limits of Size	51

12	Gages for Standard Thread Series, Classes 4g6g and 6H M Profile Screw Threads — Limits of Size	58
13	Setting Gages for Standard Thread Series, Classes 4g6g and 6H M Profile — Limits of Size	66
14	Calibration Requirements and Standards for X Tolerance Thread Gages, Indicating Gages, Plain Gages, and Measuring Equipment for External Product Threads	98
15	Calibration Requirements and Standards for X Tolerance Thread Gages, Indicating Gages, Plain Gages, and Measuring Equipment for Internal Product Threads	102
16	Calibration Requirements for Thread- and Plain-Setting Gages	105

Appendices

A	Calibration and Inspection of Limit Gages, Snap Gages, Indicating Gages, and Measuring Instruments	109
A1	General	109
A2	Thread Plug Gage Calibration	109
A3	Thread Ring Gage Inspection	110
A4	Plain Plug Gage Calibration	112
A5	Plain Ring Gage Calibration	113
A6	Plain Snap Gages	113
A7	Rolls With Zero Lead Thread Form Used on Snap and Indicating Gages	113
A8	Inspecting Peripheral Contacting Segments on Indicating Gages	113
A9	Inspection of Threaded Contact Segments Used on Internal Product Thread	115
A10	Check for Magnification Discrepancies Due to Indicating System Linkage	115
A11	Calibration of Dial and Electronic Indicators	115
A12	Assessment of Surface Quality	115
B	Metrology of 60 deg. Screw Threads	117
B1	Wire Method of Measurement of Pitch Diameter (Thread Groove Diameter)	117
B2	Size of Wires	117
B3	Methods of Measuring Wires Considering the Effect of Deformation	117
B4	Methods of Measurement Using Wires	120
B5	Standard Specification for Wires and Standard Practice in Measurement of Wires of 60 deg. Threads	120
B6	General Formula for Measurement of Pitch Diameter	121
B7	Simplified Formula for Pitch Diameter	121
B8	Setting Measuring Instruments With Variable Measuring Force	122
B9	Thread Balls	122
B10	Internal Pitch Diameter Measurement	122
C	Metric Tables for Gage Lengths	125
D	Customary Equivalents	127
Figure		
B1	A Three-Wire Method of Measuring Pitch (Thread Groove) Diameter of Thread Plug Gages	118

Tables

A1	Minimum Magnification	110
A2	60 deg. Included Thread Angle	111
B1	Metric Thread-Measuring Wires for 60 deg. Screw Threads	119
B2	Measuring Force for Over-Wire Measurements of External Pitch Diameter and Wire Calibration, and Cylindrical Diameter for Wire Calibration	119
B3	Measuring Force Over Balls for Internal Pitch Diameter Measurement and Ball Calibration	122
C1	Lengths of Taperlock and Trilock Thread Plug Gage Blanks (SI) Selected From ANSI/ASME B47.1aM	125
C2	Lengths of Thread Ring Gage Blanks and Total Thread Lengths of Standard Truncated Setting Plug Gage Blanks (SI) Selected From ANSI/ASME B47.1aM	126
D1	X Gage Tolerances for Thread Gages	128
D2	W Gage Tolerances for Thread Gages	129
D3	Gage Tolerances for Plain Cylindrical Gages	130
D4	Metric Thread-Measuring Wires for 60 deg. Screw Threads	130
D5	Gages for Standard Thread Series, Classes 6g and 6H M Profile Screw Threads — Limits of Size (Customary)	131
D6	Setting Gages for Standard Thread Series Classes 6g and 6H M Profile Screw Threads — Limits of Size (Customary)	139
D7	Gages for Standard Thread Series Classes 4g6g and 6H M Profile Screw Threads — Limits of Size (Customary)	147
D8	Setting Gages for Standard Thread Series Classes 4g6g and 6H M Profile Screw Threads — Limits of Size (Customary)	155
D9	Lengths of Taperlock and Trilock Thread Plug Gage Blanks Selected From ANSI/ASME B47.1aM (Customary)	163
D10	Lengths of Thread Ring Gage Blanks and Total Thread Lengths of Standard Truncated Setting Plug Gage Blanks Selected From ANSI/ASME B47.1aM (Customary)	164

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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.