

**ASME B47.1-2007**  
**(Revision of ASME/ANSI B47.1-1988)**

# Gage Blanks

**AN AMERICAN NATIONAL STANDARD**



**The American Society of  
Mechanical Engineers**

Three Park Avenue • New York, NY 10016

## CONTENTS

Foreword .....	vii
Committee Roster .....	ix
Correspondence With the B47 Committee .....	x
<b>1 Scope</b> .....	<b>1</b>
<b>2 Terminology</b> .....	<b>1</b>
<b>3 Details of Construction — American Gage Design Standards</b> .....	<b>3</b>
<b>4 Official Monogram for Designating Products Made to American Gage Design Standards</b> .....	<b>7</b>
<b>5 Application of American Gage Design Standards to Special Types of Gages — Recommended Practice</b> .....	<b>7</b>
<b>6 Flush Pin Gages</b> .....	<b>7</b>
<b>7 Double-End Built-Up Snap Gages</b> .....	<b>7</b>
<b>8 Flat Plug Gages</b> .....	<b>7</b>
<b>9 Handles, Bilock, for Flat Plug Gages</b> .....	<b>8</b>
<b>Figures</b>	
1 Plain Cylindrical Plug Gages, Details of Construction — Range Above 0.010 in. to and Including 8.010 in. ....	9
2 Plain Cylindrical Plug Gages, Details of Construction — Range Above 8.010 in. ....	24
3 Thread Plug Gages — Details of Construction .....	26
4 Plain Ring Gages — Details of Construction .....	40
5 Thread Ring Gage Locking Device, Details of Construction — Range 1 in. to 5½ in., Inclusive .....	43
6 Thread Ring Gages, Details of Construction — Range 0.060 in. to and Including 4.760 in. ....	45
7 Thread Ring Gages, Details of Construction — Range Above 0.510 in. to and Including 12.260 in. ....	46
8 Three-Piece Spline Plug Gage Assembly .....	61
9 Spline Plug Gage Stands .....	62
10 Adjustable Snap Gages, Details of Construction — Models A, B, C, and MC .....	83
11 Adjustable Snap Gages, Details of Construction — Model E .....	83
12 Model MC Snap Gage Details .....	89
13 Adjustable Length Gage, Double Sided, Models KA and KB, Details of Construction .....	98
14 Adjustable Length Gage, Progressive, Models LA and LB, Details of Construction .....	99
15 Adjustable Length Gage, Double Sided, Model KA, Details of Gage Heads .....	100
16 Adjustable Length Gage, Double Sided, Model KB, Details of Gage Heads .....	101
17 Adjustable Length Gage, Progressive, Model LA, Details of Gage Heads .....	102
18 Adjustable Length Gage, Progressive, Model LB, Details of Gage Heads .....	103
19 Adjustable Length Gages — Details of Spacing Tubes .....	104
20 Master Disks — Styles 1, 2, and 3 .....	106
21 Insulating Grips for Master Disks — Range Above 1.510 in. to and Including 8.010 in. ....	106

22	Official Monogram for Designating Products Made to American Gage Design Standards .....	113
23	Recommended Design of Taper Plug Gage for Special Applications and Method of Dimensioning .....	113
24	Recommended Design of Taper Ring Gage for Special Applications and Method of Dimensioning .....	113
25	Recommended Design of Bar Type Flush Pin Gage .....	116
26	Recommended Design of Small Countersink Type Flush Pin Gage — Range $\frac{3}{4}$ in. to $1\frac{1}{2}$ in. ....	116
27	Recommended Design of Large Countersink Type Flush Pin Gage .....	117
28	Application of Countersink Type .....	117
29	Recommended Design of Small Built-Up Snap Gage .....	118
30	Recommended Design of Large Built-Up Snap Gage .....	118

**Tables**

1	Handles for Wire Type Plain Cylindrical and Wire Type Thread Plug Gages, Wire Type Design — Range Above 0.010 in. to and Including 1.010 in. ....	10
2	Wire Type Plug Gage Handles, Details of Body .....	11
3	Wire Type Plug Gage Handles, Details of Capping Nut .....	12
4	Single-End Wire Type Plug Gage Handles, Details of Body .....	13
5	Wire Type Plug Gage Collet Nuts .....	14
6	Wire Type Plug Gage Collet Bushings, Size Ranges .....	15
7	Handles for Plain Cylindrical and Thread Plug Gages, Taper Lock Design — Range Above 0.059 in. to and Including 0.230 in. ....	16
8	Handles for Plain Cylindrical and Thread Plug Gages, Taper Lock Design — Range Above 0.230 in. to and Including 1.510 in. ....	17
9	Handles and Screws for Plain Cylindrical, Thread, and Spline (Involute, Serrated, Straight-Sided) Plug Gages, Trilock Design — Range Above 0.760 in. to and Including 8.010 in. ....	18
10	Plain Cylindrical Plug Gaging Members, Taper Lock Design — Range Above 0.059 in. to and Including 0.230 in. ....	20
11	Plain Cylindrical Plug Gage Blanks, Wire Type Design — Range Above 0.010 in. to and Including 1.010 in. ....	20
12	Plain Cylindrical Plug Gaging Members, Taper Lock Design — Range Above 0.230 in. to and Including 1.510 in. ....	21
13	Plain Cylindrical Plug Gaging Members, Trilock Design — Range Above 0.760 in. to and Including 2.510 in. ....	22
14	Plain Cylindrical Plug Gaging Members, Trilock Design — Range Above 2.510 in. to and Including 8.010 in. ....	23
15	Plain Cylindrical Plug Gages, Annular Design — Range Above 8.010 in. to and Including 12.010 in. ....	25
16	Thread Plug Gaging Members, Taper Lock Design — Range From No. 0 to No. 12, Inclusive .....	27
17	Thread Plug Gaging Members, Wire Type Design — Range Above 0.030 in. to and Including 1.010 in. ....	28
18	Thread Plug Gaging Members, Taper Lock Design — Range From $\frac{1}{4}$ in. to and Including $1\frac{1}{2}$ in. ....	29
19	Thread Plug Gaging Members, Trilock Design — Range Above $\frac{3}{4}$ in. to and Including $2\frac{1}{2}$ in. ....	30
20	Thread Plug Gaging Members, Trilock Design — Range Above $2\frac{1}{2}$ in. to and Including 8 in. ....	31
21	Thread Plug Gaging Members, Annular Design — Range Above 8.010 in. ....	32
22	Fine-Pitch Instrument Thread Plug Gaging Members, Taper Lock Design — Range No. 0 to $1\frac{1}{2}$ in., Inclusive .....	33
23	Fine-Pitch Instrument Thread Plug Gaging Members, Trilock Design — Range Above $1\frac{1}{2}$ in. to and Including $2\frac{1}{2}$ in. ....	34

24	Thread-Setting Plug Gaging Members, Truncated Type — Range No. 0 to 1½ in., Inclusive .....	35
25	Thread-Setting Plug Gaging Members, Truncated Type — Range Above 1½ in. to and Including 2½ in. ....	36
26	Thread-Setting Plug Gaging Members, Truncated Type — Range Above 2½ in. to and Including 6½ in. ....	37
27	Taper Pipe-Thread Plug Gaging Members (L-1) — Range ¼ in. to and Including 6 in. ....	38
28	Taper Pipe-Thread Plug Gaging Members for L-3 and Minor Diameter Check (6 Step) .....	39
29	Plain Ring Gages — Range Above 0.010 in. to and Including 1.510 in. ....	41
30	Plain Ring Gages — Range Above 1.510 in. to and Including 12.260 in. ....	42
31	Holder for Thread Ring Gages .....	44
32	Thread Ring Gages — Range No. 0 to and Including 4¾ in.; Also Fine-Pitch Instrument Thread Ring Gages, No. 0 to and Including No. 12 .....	47
33	Thread Ring Gages — Range Above 4.760 in. to and Including 8.510 in. ....	49
34	Thread Ring Gages — Range Above 8.510 in. to and Including 12.260 in. ....	50
35	Fine-Pitch Instrument Thread Ring Gages — Range Above 0.240 in. to and Including 2.510 in. ....	51
36	Thread Ring Gage Adjusting Screws .....	53
37	Thread Ring Gage Sleeves .....	54
38	Thread Ring Gage Locking Screws .....	55
39	Solid, Nonadjustable Thread-Setting and Master (Reference) Ring Gage Blanks — Range 0.059 in. to 6.010 in. ....	56
40	Taper Pipe-Thread Ring Gages L <sub>1</sub> and L <sub>2</sub> — Range ¼ in. to 8 in., Inclusive (Standard Basic Notch Design) .....	58
40A	Taper Pipe-Thread Ring Gages — Step Limit Design .....	59
41	Plug and Ring Gages for Checking Handles and Gaging Member Taper Shanks of Taper Lock Plug Gages — Range Above 0.059 in. to and Including 1.510 in. ....	60
42	Handles for Spline Plug Gages — Range Above 1.5 in. to and Including 8 in. ....	63
43	Washers for Spline Plug Gaging Members (Cup Type, Small) — Range Above 1.5 in. to and Including 5 in. ....	63
44	Washers for Spline Plug Gaging Members (Cup Type, Large) — Range Above 5 in. to and Including 8 in. ....	63
45	Involute, Serrated, and Straight-Sided Spline Composite and Sector Plug Gages — Range to and Including 2 in. ....	64
46	Involute, Serrated, and Straight-Sided Spline Composite and Sector Plug Gaging Members — Range Above 1.5 in. to and Including 8 in. ....	65
47	Involute, Serrated, and Straight-Sided Spline Composite and Sector Plug Gaging Members, Pilot Type — Range Above 1.5 in. to and Including 8 in. ....	66
48	Involute, Serrated, and Straight-Sided Spline Tapered-Tooth Composite and Sector Plug Gages, Master and Working — Range to and Including 8 in. ....	67
49	Involute and Serrated Spline Composite and Sector Ring Gages — Range to and Including 8 in. ....	68
50	Involute and Serrated Spline Composite and Sector Ring Gages, Pilot Type — Range Above 1.5 in. to and Including 8 in. ....	69
51	Straight-Sided Spline Composite Ring Gages, Prong Type, for Space Widths 0.070 in. or Less — Range to and Including 1 in. ....	70
52	Straight-Sided Spline Composite Ring Gages, Prong Type, for Space Widths Greater Than 0.070 in. — Range to and Including 6 in. ....	71
53	Straight-Sided Spline Composite Alignment Ring Gages, Double-End Prong Type — Range Above 1 in. to and Including 6 in. ....	72
54	Built-Up Double-End Snap Gages for Tooth Thickness of Straight-Sided External Splines .....	73
55	Machine Taper Plug Gages, With Tang .....	74

56	Machine Taper Ring Gages, With Tang .....	76
57	Machine Taper Plug Gages, Without Tang .....	78
58	Machine Taper Ring Gages, Without Tang .....	81
59	Sizes of Combination Drills and Countersinks for Machine Taper Plug Gages .....	82
60	Plain Adjustable Snap Gages, Models A and B — Details of Frame .....	84
61	Plain Adjustable Snap Gages, Model C — Details of Frame .....	86
62	Plain Adjustable Snap Gages, Model MC — Details of Frame .....	88
63	Adjustable Snap Gages, Extended Anvil, Model E — Details of Frame .....	90
64	Models A, B, C, and E Snap Gage, and Models K and L Adjustable Length Gage Adjusting Screws .....	92
65	Models A, B, C, and E Snap Gage, and Models K and L Adjustable Length Gage Locking Screws .....	92
66	Models A, B, C, and E Snap Gage, and Models K and L Adjustable Length Gage Locking Bushings and Nuts .....	93
67	Model A Snap Gage Gaging Pins .....	93
68	Models B, C, and E Snap Gage, and Models K and L Adjustable Length Gage Gaging Buttons .....	94
69	Model C Snap Gage and Model L Adjustable Length Gage Anvils .....	94
70	Model C Snap Gage and Model L Adjustable Length Gage Anvil Screws .....	95
71	Model E Snap Gage Anvil and Anvil Screws .....	96
72	Models A, B, C, E, and MC Snap Gage, and Models KA, KB, LA, and LB Adjustable Length Gage Marking Disks .....	97
73	Adjustable Length Gages, Parts List .....	105
74	Recommended Applicability of Adjustable Length Gage as Related to Product Tolerance .....	105
75	Master Disks — Range Above 0.105 in. to and Including 0.365 in. ....	107
76	Master Disks — Range Above 0.365 in. to and Including 1.510 in. ....	108
77	Master Disks — Range Above 1.510 in. to and Including 2.510 in. ....	109
78	Master Disks — Range Above 2.510 in. to and Including 8.010 in. ....	110
79	Insulating Grips for Master Disks — Range Above 0.105 in. to and Including 1.510 in. ....	111
80	Separator Plates for Master Disks — Range Above 1.510 in. to and Including 8.010 in. ....	112
81	Tie Rods for Master Disks — Range Above 1.510 in. to and Including 8.010 in. ....	112
82	Recommended Design of Flat Plug Gages — Range Above 1.510 in. to and Including 8.010 in. ....	114
83	Recommended Design of Barrel Type Flush Pin Gage .....	115
84	Flat Plug Gage — Additional Specifications .....	119
85	Handle for Flat Plug Gage .....	119
<b>Mandatory Appendices</b>		
I	Conversion Table From Inch to Millimeter .....	121
II	Metric Equivalents of Selected Tables .....	124