

FED-STD-H28/22

February 13, 1981

METRIC

FEDERAL STANDARD

**SCREW-THREAD STANDARDS
FOR
FEDERAL SERVICES**

**SECTION 22
METRIC SCREW-THREAD GAGES**

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INFORMATION SHEET ON FEDERAL STANDARDS

This Federal standard is issued in loose leaf form to permit the insertion or removal of new or revised pages and sections.

All users of Federal standards should keep them up to date by inserting revised or new pages as issued and removing superseded and canceled pages.

New and revised pages will be issued under Change Notices which will be numbered consecutively and will bear the date of issuance. Change Notices should be retained and filed in front of the standard until such time as they are superseded by a reissue of the entire standard.

FOREWORD

This Section was developed to provide Metric Screw-Thread Gage Standards for the Federal Services for use in conjunction with FED-STD-H28/21. It is based on needs identified by the Interdepartmental Screw Thread Committee (ISTC) prior to its termination in November 1976. At that time responsibility for the standard was transferred to the General Services Administration (GSA).

FED-STD-H28/22 was prepared by the Defense Industrial Supply Center (DLA-IS) as a new section and is released as a standard to provide immediate guidance for the Federal agencies in this Metric transition period. Presently, the American National Standards Institute (ANSI) Committee B1 is in the process of coordinating a similar standard for a Voluntary U.S. National Standard. When an acceptable ANSI standard is available, it shall be coordinated with the Federal agencies for incorporation in FED-STD-H28 to end duplicate Screw-Thread Gage Standards between the Federal Government and the U.S. private sector.

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PART A GENERAL

1 SCOPE. FED-STD-H28/22 gives information on gage design requirements for M and MJ profile metric screw-threads, detailed in FED-STD-H28/21.

1.1 Limitations. This section does not describe gaging procedures, gage adjustment, gage calibration or the philosophy of gaging which is found in FED-STD-H28/6. Information on gaging methods, their selection, and referee gaging can be found in FED-STD-H28/20.

1.2 Application. This section applies to working gages used for inspection of product screw threads and to setting gages for the working gages.

1.3 Classification.

NOTES: (1) The American HI and LO limit gage concept has been replaced by the original NOT-GO concept. And the American Gaging Practice which places gage limits of size and tolerances at the upper and lower product limits is applied here. This modifies ISO practice which permits some gages outside the product limits.

(2) In this standard, the term "NOT GO", applied to threaded gages includes gages often identified as HI, LO and Minimum Material (Mn/Mt).

1.3.1 Limit type gages for internal product threads.

- a) GO thread plug gage.
- b) Full form GO thread plug gage for spin down check.
- c) NOT-GO thread plug gage.
- d) GO thread snap gage.
- e) NOT-GO thread snap gage.
- f) GO plain plug gage.
- g) NOT-GO plain plug gage.

1.3.2 Measurement type gages for internal product threads.

- a) GO thread indicating gage, segment type.
- b) Pitch diameter indicating gage, cone and vee-segment types.
- c) Pitch diameter indicating gage, three "best size" ball types.
- d) Minor diameter indicating gage.
- e) Major diameter indicating gage.
- f) Cumulative form variation, indicating gage system.
- g) Minor diameter concentricity to pitch diameter indicating gage.

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1.3.3 Limit type gage for external product threads.

- a) GO thread ring gage.
- b) NOT-GO thread ring gage.
- c) GO thread snap gage.
- d) NOT-GO thread snap gage.
- e) GO plain ring gage.
- f) NOT-GO plain ring gage.
- g) GO and NOT-GO plain snap gage.
- h) Root radius by optical comparator template.

1.3.4 Measurement type gages for external product threads.

- a) GO thread indicating gage, segment types.
- b) GO thread indicating gage, roll types.
- c) Pitch diameter indicating gage, single rib roll types.
- d) Major diameter indicating gage.
- e) Minor diameter indicating gage.
- f) Root radius measurement by profile tracing.
- g) Cumulative form variation, indicating gage system.
- h) Major diameter concentricity to pitch diameter, indicating gage.
- i) Helical deviation indicating gage.

1.3.5 Thread setting gages.

- a) GO thread setting plug gage, full form/truncated.
- b) NOT-GO thread setting plug gage, full form/truncated.
- c) Basic Crest GO thread setting plug gage.
- d) Basic Crest NOT-GO thread setting plug gage.
- e) Solid GO thread setting ring gage (for sizes over 4 mm).
- f) Solid NOT-GO thread setting ring gage (for sizes over 4 mm).

2 REFERENCED DOCUMENTS. The issue of the following documents in effect on date of invitation for bids or solicitation for offers, form a part of this standard to the extent specified herein:

2.1 Governmental Publications:Federal Standards:

- FED-STD-H28 - Screw-Thread Standards for Federal Services (Includes all Appendices).
- FED-STD-H28/1 - Nomenclature, Definitions, and Letter Symbols for Screw Threads.
- FED-STD-H28/20 - Inspection Methods for Acceptability of UN, UNR, UNJ, M and MJ Screw-Threads.
- FED-STD-H28/21 - Metric Screw-Threads.

(Orders for Federal Standards are to be placed with General Services Administration, acting as an agent for the Superintendent of Documents. Single copies are available at the GSA Business Service Centers in Boston; New York; Philadelphia; Atlanta; Chicago; Kansas City, MO; Fort Worth; Houston; Denver; San Francisco; Los Angeles; and Seattle, WA; or from the General Services Administration, Specification and Consumer Information Distribution Branch, Bldg. 197, Washington Navy Yard, Washington, DC 20407.)

2.2 Non-Governmental Publications:

American National Standards Institute (ANSI)

- ANSI B47.1 - Gage Blanks
- ANSI B47.1A - Gage Blanks (Metric Translation of ANSI B47.1)

(Copies of the above American National Standards may be obtained from the American Society of Mechanical Engineers, United Engineering Center, 345 East 47th Street, New York, NY 10017 or the American National Standard Institute, 1430 Broadway, New York, NY 10018.)

American Society for Testing and Materials (ASTM)

- ASTM E380 - Standard for Metric Practice.

(Copies of the above ASTM Standard may be obtained from the American Society for Testing and Material, 1916 Race Street, Philadelphia, PA 19103.)

3 DEFINITIONS

3.1 Terms are defined in FED-STD-H28/1 and FED-STD-H28/21.

3.2 Symbols used in this standard are given in table XXII.A.1.

TABLE XXII.A.1 Symbols.

Symbol	Explanation
d, D	Basic major diameter of the product thread
D_1	Basic minor diameter of the internal product thread
d_2, D_2	Basic pitch diameter of the product thread
H	Height of the fundamental triangle of the thread profile
P	Pitch
R	$0.18042P$ root radius
t	Tolerance for r_3 root radius
T	Twice the tolerance for r_3 root radius
W	Gage tolerance for thread setting gages
W_G	Diameter of "best size" wire or ball
X	Gage tolerance for working thread gages and indicating gage contacts
Z	Gage tolerance for plain plug and ring gages

4 GENERAL REQUIREMENTS

4.1 Profiles. Thread profiles for threaded working gages, threaded setting gages and indicating gage contacts are given in Part B for M threads and Part C for MJ threads.

4.2 ISO gage system use. Requirements in this standard are in general accord with USA industry practice. Threaded ring and plug gages together with their setting and checking gages, which conform to ISO 1502 profiles and dimensions, are acceptable for the inspection of M profile screw threads only when agreed upon by the supplier and the contracting authority. These ISO gages differ from those specified herein in the amount and configuration of gage crest clearances and NOT-GO gage flank engagement. But of even greater significance, ISO 1502 gages often permit new or worn gages to be outside acceptable product screw thread limiting dimensions. In contrast, USA gage practice does not permit gages outside product thread limits generally, though unavoidably, functional size may be slightly outside product limits due to permissible gage maker's tolerance on lead and flank angle. Therefore the following notes apply:

- a) ISO setting and checking gages shall never be used with gages produced in accordance with USA standard practice, nor shall USA setting gages be used with ISO gages.
- b) ISO gages may accept marginal product screw threads which are rejectable by the USA gages specified and vice versa.
- c) Gages conforming to ISO 1502 may not be used with MJ profile threads.

4.3 Units of measure. In this standard, units conform to ASTM E380 Metric Practice Guide. Dimensions and values are expressed in millimeters (mm) unless otherwise noted.

4.4 Reference temperature. Dimensions are defined by this standard at 20°C which is the standard temperature used internationally for dimensional measurements.

4.4.1 The dimensions of both the gage and the threaded products are standardized at a temperature of 20°C.

4.4.2 If the threaded product and the gages have the same coefficient of linear expansion (e.g. steel threaded product and steel gages), the checking temperature may deviate from 20°C without detriment to the result, provided that the temperature of both gages and product are about the same.

4.4.3 If the threaded product and gages have different coefficients of linear expansion (e.g. brass threaded product and gages of steel or carbide), the temperature of both should be $20 \pm 2^\circ\text{C}$ at the time of gaging. Otherwise the difference of the thermal expansion of the product and of the gage should be taken into consideration.

4.5 Tolerances. Gage tolerances shall be applied within the threaded product limits of size.

- a) Tolerances for threaded working gages and indicating gage contacts shall be X gage tolerances as given in table XXII.A.2.
- b) Tolerances for threaded setting gages shall be W gage tolerances as given in table XXII.A.3.
- c) Tolerances for plain plug and ring gages shall be Z gage tolerances as given in table XXII.A.4.

4.6 Length of gages.

4.6.1 Working gages. Gages for inspecting product threads have the following length requirements.

- a) The GO plug and ring thread gages, the GO plug and ring plain gages, and the GO thread indicating gaging segments or rolls should theoretically approximate the length of engagement of the product thread with its mating thread. Standard lengths shall be in accordance with GO thread plug or ring gage blank lengths specified in ANSI B47.1A and ANSI B47.1.
- b) The NOT-GO thread plug gage and thread ring gage may have lengths shorter than the GO thread gages.
- c) The thread indicating gage segments and rolls used in lead and cumulative form analysis by differential gaging shall have a thread engagement of less than two pitches except for required standard length GO segments and rolls.

4.6.2 Setting gages. Gages for setting working gages have the following length requirements.

- a) The GO thread setting plug gage shall have a thread length equal to twice the length of the GO thread ring gage. One half of this setting plug gage length shall have full flank thread profiles and the other half truncated flank thread profiles.
- b) The NOT-GO thread setting plug gage shall have a thread length equal to or greater than twice the NOT-GO thread ring gage length. One half of this setting plug gage length shall have full flank thread profiles and the other half truncated flank thread profiles.
- c) The GO and NOT-GO solid thread setting ring gage for snap and indicating gages shall have a threaded length of at least 4 complete threads.

4.7 Gage blanks. Designs and dimensions for standard blanks for thread and plain plug and ring gages and for snap gages are published in ANSI B47.1A. For adjustable ring gage, the Woodworth design is also acceptable.

TABLE XXII.A.2 "X" Gage Tolerances for GO and NOT-GO thread gages, snap gages and thread indicating gages

Pitch	Tolerance on lead (b)	Tolerance on 30° half angle	Tolerance on major and minor diameters (a)		Tolerance on pitch diameter (a)			
			To and incl 100 mm	Above 100 mm	To and incl 39 mm	Above 39 thru 100 mm	Above 100 thru 200 mm	Above 200 thru 300 mm
1	2	3	4	5	6	7	8	9
mm	mm	± deg min	mm	mm	mm	mm	mm	mm
0.2	0.005	0° 40'	0.008	--	0.005	--	--	--
0.25	0.005	0° 40'	0.008	--	0.005	--	--	--
0.30	0.005	0° 30'	0.008	--	0.005	--	--	--
0.35	0.005	0° 30'	0.008	--	0.005	--	--	--
0.40	0.005	0° 30'	0.010	--	0.005	--	--	--
0.45	0.005	0° 30'	0.010	--	0.005	0.008	--	--
0.50	0.005	0° 30'	0.010	--	0.005	0.008	--	--
0.55	0.005	0° 30'	0.010	--	0.005	0.008	--	--
0.60	0.005	0° 20'	0.010	--	0.005	0.008	--	--
0.65	0.005	0° 20'	0.010	--	0.005	0.008	--	--
0.70	0.005	0° 20'	0.010	--	0.005	0.008	--	--
0.75	0.005	0° 20'	0.010	--	0.005	0.008	--	--
0.80	0.008	0° 15'	0.013	0.018	0.008	0.010	0.013	0.015
1.00	0.008	0° 15'	0.013	0.018	0.008	0.010	0.013	0.015
1.25	0.008	0° 15'	0.013	0.018	0.008	0.010	0.013	0.015
1.5	0.008	0° 10'	0.015	0.023	0.008	0.010	0.015	0.018
1.75	0.008	0° 10'	0.015	0.023	0.008	0.010	0.015	0.018
2	0.008	0° 10'	0.015	0.023	0.008	0.010	0.015	0.018
2.5	0.008	0° 10'	0.015	0.023	0.008	0.010	0.015	0.018
3	0.008	0° 10'	0.018	0.028	0.010	0.013	0.015	0.018
3.5	0.010	0° 5'	0.018	0.028	0.010	0.013	0.015	0.018
4	0.010	0° 5'	0.018	0.033	0.010	0.013	0.015	0.018
4.5	0.010	0° 5'	0.020	0.033	0.010	0.013	0.015	0.020
5	0.010	0° 5'	0.020	0.033	0.010	0.013	0.015	0.020
5.5	0.010	0° 5'	0.020	0.033	0.010	0.013	0.015	0.020
6	0.010	0° 5'	0.023	0.038	0.010	0.013	0.015	0.020
8	0.010	0° 5'	0.023	0.038	0.010	0.013	0.015	0.020

(a) Tolerances apply to designated size of thread. Apply tolerances in accordance with TABLE XXII.B.2 and TABLE XXII.C.2.

(b) Allowable variation between any two threads on ANSI B47.1 gage blank length.

TABLE XXII.A.3 "W" Gage Tolerances for GO and NOT-GO thread setting gages

Pitch	Tolerance on lead		Tolerance on 30° half angle	Tolerance on major and minor diameter (a)			Tolerance on pitch diameter (a)				
	To and incl 12 mm (b)	Above 12 mm (b)		To and incl 12 mm	Above 12 thru 100 mm	Above 100 mm	To and incl 12 mm	Above 12 thru 39 mm	Above 39 thru 100 mm	Above 100 thru 200 mm	Above 200 thru 300 mm
1	2	3	4	5	6	7	8	9	10	11	12
mm	mm	mm	± deg min	mm	mm	mm	mm	mm	mm	mm	mm
0.2	0.003	--	0° 30'	0.008	--	--	0.003	--	--	--	--
0.25	0.003	--	0° 30'	0.008	--	--	0.003	--	--	--	--
0.3	0.003	--	0° 30'	0.008	--	--	0.003	--	--	--	--
0.35	0.003	0.004	0° 20'	0.008	0.008	--	0.003	0.004	--	--	--
0.4	0.003	0.004	0° 20'	0.008	0.008	--	0.003	0.004	--	--	--
0.45	0.003	0.004	0° 20'	0.008	0.010	--	0.003	0.004	--	--	--
0.5	0.003	0.004	0° 20'	0.008	0.010	--	0.003	0.004	0.005	--	--
0.55	0.003	0.004	0° 18'	0.008	0.010	--	0.003	0.004	0.005	--	--
0.6	0.003	0.004	0° 18'	0.008	0.010	--	0.003	0.004	0.005	--	--
0.65	0.003	0.004	0° 15'	0.008	0.010	--	0.003	0.004	0.005	--	--
0.7	0.003	0.004	0° 15'	0.008	0.010	--	0.003	0.004	0.005	--	--
0.75	0.003	0.004	0° 12'	0.008	0.010	--	0.003	0.004	0.005	--	--
0.8	0.003	0.004	0° 12'	0.008	0.013	0.018	0.003	0.004	0.005	0.006	0.008
1	0.004	0.004	0° 8'	0.013	0.013	0.018	0.003	0.004	0.005	0.006	0.008
1.25	0.004	0.004	0° 8'	0.013	0.013	0.018	0.003	0.004	0.005	0.006	0.008
1.5	0.004	0.004	0° 8'	0.013	0.013	0.018	0.003	0.004	0.005	0.006	0.008
1.75	0.004	0.004	0° 7'	0.015	0.015	0.023	0.003	0.005	0.006	0.008	0.010
2	0.005	0.005	0° 6'	0.015	0.015	0.023	0.004	0.005	0.006	0.008	0.010
2.5	--	0.005	0° 6'	--	0.015	0.023	--	0.005	0.006	0.008	0.010
3	--	0.006	0° 6'	--	0.015	0.023	--	0.005	0.006	0.008	0.010
3.5	--	0.006	0° 5'	--	0.018	0.028	--	0.005	0.006	0.008	0.010
4	--	0.008	0° 5'	--	0.018	0.028	--	0.005	0.006	0.008	0.010
4.5	--	0.008	0° 4'	--	0.020	0.033	--	0.005	0.006	0.008	0.010
5	--	0.008	0° 4'	--	0.020	0.033	--	0.005	0.006	0.008	0.010
5.5	--	0.008	0° 4'	--	0.020	0.033	--	0.005	0.006	0.008	0.010
6	--	0.008	0° 4'	--	0.023	0.033	--	0.005	0.006	0.008	0.010
8	--	0.008	0° 4'	--	0.023	0.038	--	0.005	0.006	0.008	0.010

(a) Tolerances apply to designated size of thread. Apply tolerances in accordance with TABLE XXII.B.3, TABLE XXII.B.4, TABLE XXII.C.3 and TABLE XXII.C.4.

(b) Allowable variation between any two threads on ANSI B47.1 gage blank length.

TABLE XXII.A.4 Tolerances for plain cylindrical gages

Size Range		Tolerances (a)				
Above	To and including	XX	X	Y	Z ^(b)	ZZ
1	2	3	4	5	6	7
mm	mm	mm	mm	mm	mm	mm
1	21	0.0005	0.001	0.0018	0.003	0.005
21	38	0.0008	0.0015	0.0023	0.003	0.006
38	64	0.0010	0.002	0.0030	0.004	0.008
64	115	0.0013	0.0025	0.0038	0.005	0.010
115	165	0.0017	0.0033	0.0048	0.006	0.013
165	230	0.0020	0.0041	0.0061	0.008	0.016
230	300	0.0025	0.0051	0.0076	0.010	0.020

- (a) Tolerances apply to actual diameter of plug or ring. Apply tolerances in accordance with table XXII.B.2 and table XXII.C.2. Symbols XX, X, Y, Z and ZZ are standard gagemakers tolerance classes.
- (b) Used as tolerance on plain cylindrical plugs and ring gages to check minor diameter for internal threads and outside diameter for external threads. Also used for masters for setting indicating thread gages where the design permits.

4.8 End threads.

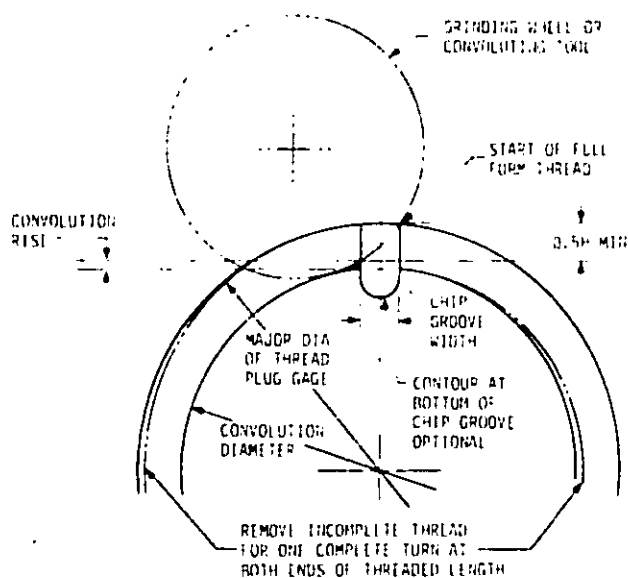
4.8.1 External gage threads. The feather edge at both ends of the threaded section of the gaging member shall be removed. On pitches greater than 0.8 mm, not more than one complete turn of the end threads shall be removed to obtain a full thread form blunt start. See figure 22.A.1. On pitches 0.8 mm and finer, a 60° chamfer from the axis of the gage is acceptable in lieu of the blunt start.

4.8.2 Internal gage threads. The feather edge at both ends of the thread ring gage shall be removed. On gages larger than 12 mm nominal size or on those having a larger pitch than 1.25, not more than one complete turn of the end threads shall be removed to obtain a full thread blunt start. On gages 12 mm nominal size and smaller or on those having 1.25 pitch or smaller, a 60° chamfer on the end threads from the axis of the gage to a depth of half to one pitch, is acceptable in place of the blunt start.

4.9 Chip grooves. Each GO thread plug gage, except in size 4 mm and smaller, shall be provided with a chip groove at the entering end. On reversible gages, a chip groove shall be provided at each end. Chip grooves are acceptable that are in accordance with commercial practice, such as a groove cut at an angle with the axis or a longitudinal groove cut parallel with the axis and extending the complete length of the gaging member. The groove shall be located circumferentially at the start of the full thread, and in all cases the depth shall extend below the root of the first full thread. The distance from the major diameter of the thread plug to the crest of the convolution rise in front of the chip groove, due to the radius of the convoluting tool, shall be a minimum of 0.5H as shown in figure 22.A.1. The beginning of the first thread shall be of full form. The recommended widths for chip grooves are given in table XXII.A.5.

TABLE XXII.A.5 Chip groove width

Nominal Diameter mm	Chip Groove Width mm	
	Max	Min
4 mm and smaller	No chip groove required	
Above 4 to and including 5 mm	0.91	0.66
Above 5 to and including 10 mm	1.32	1.07
Above 10 to and including 12 mm	1.70	1.45
Above 12 to and including 24 mm	2.11	1.70
Above 24 to and including 39 mm	3.30	1.70
Above 39 mm	4.90	1.70

FIGURE 22.A.1 Removal of partial thread and chip groove

4.10 Runout.

4.10.1 Thread plug gages. The permissible maximum effective major diameter on GO and NOT-GO thread plug gages, as determined by adding the runout measurement (full indicator movement on major cylinder using pitch cylinder axis as datum) to the measured major diameter, shall not exceed the maximum major diameter specified. The pitch cylinder shall be round and straight within the gage pitch diameter limits specified.

4.10.2 Thread ring gages. Runout requirements for GO and NOT-GO thread ring gages are:

- a) The permissible minimum effective minor diameter on GO thread ring gages, as determined by subtracting the runout measurement (full indicator movement on minor cylinder using pitch cylinder axis as datum) from the measured minor diameter, shall not be less than the specified minimum minor diameter minus the sum of the minor and pitch diameter gage tolerance.
- b) The permissible minimum effective minor diameter on NOT-GO thread ring gages, as determined by subtracting the runout measurement (full indicator reading on minor cylinder using pitch cylinder axis as datum) from the measured minor diameter, shall not be less than the specified minimum minor diameter minus twice the sum of the gage tolerances for minor and pitch diameter.

4.11 Taper limitation on pitch diameter on setting gages. The taper shall be within the gage pitch diameter limits. On setting plugs, the largest diameter shall be at the entering end.

5 DETAILED REQUIREMENTS

5.1 M thread series. The detail gage requirements for M thread series are given in Part B.

5.2 MJ thread series. The detail gage requirements for MJ thread series are given in Part C.

5.3 Verification of threaded product.

5.3.1 The following requirements apply when using ring and plug gages for thread verification.

- a) The GO thread plug gage shall enter the full threaded length of the product thread freely.
- b) The NOT-GO thread plug gage shall not enter more than three complete turns, before coming to a stop. Exceptionally short thread lengths (less than 3 pitches) may pass over the plug gage provided there is a perceptible drag.

- c) To assure that usable product thread at the extreme limit of size (minimum material limit) is not rejected in borderline cases, indicating gages may be used.
- d) GO plain plug and ring gages shall completely enter or pass over the product threads.
- e) NOT-GO plain plug and ring gages shall not enter or pass over the first full thread of the product.

5.3.2 The following requirements apply when using indicating gages for thread verification:

- a) Requirements for making measurement decision using indicating gages on threaded products are described in FED-STD-H28/20.
- b) GO thread indicating segments shall engage 25% or more of the product circumference. Product shall be checked around full circumference of thread at sufficient axial positions to check the full thread length.
- c) Thread indicating rolls shall be applied at several locations (three if possible) axially over the full thread length of the product. The circumference shall be checked at each position.

5.4 "Best Size" thread measuring wires.

5.4.1 Thread wire specifications. Thread wires shall meet the following requirements:

- a) The set of 3 wires shall have the same diameter within 0.00025 mm.
- b) This common diameter shall be within 0.0005 mm of the "best size" for the pitch for which the wires are to be used.
- c) Variation of wire diameter within central 25 mm interval = 0.00025 mm max.
- d) Out of roundness by 60° V block = 0.00025 mm max. over central 25 mm of length.
- e) Surface roughness = 0.05 μ m R_a max.
- f) Material = high speed tool steel hardened to RC 62 min or Knoop 776 min.

5.4.2 Method of measuring wires. The following procedure shall be used when measuring pitch diameter wires:

- a) The computed value for the pitch diameter of a screw thread gage obtained from readings over wires will depend upon the accuracy of the measuring instrument used, the contact force, and the value of the diameter of the wires used in the computations. In order to measure the pitch diameter of a 60° screw thread gage to an accuracy within 0.0025 mm by means of wires, it is necessary to know the wire diameters to within 0.0005 mm. Accordingly, it is necessary to use a measuring instrument that reads accurately to 0.0002 mm.
- b) A wire presses on the flanks of a 60° thread with the force that is applied to the wire by the measuring instrument. Inasmuch as the wire and thread deform at the contact areas, it is desirable to determine the size of the wire under conditions which will compensate for this deformation. It is recommended for standard practice that diameters of wires be measured between a flat contact and a hardened and accurately ground and lapped steel cylinder having a diameter in accordance with table XXII.A.6 with the measuring force specified in the table. The plane of the flat contact should be parallel to the contact element of the cylinder within 0.0001 mm.
- c) To avoid a permanent deformation of the material of the wire or gages, it is necessary to limit the contact force and, for consistent results, a uniform practice as to contact force in making wire measurements of hardened screw threads gages is necessary. The recommended force for external pitch diameter measurements is given in table XXII.A.6. The use of other contact forces will cause a difference in the reading over the wires and to completely compensate for such errors is impractical.
- d) Variations in diameter around the wire should be determined by rotating the wire between a flat measuring contact and an anvil having the form of a 60° V-groove. Variations in diameter along the wire should be determined by measuring between a flat contact and a cylindrical anvil.
- e) The "best size" wires and the constant to be subtracted from the measurement over "best size" wires for computing the measured pitch diameter on an external thread are given in table XXII.A.7.

TABLE XXII.A.6 Measuring force over wires and cylinder diameter

Pitch range	Measuring force ($\pm 10\%$)		Cylinder diameter mm
	Newtons	Pounds (Ref.)	
0.2 to 0.35	1.1	0.25	1.25
0.35 to 0.6	2.2	0.50	3
0.6 to 1.25	4.5	1.00	20
1.25 and larger	11.1	2.50	20

1 Newton = 0.2248 pound-force.

TABLE XXII.A.7 "Best Size" wires and balls
for $60^\circ \pm 3^\circ$ threads

Pitch	Wire or Ball Size 0.57735 p	Constant C for Wires 0.866025 p
0.2	0.1155*	0.1732
0.25	0.1443*	0.2165
0.3	0.1732*	0.2598
0.35	0.2021*	0.3031
0.4	0.2309*	0.3464
0.45	0.2598*	0.3897
0.5	0.2887*	0.4330
0.6	0.3464*	0.5196
0.7	0.4041	0.6062
0.75	0.4330	0.6495
0.8	0.4619	0.6928
1.0	0.5774	0.8660
1.25	0.7217	1.0825
1.5	0.8660	1.2990
1.75	1.0104	1.5155
2.0	1.1547	1.7321
2.5	1.4434	2.1651
3.0	1.7321	2.5981
3.5	2.0207	3.0311
4.0	2.3094	3.4641
4.5	2.5981	3.8971
5.0	2.8868	4.3301
5.5	3.1754	4.7631
6.0	3.4641	5.1962

*Ball measurement of internal pitch diameter on sizes under 5 mm is not practical.

5.5 External pitch diameter measurement. External pitch diameter approximately equals measurement over "best size" wire minus the constant C. For more information on thread wire measurements, refer to FED-STD-H28 (Appendix A4).

5.6 Thread balls.

5.6.1 "Best size" thread balls specifications. Thread balls shall meet the following requirements:

- a) The diameters of the "best size" balls are calibrated for their undeformed sizes. For a 60° thread, the sizes are given in table XXII.A.7.
- b) One set of "best size" balls consists of three hardened steel balls that have the same diameter within 0.00025 mm and their common diameter should be within 0.0005 mm of the corresponding best size ball for the specified pitch. The sphericity should not exceed 0.00025 mm.

5.6.2 Method of measuring balls. The following procedures shall be used when measuring pitch diameter balls:

- a) In order to measure the pitch diameter of a 60° screw thread gage ring to an accuracy of within 0.0025 mm by means of balls, it is necessary to know the ball diameters to within 0.0005 mm. Therefore, the measuring instrument must read accurately to 0.0003 mm.
- b) The ball presses on the flanks of a 60° thread with the force that is applied to the ball by the measuring instrument. Since the ball and thread deform at the contact areas, the size of the ball should be determined under conditions which nearly compensate for this deformation.* The ball should be measured between parallel flat hardened steel contacts which are set with calibrated gage blocks. The contacts should be parallel within 0.0001 mm.
- c) To avoid exceeding the elastic limit of the balls and thread gages, it is necessary to recommend a uniform practice for measuring force for the calibration of balls and for their use in measuring internal pitch diameter. table XXII.A.8 gives the recommended measuring forces.
- d) Variations in diameter around the ball should be determined by rotating the ball between parallel measuring contacts.

* Measured deformed ball size may be corrected to its undeformed size by Hertz' equation given in the National Bureau of Standards Technical Note 962, May 1978, page 2.

TABLE XXII.A.8 Measuring forces for internal pitch diameter measurements using balls

Pitch Range	Measuring force ($\pm 10\%$)	
	Newtons	Pounds (Ref.)
0.35 to .6	0.6	0.125
0.6 to 1.25	1.1	0.250
1.25 to 3	1.7	0.375
3 to 6	2.2	0.500

5.7 Internal pitch diameter measurement. Indicating gages with "best size" ball contacts are set to either a calibrated plain ring gage or a gage block gap which is longer than the basic pitch diameter of the product thread by one half of the diameter of the "best size" ball. The measured internal pitch diameter is obtained by adding the indicator reading change directly to the basic pitch diameter size.

5.8 Marking of gages. Each gage shall be plainly marked for positive identification. When it is impractical to permanently mark a gage, either attach a tag or mark its container. The gage is marked with the standard metric screw-thread designation in the following order: metric thread symbol (M) followed by (J) if applicable, nominal size, X, pitch, dash, tolerance grade for pitch diameter, tolerance position for pitch diameter, tolerance grade for major or minor diameter if different than pitch diameter, tolerance position for major or minor diameter if applicable, followed by type of gage (GO, NOT-GO, GO setting, NOT-GO setting, etc.) and pitch diameter in millimeters.

Examples:

M6X1-6g GO Setting P.D. 5.324
 MJ6X1-4h6h GO Full Form P.D. 5.350
 M6X1-6g NOT-GO P.D. 5.212

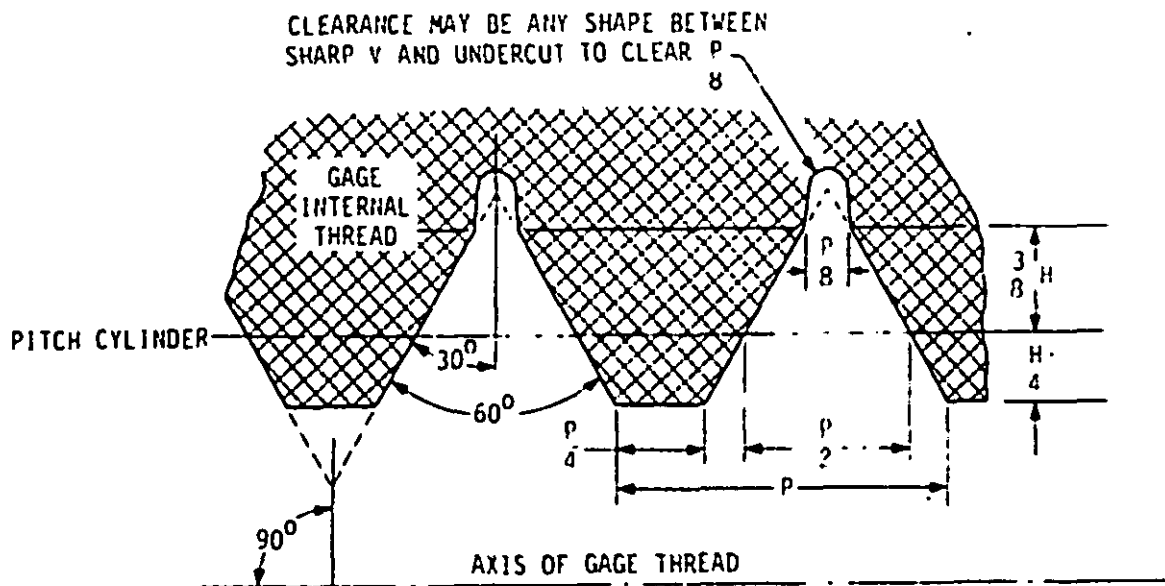
5.9 Rounding procedure for converting metric gage values to inch gage values. Determine metric gage dimensions in accordance with paragraph 4 of parts B and C, as applicable. Then calculate the inch gage size by dividing the metric gage size (given to three decimal places) by 25.4. Lastly, round to five decimal places by the following method: When the first digit discarded is less than 5, the last digit retained should not be changed. If the first discarded digit is greater than 5, or if it is a 5 followed by at least one digit other than 0, the last figure retained should be increased by one unit. And if the first discarded digit is a 5 followed by only zeros, the last digit retained should be rounded upward if it is an odd number but not changed if it is an even number.

1 INTRODUCTION. Part B of this standard establishes the detail gage requirements for M thread series.

2 THREAD PROFILES FOR GAGES. The thread profiles for thread gages shown in figure 22.B.1 through figure 22.B.8 are in general agreement with the USA industry practice of ANSI B1.16. See part A, paragraph 4.2 for a discussion of ISO gaging practice.

2.1 Internal thread profile with complete flanks, illustrated in figure 22.8.1, is used on the following gages:

- a) GO thread ring gage.
- b) GO thread snap gage anvils for checking external threads.
- c) Maximum material indicating gage segments and zero lead rolls.
- d) GO thread setting ring gage (solid) for indicating and snap gages.
- e) Indicating gage segment used together with plain contact segment spaced 180° apart for checking runout of major diameter.
- f) Indicating gage segments and zero lead rolls spaced 120° apart and segments used for differential gaging for lead and cumulative form analysis.



NOTE: Gage with same profile except 1P long shall be used for differential gaging. See paragraph 2.1f).

FIGURE 22.B.1 Internal thread profile with complete flanks for thread
gages

2.2 Internal thread profile with truncated flanks, illustrated in figure 22.B.2, is used on the following gages:

- a) NOT-GO thread ring gage.
- b) NOT-GO thread snap gage anvils.
- c) NOT-GO thread setting ring gage, (solid) for indicating and snap gages. See footnote (c) below.

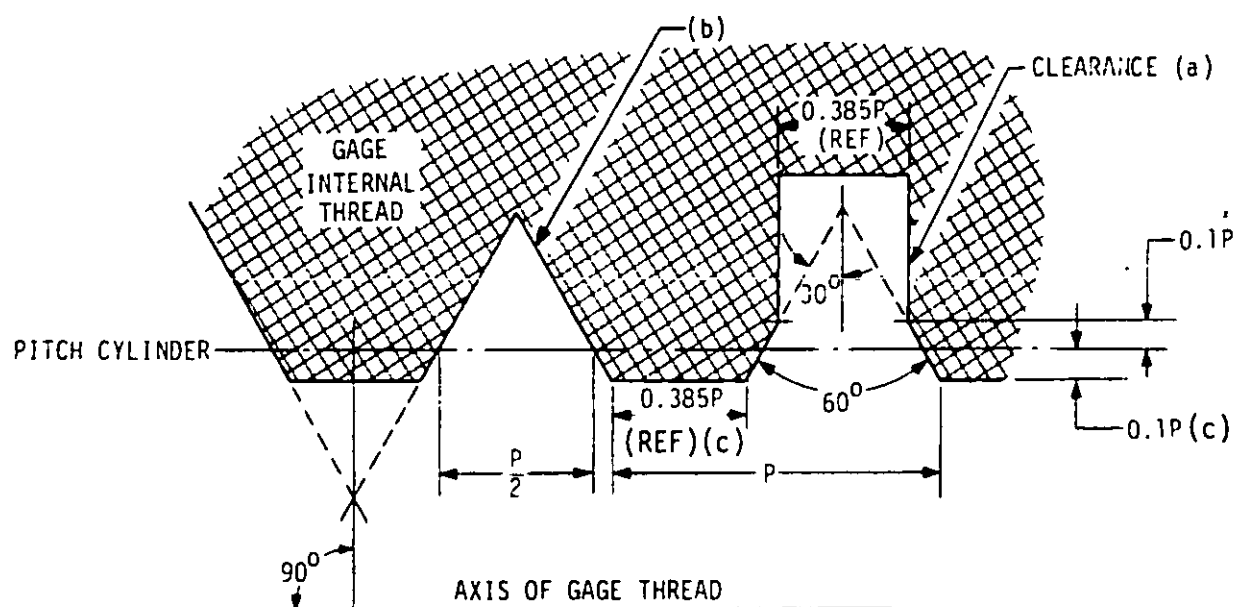
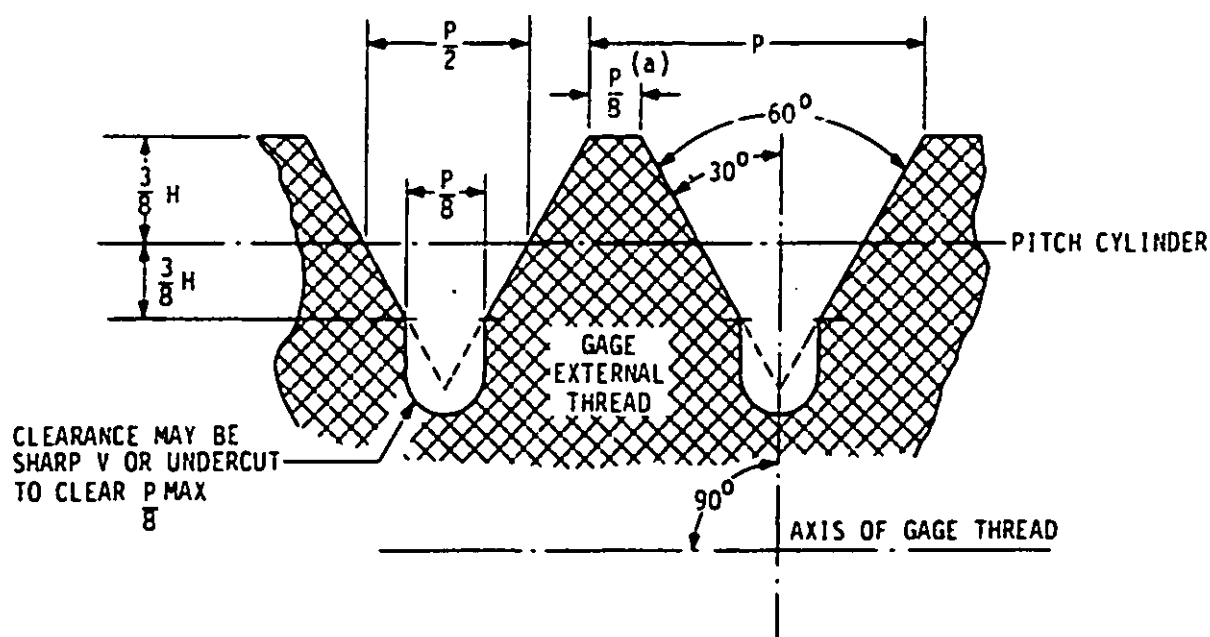


FIGURE 22.B.2 Internal thread profile with truncated flanks for thread gages

- (a) Undercut clearance is essential. The undercut clearance of the $0.385P$ width shall be central and shall clear the maximum major diameter of the product external thread or the maximum major diameter of the full form thread setting plug for the NOT-GO thread ring gage.
- (b) An optional sharp root is permitted on thread sizes smaller than 5 mm and pitches smaller than 0.8 mm provided that the full form NOT-GO gage setting plug major diameter is cleared.
- (c) Thread addendum and corresponding flat at the minor diameter are $0.25H$ and $0.25P$, respectively, for paragraph 2.2c.

2.3 External thread profile with complete flanks, illustrated in figure 22.B.3, is used on the following gages:

- a) GO thread plug gage.
- b) GO thread snap gage.
- c) Maximum material indicating gage rolls and segments.
- d) Thread setting plug gage (full form portion) for GO thread ring gage.
- e) Basic crest thread setting plug gage for GO thread ring gage and GO snap gage.
- f) Thread setting plug gage (full form portion) for NOT-GO thread ring gage. See footnote (a) below.
- g) Basic crest thread setting plug gage for NOT-GO thread ring gage and NOT-GO thread snap gage. See footnote (a) below.
- h) Indicating gage segment used together with plain contact segment spaced 180° apart for checking runout on minor diameter.
- i) Indicating gage zero lead rolls spaced 120° apart and segments used for differential gaging for lead and cumulative form analysis.



NOTE: Gage with same profile except 1P long shall be used for differential gaging. See paragraph 2.3i.

FIGURE 22.B.3 External thread profile with complete flanks for thread gages

- (a) Minimum crest width for paragraphs 2.3f and 2.3g is 0.0254 mm. This corresponds to a minimum truncation of 0.022 mm.

2.4 External thread profile with truncated flanks, illustrated in figure 22.B.4, is used on the following gages:

- a) NOT-GO thread plug gage.
- b) Thread setting plug gage (truncated portion) for GO thread ring gage.
- c) Thread setting plug gage (truncated portion) for NOT-GO thread ring gage.
- d) NOT-GO thread snap gage.

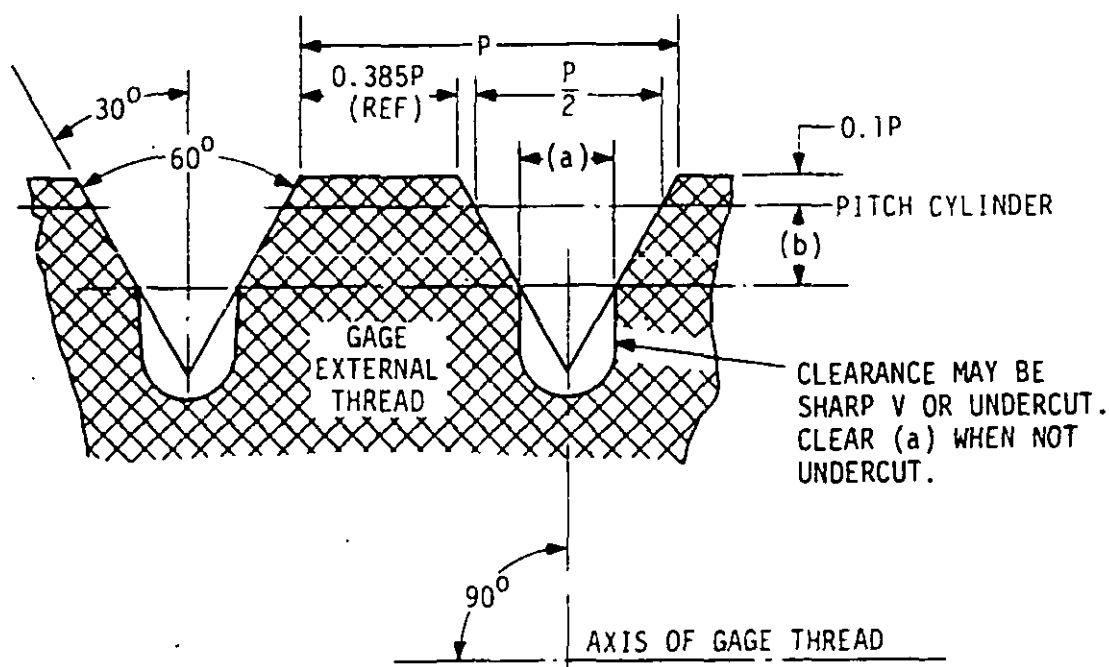


FIGURE 22.B.4 External thread profile with truncated flanks for thread gages

- (a) $\frac{P}{4}$ for working gages (2.4a and d) and $\frac{P}{8}$ for setting gages (2.4b and c).
- (b) $\frac{H}{4}$ for working gages (2.4a and d) and $\frac{3}{8}H$ for setting gages (2.4b and c).

3 GAGING ELEMENT PROFILES FOR PITCH DIAMETER MEASUREMENT AND CUMULATIVE FORM DIFFERENTIAL GAGING

3.1 Product external thread measurement, short straight flank contacts. Indicating and snap gage cone and vee profile rolls for the measurement of external pitch diameter are illustrated in figure 22.B.5. The gage has small line contact on the thread flank. Indicating gage rolls, spaced 120° apart, are used on external product threads for cumulative form differential gaging. Alternate designs may use a similar profile with approximate pitch diameter contact.

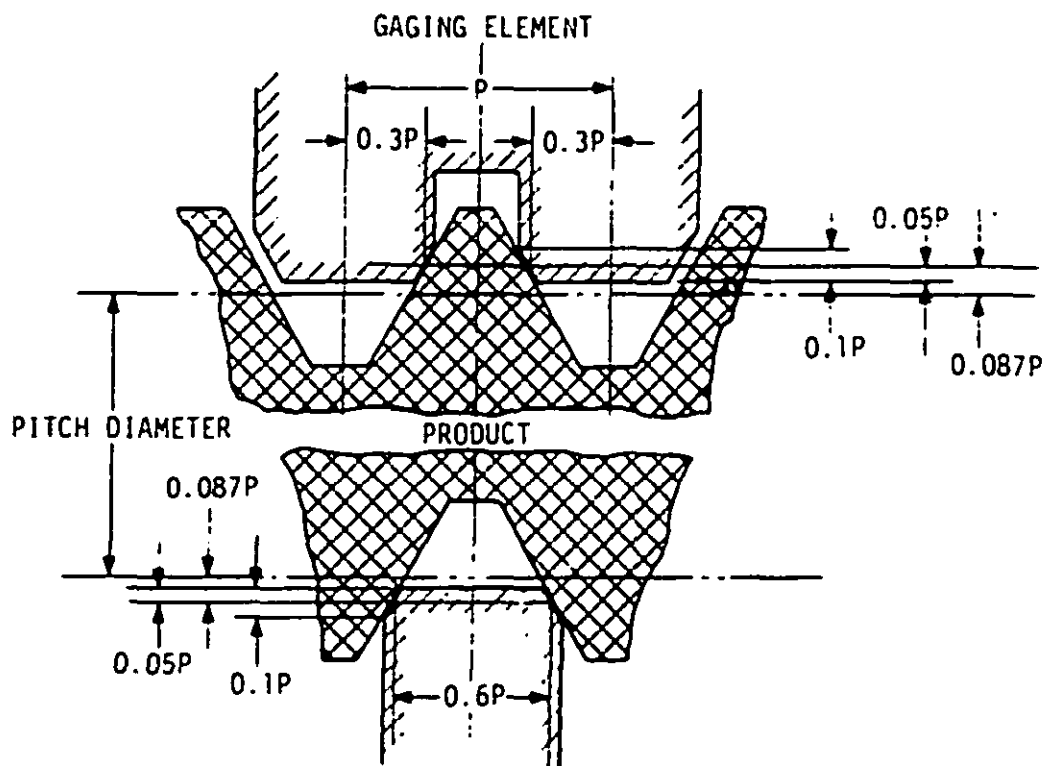


FIGURE 22.B.5 Gaging element profile for product external pitch diameter measurement and cumulative form analysis using short straight flank contacts

3.2 Product external thread measurement, curved contacts. Indicating and snap gage rolls with "best size" wire radius for the measurement of external pitch diameter are shown in figure 22.B.6. This type of gage approximates the three wire pitch diameter measurement. It has point contact with the thread flanks. Indicating gage rolls, spaced 120° apart, are used on external product threads for cumulative form differential gaging. Alternate design may use cone and vee profile rolls with "best size" wire radius contacts.

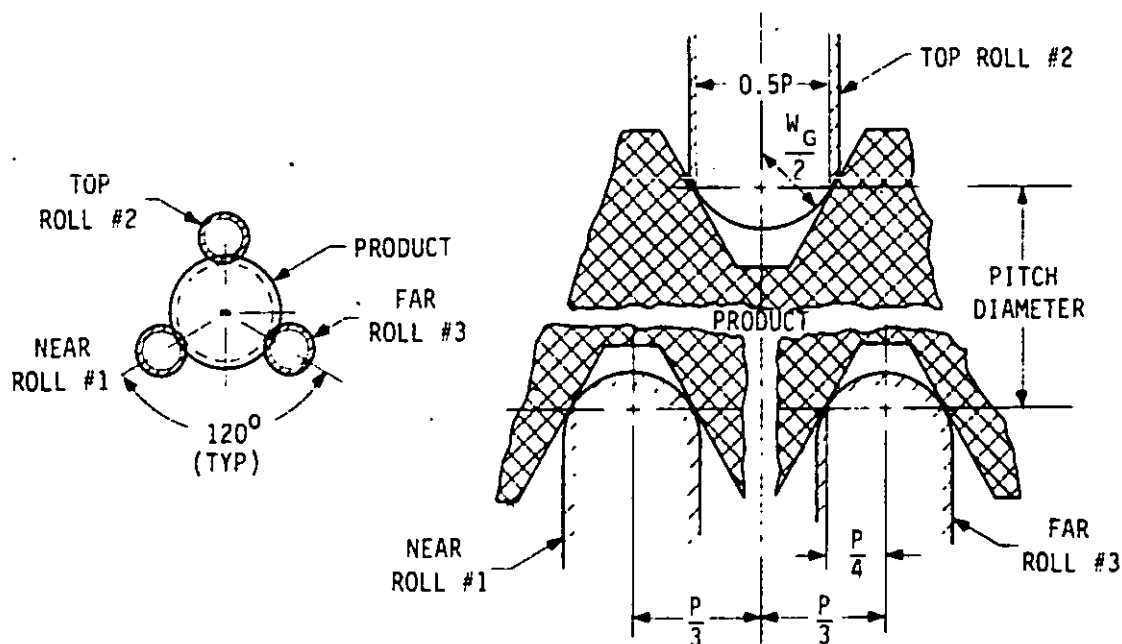


FIGURE 22.B.6 Gaging element profile for product external pitch diameter measurement and cumulative form analysis using curved contacts

3.3 Product internal thread measurement, short straight flank contacts. Indicating and snap gage cone and vee profile for segments and rolls for pitch diameter measurement on internal threads is shown in figure 22.8.7. The segments make surface contact with the thread flanks and the rolls make point or line contact with the thread flanks, depending on the angle variations of the flanks. Indicating rolls are used on internal product threads for cumulative form analysis. Alternate design may use a similar profile with approximate pitch diameter contact.

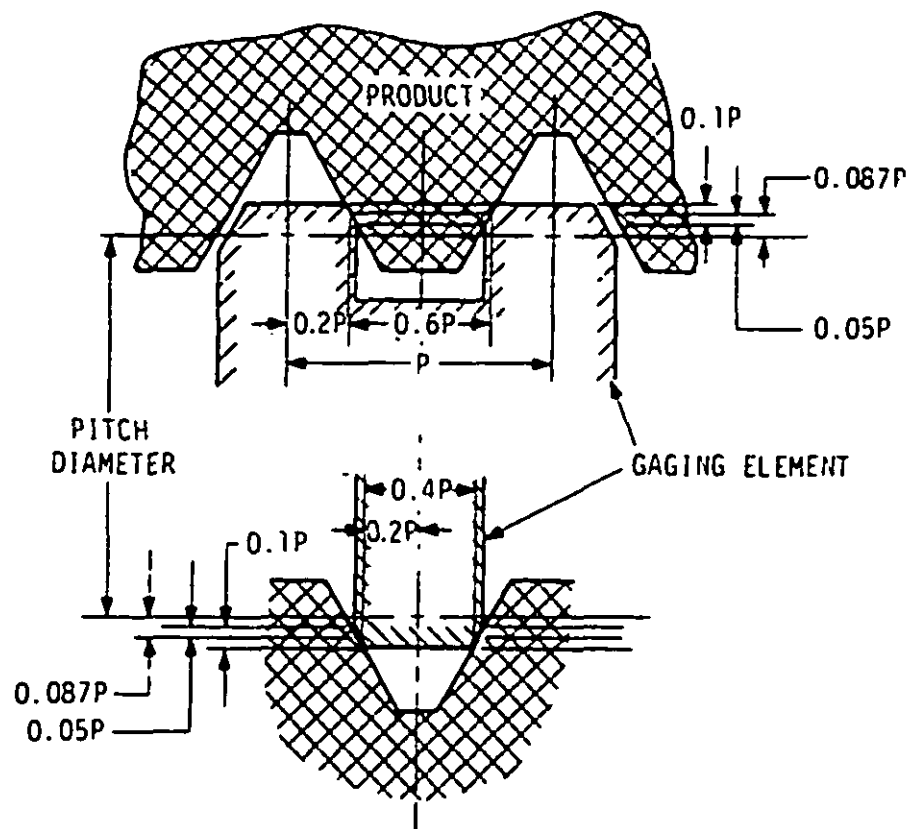


FIGURE 22.8.7 Gaging element profile for product internal pitch diameter measurement and cumulative form analysis using short straight flank contacts

3.4 Product internal thread measurement, ball contact. The three "best size" ball configuration for pitch diameter measurement on internal threads is illustrated in figure 22.B.8. Since the two balls are free to roll a small distance axially on the one mounting, they may be spaced several pitches apart. As an alternate "best size" ball contacts are acceptable.

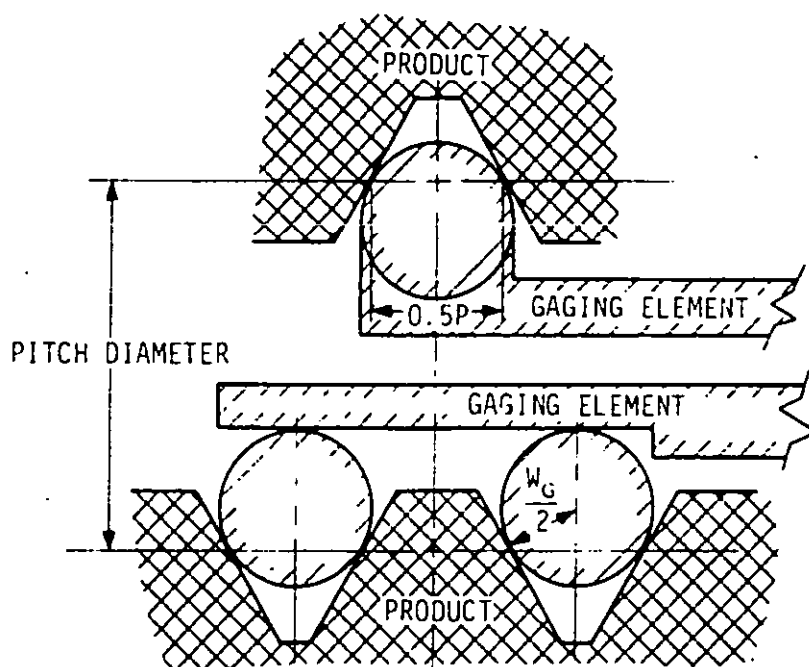


FIGURE 22.B.8 Gaging element for product internal pitch diameter measurement using "best size" balls

4 GAGE SPECIFICATIONS

4.1 Design of gaging elements for M thread gages is detailed in part B with general information provided in part A.

4.2 The limits of size for working gages are tabulated in table XXII.B.5.

4.3 The limits of size for thread setting gages for external and internal M threads are tabulated in table XXII.B.6.

4.4 For thread sizes not tabulated in this standard.

- a) Constants for computing M thread series gage dimensions may be found in table XXII.B.1.
- b) The X, W, and Z gage tolerance are given in tables XXII.A.2, XXII.A.3 and XXII.A.4, respectively.
- c) Dimensions of the M thread series are given in or may be calculated in accordance with FED-STD-H28/21.
- d) The specifications for determining the limits of size for working gages are summarized in table XXII.B.2 and for setting gages in tables XXII.B.3 and XXII.B.4.

4.5 Plain setting plug and ring gages for indicating gages shall be made to Z tolerance for plain gages, see table XXII.A.4.

4.6 The rounding procedure for converting metric gage dimensions to inch units is described in part A, GENERAL.

TABLE XXII.B.1 Constants for computing M thread series gage dimensions

Pitch P	Half Height of Cone Contact 0.05P	Distance Between Pitch Cylinder and Half Height of Cone Contact 0.087P	Height of Gage Cone Contact 0.1P	Width of Flat on GO Plug 0.125P	Addendum of Ring Thread and Truncation Internal Thread H 4	Width of Flat on GO Ring 0.25P	Dedendum of Ring Thread and Addendum of Plug Thread 3 8 H	Width of Flat on Thread of NOT-GO Ring and Plug 0.385P	Mean Width of Cone Contact for Internal Thread 0.4P	Half Height of Sharp V-Thread H 2	Space Width of Pitch Cylinder 0.5P	Mean Width of Cone Contact for External Thread 0.6P	Twice External Thread Addendum 3 4 H	Height of Sharp V-Thread H
0.2	0.010	0.0174	0.020	0.0250	0.04330	0.0500	0.32476P	0.385P	0.08	0.08660	0.100	0.12	0.12990	0.17321
0.25	0.012	0.0218	0.025	0.0312	0.05413	0.0625	0.08119	0.07700	0.08	0.10825	0.125	0.15	0.16238	0.21651
0.3	0.015	0.0261	0.030	0.0375	0.06495	0.0750	0.09743	0.11550	0.12	0.12990	0.150	0.18	0.19486	0.25981
0.35	0.018	0.0304	0.035	0.0438	0.07578	0.0875	0.11367	0.13475	0.14	0.15155	0.175	0.21	0.22733	0.30311
0.4	0.020	0.0348	0.040	0.0500	0.08660	0.1000	0.12990	0.15400	0.16	0.17320	0.200	0.24	0.25981	0.34641
0.45	0.022	0.0392	0.045	0.0562	0.09743	0.1125	0.14614	0.17325	0.18	0.19486	0.225	0.27	0.29228	0.38971
0.5	0.025	0.0435	0.050	0.0625	0.10825	0.1250	0.16238	0.19250	0.2	0.21651	0.250	0.3	0.32476	0.43301
0.6	0.030	0.0522	0.060	0.0750	0.12990	0.1500	0.19486	0.23100	0.24	0.25981	0.300	0.36	0.38971	0.51962
0.7	0.035	0.0609	0.070	0.0875	0.15155	0.1750	0.22733	0.26950	0.28	0.30311	0.350	0.42	0.45466	0.60622
0.75	0.038	0.0652	0.075	0.0938	0.16238	0.1875	0.24357	0.28875	0.3	0.32476	0.375	0.45	0.48714	0.64952
0.8	0.040	0.0696	0.080	0.1000	0.17320	0.2000	0.25981	0.30800	0.32	0.34641	0.400	0.48	0.51962	0.69282
1	0.050	0.087	0.100	0.1250	0.21651	0.2500	0.32476	0.38500	0.4	0.43301	0.500	0.6	0.64952	0.86603
1.25	0.062	0.1088	0.125	0.1562	0.27063	0.3125	0.40595	0.48125	0.5	0.54127	0.625	0.75	0.81190	1.08253
1.5	0.075	0.1305	0.150	0.1875	0.32476	0.3750	0.48714	0.57750	0.6	0.64952	0.750	0.9	0.97428	1.29904
1.75	0.088	0.1522	0.175	0.2188	0.37889	0.4375	0.56833	0.67375	0.7	0.75777	0.875	1.05	1.13666	1.51554
2	0.100	0.1740	0.200	0.2500	0.43301	0.5000	0.54952	0.77000	0.8	0.86603	1.000	1.2	1.29904	1.73205
2.5	0.125	0.2175	0.250	0.3125	0.54127	0.6250	0.81190	0.96250	1.0	1.08253	1.250	1.5	1.62380	2.16506
3	0.150	0.2610	0.300	0.3750	0.64952	0.7500	0.97428	1.15500	1.2	1.29904	1.500	1.8	1.94856	2.59808
3.5	0.175	0.3045	0.350	0.4375	0.75778	0.8750	1.13666	1.34750	1.4	1.51554	1.750	2.1	2.27332	3.03109
4	0.200	0.3480	0.400	0.5000	0.86603	1.0000	1.29904	1.54000	1.6	1.73205	2.000	2.4	2.59808	3.46410
4.5	0.225	0.3915	0.450	0.5625	0.97428	1.1250	1.46142	1.73250	1.8	1.94856	2.250	2.7	2.92284	3.89711
5	0.250	0.4350	0.500	0.6250	1.08253	1.2500	1.62380	1.92500	2.0	2.16506	2.500	3.0	3.24760	4.33013
5.5	0.275	0.4785	0.550	0.6875	1.19078	1.3750	1.78618	2.11750	2.2	2.38157	2.750	3.3	3.57235	4.76314
6	0.300	0.5220	0.600	0.7500	1.29904	1.5000	1.94856	2.31000	2.4	2.59808	3.000	3.6	3.89711	5.19615
8	0.400	0.6960	0.800	1.0000	1.73205	2.0000	2.59808	3.08000	3.2	3.46410	4.000	4.8	5.19615	6.92820

TABLE XXII.B.2 Specifications for limits of size of thread and plain working gages for checking external and internal M threads

For checking external threads	Adjustable and solid X Thread ring gages	GO	Pitch diameter	For max size use max pitch diameter of external thread. Apply X pitch diameter gage tolerance minus for min size.
			Minor diameter	For max size use max pitch diameter of external thread minus $H/2$. Apply X minor diameter gage tolerance minus for min size.
		NOT GO	Pitch diameter	For min size use min pitch diameter of external thread. Apply X pitch diameter gage tolerance plus for max size.
			Minor diameter	For min size use min pitch diameter of external thread minus $0.2p$. Apply X minor diameter gage tolerance plus for max size.
	Z Plain ring gages	GO	Major diameter	For max size use max major diameter of external thread. Apply Z gage tolerance minus for min size.
		NOT GO	Major diameter	For min size use min major diameter of external thread. Apply Z gage tolerance plus for max size.

TABLE XXII.B.2 Specifications for limits of size of thread and plain working gages for checking external and internal M threads (continued)

For checking internal threads	X Thread plug gages	GO	Major diameter	For min size use min major diameter of internal thread. Apply X major diameter gage tolerance plus for max size.
			Pitch diameter	For min size use min pitch diameter of internal thread. Apply X pitch diameter gage tolerance plus for max size.
		NOT GO	Major diameter	For max size use max pitch diameter of internal thread plus 0.2p. Apply X major diameter gage tolerance minus for min size.
			Pitch diameter	For max size use max pitch diameter of internal thread. Apply X pitch diameter gage tolerance minus for min size.
	Z Plain plug gages	GO	Minor diameter	For min size use min minor diameter of internal thread. Apply Z gage tolerance plus for max size.
		NOT GO	Minor diameter	For max size use max minor diameter of internal thread. Apply Z gage tolerance minus for min size.

TABLE XXII.B.3 Specifications for limits of size of thread setting plug for checking and adjusting ring gages used for checking external M threads

For checking external threads	Thread setting plug for GO ring gages	Major diameter	Truncated portion	For max size use max pitch diameter of external thread plus 0.2p. Apply W major diameter gage tolerance minus for min size.
			Full-form and basic crest	For min size use max major diameter of external thread. Apply W major diameter gage tolerance plus for max size.
		Pitch diameter		For max size use max pitch diameter of external thread. Apply W pitch diameter gage tolerance minus for min size.
	Thread setting plug for NOT-GO ring gages	Major diameter	(a) Truncated portion	For max size use min pitch diameter of external thread plus 0.2p. Apply W major diameter gage tolerance minus for min size.
			Full-form and basic crest	Use max major diameter of external thread provided that major diameter crest width shall not be less than 0.0254 mm (0.022 mm truncation). Apply W major diameter gage tolerance plus for max size except that for 0.0254 mm crest width apply tolerance minus for min size. For the 0.0254 mm crest width, major diameter is equal to maximum major diameter of external thread plus 0.216506p minus the sum of external thread pitch diameter tolerance and 0.0440 mm.
		Pitch diameter		For min size use min pitch diameter of external thread. Apply W pitch diameter gage tolerance plus for max size.

(a) Truncated portion is required when optional sharp root profile in figure 22.B.2 is used.

TABLE XXII.B.4 Specifications for limits of size of solid master thread ring gages for setting snap and indicating gages

For checking internal threads	Master GO thread ring (solid) for setting snap and indicating gages	Pitch (a) diameter	For min size use min pitch diameter of internal thread. Apply W pitch diameter gage tolerance plus for max size.
		Minor diameter	For max size use min minor diameter of internal thread. Apply W minor diameter gage tolerance minus for min size.
	NOT-GO thread setting ring (solid) for setting snap gages	Pitch (a) diameter	For max size use max pitch diameter of internal thread. Apply W pitch diameter gage tolerance minus for min size.
		Minor diameter	For max size use max minor diameter of internal thread. Apply W minor diameter gage tolerance minus for min size.

- (a) Tolerances greater than W tolerance for pitch diameter are acceptable when the indicating or snap gage can accommodate a greater tolerance and when agreed upon by supplier and user.

TABLE XXII.B.5 Gages for M Thread Series, Limits of Sizes

BASIC THREAD DESIGNATION	Gages for External Threads										Gages for Internal Threads									
	X Thread Ring Gages										X Thread Plug Gages									
	GO					NOT-GO					GO					NOT-GO				
	Pitch Dia		Minor Dia		Major Dia	Pitch Dia		Minor Dia		Major Dia	Pitch Dia		Minor Dia		Major Dia	Pitch Dia		Minor Dia		Major Dia
	Max	Min	Max	Min		Max	Min	Max	Min		Max	Min	Max	Min		Max	Min	Max	Min	
TOL CLASS	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
M1.6 x 0.35	6g	1.354 1.349	1.202 1.194	1.291 1.296	1.221 1.229	1.581 1.578	1.496 1.499	6H	1.600 1.608	1.373 1.378	1.528 1.520	1.458 1.453	1.221 1.224	1.321 1.318	6H	1.528 1.520	1.458 1.453	1.221 1.224	1.321 1.318	6H
M2 x 0.4	6g	1.721 1.716	1.548 1.538	1.654 1.659	1.574 1.584	1.981 1.978	1.886 1.889	6H	2.000 2.010	1.740 1.745	1.910 1.900	1.830 1.825	1.567 1.570	1.679 1.676	6H	1.910 1.900	1.830 1.825	1.567 1.570	1.679 1.676	6H
M2.5 x 0.45	6g	2.188 2.183	1.993 1.983	2.117 2.122	2.027 2.037	2.480 2.477	2.380 2.383	6H	2.500 2.510	2.208 2.213	2.393 2.383	2.303 2.298	2.013 2.016	2.138 2.135	6H	2.393 2.383	2.303 2.298	2.013 2.016	2.138 2.135	6H
M3 x 0.5	6g	2.655 2.650	2.438 2.428	2.580 2.585	2.480 2.490	2.980 2.977	2.874 2.877	6H	3.000 3.010	2.675 2.680	2.875 2.865	2.775 2.770	2.459 2.462	2.599 2.596	6H	2.875 2.865	2.775 2.770	2.459 2.462	2.599 2.596	6H
M3.5 x 0.6	6g	3.089 3.084	2.829 2.819	3.004 3.009	2.884 2.894	3.475 3.476	3.354 3.357	6H	3.500 3.510	3.110 3.115	3.342 3.332	3.222 3.217	2.850 2.853	3.010 3.007	6H	3.342 3.332	3.222 3.217	2.850 2.853	3.010 3.007	6H
M4 x 0.7	6g	3.523 3.518	3.220 3.210	3.433 3.438	3.293 3.303	3.978 3.975	3.838 3.841	6H	4.000 4.010	3.545 3.550	3.803 3.793	3.663 3.658	3.242 3.245	3.422 3.419	6H	3.803 3.793	3.663 3.658	3.242 3.245	3.422 3.419	6H
M5 x 0.8	6g	4.456 4.448	4.110 4.097	4.361 4.369	4.201 4.214	4.976 4.973	4.826 4.829	6H	5.000 5.013	4.480 4.488	4.765 4.752	4.605 4.597	4.134 4.137	4.334 4.331	6H	4.765 4.752	4.605 4.597	4.134 4.137	4.334 4.331	6H
M6 x 1	6g	5.324 5.316	4.891 4.878	5.212 5.220	5.012 5.025	5.974 5.971	5.794 5.797	6H	6.000 6.013	5.150 5.158	5.700 5.687	5.500 5.492	4.917 4.920	5.153 5.150	6H	5.700 5.687	5.500 5.492	4.917 4.920	5.153 5.150	6H
M8 x 1.25	6g	7.160 7.152	6.619 6.606	7.042 7.050	6.792 6.805	7.972 7.969	7.760 7.763	6H	8.000 8.013	7.188 7.196	7.598 7.585	7.348 7.340	6.647 6.650	6.912 6.909	6H	7.598 7.585	7.348 7.340	6.647 6.650	6.912 6.909	6H
M10 x 1	6g	7.324 7.316	6.891 6.878	7.212 7.220	7.012 7.025	7.974 7.971	7.794 7.797	6H	8.000 8.013	7.350 7.358	7.700 7.687	7.500 7.492	6.917 6.920	7.153 7.150	6H	7.700 7.687	7.500 7.492	6.917 6.920	7.153 7.150	6H
M10 x 1.5	6g	8.994 8.986	8.344 8.329	8.862 8.870	8.562 8.577	9.968 9.965	9.732 9.735	6H	10.000 10.015	9.026 9.034	9.506 9.491	9.206 9.198	8.376 8.379	8.676 8.673	6H	9.506 9.491	9.206 9.198	8.376 8.379	8.676 8.673	6H
M10 x 1.25	6g	9.160 9.152	8.619 8.606	9.042 9.050	8.792 8.805	9.972 9.969	9.760 9.763	6H	10.000 10.013	9.188 9.196	9.598 9.585	9.348 9.340	8.647 8.650	8.912 8.909	6H	9.598 9.585	9.348 9.340	8.647 8.650	8.912 8.909	6H
M10 x 0.75	6g	9.491 9.486	9.166 9.156	9.391 9.396	9.241 9.251	9.978 9.975	9.838 9.841	6H	10.000 10.010	9.513 9.518	9.795 9.785	9.645 9.640	9.188 9.191	9.378 9.375	6H	9.795 9.785	9.645 9.640	9.188 9.191	9.378 9.375	6H
M12 x 1.75	6g	10.829 10.821	10.071 10.056	10.679 10.687	10.329 10.344	11.966 11.963	11.701 11.704	6H	12.000 12.015	10.863 10.871	11.413 11.398	11.063 11.055	10.106 10.109	10.441 10.438	6H	11.413 11.398	11.063 11.055	10.106 10.109	10.441 10.438	6H

TABLE XXII.B.5 Gages for H Thread Series, Limits of Sizes (cont'd)

BASIC THREAD DESIGNATION	Gages for External Threads										Gages for Internal Threads									
	TOL CLASS	X Thread Ring Gages						Z Plain Ring Gages for Major Diameter		TOL CLASS	X Thread Plug Gages						Z Plain Plug Gages for Minor Diameter			
		GO			NOT-GO			GO	NOT-GO		GO			NOT-GO			GO	NOT-GO		
		Pitch Dia	Minor Dia	Major Dia	Pitch Dia	Minor Dia	Major Dia				Pitch Dia	Minor Dia	Major Dia	Pitch Dia	Minor Dia	Major Dia				
		Max Min	Max Min	Max Min	Min Max	Min Max	Max Min				Max Min	Min Max	Min Max	Max Min	Max Min	Min Max				
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15						
M12 x 1.25	6g	11.760 11.152	10.619 10.606	11.028 11.036	10.778 10.791	11.972 11.969	11.760 11.763	6H	12.000 12.013	11.188 11.196	11.618 11.605	11.368 11.360	10.647 10.650	10.912 10.909						
M12 x 1	6g	11.324 11.316	10.891 10.878	11.206 11.214	11.006 11.019	11.974 11.971	11.794 11.797	6H	12.000 12.013	11.350 11.358	11.710 11.697	11.510 11.502	10.917 10.920	11.153 11.150						
M14 x 2	6g	12.663 12.655	11.797 11.782	12.503 12.511	12.103 12.118	13.962 13.959	13.682 13.685	6H	14.000 14.015	12.701 12.709	13.313 13.298	12.913 12.905	11.835 11.838	12.210 12.207						
M14 x 1.5	6g	12.994 12.986	12.344 12.329	12.854 12.862	12.554 12.569	13.968 13.965	13.732 13.735	6H	14.000 14.015	13.026 13.034	13.516 13.501	13.216 13.208	12.376 12.379	12.676 12.673						
M15 x 1	6g	14.324 14.316	13.891 13.878	14.206 14.214	14.006 14.019	14.974 14.971	14.794 14.797	6H	15.000 15.013	14.350 14.358	14.710 14.697	14.510 14.502	13.917 13.920	14.153 14.150						
M16 x 2	6g	14.663 14.655	13.797 13.782	14.503 14.511	14.103 14.118	15.962 15.959	15.682 15.685	6H	16.000 16.015	14.701 14.709	15.313 15.298	14.913 14.905	13.835 13.838	14.210 14.207						
M16 x 1.5	6g	14.994 14.986	14.344 14.329	14.854 14.862	14.554 14.569	15.968 15.965	15.732 15.735	6H	16.000 16.015	15.026 15.034	15.516 15.501	15.216 15.208	14.376 14.379	14.676 14.673						
M17 x 1	6g	16.324 16.316	15.891 15.878	16.206 16.214	16.006 16.019	16.974 16.971	16.794 16.797	6H	17.000 17.013	16.350 16.358	16.710 16.697	16.510 16.502	15.917 15.920	16.153 16.150						
M18 x 1.5	6g	16.994 16.986	16.344 16.329	16.854 16.862	16.554 16.569	17.968 17.965	17.732 17.735	6H	18.000 18.015	17.026 17.034	17.516 17.501	17.216 17.208	16.376 16.379	16.676 16.673						
M20 x 2.5	6g	18.334 18.326	17.251 17.236	18.164 18.172	17.664 17.679	19.958 19.955	19.623 19.626	6H	20.000 20.015	18.376 18.384	19.100 19.085	18.600 18.592	17.294 17.297	17.744 17.741						
M20 x 1.5	6g	18.994 18.986	18.344 18.329	18.854 18.862	18.554 18.569	19.968 19.965	19.732 19.735	6H	20.000 20.015	19.026 19.034	19.516 19.501	19.216 19.208	18.376 18.379	18.676 18.673						
M20 x 1	6g	19.324 19.316	18.891 18.878	19.206 19.214	19.006 19.019	19.974 19.971	19.794 19.797	6H	20.000 20.013	19.350 19.358	19.710 19.697	19.510 19.502	18.917 18.920	19.153 19.150						
M22 x 2.5	6g	20.334 20.326	19.251 19.236	20.164 20.172	19.664 19.679	21.958 21.955	21.623 21.626	6H	22.000 22.015	20.376 20.384	21.100 21.085	20.600 20.592	19.294 19.297	19.744 19.741						
M22 x 1.5	6g	20.994 20.986	20.344 20.329	20.854 20.862	20.554 20.569	21.968 21.965	21.732 21.735	6H	22.000 22.015	21.026 21.034	21.516 21.501	21.216 21.208	20.376 20.379	20.676 20.673						
M24 x 3	6g	22.003 21.993	20.704 20.686	21.803 21.813	21.203 21.221	23.952 23.949	23.577 23.580	6H	24.000 24.018	22.051 22.061	22.916 22.898	22.316 22.306	20.752 20.755	21.252 21.249						

TABLE XIII.B.5 Gages for M Thread Series, Limits of Sizes (cont'd)

BASIC THREAD DESIGNATION	Gages for External Threads										Gages for Internal Threads																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																									
	TOL CLASS	X Thread Ring Gages					Z Plain Ring Gages for Major Diameter					TOL CLASS	X Thread Plug Gages					Z Plain Plug Gages for Minor Diameter																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
		GO		NOT-GO			GO		NOT-GO				GO		NOT-GO			GO		NOT-GO																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																
		Pitch Dia	Minor Dia	Major Dia	Pitch Dia	Minor Dia	Pitch Dia	Minor Dia	Major Dia	Pitch Dia	Minor Dia		Pitch Dia	Minor Dia	Major Dia	Pitch Dia	Minor Dia	Pitch Dia	Minor Dia	Major Dia	Pitch Dia	Minor Dia																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																														
		Max Min	Max Min	Max Min	Max Min	Max Min	Max Min	Max Min	Max Min	Max Min	Max Min		Max Min	Max Min	Max Min	Max Min	Max Min	Max Min	Max Min	Max Min	Max Min	Max Min																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																														
2	3	4	5	6	7	8	9	10	11	12	13	14	15	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	

TABLE XXII.B.5 Gages for M Thread Series, Limits of Sizes (cont'd)

BASIC THREAD DESIGNATION	Gages for External Threads										Gages for Internal Threads									
	X Thread Ring Gages										X Thread Plug Gages									
	GO					NOT-GO					GO					NOT-GO				
	Pitch Dia Max Min	Minor Dia Max Min	Pitch Dia Max Min	Minor Dia Max Min	Pitch Dia Max Min	Minor Dia Max Min	Pitch Dia Max Min	Minor Dia Max Min	Pitch Dia Max Min	Minor Dia Max Min	Major Dia Max Min	Pitch Dia Max Min	Major Dia Max Min	Pitch Dia Max Min	Major Dia Max Min	Pitch Dia Max Min	Major Dia Max Min	Pitch Dia Max Min	Major Dia Max Min	Pitch Dia Max Min
TOL CLASS	2	3	4	5	6	7	8	9	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H
M48 x 5	44.681 44.668	42.516 42.496	44.431 44.444	46.483 46.493	46.083 46.098	47.929 47.925	47.399 47.403	48.000 48.020	44.752 44.765	46.087 46.067	46.087 46.067	46.087 46.067	46.087 46.067	46.087 46.067	46.087 46.067	46.087 46.067	46.087 46.067	46.087 46.067	46.087 46.067	46.087 46.067
M48 x 2	46.663 46.653	45.797 45.782	46.663 46.653	46.483 46.493	46.083 46.098	47.962 47.958	47.882 47.886	48.000 48.015	46.701 46.711	47.337 47.322	47.337 47.322	47.337 47.322	47.337 47.322	47.337 47.322	47.337 47.322	47.337 47.322	47.337 47.322	47.337 47.322	47.337 47.322	47.337 47.322
M50 x 1.5	48.994 48.984	48.344 48.329	48.994 48.984	48.834 48.844	48.534 48.549	49.968 49.964	49.732 49.736	50.000 50.015	49.026 49.036	49.538 49.523	49.538 49.523	49.538 49.523	49.538 49.523	49.538 49.523	49.538 49.523	49.538 49.523	49.538 49.523	49.538 49.523	49.538 49.523	49.538 49.523
M55 x 1.5	53.994 53.984	53.344 53.329	53.994 53.984	53.834 53.844	53.534 53.549	54.968 54.964	54.732 54.736	55.000 55.015	54.026 54.036	54.538 54.523	54.538 54.523	54.538 54.523	54.538 54.523	54.538 54.523	54.538 54.523	54.538 54.523	54.538 54.523	54.538 54.523	54.538 54.523	54.538 54.523
M56 x 5.5	52.353 52.340	49.970 49.950	52.353 52.340	52.088 52.101	50.988 51.008	55.925 55.921	55.365 55.369	56.000 56.020	52.428 52.441	53.883 53.863	53.883 53.863	53.883 53.863	53.883 53.863	53.883 53.863	53.883 53.863	53.883 53.863	53.883 53.863	53.883 53.863	53.883 53.863	53.883 53.863
M56 x 2	54.663 54.653	53.797 53.782	54.663 54.653	54.483 54.493	54.083 54.098	55.952 55.958	55.682 55.686	56.000 56.015	54.701 54.711	55.337 55.322	55.337 55.322	55.337 55.322	55.337 55.322	55.337 55.322	55.337 55.322	55.337 55.322	55.337 55.322	55.337 55.322	55.337 55.322	55.337 55.322
M60 x 1.5	58.994 58.984	58.344 58.329	58.994 58.984	58.834 58.844	58.534 58.549	59.968 59.964	59.732 59.736	60.000 60.015	59.026 59.036	59.538 59.523	59.538 59.523	59.538 59.523	59.538 59.523	59.538 59.523	59.538 59.523	59.538 59.523	59.538 59.523	59.538 59.523	59.538 59.523	59.538 59.523
M64 x 6	60.023 60.010	57.425 57.402	60.023 60.010	59.743 59.756	58.543 58.566	63.920 63.916	63.320 63.324	64.000 64.023	60.103 60.116	61.678 61.655	61.678 61.655	61.678 61.655	61.678 61.655	61.678 61.655	61.678 61.655	61.678 61.655	61.678 61.655	61.678 61.655	61.678 61.655	61.678 61.655
M64 x 2	62.663 62.653	61.797 61.782	62.663 62.653	62.483 62.493	62.083 62.098	63.962 63.958	63.682 63.686	64.000 64.015	62.701 62.711	63.337 63.322	63.337 63.322	63.337 63.322	63.337 63.322	63.337 63.322	63.337 63.322	63.337 63.322	63.337 63.322	63.337 63.322	63.337 63.322	63.337 63.322
M65 x 1.5	63.994 63.984	63.344 63.329	63.994 63.984	63.834 63.844	63.534 63.549	64.968 64.963	64.732 64.737	65.000 65.015	64.026 64.036	64.538 64.523	64.538 64.523	64.538 64.523	64.538 64.523	64.538 64.523	64.538 64.523	64.538 64.523	64.538 64.523	64.538 64.523	64.538 64.523	64.538 64.523
M70 x 1.5	68.994 68.984	68.344 68.329	68.994 68.984	68.834 68.844	68.534 68.549	69.968 69.963	69.732 69.737	70.000 70.015	69.026 69.036	69.538 69.523	69.538 69.523	69.538 69.523	69.538 69.523	69.538 69.523	69.538 69.523	69.538 69.523	69.538 69.523	69.538 69.523	69.538 69.523	69.538 69.523
M72 x 6	68.023 68.010	65.425 65.402	68.023 68.010	67.743 67.756	66.543 66.566	71.920 71.915	71.320 71.325	72.000 72.023	68.103 68.116	69.678 69.655	69.678 69.655	69.678 69.655	69.678 69.655	69.678 69.655	69.678 69.655	69.678 69.655	69.678 69.655	69.678 69.655	69.678 69.655	69.678 69.655
M72 x 2	70.663 70.653	69.797 69.782	70.663 70.653	70.483 70.493	70.083 70.098	71.962 71.957	71.682 71.687	72.000 72.015	70.701 70.711	71.337 71.322	71.337 71.322	71.337 71.322	71.337 71.322	71.337 71.322	71.337 71.322	71.337 71.322	71.337 71.322	71.337 71.322	71.337 71.322	71.337 71.322
M75 x 1.5	73.994 73.984	73.344 73.329	73.994 73.984	73.834 73.844	73.534 73.549	74.968 74.963	74.732 74.737	75.000 75.015	74.026 74.036	74.538 74.523	74.538 74.523	74.538 74.523	74.538 74.523	74.538 74.523	74.538 74.523	74.538 74.523	74.538 74.523	74.538 74.523	74.538 74.523	74.538 74.523
M80 x 6	76.023 76.010	73.425 73.402	76.023 76.010	75.743 75.756	74.543 74.566	79.920 79.915	79.320 79.325	80.000 80.023	76.103 76.116	77.678 77.655	77.678 77.655	77.678 77.655	77.678 77.655	77.678 77.655	77.678 77.655	77.678 77.655	77.678 77.655	77.678 77.655	77.678 77.655	77.678 77.655

TABLE XXII.B.5 Gages for M Thread Series, Limits of Sizes (Cont'd)

BASIC THREAD DESIGNATION	Gages for External Threads										Gages for Internal Threads									
	X Thread Ring Gages										I Thread Plug Gages									
	GO					NOT-GO					GO					NOT-GO				
	Pitch Dia		Minor Dia		Pitch Dia	Minor Dia		Pitch Dia		Pitch Dia	Major Dia		Pitch Dia		Pitch Dia	Major Dia		Pitch Dia		Pitch Dia
	Max Min	Max Min	Max Min	Max Min	Max Min	Max Min	Max Min	Max Min	Max Min	Max Min	Max Min	Max Min	Max Min	Max Min	Max Min	Max Min	Max Min	Max Min	Max Min	Max Min
TOL CLASS																				
	2	3	4	5	6	7	8				9	10	11	12	13	14	15			
M80 x 2	69	78.663 78.653	77.797 77.782	78.483 78.493	78.083 78.098	79.362 79.357	79.682 79.687				6H	80.000 80.015	78.701 78.711	79.337 79.322	78.937 78.927	77.835 77.840	78.210 78.205			
M80 x 1.5	69	78.994 78.984	78.344 78.329	78.034 78.044	70.534 70.549	79.368 79.363	79.732 79.737				6H	80.000 80.015	79.026 79.036	79.538 79.523	79.238 79.228	78.376 78.381	78.676 78.671			
M85 x 2	69	83.663 83.653	82.797 82.782	83.483 83.493	83.083 83.098	84.962 84.957	84.682 84.687				6H	85.000 85.015	83.701 83.711	84.337 84.322	83.937 83.927	82.835 82.840	83.210 83.205			
M90 x 6	69	86.023 86.010	83.425 83.402	85.743 85.756	84.543 84.566	89.920 89.915	89.320 89.325				6H	90.000 90.023	86.103 86.116	87.678 87.655	86.478 86.465	83.505 83.510	84.300 84.300			
M90 x 2	69	88.663 88.653	87.797 87.782	88.483 88.493	88.083 88.098	89.962 89.957	89.682 89.687				6H	90.000 90.015	88.701 88.711	89.337 89.322	88.937 88.927	87.835 87.840	88.210 88.205			
M95 x 2	69	93.663 93.653	92.797 92.782	93.473 93.483	93.073 93.088	94.962 94.957	94.682 94.687				6H	95.000 95.015	93.701 93.711	93.351 93.336	93.951 93.941	92.835 92.840	93.210 93.205			
M100 x 6	69	96.023 96.010	93.425 93.402	95.723 95.736	94.523 94.546	99.920 99.915	99.320 99.325				6H	100.000 100.023	96.103 96.116	97.703 97.680	96.503 96.490	93.505 93.510	94.300 94.300			
M100 x 2	69	98.663 98.653	97.797 97.782	98.473 98.483	98.073 98.088	99.962 99.957	99.682 99.687				6H	100.000 100.015	98.701 98.711	99.351 99.336	98.951 98.941	97.835 97.840	98.210 98.205			
M105 x 2	69	103.663 103.648	102.797 102.774	103.473 103.488	103.073 103.096	104.962 104.957	104.682 104.687				6H	105.000 105.023	103.701 103.716	104.351 104.328	103.951 103.936	102.835 102.840	103.210 103.205			
M110 x 2	69	108.663 108.648	107.797 107.774	108.473 108.488	108.073 108.096	109.962 109.957	109.682 109.687				6H	110.000 110.023	108.701 108.716	109.351 109.328	108.951 108.936	107.835 107.840	108.210 108.205			
M120 x 2	69	118.663 118.648	117.797 117.774	118.473 118.488	118.073 118.096	119.962 119.956	119.682 119.688				6H	120.000 120.023	118.701 118.716	119.351 119.328	118.951 118.936	117.835 117.841	118.210 118.204			
M130 x 2	69	128.663 128.648	127.797 127.774	128.473 128.488	128.073 128.096	129.962 129.956	129.682 129.688				6H	130.000 130.023	128.701 128.716	129.351 129.328	128.951 128.936	127.835 127.841	128.210 128.204			
M140 x 2	69	138.663 138.648	137.797 137.774	138.473 138.488	138.073 138.096	139.962 139.956	139.682 139.688				6H	140.000 140.023	138.701 138.716	139.351 139.328	138.951 138.936	137.835 137.841	138.210 138.204			
M150 x 2	69	148.663 148.648	147.797 147.774	148.473 148.488	148.073 148.096	149.962 149.956	149.682 149.688				6H	150.000 150.023	148.701 148.716	149.351 149.328	148.951 148.936	147.835 147.841	148.210 148.204			
M160 x 3	69	158.003 157.988	156.704 156.676	157.719 157.794	157.119 157.207	159.952 159.946	159.577 159.583				6H	160.000 160.028	158.051 158.066	158.951 158.973	158.351 158.336	156.752 156.758	157.252 157.246			

TABLE XXII.B.5 Gages for M Thread Series, Limits of Sizes (Cont'd)

BASIC THREAD DESIGNATION	Gages for External Threads										Gages for Internal Threads									
	X Thread Ring Gages										X Thread Plug Gages									
	GO					NOT-GO					GO					NOT-GO				
	Pitch Dia	Max Min	Minor Dia	Max Min	Pitch Dia	Min Max	Minor Dia	Min Max	Pitch Dia	Minor Dia	Major Dia	Min Max	Major Dia	Min Max	Pitch Dia	Major Dia	Min Max	Pitch Dia	Major Dia	Min Max
TOL CLASS	2	3	4	5	6	7	8	9	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H
1																				
M170 x 3	168.003 167.988	166.704 166.676	167.779 167.794	167.179 167.207	169.952 169.944	169.577 169.585														
M180 x 3	178.003 177.988	176.704 176.676	177.779 177.794	177.179 177.207	179.952 179.944	179.577 179.585														
M190 x 3	188.003 187.988	186.704 186.676	187.753 187.768	187.153 187.181	189.952 189.944	189.577 189.585														
M200 x 3	198.003 197.988	196.704 196.676	197.753 197.768	197.153 197.181	199.952 199.944	199.577 199.585														

TABLE XXII.B.6 Setting Gages for M Thread Series, Limits of Size

Basic Thread Designation	External thread						Internal thread					
	W Thread setting plugs for indicating, GO snap and GO ring gages						W Thread setting plugs for NDT-GO snap and NDT-GO ring gages					
	Major Dia.			Pitch Diameter			Major Dia.			Pitch Diameter		
	Tol Class	Truncated Max Min	Full Form Min Max	Truncated Max Min	Full Form Min Max	Pitch Diameter Max Min	Tol Class	Truncated Max Min	Full Form Min Max	Pitch Diameter Max Min	Tol Class	Pitch Diameter Max Min
1	2	3	4	5	6	7	8	9	10	11	12	13
M1.6 x 0.35	6g	1.424 1.416	1.581 1.589	1.354 1.351	1.361 1.353	1.542 1.550	1.291 1.294	6H	---	---	---	---
M2 x 0.4	6g	1.801 1.793	1.981 1.989	1.721 1.718	1.734 1.726	1.949 1.957	1.654 1.657	6H	---	---	---	---
M2.5 x 0.45	6g	2.278 2.270	2.480 2.488	2.188 2.185	2.207 2.199	2.454 2.462	2.117 2.120	6H	---	---	---	---
M3 x 0.5	6g	2.755 2.747	2.980 2.988	2.655 2.652	2.680 2.672	2.961 2.969	2.580 2.583	6H	---	---	---	---
M3.5 x 0.6	6g	3.209 3.201	3.479 3.487	3.089 3.086	3.124 3.116	3.472 3.480	3.004 3.007	6H	---	---	---	---
M4 x 0.7	6g	3.663 3.655	3.978 3.986	3.523 3.520	3.573 3.565	3.978 3.986	3.433 3.436	6H	---	---	---	---
M5 x 0.8	6g	4.616 4.608	4.976 4.984	4.456 4.453	4.521 4.513	4.976 4.984	4.361 4.364	6H	4.480 4.483	4.134 4.126	4.605 4.602	4.334 4.326
M6 x 1	6g	5.524 5.511	5.974 5.987	5.324 5.321	5.412 5.399	5.974 5.987	5.212 5.215	6H	5.350 5.353	4.917 4.904	5.500 5.497	5.153 5.140
M8 x 1.25	6g	7.410 7.397	7.972 7.985	7.160 7.157	7.292 7.279	7.972 7.985	7.042 7.045	6H	7.188 7.191	6.647 6.634	7.348 7.345	6.912 6.899
M8 x 1	6g	7.524 7.511	7.974 7.987	7.324 7.321	7.412 7.399	7.974 7.987	7.212 7.215	6H	7.350 7.353	6.917 6.904	7.500 7.497	7.153 7.140
M10 x 1.5	6g	9.294 9.281	9.968 9.981	8.994 8.991	9.162 9.149	9.968 9.981	8.862 8.865	6H	9.026 9.029	8.376 8.363	9.206 9.203	8.676 8.663
M10 x 1.25	6g	9.410 9.397	9.972 9.985	9.160 9.157	9.292 9.279	9.972 9.985	9.042 9.045	6H	9.188 9.191	8.647 8.634	9.348 9.345	8.912 8.899
M10 x 0.75	6g	9.641 9.633	9.978 9.986	9.491 9.488	9.541 9.533	9.978 9.986	9.391 9.394	6H	9.513 9.516	9.188 9.180	9.645 9.642	9.378 9.370
M12 x 1.75	6g	11.179 11.164	11.966 11.981	10.829 10.826	11.029 11.014	11.966 11.981	10.679 10.682	6H	10.863 10.866	10.106 10.091	11.063 11.060	10.441 10.426

TABLE xxi: 8.6 Setting Gages for M Thread Series, Limits of Size (cont'd)

Basic Thread Designation	External thread						Internal thread					
	W Thread setting plugs for indicating, GO snap and GO ring gages						W Solid GO thread setting ring for indicating and snap gages					
	Major Dia.			Pitch Diameter			Major Dia.			Pitch Diameter		
	Tol Class	Truncated Max Min	Full Form Min Max	Truncated Max Min	Full Form Min Max	Pitch Diameter Max Min	Tol Class	Truncated Max Min	Full Form Min Max	Pitch Diameter Max Min	Tol Class	Pitch Diameter Max Min
1	2	3	4	5	6	7	8	9	10	11	12	13
M12 x 1.25	6g	11.410 11.397	11.972 11.985	11.160 11.157	11.278 11.265	11.972 11.985	11.028 11.031	6H	11.188 11.191	10.647 10.634	11.368 11.365	10.912 10.899
M12 x 1	6g	11.524 11.511	11.974 11.987	11.324 11.321	11.406 11.393	11.974 11.987	11.206 11.209	6H	11.350 11.353	10.917 10.904	11.510 11.507	11.153 11.140
M14 x 2	6g	13.063 13.048	13.962 13.977	12.663 12.658	12.903 12.888	13.962 13.977	12.503 12.508	6H	12.701 12.706	11.835 11.820	12.913 12.908	12.210 12.195
M14 x 1.5	6g	13.294 13.281	13.968 13.981	12.994 12.990	13.154 13.141	13.968 13.981	12.854 12.858	6H	13.026 13.030	12.376 12.363	13.216 13.212	12.676 12.663
M15 x 1	6g	14.524 14.511	14.974 14.987	14.324 14.320	14.406 14.393	14.974 14.987	14.206 14.210	6H	14.350 14.354	13.917 13.904	14.510 14.506	14.153 14.140
M16 x 2	6g	15.063 15.048	15.962 15.977	14.663 14.658	14.903 14.888	15.962 15.977	14.503 14.508	6H	14.701 14.706	13.835 13.820	14.913 14.908	14.210 14.195
M16 x 1.5	6g	15.294 15.281	15.968 15.981	14.994 14.990	15.154 15.141	15.968 15.981	14.854 14.858	6H	15.026 15.030	14.376 14.363	15.216 15.212	14.676 14.663
M17 x 1	6g	16.524 16.511	16.974 16.987	16.324 16.320	16.406 16.393	16.974 16.987	16.206 16.210	6H	16.350 16.354	15.917 15.904	16.510 16.506	16.153 16.140
M18 x 1.5	6g	17.294 17.281	17.968 17.981	16.994 16.990	17.154 17.141	17.968 17.981	16.854 16.858	6H	17.026 17.030	16.376 16.363	17.216 17.212	16.676 16.663
M20 x 2.5	6g	18.834 18.819	18.958 18.973	18.334 18.329	18.664 18.649	18.958 18.973	18.164 18.169	6H	18.376 18.381	17.294 17.279	18.600 18.595	17.744 17.729
M20 x 1.5	6g	19.294 19.281	19.968 19.981	18.994 18.990	19.154 19.141	19.968 19.981	18.854 18.858	6H	19.026 19.030	18.376 18.363	19.216 19.212	18.676 18.663
M20 x 1	6g	19.524 19.511	19.974 19.987	19.324 19.320	19.406 19.393	19.974 19.987	19.206 19.210	6H	19.350 19.354	18.917 18.904	19.510 19.506	19.153 19.140
M22 x 2.5	6g	20.834 20.819	21.958 21.973	20.334 20.329	20.664 20.649	21.958 21.973	20.164 20.169	6H	20.376 20.381	19.294 19.279	20.600 20.595	19.744 19.729
M22 x 1.5	6g	21.294 21.281	21.968 21.981	20.994 20.990	21.154 21.141	21.968 21.981	20.854 20.858	6H	21.026 21.030	20.376 20.363	21.216 21.212	20.676 20.663
M24 x 3	6g	22.603 22.588	23.952 23.967	22.003 22.008	22.403 22.388	23.952 23.967	21.803 21.808	6H	22.051 22.056	20.752 20.737	22.316 22.311	21.252 21.237
M24 x 2	6g	23.063 23.048	23.962 23.977	22.663 22.658	22.893 22.878	23.962 23.977	22.493 22.498	6H	22.701 22.706	21.835 21.820	22.925 22.920	22.210 22.195
M25 x 1.5	6g	24.294 24.281	24.968 24.981	23.994 23.990	24.144 24.131	24.968 24.981	23.844 23.848	6H	24.026 24.030	23.376 23.363	24.226 24.222	23.676 23.663

TABLE X11.8.6 Setting Gages for M Thread Series, Limits of Size (cont'd)

Basic Thread Designation	External thread										Internal thread				
	W Thread setting plugs for indicating, GO snap and GO ring gages										W Solid GO thread setting ring for indicating and snap gages				
	Major Dia.										Pitch Diameter				
	Tol Class	Truncated Max Min	Full Form Min Max	Pitch Diameter Max Min	Truncated Max Min	Full Form Min Max	Pitch Diameter Max Min	Major Dia. Max Min	Pitch Diameter Max Min	Major Dia. Max Min	Tol Class	Pitch Diameter Max Min	Minor Diameter Max Min	Pitch Diameter Max Min	Minor Diameter Max Min
M27 x 3	2	25.603 25.588	26.952 26.967	25.003 24.998	25.403 25.388	26.952 26.967	24.803 24.808	6	7	8	9	10	11	12	13
M27 x 2	6g	26.063 25.893	26.962 26.977	25.663 25.658	25.893 25.878	26.962 26.977	25.493 25.498	28.162 28.144	29.947 29.965	27.462 27.467	6H	25.051 25.056	23.752 23.737	25.316 25.311	24.252 24.237
M30 x 3.5	6g	28.374 28.356	29.947 29.965	27.674 27.669	28.162 28.144	29.947 29.965	27.462 27.467	29.947 29.965	29.947 29.965	27.462 27.467	6H	25.701 25.706	24.835 24.820	25.925 25.920	25.210 25.195
M30 x 2	6g	29.063 29.048	29.962 29.977	28.663 28.658	28.893 28.878	29.962 29.977	28.493 28.498	29.962 29.977	29.962 29.977	28.493 28.498	6H	28.701 28.706	27.835 27.820	28.925 28.920	28.210 28.195
M30 x 1.5	6g	29.294 29.281	29.968 29.981	28.994 28.990	29.144 29.131	29.968 29.981	28.844 28.848	29.144 29.131	29.968 29.981	28.844 28.848	6H	29.026 29.030	28.376 28.363	29.226 29.222	28.676 28.663
M33 x 2	6g	32.063 32.049	32.962 32.977	31.663 31.658	31.893 31.878	32.962 32.977	31.493 31.498	31.893 31.878	32.962 32.977	31.493 31.498	6H	31.701 31.706	30.835 30.820	31.925 31.920	31.210 31.195
M35 x 1.5	6g	34.294 34.281	34.968 34.981	33.994 33.990	34.144 34.131	34.968 34.981	33.844 33.848	34.144 34.131	34.968 34.981	33.844 33.848	6H	34.026 34.030	33.376 33.363	34.226 34.222	33.676 33.663
M36 x 4	6g	34.142 34.124	35.940 35.958	33.342 33.337	33.918 33.900	35.940 35.958	33.118 33.123	33.918 33.900	35.940 35.958	33.118 33.123	6H	33.402 33.407	31.670 31.652	33.702 33.697	32.270 32.252
M36 x 2	6g	35.063 35.048	35.962 35.977	34.663 34.658	34.893 34.878	35.962 35.977	34.493 34.498	34.893 34.878	35.962 35.977	34.493 34.498	6H	34.701 34.706	33.835 33.820	34.925 34.920	34.210 34.195
M39 x 2	6g	38.063 38.048	38.962 38.977	37.663 37.658	37.393 37.378	38.962 38.977	37.493 37.498	37.393 37.378	38.962 38.977	37.493 37.498	6H	37.701 37.706	36.835 36.820	37.925 37.920	37.210 37.195
M40 x 1.5	6g	39.294 39.281	39.968 39.981	38.994 38.989	39.144 39.131	39.968 39.981	38.844 38.849	39.144 39.131	39.968 39.981	38.844 38.849	6H	39.026 39.031	38.376 38.363	39.226 39.221	38.676 38.663
M42 x 4.5	6g	39.914 39.894	41.937 41.957	39.014 39.008	39.678 39.658	41.937 41.957	38.778 38.784	39.678 39.658	41.937 41.957	38.778 38.784	6H	39.077 39.083	37.129 37.109	39.392 39.386	37.799 37.779
M42 x 2	6g	41.063 41.048	41.962 41.977	40.663 40.657	40.893 40.878	41.962 41.977	40.493 40.499	40.893 40.878	41.962 41.977	40.493 40.499	6H	40.701 40.707	39.835 39.820	40.925 40.919	40.210 40.195
M45 x 1.5	6g	44.294 44.281	44.968 44.981	43.994 43.989	44.144 44.131	44.968 44.981	43.844 43.849	44.144 44.131	44.968 44.981	43.844 43.849	6H	44.026 44.031	43.376 43.363	44.226 44.221	43.676 43.663
M48 x 5	6g	45.681 45.661	47.929 47.949	44.681 44.675	45.431 45.413	47.929 47.949	44.431 44.437	45.431 45.413	47.929 47.949	44.431 44.437	6H	44.752 44.758	42.587 42.567	45.087 45.081	43.297 43.277
M48 x 2	6g	47.063 47.048	47.962 47.977	46.663 46.657	46.883 46.868	47.962 47.977	46.483 46.489	46.883 46.868	47.962 47.977	46.483 46.489	6H	46.701 46.707	45.835 45.820	46.937 46.931	46.210 46.195

TABLE XXII.B.6 Setting Gages for H Thread Series, Limits of Size (cont'd)

Basic Thread Designation	External thread										Internal thread			
	W Thread setting plugs for indicating, GO snap and GO ring gages					W Thread setting plugs for NOT-GO snap and NOT-GO ring gages					W Solid GO thread setting ring for indicating and snap gages		W Solid NOT-GO thread setting ring for snap gages	
	Tol Class	Major Dia.		Pitch Diameter Max Min	6	7		Pitch Diameter Max Min	Tol Class	Pitch Diameter Max Min	Minor Diameter Max Min	Pitch Diameter Max Min	Minor Diameter Max Min	
		Truncated Max Min	Full Form Min Max			Truncated Max Min	Full Form Min Max							
1	2	3	4	5	6	7	8	9	10	11	12	13		
M50 x 1.5	6g	49.294 49.281	49.968 49.981	48.994 48.989	49.134 49.121	49.959 49.972	48.834 48.839	6H	49.026 49.031	48.376 48.363	49.238 49.233	48.676 48.663		
M55 x 1.5	6g	54.294 54.281	54.968 54.981	53.994 53.989	54.134 54.121	54.959 54.972	53.834 53.839	6H	54.026 54.031	53.376 53.363	54.238 54.233	53.676 53.663		
M56 x 5.5	6g	53.452 53.432	55.925 55.945	52.353 52.347	53.188 53.168	55.925 55.945	52.088 52.094	6H	52.428 52.434	50.046 50.026	52.783 52.777	50.796 50.776		
M56 x 2	6g	55.063 55.048	55.962 55.977	54.663 54.657	54.883 54.868	55.962 55.977	54.483 54.489	6H	54.701 54.707	53.835 53.820	54.937 54.931	54.210 54.195		
M60 x 1.5	6g	59.294 59.281	59.968 59.981	58.994 58.989	59.134 59.121	59.959 59.972	58.834 58.839	6H	59.026 59.031	58.376 58.363	59.238 59.233	58.676 58.663		
M64 x 6	6g	61.223 61.200	63.920 63.943	60.023 60.017	60.943 60.920	63.920 63.943	59.743 59.749	6H	60.103 60.109	57.505 57.482	60.478 60.472	58.305 58.282		
M64 x 2	6g	63.063 63.048	63.962 63.977	62.663 62.657	62.883 62.868	63.962 63.977	62.483 62.489	6H	62.701 62.707	61.835 61.820	62.937 62.931	62.210 62.195		
M65 x 1.5	6g	64.294 64.281	64.968 64.981	63.994 63.989	64.134 64.121	64.959 64.972	63.834 63.839	6H	64.026 64.031	63.376 63.363	64.238 64.233	63.676 63.663		
M70 x 1.5	6g	69.294 69.281	69.968 69.981	68.994 68.989	69.134 69.121	69.959 69.972	68.834 68.839	6H	69.026 69.031	68.376 68.363	69.238 69.233	68.676 68.663		
M72 x 6	6g	69.223 69.200	71.920 71.943	68.023 68.017	68.943 68.920	71.920 71.943	67.743 67.749	6H	68.103 68.109	65.505 65.482	68.478 68.472	66.305 66.282		
M72 x 2	6g	71.063 71.048	71.962 71.977	70.663 70.657	70.883 70.868	71.962 71.977	70.483 70.489	6H	70.701 70.707	69.835 69.820	70.937 70.931	70.210 70.195		
M75 x 1.5	6g	74.294 74.281	74.968 74.981	73.994 73.989	74.134 74.121	74.959 74.972	73.834 73.839	6H	74.026 74.031	73.376 73.363	74.238 74.233	73.676 73.663		
M80 x 6	6g	77.223 77.200	79.920 79.943	76.023 76.017	76.943 76.920	79.920 79.943	75.743 75.749	6H	76.103 76.109	73.505 73.482	76.478 76.472	74.305 74.282		
M80 x 2	6g	79.063 79.048	79.962 79.977	78.663 78.657	78.883 78.868	79.962 79.977	78.483 78.489	6H	78.701 78.707	77.835 77.820	78.937 78.931	78.210 78.195		
M80 x 1.5	6g	79.294 79.281	79.968 79.981	78.994 78.989	79.134 79.121	79.959 79.972	78.834 78.839	6H	79.026 79.031	78.376 78.363	79.238 79.233	78.676 78.663		

TABLE XXII.8.6 Setting Gages for H Thread Series, Limits of Size (cont'd)

Basic Thread Designation	External thread										Internal thread					
	W Thread setting plugs for indicating, GO snap and GO ring gages										W Solid GO thread setting ring for indicating and snap gages					
	Major Dia.					Pitch Diameter					Pitch Diameter					Minor Diameter
	Tol Class	Truncated Max Min	Full Form Min Max	Pitch Diameter Max Min	Major Dia. Truncated Max Min	Full Form Min Max	Pitch Diameter Max Min	Major Dia. Truncated Max Min	Full Form Min Max	Pitch Diameter Max Min	Tol Class	Max Min	Max Min	Max Min	Max Min	
1	2	3	4	5	6	7	8				9	10	11	12	13	
M35 x 2	6g	84.063 84.048	84.962 84.977	83.663 83.657	83.883 83.868	84.962 84.977	83.483 83.489				6H	83.701 83.707	82.835 82.820	83.937 83.931	83.210 83.195	
M50 x 6	6g	37.223 37.200	89.920 89.943	86.023 86.017	86.943 86.920	89.920 89.943	85.743 85.749				6H	86.103 86.109	83.505 83.482	86.478 86.472	84.305 84.282	
M50 x 2	6g	89.063 89.048	89.962 89.977	88.663 88.657	88.883 88.868	89.962 89.977	88.483 88.489				6H	88.701 88.707	87.835 87.820	88.937 88.931	88.210 88.195	
M95 x 2	6g	94.063 94.048	94.962 94.977	93.663 93.657	93.873 93.858	94.962 94.977	93.473 93.479				6H	93.701 93.707	92.835 92.820	93.951 93.945	93.210 93.195	
M100 x 6	6g	97.223 97.200	99.920 99.943	96.023 96.017	96.923 96.900	99.920 99.943	95.723 95.729				6H	96.703 96.709	93.505 93.482	96.503 96.497	94.305 94.282	
M100 x 2	6g	99.063 99.048	99.962 99.977	98.663 98.657	98.873 98.858	99.962 99.977	98.473 98.479				6H	98.701 98.707	97.835 97.820	98.951 98.945	98.210 98.195	
M105 x 2	6g	104.063 104.040	104.962 104.985	103.663 103.655	103.873 103.850	104.962 104.985	103.473 103.481				6H	103.701 103.709	102.835 102.812	103.951 103.943	103.210 103.187	
M110 x 2	6g	109.063 109.040	109.962 109.985	108.663 108.655	108.873 108.850	109.962 109.985	108.473 108.481				6H	108.701 108.709	107.835 107.812	108.951 108.943	108.210 108.187	
M120 x 2	6g	119.063 119.040	119.962 119.985	118.663 118.655	118.873 118.850	119.962 119.985	118.473 118.481				6H	118.701 118.709	117.835 117.812	118.951 118.943	118.210 118.187	
M130 x 2	6g	129.063 129.040	129.962 129.985	128.663 128.655	128.873 128.850	129.962 129.985	128.473 128.481				6H	128.701 128.709	127.835 127.812	128.951 128.943	128.210 128.187	
M140 x 2	6g	139.063 139.040	139.962 139.985	138.663 138.655	138.873 138.850	139.962 139.985	138.473 138.481				6H	138.701 138.709	137.835 137.812	138.951 138.943	138.210 138.187	
M150 x 2	6g	149.063 149.040	149.962 149.985	148.663 148.655	148.873 148.850	149.962 149.985	148.473 148.481				6H	148.701 148.709	147.835 147.812	148.951 148.943	148.210 148.187	
M160 x 3	6g	158.603 158.580	159.952 159.975	158.003 157.995	158.179 158.156	159.952 159.975	157.779 157.787				6H	158.051 158.059	156.752 156.729	158.351 158.343	157.252 157.229	
M170 x 3	6g	168.603 168.580	169.952 169.975	168.003 167.995	168.179 168.156	169.952 169.975	167.779 167.787				6H	168.051 168.059	166.752 166.729	168.351 168.343	167.252 167.229	

TABLE XXII.B.6 Setting Gages for M Thread Series, Limits of Size (cont'd)

Basic Thread Designation	External thread							Internal thread				
	W Thread setting plugs for indicating, GO snap and GO ring gages				W Thread setting plugs for NOT-GO snap and NOT-GO ring gages			W Solid GO thread setting ring for indicating and snap gages		W Solid NOT-GO thread setting ring for snap gages		
	Major Dia.				Major Dia.			Tol Class	Pitch Diameter Min Max	Minor Diameter Max Min	Pitch Diameter Min Max	Minor Diameter Max Min
	Truncated Max Min	Full Form Min Max	Pitch Diameter Max Min		Truncated Max Min	Full Form Min Max	Pitch Diameter Min Max					
1	2	3	4	5	6	7	8	9	10	11	12	13
M180 x 3	6g 178.603 178.580	179.952 179.975	179.952 179.975	178.003 177.995	178.379 178.356	179.952 179.975	177.779 177.787	6H 178.051 178.059	178.051 178.059	176.752 176.729	178.351 178.343	177.252 177.229
M190 x 3	6g 188.603 188.580	189.952 189.975	189.952 189.975	188.003 187.995	188.353 188.330	189.952 189.975	187.753 187.761	6H 188.051 188.059	188.051 188.059	186.752 186.729	188.386 188.378	187.252 187.229
M200 x 3	6g 198.603 198.580	199.952 199.975	199.952 199.975	198.003 197.995	198.353 198.330	199.952 199.975	197.753 197.761	6H 198.051 198.059	198.051 198.059	196.752 196.729	198.386 198.378	197.252 197.229

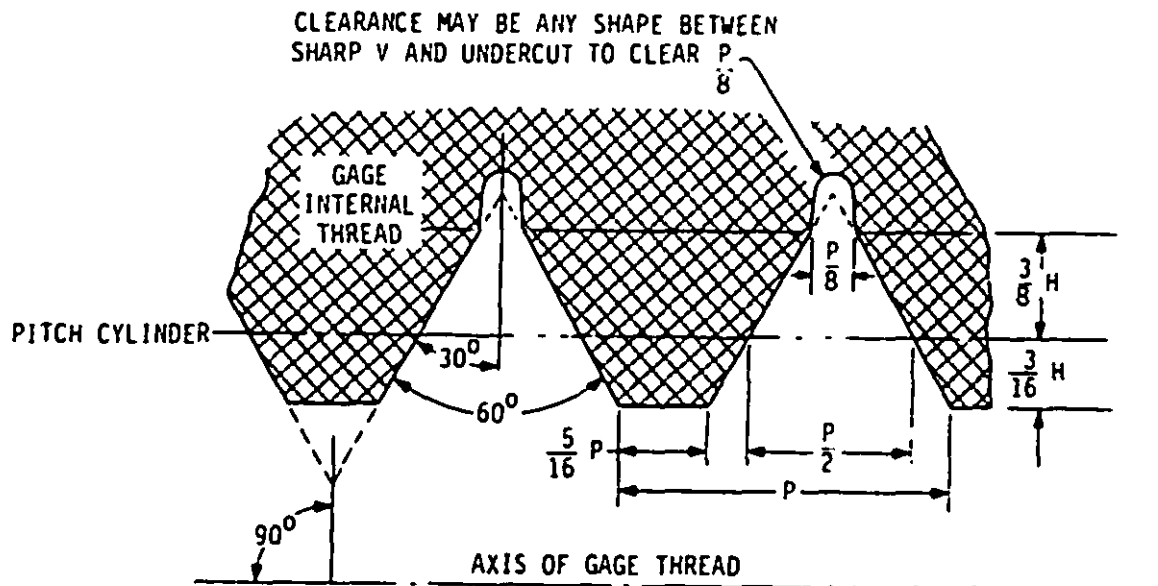
PART C MJ THREAD SERIES

1 INTRODUCTION. Part C of this standard establishes the detail gage requirements for MJ thread series.

2 THREAD PROFILES FOR GAGES. The thread profiles for thread gages are in general agreement with the USA industry practice of ANSI B1.22. Flank contact is greater, however, for ANSI B1.22 truncated portions of thread setting plugs and pitch diameter indicator/snap gaging elements. There are presently no ISO gaging standards for use with MJ threads.

2.1 Internal thread profile with complete flanks, illustrated in figure 22.C.1, is used on the following gages:

- a) GO thread ring gage.
- b) GO thread snap gage anvils for checking external threads.
- c) Maximum material indicating gage segments and zero lead rolls.
- d) GO thread setting ring gage (solid) for indicating and snap gages.
- e) Indicating gage segment used together with plain contact segment spaced 180° apart for checking runout of major diameter.
- f) Indicating gage segments and zero lead rolls spaced 120° apart and segments used for differential gaging for lead and cumulative form analysis.



NOTE: Gage with same profile except $1P$ long shall be used for differential gaging. See paragraph 2.1.f.

FIGURE 22.C.1 Internal thread profile with complete flanks for thread gages

2.2 Internal thread profile with truncated flanks, illustrated in figure 22.C.2, is used on the following gages:

- a) NOT-GO thread ring gage.
- b) NOT-GO thread snap gage anvils.
- c) NOT-GO thread setting ring gage, (solid) for indicating and snap gages. See footnote (c) below.

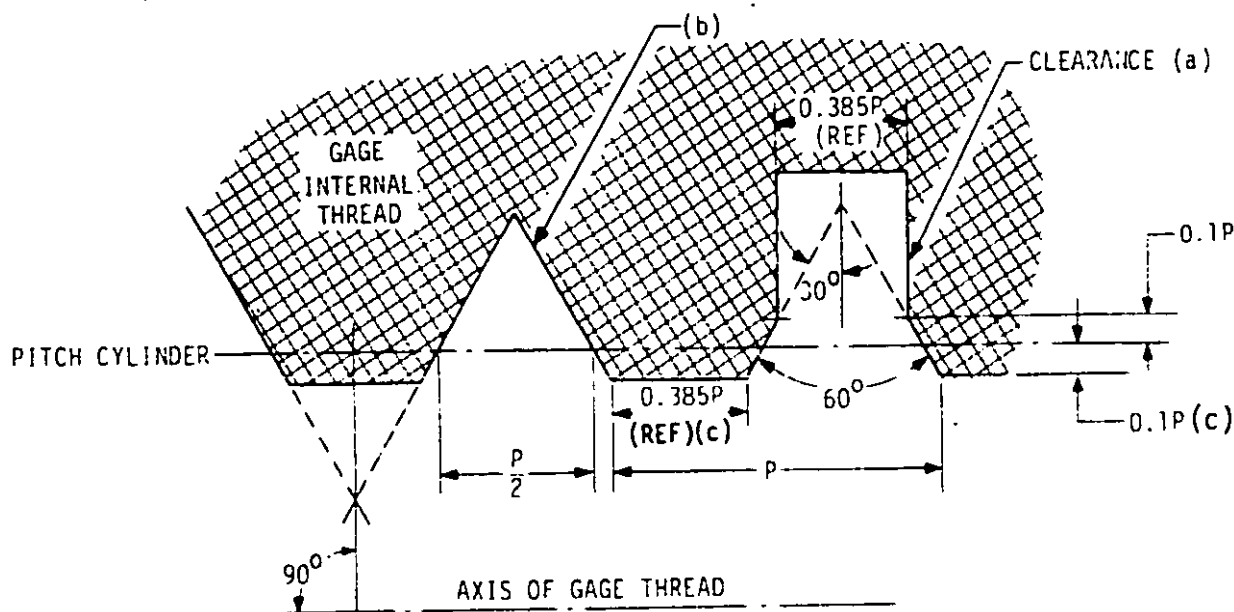
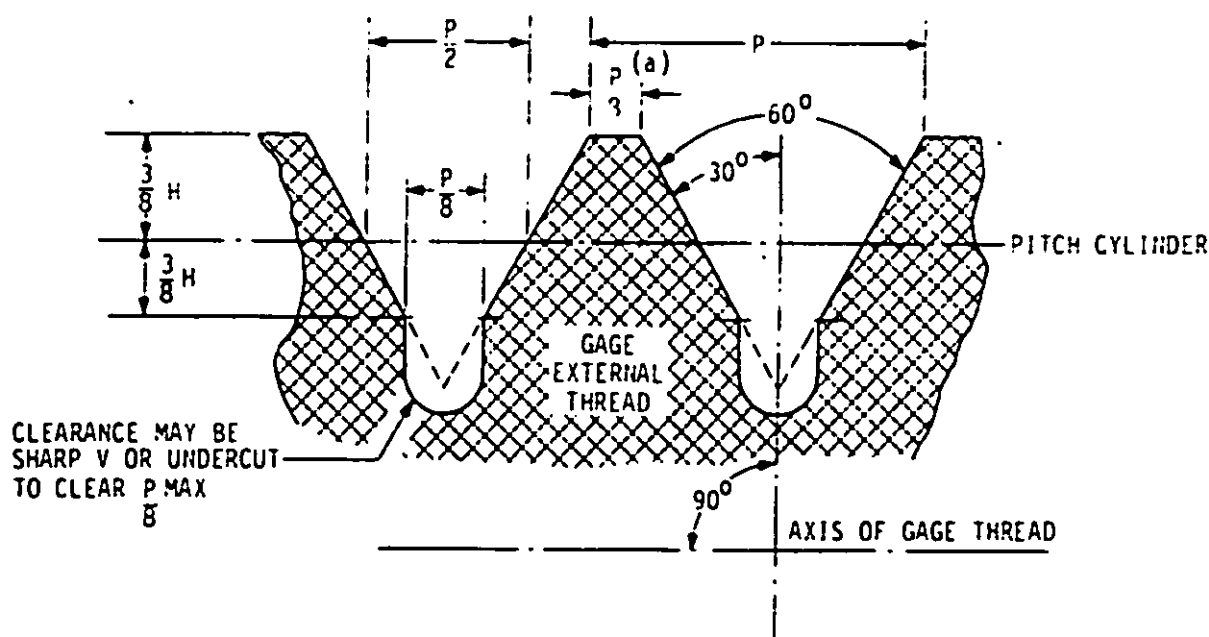


FIGURE 22.C.2 Internal thread profile with truncated flanks for thread gages

- (a) Undercut clearance is essential. The undercut clearance of the 0.385P width shall be central and shall clear the maximum major diameter of the product external thread or the maximum major diameter of the full form thread setting plug for the NOT-GO thread ring gage.
- (b) An optional sharp root is permitted on thread sizes smaller than 5 mm and pitches smaller than 0.8 mm provided that the full form NOT-GO gage setting plug major diameter is cleared.
- (c) Thread addendum and corresponding flat at the minor diameter are 0.1875H and 0.3125P respectively, for paragraph 2.2.c.

2.3 External thread profile with complete flanks, illustrated in figure 22.C.3, is used on the following gages:

- a) GO thread plug gage.
- b) GO thread snap gage.
- c) Maximum material indicating gage rolls and segments.
- d) Thread setting plug gage (full form portion) for GO thread ring gage.
- e) Basic crest thread setting plug gage for GO thread ring gage and GO thread snap gage.
- f) Thread setting plug gage (full form portion) for NOT-GO thread ring gage. See footnote (a) below.
- g) Basic crest thread setting plug gage for NOT-GO thread ring gage and NOT-GO thread snap gage. See footnote (a) below.
- h) Indicating gage segment used together with plain contact segment spaced 180° apart for checking runout on minor diameter.
- i) Indicating gage zero lead rolls spaced 120° apart and segments used for differential gaging for lead and cumulative form analysis.



NOTE: Gage with same profile except 1P long shall be used for differential gaging. See Paragraph 2.3i.

FIGURE 22.C.3 External thread profile with complete flanks for thread gages

- (a) Minimum crest width for paragraphs 2.3f and 2.3g is 0.0254 mm. This corresponds to a minimum truncation of 0.022 mm.

2.4 External thread profile with truncated flanks, illustrated in figure 22.C.4, is used on the following gages:

- a) NOT-GO thread plug gage.
- b) Thread setting plug gage (truncated portion) for GO thread ring gage.
- c) Thread setting plug gage (truncated portion) for NOT-GO thread ring gage.
- d) NOT-GO thread snap gage.

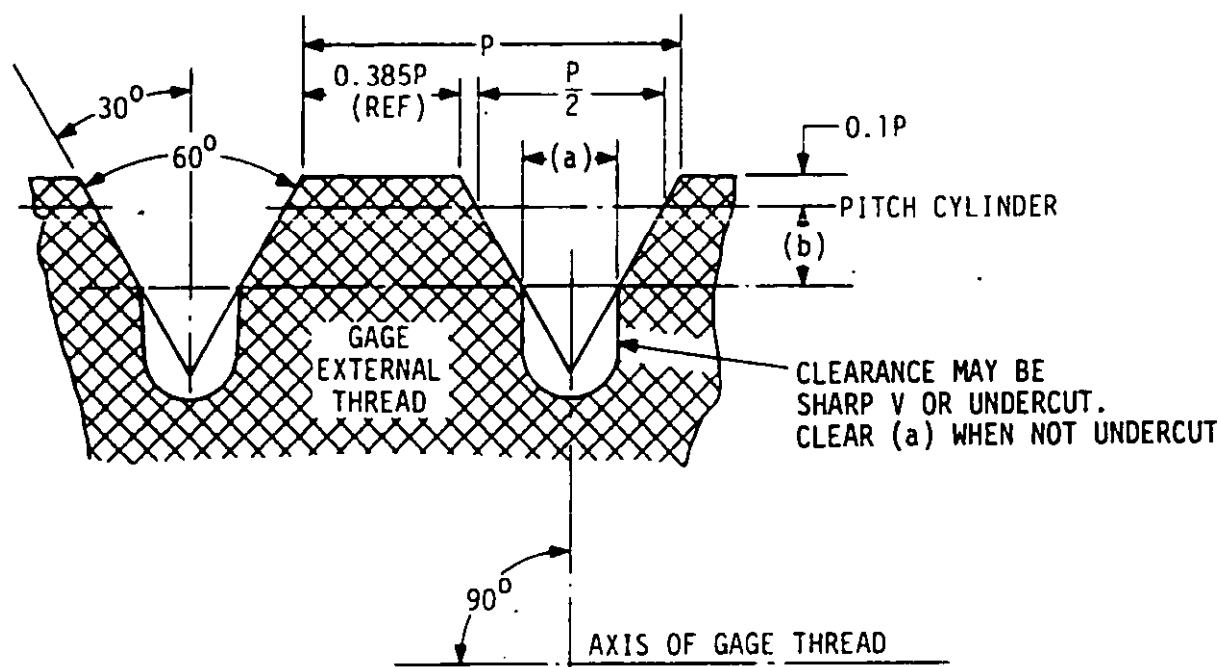


FIGURE 22.C.4 External thread profile with truncated flanks
for thread gages

- (a) $\frac{P}{4}$ for working gages (2.4a and d) and $\frac{P}{8}$ for setting gages (2.4b and c).
- (b) $\frac{H}{4}$ for working gages (2.4a and d) and $\frac{3}{8}H$ for setting gages (2.4b and c).

2.5 External thread profile, full form, for G0 thread plug gage for spin down check on internal MJ thread is illustrated in figure 22.C.5.

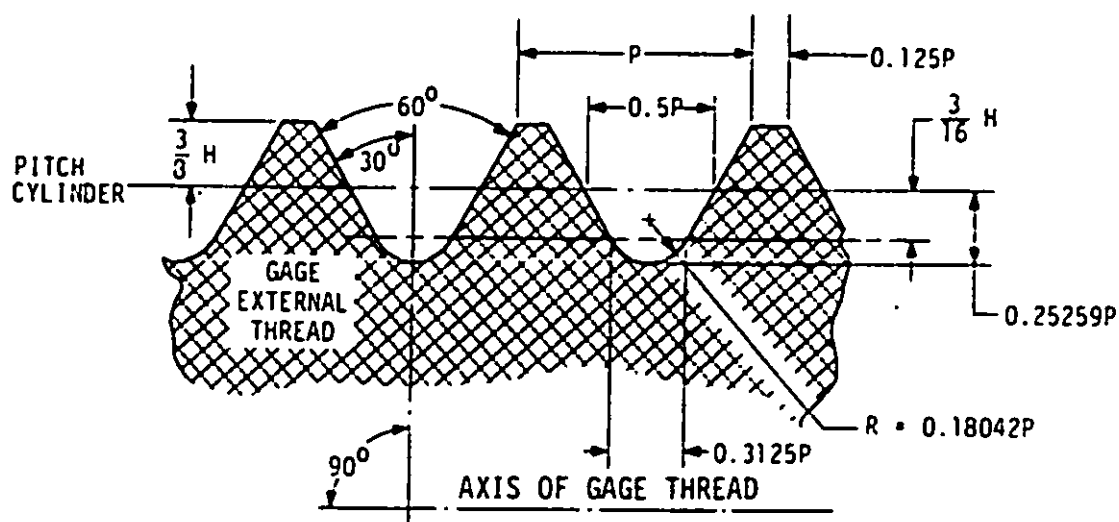


FIGURE 22.C.5 External thread profile full form
for thread gages

3 GAGING ELEMENT PROFILES FOR PITCH DIAMETER MEASUREMENT AND CUMULATIVE FORM DIFFERENTIAL GAGING

3.1 Product external thread measurement, short straight flank contacts. Indicating and snap gage cone and vee profile rolls for the measurement of external pitch diameter are illustrated in figure 22.C.6. The gage has small line contact on the thread flank. Indicating gage rolls, spaced 120° apart, are used on external product threads for cumulative form differential gaging. Alternate designs may use a similar profile with approximate pitch diameter contact.

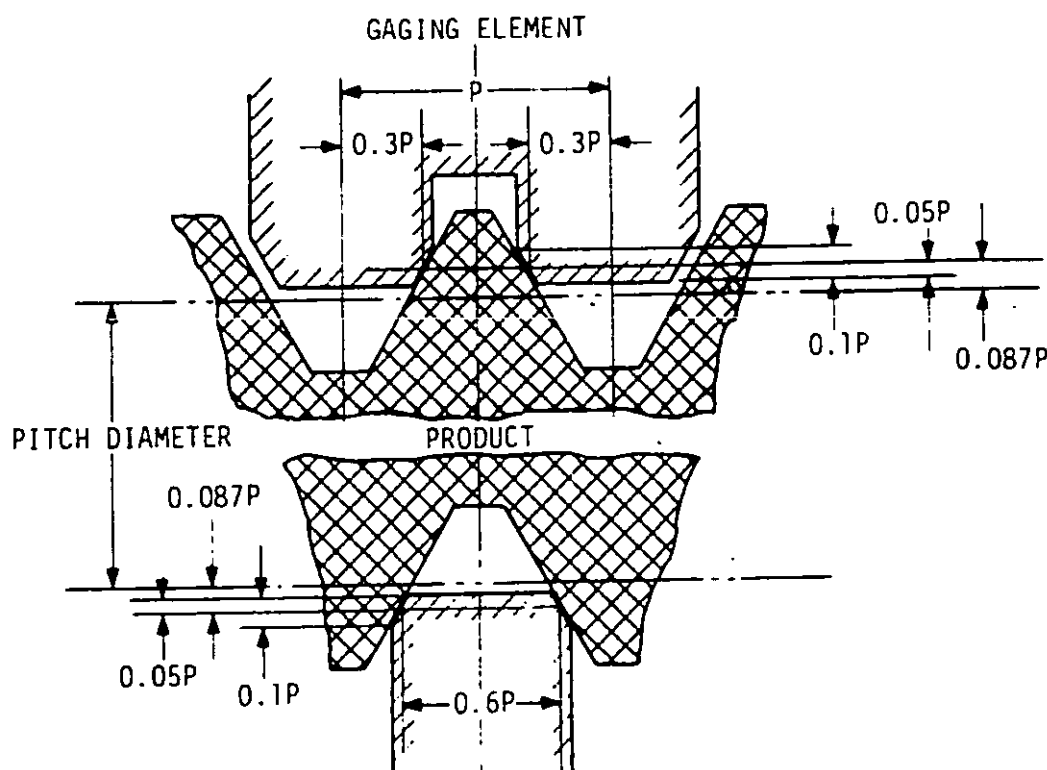


FIGURE 22.C.6 Gaging element profile for product external pitch diameter measurement and cumulative form analysis using short straight flank contacts

3.2 Product external thread measurement, curved contacts. Indicating and snap gage rolls with "best size" wire radius for the measurement of external pitch diameter are shown in figure 22.C.7. This type of gage approximates the three-wire pitch diameter measurement. It has point contact with the thread flanks. Indicating gage rolls, spaced 120° apart, are used on external product threads for cumulative form differential gaging. Alternate design may use cone and vee profile rolls with "best size" wire radius contacts.

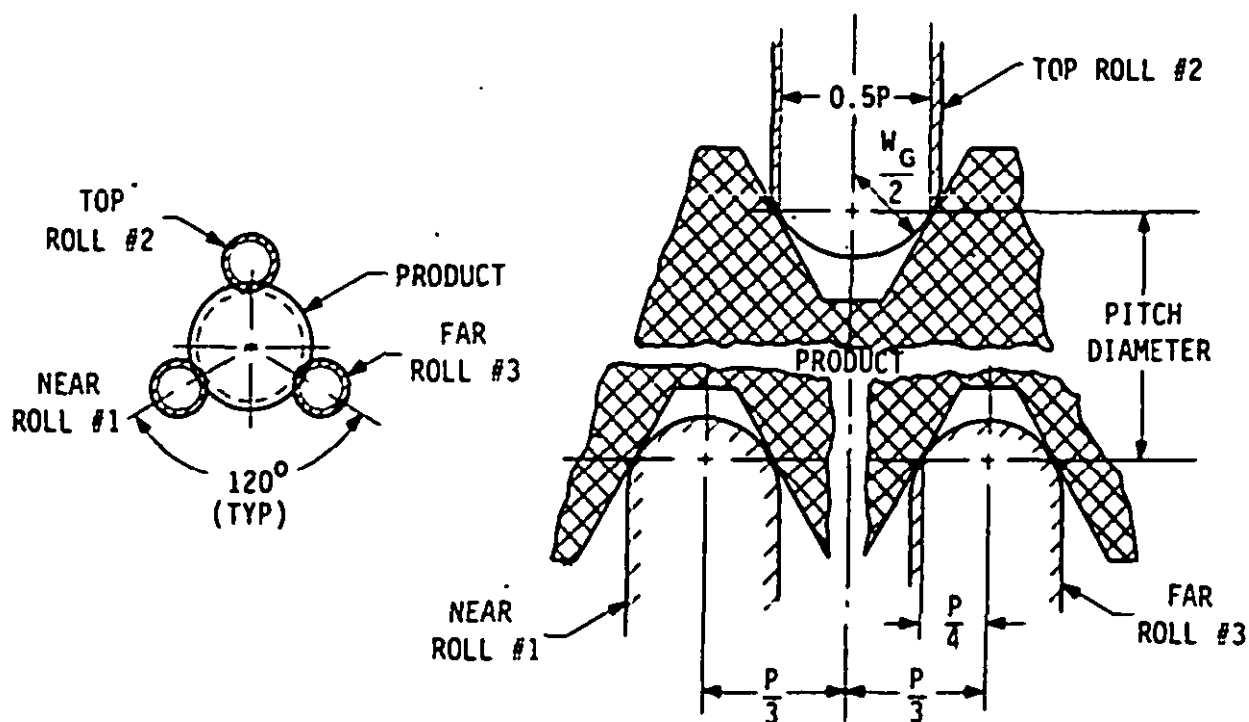


FIGURE 22.C.7 Gaging element profile for product external pitch diameter measurement and cumulative form analysis using curved contacts

3.3 Product internal thread measurement, short straight flank contacts. Indicating and snap gage cone and vee profile for segments and rolls for pitch diameter measurement on internal threads is shown in figure 22.C.8. The segments make surface contact with the thread flanks and the rolls make point or line contact with the thread flanks, depending on the angle variations of the flanks. Indicating rolls are used on internal product threads for cumulative form analysis. Alternate design may use a similar profile with approximate pitch diameter contact.

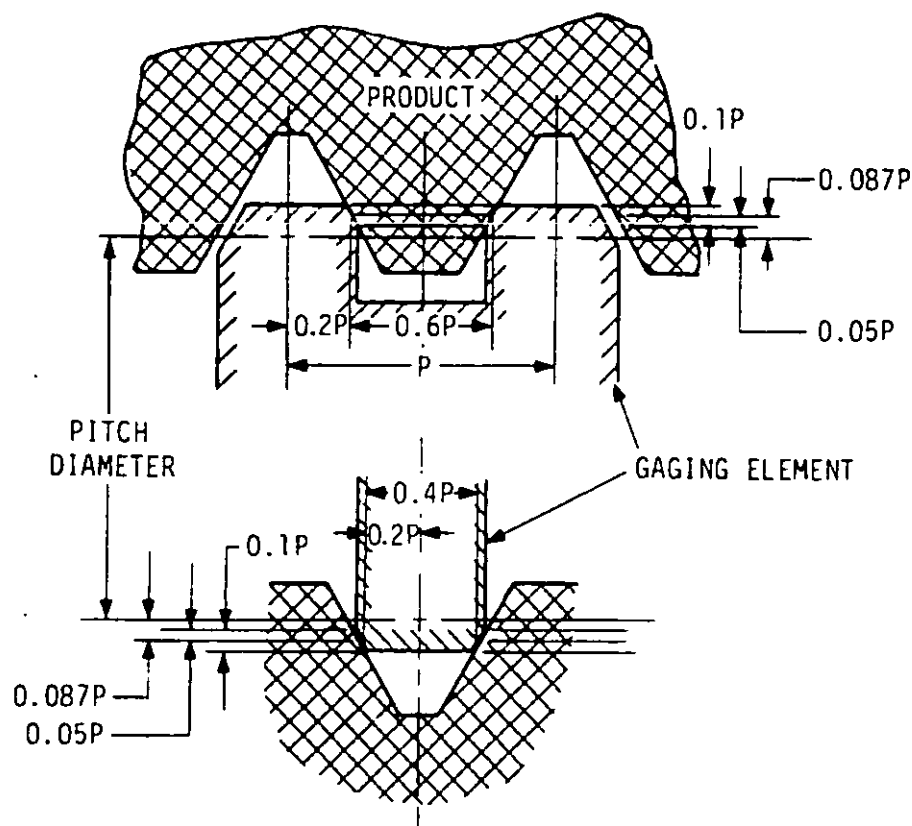


FIGURE 22.C.8 Gaging element profile for product internal pitch diameter measurement and cumulative form analysis using short straight flank contacts

3.4 Product internal thread measurement, ball contact. The three "best size" ball configuration for pitch diameter measurement on internal threads is illustrated in figure 22.C.9. Since the two balls on the one jaw are free to roll along a small axial distance, they may be spaced several pitches apart. As an alternate, "best size" ball contacts are acceptable.

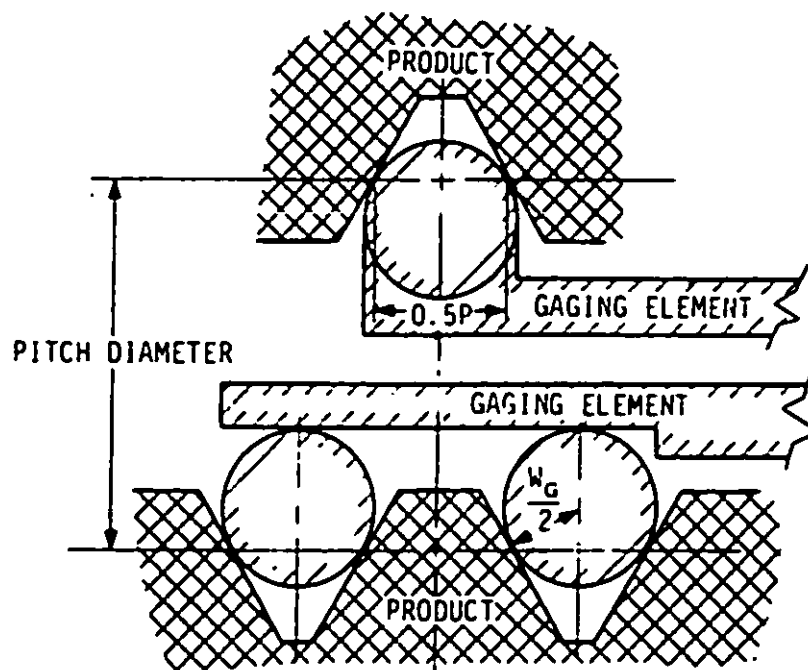


FIGURE 22.C.9 Gaging element for product internal pitch diameter measurement using "best size" balls.

4 GAGE SPECIFICATIONS

4.1 Design of gaging elements for MJ thread gages is detailed in part C with general information provided in part A.

4.2 The limits of size for working gages are tabulated in table XXII.C.5.

4.3 The limits of size for thread setting gages for external and internal MJ threads are tabulated in table XXII.C.6.

4.4 For thread sizes not tabulated in this standard.

- a) Constants for computing MJ thread series gage dimensions are found in table XXII.C.1.
- b) The X, W, and Z gage tolerances are given in tables XXII.A.2, XXII.A.3 and XXII.A.4, respectively.
- c) Dimensions of the MJ thread series are given in or may be calculated in accordance with FED-STD-H28/21.
- d) The specifications for determining the limits of size for working gages are summarized in table XXII.C.2 and for setting gages in tables XXII.C.3 and XXII.C.4.

4.5 Plain setting plug and ring gages for indicating gages shall be made to Z tolerance for plain gages, see table XXII.A.4.

4.6 The rounding procedure for converting metric gage dimensions to inch units is described in part A, GENERAL.

TABLE XXII.C.1 Constants for Computing MJ Thread Series Gage Dimensions

Pitch P	0.18042P Root Radius Tolerance (a)	Twice 0.18042P Root Radius Tolerance T	Height of Gage Cone Contact 0.1P	Width of Flat on GO Plug Thread Crest 0.125P	Tangency Depth $\frac{3}{16}H$ 0.16238P	Root Radius R 0.18042P	Addendum of Ring and Truncations of Internal Thread $\frac{1}{4}H$ 0.216506P	Width of Flat on GO Ring Thread Crest 0.25P
0.2	0.0036	0.0072	0.020	0.0250	0.03248	0.03608	0.04330	0.0500
0.25	0.0045	0.0090	0.025	0.0312	0.04059	0.04510	0.05413	0.0625
0.3	0.0054	0.0108	0.030	0.0375	0.04871	0.05413	0.06495	0.0750
0.35	0.0063	0.0126	0.035	0.0438	0.05683	0.06315	0.07578	0.0875
0.4	0.0072	0.0144	0.040	0.0500	0.06495	0.07217	0.08660	0.1000
0.45	0.0081	0.0162	0.045	0.0562	0.07307	0.08119	0.09743	0.1125
0.5	0.0090	0.0180	0.050	0.0625	0.08119	0.09021	0.10325	0.1250
0.6	0.0108	0.0216	0.060	0.0750	0.09743	0.10825	0.12990	0.1500
0.7	0.0126	0.0252	0.070	0.0875	0.11367	0.12629	0.15155	0.1750
0.75	0.0135	0.0270	0.075	0.0938	0.12178	0.13530	0.16240	0.1875
0.8	0.0144	0.0288	0.080	0.1000	0.12990	0.14434	0.17320	0.2000
1	0.0180	0.0360	0.100	0.1250	0.16238	0.18042	0.21651	0.2500
1.25	0.0226	0.0452	0.125	0.1562	0.20297	0.22552	0.27063	0.3125
1.5	0.0250	0.0500	0.150	0.1875	0.24357	0.27063	0.32476	0.3750
1.75	0.0250	0.0500	0.175	0.2188	0.28416	0.31572	0.37889	0.4375
2	0.0250	0.0500	0.200	0.2500	0.32476	0.36084	0.43301	0.5000
2.5	0.0250	0.0500	0.250	0.3125	0.40595	0.45105	0.54127	0.6250
3	0.0250	0.0500	0.300	0.3750	0.48714	0.54126	0.64952	0.7500
3.5	0.0316	0.0632	0.350	0.4375	0.56833	0.63147	0.75778	0.8750
4	0.0361	0.0722	0.400	0.5000	0.64952	0.72168	0.86603	1.0000
4.5	0.0406	0.0812	0.450	0.5625	0.73071	0.81189	0.97428	1.1250
5	0.0451	0.0902	0.500	0.6250	0.81190	0.90210	1.08253	1.2500
5.5	0.0496	0.0992	0.550	0.6875	0.89309	0.99231	1.19078	1.3750
6	0.0541	0.1082	0.600	0.7500	0.97428	1.08252	1.29904	1.5000
8	0.0722	0.1444	0.800	1.0000	1.29904	1.44336	1.73205	2.0000

(a) $t = 0.1 \times 0.18042P$ for 1.25 and smaller $t = 0.025$ for pitches over 1.25 thru 3 $t = 0.05 \times 0.18042P$ for pitches larger than 3

TABLE XIII.C.1 Constants for Computing MJ Thread Series Gage Dimensions (Cont'd)

Pitch	Maximum Dedendum $\frac{1}{2} P$	Tangency Width on External Thread	Addendum of External Thread	Twice Tangency Depth $\frac{1}{2} P$	Width of Flat on WGT-60 Ring and Plug	Mean Width of Contact for Internal Thread	Half Height of Sharp V-Thread $\frac{1}{2} H$	Space Width of Pitch Cylinder $0.5P$	Two Times Maximum Dedendum $\frac{1}{2} P$	Height of Internal Thread and Depth of Engagement $\frac{1}{2} H$	Mean Width of Cone Contact for External Thread	Twice External Thread Addendum $\frac{1}{2} H$	Height of Sharp V-Thread H
P	0.252591P	0.3125P	0.32476P	0.32476P	0.385P	0.4P	0.433013P	0.5P	0.505181P	0.6P	0.6P	0.649519P	0.866025P
0.2	0.05052	0.0625	0.06495	0.06495	0.07700	0.08	0.08660	0.100	0.10104	0.09743	0.12	0.12990	0.17321
0.25	0.06315	0.0781	0.08119	0.08119	0.09675	0.10	0.10825	0.125	0.12630	0.12178	0.15	0.16238	0.21651
0.3	0.07578	0.0938	0.09743	0.09743	0.11550	0.12	0.12990	0.150	0.15155	0.14614	0.18	0.19486	0.25981
0.35	0.08841	0.1094	0.11367	0.11367	0.13475	0.14	0.15155	0.175	0.17681	0.17050	0.21	0.22733	0.30311
0.4	0.10104	0.1250	0.12990	0.12990	0.15400	0.16	0.17320	0.200	0.20207	0.19486	0.24	0.25981	0.34641
0.45	0.11367	0.1406	0.14614	0.14614	0.17325	0.18	0.19486	0.225	0.22733	0.21921	0.27	0.29228	0.38971
0.5	0.12630	0.1562	0.16238	0.16238	0.19250	0.2	0.21651	0.250	0.25259	0.24357	0.3	0.32476	0.43301
0.6	0.15155	0.1875	0.19486	0.19486	0.23100	0.24	0.25981	0.300	0.30311	0.29228	0.36	0.38971	0.51962
0.7	0.17681	0.2188	0.22733	0.22733	0.26950	0.28	0.30311	0.350	0.35363	0.34100	0.42	0.45466	0.60622
0.75	0.18944	0.2344	0.24357	0.24357	0.28875	0.3	0.32476	0.375	0.37889	0.36535	0.45	0.48714	0.64952
0.8	0.20207	0.2500	0.25981	0.25981	0.30800	0.32	0.34641	0.400	0.40415	0.39571	0.48	0.51962	0.69282
1	0.25259	0.3125	0.32476	0.32476	0.38500	0.4	0.43301	0.500	0.50518	0.48716	0.6	0.64952	0.86603
1.25	0.31574	0.3906	0.40595	0.40595	0.48125	0.5	0.54127	0.625	0.63148	0.60892	0.75	0.81190	1.08253
1.5	0.37289	0.4688	0.48714	0.48714	0.57150	0.6	0.64952	0.750	0.75777	0.73071	0.9	0.97428	1.29904
1.75	0.44203	0.5469	0.56833	0.56833	0.63375	0.7	0.75777	0.875	0.88407	0.85249	1.05	1.13666	1.51554
2	0.50518	0.6250	0.64952	0.64952	0.71000	0.8	0.86603	1.000	1.01036	0.97428	1.2	1.29904	1.73205
2.5	0.63148	0.7812	0.81190	0.81190	0.96750	1.0	1.08253	1.250	1.26295	1.21785	1.5	1.62380	2.16506
3	0.75778	0.9375	0.97428	0.97428	1.15500	1.2	1.29904	1.500	1.51554	1.46142	1.8	1.94856	2.59808
3.5	0.88407	1.0938	1.13666	1.13666	1.34750	1.4	1.51554	1.750	1.76814	1.70499	2.1	2.27332	3.03109
4	1.01036	1.2500	1.29904	1.29904	1.54000	1.6	1.73205	2.000	2.02073	1.94856	2.4	2.59808	3.46410
4.5	1.13665	1.4062	1.46142	1.46142	1.73250	1.8	1.94856	2.250	2.27337	2.19213	2.7	2.92784	3.89711
5	1.26295	1.5625	1.62380	1.62380	1.92500	2.0	2.16506	2.500	2.52591	2.43570	3.0	3.24760	4.33013
5.5	1.38925	1.7188	1.78618	1.78618	2.11750	2.2	2.38153	2.750	2.78500	2.67527	3.3	3.57235	4.76714
6	1.51554	1.8750	1.94856	1.94856	2.31000	2.4	2.59808	3.000	3.03109	2.92784	3.6	3.89711	5.19615
8	2.02073	2.5000	2.59808	2.59808	3.08000	3.2	3.46410	4.000	4.04145	3.89711	4.8	5.19615	6.92820

TABLE XXII.C.2 Specifications for limits of size of thread and plain working gages for checking external and internal MJ threads

For checking external threads	Adjustable and solid X Thread ring gages	GO	Pitch diameter	For max size use max pitch diameter of external thread. Apply X pitch diameter gage tolerance minus for min size.
			Minor diameter	For max size use max pitch diameter of external thread minus 0.32476p. Apply X minor diameter gage tolerance minus for min size.
		NOT GO	Pitch diameter	For min size use min pitch diameter of external thread. Apply X pitch diameter gage tolerance plus for max size.
			Minor diameter	For min size use min pitch diameter of external thread minus 0.2p. Apply X minor diameter gage tolerance plus for max size.
	Z Plain ring gages	GO	Major diameter	For max size use max major diameter of external thread. Apply Z gage tolerance minus for min size.
		NOT GO	Major diameter	For min size use min major diameter of external thread. Apply Z gage tolerance plus for max size.

TABLE XXII.C.2 Specification for limits of size of thread and plain working gages for checking external and internal MJ threads (continued)

For checking internal threads	X plug gages	GO	Major diameter	For min size use min major diameter of internal thread. Apply X major diameter gage tolerance plus for max size.
			Pitch diameter	For min size use min pitch diameter of internal thread. Apply X pitch diameter gage tolerance plus for max size.
		GO full form spin down thread check plug gages	Minor diameter	For min size use min pitch diameter of internal thread minus 0.505181p. Apply X pitch diameter gage tolerance plus T tolerance from table XXII.C.1 plus for max size.
			Root Radius	For min root radius use 0.18042p. Apply t tolerance from table XXII.C.1 plus for max radius.
		NOT GO	Major diameter	For max size use max pitch diameter of internal thread plus 0.2p. Apply X major diameter gage tolerance minus for min size.
			Pitch diameter	For max size use max pitch diameter of internal thread. Apply X pitch diameter gage tolerance minus for min size.
	Z plain plug gages	GO	Minor diameter	For min size use min minor diameter of internal thread. Apply Z gage tolerance plus for max size.
		NOT GO	Minor diameter	For max size use max minor diameter of internal thread. Apply Z gage tolerance minus for min size.

TABLE XXII.C.3 Specifications for limits of size of thread setting plug for adjusting ring gages used for checking external MJ threads

For checking external threads	Thread setting plug for GO ring gages, indicating gages, and snap gages	Major diameter	Truncated portion	For max size use max pitch diameter of external thread plus 0.2p. Apply W major diameter gage tolerance minus for min size.
			Full-form and basic crest	For min size use max major diameter of external thread. Apply W major diameter gage tolerance plus for max size.
		Pitch diameter		For max size use max pitch diameter of external thread. Apply W pitch diameter gage tolerance minus for min size.
	Thread setting plug for NOT-GO ring gages	Major diameter	(a) Truncated portion	For max size use min pitch diameter of external thread plus 0.2p. Apply W major diameter gage tolerance minus for min size.
			Full-form and basic crest	Use max major diameter of external thread provided that major diameter crest width shall not be less than 0.0254 mm. (0.022 mm truncation). Apply W major diameter gage tolerance plus for max size except that for 0.0254 mm crest width apply tolerance minus for min size. For the 0.0254 mm crest width, major diameter is equal to maximum major diameter of external thread plus 0.216506p minus the sum of external thread pitch diameter tolerance and 0.0440 mm.
		Pitch diameter		For min size use min pitch diameter of external thread. Apply W pitch diameter gage tolerance plus for max size.

(a) Truncated portion is required when optional sharp root profile in figure 22.C.2 is used.

TABLE XXII.C.4 Specifications for limits of size of solid master thread GO ring gages for setting indicating gages and snap gages for internal MJ threads

For checking internal thread	Master GO thread ring (solid) gages for setting indicating and snap gages	Pitch (a) diameter	For min size, for 5 mm size and larger use min pitch diameter of internal thread. Apply W pitch diameter gage tolerance plus for max size.
		Minor diameter	For max size, for 5 mm size and larger use min minor diameter of internal thread. Apply W minor diameter gage tolerance minus for min size.
	NOT GO thread setting ring (solid) gages for setting snap gages	Pitch (a) diameter	For max size, for 5 mm size and larger use max pitch diameter of internal thread. Apply W pitch diameter gage tolerance minus for min size.
		Minor diameter	For max size, for 5 mm size and larger use max minor diameter of internal thread. Apply W minor diameter gage tolerance minus for min size.

- (a) Tolerances greater than the W tolerance for pitch diameter are acceptable when the internal indicating or snap gage can accommodate a greater tolerance and when agreed upon by supplier and user.

TABLE XIII.C.5 Gages for NJ Thread Series, Limits of Size

Basic Thread Designation	Gages for External Threads										Gages for Internal Threads									
	2 Thread Ring Gages					2 Plain Ring Gages for Major Diameter					Go Full Form 1 Thread Plug Gages					1 Thread Plug Gages				
	GO		NOT-GO			GO		NOT-GO			GO 1 Thread Plug Gages		0.18042P Root Radius			Major Dia		Pitch Dia		
	Pitch Dia Max Min	Minor Dia Max Min	Max Min	Max Min	Minor Dia Max Min	Pitch Dia Max Min	Minor Dia Max Min	Max Min	Max Min	Minor Dia Max Min	Major Dia Max Min	Minor Dia Max Min	Max Min	Max Min	Minor Dia Max Min	Major Dia Max Min	Max Min	Max Min	Max Min	Minor Dia Max Min
1	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17					
NJ1.6 ± 0.35	1.373 1.368	1.259 1.251	1.333 1.318	1.263 1.271	1.600 1.597	1.515 1.518	4H6h	1.600 1.608	1.373 1.378	1.196 1.214	0.063 0.069	1.496 1.488	1.426 1.421	1.259 1.262	1.359 1.356					
NJ2 ± 0.4	1.740 1.735	1.610 1.600	1.693 1.703	1.618 1.628	2.000 1.997	1.905 1.908	4H6h	2.000 2.010	1.740 1.745	1.538 1.557	0.072 0.079	1.876 1.866	1.796 1.791	1.610 1.613	1.722 1.719					
NJ2.5 ± 0.45	2.208 2.203	2.062 2.052	2.163 2.168	2.073 2.083	2.500 2.497	2.400 2.403	4H6h	2.500 2.510	2.208 2.213	1.981 2.002	0.081 0.089	2.358 2.348	2.268 2.263	2.062 2.065	2.187 2.184					
NJ3 ± 0.5	2.675 2.670	2.513 2.503	2.627 2.632	2.527 2.537	3.000 2.997	2.894 2.897	4H6h	3.000 3.010	2.675 2.680	2.422 2.445	0.090 0.099	2.838 2.828	2.738 2.733	2.513 2.516	2.653 2.650					
NJ3.5 ± 0.6	3.110 3.105	2.915 2.905	3.057 3.062	2.937 2.947	3.500 3.497	3.375 3.378	4H6h	3.500 3.510	3.110 3.115	2.807 2.834	0.103 0.119	3.301 3.291	3.181 3.176	2.915 2.918	3.075 3.072					
NJ4 ± 0.7	3.545 3.540	3.318 3.308	3.489 3.494	3.349 3.359	4.000 3.997	3.860 3.863	4H6h	4.000 4.010	3.545 3.550	3.191 3.221	0.126 0.139	3.760 3.750	3.620 3.615	3.318 3.321	3.498 3.495					
NJ5 ± 0.8	4.480 4.472	4.221 4.208	4.420 4.428	4.260 4.271	5.000 4.997	4.850 4.853	4H6h	5.000 5.013	4.480 4.488	4.076 4.113	0.144 0.158	4.720 4.707	4.560 4.552	4.221 4.224	4.421 4.418					
NJ6 ± 1	5.350 5.342	5.026 5.013	5.279 5.287	5.079 5.092	6.000 5.997	5.820 5.823	4H6h	6.000 6.013	5.350 5.358	4.845 4.889	0.180 0.198	5.645 5.632	5.445 5.437	5.026 5.029	5.216 5.213					
NJ7 ± 1	6.350 6.342	6.026 6.013	6.279 6.287	6.079 6.092	7.000 6.997	6.820 6.823	4H6h	7.000 7.013	6.350 6.358	5.845 5.889	0.180 0.198	6.645 6.632	6.445 6.437	6.026 6.029	6.216 6.213					
NJ8 ± 1.25	7.188 7.180	6.782 6.769	7.113 7.121	6.863 6.876	8.000 7.997	7.788 7.791	4H6h	8.000 8.013	7.188 7.196	6.557 6.610	0.226 0.249	7.538 7.525	7.288 7.280	6.782 6.785	6.994 6.991					
NJ8 ± 1	7.350 7.342	7.026 7.013	7.279 7.287	7.079 7.092	8.000 7.997	7.820 7.823	4H6h	8.000 8.013	7.350 7.358	6.845 6.889	0.180 0.198	7.645 7.632	7.445 7.437	7.026 7.029	7.216 7.213					
NJ10 ± 1.5	9.026 9.018	8.539 8.528	9.041 9.049	8.641 8.656	10.000 9.997	9.784 9.787	4H6h	10.000 10.013	9.026 9.034	8.268 8.326	0.271 0.296	9.438 9.423	9.138 9.130	8.539 8.542	8.775 8.772					
NJ10 ± 1.25	9.188 9.180	8.782 8.769	9.113 9.121	8.863 8.876	10.000 9.997	9.788 9.791	4H6h	10.000 10.013	9.188 9.196	8.557 8.610	0.276 0.299	9.538 9.525	9.288 9.280	8.782 8.785	8.994 8.991					
NJ10 ± 0.75	9.513 9.508	9.269 9.259	9.450 9.455	9.300 9.310	10.000 9.997	9.860 9.863	4H6h	10.000 10.010	9.513 9.518	9.134 9.161	0.135 0.149	9.748 9.738	9.598 9.593	9.269 9.272	9.419 9.416					
NJ11 ± 1.75	10.188 10.180	9.782 9.769	10.113 10.121	9.863 9.876	11.000 10.997	10.788 10.791	4H6h	11.000 11.013	10.188 10.196	9.557 9.610	0.226 0.249	10.538 10.525	10.288 10.280	9.782 9.785	9.994 9.991					

TABLE XXII.C.5 Gages for MJ Thread Series, Limits of Size (Cont'd)

Basic Thread Designation	Gages for External Threads										Gages for Internal Threads											
	Toi Class	X Thread Ring Gages					Z Plain Ring Gages for Major Diameter					Toi Class	Go Full Form X Thread Plug Gages					X Thread Plug Gages				
		GO		NOT-GO		Pitch Dia	Minor Dia		Major Dia	Pitch Dia	Minor Dia		Root Radius	GO X Thread Plug Gages		NOT GO		Pitch Dia	Z Plain Plug Gages for Minor Diameter			
		Max Min	Min Max	Min Max	Max Min		Min Max	Min Max						Max Min	Min Max							
1	2	3	4	5	6	7	8		9	10	11	12	13	14	15	16	17					
MJ12 x 1.75	4h6h	10.863 10.855	10.295 10.280	10.768 10.776	10.418 10.433	12.000 11.997	11.735 11.738		4H5H	12.000 12.015	10.863 10.871	9.979 10.037	0.316 0.341	11.338 11.323	10.988 10.980	10.295 10.298	10.560 10.557					
MJ12 x 1.25	4h6h	11.188 11.180	10.782 10.769	11.103 11.111	10.853 10.866	12.000 11.997	11.788 11.791		4H5H	12.000 12.013	11.188 11.196	10.557 10.610	0.226 0.249	11.550 11.537	11.300 11.292	10.782 10.785	10.994 10.991					
MJ12 x 1	4h6h	11.350 11.342	11.026 11.013	11.275 11.283	11.075 11.088	12.000 11.997	11.820 11.823		4H5H	12.000 12.013	11.350 11.358	10.845 10.889	0.180 0.198	11.650 11.637	11.450 11.442	11.026 11.029	11.216 11.213					
MJ14 x 2	4h6h	12.701 12.693	12.051 12.036	12.601 12.609	12.201 12.216	14.000 13.997	13.770 13.773		4H5H	14.000 14.015	12.701 12.709	11.691 11.749	0.361 0.386	13.233 13.218	12.833 12.825	12.051 12.054	12.351 12.348					
MJ14 x 1.5	4h6h	13.026 13.018	12.539 12.524	12.936 12.944	12.636 12.651	14.000 13.997	13.764 13.767		4H5H	14.000 14.015	13.026 13.034	12.268 12.326	0.271 0.296	13.444 13.429	13.144 13.136	12.539 12.542	12.775 12.772					
MJ15 x 1	4h6h	14.350 14.342	14.026 14.013	14.275 14.283	14.075 14.088	15.000 14.997	14.820 14.823		4H5H	15.000 15.013	14.350 14.358	13.845 13.889	0.180 0.198	14.650 14.637	14.450 14.442	14.026 14.029	14.216 14.213					
MJ16 x 2	4h6h	14.701 14.693	14.051 14.036	14.601 14.609	14.201 14.216	16.000 15.997	15.720 15.723		4H5H	16.000 16.015	14.701 14.709	13.691 13.749	0.361 0.386	15.233 15.218	14.833 14.825	14.051 14.054	14.351 14.348					
MJ16 x 1.5	4h6h	15.026 15.018	14.539 14.524	14.936 14.944	14.636 14.651	16.000 15.997	15.764 15.767		4H5H	16.000 16.015	15.026 15.034	14.268 14.326	0.271 0.296	15.444 15.429	15.144 15.136	14.539 14.542	14.775 14.772					
MJ17 x 1	4h6h	16.350 16.342	16.026 16.013	16.275 16.283	16.075 16.088	17.000 16.997	16.820 16.823		4H5H	17.000 17.013	16.350 16.358	15.845 15.889	0.180 0.198	16.650 16.637	16.450 16.442	16.026 16.029	16.216 16.213					
MJ18 x 1.5	4h6h	17.026 17.018	16.539 16.524	16.936 16.944	16.636 16.651	18.000 17.997	17.764 17.767		4H5H	18.000 18.015	17.026 17.034	16.268 16.326	0.271 0.296	17.444 17.429	17.144 17.136	16.539 16.542	16.775 16.772					
MJ20 x 2.5	4h6h	18.376 18.368	17.564 17.549	18.270 18.278	17.770 17.785	20.000 19.997	19.665 19.668		4H5H	20.000 20.015	18.376 18.384	17.113 17.171	0.451 0.476	19.016 19.001	18.516 18.508	17.564 17.567	17.919 17.916					
MJ20 x 1.5	4h6h	19.026 19.018	18.539 18.524	18.936 18.944	18.636 18.651	20.000 19.997	19.764 19.767		4H5H	20.000 20.015	19.026 19.034	18.268 18.326	0.271 0.296	19.444 19.429	19.144 19.136	18.539 18.542	18.775 18.772					
MJ20 x 1	4h6h	19.350 19.342	19.026 19.013	19.275 19.283	19.075 19.088	20.000 19.997	19.820 19.823		4H5H	20.000 20.013	19.350 19.358	18.845 18.889	0.180 0.198	19.650 19.637	19.450 19.442	19.026 19.029	19.216 19.213					
MJ22 x 1.5	4h6h	21.026 21.018	20.539 20.524	20.936 20.944	20.636 20.651	22.000 21.997	21.764 21.767		4H5H	22.000 22.015	21.026 21.034	20.268 20.326	0.271 0.296	21.444 21.429	21.144 21.136	20.539 20.542	20.775 20.772					
MJ24 x 3	4h6h	22.051 22.041	21.077 21.059	21.926 21.936	21.326 21.344	24.000 23.997	23.675 23.678		4H5H	24.000 24.018	22.051 22.061	20.535 20.595	0.541 0.566	22.821 22.801	22.521 22.511	21.077 21.080	21.477 21.474					

TABLE III.C.5 Gages for MJ Inthread Series, Limits of Size (Cont'd)

Basic Thread Designation	Gages for External Threads										Gages for Internal Threads																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																												
	Tol Class	2 Thread Ring Gages					2 Plain Ring Gages for Major Diameter					Tol Class	Go Full Form 1 Thread Plug Gages					1 Thread Plug Gages					2 Plain Plug Gages for Minor Diameter																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																
		GO		MOT-GO		Pitch Dia	Minor Dia		Major Dia	MOT-GO	Pitch Dia		Major Dia		Minor Dia		Root Radius	Major Dia		Pitch Dia		Major Dia	Minor Dia		Pitch Dia																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																														
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TABLE XXII.C.5 Gages for MJ Thread Series, Limits of Size (Cont'd)

Basic Thread Designation	Gages for External Threads										Gages for Internal Threads														
	Tol Class	X Thread Ring Gages					Z Plain Ring Gages for Major Diameter					Tol Class	Go Full Form X Thread Plug Gages					O.18042P Root Radius		X Thread Plug Gages		Z Plain Plug Gages for Minor Diameter			
		GO		NOT-GO			GO		NOT-GO				GO X Thread Plug Gages		Pitch Dia			Min Max		Major Dia		Pitch Dia		GO	
		Pitch Dia	Minor Dia	Max Min	Min Max	Minor Dia	Max Min	Min Max	Max Min	Minor Dia	Max Min		Max Min	Min Max	Min Max	Max Min	Max Min	Max Min	Max Min	Max Min	Max Min	Max Min	Max Min	Max Min	
		Max Min	Max Min	Max Min	Max Min	Max Min	Max Min	Max Min	Max Min	Max Min	Max Min		Max Min	Max Min	Max Min	Max Min	Max Min	Max Min	Max Min	Max Min	Max Min	Max Min	Max Min	Max Min	
1	2	3	4	5	6	7	8				9	10	11	12	13	14	15	16	17						
MJ48 x 5	4h6h	44.752 44.739	43.129 43.109	44.592 44.605	43.592 43.612	48.000 47.996	47.470 47.474	4H5H	48.000 48.020	44.752 48.765	42.226 42.329	0.902 0.947	45.964 45.944	44.964 44.951	43.129 43.133	43.689 43.685									
MJ48 x 2	4h6h	46.701 46.691	46.051 46.036	46.589 46.599	46.189 46.204	48.000 47.996	47.720 47.724	4H5H	48.000 48.015	46.701 46.711	45.691 45.751	0.361 0.386	47.251 47.236	46.851 46.841	46.051 46.055	46.351 46.347									
MJ50 x 1.5	4h6h	49.026 49.016	48.539 48.524	48.926 48.936	48.626 48.641	50.000 49.996	49.764 49.768	4H5H	50.000 50.015	49.026 49.036	48.268 48.328	0.271 0.296	49.458 49.443	49.158 49.148	48.539 48.543	48.775 48.771									
MJ55 x 1.5	4h6h	54.026 54.016	53.539 53.524	53.926 53.936	53.626 53.641	55.000 54.996	54.764 54.768	4H5H	55.000 55.015	54.026 54.036	53.268 53.328	0.271 0.296	54.458 54.443	54.158 54.148	53.539 53.543	53.775 53.771									
MJ56 x 5.5	4h6h	52.428 52.415	50.641 50.621	52.258 52.271	51.158 51.178	56.000 55.996	55.440 55.444	4H5H	56.000 56.020	52.428 52.441	49.650 49.762	0.992 1.042	53.752 53.732	52.652 52.639	50.641 50.645	51.241 51.237									
MJ56 x 2	4h6h	54.701 54.691	54.051 54.036	54.589 54.599	54.189 54.204	56.000 55.996	55.720 55.724	4H5H	56.000 56.015	54.701 54.711	53.691 53.751	0.361 0.386	55.251 55.236	54.851 54.841	54.051 54.055	54.351 54.347									
MJ60 x 1.5	4h6h	59.026 59.016	58.539 58.524	58.926 58.936	58.626 58.641	60.000 59.996	59.764 59.768	4H5H	60.000 60.015	59.026 59.036	58.268 58.328	0.271 0.296	59.458 59.443	59.158 59.148	58.539 58.543	58.775 58.771									
MJ64 x 6	4h6h	60.103 60.090	58.154 58.131	59.923 59.936	58.723 58.746	64.000 63.996	63.400 63.404	4H5H	64.000 64.023	60.103 60.116	57.072 57.193	1.083 1.137	61.539 61.516	60.339 60.326	58.154 58.158	58.784 58.780									
MJ64 x 2	4h6h	62.701 62.691	62.051 62.036	62.589 62.599	62.189 62.204	64.000 63.996	63.720 63.724	4H5H	64.000 64.015	62.701 62.711	61.691 61.751	0.361 0.386	63.251 63.236	62.851 62.841	62.051 62.055	62.351 62.347									
MJ65 x 1.5	4h6h	64.026 64.016	63.539 63.524	63.926 63.936	63.626 63.641	65.000 64.996	64.764 64.769	4H5H	65.000 65.015	64.026 64.036	63.268 63.328	0.271 0.296	64.458 64.443	64.158 64.148	63.539 63.543	63.775 63.771									
MJ70 x 1.5	4h6h	69.026 69.016	68.539 68.524	68.926 68.936	68.626 68.641	70.000 69.996	69.764 69.769	4H5H	70.000 70.015	69.026 69.036	68.268 68.328	0.271 0.296	69.458 69.443	69.158 69.148	68.539 68.544	68.775 68.770									
MJ72 x 6	4h6h	68.103 68.090	66.154 66.131	67.923 67.936	66.723 66.746	72.000 71.996	71.400 71.405	4H5H	72.000 72.023	68.103 68.116	65.072 65.193	1.083 1.137	69.539 69.516	68.339 68.326	66.154 66.159	66.779 66.775									
MJ72 x 2	4h6h	70.701 70.691	70.051 70.036	70.589 70.599	70.189 70.204	72.000 71.996	71.720 71.725	4H5H	72.000 72.015	70.701 70.711	69.691 69.751	0.361 0.386	71.251 71.236	70.851 70.841	70.051 70.056	70.351 70.346									
MJ75 x 1.5	4h6h	74.026 74.016	73.539 73.524	73.926 73.936	73.626 73.641	75.000 74.996	74.764 74.769	4H5H	75.000 75.015	74.026 74.036	73.268 73.328	0.271 0.296	74.458 74.443	74.158 74.148	73.539 73.544	73.775 73.770									
MJ80 x 6	4h6h	76.103 76.090	74.154 74.131	75.923 75.936	74.723 74.746	80.000 79.996	79.400 79.405	4H5H	80.000 80.023	76.103 76.116	73.072 73.193	1.083 1.137	77.539 77.516	76.339 76.326	74.154 74.159	74.784 74.779									

TABLE III.C.5 Gages for MJ Thread Series, Limits of Size (Cont'd)

Basic Thread Designation	Gages for External Threads										Gages for Internal Threads																
	Tol Class	1 Thread Ring Gages					2 Plain Ring Gages for Major Diameter					Tol Class	GO Full Form 1 Thread Plug Gages					1 Thread Plug Gages					2 Plain Plug Gages for Minor Diameter				
		GO		MOT-GO		Pitch Dia	Minor Dia		Pitch Dia	Minor Dia			Pitch Dia	GO 1 Thread Plug Gages		Root Radius	Major Dia		Pitch Dia	Minor Dia		Pitch Dia	Major Dia		Pitch Dia	Minor Dia	
		Max	Min	Max	Min		Max	Min		Max	Min			Max	Min		Max	Min		Max	Min		Max	Min		Max	Min
1	2	3	4	5	6	7	8					9	10	11	12	13	14	15	16	17							
MJ80 = 2	4h6h	78.701 73.691	78.051 78.036	78.589 78.599	78.189 78.204	80.000 79.995	79.770 79.775	4h5h	80.000 80.015	78.701 78.711	77.691 77.751	0.361 0.386	79.251 79.236	78.701 79.236	77.691 78.841	0.361 0.386	79.251 79.236	78.051 78.841	78.051 78.841	78.351 78.346	78.351 78.346						
MJ80 = 1.5	4h6h	79.026 79.016	78.539 78.524	78.926 78.936	78.626 78.641	80.000 79.995	79.764 79.769	4h5h	80.000 80.015	79.026 79.036	78.268 78.328	0.271 0.296	79.458 79.443	79.026 79.443	78.268 79.148	0.271 0.296	79.458 79.443	78.539 78.544	78.539 78.544	78.775 78.770	78.775 78.770						
MJ85 = 2	4h6h	83.701 83.691	81.071 83.036	83.589 83.599	83.189 83.204	85.000 84.995	84.770 84.775	4h5h	85.000 85.015	83.701 83.711	82.691 82.751	0.361 0.386	84.251 84.236	83.701 84.236	82.691 83.841	0.361 0.386	84.251 84.236	83.051 83.056	83.051 83.056	83.351 83.346	83.351 83.346						
MJ90 = 6	4h6h	86.103 86.090	84.154 84.131	85.923 85.936	84.723 84.746	90.000 89.995	89.400 89.405	4h5h	90.000 90.023	86.103 86.116	83.072 83.193	1.083 1.137	87.539 87.516	86.103 87.516	83.072 84.154	1.083 1.137	87.539 87.516	84.154 84.159	84.154 84.159	84.784 84.779	84.784 84.779						
MJ90 = 2	4h6h	88.701 88.691	88.051 88.036	88.589 88.599	88.189 88.204	90.000 89.995	89.770 89.775	4h5h	90.000 90.015	88.701 88.711	87.691 87.751	0.361 0.386	89.251 89.236	88.701 89.236	87.691 88.841	0.361 0.386	89.251 89.236	88.051 88.841	88.051 88.841	88.351 88.346	88.351 88.346						
MJ95 = 2	4h6h	93.701 93.691	93.051 93.036	93.583 93.593	93.183 93.198	95.000 94.995	94.720 94.725	4h5h	95.000 95.015	93.701 93.711	92.691 92.751	0.361 0.386	94.261 94.246	93.701 94.246	92.691 93.851	0.361 0.386	94.261 94.246	93.051 93.851	93.051 93.851	93.351 93.346	93.351 93.346						
MJ100 = 6	4h6h	96.103 96.090	94.154 94.131	95.913 95.926	94.713 94.726	100.000 99.995	99.400 99.405	4h5h	100.000 100.023	96.103 96.116	93.072 93.193	1.083 1.137	97.539 97.530	96.103 97.530	93.072 94.154	1.083 1.137	97.539 97.530	94.154 94.159	94.154 94.159	94.784 94.779	94.784 94.779						
MJ100 = 2	4h6h	98.701 98.691	98.051 98.036	98.583 98.593	98.183 98.198	100.000 99.995	99.720 99.725	4h5h	100.000 100.015	98.701 98.711	97.691 97.751	0.361 0.386	99.261 99.246	98.701 99.246	97.691 98.861	0.361 0.386	99.261 99.246	98.051 98.861	98.051 98.861	98.351 98.346	98.351 98.346						
MJ105 = 2	4h6h	103.701 103.686	103.051 103.028	103.583 103.598	103.183 103.206	105.000 104.995	104.720 104.725	4h5h	105.000 105.023	103.701 103.716	102.691 102.756	0.361 0.386	104.261 104.238	103.701 104.238	102.691 103.846	0.361 0.386	104.261 104.238	103.051 103.846	103.051 103.846	103.351 103.346	103.351 103.346						
MJ110 = 2	4h6h	108.701 108.686	108.051 108.028	108.583 108.598	108.183 108.206	110.000 109.995	109.720 109.725	4h5h	110.000 110.023	108.701 108.716	107.691 107.756	0.361 0.386	109.261 109.238	108.701 109.238	107.691 108.846	0.361 0.386	109.261 109.238	108.051 108.846	108.051 108.846	108.351 108.346	108.351 108.346						
MJ120 = 2	4h6h	118.701 118.686	118.051 118.028	118.583 118.593	118.183 118.206	120.000 119.994	119.720 119.726	4h5h	120.000 120.023	118.701 118.716	117.691 117.756	0.361 0.386	119.261 119.238	118.701 119.238	117.691 118.846	0.361 0.386	119.261 119.238	118.051 118.846	118.051 118.846	118.351 118.346	118.351 118.346						
MJ130 = 2	4h6h	128.701 128.686	128.051 128.028	128.583 128.598	128.183 128.206	130.000 129.994	129.720 129.726	4h5h	130.000 130.023	128.701 128.716	127.691 127.756	0.361 0.386	129.261 129.238	128.701 129.238	127.691 128.846	0.361 0.386	129.261 129.238	128.051 128.846	128.051 128.846	128.351 128.346	128.351 128.346						
MJ140 = 2	4h6h	138.701 138.686	138.051 138.028	138.583 138.598	138.183 138.206	140.000 139.994	139.720 139.726	4h5h	140.000 140.023	138.701 138.716	137.691 137.756	0.361 0.386	139.261 139.238	138.701 139.238	137.691 138.846	0.361 0.386	139.261 139.238	138.051 138.846	138.051 138.846	138.351 138.346	138.351 138.346						
MJ150 = 2	4h6h	148.701 148.686	148.051 148.028	148.583 148.593	148.183 148.206	150.000 149.994	149.720 149.726	4h5h	150.000 150.023	148.701 148.716	147.691 147.756	0.361 0.386	149.261 149.238	148.701 149.238	147.691 148.846	0.361 0.386	149.261 149.238	148.051 148.846	148.051 148.846	148.351 148.346	148.351 148.346						
MJ160 = 3	4h6h	158.051 158.036	157.077 157.049	157.911 157.926	157.111 157.339	160.000 159.994	159.625 159.611	4h5h	160.000 160.028	158.051 158.066	156.535 156.600	0.541 0.566	158.841 158.813	158.841 158.813	156.535 157.077	0.541 0.566	158.841 158.813	158.051 158.051	158.051 158.051	158.351 158.346	158.351 158.346						

TABLE xxiii.C.5 Gages for MJ Thread Series, Limits of Size (Cont'd)

Basic Thread Designation	Gages for External Threads										Gages for Internal Threads																
	Tol Class	X Thread Ring Gages					Z Plain Ring Gages for Major Diameter					Tol Class	Go Full Form X Thread Plug Gages					X Thread Plug Gages					Z Plain Plug Gages for Minor Diameter				
		GO		NOT-GO			NOT-GO		GO				GO X Thread Plug Gages		0.18042P Root Radius			NOT GO		Z Plain Plug Gages for Minor Diameter							
		Pitch Dia	Minor Dia	Pitch Dia	Minor Dia	Major Dia	Pitch Dia	Minor Dia	Major Dia	GO	Min		Max	Major Dia	Pitch Dia	Minor Dia	Major Dia	Min	Max	Major Dia	Pitch Dia	GO	Min	Max			
		Max	Min	Max	Min	Max	Max	Min	Max	Max	Min		Max	Max	Min	Max	Max	Min	Max	Max	Min	Max	Min	Max			
		Max	Min	Max	Min	Max	Max	Min	Max	Max	Min		Max	Max	Min	Max	Max	Min	Max	Max	Min	Max	Min	Max			
1	2	3	4	5	6	7	8		9	10	11	12	13	14	15	16	17										
MJ170 x 3	4h6h	168.051 168.036	167.077 167.049	167.911 167.926	167.311 167.339	170.000 169.992	169.625 169.633		4h5H	170.000 170.028	168.051 168.066	166.535 166.600	0.541 0.566	168.841 168.813	168.241 168.226	167.077 167.085	167.477 167.469										
	4h6h	178.051 178.036	177.077 177.049	177.911 177.926	177.311 177.339	180.000 179.992	179.625 179.633		4H5H	180.000 180.028	178.051 178.066	176.535 176.600	0.541 0.566	178.841 178.813	178.241 178.226	177.077 177.085	177.477 177.469										
MJ190 x 3	4h6h	188.051 188.036	187.077 187.049	187.891 187.906	187.291 187.319	190.000 189.992	189.625 189.633		4H5H	190.000 190.028	188.051 188.066	186.535 186.600	0.541 0.566	188.863 188.835	188.263 188.248	187.077 187.085	187.477 187.469										
	4h6h	198.051 198.036	197.077 197.049	197.891 197.906	197.291 197.319	200.000 199.992	199.625 199.633		4H5H	200.000 200.028	198.051 198.066	196.535 196.600	0.541 0.566	198.863 198.835	198.263 198.248	197.077 197.085	197.477 197.469										

TABLE XXII.C.6 Setting gages for MJ thread series, limits of size

Basic Thread Designation	External thread										Internal thread					
	W Thread setting plugs for indicating GO snap and GO ring gages					W Thread setting plugs for M01-GO snap and M01-GO ring gages					W Solid GO thread setting ring for indicating and snap gages			W Solid M01-GO thread setting ring for snap gages		
	Tol Class	Major Dia.			Pitch Diameter Max Min	Major Dia.			Pitch Diameter Min Max	Tol Class	Pitch Diameter Min Max	Minor Diameter Max Min	Pitch Diameter Max Min	Minor Diameter Max Min		
		Truncated Max Min	Full Form Min Max	Truncated Max Min		Full Form Min Max										
1	2	3	4	5	6	7	8	9	10	11	12	13				
MJ1.6 ± 0.35	4h6h	1.443 1.435	1.600 1.608	1.373 1.370	1.403 1.395	1.584 1.592	1.333 1.336	4H6H	--	--	--	--				
MJ2 ± 0.4	4h6h	1.820 1.812	2.000 2.008	1.740 1.737	1.778 1.770	1.993 2.001	1.698 1.701	4H6H	--	--	--	--				
MJ2.5 ± 0.45	4h6h	2.298 2.290	2.500 2.508	2.208 2.205	2.253 2.245	2.500 2.508	2.163 2.166	4H6H	--	--	--	--				
MJ3 ± 0.5	4h6h	2.775 2.767	3.000 3.008	2.675 2.672	2.727 2.719	3.000 3.008	2.627 2.630	4H6H	--	--	--	--				
MJ3.5 ± 0.6	4h6h	3.230 3.222	3.500 3.508	3.110 3.107	3.177 3.169	3.500 3.508	3.057 3.060	4H6H	--	--	--	--				
MJ4 ± 0.7	4h6h	3.685 3.677	4.000 4.008	3.545 3.542	3.629 3.621	4.000 4.008	3.489 3.492	4H6H	--	--	--	--				
MJ5 ± 0.8	4h6h	4.640 4.632	5.000 5.008	4.480 4.477	4.580 4.572	5.000 5.008	4.420 4.423	4H6H	4.480 4.483	4.221 4.213	4.560 4.557	4.421 4.413				
MJ6 ± 1	4h6h	5.550 5.437	6.000 6.013	5.350 5.347	5.479 5.466	6.000 6.013	5.279 5.282	4H5H	5.350 5.353	5.026 5.013	5.445 5.442	5.216 5.203				
MJ7 ± 1	4h6h	6.550 6.437	7.000 7.013	6.350 6.347	6.479 6.466	7.000 7.013	6.279 6.282	4H5H	6.350 6.353	6.026 6.013	6.445 6.442	6.216 6.203				
MJ8 ± 1.25	4h6h	7.438 7.425	8.000 8.013	7.188 7.185	7.363 7.350	8.000 8.013	7.113 7.116	4H5H	7.188 7.191	6.782 6.769	7.288 7.285	6.994 6.981				
MJ8 ± 1	4h6h	7.550 7.537	8.000 8.013	7.350 7.347	7.479 7.466	8.000 8.013	7.279 7.282	4H5H	7.350 7.353	7.026 7.013	7.445 7.442	7.216 7.203				
MJ10 ± 1.5	4h6h	9.326 9.313	10.000 10.013	9.026 9.023	9.241 9.228	10.000 10.013	8.941 8.944	4H5H	9.026 9.029	8.539 8.526	9.138 9.135	8.775 8.762				
MJ10 ± 1.25	4h6h	9.438 9.425	10.000 10.013	9.188 9.185	9.363 9.350	10.000 10.013	9.113 9.116	4H5H	9.188 9.191	8.782 8.769	9.288 9.285	8.994 8.981				
MJ10 ± 0.75	4h6h	9.663 9.655	10.000 10.008	9.513 9.510	9.600 9.592	10.000 10.008	9.450 9.453	4H5H	9.513 9.516	9.269 9.261	9.598 9.595	9.419 9.411				
MJ11 ± 1.25	4h6h	10.438 10.425	11.000 11.013	10.188 10.185	10.363 10.350	11.000 11.013	10.113 10.116	4H5H	10.188 10.191	9.782 9.769	10.288 10.285	9.994 9.981				

TABLE XXII.C.6 Setting gages for MJ thread series, limits of size (cont'd)

Basic Thread Designation	External thread										Internal thread							
	W Thread setting plugs for indicating GO snap and GO ring gages					W Thread setting plugs for NOT-GO snap and NOT-GO ring gages					W Solid GO thread setting ring for indicating and snap gages			W Solid NOT-GO thread setting ring for snap gages				
	ToI Class	Major Dia.		Pitch Diameter		Truncated Max Min	Full Form Min Max	Major Dia.		Pitch Diameter		ToI Class	Pitch Diameter		Minor Diameter Max Min	Pitch Diameter		Minor Diameter Max Min
		Max Min	Full Form Min Max	Max Min	Full Form Min Max			Max Min	Full Form Min Max	Max Min	Full Form Min Max		Max Min	Full Form Min Max				
1	2	3	4	5	6	7	8	9	10	11	12	13						
MJ12 x 1.75	4h6h	11.213 11.198	12.000 12.015	10.863 10.860	11.118 11.103	12.000 12.015	10.768 10.771	4H5H	10.863 10.866	10.295 10.280	10.988 10.985	10.560 10.545						
MJ12 x 1.25	4h6h	11.438 11.425	12.000 12.013	11.188 11.185	11.353 11.340	12.000 12.013	11.103 11.106	4H5H	11.188 11.191	10.782 10.769	11.300 11.297	10.994 10.981						
MJ12 x 1	4h6h	11.550 11.537	12.000 12.013	11.350 11.347	11.475 11.462	12.000 12.013	11.275 11.278	4H5H	11.350 11.353	11.026 11.013	11.450 11.447	11.216 11.203						
MJ14 x 2	4h6h	13.101 13.086	14.000 14.015	12.701 12.696	13.001 12.986	14.000 14.015	12.601 12.606	4H5H	12.701 12.706	12.051 12.036	12.833 12.828	12.351 12.336						
MJ14 x 1.5	4h6h	13.326 13.313	14.000 14.013	13.026 13.022	13.236 13.223	14.000 14.013	12.936 12.940	4H5H	13.026 13.030	12.539 12.526	13.144 13.140	12.775 12.762						
MJ15 x 1	4h6h	14.550 14.537	15.000 15.013	14.350 14.346	14.475 14.462	15.000 15.013	14.275 14.279	4H5H	14.350 14.354	14.026 14.013	14.450 14.446	14.216 14.203						
MJ16 x 2	4h6h	15.101 15.086	16.000 16.015	14.701 14.696	15.001 14.986	16.000 16.015	14.601 14.606	4H5H	14.701 14.706	14.051 14.036	14.833 14.828	14.351 14.336						
MJ16 x 1.5	4h6h	15.326 15.313	16.000 16.013	15.026 15.022	15.236 15.223	16.000 16.013	14.936 14.940	4H5H	15.026 15.030	14.539 14.526	15.144 15.140	14.775 14.762						
MJ17 x 1	4h6h	16.550 16.537	17.000 17.013	16.350 16.346	16.475 16.462	17.000 17.013	16.275 16.279	4H5H	16.350 16.354	16.026 16.013	16.450 16.446	16.216 16.203						
MJ18 x 1.5	4h6h	17.326 17.313	18.000 18.013	17.026 17.022	17.236 17.223	18.000 18.013	16.936 16.940	4H5H	17.026 17.030	16.539 16.526	17.144 17.140	16.775 16.762						
MJ20 x 2.5	4h6h	18.876 18.861	20.000 20.015	18.376 18.371	18.770 18.755	20.000 20.015	18.270 18.275	4H5H	18.376 18.381	17.564 17.549	18.516 18.511	17.919 17.904						
MJ20 x 1.5	4h6h	19.326 19.313	20.000 20.013	19.026 19.022	19.236 19.223	20.000 20.013	18.936 18.940	4H5H	19.026 19.030	18.539 18.526	19.144 19.140	18.775 18.762						
MJ20 x 1	4h6h	19.550 19.537	20.000 20.013	19.350 19.346	19.475 19.462	20.000 20.013	19.275 19.279	4H5H	19.350 19.354	19.026 19.013	19.450 19.446	19.216 19.203						
MJ22 x 1.5	4h6h	21.326 21.313	22.000 22.013	21.026 21.022	21.236 21.223	22.000 22.013	20.936 20.940	4H5H	21.026 21.030	20.539 20.526	21.144 21.140	20.775 20.762						
MJ24 x 3	4h6h	22.651 22.636	24.000 24.015	22.051 22.046	22.526 22.511	24.000 24.015	21.926 21.931	4H5H	22.051 22.056	21.077 21.062	22.221 22.216	21.477 21.462						

TABLE XXII.C.6 Setting gages for MJ thread series, limits of size (cont'd)

Basic Thread Designation	External thread										Internal thread					
	W Thread setting plugs for indicating GO snap and GO ring gages					W Thread setting plugs for M01-GO snap and M01-GO ring gages					W Solid GO thread setting ring for indicating and snap gages			W Solid M01-GO thread setting ring for snap gages		
	ToI Class	Major Dia.		Pitch Diameter Max Min	Pitch Diameter Max Min	Major Dia.		Pitch Diameter Max Min	ToI Class	Pitch Diameter Max Min	Pitch Diameter Max Min	Pitch Diameter Max Min	Pitch Diameter Max Min	Pitch Diameter Max Min	Pitch Diameter Max Min	Pitch Diameter Max Min
		Truncated Max Min	Full Form Min Max			Truncated Max Min	Full Form Min Max									
1	2	3	4	5	6	7	8	9	10	11	12	13				
MJ24 x 2	4h6h	23.101 23.086	24.000 24.015	22.701 22.696	22.995 22.980	24.000 24.015	22.595 22.600	4H5H	22.701 22.706	22.051 22.036	22.841 22.836	22.351 22.336				
MJ25 x 1.5	4h6h	24.326 24.313	25.000 25.013	24.026 24.022	24.231 24.218	25.000 25.013	23.931 23.935	4H5H	24.026 24.030	23.539 23.526	24.151 24.147	23.775 23.762				
MJ27 x 2	4h6h	26.101 26.086	27.000 27.015	25.701 25.696	25.995 25.980	27.000 27.015	25.595 25.600	4H5H	25.701 25.706	25.051 25.036	25.841 25.836	25.351 25.336				
MJ30 x 3.5	4h6h	28.427 28.409	30.000 30.018	27.727 27.722	28.295 28.277	30.000 30.018	27.595 27.600	4H5H	27.727 27.732	26.590 26.572	27.907 27.902	27.040 27.022				
MJ30 x 2	4h6h	29.101 29.086	30.000 30.015	28.701 28.696	28.995 28.980	30.000 30.015	28.595 28.600	4H5H	28.701 28.706	28.051 28.036	28.841 28.836	28.351 28.336				
MJ30 x 1.5	4h6h	29.326 29.313	30.000 30.013	29.026 29.022	29.231 29.218	30.000 30.013	28.931 28.935	4H5H	29.026 29.030	28.539 28.526	29.151 29.147	28.775 28.762				
MJ33 x 2	4h6h	32.101 32.086	33.000 33.015	31.701 31.696	31.995 31.980	33.000 33.015	31.595 31.600	4H5H	31.701 31.706	31.051 31.036	31.841 31.836	31.351 31.336				
MJ35 x 1.5	4h6h	34.326 34.313	35.000 35.013	34.026 34.022	34.231 34.218	35.000 35.013	33.931 33.935	4H5H	34.026 34.030	33.539 33.526	34.151 34.147	33.775 33.762				
MJ36 x 4	4h6h	34.202 34.184	36.000 36.018	33.402 33.397	34.062 34.044	36.000 36.018	33.262 33.267	4H5H	33.402 33.407	32.103 32.085	33.592 33.587	32.578 32.560				
MJ36 x 2	4h6h	35.101 35.086	36.000 36.015	34.701 34.696	34.995 34.980	36.000 36.015	34.595 34.600	4H5H	34.701 34.706	34.051 34.036	34.841 34.836	34.351 34.336				
MJ39 x 2	4h6h	38.101 38.086	39.000 39.015	37.701 37.696	37.995 37.980	39.000 39.015	37.595 37.600	4H5H	37.701 37.706	37.051 37.036	37.841 37.836	37.351 37.336				
MJ40 x 1.5	4h6h	39.326 39.313	40.000 40.013	39.026 39.021	39.231 39.218	40.000 40.013	38.931 38.936	4H5H	39.026 39.031	38.539 38.526	39.151 39.146	38.775 38.762				
MJ42 x 4.5	4h6h	39.977 39.957	42.000 42.020	39.077 39.071	39.827 39.807	42.000 42.020	38.927 38.933	4H5H	39.077 39.083	37.616 37.596	39.277 39.271	38.146 38.126				
MJ42 x 2	4h6h	41.101 41.086	42.000 42.015	40.701 40.695	40.995 40.980	42.000 42.015	40.595 40.601	4H5H	40.701 40.707	40.051 40.036	40.841 40.835	40.351 40.336				
MJ45 x 1.5	4h6h	44.326 44.313	45.000 45.013	44.026 44.021	44.231 44.218	45.000 45.013	43.931 43.936	4H5H	44.026 44.031	43.539 43.526	44.151 44.146	43.775 43.762				

TABLE XXIII.C.6 Setting gages for MJ thread series, limits of size (cont'd)

Basic Thread Designation	External thread										Internal thread						
	W Thread setting plugs for indicating GO snap and GO ring gages					W Thread setting plugs for NOT-GO snap and NOT-GO ring gages					W Solid GO thread setting ring for indicating and snap gages			W Solid NOT-GO thread setting ring for snap gages			
	Tol Class	Major Dia.		Pitch Diameter Max Min	6	Major Dia.		Pitch Diameter Max Min	7	8	9	10	11	Pitch Diameter Max Min	Minor Diameter Max Min	Pitch Diameter Max Min	Minor Diameter Max Min
		Truncated Max Min	Full Form Max Min			Truncated Max Min	Full Form Max Min										
1	2	3	4	5													13
MJ48 x 5	4h6h	45.752 45.732	48.000 48.020	44.752 44.746	45.592 45.572	48.000 48.020	44.592 44.598			4H5H	44.752 44.758	43.129 43.109	44.964 44.958		43.689 43.669		
MJ48 x 2	4h6h	47.101 47.086	48.000 48.015	46.701 46.695	46.989 46.974	48.000 48.015	46.589 46.595			4H5H	46.701 46.707	46.051 46.036	46.851 46.845		46.351 46.336		
MJ50 x 1.5	4h6h	49.326 49.313	50.000 50.013	49.026 49.021	49.226 49.213	50.000 50.013	48.926 48.931			4H5H	49.026 49.031	48.539 48.526	49.158 49.153		48.775 48.762		
MJ55 x 1.5	4h6h	54.326 54.313	55.000 55.013	54.026 54.021	54.226 54.213	55.000 55.013	53.926 53.931			4H5H	54.026 54.031	53.539 53.526	54.158 54.153		53.775 53.762		
MJ56 x 5.5	4h6h	53.520 53.508	56.000 56.020	52.428 52.422	53.358 53.338	56.000 56.020	52.258 52.264			4H5H	52.428 52.434	50.641 50.621	52.652 52.646		51.241 51.221		
MJ56 x 2	4h6h	55.101 55.086	56.000 56.015	54.701 54.695	54.989 54.974	56.000 56.015	54.589 54.595			4H5H	54.701 54.707	54.051 54.036	54.851 54.845		54.351 54.336		
MJ60 x 1.5	4h6h	59.326 59.313	60.000 60.013	59.026 59.021	59.226 59.213	60.000 60.013	58.926 58.931			4H5H	59.026 59.031	58.539 58.526	59.158 59.153		58.775 58.762		
MJ64 x 6	4h6h	61.303 61.280	64.000 64.023	60.103 60.097	61.123 61.100	64.000 64.023	59.923 59.929			4H5H	60.103 60.109	58.154 58.131	60.339 60.333		58.784 58.761		
MJ64 x 2	4h6h	63.101 63.086	64.000 64.015	62.701 62.695	62.989 62.974	64.000 64.015	62.589 62.595			4H5H	62.701 62.707	62.051 62.036	62.851 62.845		62.351 62.336		
MJ65 x 1.5	4h6h	64.326 64.313	65.000 65.013	64.026 64.021	64.226 64.213	65.000 65.013	63.926 63.931			4H5H	64.026 64.031	63.539 63.526	64.158 64.153		63.775 63.762		
MJ70 x 1.5	4h6h	69.326 69.313	70.000 70.013	69.026 69.021	69.226 69.213	70.000 70.013	68.926 68.931			4H5H	69.026 69.031	68.539 68.526	69.158 69.153		68.775 68.762		
MJ72 x 6	4h6h	69.303 69.280	72.000 72.023	68.103 68.097	69.123 69.100	72.000 72.023	67.923 67.929			4H5H	68.103 68.109	66.154 66.131	66.339 66.333		66.784 66.761		
MJ72 x 2	4h6h	71.101 71.086	72.000 72.015	70.701 70.695	70.989 70.974	72.000 72.015	70.589 70.595			4H5H	70.701 70.707	70.051 70.036	70.851 70.845		70.351 70.336		
MJ75 x 1.5	4h6h	74.326 74.313	75.000 75.013	74.026 74.021	74.226 74.213	75.000 75.013	73.926 73.931			4H5H	74.026 74.031	73.539 73.526	74.158 74.153		73.775 73.762		
MJ80 x 6	4h6h	77.303 77.280	80.000 80.023	76.103 76.097	77.123 77.100	80.000 80.023	75.923 75.929			4H5H	76.103 76.109	74.154 74.131	76.339 76.333		74.784 74.761		

TABLE XII.C.6 Setting gages for MJ thread series, limits of size (cont'd)

Basic Thread Designation	External thread										Internal thread					
	W Thread setting plugs for indicating GO snap and GO ring gages										W Solid GO thread setting ring for indicating and snap gages					
	Major Dia.										Pitch					
	Tol Class	Truncated Max Min	Full Form Min Max	Pitch Diameter Max Min	Truncated Max Min	Full Form Min Max	Pitch Diameter Max Min	Major Dia. Max Min	Full Form Min Max	Pitch Diameter Max Min	Tol Class	Pitch Min Max	Minor Diameter Max Min	Pitch Diameter Max Min	Minor Diameter Max Min	Pitch Diameter Max Min
1	2	3	4	5	6	7	8				9	10	11	12	13	
MJ80 x 2	4h6h	79.101 79.086	80.000 80.015	78.701 78.695	78.989 78.974	80.000 80.015	78.589 78.595				4H5H	78.701 78.707	78.051 78.036	78.851 78.845	78.351 78.336	
MJ80 x 1.5	4h6h	76.326 76.313	80.000 80.013	79.026 79.021	79.226 79.213	80.000 80.013	78.926 78.931				4H5H	79.026 79.031	78.539 78.526	79.158 79.153	78.775 78.762	
MJ85 x 2	4h6h	84.101 84.086	85.000 85.015	83.701 83.695	83.989 83.974	85.000 85.015	83.589 83.595				4H5H	83.701 83.707	83.051 83.036	83.851 83.845	83.351 83.336	
MJ90 x 6	4h6h	87.103 87.280	90.000 90.023	86.103 86.097	87.123 87.100	90.000 90.023	85.923 85.979				4H5H	86.103 86.109	84.154 84.131	86.339 86.333	84.784 84.761	
MJ90 x 2	4h6h	89.101 89.086	90.000 90.015	88.701 88.695	88.989 88.974	90.000 90.015	88.589 88.595				4H5H	88.701 89.707	88.051 88.036	88.851 88.845	88.351 88.336	
MJ95 x 2	4h6h	94.101 94.086	95.000 95.015	93.701 93.695	93.983 93.968	95.000 95.015	93.583 93.589				4H5H	93.701 93.707	91.015 91.036	93.861 93.855	93.351 93.336	
MJ100 x 6	4h6h	97.303 97.280	100.000 100.023	96.103 96.097	97.113 97.090	100.000 100.023	95.913 95.919				4H5H	96.103 96.109	94.154 94.131	96.353 96.347	94.784 94.761	
MJ100 x 2	4h6h	99.101 99.086	100.000 100.015	98.701 98.695	98.983 98.960	100.000 100.015	98.583 98.589				4H5H	98.701 98.707	98.051 98.036	98.861 98.855	98.351 98.336	
MJ105 x 2	4h6h	104.101 104.078	105.000 105.023	103.701 103.693	103.983 103.960	105.000 105.023	103.583 103.591				4H5H	103.701 103.709	103.051 103.028	103.861 103.853	103.351 103.328	
MJ110 x 2	4h6h	109.101 109.078	110.000 110.023	108.701 108.693	108.983 108.960	110.000 110.023	108.583 108.591				4H5H	108.701 108.709	108.051 108.028	108.861 108.853	108.351 108.328	
MJ120 x 2	4h6h	119.101 119.078	120.000 120.023	118.701 118.693	118.983 118.960	120.000 120.023	118.583 118.591				4H5H	118.701 118.709	118.051 118.028	118.861 118.853	118.351 118.328	
MJ130 x 2	4h6h	129.101 129.078	130.000 130.023	128.701 128.693	128.983 128.960	130.000 130.023	128.583 128.591				4H5H	128.701 128.709	128.051 128.028	128.861 128.853	128.351 128.328	
MJ140 x 2	4h6h	139.101 139.078	140.000 140.023	138.701 138.693	138.983 138.960	140.000 140.023	138.583 138.591				4H5H	138.701 138.709	138.051 138.038	138.861 138.853	138.351 138.328	
MJ150 x 2	4h6h	149.101 149.078	150.000 150.023	148.701 148.693	148.983 148.960	150.000 150.023	148.583 148.591				4H5H	148.701 148.709	148.051 148.028	148.861 148.853	148.351 148.328	
MJ160 x 3	4h6h	158.651 158.628	160.000 160.023	158.051 158.043	158.511 158.488	160.000 160.023	157.911 157.919				4H5H	158.051 158.059	157.077 157.054	158.241 158.233	157.477 157.454	

TABLE XXII.C.6 Setting gages for MJ thread series, limits of size (cont'd)

Basic Thread Designation	External thread										Internal thread			
	W Thread setting plugs for indicating GO snap and GO ring gages					W Thread setting plugs for NOT-GO snap and NOT-GO ring gages					W Solid GO thread setting ring for indicating and snap gages		W Solid NOT-GO thread setting ring for snap gages	
	Major Dia.		Pitch Diameter		Tol Class	Major Dia.		Pitch Diameter		Tol Class	Pitch Diameter	Minor Diameter	Pitch Diameter	Minor Diameter
	Truncated Max Min	Full Form Min Max	Truncated Max Min	Full Form Min Max		Truncated Max Min	Full Form Min Max	Truncated Max Min	Full Form Min Max					
1	2	3	4	5	6	7	8	9	10	11	12	13		
MJ170 x 3	4h6h 168.651 168.628	170.000 170.023	168.051 168.043	168.511 168.488	170.000 170.023	167.911 167.919	4h5H 167.077 167.054	4h5H 178.051 177.077 177.054	4h5H 188.051 187.077 187.054	4h5H 198.051 197.077 197.054	168.241 168.233	167.477 167.454		
MJ180 x 3	4h6h 178.651 178.628	180.000 180.023	178.051 178.043	178.511 178.488	180.000 180.023	177.911 177.919	4h5H 177.077 177.054	4h5H 188.051 187.077 187.054	4h5H 198.051 197.077 197.054	4h5H 200.000 200.023	178.241 178.233	177.477 177.454		
MJ190 x 3	4h6h 188.651 188.628	190.000 190.023	188.051 188.043	188.491 188.468	190.000 190.023	187.891 187.899	4h5H 187.077 187.054	4h5H 198.051 197.077 197.054	4h5H 200.000 200.023	4h5H 200.000 200.023	188.263 188.255	187.477 187.454		
MJ200 x 3	4h6h 198.651 198.628	200.000 200.023	198.051 198.043	198.491 198.468	200.000 200.023	197.891 197.899	4h5H 197.077 197.054	4h5H 200.000 200.023	4h5H 200.000 200.023	4h5H 200.000 200.023	198.263 198.255	197.477 197.454		

MILITARY INTERESTS:

Custodians

Army - AR
Navy - AS
Air Force - 11

Review Activities

Army - AT, AV, ME
Navy - OS
Air Force - 99

User Activities

Army - CR, ER
Navy - SH

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GSA - FSS, PCD

HUD - TCS

Interior - BPA

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NASA - JFK, LRC, MSF

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