

MIL-STD-110A
CHANGE NOTICE 1
6 February 1957

MILITARY STANDARD
GAGES, PLUG, PLAIN CYLINDRICAL
GO

TO ALL ACTIVITIES

1. The following pages of this standard have been revised and supersede the pages listed:

<i>New page</i>	<i>Date</i>	<i>Superseded page</i>	<i>Date</i>
1	6 February 1957	1	8 December 1955
4	6 February 1957	4	8 December 1955
5	6 February 1957	5	8 December 1955
6	6 February 1957	6	8 December 1955
7	6 February 1957	7	8 December 1955

2. The following is a cumulative list of earlier changes:

None.

3. Retain this cover page and insert before table of contents of this standard.

1. SCOPE

1.1 This standard covers the pertinent design data and stock numbers for American Gage Design Standard, single end, go plain cylindrical plug gages for the inspection of the minimum limits of internal diameters that range in size from 0.031 to 2.510 inches inclusive in increments of 0.001 and 0.03125 inches. The class of gage required is listed in accordance with the total component tolerance.

1.2 The stock numbers listed in this standard have been approved by the Cataloging Division, Office of the Assistant Secretary of Defense as Federal stock numbers (FSN). See 3.

2. REFERENCED DOCUMENTS

2.1 The following standards, specifications, and publications of latest issue form a part of this standard:

STANDARDS

MIL-STD-10 — Surface Roughness, Waviness, and Lay

(Application for copies should be addressed to the Superintendent of Documents, U. S. Government Printing Office, Washington 25, D. C.)

SPECIFICATIONS

MIL-G-10944 — Gages, Dimensional Control

(Copies of specifications should be obtained from the procuring activity or as directed by the contracting officer.)

OTHER PUBLICATIONS

U. S. Department of Commerce, Commercial Standard CS8, Gage Blanks

(Application for copies should be addressed to the Superintendent of Documents, U. S. Government Printing Office, Washington 25, D. C.)

3. DEFINITIONS

3.1 The Federal stock number (FSN) consists of the applicable 7-digit Federal item identification number designated in tables I and II as "FIIN—Gage Stock No." prefixed by the Federal supply classification (FSC), "5220". The Federal stock number shall be utilized in all instances and specified thus: 4 digits, hyphen, 3 digits, hyphen, 4 digits. (Example: 5220-742-1680.)

4. GENERAL REQUIREMENTS

4.1 This standard contains table I and table II. Table I provides the tabulated design data required for manufacture and inspection and is arranged in ascending size sequence (see par. 1.1 above). Table I is also arranged in ascending numerical sequence according to stock numbers (7420000 to 7457568 incl), except for three hundred three stock numbers. Table II is a listing of the three hundred three stock numbers in ascending numerical sequence and is provided as a finding aid for locating the required design data contained in table I for these stock numbers.

MIL-STD-110A**8 December 1955****4.1.1 Table I. Tabulation of Design and Identification Data.**

4.1.1.1 Stock numbers for gages without air groove or flat are listed in column B. Stock numbers for gages with air groove or flat are listed in column C.

4.1.1.2 Column A lists the proper reference to the applicable figure for each stock number.

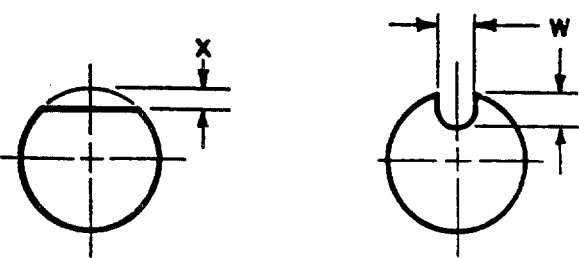
4.1.1.3 Column D lists the minimum component dimension and when applied to the total component tolerance in column E provides the data required for selecting the applicable stock number in column B or C. (NOTE: The stock number listed in column C for any given minimum component dimension is applicable for "blind" hole requirements regardless of component tolerance.)

4.1.1.3.1 When the total component tolerance is not listed, the stock number applicable to the next smaller listed total component tolerance for the minimum component dimension shall be used.

4.1.1.4 Columns F to H inclusive list the design data for each stock number and, when applied to the figure referenced in column A, provide the data required for manufacture and inspection.

4.1.1.5 Columns B to D inclusive list the identification data for each stock number and, when applied to the figure referenced in column A, provide the information for proper marking of the gages.

4.1.1.6 All stock numbers listed in column C shall have an air groove or flat as indicated in figure 1.



PLUG GAGE DIAMETER		x	w
ABOVE	TO & INCL		
0.030	0.059	0.0010 / .0005	
0.059	0.099	0.0020 / .0010	
0.099	0.149	0.0030 / .0015	
0.149	0.249	0.0060 / .0020	
0.249	0.624		0.02 / 0.01
0.624	0.999		0.04 / 0.01
0.999	2.510		0.06 / 0.02

FIGURE 1. Air groove.

4.1.1.7 Design data, etc. not specifically covered in this standard shall conform to the latest issue of the documents referenced in paragraph 2 above.

4.1.2 *Table II.* Listing of Gage Stock Numbers in Numerical Sequence.

4.1.2.1 Stock numbers not listed in ascending numerical sequence in table I are listed in column A.

4.1.2.2 Column B lists the applicable minimum component dimension for each stock number.

4.1.2.3 Column C references the page number in table I where the design and identification data for the applicable stock number may be found.

5. DETAIL REQUIREMENTS

5.1 Manufacture and inspection.

5.1.1 *Gaging members.*

5.1.1.1 American Gage Design Standard (AGD) gaging members shall be of hardened tool steel or other wear resistant material suitable for the intended purpose, as defined in specification MIL-G-10944, and shall be identified with the manufacturer's

name or trade-mark. (See figs. 2 to 4 incl for hardness requirements.)

5.1.1.2 Go plain cylindrical plug gages up to and including .510 inch in diameter shall be finished from AGD plain plug gage blanks of the wire type design. Gages above .510 inch up to and including 1.510 inches in diameter shall be finished from AGD go plain plug gage blanks of the taper lock design with precision centers.

5.1.1.3 Go plain cylindrical plug gages above 1.510 inches in diameter shall be finished from AGD not go plain plug gage blanks of the trilock design.

5.1.1.4 The surface roughness value denoted on the gaging surface of figures 2 to 4 inclusive, and listed in column H of table I is the maximum acceptable roughness of these surfaces. These values correspond to the meter indications of surface roughness measuring instruments, which from their method of operation show readings in accordance with the standard values prescribed in Standard MIL-STD-10.

5.1.1.5 Sharp edges shall not be permitted.

5.1.1.6 Gaging surfaces shall be lapped free of amorphous metal.

MIL-STD-110A**6 February 1957****5.1.2 Gage handles.**

5.1.2.1 Gage handles shall be as designated in Commercial Standard CS8. Handle sizes up to and including No. 5 shall be of steel or aluminum alloy. Handle sizes Nos. 5½ and 6 shall be of aluminum alloy. Trilock handles shall be provided with steel screws.

5.1.2.2 All gage handles shall be marked as specified in figures 2, 3, and 4 whichever is applicable. All marking shall be permanent and legible and of suitable height commensurate with the size of the handle.

5.2 Procurement.

5.2.1 The tabulated design data, manufacturing, and inspection specifications in this standard are applicable for procurement purposes.

5.2.1.1 Procurement documents shall specify the following:

- a. Title, number, and date of this standard.

- b. Gages required (quantity and stock No.)

- c. Place of delivery for acceptance inspection or place of delivery if acceptance inspection is to be at contractor's plant.

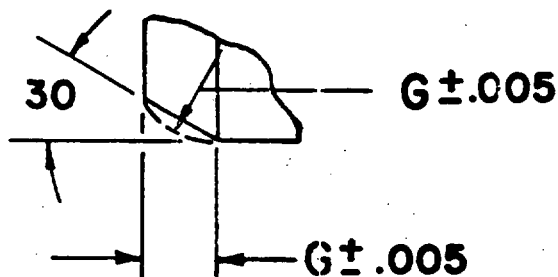
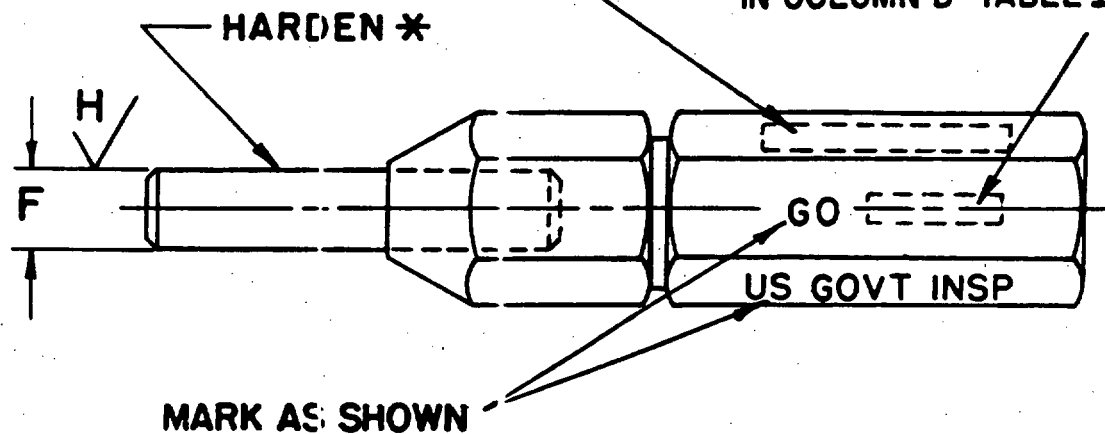
5.2.1.2 When specified, go plain plug gages may be procured without handles. Taper lock and trilock type gaging members shall be marked with the stock number, the manufacturer's name or trade-mark, and any other pertinent identification data as specified. The wire type gaging member shall be identified with a tag or label marked with the stock number and any other pertinent identification data as specified. The tag or label shall be such that it can be removed without damage to the member.

5.2.1.3 *Caution.* Although all items listed in this standard are included in the Federal catalog system as items of supply, it is not intended that all items be procured and stocked. Procurement and supply shall be confined to those items for which actual requirements exist.

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MARK FEDERAL STOCK NUMBER
SEE 3.1 & COLUMN B OR C
TABLE I

MARK DATA SHOWN
IN COLUMN D TABLE I



ENLARGED VIEW
CHAMFER OR RADIUS ON
BOTH ENDS OF WIRE

*** HARDEN: ROCKWELL OR EQUIVALENT**

C55 TO C60 FOR DIA UP TO AND INCL .10

C60 TO C63 FOR DIA ABOVE .10 TO AND INCL .20

C63 TO C66 FOR DIA ABOVE .20

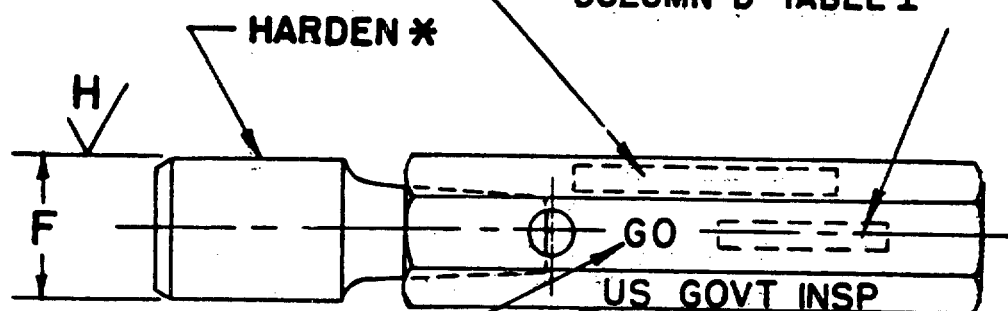
FIGURE 2. Go plain plug gage (wire type).

Supersedes page 5 of 8 December 1955.

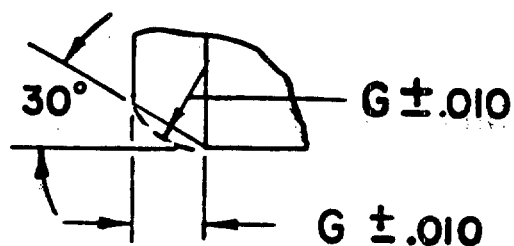
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MARK FEDERAL STOCK NUMBER
SEE 3.1 & COLUMN B OR C
TABLE I

MARK DATA SHOWN IN
COLUMN D TABLE I



MARK AS SHOWN

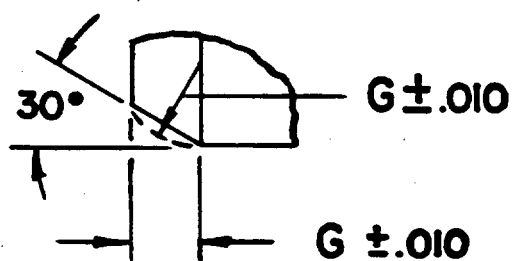
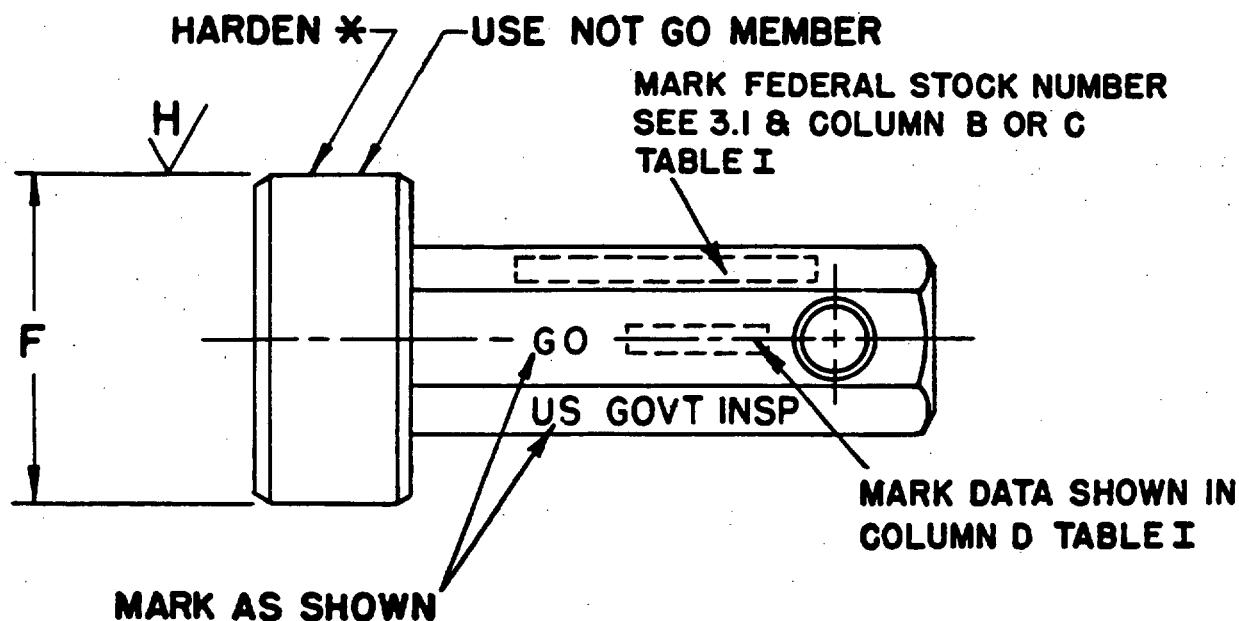


ENLARGED VIEW
CHAMFER OR RADIUS

*** HARDEN: ROCKWELL OR EQUIVALENT
C 63 TO C 66**

FIGURE 3. Go plain plug gage (taper lock type).

Supersedes page 6 of 8 December 1955.



ENLARGED VIEW
CHAMFER OR RADIUS
ON BOTH ENDS

***HARDEN: ROCKWELL OR EQUIVALENT
 C 63 TO C 66**

FIGURE 4. Go plain plug gage (trilock type).

Supersedes page 7 of 8 December 1955.

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TABLE I. *Tabulation of Design and Identification Data.*

Fig. No.	Marking on gage handle			Total component tolerance	Plug gage dimensions		Finish
	FIIN—Gage stock No.		Minimum component dimension		Diameter	Chamfer	
	without air groove	with air groove					
A	B	C	D	E	F	G	H
2	7420000	7420003	.031	MASTER	.03100 + .00002	.008	2
2	7420002		.031	.0005	.03100 + .00004	.008	4
2	7420006		.031	.002	.03110 + .00007	.008	4
2	7420008		.031	.004 AND UP	.03120 + .00010	.008	8
2	7420010	7497199	.03125	MASTER	.03125 + .00002	.008	2
2	7497198		.03125	.0005	.03125 + .00004	.008	4
2	7497202		.03125	.002	.03135 + .00007	.008	4
2	7497204		.03125	.004 AND UP	.03145 + .00010	.008	8
2	7420012	7420015	.032	MASTER	.03200 + .00002	.008	2
2	7420014		.032	.0005	.03200 + .00004	.008	4
2	7420018		.032	.002	.03210 + .00007	.008	4
2	7420020		.032	.004 AND UP	.03220 + .00010	.008	8
2	7420022	7420025	.033	MASTER	.03300 + .00002	.008	2
2	7420024		.033	.0005	.03300 + .00004	.008	4
2	7420028		.033	.002	.03310 + .00007	.008	4
2	7420030		.033	.004 AND UP	.03320 + .00010	.008	8
2	7420032	7420035	.034	MASTER	.03400 + .00002	.008	2
2	7420034		.034	.0005	.03400 + .00004	.008	4
2	7420038		.034	.002	.03410 + .00007	.008	4
2	7420040		.034	.004 AND UP	.03420 + .00010	.008	8
2	7420042	7420045	.035	MASTER	.03500 + .00002	.008	2
2	7420044		.035	.0005	.03500 + .00004	.008	4
2	7420048		.035	.002	.03510 + .00007	.008	4
2	7420050		.035	.004 AND UP	.03520 + .00010	.008	8
2	7420052	7420055	.036	MASTER	.03600 + .00002	.008	2
2	7420054		.036	.0005	.03600 + .00004	.008	4
2	7420058		.036	.002	.03610 + .00007	.008	4
2	7420060		.036	.004 AND UP	.03620 + .00010	.008	8