

**MIL-STD-118**  
**CHANGE NOTICE 1**  
**6 February 1957**

## **MILITARY STANDARD**

### **GAGES, SNAP, PLAIN ADJUSTABLE**

#### **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Superseded page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	14 January 1953
1A	6 February 1957	1	14 January 1953
3	6 February 1957	3	14 January 1953
3A	6 February 1957	3	14 January 1953
5	6 February 1957	5	14 January 1953
9	6 February 1957	9	14 January 1953
10	6 February 1957	10	14 January 1953
11	6 February 1957	11	14 January 1953
12	6 February 1957	12	14 January 1953

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

<i>New page</i>	<i>Date</i>	<i>Superseded page</i>	<i>Date</i>
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None.

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

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## **1. INTRODUCTION**

1.1 This standard establishes technical and related data, including part numbers for American Gage Design Standard Plain Adjustable Snap Gages used for inspection of component dimensions from zero to 11.625 inches inclusive.

1.2 This standard establishes the method of specifying the required setting sizes and setting tolerances of the plain adjustable snap gages on the lists of inspection gages.

1.2.1. The method of specifying the required setting sizes applies only to plain adjustable snap gages that are used for the final acceptance inspection of component material.

1.3 The stock numbers (Military Standard part 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 1.3.1 for definition of Federal Stock Number.

1.3.1 The Federal Stock Number (FSN) consists of the applicable seven digit Federal Item Identification Number designated in tables I and II as "Military standard part numbers" 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: 5220-747-9402).

## **2. APPLICATION**

2.1 Table I lists the preferred part numbers to be used for design purposes. The table also provides in numerical sequence, the ranges of plain adjustable snap gages (part numbers) in ascending order and the gage setting tolerance as determined by the total component tolerance within each range.

2.2 Table II lists all the part numbers covering American gage design standard plain adjustable snap gages, and includes the preferred part numbers listed in table I. The table is arranged simultaneously in ascending sequence for part numbers and AGD standard frame designation.

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### **3. NOTES**

**3.1 Specifying plain adjustable snap gages on lists of inspection gages.**

**3.1.1 *Go and not go gaging feature.*** The maximum component dimension will be shown as the numerator and the minimum component dimension as the denominator of the fraction. Enter the gage setting tolerance number in parenthesis ( ) after the fraction, and also the Mil-Std part number. (See sample list of inspection gages, paragraph 3.1.4, line a.)

**3.1.2 *Go gaging feature only.*** The maxi-

imum component dimension will be shown as the numerator and .000 will be used as the denominator of the fraction. Enter the gage setting tolerance number in parenthesis ( ) after the fraction, and also the Mil-Std part number. (See sample list of inspection gages, par. 3.1.4, line b.)

**3.1.3 *Not go gaging feature only.*** The numerator will be shown as .000 and the minimum component dimension as the denominator of the fraction. Enter the gage setting tolerance number in parenthesis ( ) after the fraction, and also the Mil-Std part number. (See sample list of inspection gages, par. 3.1.4, line c.)

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## 3.1.4 Sample list of inspection gages.

Gage list rev. symbol	-15				
	Component feature to be inspected	Gage type	Drawing size	MIL-STD part no.	Gage dwg. rev.
Line (a)	Diam. Head .....	Adj Snap 2.928/2.918 (5)		7479382	
Line (b)	Diam. Head "Go" .....	Adj Snap 2.928/000 (2)		7479382	
Line (c)	Diam. Head "Not Go" ....	Adj Snap 000/2.918 (2)		7479382	

3.1.5 Where an extended anvil (see fig. 17) is not required, read down column B of table I until the first dimension that exceeds the *maximum component dimension (or only dimension)* to be gaged is found, then read down column C until the *total component tolerance* is found and then on the same line read the part number in column D and the gage setting tolerance in column F. If the total component tolerance is not listed, use the next smaller total component tolerance that is listed for the maximum component dimension (or only dimension) to be gaged.

3.1.6 Where an extended anvil (see fig. 18) is required, read down column B of table I until the first dimension that exceeds the *maximum component dimension (or only dimension)* to be gaged is found, then read down column C until the *total component tolerance* is found and then on the same line read the part number in column E and the gage setting tolerance in column F. If the total component tolerance is not listed, use the next smaller total component tolerance that is listed for the *maximum component dimension (or only dimension)* to be gaged.

3.1.7 If the total component tolerance is not known, when gages are set to maximum (go) or minimum (not go) only, (pars. 3.1.2 and 3.1.3), use a gage setting tolerance of .0002 inch for gages within the range .000

to 4.1875, and a gage setting tolerance of .0004 inch for gages within the range 4.1875 to 11.625, as shown in table I. Use a gage setting tolerance of .0002 inch for other gages shown in table II having frame designations A1 to A8, B3 to B9. For gages having larger frames, use a gage setting tolerance of .0004 inch.

3.1.7.1 Enter the part number and the gage setting tolerance on the list of inspection gages. Place parenthesis marks ( ) on the gage tolerance number.

3.1.8 When the minimum component dimension falls within the range of one frame part number and the maximum component dimension falls within the range of the next larger frame part number, it will generally be permissible to specify the part number for the smaller frame because Commercial Standard CS-8 details indicate that the dimensions shown in column B of table I can be exceeded by—

3.1.8.1 One-sixteenth (.062) of an inch on gages with ranges up to and including 2.750 inches, except for AGD model MC snap gages listed in column D (fig. 17) for ranges 000–750, the Commercial Standard CS-8 details indicate the *maximum* range may be exceeded by approximately .02 inch.

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3.1.8.2 Three thirty-seconds (.093) of an inch on gages with ranges between 2.750 and 5.6875 inches.

3.1.8.3 One-eighth (.125) of an inch on gages with ranges between 5.6875 and 11.625 inches.

3.1.9 The method outlined above for specifying on the list of inspection gages the exact setting of the plain adjustable snap gages (part numbers) listed in table I can be applied to any plain adjustable snap gage (part number) shown in table II.

### 3.2 Marking.

3.2.1 Unless otherwise specified in the procurement document, all gages will require a marking disk marked as specified in figure 13. In addition all gages shall be marked with the Federal Stock Number as specified in figures 15, 16, 17, and 18 whichever is applicable.

3.2.2 *Go marking.* Stamp or etch the numerator of the fraction shown on the list of inspection gages next to the prestamped word "Go" on the marking disk of the plain adjustable snap gage (part number) specified on the list of inspection gages. If the numerator is given as .000 on the list of inspection gages, leave the area adjacent to the prestamped word "Go" on the marking disk blank.

3.2.3 *Not go marking.* Stamp or etch the denominator of the fraction shown on the list of inspection gages next to the pre-

stamped words "Not Go" on the marking disk of the plain adjustable snap gage (part number) specified on the list of inspection gages. If the denominator is given as .000 on the list of inspection gages, leave the area adjacent to the prestamped words "Not Go" on the marking disk blank.

3.2.4 *Gage setting tolerance marking.* Stamp the number shown in parenthesis on the list of inspection gages in the space provided between the words go and not go on the marking disk. That number is the gage setting tolerance in ten-thousandths (.0001) of an inch. (Note: See figure 14 for sample marking.)

3.2.5 The instructions provided in paragraphs 3.2.2 to 3.2.4 inclusive are not applicable unless specifically mentioned in the procurement document.

### 3.3 Setting and Surveillance.

3.3.1 Note that the gage setting tolerance is given in ten-thousandths (.0001) of an inch on the list of inspection gages and on the marking disk.

3.3.2 Plain adjustable snap gages must be lapped parallel and to size when the gage setting tolerance is .0001 inch.

3.3.3 *For go and not go gages.* Set inner button at Not Go stamping dimension and apply the gage setting tolerance plus (+). Set outer button at Go stamping dimension and apply the gage setting tolerance minus (-).

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**3.3.4** *For go only gages.* Set inner button at maximum retracted position. Set outer button at go dimension and apply the gage setting tolerance minus (-).

**3.3.5** *For not go only gages.* Set inner button at maximum retracted position. Set outer button at no go dimension and apply the gage setting tolerance plus (+).

**3.3.6** *Seal the gage after acceptance.*

**3.4 For procurement.**

**3.4.1** Procurement documents should specify the following:

- (a) Title, number and date of this Mil-Std.
- (b) Plain adjustable snap gages required (quantity and part number).
- (c) Place of delivery for acceptance inspection or place of delivery if acceptance inspection is to be at contractor's plant.

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3.4.1.1 Preferred plain adjustable snap gages (part numbers shown in table I should be procured with square anvils unless specific requirements exist for other models (part numbers) shown in table II.

3.4.1.2 Plain adjustable snap gages (part numbers) are normally procured unset. If it is ever necessary to procure part numbers set to a required size(s), the procurement document must specify the "fraction" and gage setting tolerance in parenthesis ( ) as shown on the sample list of inspection gages, paragraph 3.1.4 under *Gage Type*, adjacent to the part number. The procurement document must then state that paragraph 3.2.2 to 3.2.4 inclusive apply and that the gage(s) (part number) are to be set in accordance with Section 3.3.

3.4.2 Read down columns E, F and G of table II until the given part number as listed in the procurement document is found, then on the same line read the AGD frame designation in column B and figure No. in column A.

3.4.3 Refer to figures 15, 16, 17 or 18, whichever is applicable, for the model of frame and the stamping required.

3.4.4 Unless otherwise specified in the procurement document, each plain adjustable snap gage (part number) will require a

marking disk prestamped or etched as shown in figure 13.

3.4.5 Tool steel gaging members with rockwell hardness C63-66 are required.

3.4.6 The *maximum* acceptable roughness of the gaging surfaces of a plain adjustable snap gage expressed in microinches rms (Root-Mean-Square) is four. This rms value corresponds with the meter indications of surface roughness measuring instruments, which from their method of operation are assumed to show readings approximating the rms value as defined in MIL-STD-10 entitled "Surface Roughness, Waviness and Lay."

3.4.6.1 Gaging surfaces should be lapped to remove amorphous metal.

3.4.7 Remove the sharp edges from all gages.

3.4.8 All gages listed in this standard are to be in accordance with the latest revision and amendment of:

3.4.8.1 The U. S. Department of Commerce's publication entitled "Gage Blanks, Commercial Standard CS-8."

3.4.8.2 Military Specification MIL-G-10944 (Ord).

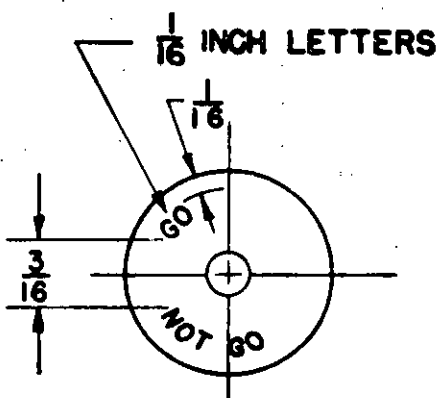


FIGURE 13.

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ON REVERSE SIDE MARK 5220-747-9382

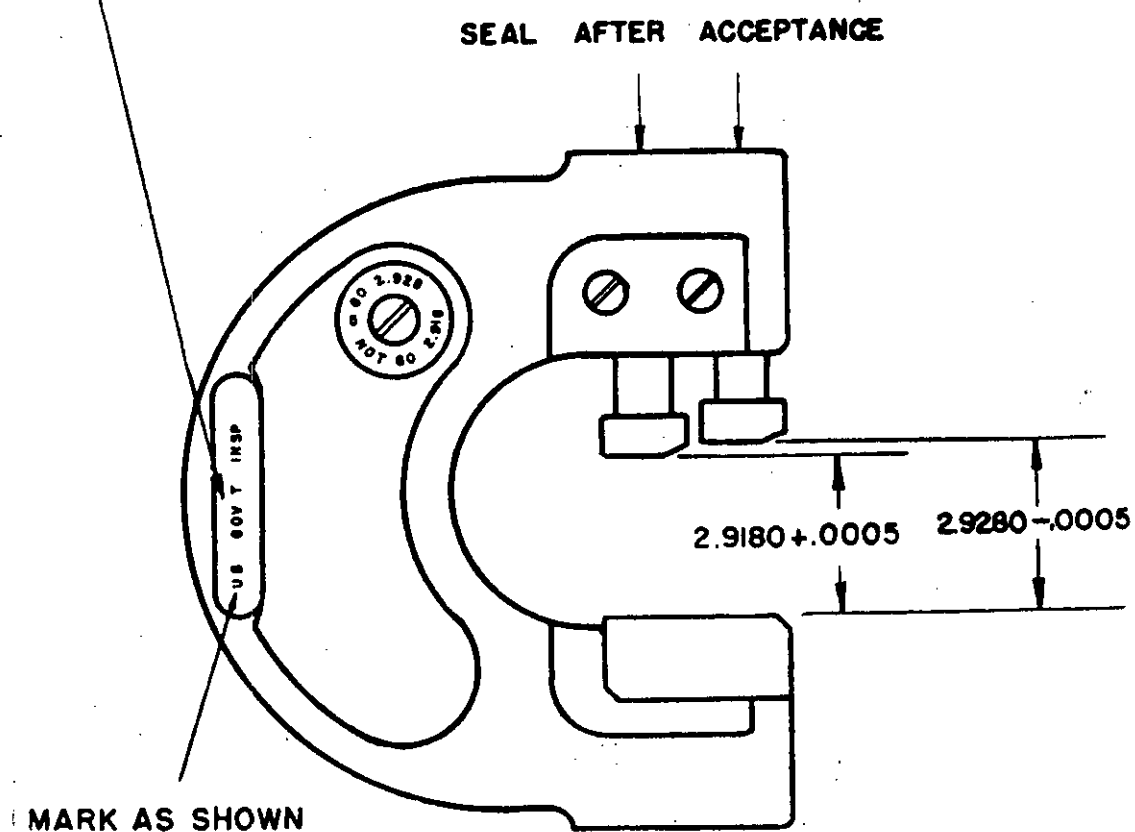


FIGURE 14.

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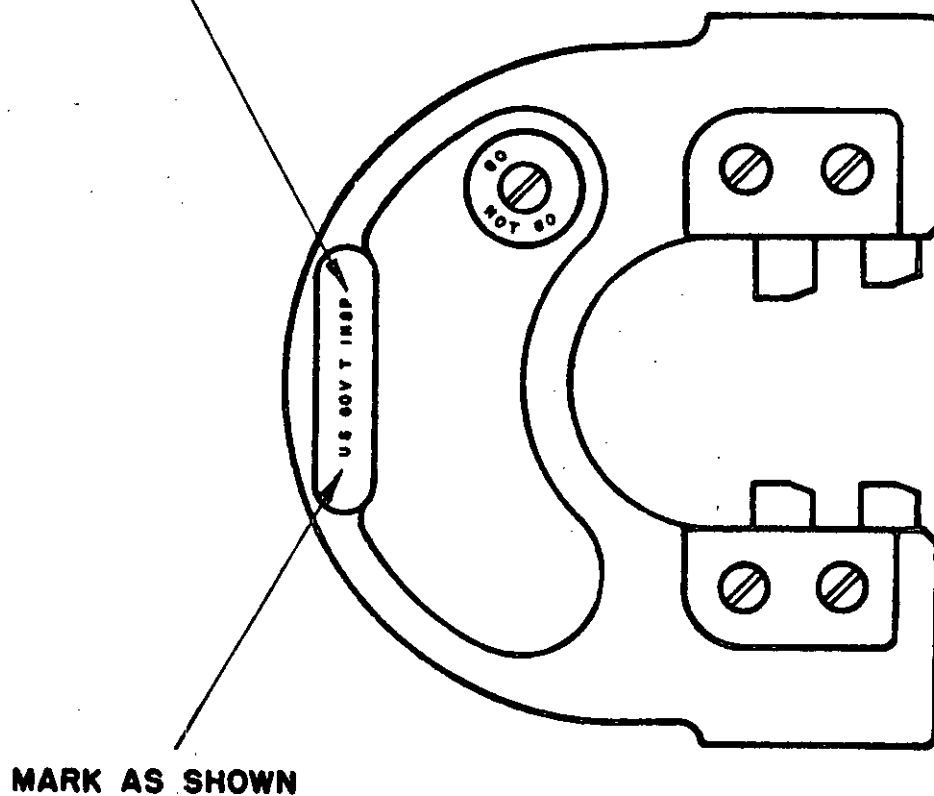
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**TABLE I**

Range		Total component tolerances <sup>1</sup>	Military standard part numbers		Gage set tol.
Above	To & incl.		Fig. No. 17	Fig. No. 18	
A	B	C	D <sup>2</sup>	E	F
.000	.195	.001 NOT RECOMMENDED.....	7479460	7479422	1
.000	.195	.003.....	7479460	7479422	2
.000	.195	.005.....	7479460	7479422	3
.000	.195	.010 AND UP.....	7479460	7479422	4
.195	.250	.001 NOT RECOMMENDED.....	7479462	7479422	1
.195	.250	.003.....	7479462	7479422	2
.195	.250	.005.....	7479462	7479422	3
.195	.250	.010 AND UP.....	7479462	7479422	4
.250	.385	.001 NOT RECOMMENDED.....	7479462	7479424	1
.250	.385	.003.....	7479462	7479424	2
.250	.385	.005.....	7479462	7479424	3
.250	.385	.010 AND UP.....	7479462	7479424	4
.385	.500	.001 NOT RECOMMENDED.....	7479464	7479424	1
.385	.500	.003.....	7479464	7479424	2
.385	.500	.005.....	7479464	7479424	3
.385	.500	.010 AND UP.....	7479464	7479424	4
.500	.570	.001 NOT RECOMMENDED.....	7479464	7479426	1
.500	.570	.003.....	7479464	7479426	2
.500	.570	.005.....	7479464	7479426	3
.500	.570	.010 AND UP.....	7479464	7479426	4
.570	.750	.001 NOT RECOMMENDED.....	7479466	7479426	1
.570	.750	.003.....	7479466	7479426	2
.570	.750	.005.....	7479466	7479426	3
.570	.750	.010 AND UP.....	7479466	7479426	4
.750	1.000	.001 NOT RECOMMENDED.....	7479366	7479428	1
.750	1.000	.003.....	7479366	7479428	2
.750	1.000	.005.....	7479366	7479428	3
.750	1.000	.010 AND UP.....	7479366	7479428	4
1.000	1.250	.001 NOT RECOMMENDED.....	7479368	7479430	1
1.000	1.250	.003.....	7479368	7479430	2
1.000	1.250	.005.....	7479368	7479430	3
1.000	1.250	.010 AND UP.....	7479368	7479430	4
1.250	1.500	.001 NOT RECOMMENDED.....	7479370	7479432	1
1.250	1.500	.003.....	7479370	7479432	2
1.250	1.500	.005.....	7479370	7479432	3
1.250	1.500	.010 AND UP.....	7479370	7479432	4
1.500	1.750	.001 NOT RECOMMENDED.....	7479372	7479434	1
1.500	1.750	.003.....	7479372	7479434	2
1.500	1.750	.005.....	7479372	7479434	3
1.500	1.750	.010 AND UP.....	7479372	7479434	4
1.750	2.000	.001 NOT RECOMMENDED.....	7479374	7479436	1
1.750	2.000	.003.....	7479374	7479436	2
1.750	2.000	.005.....	7479374	7479436	3
1.750	2.000	.010 AND UP.....	7479374	7479436	4

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**ON REVERSE SIDE MARK FEDERAL STOCK NUMBER  
SEE 1.3.1 & COLUMN E TABLE II**



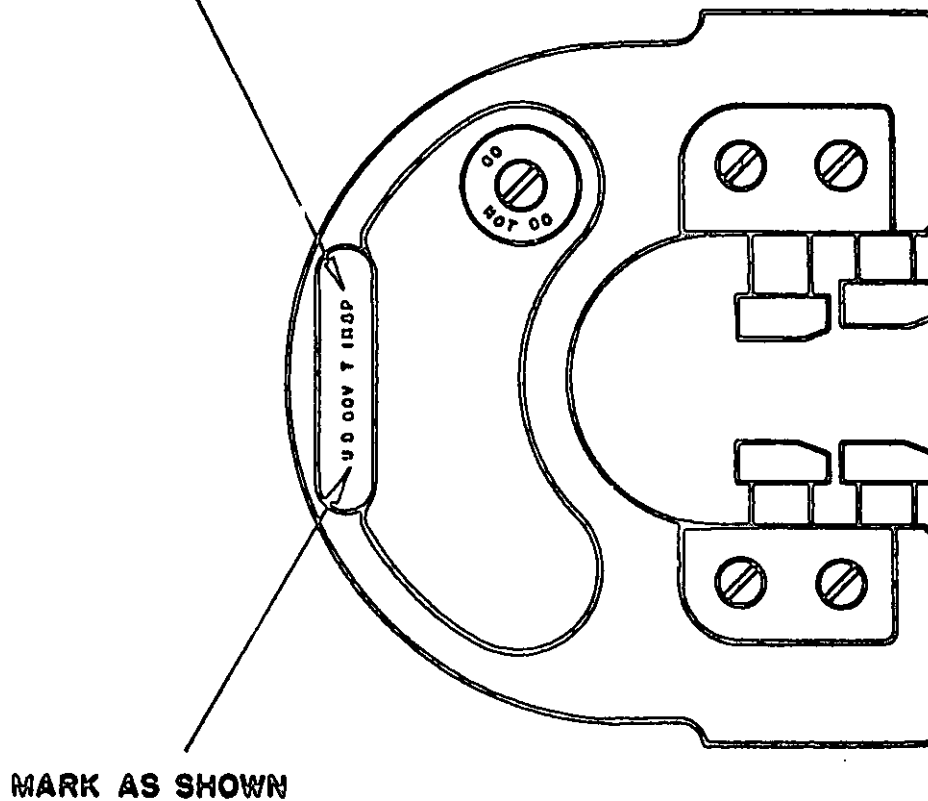
**AGD MODEL A**  
**PART NUMBERS (7479300-7479330)**

**FIGURE 15.**

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ON REVERSE SIDE MARK FEDERAL STOCK NUMBER  
SEE I. 3.1 & TABLE II



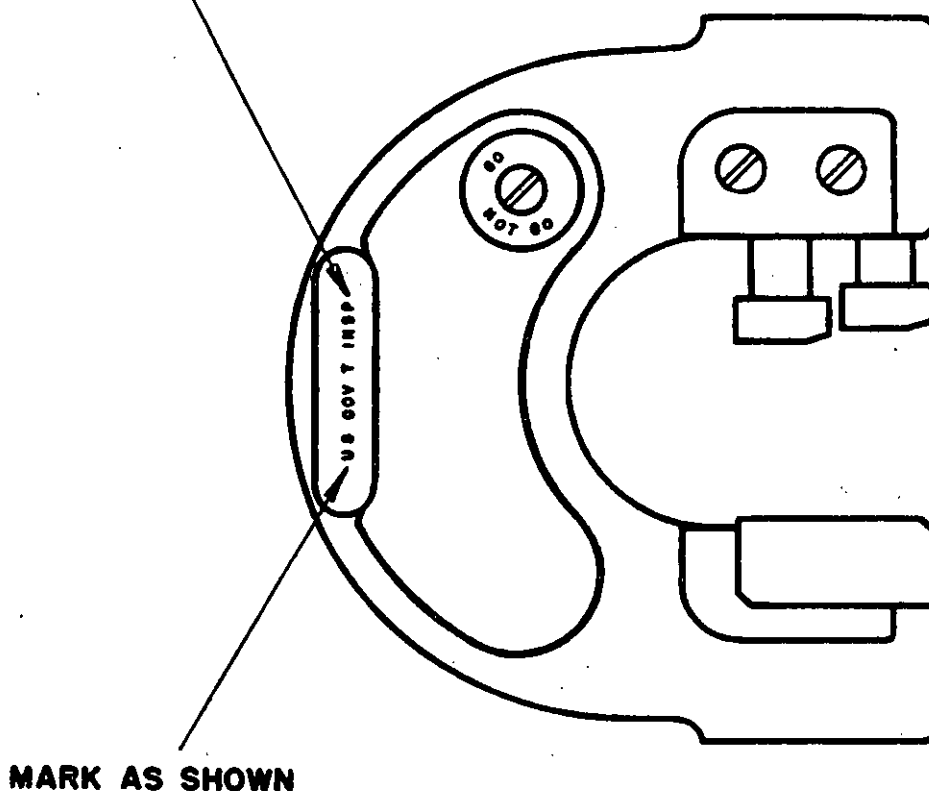
AGD MODEL B  
PART NUMBERS (7479332 - 7479359)

FIGURE 16.

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ON REVERSE SIDE MARK FEDERAL STOCK NUMBER  
SEE I.3.1 & TABLE II



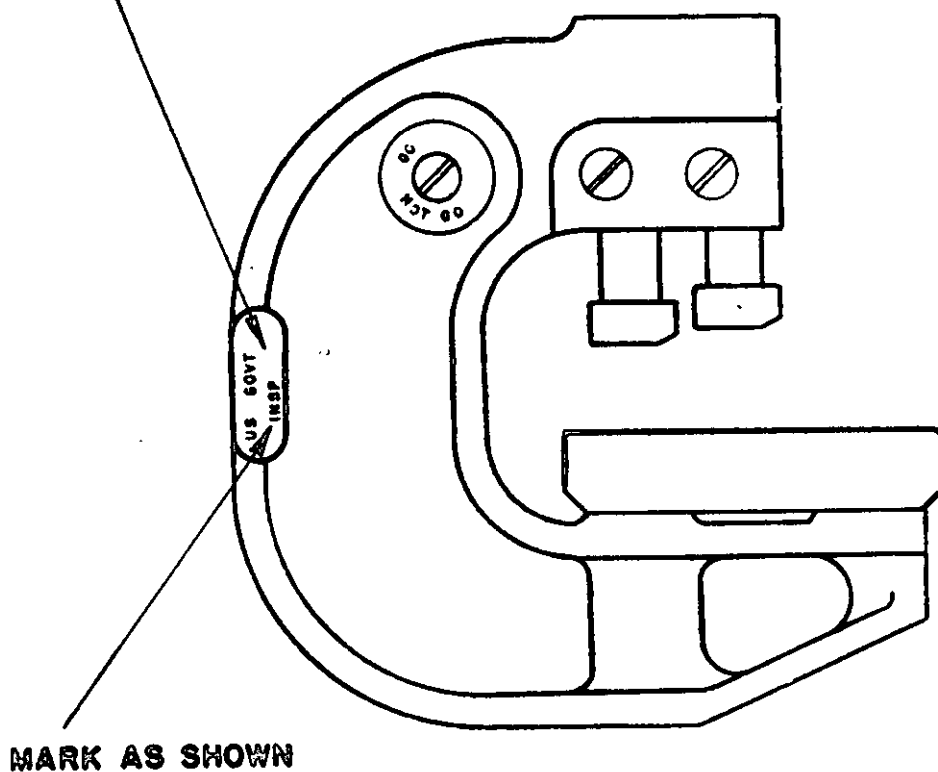
AGD MODELS C & MC  
PART NUMBERS (7479360 - 7479421)  
AND (7479460 - 7479467)

FIGURE 17.

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ON REVERSE SIDE MARK FEDERAL STOCK NUMBER  
SEE 1.3.1 & TABLE II



AGD MODEL E  
PART NUMBERS (7479422-7479459)

FIGURE 18.

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