

INCH-POUND

MS28766B
8 August 2006
SUPERSEDING
MS28766A (ASG)
30 April 1957

DETAIL SPECIFICATION SHEET

VALVE, SHUTTLE, HYDRAULIC, DIRECT MOUNTING, 3000 PSI
TYPE II SYSTEMS

INACTIVE FOR NEW DESIGN AFTER 30 April 1999

This specification is approved for use by all Departments and Agencies of the Department of Defense.

The requirements for acquiring the product described herein shall consist of this specification sheet and MIL-DTL-19068.

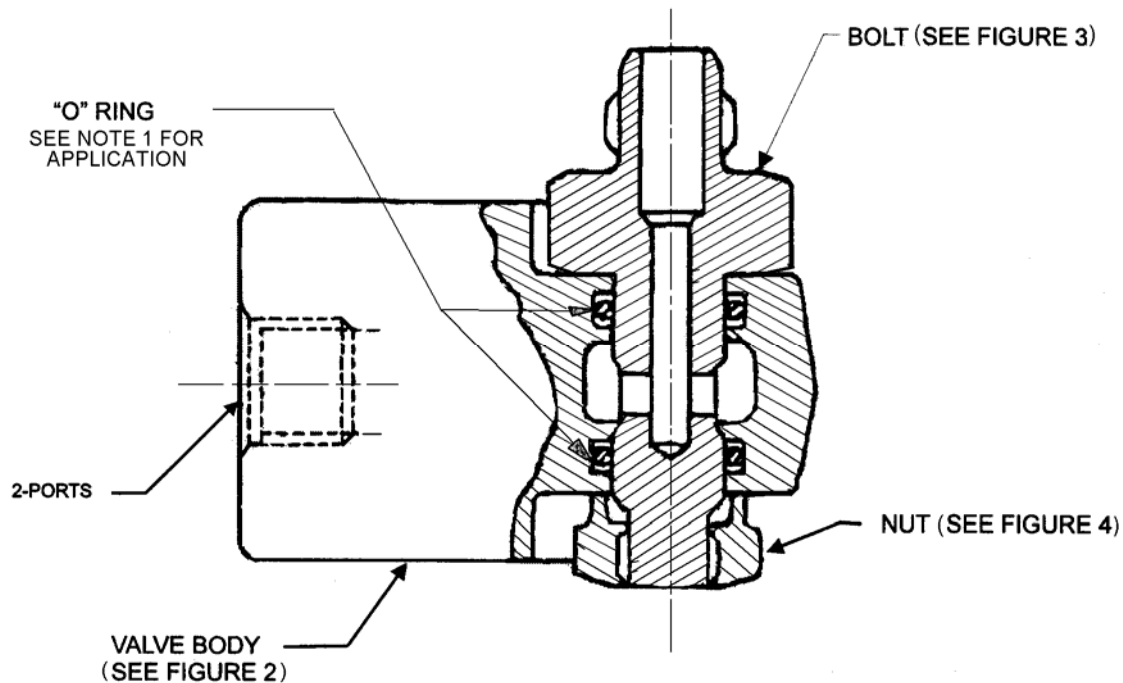


FIGURE 1. Valve assembly with bolt and nut installed in the body.

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Note:

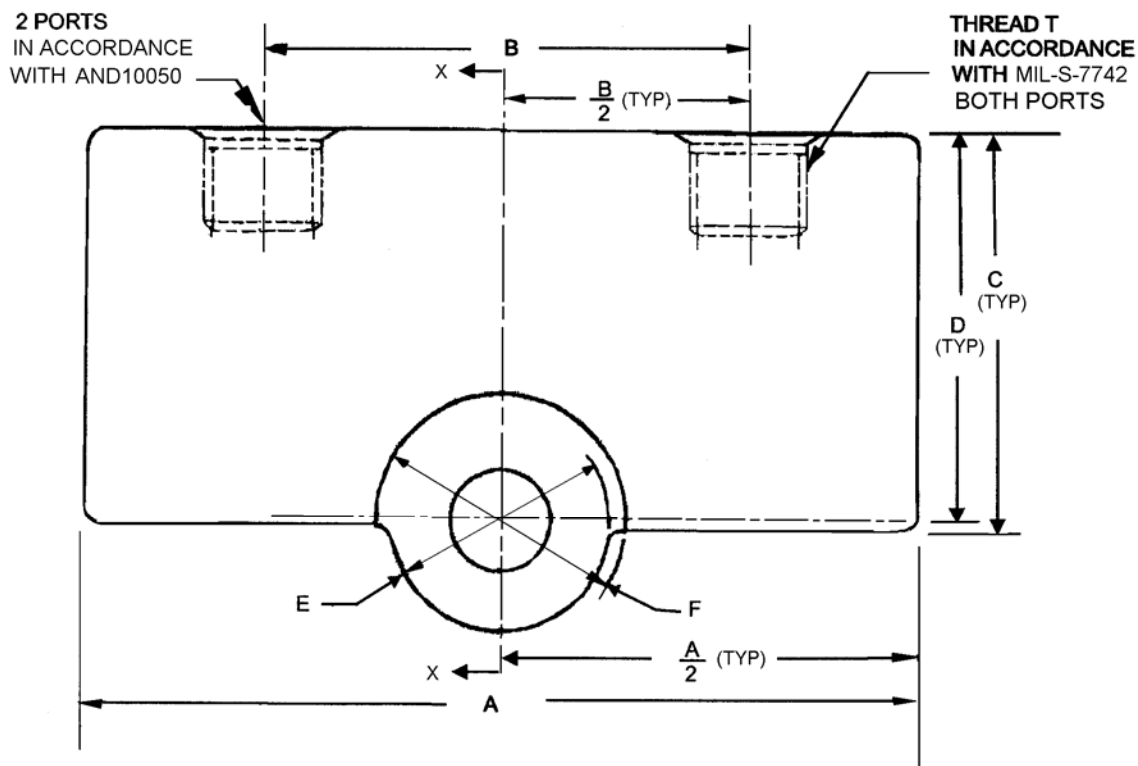
1. O-ring application.

For MS28766 -4 and -6 valves, use part number SAE-AS28775-112 O-ring.

For MS28766 -8 and -10 valves, use part number SAE-AS28775-211 O-ring.

2. Body, valve detail design and dimensions.

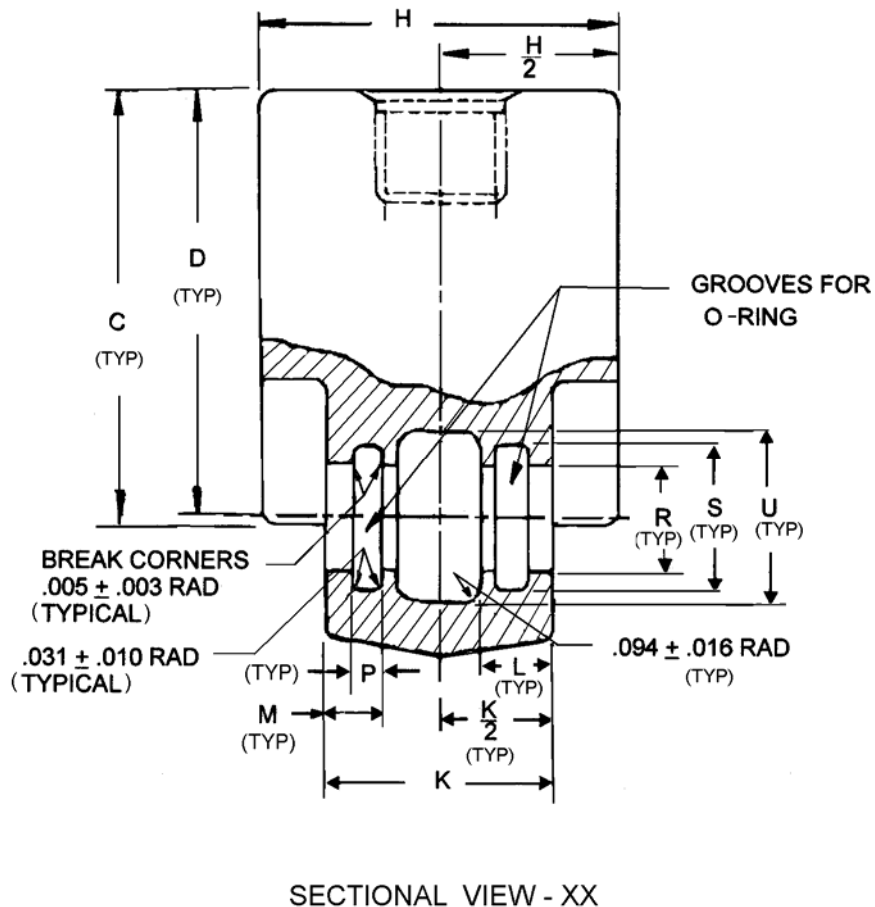
2.1 Body, valve design and configuration. The design and configuration of the body of the valve shall be in accordance with figure 2.



Body front view

FIGURE 2. Body, valve design and configuration.

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FIGURE 2. Body, valve design and configuration - Continued.

Notes:

1. Dimensions are in inches. Unless otherwise specified, tolerances linear dimensions for 3 digits $\pm .005$, 4 digits $\pm .0005$, angles $\pm 0.5^\circ$.
2. The drawing outline as shown is maximum and is not restrictive to actual design but location of the ports must be maintained.
3. Provide a lock wire hole clear of the F diameter and boss surfaces.
4. All radii shall be smooth and blended. No sharp tool marks are allowed.

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5. The machined surfaces shall be smooth to 125 micro inches R_a in accordance with ASME-B46.1.

2.2 Body valve dimensions. The dimensions of the body of the valve shall be in accordance with table I.

TABLE I. Body, valve dimensions.

Dash No	Tube OD	Thread T MIL-S-7742	A Max	B $\pm .032$	C Max	D $\pm .032$	E +.188 -.062 DIA	F $\pm .016$ DIA
-4	.250	.4375-20 UNF-3B	4.000	2.375	1.812	1.812	1.125	1.188
-6	.375	.5625-18 UNF-3B	4.188	2.438	1.937	1.937	1.125	1.252
-8	.500	.7500-16 UNF-3B	5.625	3.375	2.437	2.437	1.625	1.750
-10	.675	.8750-14 UNF-3B	5.625	3.375	2.437	2.437	1.625	1.750

TABLE I. Body, valve dimensions - Continued.

Dash No	H Max	K	L $\pm .010$	M $\pm .007$	P (TYP)	R $\pm .0005$ DIA	S $\pm .004$ DIA	U $\pm .010$ DIA	Rated Flow (GPM)
-4	1.438	1.000	.312	.249	.143	.5000	.664	.797	1.22
-6	1.625	1.000	.312	.249	.143	.5000	.664	.797	3.5
-8	2.000	1.187	.375	.283	.175	.8125	1.045	1.078	6.0
-10	2.000	1.187	.375	.283	.175	.8125	1.045	1.078	10.50

3. Bolt, valve design and dimensions.

3.1 Bolt, valve design and configuration. The design and configuration of the bolt of the valve shall be in accordance with figure 3.

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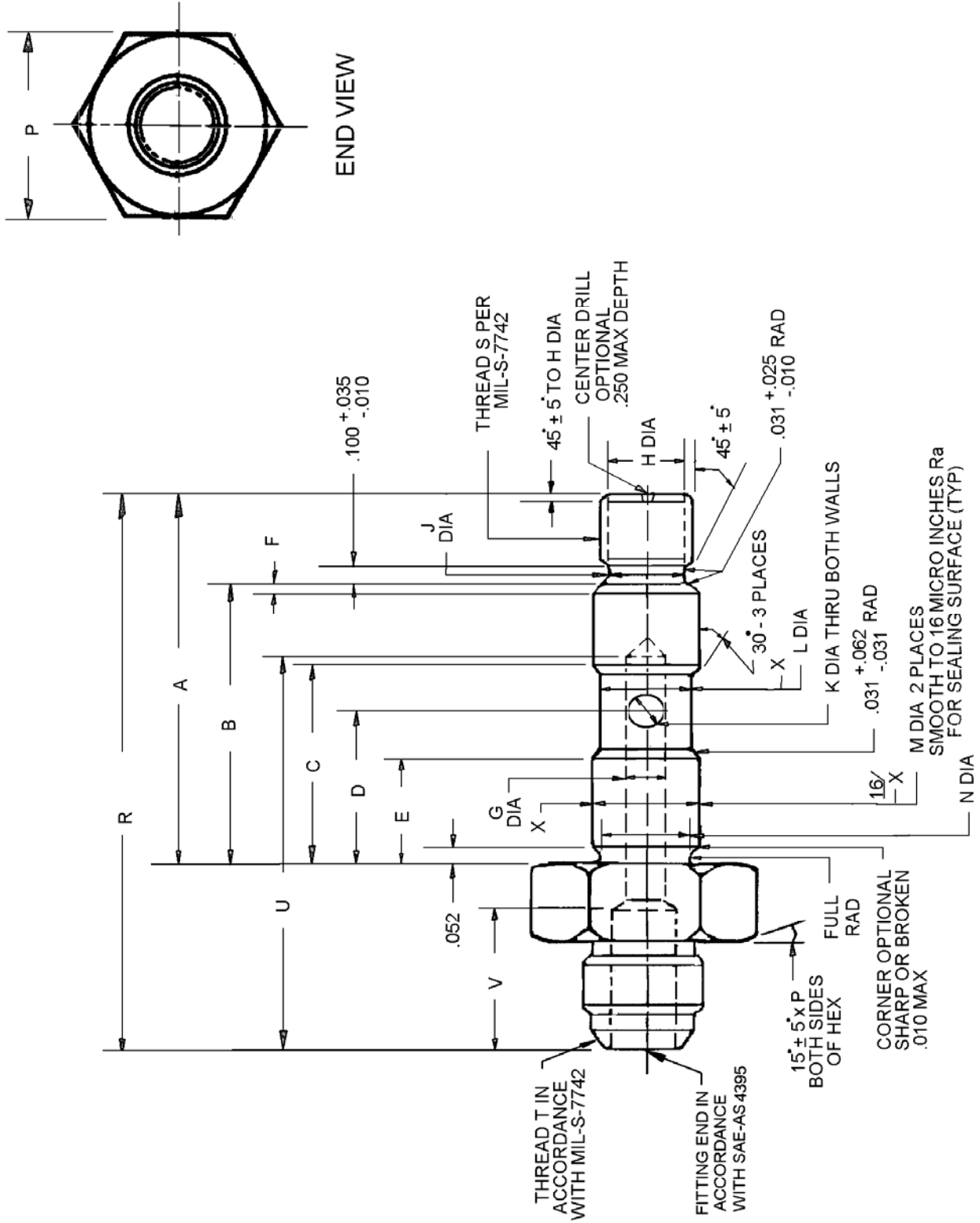


FIGURE 3. Bolt, valve design and configuration.

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Notes:

1. Dimensions are in inches. Unless otherwise specified, tolerances linear dimensions for 3 digits $\pm .010$, for 4 digits $\pm .0005$, and for angles $\pm 0.5^\circ$.
2. Diameters marked X shall be concentric within .005 FIM.
3. Diameters marked Y shall be concentric within .0005 FIM.
4. The machined surfaces shall be smooth to 125 micro inches R_a in accordance with ASME B46.1.
5. Remove all burrs and sharp edges.

3.2 Bolt, valve dimensions. The bolt dimensions of the valve shall be in accordance with table II.

TABLE II. Bolt, valve dimensions.

Dash No	Tube OD	Thread S MIL-S-7742	Thread T MIL-S-7742	A $\pm .031$	B	C
-4	.250	.4375-20 UNF-3A	.4375-20 UNF-3A	1.438	1.087	.726
-6	.375	.4375-20 UNF-3A	.5625-18 UNF-3A	1.438	1.087	.726
-8	.500	.5625-18 UNF-3A	.7500-16 UNF-3A	1.688	1.274	.891
-10	.675	.5625-18 UNF-3A	.8750-14 UNF-3A	1.688	1.274	.891

TABLE II. Bolt, valve dimensions - Continued.

Dash No	D	E	F $\pm .010$	G $\pm .003$	H $\pm .005$	J $\pm .005$	K $\pm .003$	L $\pm .005$
-4	.540	.354	.060	.172	.365	.363	.189	.433
-6	.540	.354	.060	.203	.365	.363	.189	.433
-8	.634	.377	.065	.391	.480	.480	.300	.740
-10	.634	.377	.065	.422	.480	.480	.300	.740

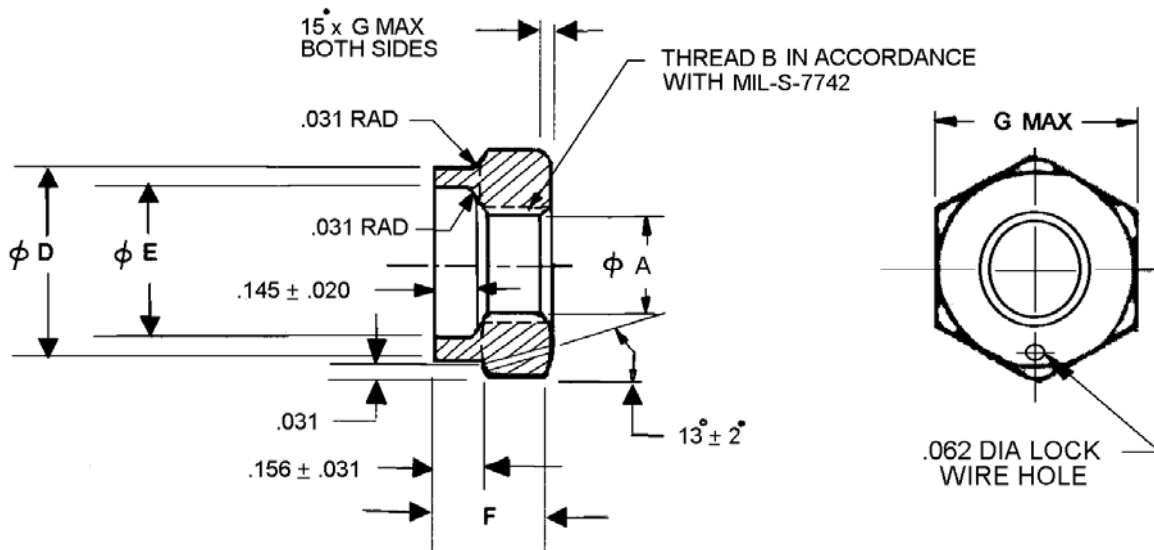
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TABLE II. Bolt, valve dimensions - Continued.

Dash No	M $\pm .0004$	N	P $\pm .031$	R	U $\pm .062$	V $\pm .062$
-4	.4989	.425	.688	2.332	1.750	-
-6	.4989	.425	.875	2.431	1.812	.750
-8	.8114	.738	1.000	2.782	2.125	-
-10	.8114	.738	1.125	2.883	2.188	.938

4. Nut, valve detail design and dimensions

4.1 Nut, valve design and configuration. The design and configuration of the nut of the valve shall be in accordance with figure 4.

FIGURE 4. Nut, valve detail design.

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Notes:

1. Dimensions are in inches. Unless otherwise specified, tolerances linear dimensions for 3 digits $\pm .010$, for 4 digits $\pm .0005$, and for angles $\pm 0.5^\circ$.
2. Remove all burrs and sharp edges.
3. The machined surfaces shall be smooth to 125 micro inches R_a in accordance with ASME-B46.1.

4.2 Nut, valve dimensions. The nut dimensions of the valve shall be in accordance with table III.

TABLE III. Nut, valve dimensions.

Dash No	Thread B MIL-S-7742	A DIA		D DIA	E DIA	F $\pm .031$	G $\pm .031$
		Max	Min				
-4	.4375-20 UNF-3B	.3916	.3834	.687	.562	.406	.688
-6	.4375-20 UNF-3B	.3916	.3834	.687	.562	.406	.688
-8	.5625-16 UNF-3B	.5106	.5024	1.000	.875	.500	1.000
-10	.5625-16 UNF-3B	.5106	.5024	1.000	.875	.500	1.000

VALVE REQUIREMENTS

Materials. Corrosion resistant steel, type 304 or aluminum alloy type 7075-T73 or equivalent. The material selected shall be compatible with hydraulic fluid and shall meet the performance requirements specified in MIL-DTL-19068.

Finish. Corrosion resistant steel (CRES) parts shall be passivated in accordance with SAE-AMS2700. Aluminum alloy parts shall be anodized in accordance with MIL-A-8625 type I to protect from corrosion. Cadmium plating shall not be used.

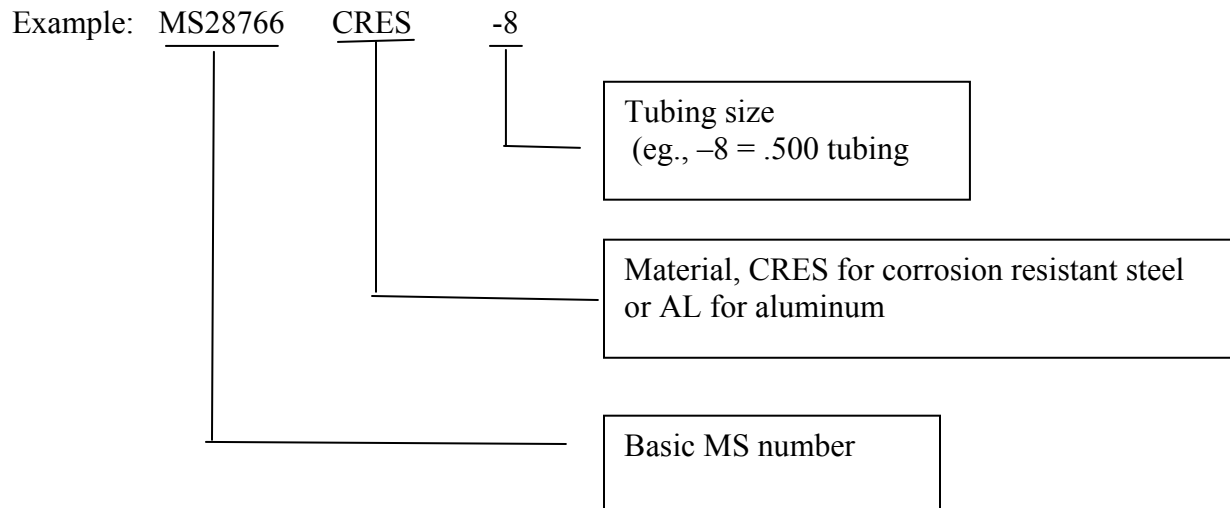
Marking.

Packaging. Marking for product packaging shall be in accordance with MIL-DTL-19068.

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Part or Identifying Number (PIN). The valve shall have a corrosion resistant identification plate permanently attached to the valve. The plate shall include the part number consisting of the following (in sequence):

1. The basic MS number.
2. The material CRES or aluminum.
3. A tubing size in dash number from table I.



NOTES:

Intended use: This direct mounted type I valve is intended for use in the aircraft type II hydraulic power systems to provide emergency fluid due to loss of pressure in the normal service lines. The valve is mounted directly on the aircraft in accordance with SAE-AS5440. This valve is currently used in military aircraft and is military unique because of the specific design and dimensions which is not available for commercial aircraft.

Change from previous issue. Marginal notations are not used in this revision to identify changes with respect to the previous issue due to the extent of the changes.

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CONCLUDING MATERIAL

Custodians:

Army-AV
Navy-AS
Air Force-99

Preparing activity:

Navy-AS

(Project 4820-2005-003)

Review activities

Army-AT
Navy-SA
Air Force-71
DLA-CC

Industry Association:

SAE-A6C

NOTE: The activities listed above were interested in this document as of the date of this document. Since organizations and responsibilities can change, you should verify the currency of the information above using the ASSIST Online database at <http://assist.daps.dla.mil>.