

INCH-POUND

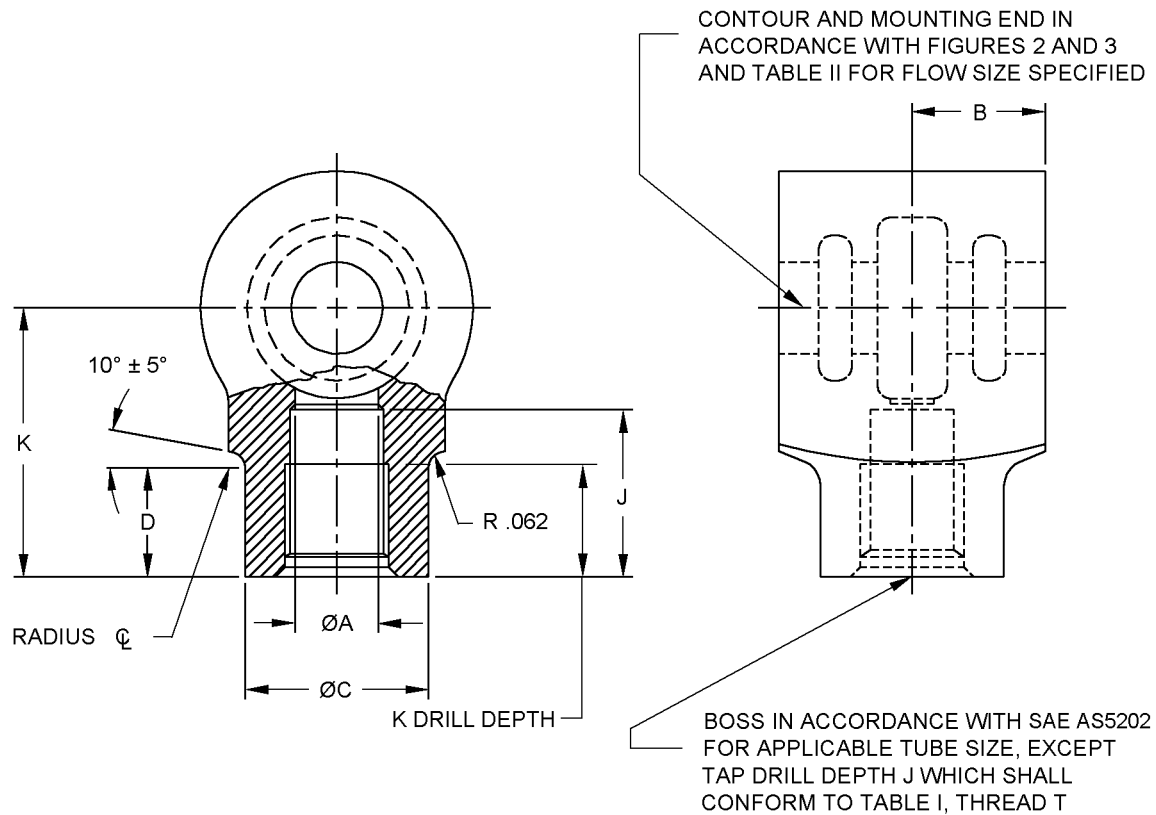
MS21946F  
 30 August 2012  
 SUPERSEDING  
 MS21946E  
 4 August 2011

## DETAIL SPECIFICATION SHEET

## BODY, CLUSTER FITTING, ONE-WAY, INTERNAL BOSS

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 SAE AS4875.



Inches	mm
.062	1.58

FIGURE 1. Body, cluster fitting.

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TABLE I. Dimensions. 1/ 2/ 3/

Low flow sizes									
Low flow size		Tube OD Inches (mm)	Thread T SAE AS8879	A Inches (mm)	B Inches (mm)	C $\pm .031$ Inches (mm)	D $\pm .031$ Inches (mm)	J Inches (mm)	K Inches (mm)
Al Alloy 7075	Al Alloy 2014/2024								
W4L	D4L	.250 (6.35)	.4375-20UNJF-3B	.312 (7.93)	.500 (12.7)	.688 (17.48)	.406 (10.31)	.625 (15.88)	1.062 (26.98)
W5L	D5L	.312 (7.93)	.500-20UNJF-3B	.344 (8.74)	.500 (12.7)	.750 (19.05)	.438 (11.13)	.625 (15.88)	1.094 (27.79)
W6L	D6L	.375 (9.53)	.5625-18UNJF-3B	.344 (8.74)	.500 (12.7)	.812 (20.63)	.469 (11.91)	.625 (15.88)	1.125 (28.58)

TABLE I. Dimensions - Continued. 1/ 2/ 3/

High flow sizes									
High flow size		Tube OD Inches (mm)	Thread T SAE AS8879	A Inches (mm)	B Inches (mm)	C $\pm .031$ Inches (mm)	D $\pm .031$ Inches (mm)	J Inches (mm)	K Inches (mm)
Al Alloy 7075	Al Alloy 2014/2024								
W4H	D4H	.250 (6.35)	.4375-20UNJF-3B	.312 (7.93)	.594 (15.09)	.688 (17.48)	.297 (7.54)	.625 (15.88)	1.219 (30.96)
W5H	D5H	.312 (7.93)	.500-UNJF20-3B	.375 (9.53)	.594 (15.09)	.750 (19.05)	.312 (7.93)	.625 (15.88)	1.250 (31.75)
W6H	D6H	.375 (9.53)	.5625-UNJF18-3B	.406 (10.31)	.594 (15.09)	.812 (20.63)	.375 (9.53)	.625 (15.88)	1.312 (33.33)
W8H	D8H	.500 (12.7)	.750-UNJF16-3B	.422 (10.72)	.594 (15.09)	1.125 (28.58)	.625 (15.88)	.750 (19.05)	1.500 (38.1)

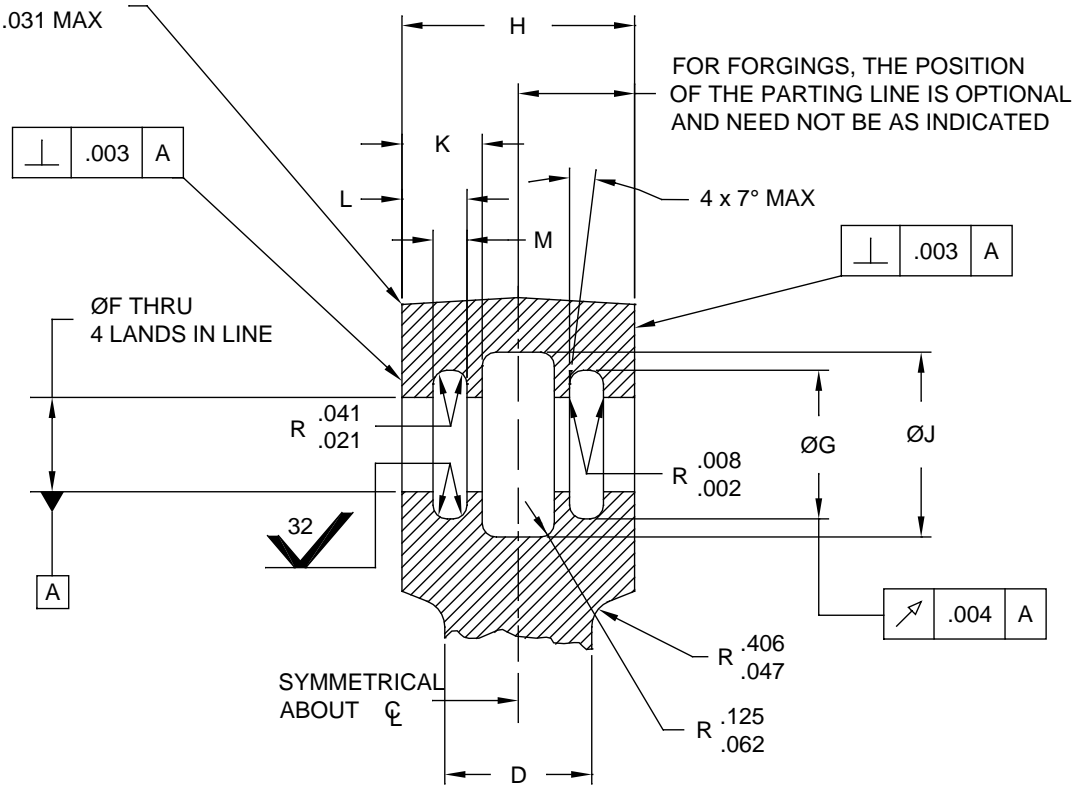
1/ Aluminum alloy D parts are inactive for new design. For new design use W parts.

2/ Dimensions are in inches.

3/ Metric equivalents are given for information only.

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CORNER ON R A MAY  
BE BROKEN .031 MAX

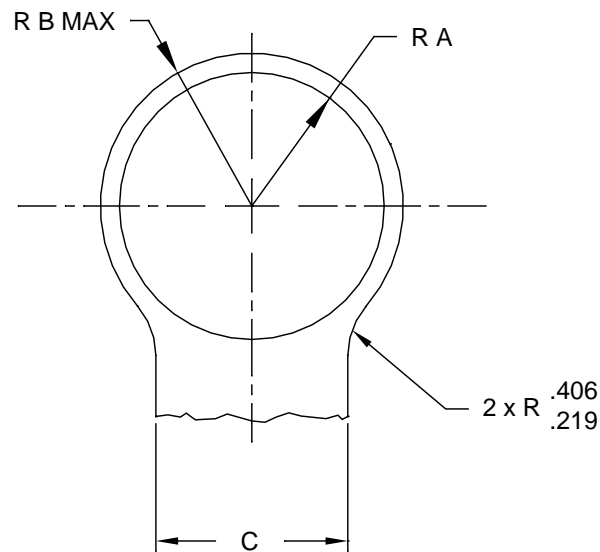


## MOUNTING END DIMENSIONS

Inches	mm	Inches	mm	Inches	mm
.002	.05	.021	.53	.062	1.57
.003	.08	.031	.79	.125	3.18
.004	.10	.041	1.04	.406	10.31
.008	.20	.047	1.19		

FIGURE 2. Mounting end.

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## CONTOUR DIMENSIONS EXTERNAL

Inches	mm	Inches	mm
.406	10.31	.219	5.56

FIGURE 3. External contour.TABLE II. Dimensions for contour and mounting end. 1/ 2/ 3/ 4/

Type Fitting	A ± .031 Inches (mm)	B Max Inches (mm)	C Max Inches (mm)	D Max Inches (mm)	F ± .0005 Inches (mm)	G ± .004 Inches (mm)	H ± .005 Inches (mm)	J ± .010 Inches (mm)	K ± .010 Inches (mm)	L ± .004 Inches (mm)	M ± .005 Inches (mm)
Low Flow	.562 (14.28)	.636 (16.15)	.844 (21.44)	.995 (25.27)	.500 (12.7)	.664 (16.87)	1.000 (25.4)	.797 (20.24)	.312 (7.93)	.249 (6.33)	.143 (3.63)
High Flow	.812 (20.63)	.909 (23.09)	1.156 (29.36)	1.188 (30.18)	.8125 (20.64)	1.045 (26.54)	1.188 (30.18)	1.078 (27.38)	.375 (9.53)	.283 (7.19)	.175 (4.45)

1/ B radius is the max envelope dimension for forging draft, flash, and other projections on A radius.

2/ Dimensions C and D represent the max envelope which shall be large enough to meet final part dimensions.

3/ Dimensions are in inches.

4/ Metric equivalents are given for information only.

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## REQUIREMENTS:

This standard takes precedence over documents referenced herein.

Dimensions. See figure 1, figure 2, figure 3, table I and table II.

Unless otherwise specified tolerances for decimals are  $\pm .010$ , angles  $\pm .5^\circ$ .

Dimensioning and tolerancing are in accordance with ASME Y14.5.

Material in accordance with table III.

TABLE III. Material

Code letter	Type	Stock	Document
D	2014-T6	Forging	SAE-AMS4133 or SAE-AMS-QQ-A-367
D	2024-T6	Bar	SAE-AMS-QQ-A-225/6
D	2024-T851	Bar	SAE-AMS-QQ-A-225/6
W	7075-T73	Forging	SAE AMS-QQ-A-225/9
W	7075-T7351	Forging	SAE-AMS4124 or SAE-AMS-QQ-A-367

Finish. See SAE AS4875. Aluminum alloy 7075 fittings shall be dyed brown.

Surfaces. All machined surfaces shall be finished to 250  $\mu\text{in}$  Ra (.00635mm), unless otherwise specified.

Surface finish shall be in accordance with ASME B46.1.

Fitting surface shall be free of all burrs and slivers.

Identification of product. The Part or Identifying Number (PIN) for the fitting consists of the MS number, the material code and size number.

Example of PIN: MS21946W4L



Changes from previous issue. The margins of this specification are marked with vertical lines to indicate where changes from the previous issue were made. This was done as a convenience only and the Government assumes no liability whatsoever for any inaccuracies in these notations. Bidders and contractors are cautioned to evaluate the requirements of this document based on the entire content irrespective of the marginal notations and relationship to the last previous issue.

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Referenced documents. In addition to SAE AS4875, this document references the following:

SAE-AMS-QQ-A-225/9	SAE AS5202	ASME B46.1
SAE-AMS-QQ-A-367	SAE AS8879	ASME Y14.5
SAE-AMS4133	SAE-AMS4124	SAE-AMS-QQ-A-225/6

## CONCLUDING MATERIAL

### Custodians:

Army - AV  
Navy - AS  
Air Force - 99  
DLA - CC

### Preparing activity:

DLA - CC

(Project 4730-2012-047)

### Review activities:

Army - AR  
Navy - MC, SA  
Air Force - 71

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