

INCH-POUND

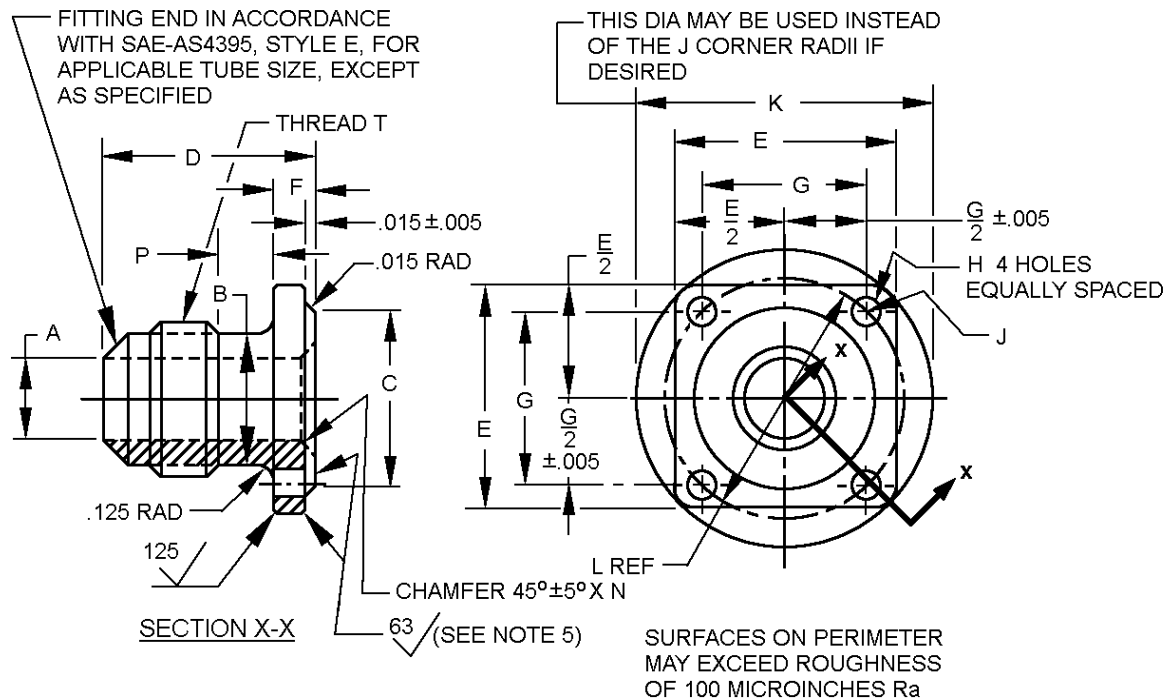
MS20760D
w/AMENDMENT 1
7 August 2014
SUPERSEDING
MS20760D
12 February 2013

DETAIL SPECIFICATION SHEET

ADAPTER, STRAIGHT, FLANGE TO TUBE

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-AS4875/1.

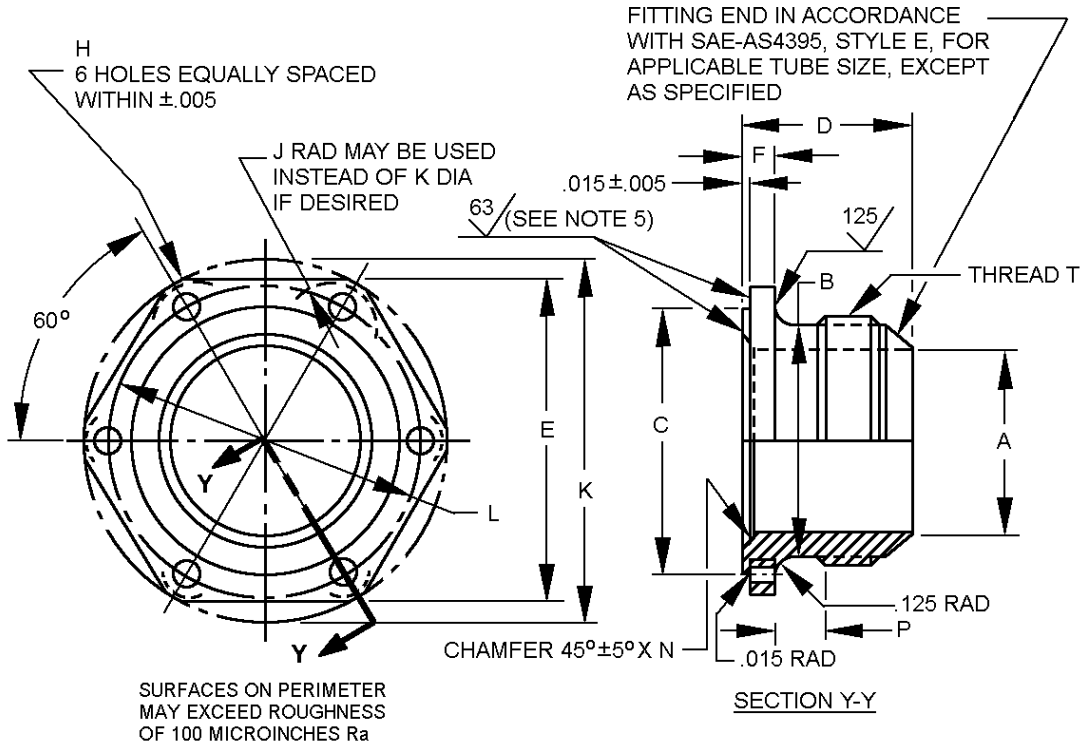


Size codes 8 through 32

Inches	mm
.005	0.13
.015	0.38
.125	3.18

FIGURE 1. Adapter straight flange to tube dimensions and configurations.

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Size codes 40 and 48 (see note 7)

Inches	mm
.005	0.13
.015	0.38
.125	3.18

Size code number	Tubing OD	Thread T (ref)	A dia. ±.003 (0.08) inch (mm)	B dia. inch (mm)
8	.500 (12.70)	.7500-16UNJF-3A	.391 (9.93)	.660 (16.76)
10	.625 (15.88)	.8750-14UNJF-3A	.484 (12.29)	.773 (19.63)
12	.750 (19.05)	1.0625-12UNJ-3A	.609 (15.47)	.891 (22.63)
12-16				
16	1.000 (2.54)	1.3125-12UNJ-3A	.844 (21.44)	1.156 (29.36)
20	1.250 (13.75)	1.6250-12UNJ-3A	1.078 (27.38)	1.438 (36.53)
20-24				
24	1.500 (38.10)	1.8750-12UNJ-3A	1.312 (33.32)	1.688 (42.88)
32	2.000 (50.80)	2.500-12UNJ-3A	1.781 (45.24)	2.250 (57.15)
40	2.500 (63.50)	3.000-12UNJ-3A	2.281 (57.94)	2.812 (71.42)
48	3.000 (76.20)	3.5000-12UNJ-3A	2.781 (70.64)	3.344 (84.94)

FIGURE 1. Adapter straight flange to tube dimensions and configurations - Continued.

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Size code number	C dia. +.000 -.005 (0.13) inch (mm)	D inch (mm)	E inch (mm)		F ± .005 (0.13) inch (mm)	G ±.005 (0.13) inch (mm)
8	.875 (22.23)	1.207 (30.66)	1.390 (35.31)	± .016 (0.41)	.250 (6.35)	.950 (24.13)
10	1.000 (25.40)	1.308 (33.22)	1.468 (37.29)			1.038 (26.37)
12	1.250 (31.75)	1.406 (35.71)	1.594 (40.49)			1.156 (29.36)
12-16	1.500 (38.10)		1.750 (44.45)			1.312 (33.32)
16		1.500 (38.10)	± .020 (0.51)			.312 (7.92)
20	1.844 (46.84)	1.625 (41.28)		2.188 (55.58)	1.812 (46.02)	
20-24	2.125 (53.98)	1.750 (44.45)		2.375 (60.33)		
24				2.125 (53.98)	2.125 (53.98)	
32	2.750 (69.85)	2.000 (50.80)		4.000 (101.60)	---	
40	3.281 (83.34)	2.125 (53.98)	4.500 (114.30)	---		
48	3.781 (96.04)	2.125 (53.98)	4.500 (114.30)	---		

Size code number	H dia. +.010 (0.25) -.000 inch (mm)	J rad. inch (mm)	K dia. inch (mm)	L Dia. ±.005 (0.13) inch (mm)
8	.205 (5.21)	.219 (5.56)	1.782 (45.26)	1.344 (34.14)
10			1.906 (48.41)	1.468 (37.29)
12			2.094 (53.19)	1.635 (41.53)
12-16			2.312 (58.72)	1.855 (47.12)
16			2.312 (58.72)	1.855 (47.12)
20	.266 (6.76)	.266 (6.76)	2.875 (73.03)	2.342 (59.49)
20-24		.281 (7.14)	3.094 (78.59)	2.562 (65.07)
24			3.094 (78.59)	2.562 (65.07)
32	.328 (8.33)	.312 (7.92)	3.953 (100.41)	3.359 (85.32)
40		.375 (9.53)	4.500 (114.30)	3.812 (96.82)
48		.625 (15.88)	5.000 (127.00)	4.312 (109.52)
			5.000 (127.00)	4.312 (109.52)

FIGURE 1. Adapter straight flange to tube dimensions and configurations - Continued.

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Size code number	N dia. inch (mm)	P
		+0.015 (0.38) -.000 inch (mm)
8	.451 (11.46)	.394 (10.01)
10	.544 (13.82)	.407 (10.34)
12	.669 (16.99)	.417 (10.59)
12-16		
16	.904 (22.96)	.464 (11.79)
20	1.138 (28.91)	.480 (12.19)
20-24		
24		
32	1.841 (46.76)	.605 (15.37)
40	2.341 (59.46)	.704 (17.88)
48	2.841 (72.16)	.751 (19.08)

NOTES:

1. Dimensions are in inches.
2. Metric equivalents are given for information only.
3. Unless otherwise specified tolerances are ± 0.005 inch (0.13 mm), angles $\pm 5^\circ$.
4. Break sharp edges and remove all hanging burrs and slivers.
5. Annular tool marks up to $63 \mu\text{-in}$ ($1.6 \mu\text{m}$) Ra max will be allowed, machined surfaces shall be finished to $100 \mu\text{in}$ ($2.54 \mu\text{m}$) Ra, unless otherwise specified on the figures. Surface finish shall be in accordance with ASME B46.1.
6. Reduction by forging draft angle of 7° maximum is permissible.
7. Not to be used unless approved by the procuring activity.

FIGURE 1. Adapter straight flange to tube dimensions and configurations - Continued.

REQUIREMENTS:

Dimensions and configuration shall be in accordance with figure 1.

For design features purposes, this standard takes precedence over documents referenced herein.

Referenced documents shall be of the issue in effect on date of invitation for bid.

Porosity test: finished castings shall not leak when subjected to 100-psi (0.7 MPa) internal air pressure and submerged in water for 3 minutes minimum.

This part is designed for use in fuel and oil systems with maximum operating pressures in accordance with table I.

TABLE I. Maximum operating pressure.

Size code number	Material	PSI	MPa
8 thru 16	Aluminum alloy	1500	10.3
24 thru 28	Aluminum alloy	500	3.4
32 thru 48	Aluminum alloy	500	3.4

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Maximum operating temperature 275° F (135°C).

Materials and finishes shall be in accordance with table II. All platings shall be capable of meeting a minimum of 96 hours salt spray test in accordance with ASTM B117. The fittings shall show no evidence of corrosion after 96 hours of salt spray. Fluid passages, other openings, and internal threads shall not be subject to the plating thickness requirement and may have bare areas provided they are protected with a light film of oil.

TABLE II. Material and finish code letters.

Code letter	Material	Finish
-	Steel 1137 or 1141 in accordance with ASTM A108	Cadmium plated in accordance with SAE-AS4875.
D	Aluminum alloy 2014-T4 in accordance with SAE-AMS-QQ-A-225/6 or aluminum alloy casting in accordance with ASTM B108/B108M	Anodized anodize in accordance with MIL-A-8625, type 2, dye light blue
	Aluminum alloy 2024 or 2024 forging and bar stock in accordance with SAE-AS4875	
DA	Aluminum alloy 2014-T4 in accordance with SAE-AMS-QQ-A-225/6 or aluminum alloy casting in accordance with ASTM B108/108M	Chemical conversion coating in accordance with, MIL-DTL-5541, type II, class 3
	Aluminum alloy 2024 or 2024 forging and bar stock in accordance with SAE-AS4875	
F	Steel 1137 or 1141 in accordance with ASTM A108	Zinc plating in accordance with ASTM B633; type VI, Fe/Zn 5. <u>2/</u>
H	Steel 1137 or 1141 in accordance with ASTM A108	Aluminum-nickel in accordance with ASTM F1136/F1136M, grade 3, NC.
R	Corrosion resistant steel (CRES) alloy 321 in accordance with SAE-AS4875	Passivate in accordance with SAE-AS4875
W	Aluminum alloy 7075-T73 or T7352 in accordance with SAE-AS4875	Anodize in accordance with MIL-A-8625, type 2, dye brown
WC	Aluminum alloy 7075-T73 or T7352 in accordance with SAE-AS4875	Chemical conversion coating in accordance with, MIL-DTL-5541, type II, class 3
T <u>1/</u>	Titanium in accordance with SAE-AS4875	Anodized in accordance with SAE-AS4875
Z	Steel 1137 or 1141 in accordance with ASTM A108	Zinc plating in accordance with ASTM B633; type II or III, Fe/Zn 5, or ASTM B695, type II, class 5.
ZN	Steel 1137 or 1141 in accordance with ASTM A108	Zinc plating in accordance with ASTM B633; type II or III, Fe/Zn 5, or ASTM B695, type II, class 5 with NAVAIR TCP in accordance with MIL-DTL-81706, type II, class 1A.

1/ Titanium shall not be used in oxygen systems.

2/ Hexavalent chromium free

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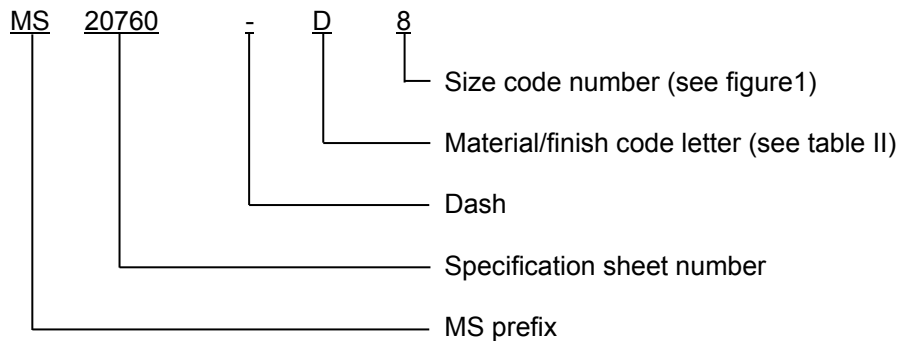
The connector flange to hose shall not exceed the weight limits specified in table III.

TABLE III. Weight limits. 1/

Size code number	Weight max lbs, (gr)		
	AL alloy	Steel/CRES	TI alloy
8	---	---	---
10	---	---	---
12	.09 (41)	.25 (113)	.15 (68)
12-16	.10 (45)	.28 (127)	.17 (77)
16	.12 (54)	.35 (159)	.20 (91)
20	.16 (73)	.53 (240)	.26 (118)
20-24	.23 (104)	.64 (290)	.38 (172)
24	.25 (113)	1.28 (581)	.41 (186)
32	.45 (204)	1.82 (826)	.74 (336)
40	.65 (295)	2.32 (1052)	1.07 (485)
48	.83 (376)	2.43 (1102)	1.37 (621)

1/ Metric equivalents given for information only.

Part or Identifying Number (PIN): The PIN consists of prefix "MS" the specification sheet number, a dash, letter for material/finish, and size code. Unassigned PIN's shall not be used.



PIN example: MS20760-D8 indicates a flange to hose adapter .500 inch (12.70 mm) flange to a .750 inch (19.05 mm) thread, aluminum alloy 2014-T4 anodized light blue.

Cadmium is not recommended. To the users of this document, it is recommended that the use of carbon steel material with cadmium plating be used only when other materials and finishes specified in this document cannot meet performance requirements.

Marking: Part shall be permanently marked with the MS PIN, and include the manufacturers CAGE, name, or trademark.

Referenced documents shall be of the issue in effect on date of invitation for bid.

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Amendment notations. The margins of this specification are marked with vertical lines to indicate modifications generated by this amendment. 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.

Referenced documents: In addition to SAE-AS4875/1, this document references the following:

MIL-A-8625	ASTM B633
MIL-DTL-5541	ASTM B695
MIL-DTL-81706	ASTM F1136/F1136M
ASME B46.1	SAE-AMS-QQ-A-225/6
ASTM A108	SAE-AS4395
ASTM B108/B108M	SAE-AS4875
ASTM B117	

CONCLUDING MATERIAL

Custodians:

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

Preparing activity:

DLA - CC

(Project 4730-2014-048)

Review activities:

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

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