

INCH-POUND

MS20759C

12 February 2013

SUPERSEDING

MS20759B

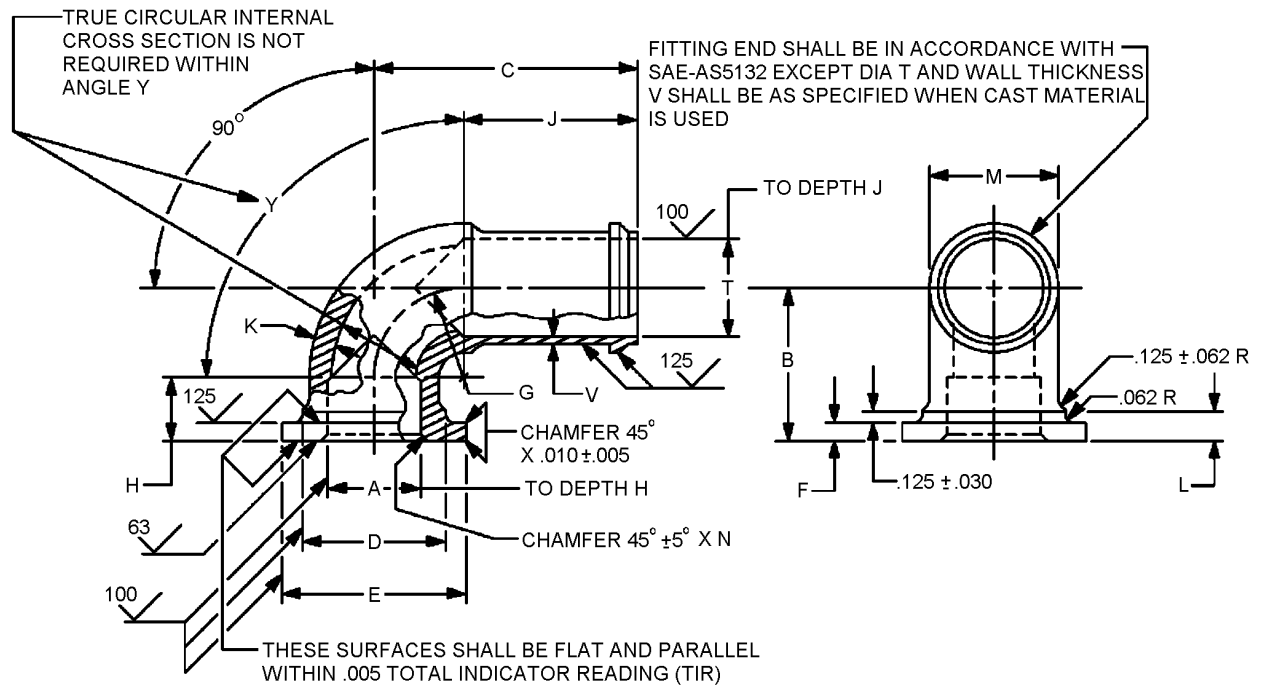
14 April 1994

DETAIL SPECIFICATION SHEET

ELBOW, HOSE, FLANGED SWIVEL, 90°

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.



Inches	mm
.005	0.13
.030	0.76
.062	1.57
.125	3.18

FIGURE 1. Hose to swivel flange dimensions and configurations.

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Size code number	Hose ID inch (mm)	A dia. ±.003 (0.08) (see note 7) inch (mm)	B +.047 (1.19) -.000 inch (mm)	C +.047 (1.19) -.000 inch (mm)	D dia. +.000 -.010 (0.25) (see note 7)
12	.750 (19.05)	.609 (15.47)	1.312 (33.32)	2.125 (53.98)	.965 (24.51)
12-16					
16	1.000 (25.40)	.844 (21.44)	1.438 (36.53)	2.250 (57.15)	1.215 (30.86)
20	1.250 (31.75)	1.078 (27.38)	1.688 (42.88)	2.438 (61.93)	1.465 (37.21)
20-24					
24	1.500 (38.10)	1.312 (33.32)	1.812 (46.02)	2.562 (65.07)	1.745 (44.32)
32	2.000 (50.80)	1.781 (45.24)	2.188 (55.58)	2.875 (73.03)	2.375 (60.33)
40	2.500 (63.50)	2.281 (57.94)	2.438 (61.93)	3.125 (79.38)	2.875 (73.03)
48	3.000 (76.20)	2.781 (70.64)	2.688 (68.28)	3.375 (85.73)	3.375 (85.73)

Size code number	E dia. +.000 -.005 (0.13) (see note 7) inch (mm)	F +.000 -.005 (0.13) inch (mm)	G rad inch (mm)	H +.047 (1.19) -.000 inch (mm)	J +.047 (1.19) -.000 inch (mm)
12	1.250 (31.75)	.156 (3.96)	.594 (15.09)	.719 (18.26)	1.531 (38.89)
12-16	1.500 (38.10)		.719 (18.26)		
16	2.125 (53.98)		.875 (22.23)	.812 (20.62)	1.562 (39.67)
20		1.844 (46.84)	1.000 (25.40)		
20-24		.188 (4.78)	1.312 (33.32)	.875 (22.23)	
24			1.562 (39.67)		
32			1.812 (46.02)		
40					
48	3.781 (96.04)				

Size code number	K inch (mm)		L ± .030 (0.76) inch (mm)	M dia. ± .015 (0.38) inch (mm)	N dia. inch (mm)
	min	max			
12	.125 (3.18)	.164 (4.17)	.250 (6.35)	.875 (22.23)	.669 (16.99)
12-16				1.125 (28.58)	.904 (22.96)
16	.141 (3.58)	.176 (4.47)		1.375 (34.93)	1.138 (28.91)
20	.156 (3.96)	.221 (5.61)		1.625 (41.28)	1.372 (34.85)
20-24			2.359 (59.92)	1.841 (46.76)	
24	.172 (4.37)	.234 (5.94)	.375 (9.53)	2.859 (72.62)	2.341 (59.46)
32	.203 (5.16)	.322 (8.18)		3.359 (85.32)	2.841 (72.16)
40	.234 (5.94)	.333 (8.46)			
48	.250 (6.35)	.344 (8.74)			

FIGURE 1. Hose to swivel flange dimensions and configurations - Continued.

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Size code number	T dia. min inch (mm)	V min inch (mm)
12	.609 (15.47)	.065 (1.65)
12-16		
16		
20	1.059 (26.90)	.090 (2.29)
20-24		
24		
32	1.793 (45.54)	.100 (2.54)
40	2.293 (58.24)	
48	2.793 (70.94)	

NOTES:

1. Dimensions are in inches.
2. Metric equivalents are given for information only.
3. Unless otherwise specified tolerances are $\pm .005$ 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. Internal flow passage around bend shall be smooth and free from projections.
7. Diameters A, D, and E shall be concentric with each other within .010 inch (0.25 mm) TIR.
8. Reduction by forging draft angle of 7° max permissible.

FIGURE 1. Hose to swivel flange 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
12 thru 16	Aluminum alloy	1500	10.3
24 thru 28	Aluminum alloy	500	3.4
32 thru 48	Aluminum alloy	500	3.4

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

Materials and finishes shall be in accordance with table II.

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TABLE II. Material and finish code letters.

Code letter	Material	Finish
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
DA	Aluminum alloy 2014-T4 in accordance with SAE-AMS-QQ-A-225/6 or aluminum alloy casting in accordance with ASTM B108/B108M	Chemical conversion coating in accordance with, MIL-DTL-5541, type II, class 3
DB	Aluminum alloy 2024 or 2024 forging and bar stock in accordance with SAE-AS4875	Anodized anodize in accordance with MIL-A-8625, type 2, dye blue
DC	Aluminum alloy 2024 or 2024 forging and bar stock in accordance with SAE-AS4875	Chemical conversion coating in accordance with, MIL-DTL-5541, type II, class 3
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

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

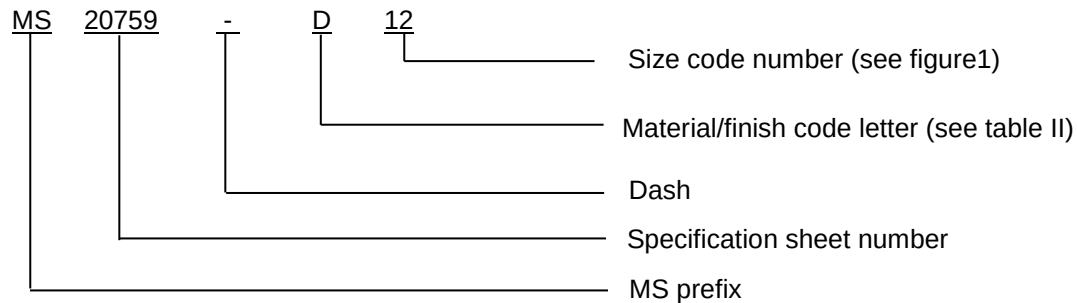
TABLE III. Weight limits. 1/

Size code number	Weight max lbs. (gr)
12	.10 (45)
12-16	.12 (54)
16	.15 (68)
20	.26 (118)
20-24	.28 (127)
24	.25 (113)
32	.73 (331)
40	1.04 (472)
48	1.40 (635)

1/ Metric equivalents given for information only.

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



PIN example: MS20759-D12 indicates a flange to hose adapter .750 inch (19.05 mm) hose ID to a 1.250 inch (31.75 mm) flange.

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.

Reference design standard MS33786 for installation.

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

Referenced documents. This document references the following:

MIL-A-8625	ASTM B108/B108M
MIL-DTL-5541	SAE-AMS-QQ-A-225/6
MS33786	SAE-AS4875
ASME B46.1	SAE-AS5132

CONCLUDING MATERIAL

Custodians:

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

Preparing activity:

DLA - CC

(Project 4730-2012-079)

Review activities:

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

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 <https://assist.dla.mil>.