

INCH-POUND

MS9193A
 16 February 2010
 SUPERSEDING
 MS9193 (ASG)
 11 April 1960

DETAIL SPECIFICATION SHEET

NIPPLE, TUBE - SAE-AMS5639, 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-AS4841.

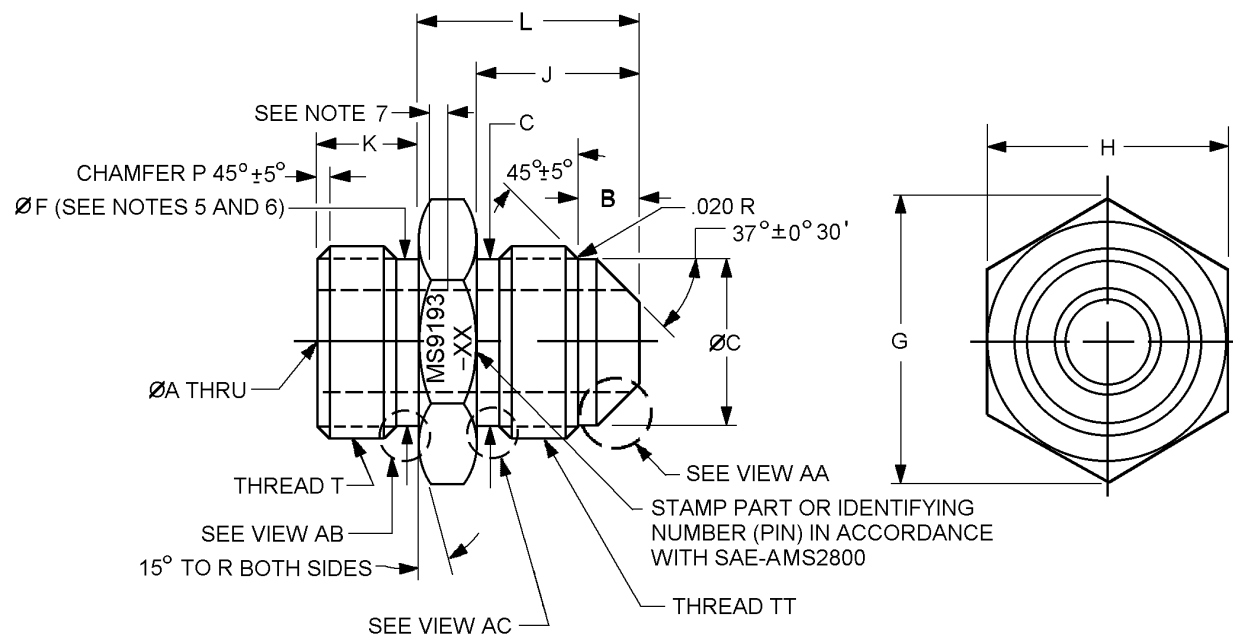
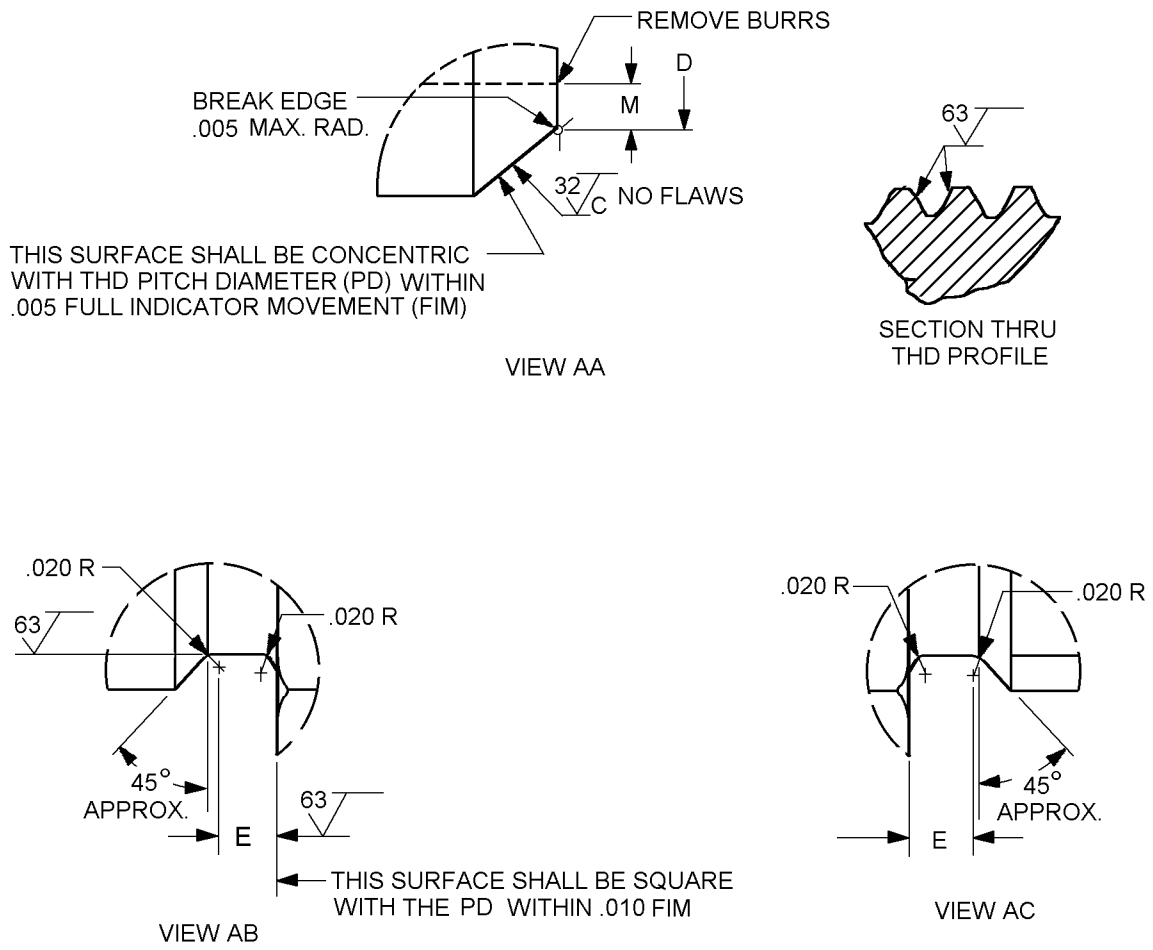


FIGURE 1. Nipple, tube, boss.

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Inches	mm
.005	0.13
.010	0.25
.020	0.51

FIGURE 1. Nipple, tube, boss - Continued.

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Dash number	Tube OD (reference) inches (mm)	A inches (mm)		B inches (mm) +.015 (0.38) -.000	C diameter inches (mm) +.000 -.010 (0.25)
-02	.125 (3.18)	.058 (1.47)	- .065 (1.65)	.144 (3.66)	.245 (6.22)
-03	.188 (4.78)	.121 (3.07)	- .128 (3.25)	.144 (3.66)	.307 (7.80)
-04	.250 (6.35)	.168 (4.27)	- .175 (4.45)	.160 (4.06)	.359 (9.12)
-05	.313 (7.95)	.230 (5.84)	- .237 (6.02)	.160 (4.06)	.421 (10.69)
-06	.375 (9.53)	.293 (7.44)	- .301 (7.65)	.165 (4.19)	.476 (12.09)
-07	.438 (11.13)	.355 (9.02)	- .363 (9.22)	.165 (4.19)	.539 (13.69)
-08	.500 (12.70)	.387 (9.83)	- .395 (10.03)	.229 (5.82)	.654 (16.61)
-09	.562 (14.27)	.434 (11.02)	- .442 (11.23)	.229 (5.82)	.716 (18.19)
-10	.625 (15.88)	.480 (12.19)	- .488 (12.40)	.255 (6.48)	.767 (19.48)
-11	.688 (17.48)	.542 (13.77)	- .552 (14.02)	.304 (7.72)	.875 (22.23)
-12	.750 (19.05)	.604 (15.34)	- .614 (15.60)	.304 (7.72)	.938 (23.83)
-14	.875 (22.23)	.729 (18.52)	- .739 (18.77)	.304 (7.72)	1.062 (26.97)
-16	1.000 (25.40)	.839 (21.31)	- .851 (21.62)	.312 (7.92)	1.188 (30.18)
-18	1.125 (28.58)	.948 (24.08)	- .960 (24.38)	.312 (7.92)	1.375 (34.93)
-20	1.250 (31.75)	1.073 (27.25)	- 1.086 (27.58)	.363 (9.22)	1.500 (38.10)
-24	1.500 (38.10)	1.307 (33.20)	- 1.320 (33.53)	.374 (9.50)	1.750 (44.45)
-28	1.750 (44.45)	1.542 (39.17)	- 1.557 (39.55)	.447 (11.35)	2.125 (53.98)
-32	2.000 (50.80)	1.776 (45.11)	- 1.791 (45.49)	.457 (11.61)	2.375 (60.33)

FIGURE 1. Nipple, tube, boss - Continued.

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Dash number	D diameter inches (mm) ± 0.003 (0.08)	E inches (mm)	F diameter inches (mm) +0.002 (0.05) -0.003 (0.08) (see notes 4 and 5)	G minimum inches (mm)	H inches (mm)
-02	.132 (3.35)	.063 (1.60)	.250 (6.35)	.631 (16.03)	.553 (14.05) - .564 (14.33)
-03	.195 (4.95)	.063 (1.60)	.312 (7.92)	.703 (17.86)	.616 (15.65) - .627 (15.93)
-04	.242 (6.15)	.075 (1.91)	.364 (9.25)	.775 (19.69)	.679 (17.25) - .690 (17.53)
-05	.304 (7.72)	.075 (1.91)	.426 (10.82)	.846 (21.49)	.741 (18.82) - .752 (19.10)
-06	.368 (9.35)	.083 (2.11)	.481 (12.22)	.916 (23.27)	.803 (20.40) - .814 (20.68)
-07	.430 (10.92)	.083 (2.11)	.544 (13.82)	.987 (25.07)	.865 (21.97) - .877 (22.28)
-08	.462 (11.73)	.094 (2.39)	.660 (16.76)	1.130 (28.70)	.990 (25.15) - 1.062 (26.97)
-09	.509 (12.93)	.094 (2.39)	.722 (18.34)	1.200 (30.48)	1.052 (26.72) - 1.064 (27.03)
-10	.555 (14.10)	.107 (2.72)	.773 (19.63)	1.270 (32.26)	1.114 (28.30) - 1.127 (28.63)
-11	.619 (15.72)	.125 (3.18)	.882 (22.40)	1.484 (37.69)	1.301 (33.05) - 1.314 (33.38)
-12	.681 (17.30)	.125 (3.18)	.945 (24.00)	1.556 (39.52)	1.364 (34.65) - 1.377 (34.98)
-14	.806 (20.47)	.125 (3.18)	1.070 (27.18)	1.699 (43.15)	1.489 (37.82) - 1.502 (38.15)
-16	.918 (23.32)	.125 (3.18)	1.195 (30.35)	1.842 (46.79)	1.614 (41.00) - 1.627 (41.33)
-18	1.027 (26.09)	.125 (3.18)	1.382 (35.10)	1.983 (50.37)	1.738 (44.15) - 1.752 (44.50)
-20	1.153 (29.29)	.125 (3.18)	1.507 (38.28)	2.126 (54.00)	1.863 (47.32) - 1.877 (47.68)
-24	1.387 (35.23)	.125 (3.18)	1.756 (44.60)	2.411 (61.24)	2.113 (53.67) - 2.127 (54.03)
-28	1.652 (41.96)	.125 (3.18)	2.131 (54.13)	2.839 (72.11)	2.488 (63.20) - 2.502 (63.55)
-32	1.886 (47.90)	.125 (3.18)	2.381 (60.48)	3.124 (79.35)	2.738 (69.55) - 2.752 (69.90)

FIGURE 1. Nipple, tube, boss - Continued.

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Dash number	J inches (mm)	K inches (mm)	L inches (mm)	M min inches (mm)
-02	.415 (10.54)	.360 (9.14)	.605 (15.37)	.030 (0.76)
-03	.446 (11.33)	.360 (9.14)	.636 (16.15)	.030 (0.76)
-04	.517 (13.13)	.400 (10.16)	.737 (18.72)	.030 (0.76)
-05	.517 (13.13)	.400 (10.16)	.737 (18.72)	.030 (0.76)
-06	.523 (13.28)	.400 (10.16)	.773 (19.63)	.030 (0.76)
-07	.523 (13.28)	.440 (11.18)	.773 (19.63)	.030 (0.76)
-08	.633 (16.08)	.440 (11.18)	.883 (22.43)	.030 (0.76)
-09	.633 (16.08)	.440 (11.18)	.883 (22.43)	.030 (0.76)
-10	.747 (18.97)	.440 (11.18)	1.057 (26.85)	.030 (0.76)
-11	.853 (21.67)	.440 (11.18)	1.163 (29.54)	.030 (0.76)
-12	.853 (21.67)	.480 (12.19)	1.163 (29.54)	.030 (0.76)
-14	.898 (22.81)	.480 (12.19)	1.208 (30.68)	.030 (0.76)
-16	.908 (23.06)	.480 (12.19)	1.268 (32.21)	.030 (0.76)
-18	.954 (24.23)	.480 (12.19)	1.314 (33.38)	.030 (0.76)
-20	.954 (24.23)	.480 (12.19)	1.314 (33.38)	.030 (0.76)
-24	1.079 (27.41)	.480 (12.19)	1.439 (36.55)	.030 (0.76)
-28	1.204 (30.58)	.480 (12.19)	1.594 (40.49)	.044 (1.12)
-32	1.329 (33.76)	.480 (12.19)	1.719 (43.66)	.044 (1.12)

FIGURE 1. Nipple, tube, boss - Continued.

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Dash number	P inches (mm)	R radius	Thread T (see note 11)
-02	.020 (0.51) - .050 (1.27)	.562 (14.27)	.3125 - 24UNF-3A
-03	.020 (0.51) - .050 (1.27)	.625 (15.88)	.375 - 24UNF-3A
-04	.030 (0.76) - .060 (1.52)	.688 (17.48)	.4375 - 20UNF-3A
-05	.030 (0.76) - .070 (1.78)	.750 (19.05)	.500 - 20UNF-3A
-06	.040 (1.02) - .070 (1.78)	.812 (20.62)	.5625 - 18UNF-3A
-07	.040 (1.02) - .070 (1.78)	.875 (22.23)	.625 - 18UNF-3A
-08	.040 (1.02) - .070 (1.78)	1.000 (25.40)	.7500 - 16UNF-3A
-09	.040 (1.02) - .070 (1.78)	1.062 (26.97)	.8125 - 16UN-3A
-10	.050 (1.27) - .080 (2.03)	1.125 (28.58)	.8750 - 14UNF-3A
-11	.050 (1.27) - .080 (2.03)	1.312 (33.32)	1.000 - 12UNF-3A
-12	.050 (1.27) - .080 (2.03)	1.375 (34.93)	1.0625 - 12UN-3A
-14	.050 (1.27) - .080 (2.03)	1.500 (38.10)	1.1875 - 12UN-3A
-16	.050 (1.27) - .080 (2.03)	1.625 (41.28)	1.3125 - 12UN-3A
-18	.050 (1.27) - .080 (2.03)	1.750 (44.45)	1.500 - 12UNF-3A
-20	.050 (1.27) - .080 (2.03)	1.875 (47.63)	1.625 - 12UN-3A
-24	.050 (1.27) - .080 (2.03)	2.125 (53.98)	1.8750 - 12UN-3A
-28	.050 (1.27) - .080 (2.03)	2.500 (63.50)	2.2500 - 12UN-3A
-32	.050 (1.27) - .080 (2.03)	2.750 (69.85)	2.500 - 12UN-3A

FIGURE 1. Nipple, tube, boss - Continued.

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Dash number	Thread TT (see note 11)					
	Size	Major diameter inches (mm)		Pitch diameter inches (mm)		Minor diameter max inches (mm)
-02	.3125 – 24UNS-3A	.3023 (7.678)	.3095 (7.861)	.2797 (7.104)	.2824 (7.173)	.2584 (6.563)
-03	.375 – 24UNS-3A	.3648 (9.266)	.3720 (9.449)	.3420 (8.687)	.3449 (8.760)	.3209 (8.151)
-04	.4375 – 20UNS-3A	.4264 (10.831)	.4345 (11.036)	.3989 (10.132)	.4020 (10.211)	.3732 (9.479)
-05	.500 – 20UNS-3A	.4889 (12.418)	.4970 (12.623)	.4613 (11.717)	.4645 (11.80)	.4357 (11.067)
-06	.5625 – 18UNS-3A	.5508 (13.990)	.5595 (14.211)	.5200 (13.208)	.5234 (13.294)	.4913 (12.479)
-07	.625 – 18UNS-3A	.6133 (15.578)	.6220 (15.799)	.5824 (14.793)	.5859 (14.881)	.5538 (14.067)
-08	.750 – 16UNS-3A	.7376 (18.735)	.7470 (18.974)	.7026 (17.846)	.7064 (17.942)	.6703 (17.026)
-09	.8125 – 16UNS-3A	.8001 (20.323)	.8095 (20.561)	.7653 (19.44)	.7689 (19.530)	.7328 (18.613)
-10	.875 – 14UNS-3A	.8617 (21.887)	.8720 (22.149)	.8215 (20.866)	.8256 (20.970)	.7844 (19.924)
-11	1.000 – 12UNS-3A	.9856 (25.034)	.9970 (25.324)	.9385 (23.838)	.9429 (23.950)	.8948 (22.728)
-12	1.0625 – 12UNS-3A	1.0481 (26.622)	1.0595 (26.911)	1.0012 (25.430)	1.0054 (25.537)	.9573 (24.315)
-14	1.1875 – 12UNS-3A	1.1731 (29.797)	1.1845 (30.086)	1.1261 (28.603)	1.1304 (28.712)	1.0823 (27.490)
-16	1.3125 – 12UNS-3A	1.2981 (32.972)	1.3095 (33.261)	1.2511 (31.778)	1.2554 (31.887)	1.2073 (30.665)
-18	1.500 – 12UNS-3A	1.4856 (37.734)	1.4970 (38.024)	1.4381 (36.528)	1.4429 (36.650)	1.3948 (35.428)
-20	1.625 – 12UNS-3A	1.6106 (40.909)	1.6220 (41.199)	1.5635 (39.713)	1.5679 (39.825)	1.5198 (38.603)
-24	1.875 – 12UNS-3A	1.8606 (47.259)	1.8720 (47.549)	1.8134 (46.060)	1.8179 (46.175)	1.7698 (44.953)
-28	2.250 – 12UNS-3A	2.2356 (56.784)	2.2470 (57.074)	2.1884 (55.585)	2.1929 (55.700)	2.1448 (54.478)
-32	2.500 – 12UNS-3A	2.4856 (63.134)	2.4970 (63.424)	2.4429 (62.050)	2.4383 (61.933)	2.3948 (60.828)

FIGURE 1. Nipple, tube, boss - Continued.

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TABLE I. Approximate weight.

Dash number	Approximate weight lbs/ea (grams/ea)		Dash number	Approximate weight lbs/ea (grams/ea)
-02	.026 (12)		-11	.255 (116)
-03	.034 (15)		-12	.282 (128)
-04	.048 (22)		-14	.331 (150)
-05	.057 (26)		-16	.407 (185)
-06	.069 (31)		-18	.522 (237)
-07	.080 (36)		-20	.573 (260)
-08	.125 (57)		-24	.739 (335)
-09	.141 (64)		-28	1.176 (533)
-10	.182 (83)		-32	1.433 (650)

Intended usage: Jet engine, miscellaneous parts, oil, fuel, and de-icing kits.

Not to be used on hydraulic, oxygen or applications requiring pressures of 3000 psi (21 MPa).

Changes 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.

Referenced documents. In addition to SAE-AS4841, this document references the following:

FED-STD-H28/2
 AMSE B46.1
 SAE-AMS2700
 SAE-AMS2800
 SAE-AMS5639

CONCLUDING MATERIAL

Custodians:
 Army - MI
 Navy - AS
 DLA - CC

Preparing activity:
 DLA - CC

(Project 4730-2009-079)

Review activity:
 Navy - SA

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>.