

INCH-POUND

MS27404B
w/AMENDMENT 2
20 November 2013
SUPERSEDING
MS27404B
w/AMENDMENT 1
6 February 2013

DETAIL SPECIFICATION SHEET

ADAPTER, STRAIGHT, REUSABLE, TUBE TO HOSE, LOW PRESSURE

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-38726.

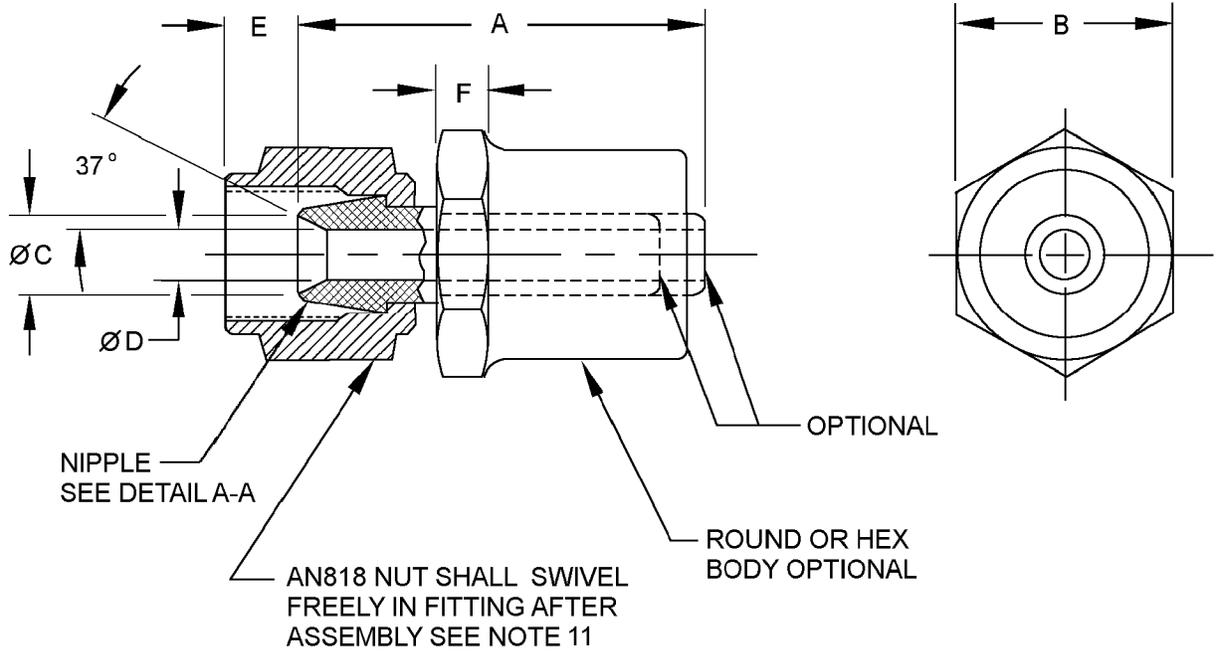
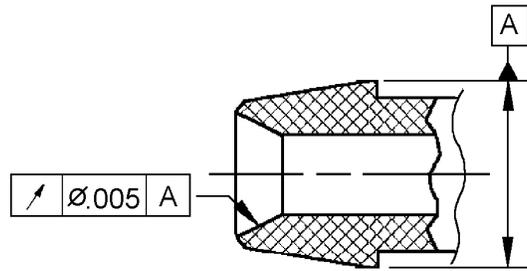


FIGURE 1. Adapter dimensions and configuration.

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DETAIL A-A

Dash number	Tube OD inches (mm)	A max inches (mm)	B max (see note 7) inches (mm)	C (see note 8) +.005/-.000 (+0.13/-9.00) inches (mm)	D min inches (mm)
-2	.125 (3.18)	1.156 (29.36)	.500 (12.70)	.189 (4.80)	.052 (1.32)
-3	.188 (4.78)	1.219 (30.96)	.563 (14.30)	.245 (6.22)	.109 (2.77)
-4	.250 (6.35)	1.250 (31.75)	.625 (15.88)	.295 (7.49)	.156 (3.96)
-6	.375 (9.53)	1.625 (41.28)	.813 (20.65)	.435 (11.05)	.281 (7.14)
-8	.500 (12.70)	1.750 (44.45)	1.000 (25.40)	.570 (14.48)	.375 (9.53)
-10	.625 (15.88)	1.875 (47.63)	1.125 (28.58)	.690 (17.53)	.453 (11.51)

Dash number	E +.016/-.000 (+0.41/-0.00) inches (mm)	F min inches (mm)	Nut AN818
-2	.328 (8.33)	.188 (4.78)	AN818-2
-3	.313 (7.95)	.188 (4.78)	AN818-3
-4	.344 (8.74)	.188 (4.78)	AN818-4
-6	.375 (9.53)	.250 (6.35)	AN818-6
-8	.422 (10.72)	.250 (6.35)	AN818-8
-10	.500 (12.70)	.313 (7.95)	AN818-10

NOTES:

1. Dimensions are in inches.
2. Metric equivalents are given for information only.
3. Dimensioning and tolerancing in accordance with ASME Y14.5.
4. Unless otherwise specified, tolerances are ± 0.005 inch (0.25 mm), angular dimensions $\pm 0^{\circ}30'$.
5. Break sharp edges and remove all hanging burrs and slivers.
6. Surface roughness shall be 125 micro inches Ra in accordance with ASME B46.1.
7. Dimension B shall fit standard wrench opening.
8. Dimension C applies to machined parts only.
9. When a flared tubing end is used instead of a machined part, the flare shall be in accordance with SAE-AS4330.
10. For design features purposes, this standard takes precedence over documents referenced herein.
11. Reference AN818 for complete PIN. Internal threads shall be in accordance with AN818 nut.

FIGURE 1. Adapter dimensions and configuration - Continued.

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REQUIREMENTS:

Adapter shall be as specified on figure 1.

Fitting shall withstand all tests specified in MIL-DTL-38726 when assembled to hose in accordance with MIL-DTL-5593.

Materials shall be in accordance with table I.

TABLE I. Material and designators.

Designator	Material	Alloy requirements
J	Corrosion resistant steel (CRES), type 304	SAE-AMS5639
K	Corrosion resistant steel (CRES), type 316	SAE-AMS5648
P	Chrome-molybdenum steel 4130	SAE-AMS6348 or SAE-AMS6370
S	Steel 4140	SAE-AMS6349 or SAE-AMS6382
T 1/	Titanium	SAE-AMS4928 (6AL-355 annealed)
W	Aluminum alloy 7075-T73	SAE-AMS-QQ-A-225/9 or SAE-AMS4141

1/ Not for use in oxygen systems.

Finish. Finishes shall be as specified in 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.

Adapter color coding. Adapter color coding shall be in accordance with MIL-DTL-38726.

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TABLE II. Material and finish identification codes.

Plating finish designator	Material	Plating Finish
Blank	Steel 4130 or 4140	Cadmium plating in accordance with SAE-AMS-C-81562, type II, class 3 or SAE-AMS-QQ-P-416, type II, class 2. <u>1/</u>
CN		Cadmium plating in accordance with SAE-AMS-C-81562, type II, class 3 or SAE-AMS-QQ-P-416, type II, class 2 and NAVAIR trivalent chromium pretreatment (TCP) in accordance with MIL-DTL-81706, type II, class 1A.
E		NAVAIR TCP in accordance with MIL-DTL-81706, type II, class 1A.
F		Zinc plate (finish J, P, or R) with NAVAIR TCP in accordance with MIL-DTL-81706, type II, class 1A.
Blank	Aluminum	Aluminum alloy anodize in accordance with MIL-A-8625, type II.
H	Steel 4130 or 4140	Aluminum-nickel in accordance with ASTM F1136/F1136M, grade 3, NC.
J		Zinc-nickel in accordance with SAE-AMS2417, type 1.
P		Zinc phosphate finish in accordance MIL-DTL-16232 type Z, class 1.
R		Zinc plating in accordance with ASTM B633; type VI, Fe/Zn 5. <u>2/</u>
Blank	CRES	No additional finish. Passivation in accordance with SAE-AMS2700, type 6 or 7.
Blank	Titanium	Anodize in accordance with SAE-AMS2488 type 2.
Z	Steel 4130 or 4140	Zinc plating in accordance with ASTM B633; type II or III, Fe/Zn 5, or ASTM B695, type II, class 5.
ZN		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/ Embrittlement test need not be run.

2/ Hexavalent chromium free.

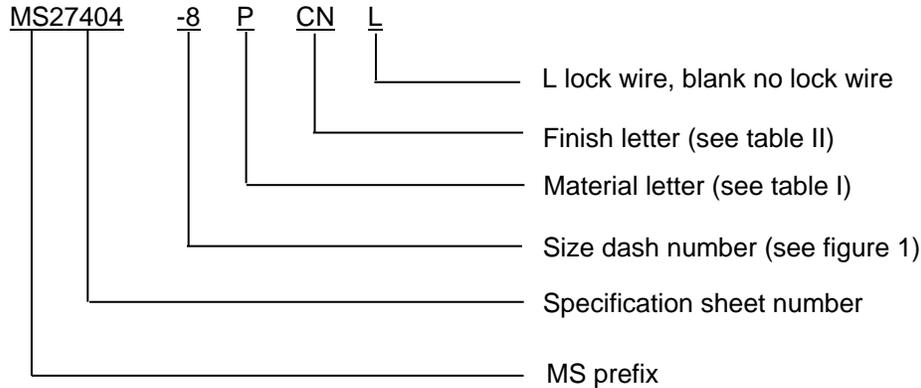
Trivalent wrenchability. When the finish has been damaged due to poor wrenchability, the surface of the connector shall be touched up using the brush plating process below. The term “trivalent wrenchability” is used to evaluate the ability of the finish to withstand abrasion from an excessive amount of wrenching.

- a. Brush plating of hard chromium by electrodeposition shall be in accordance with SAE-AMS2451/5.
- b. Brush plating of medium-hardness, low stress nickel by electrodeposition shall be in accordance with SAE-AMS2451/9.
- c. Brush plating of NAVAIR TCP shall be in accordance with MIL-DTL-81706, type II, class 1A, material form 1 through 6, application method B. Example of a PIN: M817062A6B.

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

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Part or Identifying Number (PIN): The PIN consists of the letter "MS" the specification sheet number, a dash number for tube and port size, a letter designator for material type, material finish letter, and a blank (no lockwire) or L for lockwire . Unassigned PIN's shall not be used.



PIN examples:

MS27404-8S is for a straight adapter, hose to tube, .500 inch (12.70 mm), steel (4140) with cadmium plate.

MS27404-8PCNL is for a straight adapter, hose to tube, .500 inch (12.70 mm), steel (4130) with cadmium and NAVAIR TCP, with nut drilled for lockwire hole.

MS27404-8WL is for a straight adapter, hose to tube, .500 inch (12.70 mm), aluminum alloy 7075-T73, AN818 nut drilled for lockwire hole.

NOTE: Cadmium plating is not recommended. Carbon steel material with cadmium plating shall only be used 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 manufacturer's CAGE, name, or trademark.

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

Supersession data. Due to stress cracking, aluminum alloys 2014 and 2024 "D" designator have been replaced by aluminum alloy 7075 "W" designator. Example MS27404-8D use MS27404-8W.

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.

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Referenced documents. In addition to MIL-DTL-38726, this document references the following:

AN818	ASTM F1136/F1136M	SAE-AMS4928
MIL-A-8625	SAE-AMS-C-81562	SAE-AMS5639
MIL-DTL-5593	SAE-AMS-QQ-A-225/9	SAE-AMS5648
MIL-DTL-16232	SAE-AMS-QQ-P-416	SAE-AMS6348
MIL-DTL-81706	SAE-AMS2417	SAE-AMS6349
ASME B46.1	SAE-AMS2451/5	SAE-AMS6370
ASME Y14.5	SAE-AMS2451/9	SAE-AMS6382
ASTM B117	SAE-AMS2488	SAE-AS4330
ASTM B633	SAE-AMS2700	
ASTM B695	SAE-AMS4141	

CONCLUDING MATERIAL

Custodians:

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

Preparing activity:
DLA - CC

(Project 4730-2013-117)

Review activities:

Army - AV
Navy - 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>.