INCH-POUND
MS27404B
28 February 2012
SUPERSEDING
MS27404A
8 January 2002

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.

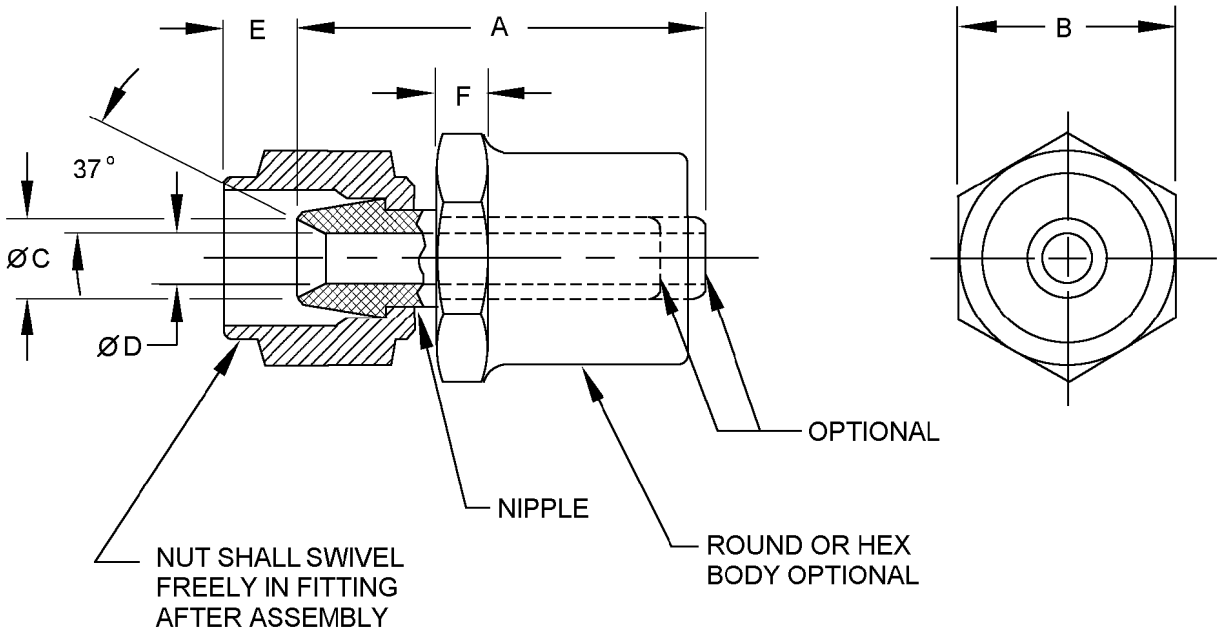


FIGURE 1. Adapter dimensions and configuration.

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 ±.005 inch (0.25 mm), angular dimensions ±0°30’.
5. Break sharp edges .and remove all hanging burrs and slivers.
6. Surfaces roughness shall be in accordance with MIL-DTL-38726.
7. Dimension B shall fit standard wrench opening.
8. Dimension C applies to machined parts only. Conical seat to be concentric with OD of nipple with .005 inch (0.13 mm) of full indicator movement.
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.

FIGURE 1. Adapter dimensions and configuration - Continued.

REQUIREMENTS:

Elbow , tube to hose, 90°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 plating's 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 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. 1/
CN		Cadmium plating in accordance with SAE-AMS-C-81562, type II, class 3 or SAE-AMS-QQ-P-416, type II, class 2 with 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	Steel 4130 or 4140	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	Steel 4130 or 4140	Zinc-nickel in accordance with SAE-AMS2417, type 1.
P	Steel 4130 or 4140	Zinc phosphate finish in accordance MIL-DTL-16232 type Z, class1.
R	Steel 4130 or 4140	Zinc plating in accordance with ASTM B633; type VI, Fe/Zn 5. 2/
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	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 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.

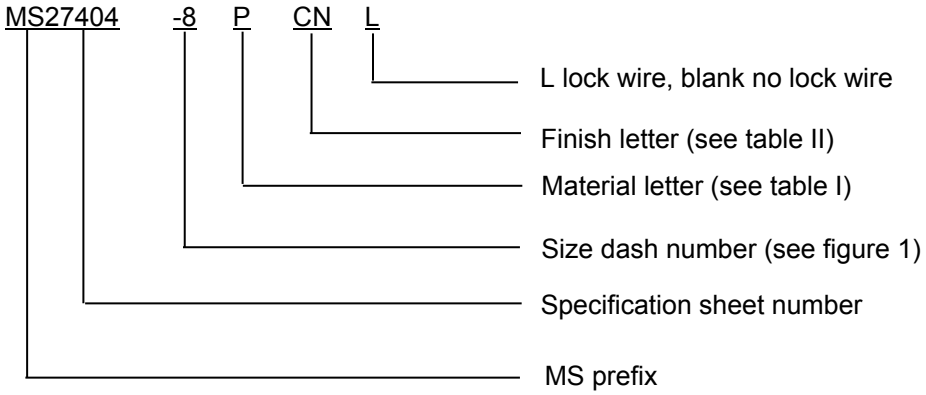
b. Brush plating of medium-hardness, low stress nickel by electrodeposition shall be in accordance with SAE-AMS2451/9.

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.

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

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 (4130) 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, SAE-AS5175 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 manufacturers CAGE, name, or trademark.

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

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

AN818
MIL-A-8625
MIL-DTL-5593
MIL-DTL-16232
MIL-DTL-81706
ASME Y14.5
ASTM B117
ASTM B633
ASTM B695
ASTM F1136/F1136M
SAE-AMS-C-81562
SAE-AMS-QQ-A-225/9
SAE-AMS-QQ-P-416
SAE-AMS2417
SAE-AMS2451/5
SAE-AMS2451/9
SAE-AMS2488
SAE-AMS2700
SAE-AMS4141
SAE-AMS4928
SAE-AMS5639
SAE-AMS5648
SAE-AMS6348
SAE-AMS6349
SAE-AMS6370
SAE-AMS6382
SAE-AS4330
SAE-AS5175

CONCLUDING MATERIAL

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

Preparing activity:
DLA - CC

(Project 4730-2011-096)

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.daps.dla.mil.