

INCH-POUND

MIL-DTL-52525/39C

30 January 2020

SUPERSEDING

MIL-DTL-52525/39B

2 December 2008

DETAIL SPECIFICATION SHEET

FITTINGS, HOSE, SCREW-ON TO 37 DEGREE FLARE FEMALE SWIVEL, 90 DEGREE BENT 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 MIL-DTL-52525.

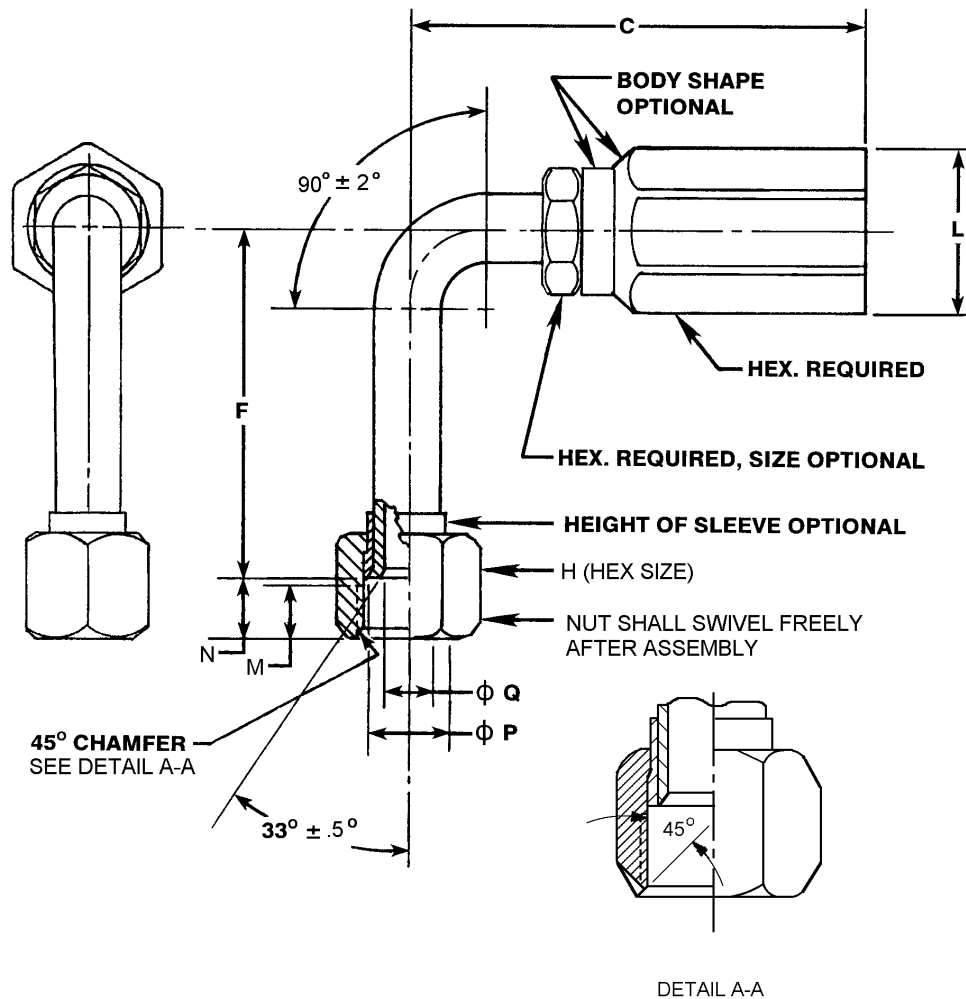


FIGURE 1. Fitting, screw-on to 37° flare female swivel, 90° bent tube.



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Part or Identifying Number (PIN)	Hose		Hose OD inches (mm)	Tube		Thread size
	ID inches (mm)	Dash size no.		OD inches (mm)	Dash size no.	
M52525/39-08-08	.50 (12.70)	-08	.94 (23.88)	.50 (12.70)	-08	.750-16
M52525/39-12-12	.75 (19.05)	-12	1.21 (30.73)	.75 (19.05)	-12	1.063-12
M52525/39-16-16	1.00 (25.40)	-16	1.50 (38.10)	1.00 (25.40)	-16	1.313-12

PIN	C max inches (cm)	F max Inches (mm)	H Hex size inches (mm)	L max inches (mm)	M min inches (mm)
M52525/39-08-08	3.60 (9.14)	1.90 (48.26)	.88 (22.35)	1.29 (32.77)	.384 (9.75)
M52525/39-12-12	4.50 (11.43)	2.40 (60.96)	1.25 (31.75)	1.73 (43.94)	.487 (12.37)
M52525/39-16-16	5.50 (13.97)	3.10 (78.74)	1.50 (38.10)	2.02 (51.31)	.505 (12.83)

PIN	N inches (mm)	P (see note 3) inches (mm)	Q Bore dia. min inches (mm)
	+.030 (0.76) -.015 (0.38)	±.005 (0.13)	
M52525/39-08-08	.435 (11.05)	.570 (14.48)	.37 (9.40)
M52525/39-12-12	.562 (14.27)	.850 (21.59)	.56 (14.22)
M52525/39-16-16	.594 (15.09)	1.103 (28.02)	.81 (20.57)

NOTES:

1. Dimensions are in inches.
2. Metric equivalents are given for information only.
3. Dimension P to be concentric with dimension Q within .015 inch (0.38 mm) full indicator movement.

FIGURE 1. Fitting, screw-on to 37° flare female swivel, 90° bent tube - Continued.

REQUIREMENTS:

The fittings described herein are for use with hose in accordance with MIL-DTL-52471/9, type 100R12, 4-spiral-wrap reinforcement hose and hose assemblies in accordance with MIL-DTL-52471/10.

The fittings shall be as specified on figure 1 and in tables I, II, and III.

If fittings are to be used on an oxygen hose, see MIL-DTL-52525.

Materials and finishes shall be in accordance with MIL-DTL-52525 and in table I.

Finish. Finishes shall be in accordance with table I. All plating's shall be capable of meeting 96-hour salt spray test in accordance with ASTM B117. The fittings shall show no evidence of red 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.

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TABLE I. Material and finish identification codes.

PIN code material/plating finish	Material	Plating finish
A	Aluminum alloy 6061 or 7075	Anodize in accordance with MIL-A-8625, type II.
AN		Anodize in accordance with MIL-A-8625, type II and NAVAIR trivalent chromium pretreatment (TCP) in accordance with MIL-DTL-81706, type II, class 1A. TCP Applied after anodizing.
BN		Bare aluminum with NAVAIR TCP in accordance with MIL-DTL-81706, type II, class 1A.
C	Steel	Cadmium plating in accordance with SAE-AMS-C-81562, type II, class 2 or SAE-AMS-QQ-P-416, type II, class 2. <u>1/ 4/ 8/</u>
YC	Chrome-molybdenum steel alloy 4130	Cadmium plating in accordance with SAE-AMS-C-81562, type II, class 2 or SAE-AMS-QQ-P-416, type II, class 2. <u>1/ 4/ 7/</u>
G	Steel	Zinc plating with colorless passivate in accordance with ASTM B633, type V, Fe/Zn 25. <u>2/ 3/</u>
YG	Chrome-molybdenum steel alloy 4130	
H	Steel	Zinc phosphate finish in accordance MIL-DTL-16232, type Z, class 1.
YH	Chrome-molybdenum steel alloy 4130	
J	Steel	Zinc plating with a colored chromate conversion in accordance with ASTM B633; type II, Fe/Zn 8, or ASTM B695, type II, class 8. <u>2/ 4/</u>
YJ	Chrome-molybdenum steel alloy 4130	
K	Nickel-copper alloy UNS N04400	No additional finish.
M	High-chromium nickel alloy UNS N06690	No additional finish.
N	Steel	Zinc-aluminum in accordance with ASTM F1136/F1136M, grade 3, NC. <u>3/</u>
YA	Chrome-molybdenum steel alloy 4130	
YN	Chrome-molybdenum steel alloy 4130	Zinc-nickel in accordance with SAE-AMS2417, type 2, grade B. <u>3/ 6/</u> .
P	Steel	Zinc plating with colorless passivate in accordance with ASTM B633, type V, Fe/Zn 8. <u>2/ 3/</u>
YP	Chrome-molybdenum steel alloy 4130	
S	Corrosion resistant steel	No additional finish. Passivation in accordance with SAE-AMS2700, type 6 or 7.
T	Titanium	Anodize in accordance with SAE-AMS2488, type 2. <u>5/ 8/</u>
TF		Fluoride phosphate in accordance with SAE-AMS2486. <u>5/ 8/</u>
U	Steel	Zinc-aluminum in accordance with ASTM F1136/F1136M, grade 3, NC. <u>4/</u>
V		Zinc-nickel in accordance with SAE-AMS2417, type 2, grade B. <u>3/ 6/</u> .
W	Steel	Any zinc plating above. <u>2/</u>
YW	Chrome-molybdenum steel alloy 4130	
Z	Steel	Zinc plating in accordance with ASTM B695, type II, class 8. <u>2/ 4/</u>

1/ Embrittlement test need not be run.

2/ Not for use in aircraft. Requires approval from the Program Office for all applications. Zinc-plated materials should be avoided in hydraulic systems with water-glycol fluids. Reference ASTM MNL37 - Fuels and Lubricants Handbook.

3/ Hexavalent chromium free. Finish shall be RoHS compliant.

4/ These finishes have a chromate conversion coating or chromic acid rinse which includes hexavalent chromium and are not recommended. The use of coatings depositing hexavalent chromium for Army vehicles is prohibited unless otherwise explicitly stated in the contract as a requirement. For new designs PIN codes C, YC, J, YJ, and Z are not to be supplied to Army and Marine ground forces.

5/ A pretreatment, a modification of the fluoride treatment, or a post treatment shall be applied so the final color of the fittings shall be similar to SAE-AMS-STD-595 colors 36076 through 36293.

6/ The zinc-nickel alloy plate shall contain 12% to 16% nickel. The coating thickness shall be 315µ inches (8µm) minimum.

7/ Cadmium shall not be used in oxygen or potable water systems. Cadmium is prohibited from use in NAVSEA-owned shipboard systems in accordance with the requirements of T9070-AL-DPC-020/077-2, unless otherwise approved by NAVSEA. The use of cadmium plating for Army vehicles is prohibited unless otherwise explicitly stated in the contract as a requirement.

8/ Titanium shall not be used in oxygen or potable water systems.

The operating pressure shall be as specified in table II. Maximum operating pressures are for low carbon steel fittings consult manufacturer for values on other materials.

TABLE II. Maximum operating pressures of fittings. 1/ 2/

Size dash number	Hose ID inches (mm)	psi	MPa
-08	.500 (12.70)	5000	34.5
-12	.750 (19.05)	4000	27.6
-16	1.00 (25.40)	4000	27.6

1/ Dimensions are in inches.

2/ Metric equivalents are given for information only.

Over tightening torque shall be as specified in table III. Maximum over torque values are for low carbon steel fittings consult manufacturer for values on other materials.

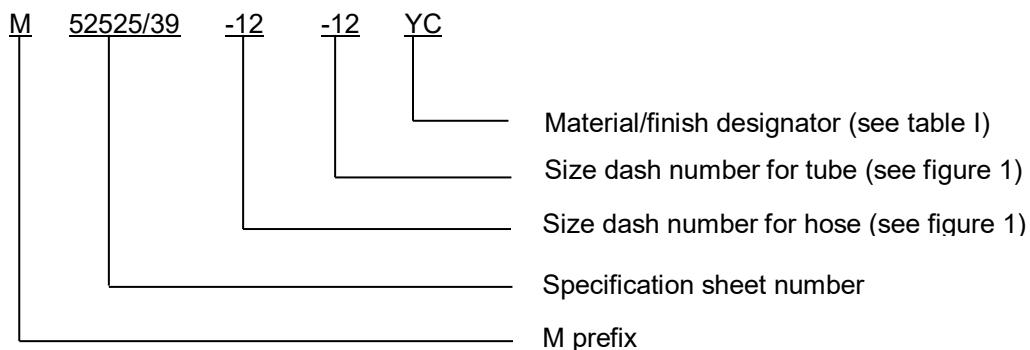
TABLE III. Over-tightening torque for swivel nut. 1/ 2/

Size dash number	Tube OD inches (mm)	Pound force Foot (lbf-ft)	N m
-08	.500 (12.70)	37.5	51
-12	.750 (19.05)	75	102
-16	1.00 (25.40)	100	136

1/ Dimensions are in inches.

2/ Metric equivalents are given for information only.

PIN: The PIN consists of the letter "M" the specification sheet number, a dash, a number for the hose size a dash, a number for tube size, and a material finish designator.



PIN example: M52525/39-12-12A, describes a 37° flare female swivel, 90° bent tube for a .750 inch (19.05 mm) hose ID, to a .750 inch (19.05 mm) tube OD, chrome-molybdenum steel with cadmium finish.

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

Cadmium is prohibited from use in NAVSEA-owned shipboard systems in accordance with the requirements of T9070-AL-DPC-020/077-2, unless otherwise approved by NAVSEA.

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The use of cadmium plating or coatings depositing hexavalent chromium for Army vehicles is prohibited unless otherwise explicitly stated in the contract as a requirement.

For new designs PIN codes C, YC, J, YJ, and Z are not to be supplied to Army and Marine ground forces.

Class I and II ozone depleting substances (ODS) shall not be used in MIL-DTL-52525/39 or any referenced procedures.

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

Color identification. Color identification shall be in accordance with SAE-AS4841.

Marking shall include the manufacturer's name or trademark, size, and hose identifier 100R12. Location of marking is optional.

Harmonization to SAE-J516 cross reference PIN in table IV is for reference only. SAE style fittings may not have the same material/finish as required by MIL-DTL-52525 and legacy with MIL-DTL-52471.

TABLE IV. Harmonization to SAE-J516 cross reference PIN. 1/

PIN	SAE PIN
M52525/39-08-08	SAE J516 8-8 F242077
M52525/39-12-12	SAE J516 12-12 F242077
M52525/39-16-16	SAE J516 16-16 F242077

1/ Material and finish designators are omitted from PIN's see table I and SAE-J846.

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 MIL-DTL-52525, this document references the following:

MIL-A-8625	SAE-AMS-STD-595/36081	SAE-AMS-STD-595/36293
MIL-DTL-16232	SAE-AMS-STD-595/36099	SAE-AMS-C-81562
MIL-DTL-52471	SAE-AMS-STD-595/36118	SAE-AMS-QQ-P-416
MIL-DTL-52471/9	SAE-AMS-STD-595/36134	SAE-AMS2417
MIL-DTL-52525/10	SAE-AMS-STD-595/36152	SAE-AMS2488
MIL-DTL-81706	SAE-AMS-STD-595/36170	SAE-AMS2486
ASTM B117	SAE-AMS-STD-595/36173	SAE-AMS2700
ASTM B633	SAE-AMS-STD-595/36176	SAE-AS4841
ASTM B695	SAE-AMS-STD-595/36231	SAE-J516
ASTM F1136/F1136M	SAE-AMS-STD-595/36251	SAE-J846
ASTM MNL37	SAE-AMS-STD-595/36270	T9070-AL-DPC-020/077-2
SAE-AMS-STD-595/36076	SAE-AMS-STD-595/36280	

CONCLUDING MATERIAL

Custodians:

Army - AT
Navy - SH
Air Force - 71
DLA - CC

Preparing activity:

DLA - CC

(Project 4730-2020-015)

Review activities:

Army - CR4
Navy - AS, CG, SA, YD

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>.