INCH-POUND

MIL-DTL-52525/5D
21 April 2011
SUPERSEDING
MIL-DTL-52525/5C
12 November 2008

DETAIL SPECIFICATION SHEET

FITTINGS, HOSE, SCREW-ON TO 37° FLARE FEMALE SWIVEL, STRAIGHT

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.

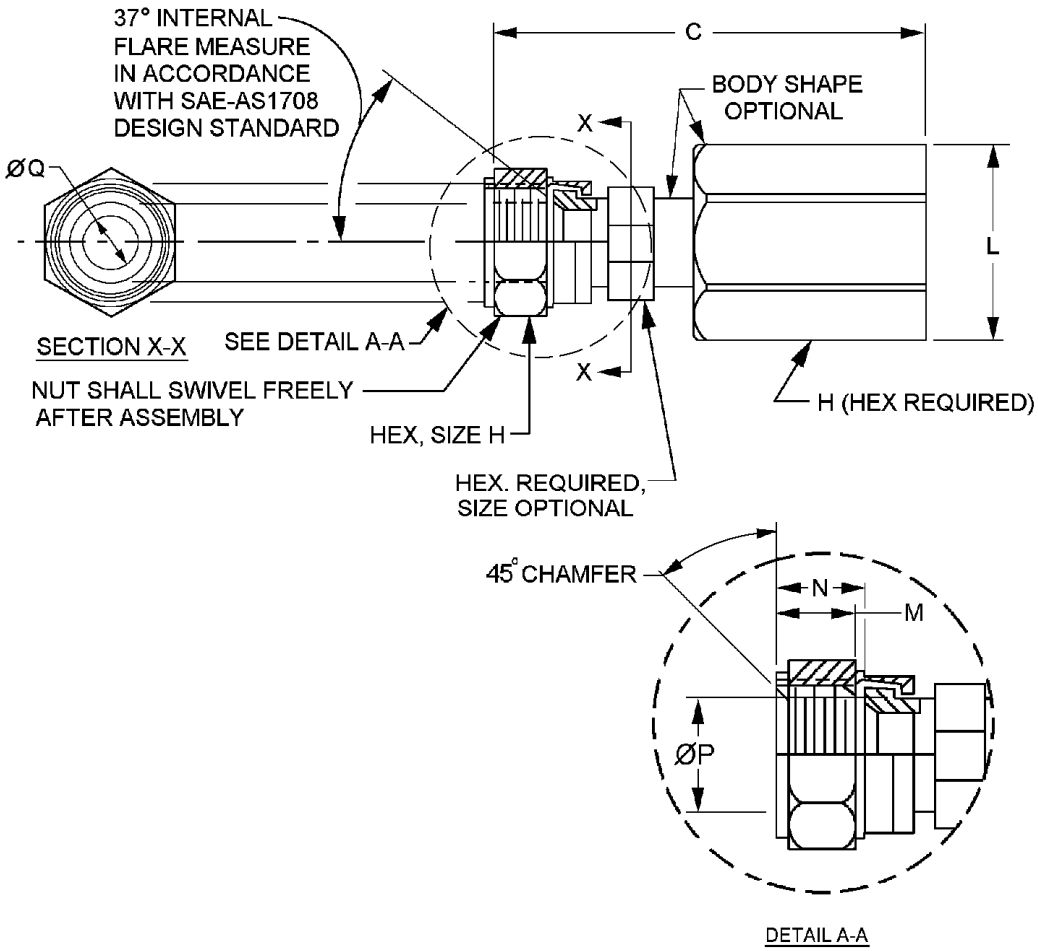


FIGURE 1. Fitting, screw-on to 37° flare, straight.

Part or Identifying Number (PIN)	Hose ID ref inches (mm)	Tube OD inches (mm)	Thread size (see note 3)	C max inches (mm)
M52525/5-4-4	.250 (6.35)	.250 (6.35)	.438-20-UNF	3.00 (76.20)
M52525/5-4-5	.250 (6.35)	.313 (7.95)	.500-20-UNF	2.80 (71.12)
M52525/5-4-6	.250 (6.35)	.375 (9.53)	.563-18-UNF	2.97 (75.44)
M52525/5-5-6	.313 (7.95)	.375 (9.53)	.563-18-UNF	2.97 (75.44)
M52525/5-6-6	.375 (9.53)	.375 (9.53)	.563-18-UNF	3.32 (84.33)
M52525/5-6-8	.375 (9.53)	.500 (12.70)	.750-16-UNF	3.49 (88.65)
M52525/5-8-8	.500 (12.70)	.500 (12.70)	.750-16-UNF	3.65 (92.71)
M52525/5-8-10	.500 (12.70)	.625 (15.88)	.875-14-UNF	3.87 (98.30)
M52525/5-10-12	.625 (15.88)	.750 (19.05)	1.063-12-UNC	4.32 (109.73)
M52525/5-12-12	.750 (19.05)	.750 (19.05)	1.063-12-UNC	4.76 (120.90)
M52525/5-12-14	.750 (19.05)	.875 (22.23)	1.188-12 UNC	5.13 (130.30)
M52525/5-16-16	1.000 (25.40)	1.000 (25.40)	1.313-12-UNC	5.50 (139.70)
M52525/5-20-20	1.250 (31.75)	1.250 (31.75)	1.625-12-UNC	4.96 (125.98)

PIN	H Hex size inches (mm)	L max inches (m)	M min inches (mm)	N inches (mm) +.030 (0.76) −.015 (0.38)	P (see note 4) ±.005 (0.13) inches (mm)
M52525/5-4-4	.563 (14.30)	.87 (22.10)	.300 (7.62)	.344 (8.74)	.295 (7.49)
M52525/5-4-5	.625 (15.88)	.87 (22.10)	.331 (8.41)	.375 (9.53)	.355 (9.02)
M52525/5-4-6	.688 (17.48)	.87 (22.10)	.333 (8.46)	.375 (9.53)	.435 (11.05)
M52525/5-5-6	.688 (17.48)	.98 (24.89)	.333 (8.46)	.375 (9.53)	.435 (11.05)
M52525/5-6-6	.688 (17.48)	1.09 (27.69)	.333 (8.46)	.375 (9.53)	.435 (11.05)
M52525/5-6-8	.875 (22.23)	1.09 (27.69)	.375 (9.53)	.422 (10.72)	.570 (14.48)
M52525/5-8-8	.875 (22.23)	1.20 (30.48)	.375 (9.53)	.422 (10.72)	.570 (14.48)
M52525/5-8-10	1.000 (25.40)	1.20 (30.48)	.461 (11.71)	.500 (12.70)	.680 (17.27)
M52525/5-10-12	1.250 (31.75)	1.40 (35.56)	.469 (11.91)	.562 (14.27)	.850 (21.59)
M52525/5-12-12	1.250 (31.75)	1.59 (40.39)	.469 (11.91)	.562 (14.27)	.850 (21.59)
M52525/5-12-14	1.375 (34.93)	1.59 (40.39)	.52 (13.21)	.580 (14.73)	.925 (24.50)
M52525/5-16-16	1.500 (38.10)	2.02 (51.31)	.563 (14.30)	.594 (15.09)	1.000 (25.40)
M52525/5-20-20	2.000 (50.80)	2.46 (62.48)	.563 (14.30)	.625 (15.88)	1.410 (35.81)

FIGURE 1. Fitting, screw-on to 37° flare, straight - Continued.

PIN	Q min Bore dia. inches (mm)	SAE J516 d_2
M52525/5-4-4	.11 (2.79)	.118 (3.00)
M52525/5-4-5	.11 (2.79)	.197 (5.00)
M52525/5-4-6	.26 (6.60)	.236 (6.00)
M52525/5-5-6	.26 (6.60)	.236 (6.00)
M52525/5-6-6	.26 (6.60)	.236 (6.00)
M52525/5-6-8	.38 (9.65)	.315 (8.00)
M52525/5-8-8	.38 (9.65)	.315 (8.00)
M52525/5-8-10	.48 (12.19)	.433 (11.00)
M52525/5-10-12	.57 (14.48)	.551 (14.00)
M52525/5-12-12	.57 (14.48)	.551 (14.00)
M52525/5-12-14	.68 (17.27)	
M52525/5-16-16	.78 (19.81)	7.48 (19.00)
M52525/5-20-20	1.010 (25.7)	9.84 (25.00)

NOTES:
1. Dimensions are in inches.
2. Metric equivalents are given for information only.
3. Threads shall be in accordance with ASME B1.1 series with graded pitches fine (UNF) and series with constant pitches (UNC), class 2B.
4. Dimension P to be concentric with dimension Q within .015 inch (0.38 mm) full indicator movement.
5. All dimensions not shown shall be in accordance with SAE-J516.
6. These fittings are similar to SAE-J516 type for use with SAE-J517, type 100R1 hose.

FIGURE 1. Fitting, screw-on to 37° flare, straight - Continued.

REQUIREMENTS:

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

The fittings described herein are for use with hose in accordance with MIL-DTL-52471/4, SAE-J517, type 100R1 steel wire reinforced, rubber covered hydraulic hose and hose assemblies in accordance with MIL-DTL-52471/1.

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. All finishes shall be capable of withstanding 96 hours minimum of salt spray.

TABLE I. Material and finish identification codes. 1/ 2/

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.
BN		Bare aluminum with NAVAIR TCP in accordance with MIL-DTL-81706, type II, class 1A.
C	Steel 3/	Cadmium plating in accordance with SAE-AMS-C-81562, type II, class 3 or SAE-AMS-QQ-P-416, type II, class 2.
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 TCP in accordance with MIL-DTL-81706, type II, class 1A.
YC	Chrome-molybdenum steel alloy 4130	Cadmium plating in accordance with SAE-AMS-C-81562, type II, class 3 or SAE-AMS-QQ-P-416, type II, class 2.
DN		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 TCP in accordance with MIL-DTL-81706, type II, class 1A.
F	Steel 3/	NAVAIR TCP in accordance with MIL-DTL-81706, type II, class 1A.
FN	Chrome-molybdenum steel alloy 4130	
G	Steel 3/	Zinc plating with colorless passivate in accordance with ASTM B633, type VI, Fe/Zn 25.
YG	Chrome-molybdenum steel alloy 4130	
H	Steel 3/	Zinc phosphate finish in accordance MIL-DTL-16232, type Z, class1. 4/
YH	Chrome-molybdenum steel alloy 4130	
J	Steel 3/	Zinc plating with chromate conversion in accordance with ASTM B633; type II or III, Fe/Zn 5, or ASTM B695, type II, class 5.
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 3/	Zinc aluminum in accordance with ASTM F1136, grade 3, NC.
YN	Chrome-molybdenum steel alloy 4130	
P	Steel 3/	Zinc plating with colorless passivate in accordance with ASTM B633, type VI, Fe/Zn 5.
YP	Chrome-molybdenum steel alloy 4130	
S	Corrosion resistant steel	No additional finish. Passivation in accordance with SAE-AMS2700, type 6 or 7.
SN		Passivation above and NAVAIR TCP in accordance with MIL-DTL-81706, type II, class 1A.
T	Titanium	Anodize in accordance with SAE-AMS2488, type 2.
V	Steel 3/	Zinc-nickel in accordance with SAE-AMS2417, type 1.
W	Steel 3/	Any zinc plating above.
YW	Chrome-molybdenum steel alloy 4130	
Z	Steel 3/	Any zinc plating above with NAVAIR TCP in accordance with MIL-DTL-81706, type II, class 1A.
YZ	Chrome-molybdenum steel alloy 4130	

1/ All materials and finishes shall be in accordance with MIL-DTL-52525.
2/ Embitterment test need not be run.
3/ All steels except 4130.
4/ Zinc phosphate finish is hexavalent chromium free..

Maximum operating pressure shall be as specified in table II.

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

SAE dash size	Hose ID inches (mm)	Steel, CRES, titanium, nickel-copper alloy, and high-chromium nickel		Aluminum	
		psi	MPa	psi	MPa
-4	.250 (6.35)	4500	31	3000	21
-5	.313 (7.95)	4000	27.5	3000	21
-6	.375 (9.53)	4000	27.5	3000	21
-8	.500 (12.70)	4000	27.5	3000	21
-10	.625 (15.88)	3000	21	3000	21
-12	.750 (19.05)	3000	21	3000	21
-16	1.000 (25.40)	2500	17	1500	10.5
-20	1.250 (31.75)	2000	14	1000	7
-24	1.500 (38.10)	1500	10.5	1000	7
-32	2.000 (50.80)	1125	8	600	4

1/ Dimensions are in inches.
2/ Metric equivalents are given for information only.

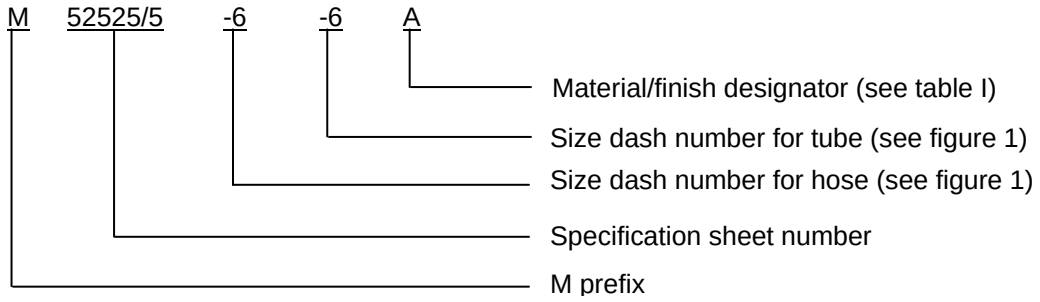
Over tightening torque shall be as specified in table III.

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

SAE dash size	Hose ID ref inches (mm)	Torque values for steel, CRES, titanium, nickel-copper alloy, and high-chromium nickel		Torque values for aluminum	
		Pound-force Inches (lb-in)	N m	Pound-force Inches (lb-in)	N m
-4	.250 (6.35)	135	15	140	16
-5	.313 (7.95)	230	26	180	20
-6	.375 (9.53)	276	31	195	22
-8	.500 (12.70)	450	51	350	40
-10	.625 (15.88)	735	83	430	49
-12	.750 (19.05)	900	102	550	62
-16	1.000 (25.40)	1200	136	840	95
-20	1.250 (31.75)	1900	215	1020	115
-24	1.500 (38.10)	2700	305	1080	122
-32	2.000 (50.80)	4000	452	2000	226

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 hose size, a dash, a number for tube size, and a material finish designator.



PIN example: M52525/5-6-6A, describes a connector for a .375 inch (9.53 mm) hose ID, .375 inch (3.75 mm) tube OD, aluminum with an anodize 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.

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

Marking shall include the manufacturer’s name or trademark, size, and hose identifier R1. 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
M52525/5-4-4	SAE J516 4-4 240153
M52525/5-4-5	SAE J516 4-5 240153
M52525/5-4-6	SAE J516 4-6 240153
M52525/5-5-6	SAE J516 5-6 240153
M52525/5-6-6	SAE J516 6-6 240153
M52525/5-6-8	SAE J516 6-8 240153
M52525/5-8-8	SAE J516 8-8 240153
M52525/5-8-10	SAE J516 8-10 240153
M52525/5-10-12	SAE J516 10-12 240153
M52525/5-12-12	SAE J516 12-12 240153
M52525/5-12-14	SAE J516 12-14 240153
M52525/5-16-16	SAE J516 16-16 240153

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

Notes:

1. For design feature purposes, this standard takes precedence over the procurement document referenced herein. Referenced documents shall be of the issue in effect on the date of invitation for bid.
2. In the event of a conflict between the text of this standard and the referenced cited herein, the text of this standard shall take precedence.

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	ASTM B633	SAE-AMS2700
MIL-DTL-16232	ASTM B695	SAE-AS1708
MIL-DTL-52471	ASTM F1136	SAE-AS4841
MIL-DTL-52471/1	SAE-AMS-C-81562	SAE-J516
MIL-DTL-52471/4	SAE-AMS-QQ-P-416	SAE-J517
MIL-DTL-81706	SAE-AMS2417	SAE-J846
ASME B1.1	SAE-AMS2488	

CONCLUDING MATERIAL

Custodians:
Army - AT
Navy - SH
Air Force - 99
DLA - CC

Preparing activity:
DLA - CC

(Project 4730-2011-049)

Review activities:
Army - CR4
Navy - AS, CG, MC, 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.daps.dla.mil.