

INCH-POUND

MIL-DTL-52525/17D

16 December 2019

SUPERSEDING

MIL-DTL-52525/17C

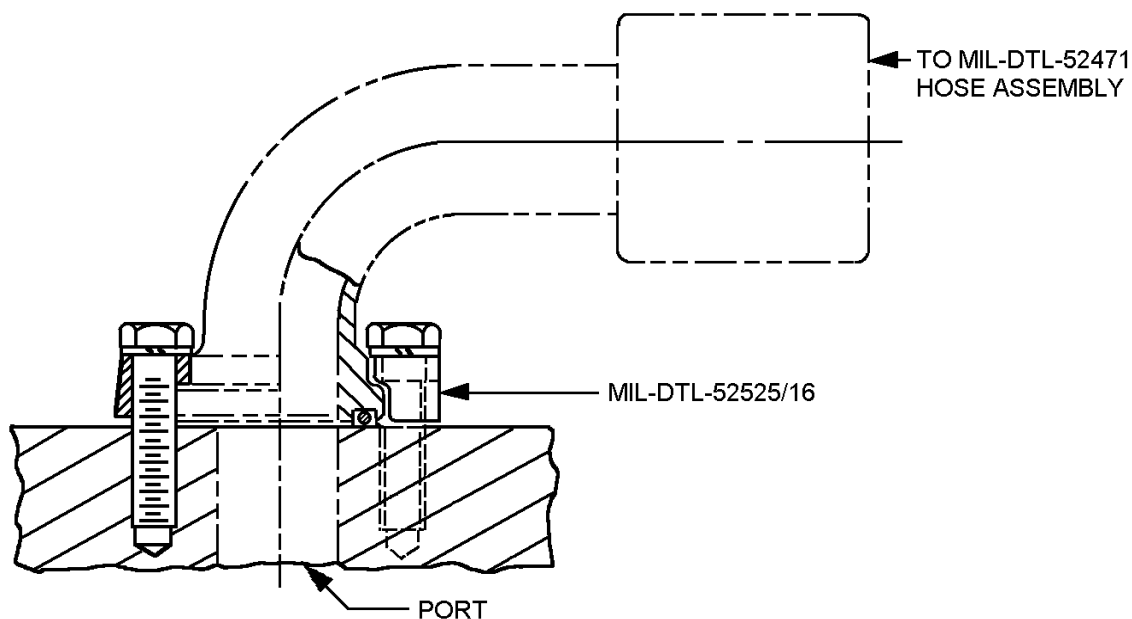
20 November 2008

DETAIL SPECIFICATION SHEET

FITTINGS, CLAMP-HALVES, FLANGE TO PORT, FOR 4-BOLT SPLIT-FLANGE

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.

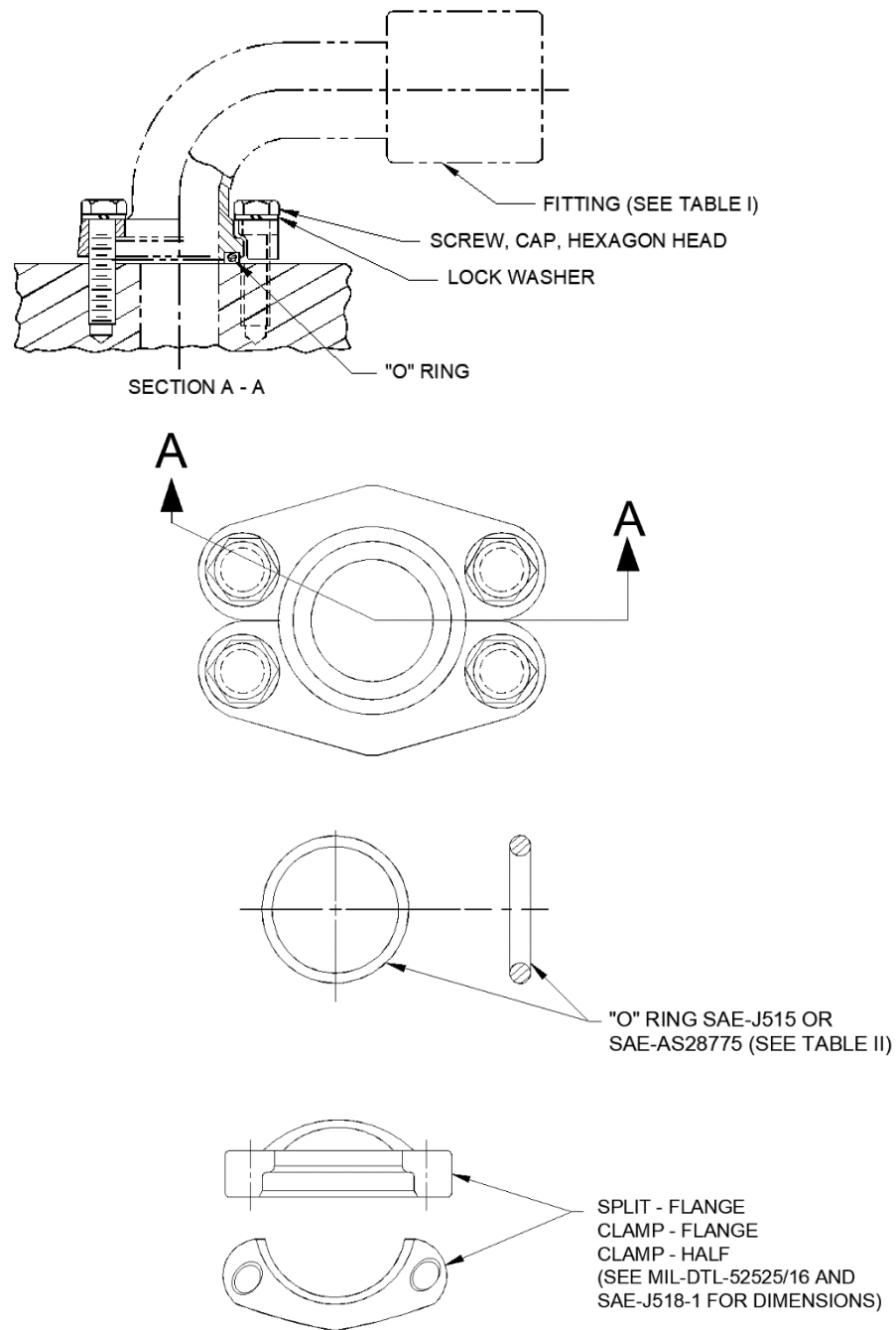


See note at end of figure.

FIGURE 1. Connections: flange to port, 4-bolt split-flange type.



MIL-DTL-52525/17D



NOTE: The fitting clamp-half flange to port is MIL-DTL-52525/16. This connection is used with MIL-DTL-52471 hose assemblies.

FIGURE 1. Connections: flange to port, 4-bolt split-flange type - Continued.

MIL-DTL-52525/17D

TABLE I. Connecting units used with flange type.

Part or Identifying Number (PIN)	Fitting	Screw cap hex head (4 required) NASM90725 PIN 1/ 2/	Washer, lock helical, split (4 required) NASM35338 PIN 1/ 2/	Clamp-halves flange to port	Clamp-halves flange to port SAE-J518-1 PIN
M52525/17-8	M52525/10-8-8	NASM90725 -36	MS35338-45	M52525/16-8	J518-8 1161
	M52525/11-8-8				
	M52525/12-8-8				
M52525/17-12	M52525/10-12-12	NASM90725 -62	MS35338-46	M52525/16-12	J518-12 1161
	M52525/11-12-12				
	M52525/12-12-12				
	M52525/13-12-12				
	M52525/14-12-12				
	M52525/15-12-12				
M52525/17-16	M52525/10-16-16	NASM90725 -62	MS35338-46	M52525/16-16	J518-16 1161
	M52525/11-16-16				
	M52525/13-16-16				
	M52525/14-16-16				
	M52525/15-16-16				
	M52525/43-16-16				
	M52525/44-16-16				
	M52525/45-16-16				
M52525/17-20	M52525/10-16-20	NASM90725 -89	MS35338-47	M52525/16-20	J518-20 1161
	M52525/10-20-20				
	M52525/11-16-20				
	M52525/11-20-20				
	M52525/12-16-20				
	M52525/12-20-20				
	M52525/13-20-20				
	M52525/14-20-20				
	M52525/15-20-20				
	M52525/43-20-20				
	M52525/44-20-20				
	M52525/45-20-20				
M52525/17-24	M52525/10-20-24	NASM90725 -113	MS35338-48	M52525/16-24	J518-24 1161
	M52525/10-24-24				
	M52525/11-24-24				
	M52525/12-20-24				
	M52525/12-24-24				
	M52525/13-24-24				
	M52525/14-24-24				
	M52525/15-24-24				
	M52525/43-24-24				
	M52525/44-24-24				

See footnotes at end of table.

TABLE I. Connecting units used with flange type - Continued.

PIN	Fitting	Screw cap hex head (4 required) NASM90725 PIN 1/ 2/	Washer, lock helical, split (4 required) NASM35338 PIN 1/ 2/	Clamp-halves flange to port	Clamp-halves flange to port SAE-J518-1 PIN
M52525/17-32	M52525/10-24-32	NASM90725 -113	MS35338-48	M52525/16-32	J518-32 1161
	M52525/10-32-32				
	M52525/11-32-32				
	M52525/12-32-32				
	M52525/43-32-32				
	M52525/44-32-32				
	M52525/45-24-24				
	M52525/45-32-32				

1/ Bolts and washers identified in table I are for low carbon steel materials only. If another material listed in table III is used to manufacture bolts or washers the dimensional requirements shall be in accordance with NASM90725 and NASM35338.

2/ Never reuse fasteners after they have been subjected to loading or the elements.

MIL-DTL-52525/17D

The O-ring legacy tables II and III shows O-rings originally called out by MIL-DTL-52525/17 and shows the superseding PIN for a side by side comparison.

TABLE II. O-ring legacy replacements for AN6227. 1/ 2/ 3/

Dash size	PIN	Width (T or d2) Inches (mm)	ID (d1) Inches (mm)	Comments
-8	AN6227-15	.0934 (2.37)	.750 (19.05)	Originally MIL-DTL-52525/17 called out the AN6227 and AN6230 PIN's. AN6227 and AN6230 are cancelled and superseded by SAE-AS28775.
-12	AN6227-19	.0934 (2.37)	1.000 (25.40)	
-16	AN6227-24	.125 (3.18)	1.313 (33.35)	
-20	AN6227-27	.125 (3.18)	1.500 (38.10)	
-24	AN6230-3	.125 (3.18)	1.875 (47.63)	
-32	AN6230-6	.125 (3.18)	2.250 (57.15)	
Replacement PIN for the AN6227				
Dash size	PIN	Width (T or d2) Inches (mm)	ID (d1) Inches (mm)	Comments
-8	SAE-AS28775-210	.135-.143 (3.43 - 3.63)	.728 - .0740 (18.49 - 1.880)	The SAE-AS28775 PIN is a replacement for AN6227 and AN6230.
-12	SAE-AS28775-214	.135-.143 (3.43 - 3.63)	.978 - .0990 (24.84 - 2.514)	
-16	SAE-AS28775-219	.135-.143 (3.43 - 3.63)	1.290 - 1.302 (32.76 - 33.070)	
-20	SAE-AS28775-222	.135-.143 (3.43 - 3.63)	1.478 - 1.490 37.54 - 37.846)	
-24	SAE-AS28775-328	.205-.215 (5.21 - 5.46)	1.840 - 1.860 (46.74 - 47.24)	
-32	SAE-AS28775-331	.205-.215 (5.21 - 5.46)	2.215 - 2.235 (56.26 - 56.77)	

1/ Dimensions are in inches.

2/ Metric equivalents are given for information only.

3/ The width and ID columns are dimensions from the PIN in column 2.

MIL-DTL-52525/17D
TABLE III. O-ring legacy replacements for SAE-J120. 1/ 2/ 3/

Dash size	PIN	Width (T or d2) Inches (mm)	ID (d1) Inches (mm)	Comments
-8	SAE-J120-210	.139 ±.004 (3.53 ± 0.10)	.734 (18.64)	SAE-J120 is cancelled without replacement. However the SAE-J120 cancellation notice should state “superseded by SAE-J515”.
-12	SAE-J120-214	.139 ±.004 (3.53 ± 0.10)	.984 (24.99)	
-16	SAE-J120-219	.139 ±.004 (3.53 ± 0.10)	1.296 (32.92)	
-20	SAE-J120-222	.139 ±.004 (3.53 ± 0.10)	1.484 (37.69)	
-24	SAE-J120-225	.139 ±.004 (3.53 ± 0.10)	1.859 (47.22)	
-32	SAE-J120-228	.139 ±.004 (3.53 ± 0.10)	2.234 (56.74)	
Replacement PIN for the SAE-J120				
Dash size	PIN	Width (T, or d2) Inches (mm)	ID (d1) Inches (mm)	Comments
-8	SAE-J515-210	.1389 ±.004 (3.528 ± 0.01)	.734 (18.64)	The SAE-J515 PIN is a replacement for SAE-J120
-12	SAE-J515-214	.1389 ±.004 (3.53 ± 0.10)	.98 (24.89)	
-16	SAE-J515-219	.1389 ±.004 (3.53 ± 0.10)	1.296 (32.92)	
-20	SAE-J515-222	.1389 ±.004 (3.53 ± 0.10)	1.484 (37.69)	
-24	SAE-J515-225	.1389 ±.004 (3.53 ± 0.10)	1.859 (47.22)	
-32	SAE-J515-228	.1389 ±.004 (3.53 ± 0.10)	2.234 (56.74)	

1/ Dimensions are in inches.

2/ Metric equivalents are given for information only.

3/ The width and ID columns are dimensions from the PIN in column 2.

REQUIREMENTS:

Fittings shall be as specified on figure 1 and in tables I and IV.

The O- ring shall have a durometer hardness of 90 ±5.

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 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.

MIL-DTL-52525/17D
TABLE IV. 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 <u>2/</u>	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/ 5/ 8/</u>
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. <u>1/ 5/ 8/</u>
G	Steel <u>2/</u>	Zinc plating with colorless passivate in accordance with ASTM B633, type V, Fe/Zn 25. <u>3/ 4/</u>
YG	Chrome-molybdenum steel alloy 4130	
H	Steel <u>2/</u>	Zinc phosphate finish in accordance MIL-DTL-16232, type Z, class1.
YH	Chrome-molybdenum steel alloy 4130	
J	Steel <u>2/</u>	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>3/ 5/</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 <u>2/</u>	Zinc-aluminum in accordance with ASTM F1136/F1136M, grade 3, NC. <u>4/</u>
YA	Chrome-molybdenum steel alloy 4130	
YN	Steel <u>2/</u>	Zinc-nickel in accordance with SAE-AMS2417, type 2, grade B. <u>4/ 7/</u> .
P	Steel <u>2/</u>	Zinc plating with colorless passivate in accordance with ASTM B633, type V, Fe/Zn 8. <u>3/ 4/</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>6/ 9/</u>
TF		Fluoride phosphate in accordance with SAE-AMS2486. <u>6/ 9/</u>
U	Steel <u>2/</u>	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>4/ 7/</u> .
W	Steel <u>2/</u>	Any zinc plating above. <u>3/</u>
YW	Chrome-molybdenum steel alloy 4130	
Z	Steel	Zinc plating in accordance with ASTM B695, type II, class 8. <u>3/ 5/</u>

1/ Embrittlement test need not be run.

2/ All steels except 4130.

3/ 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.

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

5/ 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.

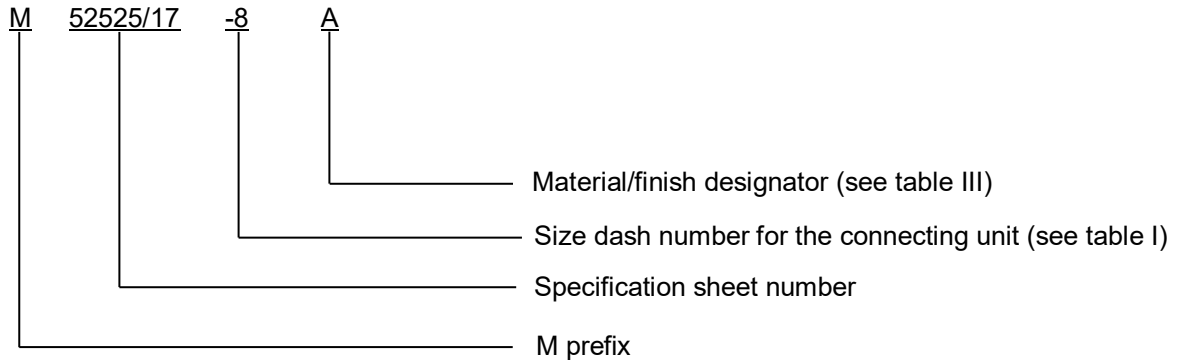
6/ A pretreatment, a modification of the fluoride treatment, or a post treatment shall be applied so the final color of the fittings shall be similar to SAE-AMS-STD-595 colors 36076 through 36293.

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

8/ 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.

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

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



PIN example: M52525/17-8A, describes a .500 inch (12.70 mm) 4-bolt split-flange, aluminum with an anodized 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.

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.

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.

Class I and II ozone depleting substances (ODS) shall not be used in MIL-DTL-52525/17 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.

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.

MIL-DTL-52525/17D

Referenced documents. In addition to MIL-DTL-52525, this document references the following:

MIL-A-8625	SAE-AMS-STD-595/36081	SAE-AMS-C-81562
MIL-DTL-16232	SAE-AMS-STD-595/36099	SAE-AMS-QQ-P-416
MIL-DTL-52471	SAE-AMS-STD-595/36118	SAE-AMS2417
MIL-DTL-52471/16	SAE-AMS-STD-595/36134	SAE-AMS2488
MIL-DTL-81706	SAE-AMS-STD-595/36152	SAE-AMS2486
ASTM B117	SAE-AMS-STD-595/36170	SAE-AMS2700
ASTM B633	SAE-AMS-STD-595/36173	SAE-AS4841
ASTM B695	SAE-AMS-STD-595/36176	SAE-AS28775
ASTM F1136/F1136M	SAE-AMS-STD-595/36231	SAE-J515
ASTM MNL37	SAE-AMS-STD-595/36251	SAE J518-1
NASM 35338	SAE-AMS-STD-595/36270	T9070-AL-DPC-020/077-2
NASM 90725	SAE-AMS-STD-595/36280	
SAE-AMS-STD-595/36076	SAE-AMS-STD-595/36293	

CONCLUDING MATERIAL

Custodians:

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

Preparing activity:

DLA - CC

(Project 4730-2020-002)

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>.