

INCH-POUND

MIL-DTL-52471/10C

30 September 2019

SUPERSEDING

MIL-DTL-52471/10B

December 4 2008

DETAIL SPECIFICATION SHEET

HOSE ASSEMBLIES, RUBBER, HYDRAULIC PRESSURE-TYPE, TYPE 100R12 FOUR-SPIRAL-WRAP REINFORCEMENT HOSE

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-52471.

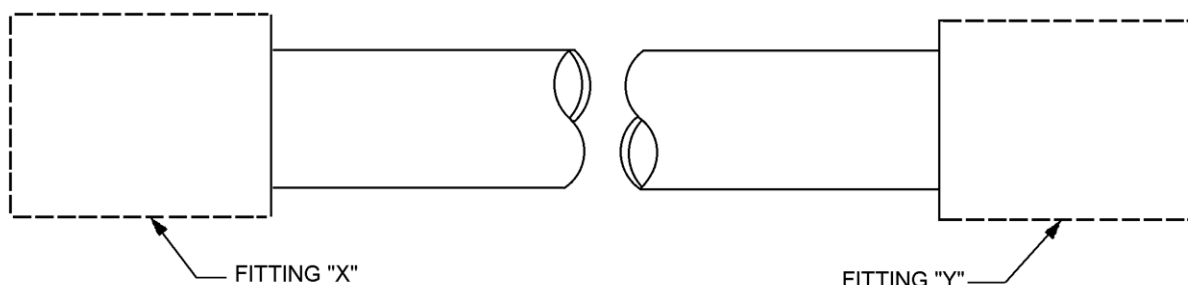


FIGURE 1. Hose assembly, fitting identification.

Hose operating pressure. The hose operating pressure shall be as specified in table I.

TABLE I. Hose operating pressure. 1/ 2/

Hose ID dash number	Hose ID			Maximum operating pressure		Minimum burst pressure	
	inch fraction	inch decimal	mm	psi	Mpa	psi	MPa
-8	1/2	.500	12.70	4000	28	16,000	110
-12	3/4	.750	19.05	4000	28	16,000	110
-16	1	1.00	25.40	4000	28	16,000	110

1/ Dimensions are in inches.

2/ Metric equivalents are given for information only.

Hose assembly code number. The purpose of this slash sheet is to provide hose assembly code
numbers for determining the hose diameter, fitting X, fitting Y, and bend angles (when applicable) as
shown in tables II through IV. The bend angles are called "style codes" and consist of hose assembly
styles as explained in MIL-DTL-52471.



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TABLE II. 1/2-inch hose assemblies.

Hose ID Inch fraction decimal (mm)	Hose PIN <u>1/</u>	Fitting X (figure 1)		Fitting Y (figure 1)		Assembly code number <u>3/</u>
		PIN <u>1/</u>	Bend angle <u>2/</u>	PIN	Bend angle <u>2/</u>	
1/2 .500 (12.70)	M52471/9-8	M52525/31-08-08	0°	M52525/31-08-08	0°	C001
				M52525/32-08-08	45°	C002
				M52525/33-08-08	90°	C003
		M52525/34-08-08	0°	M52525/34-08-08	0°	C007
				M52525/35-08-08	45°	C008
				M52525/36-08-08	90°	C009
		M52525/35-08-08	45°	M52525/35-08-08	45°	C010
				M52525/36-08-08	90°	C011
		M52525/36-08-08	90°	M52525/36-08-08	90°	C012

1/ Part or Identifying Number (PIN).2/ Reference MIL-DTL-52471 for hose assembly bend angles and displacement angles used in the PIN.3/ A suffix indicating plating finish shall be specified with the assembly code number, see table V.TABLE III. 3/4-inch hose assemblies.

Hose ID Inch fraction decimal (mm)	Hose PIN	Fitting X (figure 1)		Fitting Y (figure 1)		Assembly code number <u>2/</u>
		PIN	Bend angle <u>1/</u>	PIN	Bend angle <u>1/</u>	
3/4 .750 (19.05)	M52471/9-12	M52525/31-12-12	0°	M52525/31-12-12	0°	C101
				M52525/32-12-12	45°	C102
				M52525/33-12-12	90°	C103
		M52525/34-12-12	0°	M52525/34-12-12	0°	C107
				M52525/35-12-12	45°	C108
				M52525/36-12-12	90°	C109
		M52525/35-12-12	45°	M52525/35-12-12	45°	C110
				M52525/36-12-12	90°	C111
		M52525/36-12-12	90°	M52525/36-12-12	90°	C112

1/ Reference MIL-DTL-52471 for hose assembly bend angles and displacement angles used in the PIN.2/ A suffix indicating plating finish shall be specified with the assembly code number, see table V.

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TABLE IV. 1 inch hose assemblies.

Hose ID Inch fraction decimal (mm)	Hose PIN	Fitting X (figure 1)		Fitting Y (figure 1)		Assembly code number <u>2/</u>
		PIN	Bend angle <u>1/</u>	PIN	Bend angle <u>1/</u>	
1 1.000 (25.40)	M52471/9-16	M52525/31-16-16	0°	M52525/31-16-16	0°	C201
				M52525/32-16-16	45°	C202
				M52525/33-16-16	90°	C203
		M52525/34-16-16	0°	M52525/34-16-16	0°	C207
				M52525/35-16-16	45°	C208
				M52525/36-16-16	90°	C209
		M52525/35-16-16	45°	M52525/35-16-16	45°	C210
				M52525/36-16-16	90°	C211
		M52525/36-16-16	90°	M52525/36-16-16	90°	C212

1/ Reference MIL-DTL-52471 for hose assembly bend angles and displacement angles used in the PIN.

2/ A suffix indicating plating finish shall be specified with the assembly code number, see table V.

Fitting materials and finishes shall be in accordance with MIL-DTL-52525, material and plating designators are specified in table V.

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TABLE V. 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. 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/</u> <u>5/</u> <u>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/</u> <u>5/</u> <u>8/</u>
G	Steel <u>2/</u>	Zinc plating with colorless passivate in accordance with ASTM B633, type VI, Fe/Zn 8. <u>3/</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/</u> <u>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	Chrome-molybdenum steel alloy 4130	Zinc-nickel in accordance with SAE-AMS2417, type 2, grade B. <u>4/</u> <u>7/</u> .
P	Steel <u>2/</u>	Zinc plating with colorless passivate in accordance with ASTM B633, type V, Fe/Zn 8. <u>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>6/</u> <u>9/</u>
TF		Fluoride phosphate in accordance with SAE-AMS2486. <u>6/</u> <u>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/</u> <u>7/</u>
W	Steel <u>2/</u>	Any zinc plating above. <u>3/</u> <u>5/</u>
YW	Chrome-molybdenum steel alloy 4130	
Z	Steel	Zinc plating in accordance with ASTM B695, type II, class 8. <u>3/</u> <u>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.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.9/ Titanium shall not be used in oxygen or potable water systems.

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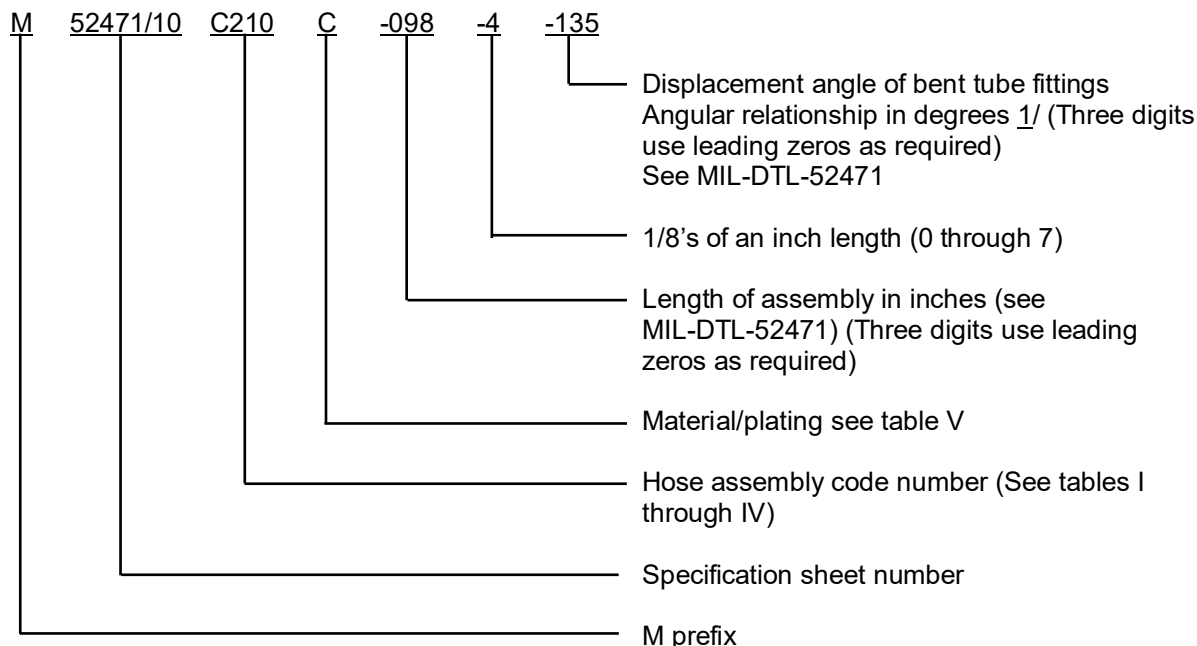
REQUIREMENTS:

The hose assemblies shall be as specified on figure 1 and in tables I through V.

Hose shall be in accordance with MIL-DTL-52471/9.

Connector fittings for hose assemblies shall be in accordance with MIL-DTL-52525.

PIN: The PIN consists of the letter "M" the specification sheet number, an assigned code number for the hose assembly, material/plating designator, hose assembly length, and angular relationship of fittings, when applicable.



1/ Not applicable for assemblies with straight fittings.

PIN example: M52471/10-C211C-098-4-135, describes a hose assembly consisting of M52471/9-16 hose, fitting X M52525/35-16-16, bend angle 45°, fitting Y M52525/35-16-166, bend angle 45°, steel with cadmium plating, 98 ½ inches long, and a displacement angle of 135°.

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.

Class I and II ozone depleting substances (ODS) shall not be used in MIL-DTL-52471/10 or any referenced procedures.

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

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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-52471, this document references the following:

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

CONCLUDING MATERIAL

Custodians:

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

Preparing activity:

DLA - CC

(Project 4720-2019-034)

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>.