

INCH-POUND

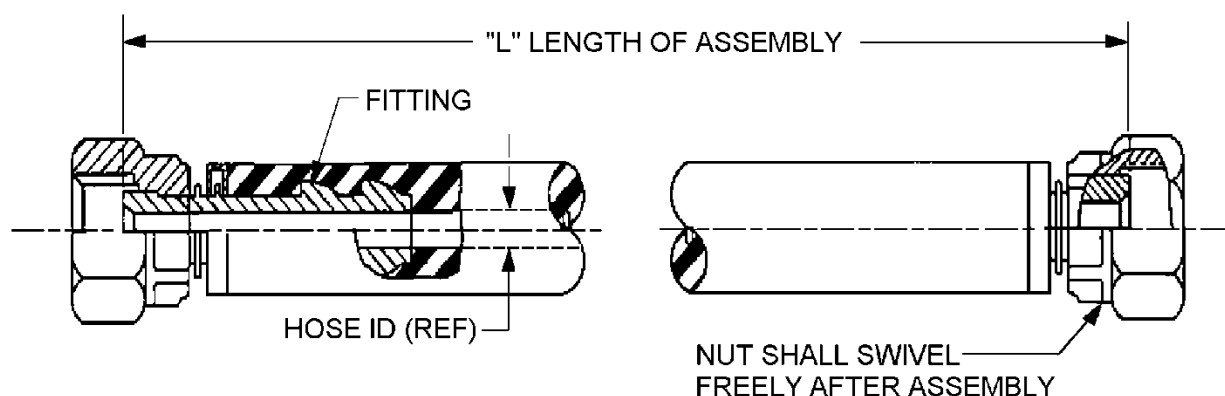
MS52104E
w/AMENDMENT 1
12 September 2025
SUPERSEDING
MS52104E
2 April 2019

DETAIL SPECIFICATION SHEET

HOSE AND HOSE ASSEMBLY, TYPE I, RUBBER: FUEL AND OIL, LOW PRESSURE, FLARED 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-13444.



NOTES:

1. All undimensioned pictorial representations are for reference purposes only.
2. Dimension "L" is the defined length of the hose assembly.
3. Hose assemblies shall be specified in the following length increments:
 - a. Under 24 inches - 1/2 (.500) inch increments (under 60.96 cm - 12.70 mm increments).
 - b. 24 to 36 inches - 1 inch increments (60.96 to 91.44 cm - 25.40 mm increments).
 - c. Over 36 inches - in not less than 2 inch increments (91.44 cm in not less than 50.80 mm increments).
4. Tolerances shall be as specified in the following:
 - a. $\pm 1/8$ (.125) inch for length under 24 inches (± 3.18 mm for lengths under 60.96 cm).
 - b. $\pm 1/4$ (.250) inch for lengths from 24 to 36 inches (± 6.35 mm for lengths from 60.96 to 91.44 cm).
 - c. $\pm 1\%$ for lengths over 36 inches ($\pm 1\%$ for lengths over 91.44 cm).

FIGURE 1. General configuration.



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TABLE I. Hose and fitting thread sizes. 1/ 2/

Designator	Hose ID ref.	Hose OD ref.	Fitting thread ref
-04	1/4 inch	1/2 inch	7/16 - 20UNF-2B
	.250 inch	.500 inch	
	6.35 mm	12.70 mm	
-06	3/8 inch	5/8 inch	9/16 - 18UNF-2B
	.375 inch	.625 inch	
	9.53 mm	15.88 mm	
-08	1/2 inch	3/4 inch	3/4 - 16UNF-2B
	.500 inch	.750 inch	
	12.70 mm	19.05 mm	
-10	5/8 inch	29/32 inch	7/8 - 14UNF-2B
	.625 inch	.906 inch	
	15.88 mm	23.01 mm	
-12	3/4 inch	1 1/32 inch	1-1/16 - 12UNF-2B
	.750 inch	1.031 inch	
	19.05 mm	26.19 mm	

1/ Dimensions are in inches

2/ Metric equivalents are for information only.

REQUIREMENTS

Design and configuration: See figure 1 and table I.

Hose material: The hose and hose used in assemblies shall be in accordance with MIL-DTL-13444, type I.

Fittings: Female fitting ends shall be in accordance with SAE-J514/1 37° flare.

Fitting material and finish shall be in accordance with MIL-DTL-13444.

Finish shall meet the salt spray requirements of MIL-DTL-13444.

Fitting material and finish designators, see table II.

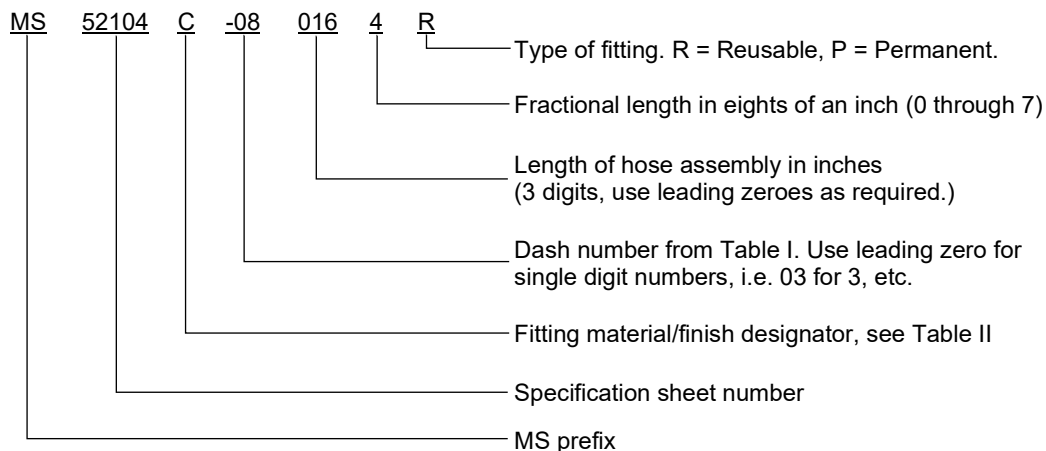
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TABLE II. Fitting material/finish designators.

Designator	Material	Finish/plating
A	Carbon steel	Cadmium plated in accordance with SAE-AMS-C-81562, type II, class 3 or SAE-AMS-QQ-P-416, type II, class 2. <u>1/</u>
B	Brass	No Additional Finish
C	Carbon steel	No Additional Finish
H	Carbon steel	Zinc-aluminum in accordance with ASTM F1136/F1136M, grade 3, NC
Q	Carbon steel	Zinc plating in accordance with ASTM B633; type III, Fe/Zn8. <u>2/ 3/</u>
R	Carbon steel	Zinc plating in accordance with ASTM B633 V, Fe/Zn 8. <u>2/</u>
S	Stainless steel	No additional finish. Passivation in accordance with SAE-AMS2700, method 1, type 6 or 7, free machining alloy UNS S30300 method 1, type 2 or 4.
Z	Carbon steel	Zinc plated. Zinc plating in accordance with ASTM B695, type II, class 8. <u>2/ 3/</u>
ZN	Carbon steel	Zinc-nickel in accordance with SAE-AMS2417, type 2, grade B. <u>2/ 4/</u>

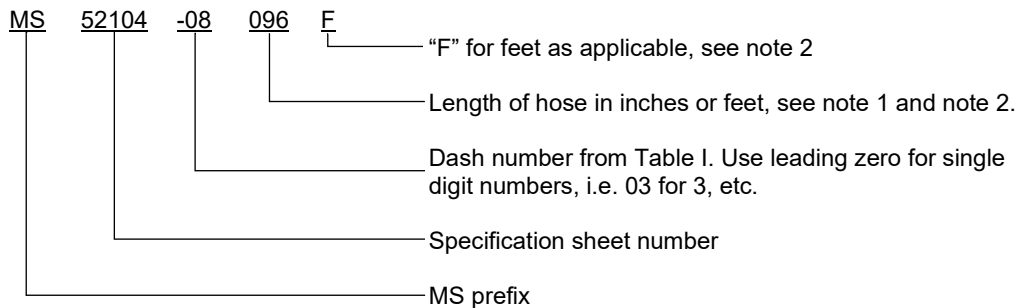
- 1/ Embrittlement test need not be run. Cadmium shall not be used in oxygen or potable water systems. Cadmium is prohibited from use in NAVSEA owned shipboard systems.
- 2/ Not for use in aircraft. Requires approval from the Program Office for all applications. Zinc-plated materials should be avoided in hydraulic systems with water-glycol fluids. Reference ASTM MNL37 - Fuels and Lubricants Handbook, "water glycol fluids are highly alkaline due to the presence of amine based corrosion inhibitors. As a result, these fluids can attack zinc, cadmium, magnesium, and non-anodized aluminum, forming sticky or gummy residues." Consequently, these metals should be avoided when selecting system components.
- 3/ These finishes have a chromate conversion coating or chromic acid rinse which includes hexavalent chromium and are not recommended.
- 4/ The zinc-nickel alloy plate shall contain 12% to 16% nickel. The coating thickness shall be 315μ inches (8μm) minimum.

Part or Identifying Number (PIN). The PINs used for hose assemblies acquired to this specification are created as shown in the example below.



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PIN. The PINs used for hoses acquired to this specification are created as shown in the example below.



NOTES

1. Length of hose in inches always use three digits; use leading zeros as required. As an example, for 96 inches, use MS52104-08096.
2. When hose length is required in feet use the letter "F" after the required amount of feet. More than three digits may be used to indicate hose length. As an example, for one thousand feet, use MS52104-081000F.

Do not use undesignated PIN's.

Some existing MS PIN's do not completely fit the above layout, but they should continue to be used without change.

Cadmium is not recommended. To the users of this document, it is recommended that the use of carbon steel material with cadmium plating be used only when 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.

Class I and II ozone depleting substances (ODS) shall not be used in MS52104 or any referenced procedures.

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

Amendment notations. The margins of this specification are marked with vertical lines to indicate modifications generated by this amendment. This was done as a convenience only and the Government assumes no liability whatsoever for any inaccuracies in these notations. Bidders and contractors are cautioned to evaluate the requirements of this document based on the entire content irrespective of the marginal notations.

Referenced documents: In addition to MIL-DTL-13444, this document references the following:

ASTM B633	SAE-AMS-QQ-P-416
ASTM B695	SAE-AMS2417
ASTM F1136/F1136M	SAE-AMS2700
ASTM MNL37	SAE-J514/1
SAE-AMS-C-81562	T9070-AL-DPC-020/077-2

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CONCLUDING MATERIAL

Custodians:

Army - AT
Navy - YD

Preparing activity:

DLA - CC

(Project 4720-2025-017)

Review activities:

Army - AR, AV, MI
Navy - MC, SH

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>.