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Superseding J20-2 NOV2001

**Coolant Hose—Normal Service Type Convolved, Wire Support Hose
(Supplement to SAE J20 for Government Use Replacing Part of MS51008)**

1. **Scope**—This SAE Standard provides ordering information for any SAE 20R5 hose type (such as “EC, HT, LT” or combination thereof.) This is a wire-reinforced hose for coolant circulating systems of automotive type engines. This hose consists of a convoluted section with plain ends. The hose shall contain a wire helix or helices in the convoluted section. It is a supplement for Government use but may be used by others.
2. **References**
- 2.1 **Applicable Publications**—The following publications form a part of this specification to the extent specified herein. Unless otherwise indicated, the latest version of SAE publications shall apply.
- 2.1.1 SAE PUBLICATION—Available from SAE, 400 Commonwealth Drive, Warrendale, PA 15096-0001.
SAE J20—Coolant System Hoses
- 2.1.2 ISO PUBLICATIONS—Available from ANSI, 11 West 42nd Street, New York, NY 10036-8002.
ISO 9001—Quality systems—Model for quality assurance in design, development, production, installation and servicing
- 2.1.3 GOVERNMENT PUBLICATIONS—Available from U. S. Government, DOD SSP, Subscription Service Division, Building 4D, 700 Robbins Avenue, Philadelphia, PA 19111-5094.
Federal Specification ZZ-H-428—Hose; Non-Metallic and Hose; Preformed: (for Coolant Systems of Automotive and Other Liquid-Cooled Engines)
Military Drawing MS51008—Hose, Preformed: Flexible, Engine Coolant, 1-1/4, 1-1/2, 1-3/4, 2, 2-1/4, 2-1/2, 3 ID
- 2.1.4 AUTOMOTIVE INDUSTRY PUBLICATION—Available from AIAG, 26200 Lasher Road, Suite 200, Southfield, MI 48034-7100.
QS 9000—Quality System Requirements

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3. Technical Requirements—The following requirements are in addition to the requirements of SAE J20.

3.1 Certification—Manufacturers/suppliers of hose to the Government must be ISO 9001 or QS-9000 certified and provide their certification to provide this SAE J20/2 hose.

3.2 Lengths—The lengths specified in Table 1 shall comply with SAE J20 Table 2 tolerances.

TABLE 1—NOMINAL LENGTHS

| Nominal Length mm | Actual Length mm (in) |
|----------------------|--------------------------|
| 127 | 127.0 (5.00) |
| 152 | 152.4 (6.00) |
| 178 | 177.8 (7.00) |
| 203 | 203.2 (8.00) |
| 229 | 228.6 (9.00) |
| 254 | 254.0 (10.00) |
| 280 | 279.4 (11.00) |
| 305 | 304.8 (12.00) |
| 356 | 355.6 (14.00) |
| 406 | 406.4 (16.00) |
| 457 | 457.2 (18.00) |
| 508 | 508.0 (20.00) |
| 550 | 550.0 (22.00) |
| 610 | 609.6 (24.00) |
| 660 | 660.4 (26.00) |
| 711 | 711.2 (28.00) |
| 762 | 762.0 (30.00) |
| 813 | 812.8 (32.00) |
| 864 | 863.6 (34.00) |
| 914 | 914.4 (36.00) |
| 965 | 965.2 (38.00) |

3.3 Inside Diameters—The inside diameters specified in Table 2 shall comply with SAE J20 tolerances.

TABLE 2—NOMINAL INSIDE DIAMETERS (ID)

| Nominal ID mm | Actual ID mm (in) |
|------------------|----------------------|
| 25 | 25.40 (1.00) |
| 32 | 31.75 (1.25) |
| 38 | 37.50 (1.50) |
| 44 | 44.45 (1.75) |
| 51 | 50.80 (2.00) |
| 57 | 57.15 (2.25) |
| 64 | 63.50 (2.50) |
| 76 | 76.20 (3.00) |

3.4 Wall Gauge Range—Wall gauge range shall comply with SAE J20.

3.5 Marking—For U.S. Government use only, marking shall consist of the following on one or both cuffs:

- a. Part Identification Number (see 4.2)
- b. Manufacturer's identification code (CAGE) or trademark symbol
- c. Month and year of manufacture

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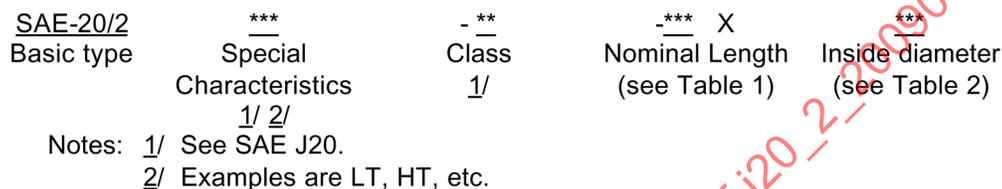
3.5.1 If there is insufficient space on the hose for the required marking due to small ID hose or too short a straight length, a label carrying the required information taped around the individual pieces of hose in lieu of the previous method of marking.

3.5.2 Marking for non-Government users shall be agreed upon by the customer and manufacturer.

4. Notes

4.1 Intended Use—The flexible, wire-reinforced coolant hose is intended for use in automotive cooling systems. It is commonly known as universal type hose.

4.2 Part Identification Number—Part numbers shall be constructed as indicated in Figure 1.



Example: SAE-20/2LT-A-280X51 indicates a convoluted wire reinforced type hose with low temperature characteristics and lot inspection in a Class A compound that is nominally 280 by 51 mm (279.4 mm (11.00 in) length by 50.8 mm (2.00 in) I.D.).

FIGURE 1—PART IDENTIFICATION NUMBER

4.3 Government Specification Replacement—This document is a replacement for portions of Federal Specification ZZ-H-428, “Hose; Non-Metallic and Hose; Preformed: (for Coolant Systems of Automotive and Other Liquid-Cooled Engines.)” This document is also a replacement for part of Military Drawing MS51008, “Hose, Preformed: Flexible, Engine Coolant, 1-1/4, 1-1/2, 1-3/4, 2, 2-1/4, 2-1/2, 3 ID.”

4.4 Cross Reference Information—Table 3 shows the relationship between designations in ZZ-H-428 and this document. MS51008 only provided part numbers for ZZ-H-428, Type V, Grade A, Class 2 hose. Those part numbers are now replaced by SAE J20/2ECLT Class A part numbers.

TABLE 3—CROSS REFERENCE DESIGNATION

| J20 Designation | J20 Class | ZZ-H-428 Type | ZZ-H-428 Grade | ZZ-H-428 Class |
|----------------------------|----------------------|--------------------------|---------------------------|---------------------------|
| SAE-J20/2ECLT | A | V | A | 2 |
| SAE-J20/2ECLT | A | V | A | 3 |
| SAE-J20/2EC | B | V | B | 1 |
| SAE-J20/2EC | C | V | B | 2 |
| SAE-J20/2EC | D-1 | V | B | 3 |
| SAE-J20/2EC | D-3 | V | B | 4 |

4.5 Other Sizes—Sizes and tolerances other than those listed in this document shall be agreed upon by the supplier and purchaser. The requirements of SAE J20 shall be the met.

4.6 Key Words—Automotive, flexible hose, universal hose.

PREPARED BY THE SAE COOLANT HOSE COMMITTEE

REAFFIRMED BY THE SAE NON-HYDRAULIC HOSE COMMITTEE