SAE International™

# SURFACE VEHICLE STANDARD

SAE J1754-2

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## Hose Assemblies, Rubber, Hydraulic, Steel Wire Reinforced—Part 2—Ordering Information



### *Foreword*

SAE Standard J1754-2 was prepared by the Fluid Conductors and Connectors Technical Committee SC2—Hydraulic Hose and Hose Connectors.

### *1. Scope*

This SAE Standard covers ordering information for steel wire reinforced rubber hose assemblies using connectors specified in SAE Standard J516 for use in hydraulic systems using petroleum based hydraulic fluids with maximum working pressures of 1.7 to 42 MPa. See Part 2, Table 8 for hose operating temperature ranges and identification codes.

NOTE—Working pressure is defined as maximum system pressure.

#### 1.1 Rationale

Presently SAE Standards J1754-1 and SAE J1754-2 contain the procurement requirements and ordering information for 21 MPa maximum working pressure hydraulic rubber hose assemblies with 37° flare fittings. It has been suggested that these standards be re-written to include the most common pressures and fitting end configurations used in the industry.

### *2. References*

#### 2.1 Applicable Documents

The following publications form a part of this specification to the extent specified herein. The latest issue of the publications shall apply.



**TO PLACE A DOCUMENT ORDER:** **Tel: 877-606-7323 (inside USA and Canada)**
**Tel: 724-776-4970 (outside USA)**
**Fax: 724-776-0790**
**Email: custsvc@sae.org**
**SAE WEB ADDRESS:** **http://www.sae.org**

2.1.1 SAE PUBLICATIONS

Available from SAE, 400 Commonwealth Drive, Warrendale, PA 15096-0001, Tel: 877-606-7323 (inside USA and Canada) or 724-776-4970 (outside USA), www.sae.org.

SAE J343—Test and Procedures Hydraulic Hose Assemblies and Hose
SAE J516—Hydraulic Hose Fittings
SAE J517—Hydraulic Hose
SAE J846—Coding Systems for Identification of Fluid Conductors and Connectors
SAE J1176—External Leakage Classifications for Hydraulic Systems
SAE J1273—Recommended Practices for Hydraulic Hose Assemblies
SAE J1405—Optional Impulse Test Procedures for Hydraulic Hose Assemblies
SAE J1754-1—Hose Assemblies, Rubber, Hydraulic, Steel Wire Reinforced—Part 1—Procurement Document

2.1.2 ASTM PUBLICATIONS

Available from ASTM, 100 Barr Harbor Drive, West Conshohocken, PA 19428-2959, Tel: 610-832-9585, www.astm.org.

ASTM B 117—Standard Test Method of Salt Spray (Fog) Testing
ASTM D 380—Methods of Testing Rubber Hose
ASTM D 471—Test Method for Rubber Property—Effect of Liquids

2.1.3 ISO PUBLICATIONS

Available from ANSI, 25 West 43rd Street, New York, NY 10036-8002, Tel: 212-642-4900, www.ansi.org.

ISO 3448—Industrial liquid lubricants—ISO viscosity classification
ISO 4397—Fluid power systems and components—Connectors and associated components—Nominal outside diameters of tubes and nominal inside diameters of hoses
ISO 4406—Hydraulic fluid power—Fluids—Method of coding level of contamination by solid particles
ISO 12151-1—Connections for hydraulic fluid power and general use—Hose fittings—Part 1: Hose fittings with ISO 8434-3 o-ring face seal ends
ISO 12151-2—Connections for hydraulic fluid power and general use—Hose fittings—Part 2: Hose fittings with ISO 8434-1 24° cone ends
ISO 12151-3—Connections for hydraulic fluid power and general use—Hose fittings—Part 3: Hose fittings with ISO 6162 flange ends
ISO 12151-4—Connections for hydraulic fluid power and general use—Hose fittings—Part 4: Hose fittings with ISO 6149 metric stud ends
ISO 12151-5—Connections for hydraulic fluid power and general use—Hose fittings—Part 5: Hose fittings with ISO 8434-2 37° flare ends
ISO 12151-6—Connections for hydraulic fluid power and general use—Hose fittings—Part 6: Hose fittings with ISO 8434-6 60° cone ends

## 3. Requirements

### 3.1 Hose Assembly Identification

Hose assemblies shall be identified using Tables 1 to 7 and either Appendix A or Appendix B.

### 3.2 Construction and Performance

Hose assemblies shall be qualified in accordance with the requirements in SAE J1754 Part 1. Users of this standard are advised to control source approval, as required.

**TABLE 1—MAXIMUM OPERATING PRESSURE RANGE RATING CODES**

| TABLES[1] | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | ---- |
|---|---|---|---|---|---|---|---|---|---|---|---|
| PRESSURE RATING - MPa [1] | 1.7 | 2.8 | 7 | 14 | 17.5 | 21 | 24.5 | 28 | 35 | 42 | ----[2] |
| LETTER DESIGNATION | **C** | **D** | **E** | **F** | **G** | **H** | **J** | **K** | **M** | **N** | **X** |

1. See Part 1 – Tables 1 to 10 for outside diameter, proof pressure, burst pressure, and minimum bend radius.
2. See drawing for operating pressure rating.

**TABLE 2—HOSE COVER TYPE CODES**

| Standard Synthetic Rubber Cover | Intermediate (Medium Abrasion) Cover | High Abrasion Cover |
|---|---|---|
| 1[1] | 2[1] | 3[1] |

1. Hose cover type material per purchasers approved material specification.

**TABLE 3—HOSE AND CONNECTOR SIZE IDENTIFICATION CODES**

| SAE HOSE DASH SIZE[1] | 03 | 04 | 05 | 06 | 08 | 10 | 12 | — | 16 | 20 | 24 | 32 | 40 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ISO HOSE SIZE[2] | 5 | 6.3 | 8 | 10 | 12.5 | 16 | 19 | — | 25 | 31.5 | 38 | 51 | 63 |
| LETTER DESIGNATION | **D** | **E** | **F** | **G** | **H** | **J** | **K** | — | **N** | **P** | **R** | **T** | **U** |

NOTE—Hose size columns in Table 3A line up with the appropriate standard connector end size in Table 3B.

| SAE CONNECTOR DASH SIZE[3] | CODE | 03 | 04 | 05 | 06 | 08 | 10 | 12 | 14 | 16 | 20 | 24 | 32 | 40 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ISO 12151-1 CONNECTOR SIZE[4] | **S** | — | 6 | 8 | 10 | 12 | 16 | 20 | — | 25 | 30 | 38 | — | — |
| ISO 12151-2 CONNECTOR SIZE-L[5] | **L** | — | 6 | 8 | 10 | 12 | 15 | 18 | 22 | 28 | 35 | 42 | — | — |
| ISO 12151-2 CONNECTOR SIZE-S[6] | **S** | — | 8 | 10 | 12 | 12 | 16 | 20 | 25 | 30 | 38 | — | — | — |
| ISO 12151-3 CONNECTOR SIZE-L[5] | **L** | — | — | — | — | — | 13 | — | 19 | 25 | 32 | 38 | 51 | — |
| ISO 12151-3 CONNECTOR SIZE-S[6] | **S** | — | — | — | — | — | 13 | — | 19 | 25 | 32 | 38 | 51 | — |
| ISO 12151-4 CONNECTOR SIZE-L[5] | **L** | — | — | 6 | 8 | 10 | 12 | 16 | 20 | 25 | 30 | 38 | 51 | — |
| ISO 12151-4 CONNECTOR SIZE-S[6] | **S** | — | — | 6 | 8 | 10 | 12 | 16 | 20 | 25 | 30 | 38 | 51 | — |
| ISO 12151-5 CONNECTOR SIZE[7] | **L** | — | — | 6 | 8 | 10 | 12 | 16 | 20 | 25 | 32 | 38 | 50 | — |
| ISO 12151-6 CONNECTOR SIZE[7] | **L** | — | 2 | 4 | 6 | 8 | 10 | 12 | 16 | 20 | 24 | 32 | — | — |
| LETTER DESIGNATION | **D** | **E** | **F** | **G** | **H** | **J** | **K** | **M** | **N** | **P** | **R** | **T** | **U** | |

1. Hose dash size is based on inches, with each dash size equal to 1/16 inch.
2. ISO hose size is based on the equivalent SAE J517 inch hose sizes per ISO 4397.
3. Connector dash size is based on inch tubing, with each dash size equal to 1/16 inch.
4. ISO connector size is based on ISO 12151-1 with S (Heavy duty series) only.
5. ISO connector size is based on ISO 12151-2, 3 and 4 with L (Light duty series).
6. ISO connector size is based on ISO 12151-2, 3 and 4 with S (Heavy duty series).
7. ISO connector size is based on ISO 12151-5 and 6 with L (Light duty series) only.

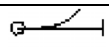
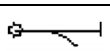
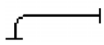
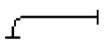
NOTE—In Appendix B drawing, the end sizes will need to be filled in the blank space, due to the different end sizes in each of the ISO 12151 standards for each letter code. Example: If a 12151-1 end connection with a 13/16-16 UN thread is used, the size and code would be 12 / H.

**TABLE 4—SLEEVE CODES[1]**

| | |
|---|---|
| **A** | Flat Armor Guard |
| **B** | Round Spring Guard |
| **C** | Polyurethane Sleeve |
| **D** | Polyamide Sleeve |
| **E** | Fire Sleeve |
| **W** | None |
| **X** | See Drawing |

1. Full length sleeve over entire hose is assumed on hose assembly. If partial length sleeve is required on hose assembly, place an "X" to see drawing.

**TABLE 5—HOSE CURVATURE ORIENTATION CODES[1]**

| | | | | | |
|---|---|---|---|---|---|
| **Top** |  |  | | | **Not Required** |
| **Front** |  |  |  |  | |
| **VIEW** | **P** | **R** | **T** | **U** | **W** |

1. Hose curvature orientation to be used when required for ease of assembly.

**TABLE 6—NUMBER OF WIRE REINFORCEMENT LAYERS CODES**

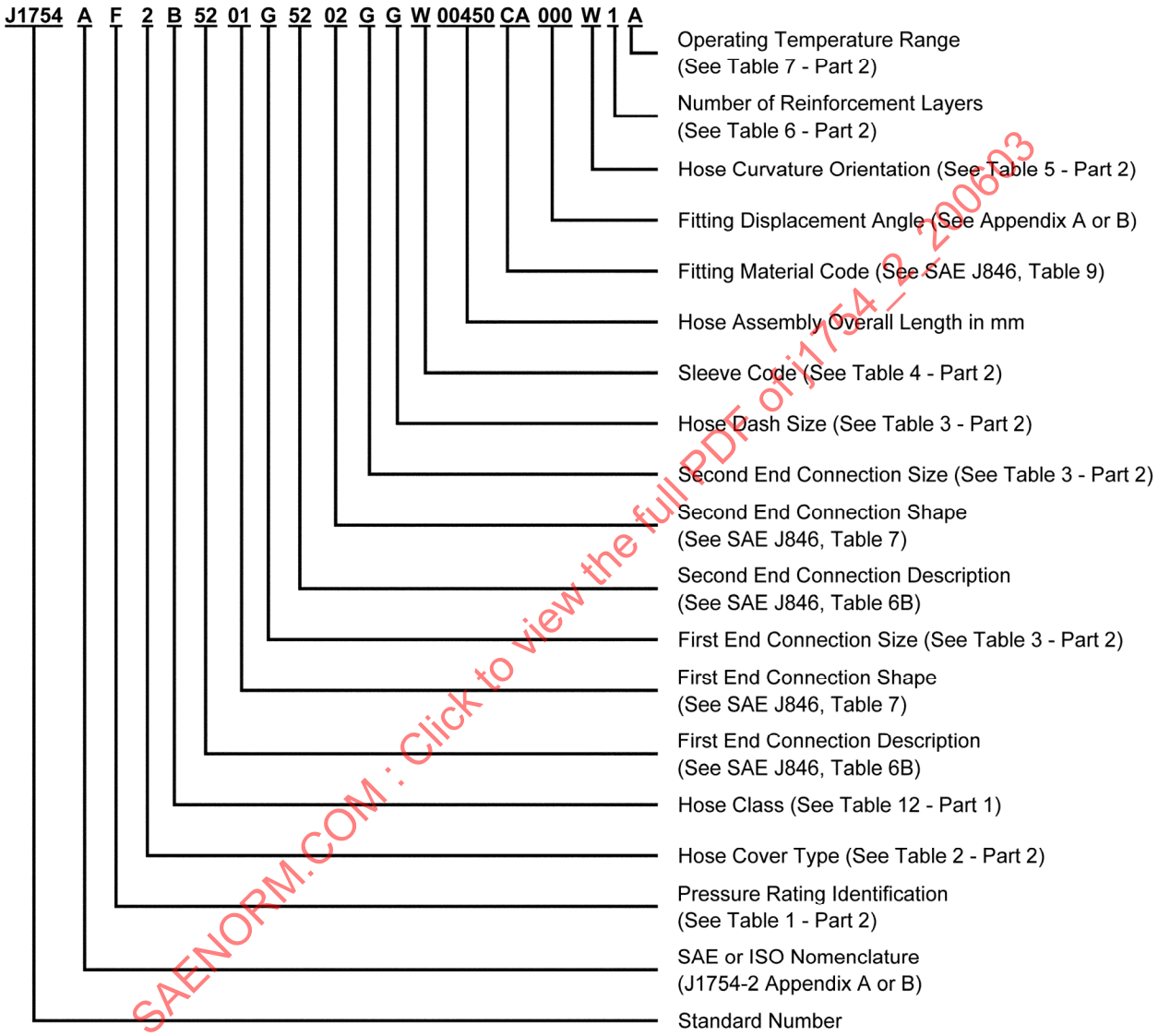
| | |
|---|---|
| **W** | Not Specified |
| **1** | One Wire Braid |
| **2** | Two Wire Braid |
| **4** | Four Wire Spiral |
| **6** | Six Wire Spiral |
| **X** | See Drawing |

**TABLE 7—HOSE OPERATING TEMPERATURE RANGE CODES**

| | |
|---|---|
| **A** | –40 °C minimum to +100 °C maximum |
| **B** | –40 °C minimum to +121 °C maximum |
| **X** | See drawing for hose temperature rating |

### 3.3 Part Identification Numbers

Example:






**Example of Hose Assembly Part Number: J1754AF2B5201G5202GGW00450CA000W1A**

**NOTE 1: "X" To be used for identifying special conditions that requires a drawing.**

**NOTE 2: "W" To be used for identifying all alpha code letters not required in the coding identification.**

**NOTE 3: "0" To be used for identifying all numerical numbers not used in the coding identification.**

FIGURE 1—EXAMPLE OF HOSE ASSEMBLY PART NUMBER

## *4. Notes*

### 4.1 Marginal Indicia

The change bar (l) located in the left margin is for the convenience of the user in locating areas where technical revisions have been made to the previous issue of the report. An (R) symbol to the left of the document title indicates a complete revision of the report.

PREPARED THE SAE FLUID CONDUCTORS AND CONNECTORS TECHNICAL COMMITTEE SC2—HYDRAULIC HOSE AND HOSE FITTINGS