SAE International™

SURFACE VEHICLE STANDARD

SAE J1754-2 | REV. OCT2007

Issued 1996-06
Revised 2007-10

Superseding J1754-2 MAR2006

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

RATIONALE

This revision to SAE J1754-2 will add missed connector codes to Table 3, add three wire braid to Table 6, add a temperature range to Table 7, add coupling attachment codes to a new Table 8, add cleanliness codes to Table 9, update example part number coding example, and update Appendix A and B hose assembly drawings used in SAE J1754-2 for ordering information.

NOTE: This draft of SAE J1754-2 and its revisions needs to be coordinated with the adoption of FCCTC-J846-06-1, S2-J516-06-1, S2-J1754-1-05-1 and S2-J1754-3-06-1 project revisions.

1. SCOPE

This SAE Standard covers ordering information for steel wire reinforced rubber hose assemblies using connectors specified in SAE Standard J516 or all parts of ISO 12151 for use in hydraulic systems using petroleum based hydraulic fluids with maximum working pressures of 1.7 to 42 MPa. See SAE J1754-2, Table 8 for hose operating temperature ranges and identification codes.

NOTE: Working pressure is defined as maximum system pressure.

2. REFERENCES

2.1 Applicable Publications

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

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 J516 Hydraulic Hose Fittings

SAE J517 Hydraulic Hose

SAE J846 Coding Systems for Identification of Fluid Conductors and Connectors

SAE J1754-1 Hose Assemblies, Rubber, Hydraulic, Steel Wire Reinforced—Part 1: Procurement Document

SAE J1754-3 Hose Assemblies, Hydraulic, J517 100R Series—Part 3: Procurement and Ordering Information

2.1.2 ISO Publications

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

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

2.2 Related Publications

The following publications are for information purposes only and are not a required part of this document.

2.2.1 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 Test Procedures for SAE 100R Series Hydraulic Hose and Hose Assemblies

SAE J1176 External Leakage Classifications for Hydraulic Systems

SAE J1273 Recommended Practices for Hydraulic Hose Assemblies

SAE J1405 Optional Test Procedures for Hydraulic Hose Assemblies

2.2.2 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

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 AND HOSE O.D. 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**(2)

1. See Part 1 – Tables 1 thru 10 for maximum outside diameter, proof pressure, burst pressure and minimum bend radius.
2. See drawing for operating pressure rating or hose outside diameter requirements.

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)		02	03	04	05	06	08	10	12	—	**16**	**20**	**24**	**32**	**40**
ISO HOSE SIZE(2)		3.2	5	6.3	8	10	12.5	16	19	—	25	31.5	38	51	63
LETTER DESIGNATION		**C**	**D**	**E**	**F**	**G**	**H**	**J**	**K**	**—**	**N**	**P**	**R**	**T**	**U**

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

SAE CONNECTOR DASH SIZE(3)	CODE	02	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	—	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**	—	—	M12	M14	M16	M18	M22	M27	—	M33	M42	M48	—	—
ISO 12151-4 CONNECTOR SIZE-S(6)	**S**	—	—	M12	M14	M16	M18	M22	M27	—	M33	M42	M48	—	—
ISO 12151-5 CONNECTOR SIZE(7)	**L**	—	—	6	8	10	12	16	20	—	25	32	38	50	—
ISO 12151-6 CONNECTOR SIZE(7)	**L**	—	6	8	—	10	12	16	20	—	25	32	38	50	—
LETTER DESIGNATION		**C**	**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.

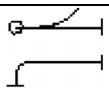
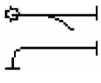
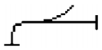
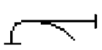
NOTE: In Appendix B drawing, the end sizes will need to be filled in the blank space, due to the different end sizes in each of the ISO 12151 standards for each letter code. Example: If a 12151-1 end connection with a 13/16-16 UN thread is used, the size and code would be 12 / H.

TABLE 4 - SLEEVE CODES[1]

Code	Sleeve Type
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 / **Front**					**Not Required**
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

Code	Number of Layers
W	Not Specified
1	One Wire Braid
2	Two Wire Braid
3	Three Wire Braid
4	Four Wire Spiral
6	Six Wire Spiral
X	See Drawing

TABLE 7 - HOSE OPERATING TEMPERATURE RANGE CODES

Code	Temperature Range
A	–40 °C minimum to +100 °C maximum
B	–40 °C minimum to +121 °C maximum
C	–40 °C minimum to +150 °C maximum
X	See drawing for hose temperature rating

TABLE 8 - HOSE FITTING COUPLING ATTACHMENT TYPE CODES[1]

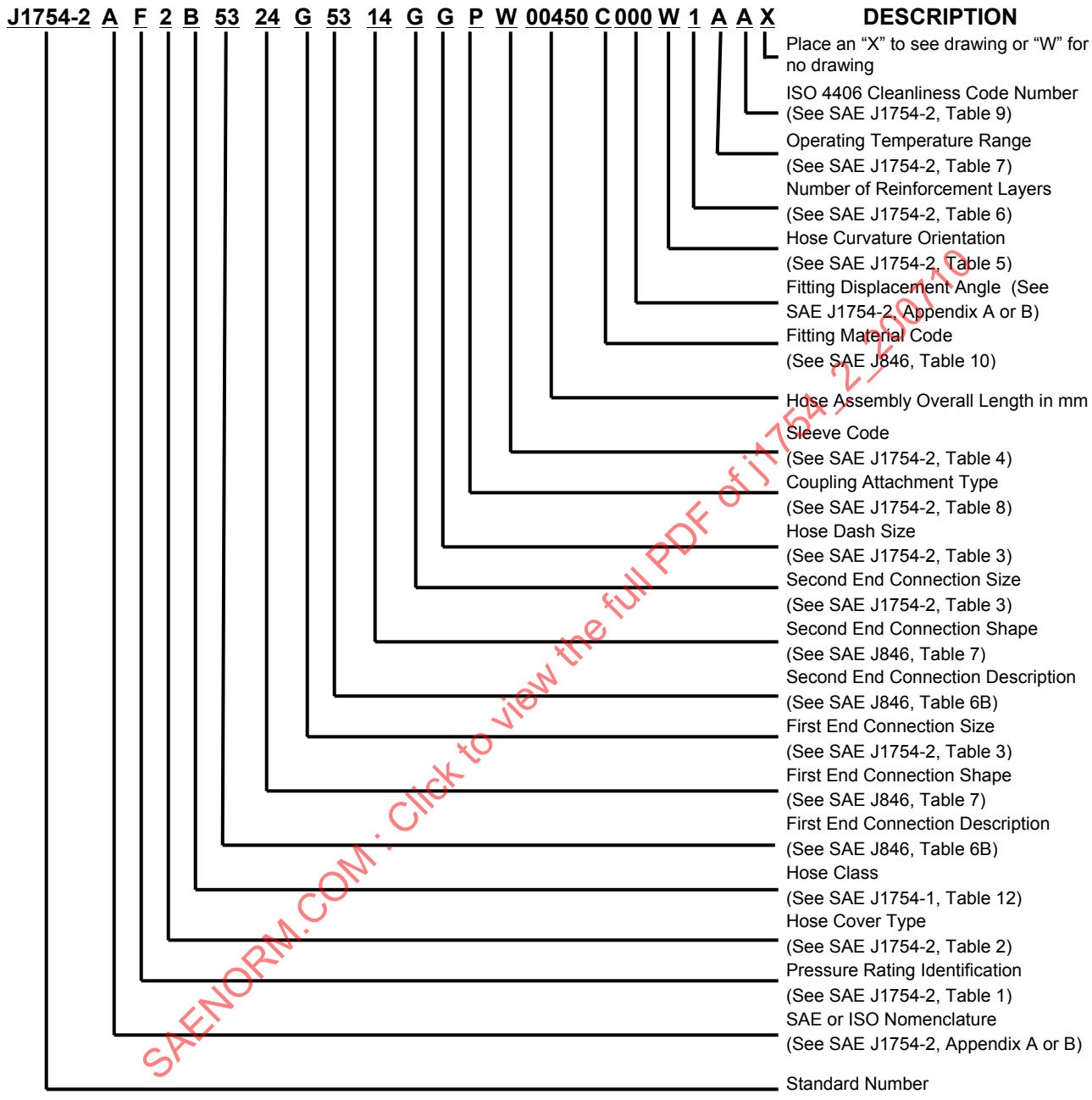
Code	Coupling Attachment Type
C	Worm gear clamp for use with SAE J1231 beaded ends and SAE 100R3 and 100R4 type hoses
F	Field attachable (screw together)
M	Field attachable (screw together), for assembly with a mandrel and SAE 100R5 type hoses
P	Permanently attached
S	Field attachable (segment clamp)
X	See drawing for hose fitting coupling attachment type

1. Letter codes are per J846 identification coding.

TABLE 9 - ISO 4406 CLEANLINESS REQUIREMENT CODES

Code	Cleanliness Requirement
A	Per SAE J1754-1 Part 1, ISO 4406 cleanliness requirement
B	ISO 4406 code 18/13 with maximum particle size of 0.5 mm in the largest dimension
X	See drawing for cleanliness requirement

3.3 Part Identification Numbers



Example of Hose Assembly Part Number: J1754-2AF2B5324G5314GGPW00450C000W1AAX

NOTE 1: "X" to be used for identifying special conditions that require a drawing.
NOTE 2: "W" to be used for identifying all letters not required in the coding identification.
NOTE 3: "0" to be used for identifying all numbers not required 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 BY THE SAE FLUID CONDUCTORS AND CONNECTORS TECHNICAL COMMITTEE SC2—HYDRAULIC HOSE AND HOSE FITTINGS