The Engineering Society For Advancing Mobility Land Sea Air and Space®
INTERNATIONAL
400 Commonwealth Drive, Warrendale, PA 15096-0001

SURFACE VEHICLE STANDARD

SAE J1754-2

REV. DEC2001

Issued 1996-06
Revised 2001-12

Superseding J1754-2 JUN1996

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

1. ***Scope—***This SAE Standard covers ordering information for steel wire reinforced rubber hose assemblies using connectors specified in SAE J516 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. Unless otherwise indicated, the latest issue of the publications shall apply.

2.1.1 SAE PUBLICATIONS—Available from SAE, 400 Commonwealth Drive, Warrendale, PA 15096-0001.

SAE J343—Test and Procedures Hydraulic Hose Assemblies & Hose
SAE J516—Hydraulic Hose Fittings
SAE J517—Hydraulic Hose
SAE J846—Coding Systems for Identification of Fluid Conductors & 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
SAEJ1754-1—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.

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

TO PLACE A DOCUMENT ORDER: +1 (724) 776-4970 FAX: +1 (724) 776-0790
SAE WEB ADDRESS http://www.sae.org

2.1.3 ISO PUBLICATIONS—Available from ANSI, 11 West 42nd Street, New York, NY 10036.

ISO3448—Industrial liquid lubricants—ISO viscosity classification
ISO4397—Fluid power systems and components—Connectors and associated components—Nominal outside diameters of tubes and nominal inside diameters of hoses
ISO4406—Hydraulic fluid power—Fluids—Method of coding level of contamination by solid particles
ISO12151-1—Connections for hydraulic fluid power and general use—Hose fittings—Part 1: Hose fittings with ISO 8434-3 O-Ring Face Seal Ends
ISO12151-2—Connections for hydraulic fluid power and general use—Hose fittings—Part 2: Hose fittings with ISO 8434-1 24° cone ends
ISO12151-3—Connections for hydraulic fluid power and general use—Hose fittings—Part 3: Hose fittings with ISO 6162 flange ends
ISO12151-4—Connections for hydraulic fluid power and general use—Hose fittings—Part 4: Hose fittings with ISO 6149 metric stud ends
ISO12151-5—Connections for hydraulic fluid power and general use—Hose fittings—Part 5: Hose fittings with ISO 8434-2 37° flare ends
ISO12151-6—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 J1754-1. Users of this document 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 SAE J2174-1 - 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 3A—HOSE 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

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.

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

TABLE 3B—CONNECTOR SIZE IDENTIFICATION CODES

SAE CONNECTOR DASH SIZE[1]	CODE	03	04	05	06	08	10	12	14	16	20	24	32	40
ISO 12151-1 CONNECTOR SIZE[2]	S	---	6	8	10	12	16	20	---	25	30	38	---	---
ISO 12151-2 CONNECTOR SIZE-L[3]	L	---	6	8	10	12	15	18	22	28	35	42	---	---
ISO 12151-2 CONNECTOR SIZE-S[4]	S	---	8	10	12	12	16	20	25	30	38	---	---	---
ISO 12151-3 CONNECTOR SIZE-L[3]	L	---	---	---	---	---	13	---	19	25	32	38	51	---
ISO 12151-3 CONNECTOR SIZE-S[4]	S	---	---	---	---	---	13	---	19	25	32	38	51	---
ISO 12151-4 CONNECTOR SIZE-L[3]	L	---	---	6	8	10	12	16	20	25	30	38	51	---
ISO 12151-4 CONNECTOR SIZE-S[4]	S	---	---	6	8	10	12	16	20	25	30	38	51	---
ISO 12151-5 CONNECTOR SIZE[5]	L	---	---	6	8	10	12	16	20	25	32	38	50	---
ISO 12151-6 CONNECTOR SIZE[5]	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. Connector dash size is based on inch tubing, with each dash size equal to 1/16 inch.
2. ISO connector size is based on ISO 12151-1 with S (Heavy-duty series) only.
3. ISO connector size is based on ISO 12151-2, 3, and 4 with L (Light duty series).
4. ISO connector size is based on ISO 12151-2, 3 and 4 with S (Heavy duty series).
5. ISO connector size is based on ISO 12151-5 & 6 with L (Light duty series) only.

NOTE 1—In Appendix A, B, and Figure 1 the hose assembly end connection description and shape codes are found in SAE J846, Table 6B and Table 7.

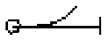
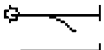
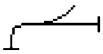
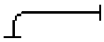
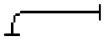
NOTE 2—In Appendix B drawing, the end sizes will need to be filled in the blank space, due to the different end sizes in each of the ISO 12151 standards for each letter code. Example: If a 12151-1 end connection with a 13/16-16 UN thread is used, the size and code would be 12 / H.

TABLE 4—SLEEVE CODES[1]

Code	Description
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 CODE

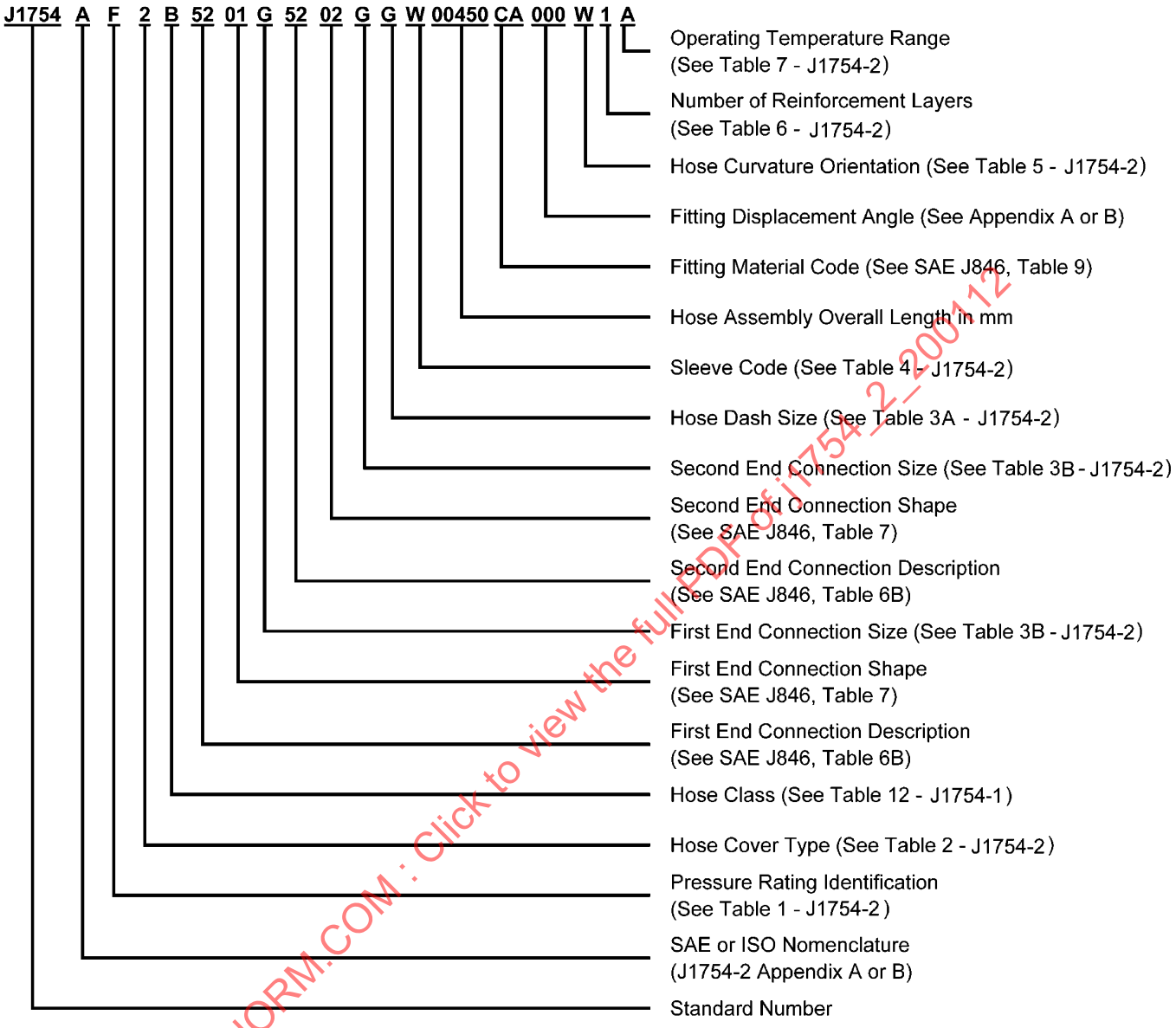
Code	Description
W	Not Specified
1	One Wire Braid
2	Two Wire Braid
4	Four Wire Spiral
6	Six Wire Spiral
X	See Drawing

TABLE 7—HOSE OPERATING TEMPERATUE RANGE CODES

Code	Temperatures
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—See Figure 1.



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 BY THE SAE FLUID CONDUCTOR AND CONNECTORS TECHNICAL COMMITTEE SC2—HYDRAULIC HOSE AND HOSE FITTINGS COMMITTEE

APPENDIX A

SAE HOSE ASSEMBLY DRAWING

End 1 — Hose Assembly Overall Length _____ mm — End 2

Connector 1 Information

Hex: Inch
End: Male ☐ Female ☐
Straight ☐ Angle _____ °
Drop: Short: ☐ Medium: ☐ Long: ☐

SAE J516

Hose Connector End Type:
- ☐ O-Ring Face Seal
- ☐ Code 61 Flange
- ☐ Code 62 Flange
- ☐ JIC (37°) Flare
- ☐ NPTF Pipe
- ☐ Male O-Ring Stud-Light Duty
- ☐ Male O-Ring Stud-Heavy Duty
- ☐ OTHER_____

Dash Size/Code:
- ☐ -03 / D
- ☐ -04 / E
- ☐ -05 / F
- ☐ -06 / G
- ☐ -08 / H
- ☐ -10 / J
- ☐ -12 / K
- ☐ -14 / M
- ☐ -16 / N
- ☐ -20 / P
- ☐ -24 / R
- ☐ -32 / T
- ☐ -40 / U

Cover Type: ☐ 1, ☐ 2, or ☐ 3

Hose Class:
- ☐ Class A
- ☐ Class B

Working Pressure / Code:
- ☐ 1.7 MPa / C
- ☐ 2.8 MPa / D
- ☐ 7 MPa / E
- ☐ 14 MPa / F
- ☐ 17.5 MPa / G
- ☐ 21 MPa / H
- ☐ 24.5 MPa / J
- ☐ 28 MPa / K
- ☐ 35 MPa / M
- ☐ 42 MPa / N
- ☐ __ MPa / X

SAE Hose Dash Size/Code:
- ☐ -03 / D
- ☐ -04 / E
- ☐ -05 / F
- ☐ -06 / G
- ☐ -08 / H
- ☐ -10 / J
- ☐ -12 / K
- ☐ -16 / N
- ☐ -20 / P
- ☐ -24 / R
- ☐ -32 / T
- ☐ -40 / U

Wire Reinforcement Layer Code: ☐ 1, ☐ 2, ☐ 4 or ☐ 6

Connector 2 Information

Hex: Inch
End: Male ☐ Female ☐
Straight ☐ Angle _____ °
Drop: Short: ☐ Medium: ☐ Long: ☐

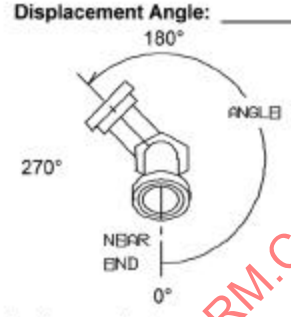
SAE J516

Hose Connector End Type:
- ☐ O-Ring Face Seal
- ☐ Code 61 Flange
- ☐ Code 62 Flange
- ☐ JIC (37°) Flare
- ☐ NPTF Pipe
- ☐ Male O-Ring Stud-Light Duty
- ☐ Male O-Ring Stud-Heavy Duty
- ☐ OTHER_____

Dash Size/Code:
- ☐ -03 / D
- ☐ -04 / E
- ☐ -05 / F
- ☐ -06 / G
- ☐ -08 / H
- ☐ -10 / J
- ☐ -12 / K
- ☐ -14 / M
- ☐ -16 / N
- ☐ -20 / P
- ☐ -24 / R
- ☐ -32 / T
- ☐ -40 / U

Hose Assembly Operating Temperature Range (Code): ☐ -40° to +100°C (A), ☐ -40° to +121°C (B) or _____ °C (X).

Displacement Angle: _____ ± 3°



Front connector down.
Point assembly away from you.
Measure counter-clockwise.

Accessories:

Sleeve Type / Code	Type of Sleeve	Full Length	Partial Length	From End Of Connector
☐ Steel Flat Armor Guard / A		☐	_____ mm	_____
☐ Round Spring Guard / B		☐	_____ mm	_____
☐ Polyamide Sleeve / C		☐	_____ mm	_____
☐ Plastic Flat Armor Guard / D		☐	_____ mm	_____
☐ Fire Sleeve / E		☐	_____ mm	_____
☐ Other / X:_____		☐	_____ mm	_____

Cleanliness Requirements: ISO 4406 CODE NUMBER 19 / 16

Inside Area: _____ m^2
Max Weight: _____ mg
Max Particle Size: _____ X _____ X _____ cm^2

Hose Curvature Orientation: _____

Top / Front					
VIEW	P	R	T	U	W
					Not Required

SAE Hose Assembly Part Number:

J1754AF2B5201G5202GGW004 50CA000W1A

SAE The Engineering Society For Advancing Mobility Land Sea Air and Space®

J1754-2

REV.:	DATED:
SUPPLIER PART #:	
CUSTOMER PART #:	
TITLE:	HOSE ASSEMBLY, HYDRAULIC
SCALE =	(DO NOT SCALE DRAWING)

FIGURE A1—SAE HOSE ASSEMBLY DRAWING

APPENDIX B

ISO HOSE ASSEMBLY DRAWING

End 1 ← Hose Assembly Overall Length _____ mm → End 2

Connector 1 Information

Hex: Metric
End: Male ☐ Female ☐
Straight ☐ Angle _____ °
Drop: Short: ☐ Medium: ☐ Long: ☐

ISO 12151

Hose Connector End Type:	Size/Code:
☐ Part 1 - Face Seal - Code S	☐ __ / E
☐ Part 2 - 24° Cone - Code L	☐ __ / F
☐ Part 2 - 24° Cone - Code S	☐ __ / G
☐ Part 3 - Flange - Code L	☐ __ / H
☐ Part 3 - Flange - Code S	☐ __ / J
☐ Part 4 - Stud End - Code L	☐ __ / K
☐ Part 4 - Stud End - Code S	☐ __ / M
☐ Part 5 - 37° Flare - Code L	☐ __ / N
☐ Part 6 - 60° Cone - Code L	☐ __ / P
☐ OTHER_____	☐ __ / R
	☐ __ / T

Cover Type: ☐ 1, ☐ 2, or ☐ 3

Hose Class:	ISO Metric Hose Size/Code:	Working Pressure / Code:
☐ Class A	☐ 5 / D	☐ 1.7 MPa / C
☐ Class B	☐ 6.3 / E	☐ 2.8 MPa / D
	☐ 8 / F	☐ 7 MPa / E
	☐ 10 / G	☐ 14 MPa / F
	☐ 12.5 / H	☐ 17.5 MPa / G
	☐ 16 / J	☐ 21 MPa / H
	☐ 19 / K	☐ 24.5 MPa / J
	☐ 25 / N	☐ 28 MPa / K
	☐ 31.5 / P	☐ 35 MPa / M
	☐ 38 / R	☐ 42 MPa / N
	☐ 51 / T	☐ __ MPa / X
	☐ 63 / U	

Connector 2 Information

Hex: Metric
End: Male ☐ Female ☐
Straight ☐ Angle _____ °
Drop: Short: ☐ Medium: ☐ Long: ☐

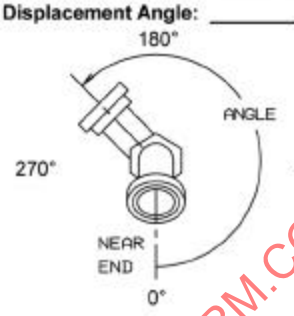
ISO 12151

Hose Connector End Type:	Size/Code:
☐ Part 1 - Face Seal - Code S	☐ __ / E
☐ Part 2 - 24° Cone - Code L	☐ __ / F
☐ Part 2 - 24° Cone - Code S	☐ __ / G
☐ Part 3 - Flange - Code L	☐ __ / H
☐ Part 3 - Flange - Code S	☐ __ / J
☐ Part 4 - Stud End - Code L	☐ __ / K
☐ Part 4 - Stud End - Code S	☐ __ / M
☐ Part 5 - 37° Flare - Code L	☐ __ / N
☐ Part 6 - 60° Cone - Code L	☐ __ / P
☐ OTHER_____	☐ __ / R
	☐ __ / T

Wire Reinforcement Layer Code: ☐ 1, ☐ 2, ☐ 4 or ☐ 6

Hose Assembly Operating Temperature Range (Code): ☐ -40° to +100°C (A), ☐ -40° to +121°C (B) or _____ °C (X).

Displacement Angle: _____ ± 3°



Front connector down.
Point assembly away from you.
Measure counter-clockwise.

Accessories:

Sleeve Type / Code	Type of Sleeve	Full Length	Partial Length	From End Of Connector
☐ Steel Flat Armor Guard / A		☐	_____ mm	_____
☐ Round Spring Guard / B		☐	_____ mm	_____
☐ Polyamide Sleeve / C		☐	_____ mm	_____
☐ Plastic Flat Armor Guard / D		☐	_____ mm	_____
☐ Fire Sleeve / E		☐	_____ mm	_____
☐ Other / X:_____		☐	_____ mm	_____

Cleanliness Requirements: ISO 4406 CODE NUMBER 19 / 16

Inside Area: _____ m^2
Max Weight: _____ mg
Max Particle Size: _____ X _____ X _____ cm^2

Hose Curvature Orientation:_____

Top / Front					
VIEW	P	R	T	U	W
					Not Required

SAE Hose Assembly Part Number:

J1754BF2B5201G5202GGW00450CA000W1A

SAE The Engineering Society For Advancing Mobility Land Sea Air and Space®
400 COMMONWEALTH DRIVE, WARRENDALE, PA 15096

J1754-2

REV.:	DATED:
SUPPLIER PART #:	
CUSTOMER PART #:	
TITLE:	HOSE ASSEMBLY, HYDRAULIC
SCALE =	(DO NOT SCALE DRAWING)

FIGURE B1—ISO HOSE ASSEMBLY DRAWING