

 SURFACE VEHICLE STANDARD	SAE J2552 MAR2009
	Issued 2009-03
Push-On Hose and Mating Hose Fittings	

RATIONALE

This is a new document with the objective to standardize push-on hose and the mating hose fittings.

FOREWORD

This document contains push-on hose and mating barb type hose fittings. The push-on hose is assembled in the field by cutting off the hose to its service length (hose cut off length) and manually inserting the barb end of the hose fitting into the hose. The standard also has qualification testing (usually performed once to test the design and manufacturing), conformance testing (performed when ordered, unless certification is used) and periodic testing (fewer tests than qualification and usually performed once a year to assure qualification is still in place). This document also contains a Part Identification Number (PIN) which is used for ordering.

INTRODUCTION

The standard is divided into two sections. Section one is used for the hose and section two is used for the hose fittings. The figures and tables have limited technical, catalog type information, with the goal to have just enough information to standardize for interconnection and application. This way the manufacturers' unique differences are not encroached and standardization is still obtained. The requirements and testing are performance based, to validate the standardization requirements.

1. SCOPE

SAE J2552 provides limited, dimensional and general performance requirements for low pressure, field attachable, push-on hose and their mating hose fittings. The intended application is for fluid and pneumatic power used with petroleum base hydraulic fluids, lube oils, water glycols and air, within the temperature ranges listed in Table 1. The maximum working pressure is 1.7 MPa (see Table 2). For air applications the maximum working pressure is at 0.7 MPa.

Hose and hose fittings are manufactured within certain dimensions with tolerance ranges in order to provide the proper gripping and sealing. SAE J2552 hose from one manufacturer may not be compatible with SAE J2552 hose fittings supplied by another manufacturer. It is the responsibility of the fabricator to always follow the manufacturers' instructions for proper preparation and fabrication of hose assemblies. The fabricator shall consult the manufacturers' written assembly instructions or the manufacturers directly before intermixing hose and hose fittings from two manufacturers.

Hose assemblies made to this standard shall not be used in dynamic motion, vibrating or impulsing applications, nor for brake hoses or fuel lines.

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TABLE 1 - WORKING TEMPERATURE RANGES⁽¹⁾

Media	Temperature
Hydraulic Fluids, Lube Oils	–40 °C to +100 °C
Water and Water Base Fluids	Up to +70 °C
Air	Up to +38 °C

1. Operating temperatures in excess of those listed above may materially reduce the life of the hose

2. REFERENCES

2.1 Applicable Publications

The following publications form a part of the specification to the extent specified herein. Unless otherwise indicated, the latest revision of SAE publications shall apply.

2.1.1 SAE Publications

Available from SAE International, 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 J476 Dryseal Pipe Threads
- SAE J516 Hydraulic Hose Fittings
- SAE J517 Hydraulic Hose
- SAE J846 Coding Systems for Identification of Fluid Conductors and Connectors
- SAE J1273 Recommended Practices for Hydraulic Hose Assemblies
- SAE J1401 Road Vehicle—Hydraulic Brake Hose Assemblies for Use with Nonpetroleum-Base Hydraulic Fluids

2.1.2 ASME Publications

Available from ASME, 22 Law Drive, P.O. Box 2900, Fairfield, NJ 07007-2900, Tel: 973-882-1170, www.asme.org.

- ASME B1.1 Unified Inch Screw Threads (UN and UNR Thread Form)
- ASME B1.20 Pipe Threads, General Purpose, Inch
- ASME Y14.5M Dimensioning and Tolerancing

2.1.3 ASTM Publications

Available from ASTM International, 100 Barr Harbor Drive, P.O. Box C700, 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 Standard Test Methods for Rubber Hose

2.2 Related Publications

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

2.2.1 SAE Publications

Available from SAE International, 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 J246	Spherical and Flanged Sleeve (Compression) Tube Fittings
SAE J512	Automotive Tube Fittings
SAE J513	Refrigeration Tube Fittings—General Specifications
SAE J515	Specification for Hydraulic O-Ring Materials, Properties, and Sizes for Metric and Inch Stud Ends, Face Seal Fitting and Four-Screw Flange Tube Connections

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 9000	Quality management standard
ISO 9227	Corrosion tests in artificial atmospheres—Salt spray tests
ISO/TS 16949	Quality management systems

3. DEFINITIONS

The hose and fitting size is normally designated by the fractional inch indicating the nominal hose inside diameter together with the nominal pipe or straight thread size. However, these sizes may also be designated by their SAE dash number as follows:

3.1 SAE Hose Dash Size

The SAE hose dash size is equivalent to the number of sixteenth inch increments in the hose inside diameter (1/2 inch I.D. Hose = $8/16$ = –8 dash size).

3.2 Pipe Thread Dash Size

The pipe thread dash size is the number of sixteenth inch increments in the nominal pipe thread size (3/4 inch pipe thread = $12/16$ = –12 dash size). Other thread style sizes are identified by their assigned SAE dash size numbers as shown in the following fitting tables.

3.3 Straight Threads

Straight threads are identified in accordance with ASME B1.1

3.4 Dimensions and Tolerances

Unless otherwise specified, dimensions and tolerances shall be in accordance with the appropriate SAE standard and ASME Y14.5M.

4. HOSE

The hose shall be a low pressure, push-on hose (SAE J846 code A8).

4.1 General Information

For information regarding age control, application factors, identification, offset and assembly length, see SAE J517. Additional information regarding the selection, care, use and routing of hose can be found in SAE J1273.

4.2 Hose Construction

The hose shall consist of an inner tube of oil resistant synthetic rubber, with suitable braids or spiraled layers of appropriate textile yarn reinforcement, and an oil and weather resistant cover.

4.3 Hose Dimensions

Dimensions and tolerances applicable to this hose are given in Table 2. The inside diameter and outside diameter of the hose shall be concentric within the limits in Table 3.

TABLE 2 - DIMENSIONS AND SPECIFICATIONS FOR SAE PUSH-ON HOSE⁽¹⁾

Dimensions are in mm

Metric Size	SAE Hose Dash Size	Hose OD (max)	Maximum Working Pressure (MPa)	Maximum Working Pressure for Air (MPa)	Minimum Bend Radius
6.3	-4	14.2	1.7	0.7	75
8	-5	16.1	1.7	0.7	75
10	-6	18.0	1.7	0.7	75
12.5	-8	21.1	1.7	0.7	125
16	-10	24.6	1.7	0.7	150
19	-12	27.9	1.7	0.7	180

1. Proof pressure shall be 2 times the maximum working pressure shown above. Minimum burst pressure shall be 4 times the maximum working pressure shown above.

TABLE 3 - HOSE CONCENTRICITY

Dimensions are in mm

Metric Size	Concentricity (FIR)
Up to 6.3, included	0.8
Over 6.3	1.0

4.4 Hose Shelf Life

Hose shelf life shall be according to SAE J517 for rubber and fabric reinforcement.

4.5 Hose Identification

The entire length of hose shall be legibly marked with one or more stripes parallel to the longitudinal axis. Marking shall include, but is not limited to, this SAE hose specification number, the hose dash size number, the fractional (inch) nominal hose inside diameter, the maximum working pressure of the hose (Air or Liquid) and the date of manufacture, repeated with the first letter of each repeat not more than 760 mm from the first letter of that preceding.

No mention of the burst pressure or the design factor is allowed on the hose. This information could be misinterpreted and result in a hose being used above its maximum working pressure.

Examples:

XXX	MAX. W.P. - Air	XXX	MAX. W.P. - Liquid
XXX	Maximum W.P. Air	XXX	Maximum W.P. Liquid
XXX	Max. Working Pressure, Air	XXX	Max. Working Pressure, Liquid

The date of manufacture may be expressed as month, day, and year (2/18/04), month and year (2/04), or quarter and year (1Q04), at the option of the manufacturer.

In addition, a colored yarn shall be incorporated into the wall of the hose, identifying the manufacturer. The color shall be as designated by the Rubber Manufacturers Association (See SAE J1401, Appendix A, Table A1).

4.6 Tests

Unless otherwise agreed upon between the manufacturer and purchaser, tests for evaluating conformance of product with specifications shall be on the basis of the Qualification Tests and Inspection Tests set forth in this document. Tests may be conducted by the manufacturer, the purchaser or both, as decreed by the purchaser. The tests, sampling and criteria applicable to both test classifications are given in the detailed specifications and tables herein. All tests shall be conducted in accordance with the procedures in SAE J343 and for the connector see 5.7.

Connector samples shall be mixed between a 90 degree elbow and a straight.

4.7 Qualification Tests of Hose

(Refer to SAE J343) For qualification to this section, hose and/or hose assemblies shall conform to the following tests and requirements:

4.7.1 Dimensional Check Test (All Samples)

Shall conform to dimensions in Table 2 and these detailed specifications.

4.7.2 Proof Test (All Samples)

Shall not leak at the proof pressure of 2X the maximum working pressure.

4.7.3 Change in Length Test (One Sample)

When pressurized to the maximum liquid working pressure, the SAE J2552 hose shall not exceed +4% to -8% change in length.

4.7.4 Burst Test (One 300 mm Minimum Free Hose Length Assembly)

Shall not leak or fail below the minimum burst pressure of 4X the maximum working pressure.

4.7.5 Leakage Test (Two 300 mm Minimum Free Hose Length Assemblies)

Shall not leak or fail at the leakage pressure of 70% of the burst pressure.

4.7.6 Ozone Resistance Test (Two Samples)

Specimens shall be subjected to an atmosphere comprised of air and ozone with an ozone partial pressure of 50 mPa (50 parts ozone per 100 million parts of air at standard atmospheric conditions) at an ambient temperature of 40 °C. After 70 h exposure, specimens shall not show evidence of cracking or deterioration when viewed with seven-power magnification while still in a stressed condition.

4.7.7 Visual Examination (All Samples)

Looking for layer separations, bulges or discontinuities.

4.8 Hose Periodic Inspection Tests

Inspection tests listed as follows shall be performed on two samples representing each lot of 150 to 3000 m of bulk hose. Lots of less than 150 m of hose need not be subjected to these tests if a lot has been tested and met the requirements within the previous 12-month period. Requirements shall be the same as for the corresponding Qualification Tests:

- a. Dimensional Check Test (see 4.7 and 4.7.1)
- b. Proof Test (see 4.7 and 4.7.2)
- c. Change In Length Test (see 4.7 and 4.7.3)
- d. Burst Test (see 4.7 and 4.7.4)

In addition, all hose and/or hose assemblies shall be subjected to visual examination. Hose manufacturing facilities that are ISO 9000 or ISO/TS 16949 certified with a quality management system that undergoes routine assessments by an accredited third party registrar may use their documented inspection test procedures in lieu of the inspection test requirements listed above.

4.8.1 Hose Conformance Inspection

Prior to shipping the purchased ordered lot, perform the following nondestructive tests unless certification is used (see 4.8.2):

- a. Dimensional Check Test (see 4.7 and 4.7.1)
- b. Proof Test (see 4.7 and 4.7.2)
- c. Visual Examination (see 4.7 and 4.7.9)

4.8.2 Certification

See Appendix A, A.2.

4.9 Hose Part Identification Number (PIN)

For ordering purposes hose to this document shall be identified by a part identification number consisting of the following:

- a. The standard number (SAE J2552)
- b. The hose code number (A8)
- c. The SAE hose dash size

EXAMPLE: 3/8" I.D. (-6) Push-On Hose (Metric Size 10)

SAE J2552 A8 – 6 – Length

A8 – 6 – Length (In Metric or English Units)

SAE 3/8" I.D. dash size

Code Number for push-on hose

NOTE: Codes are in accordance with SAE J846

4.10 Inspection Retests and Rejection

In the event of failure of one or more samples to meet any of the inspection tests, the product shall be resampled and retested for the test or tests in which it failed. Twice the number of samples designated under the initial test procedure shall be selected from the lot in question for such retests, and failure of any of the retested samples shall be cause for rejection of the entire lot.

5. HYDRAULIC AND PNEUMATIC BARB HOSE FITTINGS

General and dimensional specifications for push-on hose fittings (SAE J846 Code 55).

Within this standard the term hose fitting is used to describe barb type hose fittings used in hydraulic and pneumatic applications with push-on hose.

5.1 General Information

These hose fittings are intended for general purpose applications in low pressure hydraulic and pneumatic systems on automotive, industrial and commercial products. It is recommended that where additional types of hose fittings are required, they be designed to conform to the specifications of this document insofar as they may apply. The following general specifications shall supplement the dimensional data contained in the tables with respect to all unspecified detail.

5.2 Material

Hose fittings shall be made from materials of good quality. Push-on hose fittings are generally made of brass, however, connectors made from other materials such as carbon steel, stainless steel, aluminum, etc., may be provided as agreed upon by the supplier and the user.

5.3 Finish

The external surfaces and threads of all carbon steel parts shall be plated or coated with a suitable material that passes a 96 h salt spray test in accordance with ISO 9227 or ASTM B 117. Any appearance of red rust during the 96 h salt spray test shall be considered failure, except for the following:

- a. All internal fluid passages
- b. Edges such as hex points, serrations, and crests of threads where there may be mechanical deformation of the plating or coating typical of mass-produced parts or shipping effects.
- c. Areas where there is mechanical deformation of the plating or coating caused by crimping, flaring, bending and other post-plate metal forming operations.
- d. Areas where the parts are suspended or affixed in the test chamber where condensate can accumulate.

NOTE: Parts manufactured to this standard shall not be cadmium plated. Hexavalent chromate coatings are not preferred for commercial and industrial usage due to environmental reasons. Internal fluid passages shall be protected from corrosion during storage and shipping. Changes in plating may affect assembly torques and require re-qualification, when applicable.

5.4 Dimensions and Tolerances

Tabulated dimensions shall apply to the finished parts, plated or otherwise processed, as specified by the purchaser. Details of the hose fitting barbed ends are not specified and shall be optional with the manufacturer (see 5.9).

Where applicable, the maximum and minimum flat dimensions shall be within the commercial tolerance of bar stock from which the fittings are produced. Formed or upset contours shall fit standard wrench openings. The minimum across corner dimensions of external hexagons shall be 1.092 times the nominal width across flats, but shall not result in a side flat width of less than 0.43 times the nominal width across flats.

Except for nominal sizes and thread specifications, dimensions and tolerances are given in SI units. Tolerances on all dimensions not otherwise limited shall be ± 0.25 mm. Angular tolerances on axis of ends on elbows shall be ± 2.5 degrees for sizes up to and including 9.5 mm and ± 1.5 degrees for sizes larger than 9.5 mm.

5.5 Workmanship

Workmanship shall conform to the best commercial practice to produce high quality hose fittings. Hose fittings shall be free from all hanging burrs, loose scale and all other defects that might affect serviceability. All sealing surfaces must be smooth except that annular tool marks up to 2.5 μ m maximum, unless otherwise specified, shall be permissible.

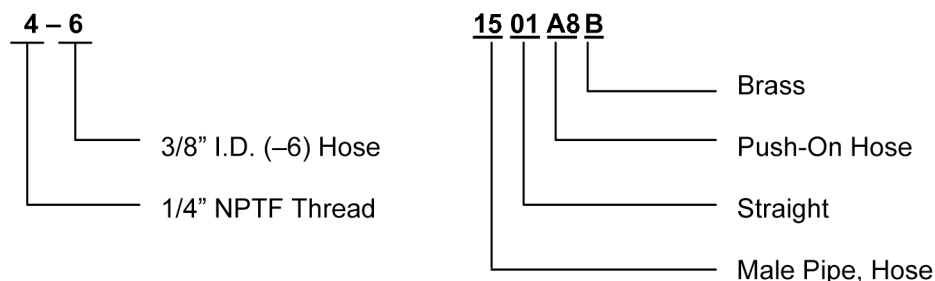
5.6 Part Identification Number (PIN)

For ordering purposes hose fittings made to this document shall be identified by a part identification number consisting of the following or by marking the packaging.

- The standard number (SAE J2552)
- The connection dash size followed by the hose dash size
- The fitting type code (SAE J846, Table 6)
- The fitting shape code (SAE J846, Table 7)
- Push on hose code (A8)
- The material identification code (SAE J846, Table 10)

EXAMPLE: Straight, 1/4" male pipe thread brass hose fitting for metric size 10 (SAE -6) push-on hose

SAE J2552 4 – 6 15 01 A8 B



NOTE: Style codes are in accordance with SAE J846

5.7 Hose Fitting Qualification

Qualification is defined as a formal comprehensive process that verifies that a product design meets the specified performance, quality and reliability requirements. The process is completed independent of procurement to avoid unnecessary delays while affording off-the-shelf procurement of critical high confidence level items. The process can include product design verifications, raw material controls, manufacturing and quality process controls and specific initial and periodic testing requirements.

For qualification to this section, hose, hose fittings and/or hose assemblies shall conform to the following tests and requirements:

- a. Visually inspect hose barb area (barb design and number of barbs is optional with the manufacturer, see 5.9)
- b. Dimensional check (see 5.4), (Refer to SAE J516)
- c. Inspect threads (Refer to SAE J516)
- d. Test finish, salt spray resistance (see 5.3), (Refer to SAE J516)
- e. Proof pressure test (see 4.7 and 4.7.2), (Refer to SAE J516)
- f. Burst test (see 4.7 and 4.7.4), (Refer to SAE J516)

5.7.1 Periodic Inspection Tests

Once a year perform the following tests to assure qualification is still in effect.

- a. Dimensional check (see 5.4)
- b. Proof pressure test (see 4.7 and 4.7.2)
- c. Visually inspect hose barb area (barb design and number of barbs is optional with the manufacturer, see 5.9)

5.7.2 Conformance Inspection

Perform the following tests if called out on purchased order.

- a. Dimensional check (see 5.4)
- b. Proof pressure test (see 4.7 and 4.7.2)
- c. Visually inspect hose barb area (barb design and number of barbs is optional with the manufacturer, see 5.9)

5.7.3 Certification

See Appendix 6.1.

5.7.4 Hose Fitting Samples for Qualification, Periodic and Conformance Tests

Samples for qualification shall be representative of the products proposed to be furnished. Samples shall be as specified in the applicable test method.

5.8 Push-On Hose Fittings

The following Figures 1 through 15, and corresponding dimensional tables denote the more common end styles and sizes of push-on hose fittings available. The SAE J846 style codes are in parenthesis and are explained in 5.6.

5.9 Barb-End Design

Barb shape and number of barbs is optional with the manufacturer, but shall have a minimum of two barbs.

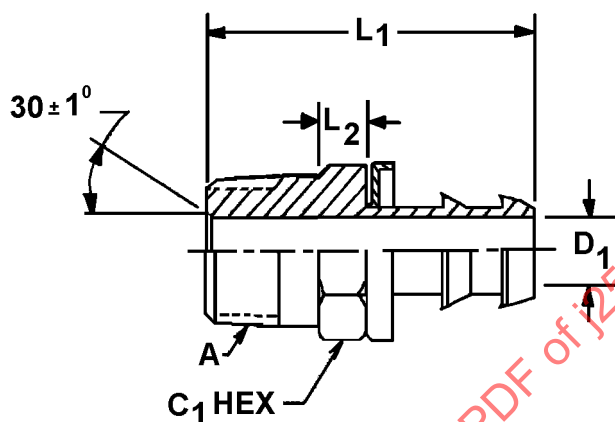


FIGURE 1 - MALE PIPE THREAD PUSH-ON HOSE FITTING
(SAE J846 STYLE CODE: 1501A8)

TABLE 4 - DIMENSIONS OF MALE PIPE THREAD PUSH-ON HOSE FITTING (FIGURE 1)^(a)

Dimensions are in mm

Ordering Code	SAE Thread Dash Size	A Dryseal Taper Thread ^(b) NPTF	SAE Hose Dash Size	Metric Hose Size	C ₁	D ₁ Dia Min	L ₁ Max	L ₂ Min
2-4	-2	1/8 - 27	-4	6.3	11	3	39	4.8
4-4	-4	1/4 - 18	-4	6.3	14	3	44	5.6
4-5	-4	1/4 - 18	-5	8	14	5	44	5.6
4-6	-4	1/4 - 18	-6	10	14	6	46	5.6
6-6	-6	3/8 - 18	-6	10	17	6	46	6.4
6-8	-6	3/8 - 18	-8	12.5	17	8	51	6.4
8-8	-8	1/2 - 14	-8	12.5	22	8	58	7.9
8-10	-8	1/2 - 14	-10	16	22	11	70	7.9
12-12	-12	3/4 - 14	-12	19	27	14	72	8.8

a. Barb design and number of barbs is dependent on manufacturer (see 5.9).

b. Dryseal American Standard Taper Pipe Thread.

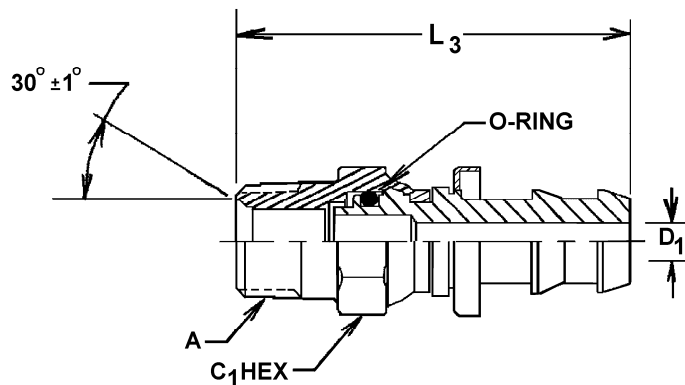


FIGURE 2 - SWIVEL MALE PIPE THREAD PUSH-ON HOSE FITTING
(SAE J846 STYLE CODE: 4401A8)

TABLE 5 - DIMENSIONS OF SWIVEL MALE PIPE THREAD PUSH-ON HOSE FITTING (FIGURE 2)^(a)

Dimensions are in mm

Ordering Code	SAE Thread Dash Size	A Dryseal Taper Thread ^(b) NPTF	SAE Hose Dash Size	Metric Hose Size	C ₁	D ₁ Dia Min	L ₃ Max
4-4	-4	1/4 - 18	-4	6.3	14	3	57
6-6	-6	3/8 - 18	-6	10	17	6	60
8-8	-8	1/2 - 14	-8	12.5	22	8	70

a. Barb design and number of barbs is dependent on manufacturer (see 5.9).

b. Dryseal American Standard Taper Pipe Thread.

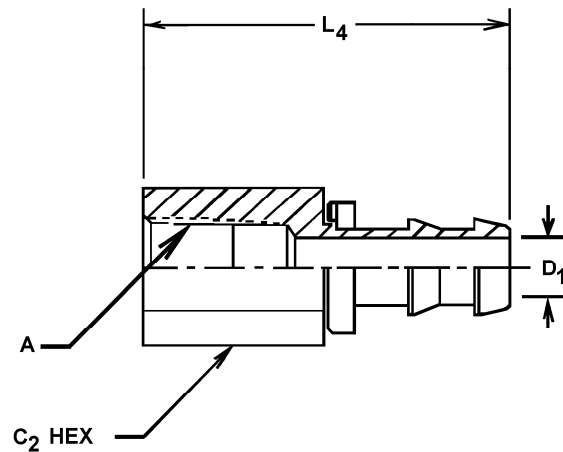


FIGURE 3 - FEMALE PIPE THREAD PUSH-ON HOSE FITTING
(SAE J846 STYLE CODE: 5901A8)

TABLE 6 - DIMENSIONS OF FEMALE PIPE THREAD PUSH-ON HOSE FITTING (FIGURE 3)^(a)

Dimensions are in mm

Ordering Code	SAE Thread Dash Size	A Dryseal Taper Thread ^(b) NPTF	SAE Hose Dash Size	Metric Hose Size	C ₂	D ₁ Dia Min	L ₄ Max
4-4	-4	1/4 - 18	-4	6.3	17	3	44
6-6	-6	3/8 - 18	-6	10	22	6	47
8-8	-8	1/2 - 14	-8	12.5	24	8	58

a. Barb design and number of barbs is dependent on manufacturer (see 5.9).

b. Dryseal American Standard Taper Pipe Thread.

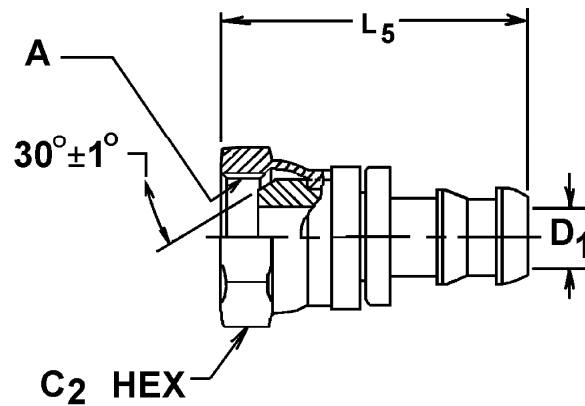


FIGURE 4 - SWIVEL FEMALE PIPE THREAD PUSH-ON HOSE FITTING
(SAE J846 STYLE CODE: 4701A8)

TABLE 7 - DIMENSIONS OF SWIVEL FEMALE PIPE THREAD PUSH-ON HOSE FITTING (FIGURE 4)^(a)

Dimensions are in mm

Ordering Code	SAE Thread Dash Size	A Straight Thread ^(b) NPSM	SAE Hose Dash Size	Metric Hose Size	C ₂	D ₁ Dia Min	L ₅ Max
4-4	-4	1/4 - 18	-4	6.3	17	3	43
6-6	-6	3/8 - 18	-6	10	22	6	46
8-8	-8	1/2 - 14	-8	12.5	24	8	54
8-10	-8	1/2 - 14	-10	16	24	11	66
12-12	-12	3/4 - 14	-12	19	32	14	69

a. Barb design and number of barbs is dependent on manufacturer (see 5.9).

b. Straight Pipe Thread.

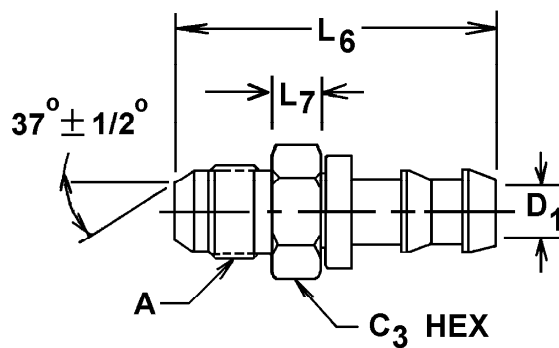


FIGURE 5 - MALE 37 DEGREE FLARED PUSH-ON HOSE FITTING
(SAE J846 STYLE CODE: 2101A8)

TABLE 8 - DIMENSIONS OF MALE 37 DEGREE FLARED PUSH-ON HOSE FITTING (FIGURE 5)^(a)

Dimensions are in mm

Ordering Code	SAE Thread Dash Size	A Straight Thread ^(b)	SAE Hose Dash Size	Metric Hose Size	C ₃	D ₁ Dia Min	L ₆ Max	L ₇ Min
4-4	-4	7/16 - 20	-4	6.3	12	3	43	5.5
5-4	-5	1/2 - 20	-4	6.3	14	3	43	6
6-6	-6	9/16 - 18	-6	10	17	6	47	6.5
8-8	-8	3/4 - 16	-8	12.5	19	8	54	7.5
10-10	-10	7/8 - 14	-10	16	22	11	68	9.5
12-12	-12	1-1/16 - 12	-12	19	27	14	70	10.5

a. Barb design and number of barbs is dependent on manufacturer (see 5.9).

b. Straight Thread per ASME B1.1.

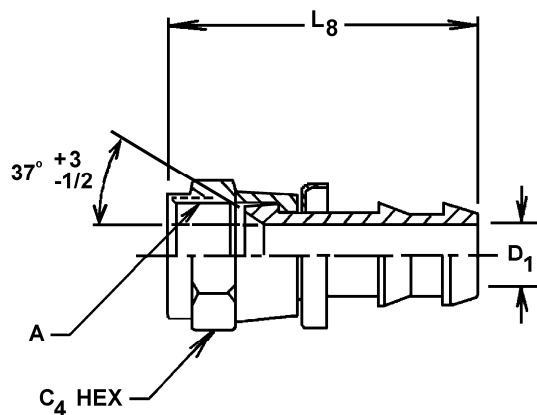


FIGURE 6 - FEMALE SWIVEL 37 DEGREE FLARED PUSH-ON HOSE FITTING
(SAE J846 STYLE CODE: 2401A8)

TABLE 9 - DIMENSIONS OF FEMALE SWIVEL 37 DEGREE FLARED PUSH-ON HOSE FITTING (FIGURE 6)^(a)

Dimensions are in mm

Ordering Code	SAE Thread Dash Size	A Straight Thread ^(b)	SAE Hose Dash Size	Metric Hose Size	C ₄	D ₁ Dia Min	L ₈ Max
4-4	-4	7/16 - 20	-4	6.3	14	3	40
5-4	-5	1/2 - 20	-4	6.3	17	3	41
6-4	-6	9/16 - 18	-4	6.3	19	3	42
6-6	-6	9/16 - 18	-6	10	19	6	45
8-6	-8	3/4 - 16	-6	10	22	6	48
8-8	-8	3/4 - 16	-8	12.5	22	8	52
10-8	-10	7/8 - 14	-8	12.5	27	8	55
10-10	-10	7/8 - 14	-10	16	27	11	68
12-12	-12	1-1/16 - 12	-12	19	32	14	80

a. Barb design and number of barbs is dependent on manufacturer (see 5.9).

b. Straight Thread per ASME B1.1.

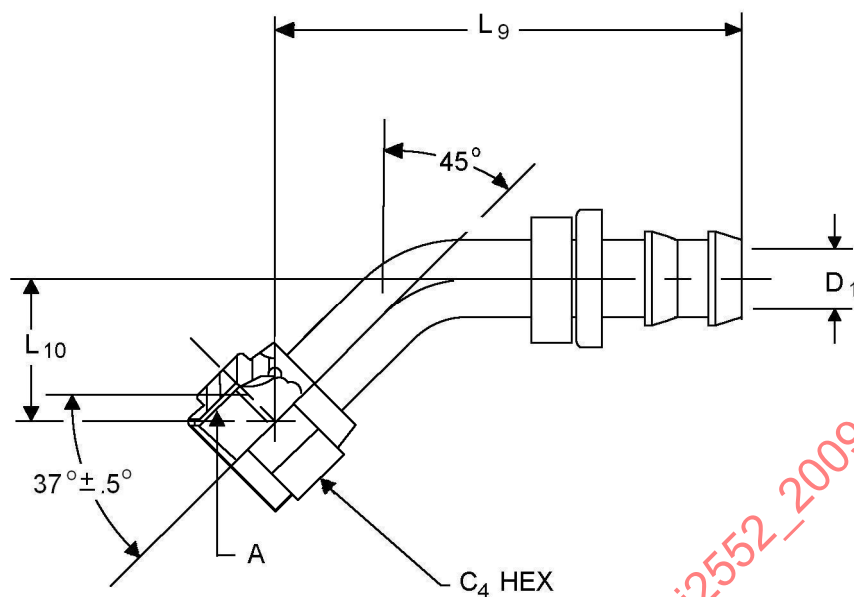


FIGURE 7 - FEMALE SWIVEL 37 DEGREE FLARED 45 DEGREE ELBOW PUSH-ON HOSE FITTING
(SAE J846 STYLE CODE: 2422A8)

TABLE 10 - DIMENSIONS OF FEMALE SWIVEL 37 DEGREE FLARED 45 DEGREE ELBOW PUSH-ON
HOSE FITTING (FIGURE 7)^(a)

Dimensions are in mm

Ordering Code	SAE Thread Dash Size	A Straight Thread ^(b)	SAE Hose Dash Size	Metric Hose Size	C ₄	D ₁ Dia Min	L ₉ Max	L ₁₀ ± 1.5
4-4	-4	7/16 - 20	-4	6.3	14	3	45	10
6-6	-6	9/16 - 18	-6	10	19	6	55	11
8-8	-8	3/4 - 16	-8	12.5	22	8	70	14
10-10	-10	7/8 - 14	-10	16	27	11	80	17

a. Barb design and number of barbs is dependent on manufacturer (see 5.9).

b. Straight Thread per ASME B1.1.

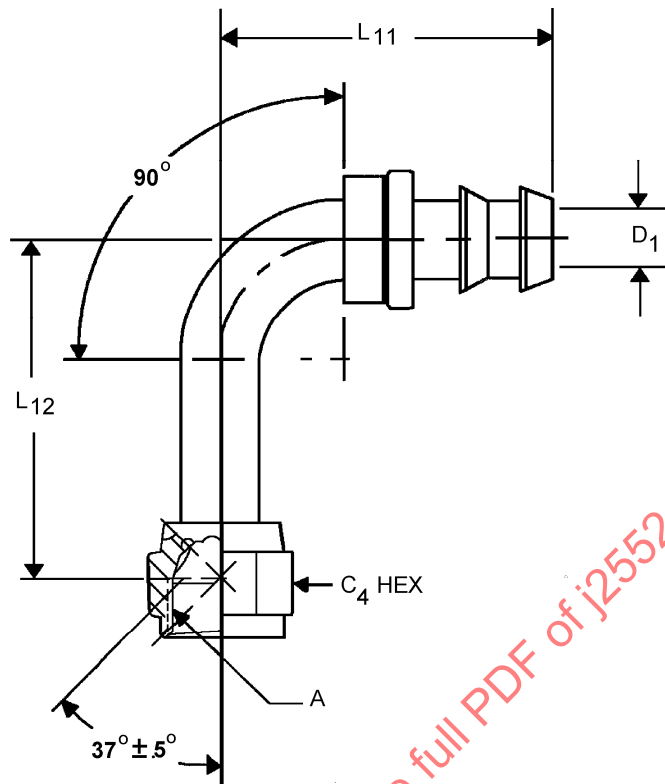


FIGURE 8 - FEMALE SWIVEL 37 DEGREE FLARED 90 DEGREE ELBOW PUSH-ON HOSE FITTING
(SAE J846 STYLE CODE: 2414A8)

TABLE 11 - DIMENSIONS OF FEMALE SWIVEL 37 DEGREE FLARED 90 DEGREE ELBOW PUSH-ON
HOSE FITTING (FIGURE 8)^(a)

Dimensions are in mm

Ordering Code	SAE Thread Dash Size	A Straight Thread ^(b)	SAE Hose Dash Size	Metric Hose Size	C ₄	D ₁ Dia Min	L ₁₁ Max	L ₁₂ ± 1.5
4-4	-4	7/16 - 20	-4	6.3	14	3	40	21
6-6	-6	9/16 - 18	-6	10	19	6	48	23
8-6	-8	3/4 - 16	-6	10	22	6	56	28
8-8	-8	3/4 - 16	-8	12.5	22	8	60	28
10-10	-10	7/8 - 14	-10	16	27	11	74	31
12-12	-12	1-1/16 - 12	-12	19	32	14	84	46

a. Barb design and number of barbs is dependent on manufacturer (see 5.9).

b. Straight Thread per ASME B1.1.

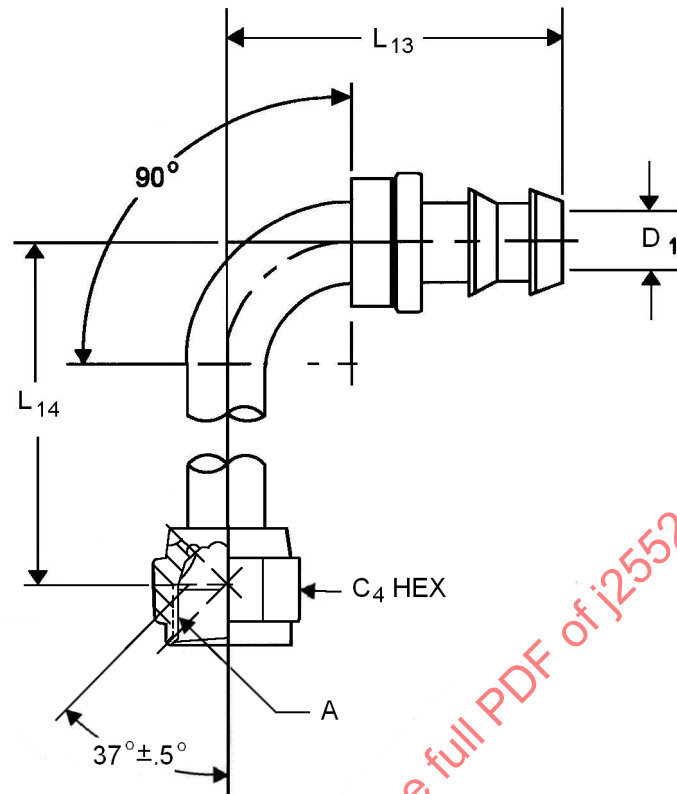


FIGURE 9 –FEMALE SWIVEL 37 DEGREE FLARED 90 DEGREE ELBOW LONG DROP PUSH-ON HOSE FITTING
(SAE J846 STYLE CODE: 2415A8)

TABLE 12 - DIMENSIONS OF FEMALE SWIVEL 37 DEGREE FLARED 90 DEGREE ELBOW LONG DROP
PUSH-ON HOSE FITTING (FIGURE 9)^(a)

Dimensions are in mm								
Ordering Code	SAE Thread Dash Size	A Straight Thread ^(b)	SAE Hose Dash Size	Metric Hose Size mm	C ₄	D ₁ DIA Min	L ₁₃ Max	L ₁₄ ± 1.5
4-4	-4	7/16 – 20	-4	6.3	14	3	46	46
6-6	-6	9/16 – 18	-6	10	19	6	51	55

a. Barb design and number of barbs is dependent on manufacturer (see 5.9).

b. Straight Thread per ASME B1.1.

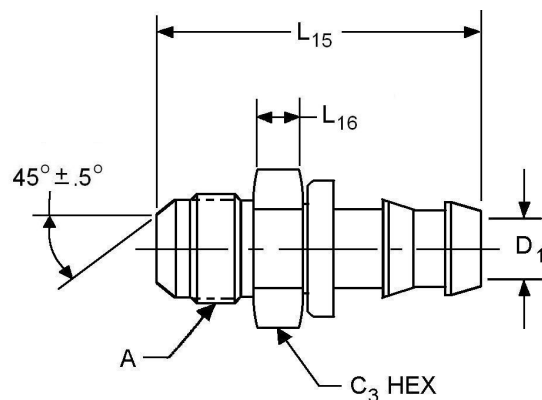


FIGURE 10 - MALE 45 DEGREE FLARED PUSH-ON HOSE FITTING
(SAE J846 STYLE CODE - 2801A8)

TABLE 13 - MALE 45 DEGREE FLARED PUSH-ON HOSE FITTING (FIGURE 10)^(a)

Dimensions are in mm

Ordering Code	SAE Thread Dash Size	A Straight Thread ^(b)	SAE Hose Dash Size	Metric Hose Size	C ₃	D ₁ Dia Min	L ₁₅ Max	L ₁₆ Min
4-4	-4	7/16 - 20	-4	6.3	12	3	42	5.5
5-4	-5	1/2 - 20	-4	6.3	14	3	43	6
6-6	-6	5/8 - 18	-6	10	17	3	48	6.5
8-8	-8	3/4 - 16	-8	12.5	19	8	56	7.5

a. Barb design and number of barbs is dependent on manufacturer (see 5.9).

b. Straight Thread per ASME B1.1.

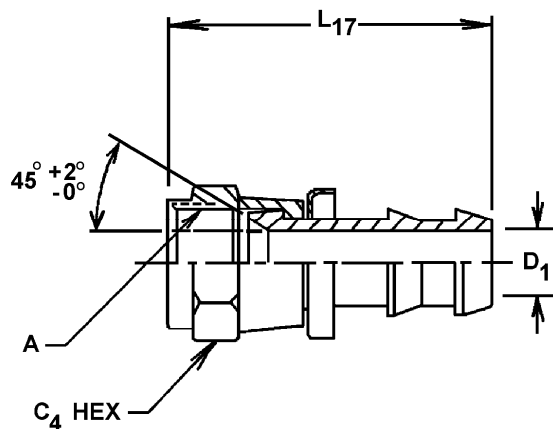


FIGURE 11 - FEMALE SWIVEL 45 DEGREE FLARED PUSH-ON HOSE FITTING
(SAE J846 STYLE CODE 3001A8)

TABLE 14 - DIMENSIONS OF FEMALE SWIVEL 45 DEGREE FLARED PUSH-ON HOSE FITTING (FIGURE 11)^(a)

Dimensions are in mm

Ordering CODE	SAE Thread Dash Size	A Straight Thread ^(b)	SAE Hose Dash Size	Metric Hose Size	C ₄	D ₁ Dia Min	L ₁₇ Max
4-4	-4	7/16 - 20	-4	6.3	14	3	40
5-4	-5	1/2 - 20	-4	6.3	17	3	41
6-6	-6	5/8 - 18	-6	10	19	6	47
8-6	-8	3/4 - 16	-6	10	22	6	48
8-8	-8	3/4 - 16	-8	12.5	22	8	52
10-8	-10	7/8 - 14	-8	12.5	27	8	60
10-10	-10	7/8 - 14	-10	16	27	11	68
12-12	-12	1-1/16 - 14	-12	19	32	14	71

a. Barb design and number of barbs is dependent on manufacturer (see 5.9).

b. Straight Thread per ASME B1.1.