SAE International	SURFACE VEHICLE STANDARD	SAE J1926-1 FEB2010
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Connections for General Use and Fluid Power—Ports and Stud Ends with ASME B1.1 Threads and O-Ring Sealing—Part 1: Threaded Port with O-Ring Seal in Truncated Housing

RATIONALE

To add sizes –40, –48 and –64 and make general editorial corrections.

FOREWORD

SAE J1926 consists of the following parts, under the general title:

Connections for general use and fluid power Ports and stud ends with ASME B1.1 threads and O-ring sealing:

— Part 1: Port with O-Ring Seal in Truncated Housing
— Part 2: Heavy-Duty (S Series) Stud Ends
— Part 3: Light-Duty (L Series) Stud Ends

These standards define performance requirements, dimensions, and designs for port and stud end connections for heavy-duty in Part 2 and light-duty in Part 3. Significant testing through over 50 years of use has confirmed the performance requirements of these ports and stud ends.

In fluid power systems, power is transmitted and controlled through a fluid (liquid or gas) under pressure within an enclosed circuit. In general applications, a fluid may be conveyed under pressure. Components are connected through their threaded ports by fluid conductor fittings to tubes and pipes, or to hose fittings and hoses.

Ports are an integral part of fluid power components such as pumps, motors, valves, cylinders, etc.

1. SCOPE

This part of SAE J1926 specifies dimensions for fluid power and general use ports with inch threads in accordance with ASME B1.1 for use with adjustable and nonadjustable stud ends shown in SAE J1926-2 and SAE J1926-3.

Ports in accordance with this part of SAE J1926 may be used at working pressures up to 63 MPa for nonadjustable stud ends and up to 40 MPa for adjustable stud ends. The permissible working pressure depends upon materials, design, working conditions, application, etc.

For threaded ports and stud ends specified in new designs for hydraulic fluid power applications, only ISO 6149 shall be used. Threaded ports and stud ends in accordance with ISO 1179, ISO 9974, and ISO 11926 shall not be used for new designs in hydraulic fluid power applications.

2. REFERENCES

2.1 Applicable Publications

The following standards contain provisions which, through reference in this text, constitute provisions of this document. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this document are encouraged to investigate the possibility of applying the most recent edition of the standards indicated as follows. Members of IEC and ISO maintain registers of currently valid International Standards.

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 1926-2 Connections for General Use and Fluid Power—Ports and Stud Ends with ASME B1.1 Threads and O-Ring Sealing—Part 2: Heavy Duty (S Series) Stud Ends

SAE 1926-3 Connections for General Use and Fluid Power—Ports and Stud Ends with ASME B1.1 Threads and O-Ring Sealing—Part 3: Light Duty (L Series) Stud Ends

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 5598 Fluid power systems and components—Vocabulary

ISO 19879 Metallic tube connections for fluid power and general use—Test methods for hydraulic fluid power connections

2.1.3 ASME Publications

Available from the American Society of Mechanical Engineers, 22 Law Drive, PO 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)

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 J514 Hydraulic Tube Fittings

SAE J1453 Fitting—O-Ring Face Seal

2.2 ISO Publications

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

ISO 68-2 ISO general purpose screw threads—Basic profile—Part 2: Inch screw threads

ISO 263 ISO inch screw threads—General plan and selection for screws, bolts and nuts—Diameter range 0,06 to 6 in

ISO 1101 Technical drawings—Geometrical tolerancing—Tolerancing of form, orientation, location and run-out—Generalities, definitions, symbols, indications on drawings

ISO 1302 Geometrical Product Specification (GPS)—Indication of surface texture in technical product documentation

ISO 1179-1 Connections for general use and fluid power—Ports and stud ends with ISO 228-1 threads with elastomeric and metal-to-metal sealing—Part 1: Threaded port

ISO 1179-2 Connections for general use and fluid power—Ports and stud ends with ISO 228-1 threads with elastomeric and metal-to-metal sealing—Part 2: Heavy duty (S series) and light duty (L series) stud ends with elastomeric sealing (type E)

ISO 1179-3 Connections for general use and fluid power—Ports and stud ends with ISO 228-1 threads with elastomeric and metal-to-metal sealing—Part 3: Light duty (L series) stud end with sealing by O-ring with retaining ring (types G and H)

ISO 1179-4 Connections for general use and fluid power—Ports and stud ends with ISO 228-1 threads with elastomeric and metal-to-metal sealing—Part 4: Stud end for general use only with metal-to-metal sealing (type B)

ISO 2306 Drills for use prior to tapping screw threads

ISO 5864 ISO inch screw threads—Allowances and tolerances

ISO 6149-1 Connections for fluid power and general use—Ports and stud ends with ISO 261 threads and O-ring sealing—Part 1: Port with O-ring seal in truncated housing

ISO 6149-2 Connections for fluid power and general use—Ports and stud ends with ISO 261 threads and O-ring sealing—Part 2: Heavy duty (S series) stud ends—Dimensions, design, test methods and requirements

ISO 6149-3 Connections for fluid power and general use—Ports and stud ends with ISO 261 threads and O-ring sealing—Part 3: Light duty (L series) stud ends—Dimensions, design, test methods and requirements

ISO 8434-2 Metallic tube fittings for fluid power and general use—Part 2: 37° flared fittings

ISO 9974-1 Connections for general use and fluid power—Ports and stud ends with ISO 261 threads with elastomeric and metal-to-metal sealing—Part 1: Threaded port

ISO 9974-2 Connections for general use and fluid power—Ports and stud ends with ISO 261 threads with elastomeric and metal-to-metal sealing—Part 2: Stud end with elastomeric sealing (type E)

ISO 9974-3 Connections for general use and fluid power—Ports and stud ends with ISO 261 threads with elastomeric and metal-to-metal sealing—Part 3: Stud end with metal-to-metal sealing (type B)

ISO 11926-2 Connections for general use and fluid power—Ports and stud ends with ISO 261 threads and O-ring sealing—Part 2: Heavy duty (S series) stud ends

ISO 11926-3 Connections for general use and fluid power—Ports and stud ends with ISO 261 threads and O-ring sealing—Part 3: Light duty (L series) stud ends

3. DEFINITIONS

For the purpose of this part of SAE J1926, the definitions given in ISO 5598 shall apply.

4. PORT SIZE

The ports shall be specified by SAE J1926-1 and the thread size (without UNF or UN and 2B designation), separated by a dash, for example SAE J1926-1 1/2-20.

5. DIMENSIONAL REQUIREMENTS

Ports shall conform to the dimensions in Figure 1 and Table 1.

6. TEST METHODS

Ports shall be tested along with stud ends per the test methods and requirements in ISO 19879.

7. IDENTIFICATION STATEMENT

Use the following statement in test reports, catalogues, and sales literature when electing to comply with this part of SAE J1926:

"Port conforms to SAE J1926-1, Connections for fluid power and general use—Ports and stud ends with ASME B1.1 threads and O-ring sealing—Part 1: Threaded port with O-ring seal in truncated housing."

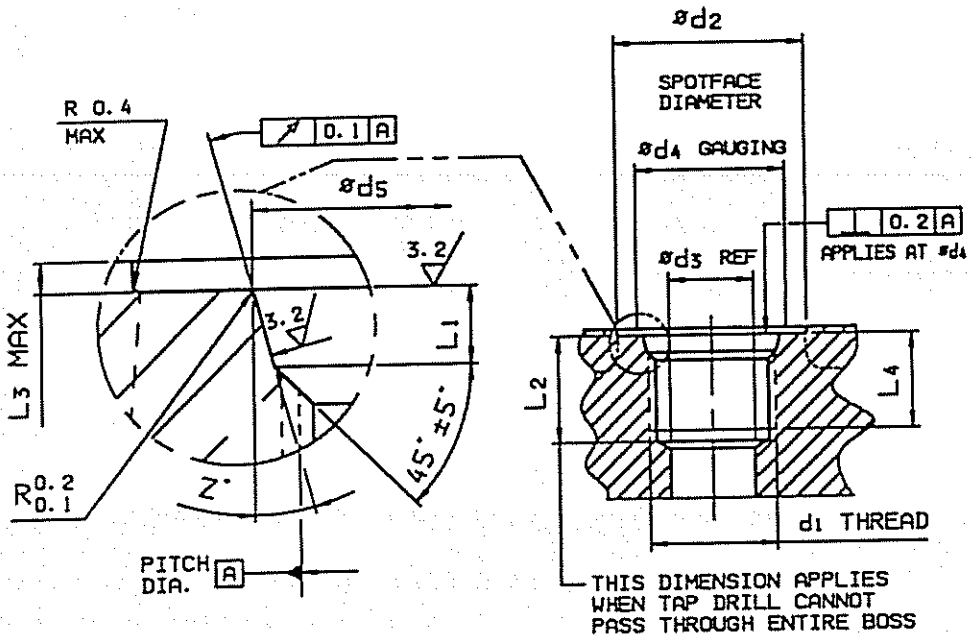

FIGURE 1 - SAE J1926-1 PORT DETAIL

TABLE 1 - SAE J1926-1 PORT DIMENSIONS

Nominal Tube Or Hose ID Inch Tubing Dash Size	Nominal Tube OD or Hose ID Inch Tubing mm	Nominal Tube OD or Hose ID Inch Tubing in	Nominal Tube OD or Hose ID Metric Tubing mm	d_1 Thread Size, in	d_2 (1)	d_3 (2) Ref	d_4 Min	d_5 ± 0.05	L_1 ± 0.2	L_2 (3) Min	L_3 (4) Max	L_4 Min Full Thread	α° ± 1°
–2	3.18	0.125	4	5/16-24 UNF-2B	17	1.6	11	9.15	2.1	12	1.6	10	12°
–3	4.76	0.188	5	3/8-24 UNF-2B	19	3.5	13	10.75	2.1	12	1.6	10	12°
–4	6.35	0.250	6	7/16-20 UNF-2B	21	4.5	15	12.45	2.6	14	1.6	11.5	12°
–5	7.94	0.312	8	1/2-20 UNF-2B	23	6	16	14.05	2.6	14	1.6	11.5	12°
–6	9.52	0.375	10	9/16-18 UNF-2B	25	7.5	18	15.70	2.7	15.5	1.6	12.7	12°
–8	12.70	0.500	12	3/4-16 UNF-2B	30	10	22	20.65	2.7	17.5	2.4	14.3	15°
–10	15.88	0.625	16	7/8-14 UNF-2B	34	12.5	26	24	2.7	20	2.4	16.7	15°
–12	19.05	0.750	20	1-1/16-12 UN-2B	41	16	32	29.2	3.5	23	2.4	19	15°
–14	22.22	0.875	22	1-3/16-12 UN-2B	45	18	35	32.4	3.5	23	2.4	19	15°
–16	25.40	1.000	25	1-5/16-12 UN-2B	49	21	38	35.55	3.5	23	3.2	19	15°
–20	31.75	1.250	30	1-5/8-12 UN-2B	58	27	48	43.55	3.5	23	3.2	19	15°
–24	38.10	1.500	38	1-7/8-12 UN-2B	65	33	54	49.9	3.5	23	3.2	19	15°
–32	50.80	2.000	50	2-1/2-12 UN-2B	88	45	70	65.75	3.5	23	3.2	19	15°
–40	63.50	2.500		3-12 UN-2B	101	57.7	83	78.45	3.5	30.5	3.2	25.5	15
–48	76.20	3.000		3 ½-12 UN-2B	113	70.4	95	91.15	3.5	30.5	3.2	25.5	15
–64	101.60	4.000		4 ½-12UN-2B	139	95.8	121	116.55	3.5	30.5	3.2	25.5	15

1. Minimum spotface diameter. If face of port is on a machined surface, dimensions d_2 and L_3 need not apply as long as R 0.2/0.1 is maintained to avoid damage to the O-ring during installation.
2. Reference only, connecting hole application may require a different size.
3. Tap drill depths given require use of a bottoming tap to produce the specified full thread lengths. Where standard taps are used, increase tap drill depths accordingly.
4. Maximum recommended spotface depth to permit sufficient wrench grip for proper tightening of the fitting or locknut.

8. NOTES

8.1 Marginal Indicia

A change bar (I) located in the left margin is for the convenience of the user in locating areas where technical revisions, not editorial changes, have been made to the previous issue of this document. An (R) symbol to the left of the document title indicates a complete revision of the document, including technical revisions. Change bars and (R) are not used in original publications, nor in documents that contain editorial changes only.

PREPARED BY THE SAE FLUID CONDUCTORS AND CONNECTORS TECHNICAL STEERING COMMITTEE C1—HYDRAULIC TUBE FITTINGS COMMITTEE