



# SURFACE VEHICLE STANDARD

J1926™-3

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Superseding J1926-3 SEP2016

## 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

### RATIONALE

This document was revised in order to remove Table 5.

### FOREWORD

SAE J1926 consists of the following parts, under the general title of “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
- Part 4: External Hex and Internal Hex Inch Port Plugs - Dimensions, Design, Test Methods, and Requirements

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 50 years of use has confirmed the performance requirements of these ports and stud ends. SAE J1926-3 stud ends originated with 37 degree flare connectors shown in SAE J514.

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 stud ends on fluid conductor fittings to tubes/pipes, or to hose fittings and hoses.

### 1. SCOPE

This part of SAE J1926 specifies dimensions, performance requirements, and test procedures for adjustable and nonadjustable light-duty (L series) stud ends with ASME B1.1 threads for use in fluid power and general applications and the O-rings used with them.

Stud ends in accordance with this part of SAE J1926 may be used at working pressures up to 35 MPa for nonadjustable and adjustable stud ends. The permissible working pressure depends upon materials, design, working conditions, application, etc.

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For threaded ports and stud end 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 design in hydraulic fluid power applications.

Conformance to the dimensional information does not guarantee rated performance. Each manufacturer shall perform testing according to the specification contained in this document to ensure that components made to this document comply with the performance rating.

Appendices A and B of this document are informative.

NOTE: This document specifies inch as well as metric hexes for the stud ends. Therefore, any product drawing specifying stud ends in accordance with this document must specify hex type, inch or metric, to assure getting intended hex.

Stud ends or parts specified before January 1, 2010, using this standard, shall be supplied with inch hexes, unless otherwise specified.

## 2. REFERENCES

### 2.1 Applicable Documents

The following publications form a part of this specification to the extent specified herein. Unless otherwise indicated, the latest issue 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 +1 724-776-4970 (outside USA), [www.sae.org](http://www.sae.org).

SAE J515      Specification for O-Ring Materials Used with Hydraulic Connectors

SAE J1926-1   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

SAE J2593      Information Report for the Installation of Fluid Conductors and Connectors

#### 2.1.2 ISO Publications

Copies of these documents are available online at <https://webstore.ansi.org/>.

ISO 4759 -1   Tolerances for Fasteners - General Plan and Selection for Screws, Bolts and Nuts - Product Grades A, B, and C

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 ASME, P.O. Box 2900, 22 Law Drive, Fairfield, NJ 07007-2900, Tel: 800-843-2763 (U.S./Canada), 001-800-843-2763 (Mexico), 973-882-1170 (outside North America), [www.asme.org](http://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 SAE Technical Report.

### 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 +1 724-776-4970 (outside USA), [www.sae.org](http://www.sae.org).

- |             |                                                                                                                                                                                                                     |
|-------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| SAE J514-1  | Metallic Connections for Fluid Power and General Use - Part 1: 37 Degree Fittings                                                                                                                                   |
| SAE J514-2  | Flareless Hydraulic Tube Fittings                                                                                                                                                                                   |
| SAE J1926-1 | 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                                           |
| SAE J1926-2 | 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 J1926-4 | Connector for Fluid Power and General Use - Ports and Stud Ends with ASME B1.1 Threads and O-Ring Seal - Part 4: External Hex and Internal Hex Inch Port Plugs - Dimensions, Design, Test Methods, and Requirements |

### 2.2.2 ISO Publications

Copies of these documents are available online at <https://webstore.ansi.org/>.

- |            |                                                                                                                                                                                                                                            |
|------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ISO 48     | Rubber, Vulcanized or Thermoplastic - Determination of Hardness (Hardness between 10 IRHD and 100 IRHD)                                                                                                                                    |
| ISO 1101   | Technical Drawings - Tolerancing of Form, Orientation, Location and Run-Out - Generalities, Definitions, Symbols, Indications on Drawings                                                                                                  |
| 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 1302   | Technical Drawings - Method of Indicating Surface Texture on Drawings                                                                                                                                                                      |
| 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 6410-1  | Technical Drawings - Screw Threads and Threaded Parts - Part 1: General Conventions                                                                                                                     |
| ISO 8434-2  | Metallic tube Connections for Fluid Power and General Use - Part 2: 37° Flared Connectors                                                                                                               |
| 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 11926-3 | 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 and the following shall apply.

#### 3.1 ADJUSTABLE STUD END

A stud end connector that allows for fitting orientation before final tightening of the locknut to complete the connection. This type of stud end is typically used on shaped fittings (e.g., tees, crosses, and elbows).

#### 3.2 NONADJUSTABLE STUD END

A stud end connector that does not require specific orientation before final tightening of the connection because it is typically used on straight fittings.

### 4. STUD END

#### 4.1 Size Designation

The stud ends shall be designated by SAE J1926-3 and the thread size, separated by a colon, for example, SAE J1926-3: 1/2-20. Products drawings specifying this stud end shall have the type of hex, inch or metric, listed.

#### 4.2 Reduced Size Stud Ends for Jump Size Connectors

For jump size connectors where the hex size of the other end, e.g., tube/hose end, is larger than the stud hex "V" in Tables 1 and 6, a shoulder may have to be turned to the appropriate diameter and length to avoid interference with the port spot face. For details, see appropriate connector standard, e.g., SAE J514-1.

#### 4.3 Assembly

For proper stud end assembly, follow the instructions in SAE J2593.