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# Connectors for fluid power and general use — Designation and nomenclature

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## National foreword

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# Connectors for fluid power and general use — Designation and nomenclature

*Connecteurs pour transmissions hydrauliques et applications générales — Désignation et nomenclature*

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# Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents).

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For an explanation on the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT) see the following URL: www.iso.org/iso/foreword.html.

The committee responsible for this document is ISO/TC 131, *Fluid power systems,* Subcommittee SC 4, *Connectors and similar products and components*.

# Introduction

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 can be conveyed under pressure.

Components can be connected through their ports by connections (connectors) and conductors (tubes and hoses). Tubes are rigid conductors; hoses are flexible conductors.

Annexes A and B are normative; Annex C is informative.

# Connectors for fluid power and general use — Designation and nomenclature

## 1 Scope

This document collects the various designation and nomenclature schemes specified in International Standards for connectors and similar products standardized by ISO/TC 131/SC 4. It establishes a uniform nomenclature structure to facilitate standardization of product names used for threaded connectors, push-in connectors, flanges, hose fittings, port plugs and quick-action couplings.

The designation and nomenclature established in this document are applicable for procurement purposes when agreed to by user and supplier.

## 2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

There are no normative references in this document.

## 3 Terms and definitions

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

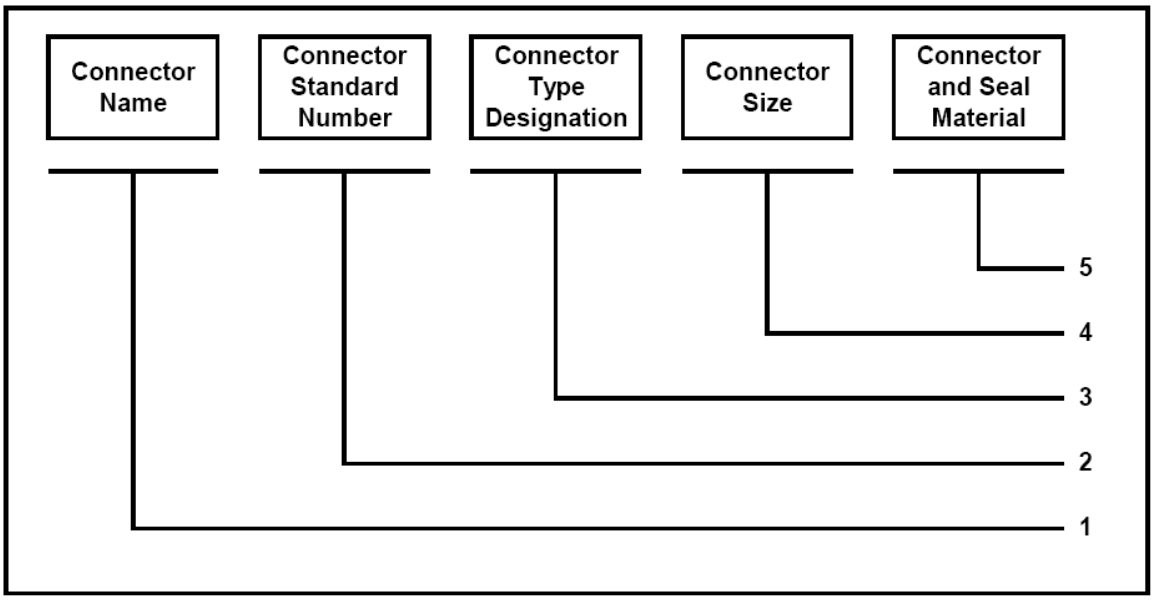
— IEC Electropedia: available at http://www.electropedia.org/

— ISO Online browsing platform: available at http://www.iso.org/obp

## 4 Designation and format

### 4.1 General

Designations use the format shown in Figure 1 when specifying a part for procurement to International Standards for connectors developed by ISO/TC 131/SC 4. Tube ends are assumed, so there is no type symbol for unions. When multiple end types are required to describe a threaded connector type, use the stud end first, when applicable (e.g. SDSWS). If there is no stud end, the description of the part shall dictate the designation order (e.g. WDRDNP for a weld-on reducing nipple).




**Key**

1 connector name – the name for the part (for example, connector, hose fitting, coupling, etc.) from the standard.

2 connector standard number – the term "ISO" and the number of the relevant International Standard.

3 connector type designation – the abbreviated designation consists of symbol for connector end type (Table 1) followed by, when needed, symbol for connector shape (Table 2) followed by symbol for complete connector (Table 3), if so ordered.

4 connector size – see 5.2.

5 connector material symbol (Table 7) followed by seal material symbol (Table 8), where applicable.

**Figure 1 — System for designating and specifying a part**

## 4.2 Connector size

The appropriate size designator for the connector end(s) from the relevant International Standard.

### 4.2.1 Threaded connectors and cross connectors

The following general rules shall apply:

— larger tube end size shall precede the smaller one for straight unions and union elbows;

— tube end size shall precede that of stud, hose, or other ends of the connector;

— male tube end shall precede female (swivel) tube end;

— for tee connectors, designation shall start with the size of the larger end on the run followed by the size of the branch;

— if the tee connector has a swivel, it shall be designated first, and on run tees the branch size shall follow;

— for cross connectors, leg with the largest tube end size shall be considered the run and the other the branch;

— the sequence shall be run sizes (large followed by small) followed by branch sizes (large followed by small);

— for tube or hose ends, the size of tube or hose in millimetres is used (for 8434-1 connectors the size is followed by the duty symbol (Table 4));

— for stud ends with metric threads, symbol "M" followed by thread size (without pitch) followed by the duty symbol (Table 4), followed by type of sealing (Table 5), e.g. M14LB for M14×1,5 light duty stud with metal-to metal sealing.

— for stud ends with BSP threads, symbol "G" followed by thread size in inches followed by "A" (tolerance class), followed by duty symbol, followed by type of sealing, e.g. G1/4ASE for heavy duty stud end with G1/4 BSP threads and elastomeric sealing;

— for stud ends with UN/UNF threads, thread size in inches (without pitch) followed by UN or UNF, as appropriate, followed by duty symbol (no sealing type is needed as only O-ring sealing is used with these threads).

#### 4.2.2 Flange connectors

For split flange clamps, FCS, the letter M if the split flange clamps are used with metric screws only, followed by a dash and the nominal size.

##### 4.2.2.1 FCS-25 and FCSM-32

Most split flange clamps accept both inch and metric screws and shall use FCS. Those that only accept inch screws shall use FCS and those that accept metric screws only shall use FCSM.

For one-piece flange clamps, FC, the letter M if the one-piece flange clamps are used with metric screws only, followed by a dash and the nominal size e.g. FC-25 or FCM-32.

Most one-piece flange clamps accept both inch and metric screws and shall use FC. Those that only accept inch screws shall use FC and those that accept metric screws only shall use FCM

— For flange ports, P, followed by a dash and the nominal size and the letter M if the flange ports use metric screws e.g. P-76 or P-76M

— For flange heads, FH, followed by a dash and the nominal size e.g. FH-76

##### 4.2.2.2 Push-in connectors

For tube ends, the outside diameter of the tubes with which they are to be connected, if all tubes are the same size, otherwise the largest and then the smallest each separated by a multiplication symbol (×).

For stud ends, the outside diameter of the tubes with which they are to be connected, followed by the stud end thread designation separated by a multiplication symbol (×).

##### 4.2.2.3 Hose fittings

For ISO 12151-1, ISO 12151-5 and ISO 12151-6 hose fittings, the connection size, followed by a multiplication symbol (×) and the hose size e.g. 12×12,5.

For ISO 12151-2, ISO 12151-3 and ISO 12151-4 hose fittings, the duty symbol, the connection size, followed by a multiplication symbol (×) and the hose size e.g. L22×19.

##### 4.2.2.4 Port plugs

Same as the stud ends for threaded connectors (see 5.2.1).

##### 4.2.2.5 Quick-action couplings

Since are no connector styles, only the coupling series (A, B, or C) and the nominal coupling diameter are required there.

## 4.3 Designation for ordering parts

Connectors, hose fittings, port plugs, flanges, push-in fittings and quick-action couplings are designated by an alphanumeric code to facilitate ordering. They are designated by the connector name and a space, followed by reference to the relevant standard (ISO XXXX), followed by a hyphen, then the type letter symbols (connector type and shape, where applicable), followed by a hyphen and followed by the size code (tube/hose/flange end and/or thread size designators) for the ends, followed by hyphen and followed by connector and seal (if applicable) material symbols.

Size designators for connector ends shall be separated by a multiplication symbol (×). There shall be no spaces on either side of the hyphens or the multiplication symbol.

See Tables 1 through 9 for the alpha-numeric symbols to be used.

Annex A provides an index of the letter symbols used in alphabetical order.

Annex B provides examples of how the designation system is applied.

Annex C provides correlation of SAE dash sizes to ISO connector, tube and hose sizes.

**Table 1 — Letter symbols to be used in designating connector types for fluid power and general use**

| Connector type | Letter symbol | Tube connectors | | | Hose fittings |
|---|---|---|---|---|---|
| | | Threaded | Flange | Push-in | |
| Banjo | BJ | | | 14743 | |
| Bulkhead | BH | 8434-1<br>8434-2<br>8434-3<br>8434-6 | | 14743 | |
| Braze-on | BR | 8434-1<br>8434-3 | | | |
| Cap | CP | 8434-1<br>8434-2<br>8434-3 | | | |
| Plug | PL | 8434-1<br>8434-2<br>8434-3 | | 14743 | |
| Port | P | | 6162-1<br>6162-2 | 14743 | |
| Reducer<br>Reducer with nut<br>Reducer without nut | RD<br>RDA<br>RDB | 8434-1<br>8434-2<br>8434-6<br>8434-3<br>8434-3 | | | |
| Stud | SD | 8434-1<br>8434-2<br>8434-3<br>8434-6 | | 14743 | 12151-4 |
| Swivel<br>With sealing surface not exposed<br>With sealing surface exposed | SW<br>SWA<br>SWB | 8434-1<br>8434-2<br>8434-6<br>8434-3<br>8434-3 | | 14743 | 12151-2<br>12151-5<br>12151-6<br>12151-1<br>12151-1 |
| Swivel with O-ring | SWO | 8434-1 | | | |
| Swivel bulkhead | SWBH | | | 14743 | |

**Table 1** *(continued)*

| Connector type | Letter symbol | Tube connectors | | | Hose fittings |
|---|---|---|---|---|---|
| | | Threaded | Flange | Push-in | |
| Swivel port | SWP | | | 14743 | |
| Tube end | TE | | | 14743 | |
| Weld-on / Weld-in | WD | 8434-1<br>8434-3 | | | |

**Table 2 — Letter symbols to be used in designating shapes of connectors for fluid power and general use**

| Shape | Letter symbol | Tube connectors | | Hose fittings |
|---|---|---|---|---|
| | | Threaded | Push-in | |
| Branch tee | BT | 8434-1<br>8434-2<br>8434-3 | 14743 | |
| 90° elbow | E | 8434-1<br>8434-2<br>8434-3<br>8434-6 | 14743 | 12151-1<br>12151-2<br>12151-3<br>12151-4<br>12151-5<br>12151-6 |
| 22,5° elbow | E22 | | | 12151-3 |
| 30° elbow | E30 | | | 12151-3 |
| 45° elbow | E45 | | | 12151-1<br>12151-2<br>12151-3<br>12151-5<br>12151-6 |
| 60° elbow | E60 | | | 12151-3 |
| 67,5° elbow | E67 | | | 12151-3 |
| Cross | K | 8434-1<br>8434-2<br>8434-3 | 14743 | |
| Run tee | RT | 8434-1<br>8434-2<br>8434-3 | 14743 | |
| Straight | S | 8434-1<br>8434-2<br>8434-3 | 14743 | 12151-1<br>12151-2<br>12151-3<br>12151-4<br>12151-5<br>12151-6 |
| Tee | T | 8434-1<br>8434-2<br>8434-3 | 14743 | |
| Y shape | Y | | 14743 | |

**Table 3 — Letter symbols to be used in designating types of components of connectors for fluid power and general use**

| Type of connector component | Letter symbol | Tube connectors | |
|---|---|---|---|
| | | Threaded | Flange |
| Cutting ring | CR | 8434-1 | |
| One-piece flange clamp | FC | | 6162-1<br>6162-2 |
| Split flange clamp pair | FCS | | 6162-1<br>6162-2 |
| Flange head | FH | | 6162-1<br>6162-2 |
| Locknut | LN | 8434-1<br>8434-2<br>8434-3 | |
| Sleeve:<br>For metric tube<br>For inch tube | SL<br>MSL<br>ISL | 8434-2<br>8434-3<br>8434-2<br>8434-3 | |
| Nut<br>Standard strength nut<br>High strength nut | N<br>NA<br>NB | 8434-1<br>8434-2<br>8434-3<br>8434-3 | |
| Nipple<br>For metric tube<br>For inch tube | NP<br>MNP<br>INP | 8434-1<br>8434-3<br>8434-3 | |

**Table 4 — Letter symbols to be used in designating completeness, with sleeve(s) or cutting ring(s) and nut(s), of connectors for fluid power and general use**

| Completeness indication | Letter symbol | Tube connectors |
|---|---|---|
| | | Threaded |
| Complete connector | C | 8434-1<br>8434-2 |

**Table 5 — Letter symbols to be used in designating stud end sealing types of connectors for fluid power and general use**

| Stud end sealing types | Letter symbol | Tube connectors | Port plugs |
|---|---|---|---|
| | | Threaded | |
| Metal-to-metal sealing | B | 1179-4<br>8434-1<br>8434-2<br>9974-3 | |
| Elastomeric sealing | E | 1179-2<br>8434-1<br>8434-2<br>9974-2 | 9974-4 |
| O-ring sealing | F | 6149-2<br>6149-3<br>8434-1<br>8434-2<br>8434-3<br>11926-2<br>11926-3 | 6149-4 |
| O-ring with retaining ring:<br>Type G<br>Type H | G<br>H | 1179-3<br>8434-2<br>8434-6<br>1179-3<br>8434-2<br>8434-6 | |

**Table 6 — Letter symbols to be used in designating working pressure levels (duty) of connectors for fluid power and general use**

| Working pressure series | Letter symbol | Tube connectors | Hose fittings |
|---|---|---|---|
| | | Threaded | |
| Extra light-duty | LL | 8434-1 | |
| Light-duty | L | 1179-3<br>6149-3<br>8434-1<br>9974-3<br>11926-3 | 12151-2<br>12151-3<br>12151-4 |
| Heavy-duty | S | 1179-2<br>6149-2<br>8434-1<br>9974-2<br>11926-2 | 12151-2<br>12151-3<br>12151-4 |

**Table 7 — Letter symbols to be used in designating connector material of connectors for fluid power and general use**

| Connector material | Letter symbol |
|---|---|
| Steel | S |
| Copper and copper alloys | B |
| Stainless steel | SS |

**Table 8 — Letter symbols to be used in designating seal material of connectors for fluid power and general use**

| Seal material | Letter symbol |
|---|---|
| Acrylonitriile-butadiene rubber (commonly known as nitrile rubber or NBR) | N |
| Hydrogenated NBR | H |
| Terpolymer of ethylene, propylene and a diene or EPDM | E |
| Fluoro rubber | F |

Letter symbols used are intended to be as short as possible for use in designation of connectors and do not conform to the elastomeric seal material designations listed in ISO 1629.

**Table 9 — Letter symbols to be used in designating miscellaneous features of connectors for fluid power and general use**

| Miscellaneous designations | Letter symbol | Tube connectors | | Hose fittings | Port plugs |
|---|---|---|---|---|---|
| | | Threaded | Flange | | |
| Short | S | | | 12151-1<br>12151-3<br>12151-5 | |
| Medium | M | | | 12151-1<br>12151-3<br>12151-5 | |
| Long | L | | | 12151-1<br>12151-5 | |
| External hex | EH | | | | 6149-4<br>9974-4 |
| Internal hex | IH | | | | 6149-4<br>9974-4 |
| Metric | M | | | | |
| Inch | I | | | | |
| Sealing (style) with O-ring | A | | | 12151-6 | |
| Sealing (style) without O-ring | B | | | 12151-6 | |

# Annex A
(normative)

# Index of letter symbols in alphabetical order

## A.1 Index

Table A.1 provides an index of letter symbols in alphabetical order, along with each symbol's definition.

**Table A.1 — Index of letter symbols in alphabetical order**

| Letter symbol | Definition |
|---|---|
| A | Sealing (style) with O-ring |
| B | Sealing (style) without O-ring |
| B | Metal-to-metal sealing |
| B | Copper and copper alloys |
| BH | Bulkhead |
| BJ | Banjo |
| BR | Braze-on |
| BT | Branch tee |
| C | Complete connector |
| CP | Cap |
| CR | Cutting ring |
| E | 90° elbow |
| E | Elastomeric sealing |
| E | Terpolymer of ethylene, propylene and a diene or EPDM |
| EH | External hex |
| E22 | 22,5° elbow |
| E30 | 30° elbow |
| E45 | 45° elbow |
| E60 | 60° elbow |
| E67 | 67,5° elbow |
| F | O-ring sealing |
| F | Female component |
| F | Fluoro rubber |
| FC | One-piece flange clamp |
| FCS | Split flange clamp pair |
| FH | Flange head |
| G | O-ring with retaining ring - Type G |
| H | O-ring with retaining ring - Type H |
| H | Hydrogenated NBR |
| I | Inch tube, thread or screw |
| IH | Internal hex |
| INP | Nipple for inch tube |

**Table A.1** *(continued)*

| | |
|---|---|
| ISL | Sleeve for inch tube |
| K | Cross |
| L | Long |
| L | Light-duty connection |
| LL | Extra light-duty connection |
| LN | Locknut |
| M | Medium |
| M | Male component |
| M | Metric tube, thread or screw |
| MNP | Nipple for metric tube |
| MSL | Sleeve for metric tube |
| N | Nut |
| N | Acrylonitriile-butadiene rubber (commonly known as nitrile rubber or NBR) |
| NA | Standard strength nut |
| NB | High strength nut |
| NP | Nipple |
| OR | O-ring face seal |
| P | Port |
| PL | Plug |
| RD | Reducer |
| RDA | Reducer with nut |
| RDB | Reducer without nut |
| RT | Run tee |
| S | Straight |
| S | Steel |
| S | Short |
| S | Heavy-duty connection |
| SD | Stud |
| SL | Sleeve |
| SS | Stainless steel |
| SW | Swivel |
| SWA | Swivel with sealing surface not exposed |
| SWB | Swivel with sealing surface exposed |
| SWBH | Swivel bulkhead |
| SWO | Swivel with O-ring |
| SWP | Swivel port |
| T | Tee |
| TE | Tube end |
| WD | Weld-on / Weld-in |
| Y | Y shape |

# Annex B
(informative)

# Application examples

## B.1 Threaded connector examples

EXAMPLE 1

A 90° stud elbow connector, made of corrosion protected steel, for use with 12 mm OD tubing with a heavy-duty (S series) M18 × 1,5 stud end, in accordance with ISO 9974-2 with elastomeric sealing is designated as follows:

Connector ISO 8384-X-SDE-12×M18E-S

Symbol for the seal material will follow S, if ordered with seal, as follows:

Connector ISO 8384-X-SDE-12×M18E-SN (for NBR)

EXAMPLE 2

A bulkhead branch tee connector, made of stainless steel, to connect to tubes with a nominal outside diameter of 12 mm on the run and 16 mm on the branch end, is designated as follows:

Connector ISO XXXXX-BHBT-12×12×16-SS

## B.2 Hose fitting examples

EXAMPLE 1

A 45° elbow swivel hose fitting for 12 mm OD tubing and 12,5 hose size, is designated as follows:

Hose Fitting ISO 12151-X-SWE45–12×12,5

EXAMPLE 2

A hose fitting with a medium drop length 45° elbow, a 42 MPa (420 bar) flanged head size 32 and 31,5 hose size, is designated as follows:

Hose Fitting ISO 12151-3, E45M-S32×31,5

NOTE Flanged hose fittings do not use a connector type symbol, since ISO 12151-3 is the default standard.

## B.3 Port plug examples

EXAMPLES

A plug made of corrosion protected steel, with an internal hex (drive) for M12×1,5 size ISO 6149-1 port shall be designated as follows:

Plug ISO 6149–4-PLIH-M12-S

The O-ring material symbol will follow S, if ordered with O-ring, as follows:

Plug ISO 6149–4-PLIH-M12-SE (for Ethylene Propylene)

## B.4 Flange connector examples

EXAMPLES

| | |
|---|---|
| One-piece flange clamp<br>(can be used with either inch or metric screws) | Flange ISO 6162-X-FC-25 |
| One-piece flange clamp, metric screws only | Flange ISO 6162-X-FCM-32 |
| Split flange clamp pair<br>(can be used with either inch or metric screws) | Flange ISO 6162-X-FCS-25 |
| Split flange clamp pair, metric screws only | Flange ISO 6162-X-FCSM-32 |
| Flange head | Head ISO 6162-X-FH-25 |
| Flange port with inch threads | Port ISO 6162-X-P-76 |
| Flange port with metric threads | Port ISO 6162-X-P-76M |

# Annex C
(informative)

# Correlation of SAE dash sizes to ISO connector, tube and hose sizes

Table C.1 shows the correlation of the dash sizes used in standards developed by SAE International and connector, tube and hose sizes used in International Standards for fluid power connectors.

**Table C.1 — Correlation of SAE dash sizes to ISO connector, tube and hose sizes**

| SAE dash size | ISO nominal connector size | ISO nominal tube outside diameter | ISO hose size |
|---|---|---|---|
| – 2 | | | 3,2 |
| ––– | 4 | 4 | |
| – 3 | 5 | 5 | 5 |
| – 4 | 6 | 6 | 6,3 |
| – 5 | 8 | 8 | 8 |
| – 6 | 10 | 10 | 10 |
| – 8 | 12 | 12 | 12,5 |
| ––– | | 14 [a] | |
| ––– | | 15 | |
| – 10 | 16 | 16 | 16 |
| ––– | | 18 | |
| – 12 | 20 | 20 | 19 |
| – 14 | 22 | 22 | |
| – 16 | 25 | 25 | 25 |
| ––– | | 28 | |
| – 20 | 30 | 30 | 31,5 |
| ––– | | 32 | |
| ––– | | 34 [a] | |
| ––– | | 35 | |
| – 24 | 38 | 38 | 38 |
| ––– | | 40 [a] | |
| ––– | | 42 | |
| – 32 | 50 | 50 | 51 |
| – 40 | 64 | | 63 |
| – 48 | 76 | | 78 |
| – 56 | 89 | | 89 |
| – 64 | 102 | | 102 |

a Not to be used for new designs.

# Bibliography

[1] ISO 10683, *Fasteners* — Non-electrolytically applied zinc flake coatings

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

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

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

[5] 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*

[6] 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*

[7] ISO 6149-4, *Connections for fluid power and general use — Ports and stud ends with ISO 261 threads and O-ring sealing — Part 4: Heavy-duty (S series) external hex and Light-duty (L series) internal hex port plugs — Dimensions, design, test methods and requirements*

[8] ISO 6150, *Pneumatic fluid power — Cylindrical quick-action couplings for maximum working pressures of 10 bar, 16 bar and 25 bar (1 MPa, 1,6 MPa and 2,5 MPa) — Plug connecting dimensions, specifications, application guidelines and testing*

[9] ISO 6162-1, *Hydraulic fluid power — Flange connectors with split or one-piece flange clamps and metric or inch screws — Part 1: Flange connectors, ports and mounting surfaces for use at pressures of 3,5 MPa (35 bar) to 35 MPa (350 bar), DN 13 to DN 127*

[10] ISO 6162-2, *Hydraulic fluid power — Flange connectors with split or one-piece flange clamps and metric or inch screws — Part 2: Flange connectors, ports and mounting surfaces for use at pressure of 42 MPa (420 bar), DN 13 to DN 76*

[11] ISO 7241, *Hydraulic fluid power — Dimensions and requirements of quick-action couplings*

[12] ISO 8434-1, *Metallic tube connections for fluid power and general use — Part 1: 24° compression fittings*

[13] ISO 8434-2, *Metallic tube connections for fluid power and general use — Part 2: 37° flared fittings*

[14] ISO 8434-3, *Metallic tube connections for fluid power and general use — Part 3: O-ring face seal fittings*

[15] ISO 8434-6, *Metallic tube connections for fluid power and general use — Part 6: 60° cone connectors*

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

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

[18] ISO 9974-4, *Connections for general use and fluid power — Ports and stud ends with ISO 261 threads and elastomeric or metal-to-metal sealing — Part 4: Dimensions, design, test methods and requirements for external hex and internal hex port plugs*

[19] ISO 11926-2, *Connections for general use and fluid power — Ports and stud ends with ISO 725 threads and O-ring sealing — Part 2: Heavy-duty (S series) stud ends*

[20] ISO 11926-3, *Connections for general use and fluid power — Ports and stud ends with ISO 725 threads and O-ring sealing — Part 3: Light-duty (L series) stud ends*

[21] 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*

[22] ISO 12151-2, *Connections for hydraulic fluid power and general use — Hose fittings — Part 2: Hose fittings with ISO 8434-1 and ISO 8434-4, 24° cone connector ends with O-rings*

[23] ISO 12151-3, *Connections for hydraulic fluid power and general use — Hose fittings — Part 3: Hose fittings with ISO 6162 flange ends*

[24] ISO 12151-4, *Connections for hydraulic fluid power and general use — Hose fittings — Part 4: Hose fittings with ISO 6149 metric stud ends*

[25] ISO 12151-5, *Connections for hydraulic fluid power and general use — Hose fittings — Part 5: Hose fittings with ISO 8434-2, 37° flared ends*

[26] ISO 12151-6, *Connections for hydraulic fluid power and general use — Hose fittings — Part 6: Hose fittings with ISO 8434-6, 60° cone connector ends*

[27] ISO 14540, *Hydraulic fluid power — Dimensions and requirements for screw-to-connect quick-action couplings for use at a pressure of 72 MPa (720 bar)*

[28] ISO 14541, *Hydraulic fluid power — Dimensions and requirements for screw-to-connect type quick-action couplings for general purpose*

[29] ISO 14743, *Pneumatic fluid power — Push-in connectors for thermoplastic tubes*

[30] ISO 15171-1, *Connections for fluid power and general use — Hydraulic couplings for diagnostic purposes — Part 1: Coupling not for connection under pressure*

[31] ISO 15171-2, *Connections for fluid power and general use — Hydraulic couplings for diagnostic purposes — Part 2: Coupling with M16 × 2 end for connection under pressure*

[32] ISO 16028, *Hydraulic fluid power — Flush-face type, quick-action couplings for use at pressures of 20 MPa (200 bar) to 31,5 MPa (315 bar) — Specifications*

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