
**Metallic tube connections for fluid power
and general use —**

Part 1:
24° cone connectors

*Raccordements de tubes métalliques pour transmissions hydrauliques
et pneumatiques et applications générales —*

Partie 1: Raccords coniques à 24°



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ISO copyright office
Case postale 56 • CH-1211 Geneva 20
Tel. + 41 22 749 01 11
Fax + 41 22 749 09 47
E-mail copyright@iso.org
Web www.iso.org

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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.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

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.

ISO 8434-1 was prepared by Technical Committee ISO/TC 131, *Fluid power systems*, Subcommittee SC 4, *Connectors and similar products and components*.

This second edition of ISO 8434-1 cancels and replaces ISO 8434-1:1994 and ISO 8434-4:1995, of which it constitutes a technical revision.

ISO 8434 consists of the following parts, under the general title *Metallic tube connections for fluid power and general use*:

- *Part 1: 24° cone connectors*
- *Part 2: 37° flared connectors*
- *Part 3: O-ring face seal connectors*
- *Part 6: 60° cone connectors with or without O-ring*

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 may be conveyed under pressure.

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

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Metallic tube connections for fluid power and general use —

Part 1: 24° cone connectors

1 Scope

This part of ISO 8434 specifies the general and dimensional requirements for 24° cone connectors using cutting ring and O-ring seal cone (referred to as DKO) suitable for use with ferrous and non-ferrous tubes with outside diameters from 4 mm to 42 mm inclusive. These connectors are for use in fluid power and general applications within the limits of pressure and temperature specified in this part of ISO 8434.

They are intended for the connection of plain end tubes and hose fittings to ports in accordance with ISO 6149-1, ISO 1179-1 and ISO 9974-1. (See ISO 12151-2 for related hose fitting specification.)

These connectors provide full-flow connections in hydraulic systems operating to the working pressures shown in Table 1. Because many factors influence the pressure at which a system performs satisfactorily, these values are not to be understood as guaranteed minimums. For every application, sufficient testing will need to be conducted and reviewed by both the user and manufacturer to ensure that required performance levels are met.

NOTE 1 For new designs in hydraulic fluid power applications, see the requirements given in 9.6. Where the requirements of the application allow for the use of elastomeric seals, connector designs that conform to International Standards and incorporate elastomeric sealing are preferred.

NOTE 2 For use under conditions outside the pressure and/or temperature limits specified, see 5.4.

This part of ISO 8434 also specifies a performance and qualification test for these connectors.

2 Normative references

The following referenced documents are indispensable for the application 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.

ISO 48, *Rubber, vulcanized or thermoplastic — Determination of hardness (hardness between 10 IRHD and 100 IRHD)*

ISO 228-1:2000, *Pipe threads where pressure-tight joints are not made on the threads — Part 1: Dimensions, tolerances and designation*

ISO 261, *ISO general purpose metric screw threads — General plan*

ISO 965-1:1998, *ISO general-purpose metric screw threads — Tolerances — Part 1: Principles and basic data*

ISO 1127, *Stainless steel tubes — Dimensions, tolerances and conventional masses per unit length*

ISO 8434-1:2007(E)

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

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)*

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)*

ISO 3304, *Plain end seamless precision steel tubes — Technical conditions for delivery*

ISO 3305, *Plain end welded precision steel tubes — Technical conditions for delivery*

ISO 3601-3:2005, *Fluid power systems — O-rings — Part 3: Quality acceptance criteria*

ISO 4759-1:2000, *Tolerances for fasteners — Part 1: Bolts, screws, studs and nuts — Product grades A, B and C*

ISO 5598:1985, *Fluid power systems and components — Vocabulary*

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

ISO 6149-2, *Connections for hydraulic fluid power and general use — Ports and stud ends with ISO 261 metric threads and O-ring sealing — Part 2: Dimensions, design, test methods and requirements for heavy-duty (5 series) stud ends*

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

ISO 9227, *Corrosion tests in artificial atmospheres — Salt spray tests*

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

ISO 9974-2, *Connections for general use and fluid power — Ports and stud ends with ISO 261 threads with elastomeric or metal-to-metal sealing — Part 2: Stud ends 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 or metal-to-metal sealing — Part 3: Stud ends with metal-to-metal sealing (type B)*

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*

ISO 19879:2005, *Metallic tube connections for fluid power and general use — Test methods for hydraulic fluid power connections*