SLOVENSKI STANDARD
SIST EN ISO 8434-1:2018

01-november-2018

Nadomešča:
SIST EN ISO 8434-1:2007
SIST EN ISO 8434-1:2007/AC:2009

Kovinski cevni priključki za fluidno tehniko in za splošno uporabo - 1. del: Stožčasti priključki z naklonom 24° (ISO 8434-1:2018, popravljena različica 2018-10)

Metallic tube connections for fluid power and general use - Part 1: 24° cone connectors (ISO 8434-1:2018, Corrected version 2018-10)

Metallische Rohrverschraubungen für Fluidtechnik und allgemeine Anwendung - Teil 1: Verschraubungen mit 24°-Konus (ISO 8434-1:2018, korrigierte Fassung 2018-10)

Raccordements de tubes métalliques pour transmissions hydrauliques et pneumatiques et applications générales - Partie 1: Raccords coniques à 24° (ISO 8434-1:2018, Version corrigée 2018-10)

Ta slovenski standard je istoveten z: **EN ISO 8434-1:2018**

ICS:

23.100.40 Cevna napeljava in sklopke Piping and couplings

SIST EN ISO 8434-1:2018 **en,fr,de**

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN ISO 8434-1

August 2018

ICS 23.100.40

Supersedes EN ISO 8434-1:2007

English Version

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This European Standard was approved by CEN on 4 July 2018.

This European Standard was corrected and reissued by the CEN-CENELEC Management Centre on 19 December 2018.

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EUROPÄISCHES KOMITEE FÜR NORMUNG

CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

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European foreword

This document (EN ISO 8434-1:2018) has been prepared by Technical Committee ISO/TC 131 "Fluid power systems" in collaboration with Technical Committee ECISS/TC 110 “Steel tubes, and iron and steel fittings” the secretariat of which is held by UNI.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by February 2019, and conflicting national standards shall be withdrawn at the latest by February 2019.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN shall not be held responsible for identifying any or all such patent rights.

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Endorsement notice

The text of ISO 8434-1:2018, Corrected version 2018-10 has been approved by CEN as EN ISO 8434-1:2018 without any modification.

INTERNATIONAL STANDARD

ISO 8434-1

Third edition
2018-07

Corrected version
2018-10

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°

Reference number
ISO 8434-1:2018(E)

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Published in Switzerland

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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).

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Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation on the voluntary nature of standards, 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.

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

This third edition cancels and replaces the second edition (ISO 8434-1:2007), which has been technically revised.

A list of all the parts in the ISO 8434 series, can be found on the ISO website.

This corrected version of ISO 8434-1:2018 incorporates the following corrections:

— Table 4: missing data in the Thread column of Series L and S has been inserted.

— Table 21: missing data in the s_1 column of Series L and S has been inserted.

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.

Metallic tube connections for fluid power and general use —

Part 1:
24° cone connectors

1 Scope

This document 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 document.

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 a 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 intended to be understood as guaranteed minimums. For every application, sufficient testing is meant 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 document also specifies a performance and qualification test for these connectors.

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.

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

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

ISO 724, *ISO general-purpose metric screw threads — Basic dimensions*

ISO 965-1, *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 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, *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 5598:2008, *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 (S 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 19879, *Metallic tube connections for fluid power and general use — Test methods for hydraulic fluid power connections*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 5598 and the following apply.

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

3.1
connector
device that connects tubes, hoses or pipes to each other or to components

[SOURCE: ISO 5598:2008, 3.2.122]

3.2
connection
assembly of parts belonging to piping

3.3
fastening thread
terminal thread of a complete connector

3.4
run
two principal, axially aligned outlets of a tee connector or cross connector

[SOURCE: ISO 5598:2008, 3.2.632]

3.5
branch
side outlet(s) of a tee connector or cross connector

[SOURCE: ISO 5598:2008, 3.2.81]

3.6
chamfer
removal of a conical portion at the entrance of a thread, used to assist assembly and prevent damage to the start of the thread

3.7
face-to-face dimension
distance between the two parallel faces of axially aligned outlets of a connector

3.8
face-to-centre dimension
distance from the face of an outlet to the central axis of an angularly disposed outlet

3.9
assembly torque
torque required to achieve a satisfactory final connection

[SOURCE: ISO 5598:2008, 3.2.46]

3.10
maximum working pressure
highest pressure at which a system or sub-system is intended to operate in steady-state operating conditions

Note 1 to entry: For components and piping see also related term “rated pressure”.

[SOURCE: ISO 5598:2008, 3.2.429, modified — NOTE 2 deleted.]

4 Materials

4.1 General

Figures 1 and 2 show the cross-sections and component parts of typical 24° cone connectors.