

INTERNATIONAL
STANDARD

ISO
8434-2

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

Part 2:
37° flared fittings

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

Partie 2: Raccords évasés à 37°



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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.

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.

International Standard ISO 8434-2 was prepared jointly by Technical Committees ISO/TC 5, *Ferrous metal pipes and metallic fittings* and ISO/TC 131, *Fluid power systems*, Subcommittee SC 4, *Connectors and similar products and components*.

This first edition, together with ISO 8434-1, cancels and replaces ISO 8434:1986, which has been technically revised.

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

- Part 1: 24 degree compression fittings
- Part 2: 37 degree flared fittings
- Part 3: O-ring face seal fittings
- Part 4: 24 degree cone connectors with O-ring weld-on nipples
- Part 5: Test methods for threaded hydraulic fluid power connectors

Annex A of this part of ISO 8434 is for information only.

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 (fittings), 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 2: 37° flared fittings

1 Scope

This part of ISO 8434 specifies general and dimensional requirements for the design and performance of 37° flared fittings which are suitable for use with ferrous and non-ferrous tubes with outside diameters from 6 mm to 50 mm, inclusive. These fittings 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 tubes and hose fittings to ports in accordance with ISO 6149-1, ISO 1179-1 and ISO 11926-1.

NOTES

- 1 For new designs in hydraulic fluid power applications, see the requirements given in 9.6.
- 2 For use under conditions outside the pressure and/or temperature limits specified, see 5.4.

2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this part of ISO 8434. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this

part of ISO 8434 are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO 228-1:1994, *Pipe threads where pressure-tight joints are not made on the threads — Part 1: Dimensions, tolerances and designation.*

ISO 261:—¹⁾, *ISO general-purpose metric screw threads — General plan.*

ISO 263:1973, *ISO inch screw threads — General plan and selection for screws, bolts and nuts — Diameter range 0.06 to 6 in.*

ISO 274:1975, *Copper tubes of circular section — Dimensions.*

ISO 286-2:1988, *ISO system of limits and fits — Part 2: Tables of standard tolerance grades and limit deviations for holes and shafts.*

ISO 725:1978, *ISO inch screw threads — Basic dimensions.*

ISO 1127:1992, *Stainless steel tubes — Dimensions, tolerances and conventional masses per unit length.*

1) To be published. (Revision of ISO 261:1973)

ISO 1179-1:—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 1: Threaded ports.*

ISO 1179-3:—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 3: Light-duty (L series) stud ends with sealing by O-ring with retaining ring (types G and H).*

ISO 3304:1985, *Plain end seamless precision steel tubes — Technical conditions for delivery.*

ISO 4759-1:1978, *Tolerances for fasteners — Part 1: Bolts, screws and nuts with thread diameters between 1,6 (inclusive) and 150 mm (inclusive) and product grades A, B and C.*

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

ISO 5864:1993, *ISO inch screw threads — Allowances and tolerances.*

ISO 6149-1:1993, *Connections for fluid power and general use — Ports and stud ends with ISO 261 threads and O-ring sealing — Part 1: Ports with O-ring seal in truncated housing.*

ISO 6149-3:1993, *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 6508:1986, *Metallic materials — Hardness test — Rockwell test (scales A - B - C - D - E - F - G - H - K).*

ISO 8434-1:1994, *Metallic tube connections for fluid power and general use — Part 1: 24 degree compression fittings.*

ISO 9227:1990, *Corrosion tests in artificial atmospheres — Salt spray tests.*

ISO 11926-1:—²⁾, *Connections for general use and fluid power — Ports and stud ends with ISO 725 threads and O-ring sealing — Part 1: Threaded ports.*

ISO 11926-3:—²⁾, *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.*

²⁾ To be published.

3 Definitions

For the purposes of this part of ISO 8434, the definitions given in ISO 8434-1 and ISO 5598 and the following definitions apply.

3.1 adjustable stud end: Stud end connector that allows for fitting orientation through 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 non-adjustable stud end: Stud end connector that does not require specific orientation before final tightening of the connection because it is only used on straight fittings.

4 Requirements for materials

Figure 1 shows the cross-section and component parts of a typical fitting.

4.1 Fitting bodies

Bodies shall be manufactured from carbon steel, stainless steels or copper alloys which will provide the minimum requirements for the pressure/temperature ratings specified in clause 5. They shall have characteristics which make them suitable for use with the fluid to be conveyed and to provide an effective joint.

4.2 Nuts

Nuts to be used with carbon steel bodies shall be made of carbon steel and those for use with stainless steel bodies shall be made of stainless steel, unless otherwise specified. Nuts to be used with copper alloy bodies shall be made of a material similar to the bodies.

4.3 Sleeves

Sleeves shall be manufactured from a material similar to the bodies.