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Connections for hydraulic fluid power and general use — Hose fittings —

Part 6: Hose fittings with ISO 8434-6 60° cone ends

Raccordements pour transmissions hydrauliques et applications générales — Flexibles de raccordement —

Partie 6: Flexibles avec embouts à cône à 60° conformes à l'ISO 8434-6

ICS 23.040.70; 23.100.40

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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.

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 12151-6 was prepared by Technical Committee ISO/TC 131, *Fluid power systems*, Subcommittee SC 4, *Connectors and similar products and components*.

ISO 12151 consists of the following parts, under the general title *Connections for hydraulic fluid power and general use — Hose fittings*:

- Part 1: *Hose fittings with ISO 8434-3 O-ring face seal ends*
- Part 2: *Hose fittings with ISO 8434-1 and ISO 8434-4 24° cone connector end with O-rings*
- Part 3: *Hose fittings with ISO 6162 flange ends*
- Part 4: *Hose fittings with ISO 6149 metric stud ends*
- Part 5: *Hose fittings with ISO 8434-2 37° flared ends*
- Part 6: *Hose fittings with ISO 8434-6 60° cone ends*

Introduction

In hydraulic fluid power systems, power is transmitted and controlled through a liquid under pressure within an enclosed circuit. In general applications, the fluid may be conveyed under pressure.

Components are connected through their ports by stud ends on fluid conductor connectors to tubes or pipes or to hose fittings and hoses.

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Connections for hydraulic fluid power and general use — Hose fittings —

Part 6: Hose fittings with ISO 8434-6 60° cone ends

1 Scope

This part of ISO 12151 specifies the general and dimensional requirements for the design and performance of hose fittings made of carbon steel with 60° cone ends for hose sizes 5 to 51 inclusive, in accordance with ISO 4397.

These hose fittings (see Figure 1 for a typical example) are for use in hydraulic fluid power systems with hose that meets the requirements of the respective hose standards and in general applications with suitable hose.

NOTE 1 Other materials may be supplied as agreed between the manufacturer and user.

NOTE 2 For hose fittings used in hydraulic and pneumatic braking systems on road vehicles (as defined in the scope of ISO/TC 22), see ISO 4038 and ISO 4039.

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

ISO 4397, *Fluid power systems and components — Connectors and associated components — Nominal outside diameters of tubes and nominal inside diameters of hoses*

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

ISO 5598¹⁾, *Fluid power systems and components — Vocabulary*

ISO 8434-6²⁾, *Metallic tube connections for fluid power and general use — Part 6: 60° cone connectors with or without O-ring*

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

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 part of ISO 12151, the terms and definitions given in ISO 5598 shall apply.

1) Under revision

2) To be published

4 Performance requirements

Hose assemblies shall meet the performance requirements specified in the appropriate hose specification without leakage or failure when tested in accordance with ISO 6605.

The rated (working) pressure of the hose assembly shall be the lower of the rated pressure given for its size in ISO 8434-6 and the working pressure in the relevant hose specification.

The working pressure of the hose fitting shall be verified through testing conducted in accordance with ISO 19879, but the entire hose assembly shall be tested in accordance with ISO 6605. During the cyclic endurance test, the hose fitting shall be subjected to the number of cycles specified in the relevant hose specification.

5 Designation of hose fittings

5.1 Hose fittings shall be designated by an alphanumeric code to facilitate ordering. They shall be designated by the phrase "Hose fitting," followed by ISO 12151-6, followed by a spaced hyphen, then the connection end type, shape and sealing style letter symbols (see 5.4) followed by another spaced hyphen, the 60° cone connector end size (nominal tube outside diameter in accordance with ISO 8434-6) and the hose size (nominal hose inside diameter in accordance with ISO 4397), each separated by a multiplication symbol (×).

A swivel hose fitting O-ring sealing with 45° elbow, for 12 mm nominal OD tubing and 12,5 mm nominal ID hose is designated as follows:

EXAMPLE

Hose fitting ISO 12151-6 - SWE45B - 12 × 12,5

5.2 The letter symbol designation of the hose fitting shall consist of the connection end type, immediately followed by the shape of the fitting and the nut style, where applicable.

5.3 Tube ends are assumed to be male and thus do not need to be included in the code. However, if another end is involved, it shall be designated.

5.4 The following letter symbols shall be used:

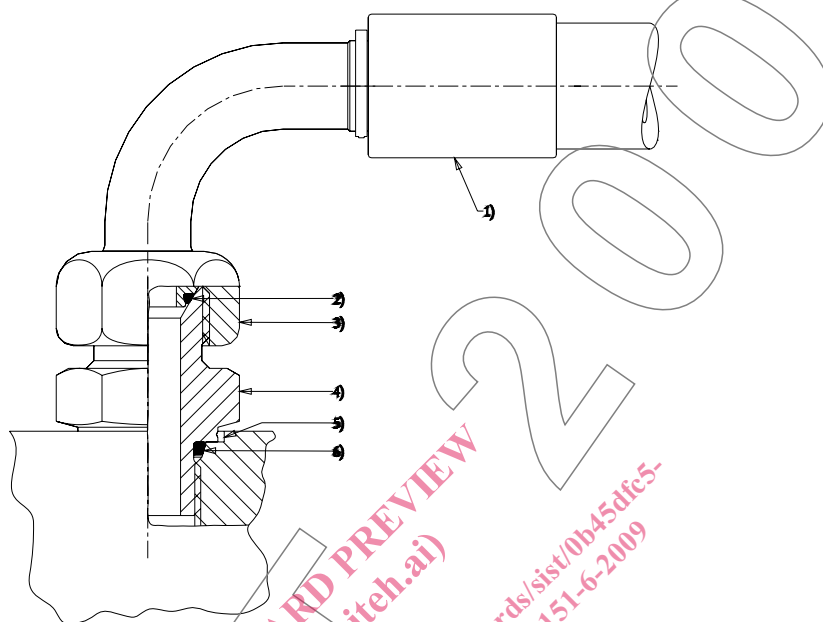
Connection end type	Letter
Swivel	SW

Shape	Letter
Straight	S
90° elbow	E
45° elbow	E45

Sealing	Style
O-ring	A
Non O-ring	B

6 Design

6.1 Figure 1 shows a typical example of a hose fitting with a 60° cone connection end.



Key

- 1 Hose fitting
- 2 O-ring seal
- 3 Nut
- 4 Straight stud connector conforming to ISO 8434-6
- 5 Port conforming to ISO 6149-1
- 6 O-ring seal

Figure 1 — Typical example of hose fitting with 60° cone connection

6.2 Hose fitting dimensions shown in Figures 2 through 5 shall conform to the dimensions in Tables 1 through 4 and to the relevant dimensions in ISO 8434-6.

6.3 Hex tolerances across flats shall be in accordance with ISO 4759-1, product grade C. Minimum across corner hex diameters are 1,092 times the nominal width across flats. The minimum side flat is 0,43 times the nominal width across flats.

6.4 Angular tolerances on axes of ends of elbows shall be $\pm 3^\circ$ for all sizes.

6.5 Details of contour shall be as chosen by the manufacturer, provided that the dimensions given in Tables 1 through 4 are maintained.

6.6 The screw threads on the connection ends of the hose fittings shall be inch screw threads in accordance with ISO 228-1.