
**Fluid power connectors and associated
components — Nominal outside
diameters of tubes and nominal hose
sizes**

*Raccords et éléments associés dans les transmissions hydrauliques et
pneumatiques — Diamètres extérieurs nominaux des tubes et tailles
nominales des tuyaux flexibles*

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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 4397 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 4397:1993), which has been technically revised.

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Introduction

In fluid power systems, power is transmitted and controlled through a fluid (liquid or gas) under pressure within an enclosed circuit. Components are interconnected through their ports and associated fluid conductor connector ends. Tubes are rigid or semi-rigid conductors; hoses are flexible conductors.

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Fluid power connectors and associated components — Nominal outside diameters of tubes and nominal hose sizes

1 Scope

This International Standard specifies information on the nominal outside diameters of rigid or semi-rigid tubing and nominal hose sizes to be used with hydraulic and pneumatic fluid power connectors and associated components:

- a) nominal outside diameters for rigid or semi-rigid tubes, irrespective of material composition, used in fluid power;
- b) a list of nominal sizes for hoses made of rubber or plastic used in fluid power.

NOTE Actual outside diameters and tolerances for steel tubes can be found in ISO 3304 and ISO 3305; actual dimensions and tolerances for hose inside diameters can be found in ISO 1307.

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 5598, *Fluid power systems and components — Vocabulary*

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3 Terms and definitions

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

4 Nominal outside diameters of tubes and nominal hose sizes

Nominal outside diameters of tubes shall be selected from the diameters given in Table 1. Nominal hose sizes shall be selected from the sizes given in Table 2.

Table 1 — Nominal outside diameters of tubes

Dimensions in millimetres

Nominal outside diameters of tubes
3
4
5
6
8
10
12
15
16
18
20
22
25
28
30
32
35
38
42
50
60
75
90
100
115
140

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Table 2 — Nominal hose sizes

Dimensions in millimetres

Nominal hose sizes
3,2
4
5
6,3
8
10
12,5
16
19
25
31,5
38
51
63
76
90
100
125
150

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5 Identification statement (reference to this International Standard)

Use the following statement in test reports, catalogues and sales literature when electing to comply with this International Standard.

“Nominal outside diameters of tubes and/or nominal hose sizes are in accordance with ISO 4397:2011, *Fluid power connectors and associated components — Nominal outside diameters of tubes and nominal hose sizes.*”

Bibliography

- [1] ISO 1307, *Rubber and plastics hoses — Hose sizes, minimum and maximum inside diameters, and tolerances on cut-to-length hoses*
- [2] ISO 3304, *Plain end seamless precision steel tubes — Technical conditions for delivery*
- [3] ISO 3305, *Plain end welded precision steel tubes — Technical conditions for delivery*

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