INTERNATIONAL STANDARD

# ISO 4397

Second edition
1993-02-15



# Fluid power systems and components — Connectors and associated components — Nominal outside diameters of tubes and nominal inside diameters of hoses

*Transmissions hydrauliques et pneumatiques — Raccords et éléments associés — Diamètres extérieurs nominaux des tubes et diamètres intérieurs nominaux des tuyaux flexibles*

Reference number
ISO 4397:1993(E)

## 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 4397 was prepared by Technical Committee ISO/TC 131, *Fluid power systems*, Sub-Committee SC 4, *Connectors and similar products and components*.

This second edition cancels and replaces the first edition (ISO 4397:1978), of which it constitutes a minor revision.





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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 fitting ends. Tubes are rigid or semi-rigid conductors; hoses are flexible conductors.

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# Fluid power systems and components — Connectors and associated components — Nominal outside diameters of tubes and nominal inside diameters of hoses



## 1 Scope

This International Standard specifies two series of diameters for use within hydraulic and pneumatic fluid power connectors and associated components:

a) a series of nominal outside diameters for hydraulic and pneumatic rigid or semi-rigid tubes, irrespective of material composition;

b) a series of nominal inside diameters for hydraulic and pneumatic hoses made of rubber or plastic.

## 2 Normative reference

The following standard contains provisions which, through reference in this text, constitute provisions of this International Standard. At the time of publication, the edition indicated was valid. All standards are subject to revision, and parties to agreements based on this International Standard are encouraged to investigate the possibility of applying the most recent edition of the standard indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

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

## 3 Definitions

For the purposes of this International Standard, the definitions given in ISO 5598 apply. For the convenience of users of this International Standard, the following definitions are reproduced from ISO 5598.

**3.1 rigid tubes; semi-rigid tubes:** Pipelines (conductors) of metal or plastic, used for connecting fixed assemblies.

**3.2 flexible hose:** Flexible pipeline (conductor) usually of wire-reinforced rubber or plastic.

## 4 Dimensions

Nominal outside diameters of tubes and nominal inside diameters of hoses shall be selected from table 1.

**Table 1 — Series of nominal outside diameters of tubes and nominal inside diameters of hoses**

Dimensions in millimetres

| Tubes, outside diameters | Hoses, inside diameters |
|---|---|
| 4 | 3,2 |
| 5 | 5 |
| 6 | 6,3 |
| 8 | 8 |
| 10 | 10 |
| 12 | 12,5 |
| 14[1)] | 16 |
| 15 | 19[2)] |
| 16 | 20 |
| 18 | 25 |
| 20 | 31,5 |
| 22 | 38[2)] |
| 25 | 40 |
| 28 | 50 |
| 30 | 51[2)] |
| 32 | |
| 34[1)] | |
| 35 | |
| 38 | |
| 40[1)] | |
| 42 | |
| 50 | |

1) Not to be used for new designs.
2) For hydraulic purpose only.

## 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:

"Outside diameters of tubes and inside diameters of hoses are in accordance with ISO 4397:1993, *Fluid power systems and components — Connectors and associated components — Nominal outside diameters of tubes and nominal inside diameters of hoses.*"