
Fluid power systems — O-rings —

**Part 2:
Housing dimensions for general
applications**

*Transmissions hydrauliques et pneumatiques — Joints toriques —
Partie 2: Dimensions des logements pour applications générales*





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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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For an explanation on the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the WTO principles in the Technical Barriers to Trade (TBT) see the following URL: [Foreword - Supplementary information](#)

The committee responsible for this document is ISO/TC 131, *Fluid power systems*, Subcommittee SC 7, *Sealing devices*.

This second edition cancels and replaces the first edition (ISO 3601-2:2008), which has been technically revised.

ISO 3601 consists of the following parts, under the general title *Fluid power systems — O-rings*:

- *Part 1: Inside diameters, cross-sections, tolerances and designation codes*
- *Part 2: Housing dimensions for general applications*
- *Part 3: Quality acceptance criteria*
- *Part 4: Anti-extrusion rings (back-up rings)*
- *Part 5: Specification of elastomeric materials for industrial applications*

Introduction

In fluid power systems, power is transmitted and controlled through a fluid (liquid or gas) under pressure within an enclosed circuit. To avoid leakage or to seal different chambers of a component from each other, sealing devices are used. O-rings are one type of sealing devices. To seal properly, an O-ring has to be used in an appropriate housing for the application.

[Annex A](#) and [Annex B](#) of this part of ISO 3601 are for information only.

Fluid power systems — O-rings —

Part 2: Housing dimensions for general applications

1 Scope

This part of ISO 3601 specifies the housing (gland) dimensions for class A O-rings for general industrial applications conforming to ISO 3601-1, as well as housing dimensions for class B O-rings used on selected metric-dimensioned hardware, e.g. fluid power cylinder bores and piston rods. These O-rings are for use in general hydraulic and pneumatic applications without and with anti-extrusion rings (back-up rings). The dimensions of the O-rings (d_1 and d_2), size codes (SC) and tolerances conform to ISO 3601-1.

Housing dimensions for the O-rings intended for aerospace applications that are specified in ISO 3601-1 are addressed in [Annex A](#).

NOTE 1 It is expected that O-ring housing dimensions for special applications be agreed upon between the O-ring manufacturer and the user.

NOTE 2 The terms “housing”, “groove” and “gland” are interchangeable, and their usage is a matter of local convenience. In this part of ISO 3601, the term “housing” is used exclusively.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 3601-1:2012, *Fluid power systems — O-rings — Part 1: Inside diameters, cross-sections, tolerances and designation codes*

ISO 3601-4, *Fluid power systems — O-rings — Part 4: Anti-extrusion rings (back-up rings)*

ISO 5598, *Fluid power systems and components — Vocabulary*

ISO 8015, *Geometrical product specifications (GPS) — Fundamentals — Concepts, principles and rules*

3 Terms and definitions

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

4 Symbols

For the purposes of this document, the following symbols are used in this part of ISO 3601.

A_{cs1} cross-sectional area of the O-ring

A_{cs2} cross-sectional area of the O-ring housing

a roughness of the side surface of the O-ring housing

b_x width of the O-ring housing

b_1 width of the O-ring housing without an anti-extrusion ring (back-up ring)