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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

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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 document 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 of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT), see www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/TC 131, *Fluid power systems*, Subcommittee SC 7, *Sealing devices*.

This third edition cancels and replaces the second edition (ISO 3601-2:2016), which has been technically revised.

The main changes are as follows:

— comprehensive extension of listed housing dimensions for metric bore sizes (Tables 4 and 6);

— volumetric calculation of housing fill instead of calculation with cross-sectional areas (Annex B);

— correction in calculation of the cross-sectional reduction for the effective compression (5.6.2).

A list of all parts in the ISO 3601 series can be found on the ISO website.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

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.

Fluid power systems — O-rings —

Part 2: Housing dimensions for general applications

1 Scope

This document specifies the housing 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.

This document also addresses different design approaches in industry, and this is reflected in the table structures for hardware dimensions. Using the O-ring as a starting point to design the optimal hardware dimensions is reflected in Tables 3, 5, and 8. Using fixed hardware dimensions (i.e. bore/rod) and choosing the most appropriate O-ring to fit is reflected in Tables 4 and 6.

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 term “housing”, in this document, is used to describe the groove or cavity, into which the O-ring is fitted, and the mating surface, which between them confine the O-ring.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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 3601-1, *Fluid power systems — O-rings — Part 1: Inside diameters, cross-sections, tolerances and designation codes*

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

3 Terms and definitions

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

ISO and IEC maintain terminology databases for use in standardization at the following addresses:

— ISO Online browsing platform: available at https://www.iso.org/obp

— IEC Electropedia: available at https://www.electropedia.org/

4 Symbols

The following letter symbols are used in this document.