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Fluid power systems — O-rings —
Part 3:
Quality acceptance criteria

Transmissions hydrauliques et pneumatiques — Joints toriques —
Partie 3: Critères de qualité



Reference number
ISO 3601-3:2005(E)

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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 3601-3 was prepared jointly by Technical Committee ISO/TC 20, *Aircraft and space vehicles*, Subcommittee SC 10, *Aerospace fluid systems and components*, and by Technical Committee ISO/TC 131, *Fluid power systems*, Subcommittee SC 7, *Sealing devices*.

This second edition cancels and replaces the first edition (ISO 3601-3:1987), which has been technically revised.

This corrected version of ISO 3601-1:2005 incorporates the following corrections:

- Table 2, right hand column title changed from “**Grade N O-rings Cross-section d_2** ” to “**Grade S O-rings Cross-section d_2** ”;
- Table 3, right hand column title changed from “**Grade N O-rings Cross-section d_2** ” to “**Grade CS O-rings Cross-section d_2** ”;

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

- *Part 1: Inside diameters, cross-sections, tolerances and size identification code*
- *Part 3: Quality acceptance criteria*
- *Part 5: Suitability of elastomeric materials for industrial applications*

The following parts are in preparation:

- *Part 2: Housing dimensions for general applications*
- *Part 4: Anti-extrusion devices (back-up rings)*

Introduction

In fluid power systems, power is transmitted and controlled through a fluid (liquid or gas) under pressure within an enclosed circuit. Components must be designed to meet these requirements under varying conditions. Testing of components to meet performance requirement provides users a basis of assurance for determining design application and for checking component compliance with their stated requirements.

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Fluid power systems — O-rings —

Part 3: Quality acceptance criteria

1 Scope

This part of ISO 3601 lays down the quality acceptance criteria of O-rings used in fluid systems, the dimensions of which are standardized in ISO 3601-1, ISO 16031-1 and ISO 16031-2.

This part of ISO 3601 also defines and classifies surface imperfections on O-rings and specifies maximum acceptable limits for these imperfections.

This part of ISO 3601 is also applicable to O-rings to be used in aerospace construction.

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 3601-1, *Fluid power systems — O-rings — Part 1: Inside diameters, cross-sections, tolerances and size identification code*

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

ISO 16031-1, *Aerospace fluid systems — O-rings, inch series: Inside diameters and cross sections, tolerances and size-identification codes — Part 1: Close tolerances for hydraulic systems*

ISO 16031-2, *Aerospace fluid systems — O-rings, inch series: Inside diameters and cross sections, tolerances and size-identification codes — Part 2: Standard tolerances for non-hydraulic systems*

3 Terms, definitions and symbols

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

3.1

backrind

longitudinal imperfection in which the rubber adjacent to the flash line shrinks below the level of the moulding and has a “U”-like or “W”-like cross section with the flash frequently being ragged or torn

[see Figure 1]

3.2

combined flash

combination of offset, flash and parting line projection