SLOVENSKI STANDARD
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Fluidna tehnika ï Hidravlika ï Filtrski vloģki ï Overjanje kakovosti izdelave in ugotavljanje tlaka zaļetnega mehurjenja

Hydraulic fluid power -- Filter elements -- Verification of fabrication integrity and determination of the first bubble point

Transmissions hydrauliques -- Éléments filtrants -- Vérification de la conformité de fabrication et détermination du point de première bulle

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Hydraulic fluid power — Filter elements — Verification of fabrication integrity and determination of the first bubble point

Transmissions hydrauliques — Éléments filtrants — Vérification de la conformité de fabrication et détermination du point de première bulle

Reference number
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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 2942 was prepared by Technical Committee ISO/TC 131, *Fluid power systems*, Subcommittee SC 6, *Contamination control*.

This fourth edition cancels and replaces the third edition (ISO 2942:1994) which has been technically revised.

Introduction

In hydraulic fluid power systems, power is transmitted and controlled through a liquid under pressure within an enclosed circuit. Filters maintain fluid cleanliness by removing insoluble contaminants.

The ability of a filter to achieve and maintain the required level of performance depends, among other parameters, upon its filtration rating and structural integrity. Any imperfections in the structure, either through poor manufacturing techniques or lack of strength, will allow bypassing of unfiltered fluid.

The integrity of the element after manufacture can be evaluated using a non-destructive filter integrity test. This test determines whether flaws are present which would allow the fluid to bypass the filtering process and provides for quality control. The test is also used to evaluate whether damage has been sustained by the element during both service and laboratory tests.

The first bubble point test is used for investigative product development and/or production process evaluation. The acceptability of filtration performance cannot be determined by the first bubble point test.

Hydraulic fluid power — Filter elements — Verification of fabrication integrity and determination of the first bubble point

1 Scope

This International Standard specifies a bubble-point test method applicable to filter elements used in hydraulic fluid power systems. It can be used either to verify the fabrication integrity of a filter element (by checking the absence of bubbles) or to permit the localization of the largest pore of the filter element by determining the first bubble point.

Verification of fabrication integrity defines the acceptability of the filter elements for further use or testing.

The first bubble point is established through continuation of the fabrication integrity test. It is under no circumstances a functional characteristic of a filter element; in particular, it cannot be used for extrapolation to the concepts of filtration rating, efficiency or retention capacity and should be used for information only.

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*

ISO 6295, *Petroleum products — Mineral oils — Determination of interfacial tension of oil against water — Ring method.*

3 Terms and definitions

For the purposes of this International Standard, the definitions given in ISO 5598 and the following apply.

3.1
filter element
porous device that performs the actual process of filtration

NOTE This definition differs from that given in ISO 5598, which reads: “The component which ensures the retention of contaminant.”

3.2
fabrication integrity
physical acceptability of a filter element to meet the specification designated by the filter manufacturer

3.3
first bubble point
pressure at which the first bubble stream appears when a filter element is tested using the method specified in this International Standard

NOTE In the absence of manufacturing defects, this value is indicative of the largest pore of the filtering medium.