



SLOVENSKI STANDARD
SIST ISO 3968:2002
01-julij-2002

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Hydraulic fluid power -- Filters -- Evaluation of differential pressure versus flow characteristics

Transmissions hydrauliques -- Filtres -- Évaluation de la perte de charge en fonction du débit

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ICS:

23.100.60 ~~04c 2A^•} 3aa~~ Filters, seals and contamination of fluids
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INTERNATIONAL STANDARD

**ISO
3968**

Second edition
2001-12-15

Hydraulic fluid power — Filters — Evaluation of differential pressure versus flow characteristics

*Transmissions hydrauliques — Filtres — Évaluation de la perte de charge
en fonction du débit*

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ISO 3968:2001(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.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 3.

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 International Standard may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

ISO 3968 was prepared by Technical Committee ISO/TC 131, *Fluid power systems*, Subcommittee SC 6, *Contamination control*.

This second edition cancels and replaces the first edition (ISO 3968:1981), which has been technically revised. Its primary objective is to bring procedures and equipment as close as possible to those of ISO 16889. It also integrates some recommendations of ISO 9110-1^[1] and ISO 9110-2^[2], which deal with pressure measurements, and of other standards pertaining to the subject matter.

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Introduction

In hydraulic fluid power systems, power is transmitted and controlled through a fluid under pressure circulating within a closed circuit. Filters maintain the cleanliness of the fluid by retaining the insoluble contaminants.

Hydraulic filters normally include a housing that serves as the pressure-containing vessel to direct the flow of fluid through a filter element that separates contaminants from the test fluid.

In operation, fluid flowing through a filter meets resistance due to kinetic and viscous effects. The pressure required to overcome this resistance and to maintain flow is known as the differential pressure. The differential pressure is the total pressure difference observed between the filter inlet port and outlet port and represents the sum of the losses recorded in the housing and filter element.

Factors which affect clean filter differential pressure are fluid viscosity, fluid specific gravity, flow rate, filter element media type and construction, as well as housing design.

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Hydraulic fluid power — Filters — Evaluation of differential pressure versus flow characteristics

1 Scope

This International Standard specifies a procedure for evaluating differential pressure versus flow characteristics of hydraulic filters and constitutes a basis for agreement between the filter manufacturer and user.

It also specifies a method for measurement of the differential pressure generated at different flow rates and viscosities by the relevant parts of a filter assembly, that is the housing, the filter element and any valves contained within the housing that are in the flow stream.

2 Normative references

The following normative documents contain provisions which, through reference in this text, constitute provisions of this International Standard. For dated references, subsequent amendments to, or revisions of, any of these publications do not apply. However, parties to agreements based on this International Standard are encouraged to investigate the possibility of applying the most recent editions of the normative documents indicated below. For undated references, the latest edition of the normative document referred to applies. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO 1219-1, *Fluid power systems and components — Graphic symbols and circuit diagrams — Part 1: Graphic symbols*

ISO 3448, *Industrial liquid lubricants — ISO viscosity classification*

ISO 4021, *Hydraulic fluid power — Particulate contamination analysis — Extraction of fluid samples from lines of an operating system*

ISO 4406, *Hydraulic fluid power — Fluids — Method for coding the level of contamination by solid particles*

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

ISO 16889, *Hydraulic fluid power filters — Multi-pass method for evaluating filtration performance of a filter element*

3 Terms and definitions

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

3.1

filter rated flow rate

flow rate recommended by the filter manufacturer for a specified kinematic viscosity

3.2

viscosity index

empirical measure of the viscosity/temperature characteristics of a fluid

NOTE The smaller the change in viscosity within a given temperature range, the higher the viscosity index.