INTERNATIONAL STANDARD

ISO 10770-3

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Hydraulic fluid power — Electrically modulated hydraulic control valves —

Part 3: Test methods for pressure control valves

Transmissions hydrauliques — Distributeurs hydrauliques à modulation électrique —

Partie 3: Méthodes d'essai pour distributeurs de commande de pression

Reference number
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ISO copyright office
Case postale 56 • CH-1211 Geneva 20
Tel. + 41 22 749 01 11
Fax + 41 22 749 09 47
E-mail copyright@iso.org
Web www.iso.org

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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 10770-3 was prepared by Technical Committee ISO/TC 131, *Fluid power systems*, Subcommittee SC 8, *Product testing*.

ISO 10770 consists of the following parts, under the general title *Hydraulic fluid power — Electrically modulated hydraulic control valves*:

— *Part 1: Test methods for four-way directional flow control valves*

— *Part 2: Test methods for three-way directional flow control valves*

— *Part 3: Test methods for pressure control valves*

Introduction

This part of ISO 10770 describes methods of testing electrohydraulic pressure relief and pressure reducing valves. These types of electrohydraulic valves prevent the pressure in a hydraulic system rising above a level defined or set by an electrical input signal.

Relief valves are used to control the pressure in a closed volume by increasing the flow out of the volume if the pressure exceeds the set pressure level. The excess flow is dumped directly to a tank.

Reducing valves are used to control the pressure in a closed volume by restricting the flow into the volume if the pressure exceeds the set pressure level.

The design of the system and the position of the valve within the system dictates which type of valve is appropriate to use.

This part of ISO 10770 has been prepared with the intention of improving the uniformity of valve testing and hence the consistency of recorded valve performance data so that these data can be used for system design, regardless of the data source.

Hydraulic fluid power — Electrically modulated hydraulic control valves —

Part 3: Test methods for pressure control valves

1 Scope

This part of ISO 10770 describes test methods for determining the performance characteristics of electrically modulated hydraulic pressure control valves.

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 1219-1, *Fluid power systems and components — Graphic symbols and circuit diagrams — Part 1: Graphic symbols for conventional use and data-processing applications*

ISO 3448:1992, *Industrial liquid lubricants — ISO viscosity classification*

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

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

ISO 6743-4, *Lubricants, industrial oils and related products (Class L) — Classification — Part 4: Family H (Hydraulic systems)*

ISO 9110-1:1990, *Hydraulic fluid power — Measurement techniques — Part 1: General measurement principles*

ISO 10771-1, *Hydraulic fluid power — Fatigue pressure testing of metal pressure-containing envelopes — Part 1: Test method*

IEC 60617-DB, *Graphical symbols for diagrams*

3 Terms, definitions and symbols

3.1 Terms and definitions

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

3.1.1
electrically modulated pressure control valve
valve that limits the pressure in a hydraulic system to a level that is continuously variable and proportional to an electrical input signal