
**Hydraulic fluid power — Electrically
modulated hydraulic control valves —**

Part 1:

**Test methods for four-way directional flow
control valves**

*Transmissions hydrauliques — Distributeurs hydrauliques à modulation
électrique —*

Partie 1: Méthodes d'essai pour distributeurs à quatre voies



Contents

Page

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1	Scope	1
2	Normative references	1
3	Definitions	1
4	Symbols and units	2
5	Standard test conditions	3

4	Valve coil step response	30
5	Internal leakage versus input signal	30
6	Output flow versus input signal at constant valve pressure drop	31
7	Threshold characteristics	31
8	Metering test	32
9	Output flow without integral pressure compensation	33
a)	Output flow versus load pressure difference	33
b)	Output flow versus valve pressure drop	33
10	Output flow with integral pressure compensation	34
a)	Output flow versus load pressure difference	34
b)	Output flow versus valve pressure drop	34
11	Limiting power curve	35
12	Output flow and pressure difference versus fluid temperature	36
a)	Output flow	36
b)	Load pressure difference	36
13	Blocked port load pressure versus input signal	37
14	Load pressure difference versus input signal	38
15	Frequency response	39
16	Step response	40
a)	Transient response to step input signal	40
b)	Transient response to load pressure step with flow compensation	40

Annexes

A	(normative) Errors and classes of measurement	41
B	(informative) Guidance on conducting the tests	42
C	(informative) Bibliography	43

Foreword

ISO (the International Organisation for Standardisation) 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 organisations, 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 standardisation.

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.

International Standard ISO 10770-1 was prepared by Technical Committee ISO/TC 131, *Fluid power systems*, Subcommittee SC 8, *Product testing*.

This first edition of ISO 10770-1 together with ISO 10770-2 cancel and replace ISO 6404:1985, of which they constitute a technical revision. In particular, ISO 10770 is wider-ranging and more comprehensive, covering both servovalves and proportional valves.

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*

Annex A forms an integral part of this part of ISO 10770. Annexes B and C are for information only.

Introduction

In hydraulic fluid power systems, power is transmitted by a fluid under pressure from a hydraulic power source to one or several loads through electrically modulated hydraulic control valves.

These control valves are components which receive control signals in the form of an electrical signal, receive hydraulic power from a power source, and then, control the direction and amount of hydraulic flow to the load, depending upon the electrical input signal. There are a number of performance characteristics that must be known in order to successfully apply electrically modulated hydraulic control valves.

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Hydraulic fluid power — Electrically modulated hydraulic control valves —

Part 1:

Test methods for four-way directional flow control valves

1 Scope

This part of ISO 10770 describes methods for production acceptance and type (or qualification) testing of electrically modulated hydraulic four-way directional flow control valves.

2 Normative references

The following standards contain provisions, which, through reference in this text, constitute provisions of this part of ISO 10770. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this part of ISO 10770 are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO 1219-1:1991, *Fluid power systems and components — Graphic symbols and circuit diagrams — Part 1: Graphic symbols*.

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

ISO 4406:1987, *Hydraulic fluid power — Fluids — Method for coding level of contamination by solid particles*.

ISO 5598:1985, *Fluid power systems and components — Vocabulary*.

ISO 6743-4:1982, *Lubricants, industrial oils and related products (class L) — Classification — Part 4: Family H (Hydraulic systems)*.

IEC 617, *Graphical symbols and diagrams*.

3 Definitions

For the purposes of this part of ISO 10770, the definitions given in ISO 5598 and the following definition apply.

3.1 electrically modulated hydraulic flow control valve: Valve that provides a degree of proportional flow control in response to a continuously variable electrical input signal.