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**Hydraulic fluid power — Valves —  
Determination of pressure  
differential/flow characteristics**

*Transmissions hydrauliques — Distributeurs — Détermination des  
caractéristiques de pression différentielle/débit*



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## Foreword

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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 4411 was prepared by Technical Committee ISO/TC 131, *Fluid power systems*, Subcommittee SC 5, *Control products and components*.

This second edition cancels and replaces the first edition (ISO 4411:1986), 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. Hydraulic valves control the direction, pressure or flow rate of the fluid in the system.

When fluid flows through a valve, it encounters some resistance, which results in a loss of pressure; this loss is called the pressure differential.

This International Standard is intended to unify testing methods for hydraulic fluid power valves to enable the pressure differential/flow characteristics of different valves to be compared.

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# Hydraulic fluid power — Valves — Determination of pressure differential/flow characteristics

## 1 Scope

This International Standard specifies methods for determining, under steady-state conditions, the pressure differential caused by the flow through any given path in a hydraulic fluid power valve. Requirements for test installations, procedures and presentation of results are specified.

## 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 4401, *Hydraulic fluid power — Four-port directional control valves — Mounting surfaces*

ISO 5598<sup>1)</sup>, *Fluid power systems and components — Vocabulary*

ISO 5781, *Hydraulic fluid power — Pressure-reducing valves, sequence valves, unloading valves, throttle valves and check valves — Mounting surfaces*

ISO 6263, *Hydraulic fluid power — Compensated flow-control valves — Mounting surfaces*

ISO 6264, *Hydraulic fluid power — Pressure-relief valves — Mounting surfaces*

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

ISO 9110-2, *Hydraulic fluid power — Measurement techniques — Part 2: Measurement of average steady-state pressure in a closed conduit*

ISO 10372, *Hydraulic fluid power — Four- and five-port servovalves — Mounting surfaces*

## 3 Terms and definitions

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

### 3.1

#### **tare pressure differential**

pressure loss between the pressure-tapping points as generated by the test equipment exclusive of the test valve

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1) To be published. (Revision of ISO 5598:1985)