Australian Standard™

Hydraulic fluid power—General requirements for systems (ISO 4413:1998, MOD)

Standards Australia

This Australian Standard was prepared by Committee ME-035, Fluid Power Systems and Components. It was approved on behalf of the Council of Standards Australia on 31 July 2002 and published on 5 August 2002.

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PREFACE

This Standard was prepared by the Standards Australia Committee ME-035, Fluid Power Systems and Components to supersede AS 2671—1983, *Fluid power—Hydraulic systems and components.*

The objective of this Standard is to provide designers and operators of fluid power systems with the general requirements relating to the safety, reliability and maintainability of hydraulic fluid power systems.

This Standard is adopted with Australian modifications and has been reproduced from ISO 4413:1998, *Hydraulic fluid power—General rules relating to systems.*

The Australian modifications are listed in Appendix ZZ and are indicated by margin bars in the text of the Standard.

The terms 'normative' and 'informative' have been used in this Standard to define the application of the annex or appendix to which they apply. A normative annex or appendix is an integral part of a Standard, whereas an 'informative' annex or appendix is only for information and guidance.

As this Standard is reproduced from an International Standard, the following applies:

(a) Its number appears on the cover and title page while the International Standard number appears only on the cover.

(b) In the source text, 'this International Standard' should read this 'Australian Standard'.

(c) A full point substitutes for a comma when referring to a decimal marker.

References to International Standards should be replaced by Australian Standards as follows:

Reference to International Standard		*Australian Standard*	
ISO		AS	
1219	Fluid power systems and components—Graphic symbols and circuit	1101	Graphic symbols for general engineering
1219-1	Part 1: Graphic symbols	1101.1	Part 1: Hydraulic and pneumatic systems
1219-2	Part 2: Circuit diagrams	—	
4021	Hydraulic fluid power—Particulate contamination analysis—Extraction of fluid samples from lines of an operating system	4002	Hydraulic fluid power—Particulate contamination of systems
		4002.2	Part 2: Extraction of fluid samples from an operating system
4400	Fluid power systems and components—Three-pin electrical plug connectors with earth contact—Characteristics and requirements	—	
4401	Hydraulic fluid power—Four-port directional control valves—Mounting surfaces	—	
4406	Hydraulic fluid power—Fluids—Method for coding level of contamination of solid particles	4002	Hydraulic fluid power—Particulate contamination of systems
		4002.1	Part 1: Method for coding the level of contamination
5598	Fluid power systems and components—Vocabulary	4061	Fluid power systems and components—Vocabulary

ISO		AS
5781	Hydraulic fluid power—Pressure-control valves (excluding pressure-relief valves), sequence valves, unloading valves, throttle valves and check valves—Mounting surfaces	—
6149	Connections for fluid power and general use—Parts and stud ends with ISO 261 threads and O-ring sealing	—
6149-1	Part 1: Ports with O-ring seal in truncated housing	—
6162	Hydraulic fluid power—Four-screw split-flange connections for use at pressures of 2.5 MPa to 40 MPa (25 bar to 400 bar)—Type I metric series and Type II inch series	—
6164	Hydraulic fluid power—Four-screw, one-piece square-flange connections for use at pressures of 25 MPa and 40 MPa (250 and 400 bar)	—
6263	Hydraulic fluid power—Compensated flow-control valves—Mounting surfaces	—
6264	Hydraulic fluid power—Pressure-relief valves—Mounting surfaces	—
6952	Fluid power systems and components—Two-pin electrical plug connector with earth contact—Characteristics and requirements	—
7368	Hydraulic fluid power—Two-port slip-in cartridge valves—Cavities	—
7789	Hydraulic fluid power—Two-, three- and four-port screw-in cartridge valves—Cavities	—
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TR11688-1	Part 1: Planning	—
12151	Connections for hydraulic fluid power and general use—Hose fittings	
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12151-3	Part 3: Hose fittings with ISO 6162 flange ends	—
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INTRODUCTION

In hydraulic fluid power systems, power is transmitted and controlled through a liquid under pressure within an enclosed circuit.

The application of hydraulic fluid power systems requires a thorough understanding and precise communication between supplier and purchaser. This International Standard was prepared to assist that understanding and communication and to document many of the good practices learned from experience with hydraulic systems.

Use of this International Standard assists:

a) the identification and specification of the requirements for hydraulic systems and components;

b) the identification of respective areas of responsibility;

c) the design of systems and their components to comply with specific requirements;

d) understanding of the safety requirements of a hydraulic system.

General rules given in this International Standard have no legal status except those paragraphs that are included in contractual agreements between purchasers and suppliers. Deviation from those parts of this International Standard included in contractual agreements shall also be agreed to in writing by the purchaser and supplier. Attention shall be drawn by the purchaser and/or supplier to applicable national or local codes or laws.

General rules that contain the verb "shall" are counsels of good engineering practice, universally applicable with rare exception. Use of the word "should" in the document is not an indication of choice but an indication that the desirable engineering practices described may have to be modified due to the peculiarities of certain processes, environmental conditions or equipment size.

Titles or parts of the text which are marked with an asterisk (*) indicate subclauses for which discussion is needed between the supplier and purchaser to define the requirements and/or responsibilities. These are also listed in annex A.

AUSTRALIAN STANDARD

Hydraulic fluid power—General requirements for systems (ISO 4413:1998, MOD)

1 Scope

This International Standard provides general rules relating to hydraulic systems on machinery used in industrial manufacturing processes. It is intended as a guide for both suppliers and purchasers, with a view to ensuring:

a) safety;

b) uninterrupted system operation;

c) ease and economy of maintenance;

d) long life of the system.

2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this International Standard. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this International Standard 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 1219-2:1995, *Fluid power systems and components — Graphic symbols and circuit diagrams — Part 2: Circuit diagrams.*

ISO 4400:1994, *Fluid power systems and components — Three-pin electrical plug connectors with earth contact — Characteristics and requirements.*

ISO 4401:1994, *Hydraulic fluid power — Four-port directional control valves — Mounting surfaces.*