AS 2671:2021

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Hydraulic fluid power — General rules and safety requirements for systems and their components (ISO 4413:2010, MOD)

AS 2671:2021

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The following are represented on Committee ME-005:

Australian Chamber of Commerce and Industry
Australian Industry Group
Australian Institute for Non-Destructive Testing
Better Regulation Division (Fair Trading, Safework NSW, Testsafe)
Bureau of Steel Manufacturers of Australia
Crane Industry Council of Australia
Department of Regional NSW
Elevating Work Platform Association of Australia
Engineers Australia
National Heavy Vehicle Regulator
Office of Industrial Relations, Qld
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WorkSafe Division — Department of Mines, Industry Regulation and Safety (DMIRS) WA
Victorian WorkCover Authority (WorkSafe Victoria)

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Preface

This Standard was prepared by the Australian members of the Joint Standards Australia/Standards New Zealand Committee ME-005, Cranes, to supersede AS 2671—2002, *Hydraulic fluid power — General requirements for systems (ISO 4413:1998, MOD)*. After consultation with stakeholders in both countries, Standards Australia and Standards New Zealand decided to develop this Standard as an Australian Standard rather than an Australian/New Zealand Standard.

The objective of this Standard is to specify general rules and safety requirements for hydraulic fluid power systems and components used on machinery. It deals with all significant hazards associated with hydraulic fluid power systems and specifies the principles to apply in order to avoid those hazards when the systems are put to their intended use.

This Standard applies to the design, construction and modification of systems and their components, also taking into account the following aspects:

(a) Assembly.

(b) Installation.

(c) Adjustment.

(d) Uninterrupted system operation.

(e) Ease and economy of maintenance and cleaning.

(f) Reliable operation in all intended uses.

(g) Energy efficiency.

(h) Environment.

This Standard is an adoption with national modifications and has been reproduced from ISO 4413:2010, *Hydraulic fluid power — General rules and safety requirements for systems and their components*. The modifications are additional requirements and are set out in Appendix ZZ, which has been added at the end of the source text.

Appendix ZZ lists the variations to ISO 4413:2010, for the application of this Standard in Australia.

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

(i) In the source text “this International Standard” should read “this Australian Standard”.

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

The terms “normative” and “informative” are used in Standards to define the application of the appendices or annexes to which they apply. A “normative” appendix or annex is an integral part of a Standard, whereas an “informative” appendix or annex is only for information and guidance.

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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 4413 was prepared by Technical Committee ISO/TC 131, *Fluid power systems*, Subcommittee SC 9, *Installations and systems*.

This third edition cancels and replaces the second edition (ISO 4413:1998), which has been technically revised, specifically with regards to the following:

a) integration of ISO 4413:1998 and EN 982:1996;

b) integration of safety requirements to comply with the European Machinery Directive 2006/42/EC;

c) updating of safety requirements, taking into account International Standards on machine safety.

Introduction

This International Standard is a type B standard as defined in ISO 12100. The provisions of this International Standard can be supplemented or modified by a type C standard. For machines that are covered by the scope of a type C standard and that have been designed and built in accordance with the provisions of that standard, the provisions of that type C standard take precedence over the provisions of this type B standard.

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

In the past, ISO 4413 was intended to provide assistance in the understanding between the supplier and the purchaser. This edition of ISO 4413 now includes, in addition, general requirements for the engineering of a hydraulic system and safety requirements that support the essential health and safety requirements of the European Machinery Directive.

Equivalent requirements for pneumatic systems are defined in ISO 4414.

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1 Scope

This International Standard specifies general rules and safety requirements for hydraulic fluid power systems and components used on machinery as defined by ISO 12100:2010, 3.1. It deals with all significant hazards associated with hydraulic fluid power systems and specifies the principles to apply in order to avoid those hazards when the systems are put to their intended use.

NOTE 1 See Clause 4 and Annex A.

The significant hazard noise is incompletely dealt with in this International Standard.

NOTE 2 Noise emission depends especially on the installation of hydraulic components or systems into machinery.

This International Standard applies to the design, construction and modification of systems and their components, also taking into account the following aspects:

a) assembly;

b) installation;

c) adjustment;

d) uninterrupted system operation;

e) ease and economy of maintenance and cleaning;

f) reliable operation in all intended uses;

g) energy efficiency; and

h) environment.

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 1219-2, *Fluid power systems and components — Graphic symbols and circuit diagrams — Part 2: Circuit diagrams*

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 6149-1, *Connections for hydraulic fluid power and general use — Ports and stud ends with ISO 261 metric threads and O-ring sealing — Part 1: Ports with truncated housing for O-ring seal*