



NSAI
Standards

Irish Standard
I.S. EN ISO 4413:2010

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

I.S. EN ISO 4413:2010

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SWIFT xxx: A rapidly developed recommendatory document based on the consensus of the participants of an NSAI workshop.

This document replaces:
EN 982:1996+A1:2008

This document is based on:
EN ISO 4413:2010

Published:
26 November, 2010

This document was published
under the authority of the NSAI
and comes into effect on:
26 November, 2010

ICS number:
23.100.01
23.100.01
23.100.01

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English Version

**Hydraulic fluid power - General rules and safety requirements for
systems and their components (ISO 4413:2010)**

Transmissions hydrauliques - Règles générales et
exigences de sécurité relatives aux systèmes et leurs
composants (ISO 4413:2010)

Fluidtechnik - Allgemeine Regeln und sicherheitstechnische
Anforderungen an Hydraulikanlagen und deren Bauteile
(ISO 4413:2010)

This European Standard was approved by CEN on 6 November 2010.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the CEN-CENELEC Management Centre or to any CEN member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the CEN-CENELEC Management Centre has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom.



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Foreword

This document (EN ISO 4413:2010) has been prepared by Technical Committee ISO/TC 131 “Fluid power systems” in collaboration with Technical Committee CEN/TC 114 “Safety of machinery” the secretariat of which is held by DIN.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by May 2011, and conflicting national standards shall be withdrawn at the latest by November 2011.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN [and/or CENELEC] shall not be held responsible for identifying any or all such patent rights.

This document supersedes EN 982:1996+A1:2008.

This document has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association, and supports essential requirements of EU Directive.

For relationship with EU Directive, see informative Annex ZA, which is an integral part of this document.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and the United Kingdom.

Endorsement notice

The text of ISO 4413:2010 has been approved by CEN as a EN ISO 4413:2010 without any modification.

Annex ZA (informative)

Relationship between this European Standard and the Essential Requirements of EU Directive 2006/42/EC

This European Standard has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association to provide a means of conforming to Essential Requirements of the New Approach Directive 2006/42/EC on machinery.

Once this standard is cited in the Official Journal of the European Union under that Directive and has been implemented as a national standard in at least one Member State, compliance with the normative clauses of this standard confers, within the limits of the scope of this standard, a presumption of conformity with the relevant Essential Requirements, except Essential Requirements 1.5.8 and 1.7.4.2 u), of that Directive and associated EFTA regulations.

WARNING — Other requirements and other EU Directives may be applicable to the product(s) falling within the scope of this standard.

I.S. EN ISO 4413:2010
**INTERNATIONAL
STANDARD**

**ISO
4413**

Third edition
2010-11-15

**Hydraulic fluid power — General rules
and safety requirements for systems and
their components**

*Transmissions hydrauliques — Règles générales et exigences de
sécurité relatives aux systèmes et leurs composants*



Reference number
ISO 4413:2010(E)

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Published in Switzerland

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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.

I.S. EN ISO 4413:2010

Hydraulic fluid power — General rules and safety requirements for systems and their components

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*

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