



SLOVENSKI STANDARD SIST EN ISO 9409-2:2003

01-oktober-2003

Manipulirni industrijski roboti – Mehanski vmesniki – 2. del: Gredi (oblika A) (ISO 9409-2:2002)

Manipulating industrial robots - Mechanical interfaces - Part 2: Shafts (ISO 9409-2:2002)

Industrieroboter - Mechanische Schnittstellen - Teil 2: Shäfte (ISO 9409-2:2002)

Robots manipulateurs industriels - Interfaces mécaniques - Partie 2: Interfaces a queue (ISO 9409-2:2002)

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Ta slovenski standard je istoveten z: **EN ISO 9409-2:2003**

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ICS:

25.040.30	Industrijski roboti. Manipulatorji	Industrial robots. Manipulators
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EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN ISO 9409-2

July 2003

ICS 25.040.30

Supersedes EN ISO 9409-2:1996

English version

Manipulating industrial robots - Mechanical interfaces - Part 2: Shafts (ISO 9409-2:2002)

Robots manipulateurs industriels - Interfaces mécaniques -
Partie 2: Interfaces à queue (ISO 9409-2:2002)

Industrieroboter - Mechanische Schnittstellen - Teil 2:
Shaft (ISO 9409-2:2002)

This European Standard was approved by CEN on 27 December 2002.

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 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 Management Centre has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Luxembourg, Malta, Netherlands, Norway, Portugal, Slovakia, Spain, Sweden, Switzerland and United Kingdom.

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EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

Management Centre: rue de Stassart, 36 B-1050 Brussels

EN ISO 9409-2:2003 (E)**Foreword**

The text of ISO 9409-2:2002 has been prepared by Technical Committee ISO/TC 184 "Industrial automation systems and integration" of the International Organization for Standardization (ISO) and has been taken over as EN ISO 9409-2:2003 by Technical Committee CEN/TC 310 "Advanced Manufacturing Technologies", the secretariat of which is held by BSI.

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 January 2004, and conflicting national standards shall be withdrawn at the latest by January 2004.

This document supersedes EN ISO 9409-2:1996.

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

NOTE FROM CMC The foreword is susceptible to be amended on reception of the German language version. The confirmed or amended foreword, and when appropriate, the normative annex ZA for the references to international publications with their relevant European publications will be circulated with the German version.

Endorsement notice

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The text of ISO 9409-2:2002 has been approved by CEN as EN ISO 9409-2:2003 without any modifications.

INTERNATIONAL STANDARD

ISO
9409-2

Second edition
2002-11-01

Manipulating industrial robots — Mechanical interfaces —

Part 2: Shafts

*Robots manipulateurs industriels — Interfaces mécaniques —
Partie 2: Interfaces à queue*
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Reference number
ISO 9409-2:2002(E)

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ISO 9409-2:2002(E)**PDF disclaimer**

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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 3.

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 part of ISO 9409 may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

ISO 9409-2 was prepared by Technical Committee ISO/TC 184, *Industrial automation systems and integration*, Subcommittee SC 2, *Robots for manufacturing environment*.

This second edition cancels and replaces the first edition (ISO 9409-2:1996), of which it constitutes a minor revision. Clause 7 has been revised.

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ISO 9409 consists of the following parts, under the general title *Manipulating industrial robots — Mechanical interfaces*:

— Part 1: Plates

— Part 2: Shafts

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ISO 9409-2:2002(E)**Introduction**

This part of ISO 9409 is part of a series of International Standards dealing with manipulating industrial robots. Other International Standards cover such topics as safety, general characteristics, coordinate systems, performance criteria and related test methods, terminology, and robot programming. It is noted that these standards are interrelated and also related to other International Standards.

Manipulating industrial robots are steadily growing in importance in industrial automation. Depending on the type of application, they may require removable end effectors such as grippers or tools which are attached to the mechanical interface.

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Manipulating industrial robots — Mechanical interfaces —

Part 2: Shafts

1 Scope

This part of ISO 9409 defines the main dimensions, designation and marking for a shaft with cylindrical projection as mechanical interface. It is intended to ensure the exchangeability and to keep the orientation of hand-mounted end effectors.

This part of ISO 9409 does not contain any correlation of load-carrying ranges.

The mechanical interfaces specified in this part of ISO 9409 will also find application in simple handling systems which are not covered by the definition of manipulating industrial robots, such as pick-and-place or master-slave units.

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2 Normative references

The following normative documents contain provisions which, through reference in this text, constitute provisions of this part of ISO 9409. For dated references, subsequent amendments to, or revisions of, any of these publications do not apply. However, parties to agreements based on this part of ISO 9409 are encouraged to investigate the possibility of applying the most recent editions of the normative documents indicated below. For undated references, the latest edition of the normative document referred to applies. Members of ISO and IEC maintain registers of currently valid International Standards.

ISO 286-1:1988, *ISO system of limits and fits — Part 1: Bases of tolerances, deviations and fits*

ISO 286-2:1988, *ISO system of limits and fits — Part 2: Tables of standard tolerance grades and limit deviations for holes and shafts*

ISO 1101:—¹⁾, *Geometrical Product Specifications (GPS) — Geometrical tolerancing — Tolerances of form, orientation, location and run-out*

ISO 8373:1994, *Manipulating industrial robots — Vocabulary*

ISO 9409-1:1996, *Manipulating industrial robots — Mechanical interfaces — Part 1: Plates (form A)*

ISO 9787:1999, *Manipulating industrial robots — Coordinate systems and motion nomenclatures*

3 Terms and definitions

For the purposes of this part of ISO 9409, the terms and definitions given in ISO 8373 apply.

1) To be published. (Revision of ISO 1101:1983)