

BS ISO 29262:2011



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Production equipment for microsystems — Interface between end effector and handling system

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National foreword

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The UK participation in its preparation was entrusted to Technical Committee MTE/1, Machine tools.

A list of organizations represented on this committee can be obtained on request to its secretary.

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Production equipment for microsystems — Interface between end effector and handling system

*Équipement de production pour systèmes microtechniques — Interface
entre outil et dispositif de manipulation*



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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 29262 was prepared by Technical Committee ISO/TC 39, *Machine tools*.

Introduction

This International Standard specifies requirements for an interface between end effector and handling systems, or between functional modules in production equipment for microsystems. In production equipment for precision and microsystem technology, it is necessary for tools and end effectors to be replaced frequently because of small production runs. Interfaces for macroscopic handling systems, standardized according to ISO 9409-1 or ISO 9409-2 for instance, cannot be considered because of the small dimensions of the parts processed and, thus they are unsuitable for use as interface for end effectors and tools in micro and precision mechanics. This International Standard defines, in addition to the mechanical interface, the position and specification of the feedthroughs for fluidic and electrical coupling elements. An extra feature of this International Standard that differs from other standards in use is a central opening to permit the observation of the production or assembly process.

Production equipment for microsystems — Interface between end effector and handling system

1 Scope

This International Standard specifies provisions for the interface between end effector and handling systems in production equipment for microsystems. It specifies principal deviations, tolerances and designations for manually and automatically changeable end effectors. The aim is to specify the end effector interface in three levels with an increasing degree of specification.

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 286-1, *Geometrical product specifications (GPS) — ISO code system for tolerances on linear sizes — Part 1: Basis of tolerances, deviations and fits*

ISO 286-2, *Geometrical product specifications (GPS) — ISO code system for tolerances on linear sizes — Part 2: Tables of standard tolerance classes and limit deviations for holes and shafts*

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

ISO 3650, *Geometrical Product Specifications (GPS) — Length standards — Gauge blocks*

ISO 8734:1997, *Parallel pins, of hardened steel and martensitic stainless steel (Dowel pins)*

ISO 9409-1, *Manipulating industrial robots — Mechanical interfaces — Part 1: Plates*

ISO 9409-2, *Manipulating industrial robots — Mechanical interfaces — Part 2: Shafts*

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

ISO 18265, *Metallic materials — Conversion of hardness values*

ISO/IEC 11801:2002, *Information technology — Generic cabling for customer premises*

ISO/IEC 24702, *Information technology — Generic cabling — Industrial premises*

ISO/IEC 24740, *Information technology — Responsive Link (RL)*

IEC 61131-2, *Programmable controllers — Part 2: Equipment requirements and tests*

IEC 61158 (all parts), *Industrial communication networks — Fieldbus specifications*

IEC 61784 (all parts), *Industrial communication networks — Profiles*