INTERNATIONAL STANDARD

ISO 14617-13

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Graphical symbols for diagrams —

Part 13: Devices for material processing

Symbols graphiques pour schémas —

Partie 13: Dispositifs de transformation des matériaux

Reference number
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Foreword

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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 14617-13 was prepared by Technical Committee ISO/TC 10, *Technical product documentation*, Subcommittee SC 10, *Process plant documentation and tpd-symbols*.

ISO 14617 consists of the following parts, under the general title *Graphical symbols for diagrams*:

— *Part 1: General information and indexes*

— *Part 2: Symbols having general application*

— *Part 3: Connections and related devices*

— *Part 4: Actuators and related devices*

— *Part 5: Measurement and control devices*

— *Part 6: Measurement and control functions*

— *Part 7: Basic mechanical components*

— *Part 8: Valves and dampers*

— *Part 9: Pumps, compressors and fans*

— *Part 10: Fluid power converters*

— *Part 11: Devices for heat transfer and heat engines*

— *Part 12: Devices for separating, purification and mixing*

— *Part 13: Devices for material processing*

— *Part 14: Devices for transport and handling of material*

— *Part 15: Installation diagrams and network maps*

Introduction

The purpose of ISO 14617 in its final form is the creation of a library of harmonized graphical symbols for diagrams used in technical applications. This work has been, and will be, performed in close co-operation between ISO and IEC. The ultimate result is intended to be published as a standard common to ISO and IEC, which their technical committees responsible for specific application fields can use in preparing International Standards and manuals.

Graphical symbols for diagrams —

Part 13:
Devices for material processing

1 Scope

This part of ISO 14617 specifies graphical symbols in diagrams for casting machines and machine tools.

For the fundamental rules of creation and application of graphical symbols in diagrams, see ISO 81714-1.

For an overview of ISO 14617, information on the creation and use of registration numbers for identifying graphical symbols used in diagrams, rules for the presentation and application of these symbols, and examples of their use and application, see ISO 14617-1.

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 14617-1:2002, *Graphical symbols for diagrams — Part 1: General information and index*

ISO 81714-1:1999, *Design of graphical symbols for use in the technical documentation of products — Part 1: Basic rules*

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

NOTE The list has been restricted to terms whose meaning is not obvious and which have not been defined elsewhere in an International Standard, or which have been defined in various ways in different standards. In preparing these definitions, ISO and IEC standards on terminology have been consulted; see the references in parentheses. However, most of the definitions in those standards were prepared by different technical committees within a restricted scope. This means that many terms so defined have to be given more general or neutral definitions when applied in the context of graphical symbols.

3.1
complex device
device consisting of several functionally interrelated components or elements, the description of which needs a diagram

3.2
functional unit
constructional assembly containing functionally interrelated components or devices

[IEC 60050-441]

4 Casting machines and machine tools

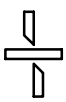
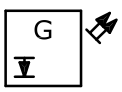
4.1 Symbols of basic nature

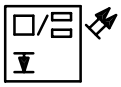
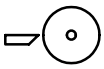
4.1.1	**101**		Complex device, functional unit, equipment See R101 (2-4.2.1).

4.2 Application rules for the symbol in 4.1

None.

4.3 Symbols giving supplementary information

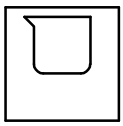
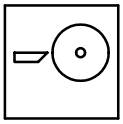
4.3.1	**2801**		Casting or moulding
4.3.2	**2802**		Material forming by forging
4.3.3	**2803**		Material forming by pressing
4.3.4	**2804**		Material forming by bending or folding
4.3.5	**2805**		Material forming by rolling
4.3.6	**2806**		Material forming by extruding or pultruding
4.3.7	**2807**		Heat treatment, for example, annealing or tempering
4.3.8	**2808**		Size reduction by crushing, breaking, or pulverization
4.3.9	**2809**		Size enlarging by sintering, agglomeration, coagulation, or flocculation
4.3.10	**2810**		Dividing material
4.3.11	**2811**		Dividing by sawing
4.3.12	**2812**		Dividing by shearing
4.3.13	**CEI**		Laser generator

4.3.14	**2814**		Dividing by laser beam
4.3.15	**2815**		Boring, drilling
4.3.16	**2816**		Reaming
4.3.17	**2817**		Planing
4.3.18	**2818**		Broaching
4.3.19	**2819**		Tapping
4.3.20	**2820**		Threading, for example, machining or thread rolling
4.3.21	**2821**		Milling
4.3.22	**2822**		Turning
4.3.23	**2823**		Joining, for example, by riveting, gluing, welding, brazing or soldering
4.3.24	**2824**		Surface treatment by removal of material, for example, by grinding, honing, polishing, or sanding
4.3.25	**2825**		Surface treatment without removal of material, for example, by rolling or shot peening
4.3.26	**2826**		Calendering
4.3.27	**2827**		Coating, for example, painting
4.3.28	**2828**		Sealing, for example, by caulking
4.3.29	**2829**		Complex function, multi-function, for example, multi-processing

4.4 Application rules for the symbols in 4.3

None.

4.5 Application examples

4.5.1	**X2801**	 101, 2801	Casting machine
4.5.2	**X2802**	 101, 2822	Lathe