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Graphical symbols for diagrams —

Part 14: Devices for transport and handling of material

Symboles graphiques pour schémas —

Partie 14: Dispositifs pour le transport et la manutention des matériaux

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Foreword

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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.

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ISO 14617-14 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 14:
Devices for transport and handling of material

1 Scope

This part of ISO 14617 specifies graphical symbols in diagrams for components and devices for material transport and handling.

For the fundamental rules of creation and application of graphical symbols for use 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 indexes*

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

3 Conveyors and associated devices

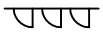
3.1 Symbols of basic nature

3.1.1	**3801**		Conveyor See R3801 (3.2.1) and R3802 (3.2.2).
3.1.2	**3806**		Feeding funnel, hopper
3.1.3	**3807**		Vane feeder rotor
3.1.4	**3808**		Turntable

3.2 Application rules for the symbols in 3.1

3.2.1	**R3801**	The symbol may have another shape if the shape of the conveyor is significant for the function. For examples, see X3805 (3.5.5) and X3811 (3.5.11).
3.2.2	**R3802**	For a unidirectional conveyor, the asterisk shall be replaced with symbol 241 (3.3.2). For a reversible conveyor, the asterisk shall be replaced with symbol 245 (3.3.3). For a conveyor with the possibility to transport objects in both directions simultaneously, for example, a ropeway, the asterisk shall be replaced with symbol 247 (3.3.4).

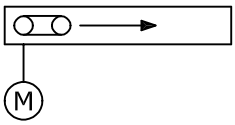
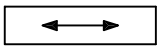
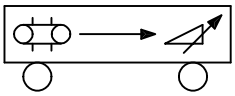
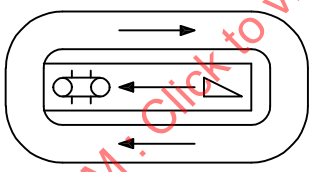
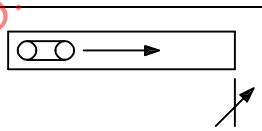
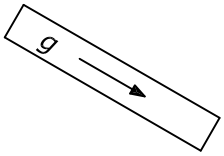
3.3 Symbols giving supplementary information

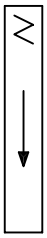
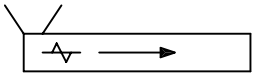
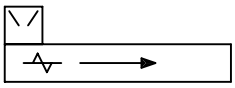
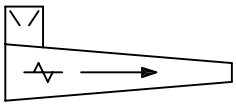
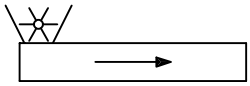
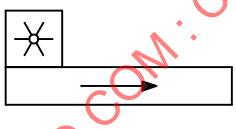
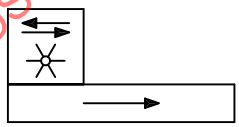
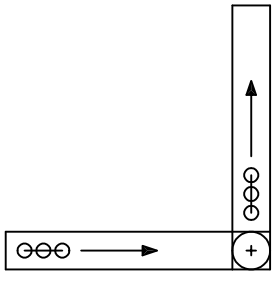
3.3.1	**201**		Adjustability
3.3.2	**241**		Direction in general, except for energy and signal flow
3.3.3	**245**		Alternative directions in general, except for energy and signal flow
3.3.4	**247**		Bidirectional, simultaneously
3.3.5	**3061**		Slope Explanation: The oblique line in the symbol indicates the direction of the slope.
3.3.6	**3821**		Belt type
3.3.7	**3822**		Belt type with scraper flights
3.3.8	**3823**		Chain- or wire-driven type
3.3.9	**3824**		Roller type
3.3.10	**3825**		Ropeway type, overhead type
3.3.11	**3828**		Bucket type
3.3.12	**3830**		Screw type
3.3.13	**3831**		Vibrating type
3.3.14	**3832**	*g*	Gravity type
3.3.15	**3833**		Spiral gravity (sliding) type
3.3.16	**3834**		Escalator function

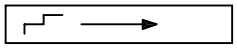
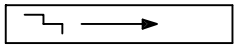
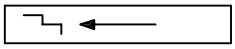
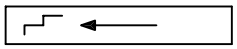
3.4 Application rules for the symbols in 3.3

None.

3.5 Application examples

3.5.1	**X3801**	 3801, 241, 3821, CEI	Unidirectional belt conveyor driven by electric motor
3.5.2	**X3802**	 3801, 245	Reversible conveyor
3.5.3	**X3803**	 3801, 247	Conveyor with the possibility to transport objects in both directions simultaneously
3.5.4	**X3804**	 201, 241, 2013, 3061, 3801, 3822	Mobile belt conveyor with scraper flights and adjustable elevation
3.5.5	**X3805**	 101, 145, 241, 3061, 3801, 3822	Conveyor connected to a feeding belt conveyor with scraper flights coming from below
3.5.6	**X3806**	 201, 241, 3801, 3821	Belt conveyor with adjustable length
3.5.7	**X3807**	 241, 3801, 3832	Straight gravity slide

3.5.8	**X3808**	 241, 3801, 3833	Spiral gravity slide
3.5.9	**X3809**	 241, 3801, 3806, 3830	Screw feeder with feeding funnel Two forms shown.
3.5.10	**X3810**	 101, 241, 3801, 3806, 3830	
3.5.11	**X3811**	 101, 3801, 3806, 3830	Compressing screw conveyor
3.5.12	**X3812**	 241, 3801, 3806, 3807	Conveyor with rotary vane feeder Two forms shown.
3.5.13	**X3813**	 101, 241, 3801, 3807	
3.5.14	**X3814**	 101, 241, 3801, 3807, 3831	Conveyor with vibrating rotary vane feeder
3.5.15	**X3815**	 241, 3801, 3808, 3824	Two conveyors of roller type interlinked by a turntable

3.5.16	**X3816**	 241, 3801, 3834	Escalator going upwards and to the right
3.5.17	**X3817**	 241, 3801, 3834	Escalator going downwards and to the right
3.5.18	**X3818**	 241, 3801, 3834	Escalator going upwards and to the left
3.5.19	**X3819**	 241, 3801, 3834	Escalator going downwards and to the left

4 Cranes, lifts, hoists, and materials handling robots

4.1 Symbols of basic nature

4.1.1	**3841**		Crane
4.1.2	**3842**		Lift, hoist
4.1.3	**3843**		Materials handling robot

4.2 Application rules for the symbols in 4.1

None.

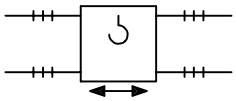
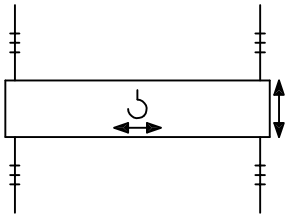
4.3 Symbols giving supplementary information

None.

4.4 Application rules for the symbols in 4.3

None.

4.5 Application examples

4.5.1	**X3841**	 245, 3841, 3851	Crane travelling on two monorails
4.5.2	**X3842**	 245, 3841, 3851	Overhead, travelling crane

5 Tracks and associated devices

5.1 Symbols of basic nature

5.1.1	**3851**		Monorail
5.1.2	**3852**		Double rail, railway track
5.1.3	**3853**		Traverser, traversing platform
5.1.4	**3854**		Track turntable
5.1.5	**3855**		Railway wagon tip, platform tip

5.2 Application rules for the symbols in 5.1

None.

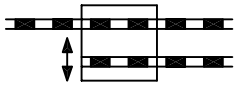
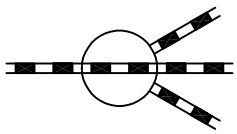
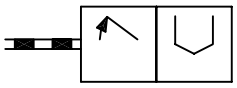
5.3 Symbols giving supplementary information

None.

5.4 Application rules for the symbols in 5.3

None.

5.5 Application examples

5.5.1	**X3851**	 245, 3852, 3853	Traverser, traversing platform with one railway track on one side and two railway tracks on the other
5.5.2	**X3852**	 3852, 3854	Railway turntable serving four railway tracks
5.5.3	**X3853**	 101, 2064, 3852, 3855	Wagon tip, platform tip at the end of a railway track adjacent to a bunker

6 Industrial trucks, vehicles and cargo ships

6.1 Symbols of basic nature

6.1.1	**3861**		Industrial truck
6.1.2	**3862**		Fork lift truck
6.1.3	**3863**		Driverless, automatic fork lift truck, including remote controlled command
6.1.4	**3864**		Container truck
6.1.5	**3865**		Wheel loader
6.1.6	**3866**		Log loader
6.1.7	**3867**		Bulldozer
6.1.8	**3868**		Lorry