
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



Reference number
ISO 14617-14:2004(E)

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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 14617-14 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.

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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

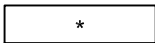



The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

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).

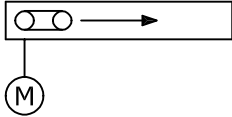
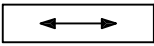
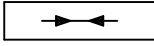
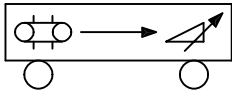
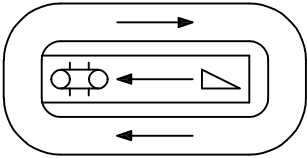
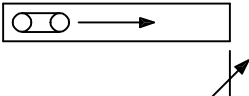
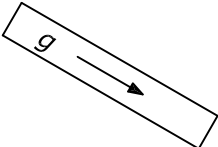
3.3 Symbols giving supplementary information


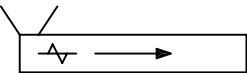
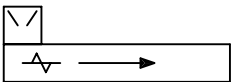
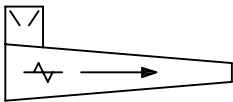


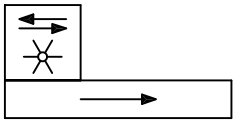
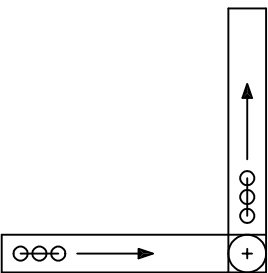
3.3.1	201		Adjustability
3.3.2	241		Direction in general, except for energy and signal flow
3.3.3	245		Alternative directions in general, except for energy and signal flow
3.3.4	247		Bidirectional, simultaneously
3.3.5	3061		Slope Explanation: The oblique line in the symbol indicates the direction of 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	<i>g</i>	Gravity type
3.3.15	3833		Spiral gravity (sliding) type
3.3.16	3834		Escalator function

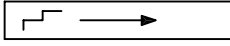
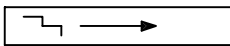
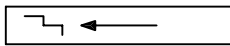
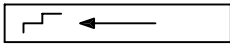
3.4 Application rules for the symbols in 3.3

None.

3.5 Application examples




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

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

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.

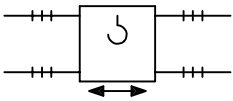
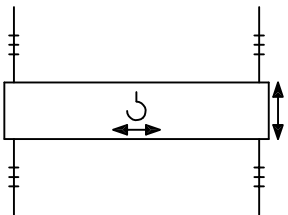
4.3 Symbols giving supplementary information

None.

4.4 Application rules for the symbols in 4.3

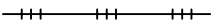




None.

4.5 Application examples

4.5.1	X3841	 <p>245, 3841, 3851</p>	Crane travelling on two monorails
4.5.2	X3842	 <p>245, 3841, 3851</p>	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.

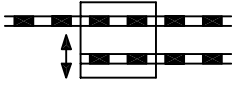
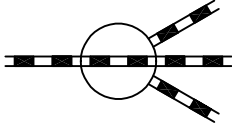
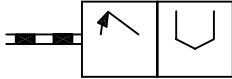
5.3 Symbols giving supplementary information

None.

5.4 Application rules for the symbols in 5.3









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







5.5 Application examples

5.5.1	X3851	 <p>245, 3852, 3853</p>	Traverser, traversing platform with one railway track on one side and two railway tracks on the other
5.5.2	X3852	 <p>3852, 3854</p>	Railway turntable serving four railway tracks
5.5.3	X3853	 <p>101, 2064, 3852, 3855</p>	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

6.1.9	3869		Covered lorry, van
6.1.10	3870		Tank truck
6.1.11	3871		Open railway wagon or open trailer
6.1.12	3872		Covered railway wagon or covered trailer
6.1.13	3873		Railway wagon or trailer for non-solid material
6.1.14	3874		Railway tanker or trailer tanker
6.1.15	3875		Locomotive
6.1.16	3881		Cargo ship

6.2 Application rules for the symbols in 6.1

None.

6.3 Symbols giving supplementary information

None.

6.4 Application rules for the symbols in 6.3

None.

6.5 Application examples

None.

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ICS 01.080.30; 53.040.01

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