
**Mobile elevating work platforms —
Symbols for operator controls
and other displays**

*Plates-formes élévatrices mobiles de personnel — Symboles
pour les commandes de l'opérateur et autres indicateurs*



Reference number
ISO 20381:2009(E)

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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 20381 was prepared by Technical Committee ISO/TC 214, *Elevating work platforms*.

Mobile elevating work platforms — Symbols for operator controls and other displays

IMPORTANT — The electronic file of this document contains colours which are considered to be useful for the correct understanding of the document. Users should therefore consider printing this document using a colour printer.

1 Scope

This International Standard establishes general graphic symbols for the operator controls and other displays of mobile elevating work platforms (MEWPs).

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.

IEC 80416-3:2002, *Basic principles for graphical symbols for use on equipment — Part 3: Guidelines for the application of graphical symbols*

3 Terms and definitions

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

3.1

symbol

visually perceptible figure used to transmit information independently of language

NOTE It can be produced by drawing, printing or other means.

4 General

4.1 Symbols shall be as shown in the successive clauses of this International Standard. However, symbols that are shown in outline form may, in actual use, be filled for enhanced clarity of reproduction and to improve visual perception by the operator, except as otherwise noted for individual symbols.

It is recommended that symbols be made as simple as possible, especially because they will be submitted to the effects of dust, painting, etc.

4.2 Limitations inherent in some reproduction and display technologies can require increased line thickness or other minor modifications of symbols. Such modifications are acceptable, provided the symbol remains unchanged in its basic graphical elements and is easily discernible by the operator.

4.3 Additionally, to improve the appearance and perceptibility of a graphical symbol or to coordinate with the design of the equipment to which the symbol is applied, it could be necessary to change the thickness or to round the corners of a symbol. The graphic designer is normally free to make such changes provided that the essential perceptual characteristics of the symbols are maintained in accordance with IEC 80416-3:2002, 6.1.

4.4 For actual use, all symbols shall be reproduced large enough to be easily discernible by the operator. See IEC 80416-3:2002, Clause 5, for the proper sizing of symbols.

4.5 Symbols on controls and displays shall have good contrast to their background. A light symbol on a dark background is preferred for most controls. Displays may use either a light symbol on a dark background or a dark symbol on a light background, depending upon which of these alternatives provides the best visual perception. When a symbol image is reversed (for example, from black on white to white on black or vice versa), it shall be done for the entire symbol.

4.6 Most symbols are constructed using a building block approach in which various symbols and symbol elements are combined in a logical manner to produce new symbols. For example, symbol 8.4 for the engine lubricating oil filter has been constructed using engine symbol 6.1, oil symbol 6.5 and filter symbol 6.10.

4.7 The symbol may be located on the control panel in any desired position according to the movement it shows.

4.8 Symbols shall be located on, or adjacent to, the control or display that is being identified. Where more than one symbol is required for a control, the symbols shall be located in relation to the control such that the movement of a control towards the symbol shall effect the function depicted by that symbol.

4.9 ISO/IEC registration numbers are provided for the symbols in this International Standard. Registration numbers below 5000 refer to ISO 7000. Registration numbers above 5000 refer to IEC 60417.

NOTE At the time of publication of this International Standard, a number of symbols for operator controls and other displays had yet to be registered. These are intended to form the subject of an Amendment to this International Standard, to be published at a later date and to include symbols for the following: chain-breaking, chain slack, on-track travel mode, footswitch activation, MEWP with telescopic boom (basic shape, raise/lower, extend/retract, levelling of platform, jib raise/lower), MEWP with articulating boom (basic shape, upper and lower boom raise/lower and extend/retract, levelling of platform, jib raise/lower), platform rotation, MEWP on lorry with telescopic boom (raise/lower, jib raise/lower), MEWP on lorry with articulating boom (upper and lower boom raise/lower and extend/retract, levelling of platform), vertical MEWP (basic shape, raise/lower), automatic chassis level control, platform overload, maximum wheel load, maximum stabilizer/outrigger load, and maximum tilt (inclination).

4.10 Symbols are presented within the outer limits of a 24 mm square grid (32 % of the original size on the ISO graphics grid). Corner marks delimit the corners of the 75 mm square graphics grid and are not part of the symbol itself, but are provided to ensure consistent presentation of all symbol graphics.

5 Colour

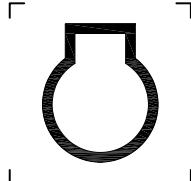
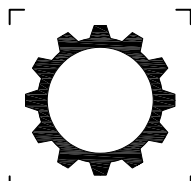
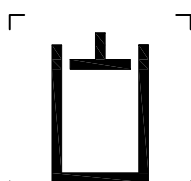
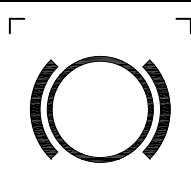
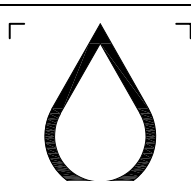
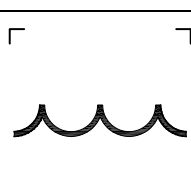
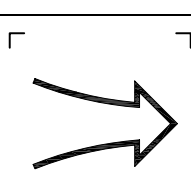
5.1 When used on illuminated displays, the following colours have the meanings indicated:

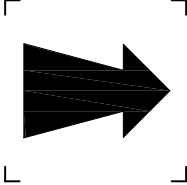
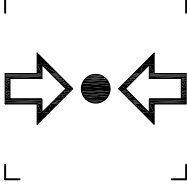
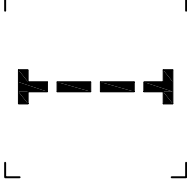
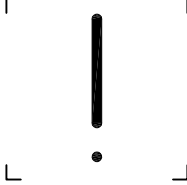
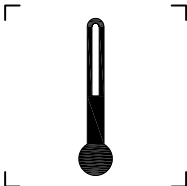
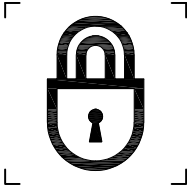

- red: failure or serious malfunction; requires immediate attention;
- yellow or amber: outside normal operating limits;
- green: normal operating condition.

5.2 In addition, certain colours are used for a specific function:


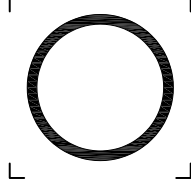
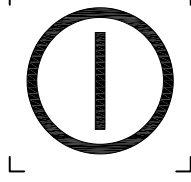
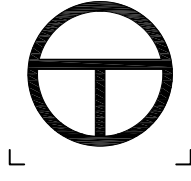
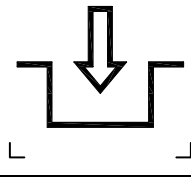
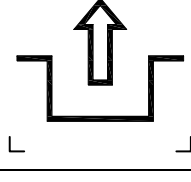

- blue: headlight main-/high-beam display;
- red: hazard warning display;
- green: turn signal display.

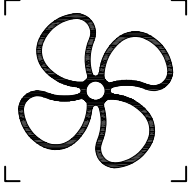
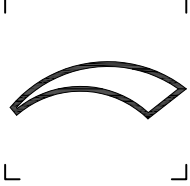
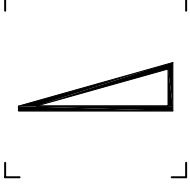
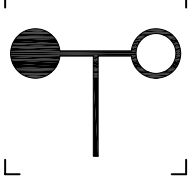
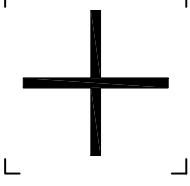
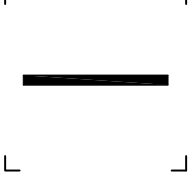
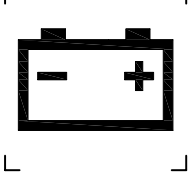
6 Basic symbol shapes

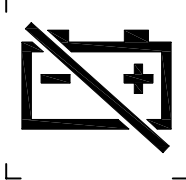
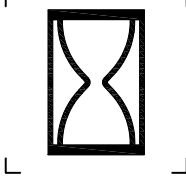
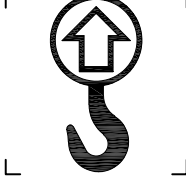
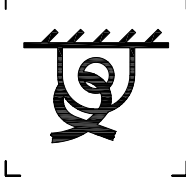
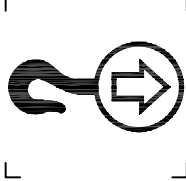
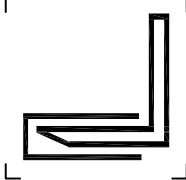

Symbol number	Symbol form/shape	Symbol description/application	ISO/IEC registration number
6.1		Engine	ISO 7000-1156
6.2		Transmission	ISO 7000-1166
6.3		Hydraulic system	ISO 7000-1409
6.4		Brake system	ISO 7000-1399
6.5		Oil	ISO 7000-1056
6.6		Coolant (water)	ISO 7000-0536
6.7		Intake air	ISO 7000-1604

Symbol number	Symbol form/shape	Symbol description/application	ISO/IEC registration number
6.8		Exhaust gas	ISO 7000-1605
6.9		Pressure	ISO 7000-1701
6.10		Filter	ISO 7000-1369
6.11		Failure/malfunction	ISO 7000-1603
6.12		Temperature	ISO 7000-0034
6.13		Lock	ISO 7000-1656
6.14		Unlock	IEC 60417-5570








7 General symbols


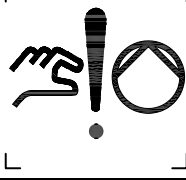


Symbol number	Symbol form/shape	Symbol description/application	ISO/IEC registration number
7.1		On/start	IEC 60417-5007
7.2		Off/stop	IEC 60417-5008
7.3		On and Off	IEC 60417-5010
7.4		On and Off (push-button) (Switching on with push-button press only)	IEC 60417-5011
7.5		Engaging, mechanical activation (Symbol may be rotated 90° for a clearer visual representation.)	ISO 7000-0022
7.6		Disengaging, mechanical deactivation (Symbol may be rotated 90° for a clearer visual representation.)	ISO 7000-0023
7.7		Horn	ISO 7000-0244

Symbol number	Symbol form/shape	Symbol description/application	ISO/IEC registration number
7.8		Ventilation	ISO 7000-0089
7.9		Continuously variable control — Rotational	ISO 7000-1364
7.10		Continuously variable control — Linear	IEC 60417-5004
7.11		Wind speed	ISO 7000-1698
7.12		Plus/increase/positive polarity	IEC 60417-5005
7.13		Minus/decrease/negative polarity	IEC 60417-5006
7.14		Battery	ISO 7000-0247

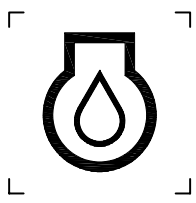
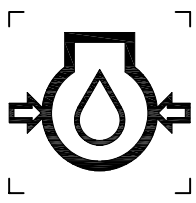
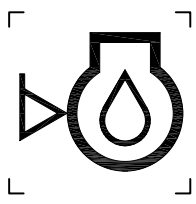
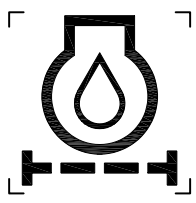
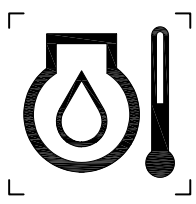
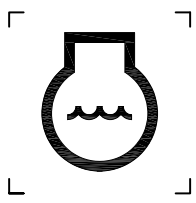
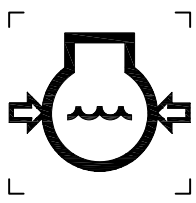
Symbol number	Symbol form/shape	Symbol description/application	ISO/IEC registration number
7.15		Battery power — Disconnect	ISO 7000-2063
7.16		Hour meter/elapsed operating hours	ISO 7000-1366
7.17		Lift point	ISO 7000-1368
7.18		Tie-down point	ISO 7000-2069
7.19		Tow point	ISO 7000-2686
7.20		Fork-lift pocket	ISO 7000-2869
7.21		Very slow; creeper	ISO 7000-2812

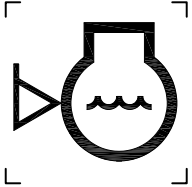
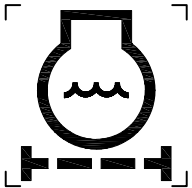
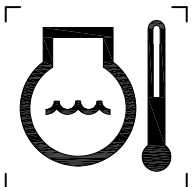
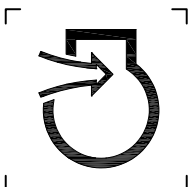
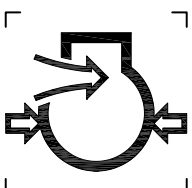
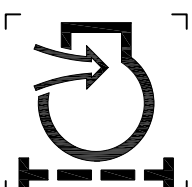
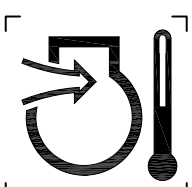
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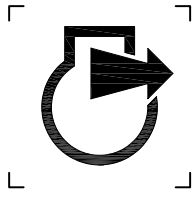
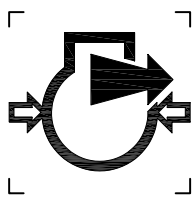
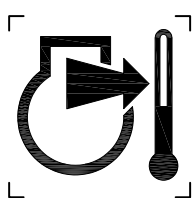
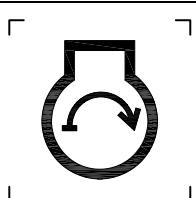

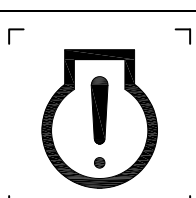
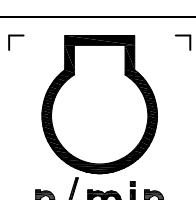
Symbol number	Symbol form/shape	Symbol description/application	ISO/IEC registration number
7.22		Slow	ISO 7000-2811
7.23		Fast	ISO 7000-2810
7.24		High torque/high force	ISO 7000-2689
7.25		Remote control	ISO 7000-0093
7.26		Rope/cable breaking	ISO 7000-2687
7.27		Rope/cable slack	ISO 7000-2688
7.28		Read operator's manual	ISO 7000-0790

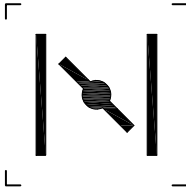
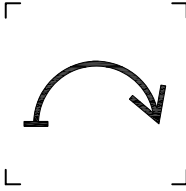
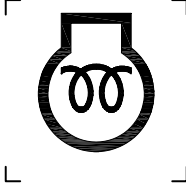
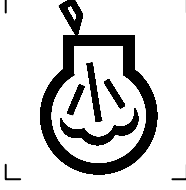

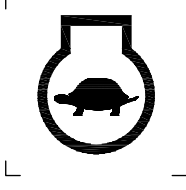
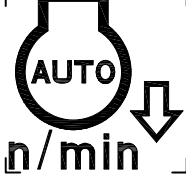
Symbol number	Symbol form/shape	Symbol description/application	ISO/IEC registration number
7.29		Back-up pump, electrical	ISO 7000-2697
7.30		Back-up pump, manual	ISO 7000-2698
7.31		Warning — Caution	ISO 7000-0434
7.32		Danger — Electricity	ISO 7010-W012

8 Engine symbols

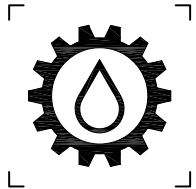

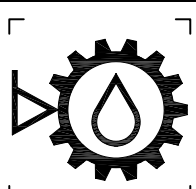
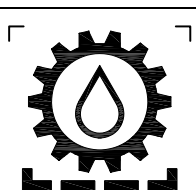
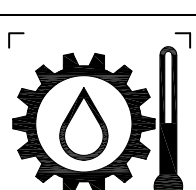
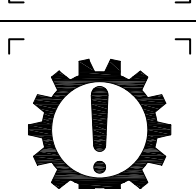
Symbol number	Symbol form/shape	Symbol description/application	ISO/IEC registration number
8.1		Engine lubricating oil	ISO 7000-1372
8.2		Engine lubricating oil — Pressure	ISO 7000-1374
8.3		Engine lubricating oil — Level	ISO 7000-1373
8.4		Engine lubricating oil — Filter	ISO 7000-1376
8.5		Engine lubricating oil — Temperature	ISO 7000-1375
8.6		Engine coolant (If the engine coolant level alone is to be displayed, then this symbol may be used to indicate the level in the tank. See 8.8.)	ISO 7000-1377
8.7		Engine coolant — Pressure	ISO 7000-1379

Symbol number	Symbol form/shape	Symbol description/application	ISO/IEC registration number
8.8		Engine coolant — Level	ISO 7000-1378
8.9		Engine coolant — Filter	ISO 7000-1562
8.10		Engine coolant — Temperature	ISO 7000-1380
8.11		Engine intake/combustion air	ISO 7000-1381
8.12		Engine intake/combustion air — Pressure	ISO 7000-1382
8.13		Engine intake air — Filter	ISO 7000-1170
8.14		Engine intake air — Temperature	ISO 7000-1383

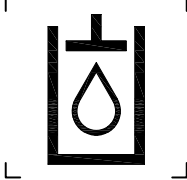
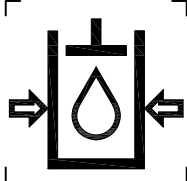
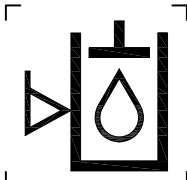

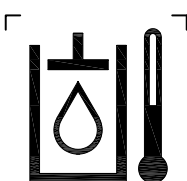
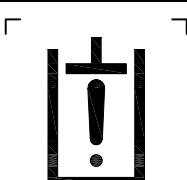
Symbol number	Symbol form/shape	Symbol description/application	ISO/IEC registration number
8.15		Engine exhaust gas	ISO 7000-1384
8.16		Engine exhaust gas — Pressure	ISO 7000-1385
8.17		Engine exhaust gas — Temperature	ISO 7000-1386
8.18		Engine start	ISO 7000-1387
8.19		Engine stop	ISO 7000-1388
8.20		Engine failure/malfunction	ISO 7000-1371
8.21		Engine rotational speed/frequency	ISO 7000-1389

Symbol number	Symbol form/shape	Symbol description/application	ISO/IEC registration number
8.22		Choke	ISO 7000-0243
8.23		Start/crank; crank	ISO 7000-1365
8.24		Electrical preheat	ISO 7000-1704
8.25		Gas injection	ISO 7000-1547
8.26		High engine speed	ISO 7000-2883
8.27		Low engine speed	ISO 7000-2884
8.28		Engine rotational speed — Automatic decrease	ISO 7000-2309


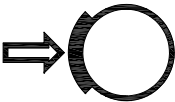



9 Transmission symbols

Symbol number	Symbol form/shape	Symbol description/application	ISO/IEC registration number
9.1		Transmission oil	ISO 7000-1397
9.2		Transmission oil — Pressure	ISO 7000-1167
9.3		Transmission oil — Level	ISO 7000-1398
9.4		Transmission oil — Filter	ISO 7000-1169
9.5		Transmission oil — Temperature	ISO 7000-1168
9.6		Transmission — Failure/malfunction	ISO 7000-1396

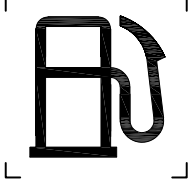

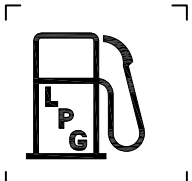
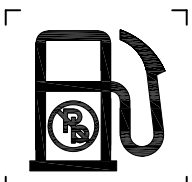
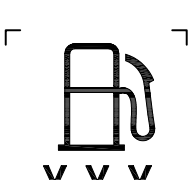
10 Hydraulic symbols

Symbol number	Symbol form/shape	Symbol description/application	ISO/IEC registration number
10.1		Hydraulic oil	ISO 7000-1411
10.2		Hydraulic oil — Pressure	ISO 7000-1413
10.3		Hydraulic oil — Level	ISO 7000-1412
10.4		Hydraulic oil — Filter	ISO 7000-1415
10.5		Hydraulic oil — Temperature	ISO 7000-1414
10.6		Hydraulic system — Failure/malfunction	ISO 7000-1410


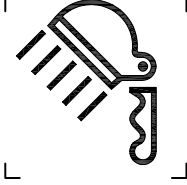
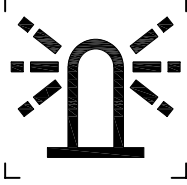
11 Braking symbols

Symbol number	Symbol form/shape	Symbol description/application	ISO/IEC registration number
11.1		Parking brake	ISO 7000-0238
11.2		Brake on	ISO 7000-0020
11.3		Brake off	ISO 7000-0021
11.4		Brake system pressure	ISO 7000-1402
11.5		Brake failure	Application ISO 7000-0239

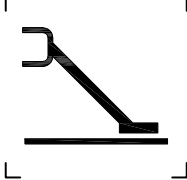
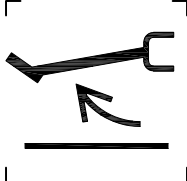
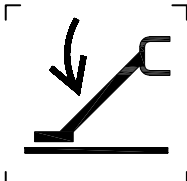
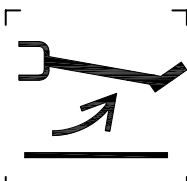
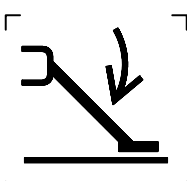
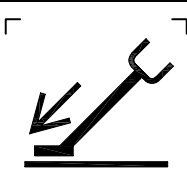
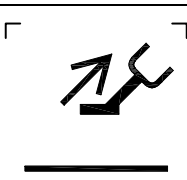
12 Fuel symbols

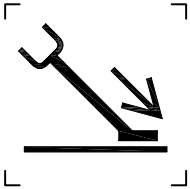
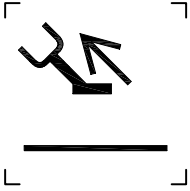
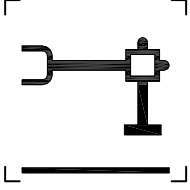
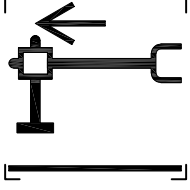
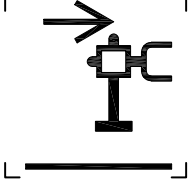
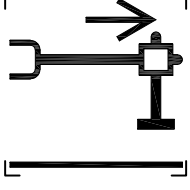
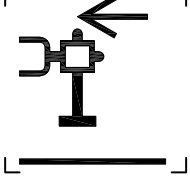
Symbol number	Symbol form/shape	Symbol description/application	ISO/IEC registration number
12.1		Gasoline fuel	ISO 7000-0245
12.2		Diesel fuel	ISO 7000-1541
12.3		LPG fuel	ISO 7000-2489
12.4		Unleaded fuel	ISO 7000-0237
12.5		Fuel type [This symbol identifies the fuel type (e.g. LPG, CMG, DIESEL, HYDROGEN, E85, LOW SULPHUR) that is currently being used or that is to be used. It may be shown on a control used to switch between dual fuel types or on a display to show the current fuel type.]	ISO 7000-2641

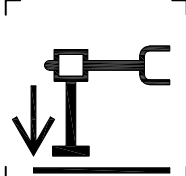
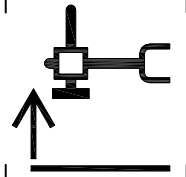
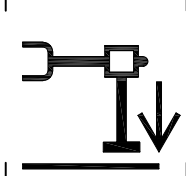
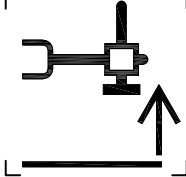
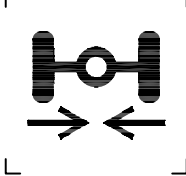
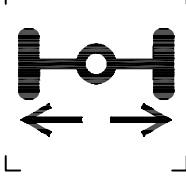
13 Lighting symbols

Symbol number	Symbol form/shape	Symbol description/application	ISO/IEC registration number
13.1		Floodlight/work light	ISO 7000-1204
13.2		Spotlight	ISO 7000-1700
13.3		Beacon	ISO 7000-1141

14 Stability symbols

Symbol number	Symbol form/shape	Symbol description/application	ISO/IEC registration number
14.1		Stabilizer — Basic symbol	ISO 7000-2072
14.2		Left stabilizer — Up/raise	ISO 7000-2073
14.3		Left stabilizer — Down/lower	ISO 7000-2074
14.4		Right stabilizer — Up/raise	ISO 7000-1292
14.5		Right stabilizer — Down/lower	ISO 7000-1291
14.6		Left stabilizer — Extend	ISO 7000-2075
14.7		Left stabilizer — Retract	ISO 7000-2076

Symbol number	Symbol form/shape	Symbol description/application	ISO/IEC registration number
14.8		Right stabilizer — Extend	ISO 7000-1536
14.9		Right stabilizer — Retract	ISO 7000-1537
14.10		Outrigger — Basic symbol	ISO 7000-2077
14.11		Outrigger — Left beam out — Horizontal extension only	ISO 7000-2078
14.12		Outrigger — Left beam in — Horizontal retraction only	ISO 7000-2079
14.13		Outrigger — Right beam out — Horizontal extension only	ISO 7000-0746B
14.14		Outrigger — Right beam in — Horizontal retraction only	ISO 7000-0747B

Symbol number	Symbol form/shape	Symbol description/application	ISO/IEC registration number
14.15		Outrigger — Left jack down — Vertical extension only	ISO 7000-2080
14.16		Outrigger — Left jack up — Vertical retraction only	ISO 7000-2081
14.17		Outrigger — Right jack down — Vertical extension only	ISO 7000-0750B
14.18		Outrigger — Right jack up — Vertical retraction only	ISO 7000-0751B
14.19		Retract axles	ISO 7000-2870
14.20		Extend axles	ISO 7000-2871

15 Operation control symbols

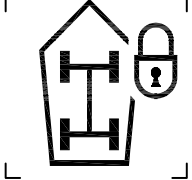
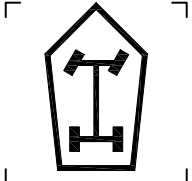
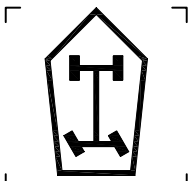
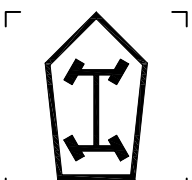
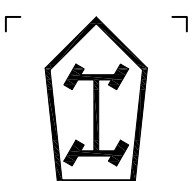
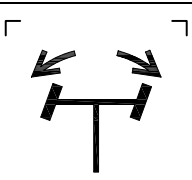
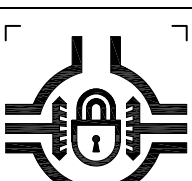
Symbols may be combined on a personalized drawing representing a part, or the whole, of the machine to indicate movements of the MEWP.

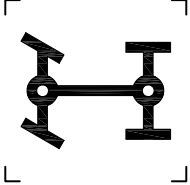
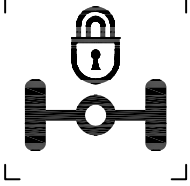
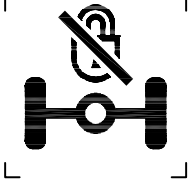
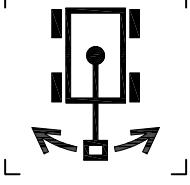
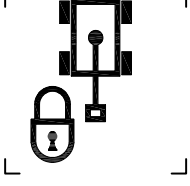
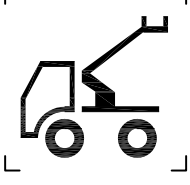

Forward and reverse shall be distinguished for MEWP with a 360° rotation — for example, using colours that will be reported on the carrier.


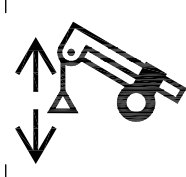
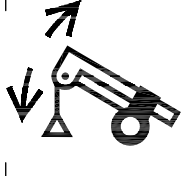
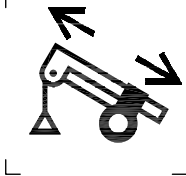
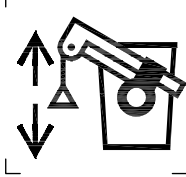
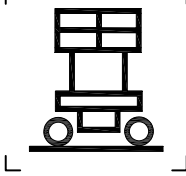
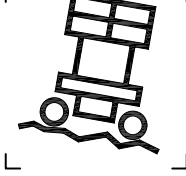
A platform is shown to distinguish the device as an MEWP.

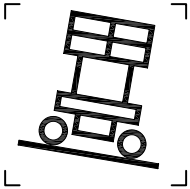
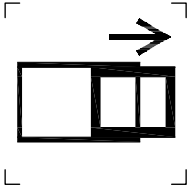
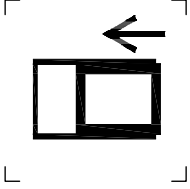
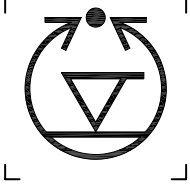
ISO arrows are used to show the direction of movement.

Symbol number	Symbol form/shape	Symbol description/application	ISO/IEC registration number
15.1		Direction of movement	IEC 60417-5022
15.2		Operating direction	ISO 7000-1436
15.3		Operating direction — Multiple direction	ISO 7000-1703
15.4		Roadway travel mode (transport on road)	ISO 7000-2310
15.5		Direction of travel, forward and/or rearward	ISO 7000-2691


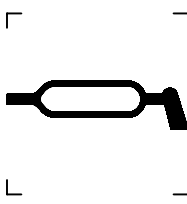
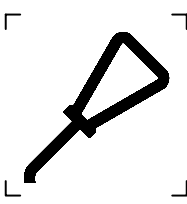
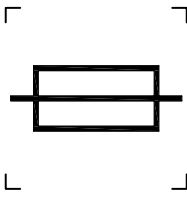
Symbol number	Symbol form/shape	Symbol description/application	ISO/IEC registration number
15.6		Wheels in straight position	ISO 7000-2690
15.7		Two-wheel steering — Front	ISO 7000-2391
15.8		Two-wheel steering — Rear	ISO 7000-2392
15.9		Four-wheel/all-wheel steering	ISO 7000-2393
15.10		Crab steering	ISO 7000-2394
15.11		Steer	ISO 7000-2699
15.12		Differential lock (Add symbols or diagonal line through lock for “on” and “off” as needed.)	ISO 7000-1662

Symbol number	Symbol form/shape	Symbol description/application	ISO/IEC registration number
15.13		<p>Axle connect — All-wheel drive</p> <p>(Add symbols for “on” and “off” or “engage” and “disengage” as needed.)</p>	ISO 7000-1203
15.14		<p>Axle lock — On or available</p>	ISO 7000-2872
15.15		<p>Axle lock — Off or not available</p>	ISO 7000-2873
15.16		<p>MEWP, boom slewing</p>	ISO 7000-2692
15.17		<p>MEWP, boom lock</p>	ISO 7000-2693
15.18		<p>MEWP on lorry with telescopic boom — Basic shape</p> <p>(The elements of platform or chassis of this symbol may be used in combination with other symbols. See 4.6.)</p>	ISO 7000-2874
15.19		<p>MEWP on lorry with telescopic boom — Extend/retract</p>	ISO 7000-2877

Symbol number	Symbol form/shape	Symbol description/application	ISO/IEC registration number
15.20		MEWP on lorry with telescopic boom — Raise/lower	ISO 7000-2878
15.21		Jib winch — Load raise/lower	ISO 7000-2879
15.22		Jib — Tilt up/down (with winch)	ISO 7000-2880
15.23		Jib — Retract/extend (with winch)	ISO 7000-2881
15.24		Jib winch — Load raise/lower — Lower controls	ISO 7000-2882
15.25		MEWP on level surface	ISO 7000-2694
15.26		MEWP on rough terrain	ISO 7000-2695

Symbol number	Symbol form/shape	Symbol description/application	ISO/IEC registration number
15.27		MEWP on slope	ISO 7000-2696
15.28		Platform extension — Extend, out	ISO 7000-2875
15.29		Platform extension — Retract, in	ISO 7000-2876
15.30		Chassis level control	ISO 7000-0176

16 Maintenance symbols

Symbol number	Symbol form/shape	Symbol description/application	ISO/IEC registration number
16.1		Maintenance manual position	ISO 7000-1659
16.2		Grease lubrication point	ISO 7000-0787
16.3		Oil lubrication point	Application ISO 7000-0391
16.4		Fuse	IEC 60417-5016

Bibliography

- [1] ISO 3461-1:1988, *General principles for the creation of graphical symbols — Part 1: Graphical symbols for use on equipment*
- [2] ISO 6405-1, *Earth-moving machinery — Symbols for operator controls and other displays — Part 1: Common symbols*
- [3] ISO 7000, *Graphical symbols for use on equipment — Index and synopsis*
- [4] ISO 7010, *Graphical symbols — Safety colours and safety signs — Safety signs used in workplaces and public areas*
- [5] IEC 60417-DB-12M, *Graphical symbols for use on equipment* ¹⁾

1) Online database.

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