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Tractors, machinery for agriculture and forestry, powered lawn and garden equipment — Symbols for operator controls and other displays —

Part 2: Symbols for agricultural tractors and machinery

Tracteurs, matériels agricoles et forestiers, matériel à moteur pour jardins et pelouses — Symboles pour les commandes de l'opérateur et autres indications —

Partie 2: Symboles pour tracteurs et matériels agricoles

Reference number
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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.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

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. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation on the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the WTO principles in the Technical Barriers to Trade (TBT) see the following URL: Foreword - Supplementary information

The committee responsible for this document is ISO/TC 23, *Tractors and machinery for agriculture and forestry*, SC 14, *Operator controls, operator symbols and other displays, operator manuals*.

This fourth edition cancels and replaces the third edition (ISO 3767-2:2008), which has been technically revised. Many new symbols have been added.

A list of all the parts in the ISO 3767 series can be found on the ISO website.

Tractors, machinery for agriculture and forestry, powered lawn and garden equipment — Symbols for operator controls and other displays —

Part 2: Symbols for agricultural tractors and machinery

1 Scope

This document standardizes symbols for use on operator controls and other displays on agricultural tractors and machinery.

NOTE 1 ISO 3767-1 covers common symbols that apply to multiple types of agricultural tractors and machinery, forestry machinery, and powered lawn and garden equipment. ISO 3767-3 covers symbols for powered lawn and garden equipment. ISO 3767-4 covers symbols for forestry machinery. ISO 3767-5 covers symbols for manual portable forestry machines.

NOTE 2 ISO 7000 and IEC 60417 can be consulted for additional internationally standardized symbols of potential relevance to agricultural tractors and machinery.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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 3767-1:2016, *Tractors, machinery for agriculture and forestry, powered lawn and garden equipment — Symbols for operator controls and other displays—Part 1: Common symbols*

IEC 80416-1, *Basic principles for graphical symbols for use on equipment — Part 1: Creation of graphical symbols for registration*

ISO 80416-2, *Basic principles for graphical symbols for use on equipment — Part 2: Form and use of arrows*

IEC 80416-3, *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 document, the following terms and definitions apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

— IEC Electropedia: available at http://www.electropedia.org/

— ISO Online browsing platform: available at http://www.iso.org/obp

3.1
symbol
graphical symbol
visually perceptible figure used to transmit information independent of language

Note 1 to entry: It may be produced by drawing, printing or other means. Letters, numerals and mathematical symbols may be used as symbols or symbol elements. For some specific applications, groups of letters (for example, AUTO, STOP) are used as symbols or symbol elements.

Note 2 to entry: Letters and numerals are not registered by ISO/TC 145/SC 3 or published in ISO 7000 unless they are symbol elements embedded in graphical symbols.

3.2
icon
digital display icon
digitized (pixelated) representation of a graphical symbol, usually used on a reconfigurable electronic display screen or graphical user interface (GUI)

Note 1 to entry: A single symbol can be represented by multiple icons, each of a different size, pixel count or colourization.

4 General

4.1 Except where indicated in subsequent clauses, symbols shall be used as shown in this document.

4.2 Selected symbols, which are shown in outline form in this document, may be filled in actual use for enhanced clarity of reproduction and improved visual perception by the operator, except as otherwise specified for individual symbols, and in accordance with IEC 80416-3.

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

4.4 To improve the appearance and perceptibility of a graphical symbol, or to coordinate with the design of the equipment to which it is applied, it can be necessary to modify the symbol as indicated in IEC 80416-3 (for example, to change the line width or to round the corners of the symbol). Such modifications are allowed, provided that the essential perceptible characteristics of the symbol are maintained.

4.5 For actual use, all symbols shall be reproduced large enough to be easily discernible by the operator. Follow IEC 80416-1 for the proper sizing of symbols. Symbols grouped together in a display or on a set of controls should be scaled to the same degree relative to the corner marks of the symbol original as shown in this document in order to maintain the correct visual relationship among the symbols. Symbols shall be used in the orientation shown in this document, unless rotation or mirror imaging is specifically allowed for individual symbols.

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 a new symbol.

4.7 In some cases, symbols may be used in conjunction, without being combined into a composite symbol, to convey the same meaning as the composite symbol.

4.8 Symbols are generally intended to replace a word or words with a graphical image that has the same meaning for all operators, regardless of their native language. However, the use of a graphical symbol to identify a control or display does not preclude the use of words in conjunction with that control or display.

4.9 If a symbol shows a machine or parts of a machine from a side view, a machine moving from right to left across the symbol area shall be assumed. If a symbol shows a machine or parts of a machine from an overhead view, a machine moving from bottom to top across the symbol area shall be assumed.

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

4.11 If symbols are cast, moulded, embossed or stamped into a surface, the symbols shall be visually distinct from that surface without dependence on colour.

4.12 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 movement of the control towards the symbols shall effect the function depicted by that symbol.

4.13 Arrows used in symbols shall conform to the requirements of ISO 80416-2. IEC 80416-1 shall be consulted for the general principles for creating symbol originals. IEC 80416-3 should be consulted for guidelines for the application of symbols.

4.14 ISO/IEC registration numbers are shown for symbols which are registered in ISO 7000 or IEC 60417.

NOTE Symbol originals are approved and registered either by ISO/TC 145/SC 3 and published in ISO 7000 or by IEC/SC 3C and published in IEC 60417. In some cases, modified or application symbols, rather than the registered symbol originals, are standardized in this document.

4.15 When letters or numerals are used in a symbol, the font shown shall not be considered definitive. Other fonts may be used so long as the letters and numerals remain legible.

4.16 Symbols in this document are shown within marks that delimit the corners of the 75 mm square basic pattern from IEC 80416-1. Corner marks are not part of the symbol, but are provided to ensure consistent presentation of all symbol graphics.

5 Colour

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

— red denotes a failure, serious malfunction or operating condition that requires immediate attention;

— yellow or amber denotes a condition outside normal operating limits;

— green denotes a normal operating condition.

6 Development of new symbols

6.1 Prior to developing a new symbol, a search should be conducted for previously standardized symbols with the same or similar meaning to what is needed. ISO 7000 and IEC 60417 (both available in database form) are compilations of internationally standardized symbols which can be useful both for finding appropriate symbols that do not appear in ISO 3767 and for generating concepts that can be used in the development of new symbols.

6.2 New symbols shall be developed in accordance with the principles of ISO 3767-1:2016, Annex A. IEC 80416-1 should be consulted for general principles for the creation of symbols. Arrows shall be in accordance with ISO 80416-2. Different arrow forms have different meanings according to ISO 80416-2. Care should be taken to use the correct arrow form. Following the guidelines of ISO 3767-1:2016, Annex A makes possible the development of symbols appropriate in graphical form and content for international standardization and ISO 7000 registration.

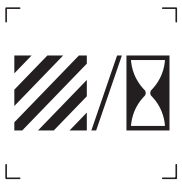
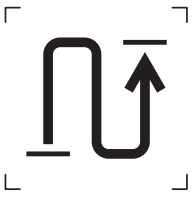
6.3 Symbols proposed for standardization in this document shall include a short explanation of the function or expected use of the symbol.

NOTE IEC 80416-1 uses the term "description" for this type of information and provides guidelines for writing descriptions for symbols intended for standardization in ISO 7000 or IEC 60417. The descriptions for symbols standardized in this document can serve as examples.

7 Adaptation of symbols as digital display icons

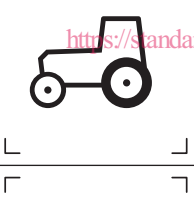
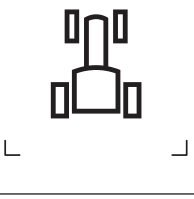
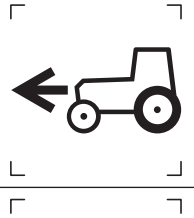
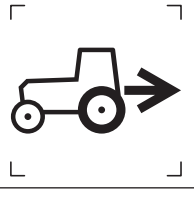
Symbols can be adapted for use as digital display icons on visual display units, reconfigurable displays or other electronic displays. Such adaptations should follow the principles of ISO 80416-4. Special care should be taken to ensure that digital display icons preserve the visual impression of the symbol from which the icon is adapted. The same principles regarding use of colour with symbols apply to the use of colour with digital display icons.

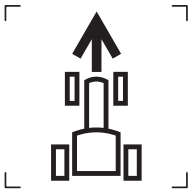
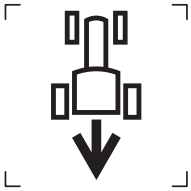
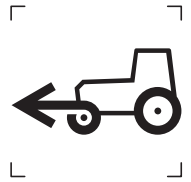
8 General agricultural equipment symbols

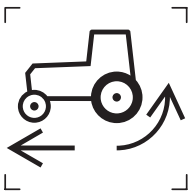
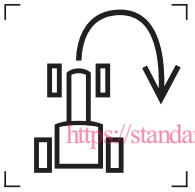
No.	Graphical symbol	Symbol title and description	ISO/IEC registration number
8.1		**Area worked** To indicate the area that has been worked by a machine. To identify the control for specifying an area.	ISO 7000-1657
8.2		**Area worked per hour** To indicate the area that has been worked by a machine per hour of operation.	ISO 7000-1658
8.3		**Work distance travelled** To indicate the distance that has been travelled by a machine during work.	ISO 7000-2177
8.4		**Application rate per area, general** To indicate the application rate (for example, of seeds or fertilizer) per area.	ISO 7000-3188

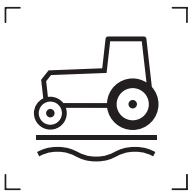
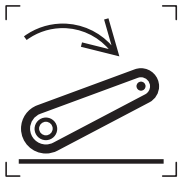
No.	Graphical symbol	Symbol title and description	ISO/IEC registration number
8.5		**Machine immobilizer** To identify the control that immobilizes the machine to prevent its unintended or unauthorized movement. To indicate that the machine is in the immobilized condition.	ISO 7000-3037
8.6		**Total area worked** To indicate the total area that has been worked by the machine in the given time period.	ISO 7000-3130
8.7		**Area remaining to work** To indicate the area that remains to be worked by a machine. The total area to be worked is specified and the actual area worked is subtracted to determine the area remaining.	ISO 7000-3244

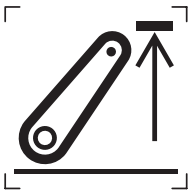
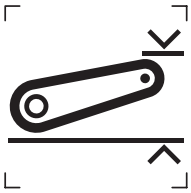
9 Agricultural tractor symbols

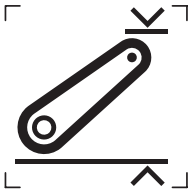
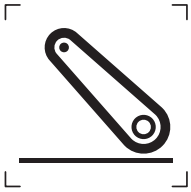
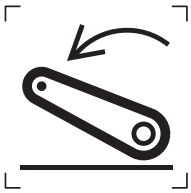
No.	Graphical symbol	Symbol title and description	ISO/IEC registration number
9.1		**Tractor (side view of machine)** To identify the tractor from a side (profile) view. Use as a base symbol for developing tractor symbols that use a side (profile) view.	ISO 7000-2133
9.2		**Tractor (overhead view of machine)** To identify the tractor from an overhead (plan) view. This symbol is viewed from the perspective of a person looking at the tractor from above the machine. Use as a base symbol for developing tractor symbols that use an overhead (plan) view.	ISO 7000-2134
9.3		**Tractor, forward direction of movement (side view of machine)** To identify the control that moves the tractor in the forward direction. To indicate that the tractor is moving forward.	ISO 7000-1666
9.4		**Tractor, rearward direction of movement (side view of machine)** To identify the control that moves the tractor in the rearward direction. To indicate that the tractor is moving rearward.	ISO 7000-1667

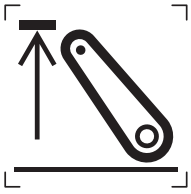
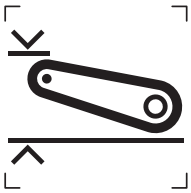
No.	Graphical symbol	Symbol title and description	ISO/IEC registration number
9.5		**Tractor, forward direction of movement (overhead view of machine)** To identify the control that moves the tractor in the forward direction. To indicate that the tractor is moving forward. This symbol is viewed from the perspective of a person looking at the tractor from above the machine.	ISO 7000-2135
9.6		**Tractor, rearward direction of movement (overhead view of machine)** To identify the control that moves the tractor in the rearward direction. To indicate that the tractor is moving rearward. This symbol is viewed from the perspective of a person looking at the tractor from above the machine.	ISO 7000-2136
9.7		**Tractor, ground speed** To identify the display that shows the ground speed of the tractor. To indicate the ground speed of the tractor.	ISO 7000-2179
9.8		**Tractor, ground speed, automatic control** To identify the control that activates the automatic mode for tractor ground speed. To indicate that tractor ground speed is in the automatic control mode.	ISO 7000-3131
9.9		**Tractor, target ground speed** To identify the control that sets the target ground speed of the tractor. To indicate the tractor target ground speed.	ISO 7000-3132
9.10		**Tractor, front wheel drive** To identify the control for the tractor front wheel drive. To indicate that the tractor front wheel drive is in normal operation mode.	ISO 7000-1663
9.11		**Tractor, front wheel drive, off or not available** To identify the control that switches off the tractor front wheel drive. To indicate that the tractor front wheel drive is switched off or is otherwise not available.	Negation of ISO 7000-1663
9.12		**Tractor, front wheel drive, automatic operation** To identify the control for the automatic operation of the tractor front wheel drive. To indicate that the tractor front wheel drive is in automatic operation mode. Front wheel drive is engaged and disengaged automatically based on operating conditions.	ISO 7000-2420

No.	Graphical symbol	Symbol title and description	ISO/IEC registration number
9.13		**Tractor, front wheel drive, braking** To identify the control for the tractor front wheel drive brake. To indicate the status of the tractor front wheel drive brake system. Front wheel drive engages when brakes are applied at travel speeds above a specified limit.	ISO 7000-2421
9.14		**Tractor, wheel slip** To indicate the degree of wheel slip, which is the difference between the actual ground speed of the tractor and the ground speed implied by the rotational speed of the drive wheels. To identify the control that sets or adjusts the degree of wheel slip at which an indication is provided or action is taken, either manually or automatically.	ISO 7000-1665
9.15		**Tractor, wheel slip. automatic operation** To identify the control for the automatic operation of the tractor wheel slip system. To indicate that the tractor wheel slip system is in automatic operation mode.	ISO 7000-3133
9.16		**Tractor, headland turning** To identify the control for a programmed sequence of tractor operations taken at the end of a field (headland). To indicate the operational status of the tractor headland turning system. This symbol is viewed from the perspective of a person looking at the tractor from above the machine.	ISO 7000-2801
9.17		**Tractor, auxiliary headlights** To identify the control for the auxiliary headlights of the tractor.	ISO 7000-2137
9.18		**Tractor, suspension system** To identify the control for the tractor suspension system. To indicate the operational status of the tractor suspension system.	ISO 7000-3134
9.19		**Tractor, suspension system, front** To identify the control for the tractor front suspension system. To indicate the operational status of the tractor front suspension system.	ISO 7000-3135

No.	Graphical symbol	Symbol title and description	ISO/IEC registration number
9.20		**Tractor, suspension system, rear** To identify the control for the tractor rear suspension system. To indicate the operational status of the tractor rear suspension system.	ISO 7000-3136
9.21		**Tractor, ride control system** To identify the control for the tractor ride control system, which dynamically adjusts the suspension system to smooth the ride over uneven ground. To indicate the operational status of the tractor ride control system.	ISO 7000-3137
9.22		**Rockshaft** To identify the control for the rockshaft of a machine; the rockshaft raises or lowers the implement or equipment attached to it. To indicate the operational status of the rockshaft. ISO 7000-2133 (see 9.1) may be placed to the left of this symbol. The horizontal ground line may be deleted if in context the symbol meaning remains clear. For front hitch (rockshaft) use the mirror image (see 9.30).	ISO 7000-1566
9.23		**Rockshaft, up; rockshaft, raise** To identify the control that raises the rockshaft. To indicate that the rockshaft is being raised or is in the raised (up) position. ISO 7000-2133 (see 9.1) may be placed to the left of this symbol. The horizontal ground line may be deleted if in context the symbol meaning remains clear. For front hitch (rockshaft) use the mirror image (see 9.31).	ISO 7000-1567
9.24		**Rockshaft, down; rockshaft, lower** To identify the control that lowers the rockshaft. To indicate that the rockshaft is being lowered or is in the lowered (down) position. ISO 7000-2133 (see 9.1) may be placed to the left of this symbol. The horizontal ground line may be deleted if in context the symbol meaning remains clear. For front hitch use the mirror image (see 9.32).	ISO 7000-1568

No.	Graphical symbol	Symbol title and description	ISO/IEC registration number
9.25		**Rockshaft, float** To identify the control that allows the rockshaft to move up and down with the contour of the ground over which or through which the implement or equipment attached to the rockshaft moves. To indicate that the rockshaft is in the float condition. ISO 7000-2133 (see 9.1) may be placed to the left of this symbol. For front hitch (rockshaft) use the mirror image (see 9.33).	ISO 7000-1660
9.26		**Rockshaft, upper limit** To identify the control that sets the maximum height to which an implement can be raised by the rockshaft. To indicate that the rockshaft is raised to its maximum height. ISO 7000-2133 (see 9.1) may be placed to the left of this symbol. The horizontal ground line may be deleted if in context the symbol meaning remains clear. For front hitch (rockshaft) use the mirror image (see 9.34).	ISO 7000-2178
9.27		**Rockshaft, lower limit** To identify the control that sets the minimum height to which an implement can be lowered by the rockshaft. To indicate that the rockshaft is lowered to its minimum height. ISO 7000-2133 (see 9.1) may be placed to the left of this symbol. The horizontal ground line may be deleted if in context the symbol meaning remains clear. For front hitch (rockshaft) use the mirror image (see 9.35).	ISO 7000-3189
9.28		**Rockshaft, depth control, maximum depth** To identify the control that sets the maximum depth to which the rockshaft is allowed to move while the implement or equipment is in operation. To indicate the maximum depth setting of the rockshaft depth control. ISO 7000-2133 (see 9.1) may be placed to the left of this symbol. For front hitch (rockshaft) use the mirror image (see 9.36).	ISO 7000-3190

No.	Graphical symbol	Symbol title and description	ISO/IEC registration number
9.29		**Rockshaft, depth control, minimum depth** To identify the control that sets the minimum depth to which the rockshaft is allowed to move while the implement or equipment is in operation. To indicate the minimum depth setting of the rockshaft depth control. ISO 7000-2133 (see 9.1) may be placed to the left of this symbol. For front hitch (rockshaft) use the mirror image (see 9.37).	ISO 7000-3191
9.30		**Front hitch (rockshaft)** To identify the control for the rockshaft of a machine; the rockshaft raises or lowers the implement or equipment attached to it. To indicate the operational status of the rockshaft. ISO 7000-2133 (see 9.1) may be placed to the right of this symbol. The horizontal ground line may be deleted if in context the symbol meaning remains clear. For rear hitch (rockshaft) use ISO 7000-1566 (see 9.22).	Mirror image of ISO 7000-1566
9.31		**Front hitch (rockshaft), up (raise)** To identify the control that raises the front hitch (rockshaft). To indicate that the front hitch (rockshaft) is being raised or is in the raised (up) position. ISO 7000-2133 (see 9.1) may be placed to the right of this symbol. The horizontal ground line may be deleted if in context the symbol meaning remains clear. For rear hitch (rockshaft) use ISO 7000-1567 (see 9.23).	Mirror image of ISO 7000-1567
9.32		**Front hitch (rockshaft), down (lower)** To identify the control that lowers the rockshaft. To indicate that the rockshaft is being lowered or is in the lowered (down) position. ISO 7000-2133 (see 9.1) may be placed to the right of this symbol. The horizontal ground line may be deleted if in context the symbol meaning remains clear. For rear hitch (rockshaft) use ISO 7000-1568 (see 9.24).	Mirror image of ISO 7000-1568

No.	Graphical symbol	Symbol title and description	ISO/IEC registration number
9.33		**Front hitch (rockshaft), float** To identify the control that allows the front hitch (rockshaft) to move up and down with the contour of the ground over which or through which the implement or equipment attached to the rockshaft moves. To indicate that the front hitch (rockshaft) is in the float condition. ISO 7000-2133 (see 9.1) may be placed to the right of this symbol. For rear hitch (rockshaft) use ISO 7000-1660 (see 9.25).	Mirror image of ISO 7000-1660
9.34		**Front hitch (rockshaft), upper limit** To identify the control that sets the maximum height to which an implement can be raised by the front hitch (rockshaft). To indicate that the front hitch (rockshaft) is raised to its maximum height. ISO 7000-2133 (see 9.1) may be placed to the right of this symbol. The horizontal ground line may be deleted if in context the symbol meaning remains clear. For rear hitch (rockshaft) use ISO 7000-2178 (see 9.26).	Mirror image of ISO 7000-2178
9.35		**Front hitch (rockshaft), lower limit** To identify the control that sets the minimum height to which an implement can be lowered by the front hitch (rockshaft). To indicate that the front hitch (rockshaft) is lowered to its minimum height. ISO 7000-2133 (see 9.1) may be placed to the right of this symbol. The horizontal ground line may be deleted if in context the symbol meaning remains clear. For rear hitch (rockshaft) use ISO 7000-3189 (see 9.27).	Mirror image of ISO 7000-3189
9.36		**Front hitch (rockshaft), depth control, maximum depth** To identify the control that sets the maximum depth to which the rockshaft is allowed to move while the implement or equipment is in operation. To indicate the maximum depth setting of the rockshaft depth control. ISO 7000-2133 (see 9.1) may be placed to the right of this symbol. For rear hitch (rockshaft) use ISO 7000-3190 (see 9.28).	Mirror image of ISO 7000-3190