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

Part 1: Common symbols

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

Partie 1: Symboles communs

ICS: 65.060.01; 01.080.20

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Foreword

A boiler plate text will be inserted by ISO CS from DIS onwards.

ISO 3767 consists of the following parts, under the general title *Tractors, machinery for agriculture and forestry, powered lawn and garden equipment — Symbols for operator controls and other displays*:

Part 1: Common symbols

Part 2: Symbols for agricultural tractors and machinery

Part 3: Symbols for powered lawn and garden equipment

Part 4: Symbols for forestry machinery

Part 5: Symbols for manual portable forestry machines

List here the changes if this document is a revision.

This edition of ISO 3767-1 constitutes an extensive technical revision with many new symbols added.

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Contents

Foreword	3
Contents	5
1 Scope	1
2 Normative references	1
3 Terms and definitions	2
4 General	2
5 Colour	4
6 Development of new symbols	4
7 Adaptation of symbols as digital display icons	5
8 Base symbols.....	6
9 General symbols.....	8
10 Engine symbols	44
11 Transmission symbols.....	56
12 Hydraulic system symbols	61
13 Brake symbols	66
14 Fuel symbols.....	69
15 Lighting symbols.....	72
16 Window and visibility symbols	77
17 Climate control symbols.....	86
18 Seat symbols.....	89
19 Tyre, wheel, axle, and suspension symbols.....	93
20 Steering symbols.....	100
Annex A (informative) Guidelines for the development and evaluation of graphical symbols.....	103

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Tractors, machinery for agriculture and forestry, powered lawn and garden equipment — Symbols for operator controls and other displays — Part 1: Common symbols

1 Scope

1.1 ISO 3767-1 standardizes symbols for use on operator controls and other displays applicable to multiples types of agricultural tractors and machinery, forestry machinery, and powered lawn and garden equipment as defined in ISO 3339-0, ISO 5395, and ISO 6814.

1.2 ISO 3767-2 covers symbols for tractors and machinery for agriculture. 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.

1.3 ISO 7000 and IEC 60417 can be consulted for additional internationally standardized symbols of potential relevance to agricultural tractors and machinery, forestry machinery, and powered lawn and garden equipment.

2 Normative references

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

ISO 3339-0, *Tractors and machinery for agriculture and forestry — Classification and terminology — Part 0: Classification system and classification*

ISO 3767-2, *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*

ISO 3767-3, *Tractors, machinery for agriculture and forestry, powered lawn and garden equipment — Symbols for operator controls and other displays—Part 3: Symbols for powered lawn and garden equipment*

ISO 3767-4, *Tractors, machinery for agriculture and forestry, powered lawn and garden equipment — Symbols for operator controls and other displays — Part 4: Symbols for forestry machinery*

ISO 3767-5, *Tractors, machinery for agriculture and forestry, powered lawn and garden equipment — Symbols for operator controls and other displays — Part 5: Symbols for manual portable forestry machines*

ISO 5395, *Power lawn-mowers, lawn tractors, lawn and garden tractors, professional mowers, and lawn and garden tractors with mowing attachments — Definitions, safety requirements and test procedures*

ISO 6814, *Machinery for forestry — Mobile and self-propelled machinery — Terms, definitions and classification*

ISO 7000, *Graphical symbols for use on equipment*

[available in database format at <http://www.graphical-symbols.info/> and <http://www.iso.org/obp/ui/>]

IEC60417, *Graphical symbols for use on equipment*
[available in database format at <http://www.graphical-symbols.info/>]

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

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*

ISO 80416-4, *Basic principles for graphical symbols for use on equipment — Part 4: Guidelines for the adaptation of graphical symbols for use on screens and displays (icons)*

3 Terms and definitions

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

3.1

symbol (graphical symbol)

a visually perceptible figure used to transmit information independent of language. 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 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)

a digitized (pixelated) representation of a graphical symbol, usually used on a reconfigurable electronic display screen or graphical user interface (GUI). A single symbol can be represented by multiple icons, each of a different size, pixel count, or colourization.

4 General

4.1 Except as indicated in subsequent clauses, symbols shall be used as shown in ISO 3767-1.

4.2 Selected symbols, which are shown in outline form in ISO 3767-1, 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. Refer to IEC 80416-3 for guidance.

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. See IEC 80416-1 for guidelines on 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 ISO 3767-1 in order to maintain the correct visual relationship among the symbols. Symbols shall be used in the orientation shown in ISO 3767-1, 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 ISO 3767-1.

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 ISO 3767-1 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

5.1 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

5.2 In addition, certain colours shall be used for specific applications:

- Blue is used for the high beam; main beam display (see 15.1);
- Red is used for the hazard warning display and for the hazard warning control (see 15.6);
- Green is used for the turn signal display (see 15.10).

5.3 If colour is used on or in association with symbols for heating and cooling systems, the colour red shall be used to indicate hot, and the colour blue shall be used to indicate cold.

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 one of the parts of 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, 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, 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 ISO 3767-1 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 ISO 3767-1 can serve as examples.






7 Adaptation of symbols as digital display icons

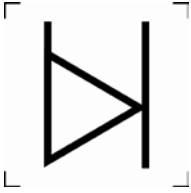
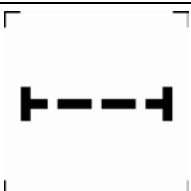




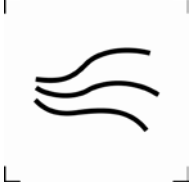
Symbols can be adapted for use as digital display icons on visual display units, reconfigurable displays, or other electronic displays. Such adaptations should follow the principles of ISO 80416-4. Special care should be taken to ensure that digital display icons preserve the visual impression of the 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.

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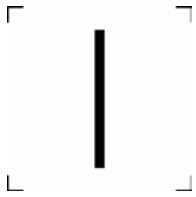
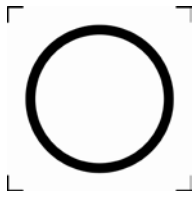
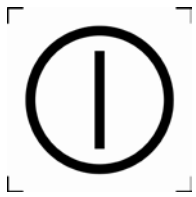
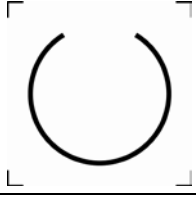
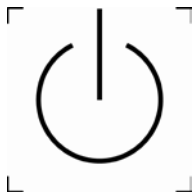
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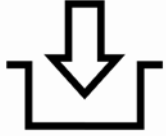

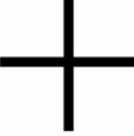



8 Base symbols

	Graphical symbol	Symbol title and description	ISO/IEC registration number
8.1		<p>Oil; fluid</p> <p>To indicate oil or other non-water-base fluid.</p> <p>Use as a symbol element in combination with other symbols to indicate specified types of oil.</p> <p>This symbol may be used when the type of oil or fluid is not specified.</p>	ISO 7000-1056
8.2		<p>Water; coolant; water-base fluid</p> <p>To indicate water, coolant, or other water-base fluid.</p> <p>Use as a symbol element in combination with other symbols to indicate specified types of water-base fluid.</p> <p>This symbol may be used when the type of water-base fluid is not specified.</p>	ISO 7000-0536
8.3		<p>Intake air; air flow through</p> <p>To indicate intake air.</p> <p>To indicate air flow into or through a tube or pipe.</p> <p>This symbol shall be used outline.</p>	ISO 7000-1604
8.4		<p>Exhaust gas</p> <p>To indicate exhaust gas.</p> <p>To indicate air flow out of a tube or pipe.</p> <p>This symbol shall be used filled.</p>	ISO 7000-1605
8.5		<p>Pressure</p> <p>To indicate pressure in general.</p> <p>Use as a symbol element in combination with other symbols to indicate the type of material that is under pressure.</p> <p>The filled circle may be deleted and an appropriate symbol inserted between the arrows.</p>	ISO 7000-1701

	Graphical symbol	Symbol title and description	ISO/IEC registration number
8.6		<p>Level indicator</p> <p>To identify the control that adjusts the amount of level of material in a container.</p> <p>To indicate the level of, for example, a liquid in a container.</p> <p>Use as a symbol element in combination with other symbols to indicate the type of material whose quantity is measured.</p> <p>The line at the right of the symbol may be deleted and an appropriate symbol inserted.</p>	Application of ISO 7000-0159
8.7		<p>Filter</p> <p>To indicate a filter for liquid or gas.</p> <p>Use as a symbol element in combination with other symbols to indicate the type of material that is filtered.</p>	ISO 7000-1369
8.8		<p>Temperature</p> <p>To indicate temperature or a function associated with temperature.</p>	ISO 7000-0034
8.9		<p>Malfunction, general; failure</p> <p>To indicate that a component or function has failed or malfunctioned.</p> <p>Use as a symbol element in combination with other symbols to indicate the component or function that has failed or malfunctioned.</p>	ISO 7000-1603B
8.10		<p>Mass; weight [version A]</p> <p>To indicate mass.</p> <p>To identify a function related to mass.</p>	Application of ISO 7000-1321A
8.11		ISO 7000-1321A and ISO 7000-1321B are alternative symbols with the same meaning.	ISO 7000-1321B
8.12		<p>Air, general</p> <p>To indicate air in general.</p> <p>To indicate a function related to air in general.</p>	ISO7000-0537

9 General symbols

	Graphical symbol	Symbol title and description	ISO/IEC registration number
9.1		<p>On; start</p> <p>To identify the control that starts a function or operation.</p> <p>To identify the control that enables a function or operation to be engaged or activated.</p> <p>Use independently or in conjunction with other symbols. Do not use as a graphical element with the meaning "on; start" within a combined symbol (see 4.6 and 4.7).</p>	Application of IEC 60417-5007
9.2		<p>Off; stop</p> <p>To identify the control that stops a function or operation.</p> <p>To identify the control that disables a function or operation to be engaged or activated.</p> <p>Use independently or in conjunction with other symbols. Do not use as a graphical element with the meaning "on; start" within a combined symbol (see 4.6 and 4.7).</p>	Application of IEC 60417-5008
9.3		<p>On and off</p> <p>To identify the control that, depending on its position or last activation, starts or stops a function or operation.</p> <p>Use independently or in conjunction with other symbols. Do not use as a graphical element with the meaning "on and off" within a combined symbol (see 4.6 and 4.7).</p>	Application of IEC 60417-5010
9.4		<p>Ready</p> <p>To indicate that the machine or equipment or function is ready for operation.</p>	ISO 7000-1140
9.5		<p>Stand-by</p> <p>To identify the control by which part of the equipment is switched on in order to bring the component or function into the stand-by condition.</p>	IEC 60417-5009

	Graphical symbol	Symbol title and description	ISO/IEC registration number
9.6		<p>Engage</p> <p>To identify the control that effects the engagement of two machine parts or elements, or the activation of a mechanical function.</p> <p>To indicate the engagement function.</p> <p>This symbol may be rotated 90° or 180° for a clearer visual representation.</p>	ISO 7000-0022
9.7		<p>Disengage</p> <p>To identify the control that effects the disengagement of two machine parts or elements, or the deactivation of a mechanical function.</p> <p>To indicate the disengagement function.</p> <p>This symbol may be rotated 90° or 180° for a clearer visual representation.</p>	ISO 7000-0023
9.8		<p>Plus; increase; positive polarity</p> <p>To identify the positive terminals of equipment which is used with or generates direct current.</p> <p>To indicate that a quantity is increasing or the direction of control movement that increases a quantity.</p>	Application of IEC 60417-5005
9.9		<p>Minus; decrease; negative polarity</p> <p>To identify the negative terminals of equipment which is used with or generates direct current.</p> <p>To indicate that a quantity is decreasing or the direction of control movement that decreases a quantity.</p>	Application of IEC 60417-5006
9.10		<p>Lock</p> <p>To identify the location of a lock.</p> <p>To identify the control that effects a locking function.</p>	ISO 7000-1656
9.11		<p>To indicate that the component or function is in its locked state.</p> <p>ISO 7000-1656 and IEC 60417-5569 are alternative symbols with the same meaning.</p>	Application of IEC 60417-5569