INTERNATIONAL STANDARD

ISO 3767-4

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

Part 4:
Symbols for forestry machinery

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

Partie 4: Symboles pour le matériel forestier

Reference number
ISO 3767-4:1993(E)

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.

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.

International Standard ISO 3767-4 was prepared by Technical Committee ISO/TC 23, *Tractors and machinery for agriculture and forestry*, Sub-Committee SC 14, *Operator controls, operator symbols and other displays, operator manuals*.

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 machinery*

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

Part 4:
Symbols for forestry machinery

1 Scope

This part of ISO 3767 establishes graphical symbols uniquely for use on operator controls and other displays on specialized forestry machinery as defined in ISO 6814.

Symbols given in this part of ISO 3767 apply to controls and displays specific to forestry machinery such as feller bunchers, grapple skidders and log loaders. Also included are symbols for controls and displays specific to equipment such as saws, stabilizers and winches.

NOTE 1 The foreword lists other parts of this International Standard, where symbols for specific forms of machinery and equipment may be found.

2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this part of ISO 3767. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this part of ISO 3767 are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO 3461-1:1988, *General principles for the creation of graphical symbols — Part 1: Graphical symbols for use on equipment.*

ISO 3767-1:1991, *Tractors, machinery for agriculture and forestry, powered lawn and garden equipment — Symbols for operator controls and other displays — Part 1: Common symbols.*

ISO 4196:1984, *Graphical symbols — Use of arrows.*

ISO 6814:1983, *Machinery for forestry — Mobile and self-propelled machinery — Identification vocabulary.*

ISO 7000:1989, *Graphical symbols for use on equipment — Index and synopsis.*

IEC 417:1973, *Graphical symbols for use on equipment — Index, survey and compilation of the single sheets.*

3 Definition

For the purposes of this part of ISO 3767, the definition of symbol given in ISO 3767-1 applies.

4 General

4.1 Symbols shall be as shown in succeeding clauses of this part of ISO 3767. However, selected symbols and selected combined symbols which are shown in outline form in this part of ISO 3767 may be shaded in actual use for clarity of reproduction and improved visual perception by the operator, except as otherwise noted for individual symbols.

4.2 Limitations inherent in some reproduction and display technologies may require increased line thickness or other minor modifications of symbols. Such modifications are acceptable provided the symbol remains in its basic graphic elements and remains 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 it is applied, it may be necessary to change the line thickness or to round off the corners of the symbol. The graphical designer is normally free to make such changes provided that the essential perceptual characteristics of the symbol are maintained. See ISO 3461-1:1988, subclause 10.2.

4.4 For actual use, all symbols shall be reproduced large enough to be easily discernible by the operator. See ISO 3461-1 for guidelines for proper sizing of symbols. Symbols shall be used in the orientations shown in this part of ISO 3767 unless otherwise noted for individual symbols.

4.5 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.

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

4.7 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 alternative provides the best visual perception. When a symbol image is reversed (for example, black to white and vice versa), it shall be done for the entire symbol.

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 movement of the controls towards the symbol shall effect the function depicted by that symbol.

4.9 Arrows used in symbols shall conform to the requirements of ISO 4196. ISO 3461-1 shall be consulted for the general principles of creating symbols.

4.10 ISO/IEC registration numbers are shown for symbols in this International Standard. Registration numbers below 5000 refer to ISO 7000. Registration numbers above 5000 refer to IEC 417.

4.11 Symbols in this part of ISO 3767 are presented 32 % of original size. The grid marks "⌞" denote the corners of the 75 mm square of the graphic grid presented. The grid marks are not part of the symbol but are provided to ensure consistent presentation of all symbol graphics.

4.12 Microfiches of the symbols are available from the ISO/TC 145 Secretariat.

5 Colour

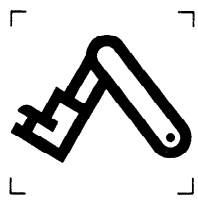
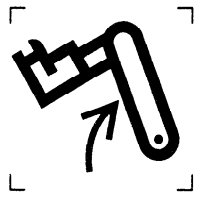
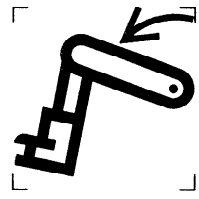
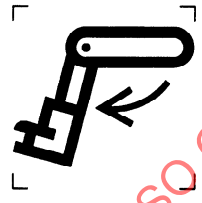
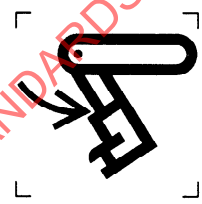
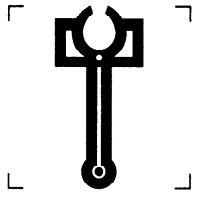
When used on illuminated displays, the following colours have the meanings indicated:

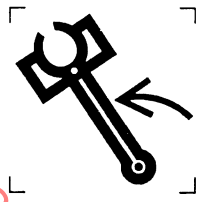
— red: failure or serious malfunction; requires immediate attention;

— yellow or amber: outside normal operating limits;

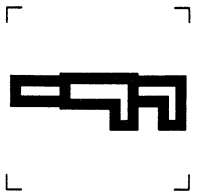
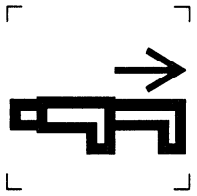
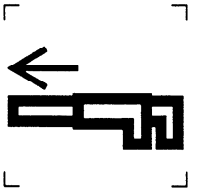
— green: normal operating condition.

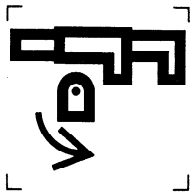
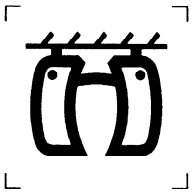
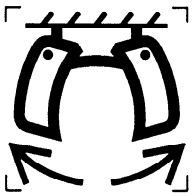
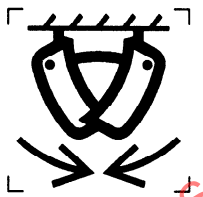
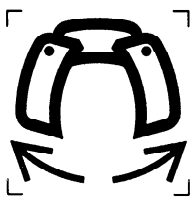
6 Tree harvester/feller buncher symbols

Symbol number	Symbol form/shape	Symbol description/application	ISO/IEC registration number
6.1		Boom/arm movement — Basic symbol	1709
6.2		Boom — Raise	2050
6.3		Boom — Lower	2049
6.4		Arm — Raise	1710
6.5		Arm — Lower	1711
6.6		Boom swing — Basic symbol	1712

Symbol number	Symbol form/shape	Symbol description/application	ISO/IEC registration number
6.7		Boom swing — Swing left	1713
6.8		Boom swing — Swing right	1714

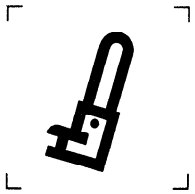
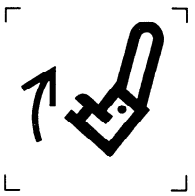
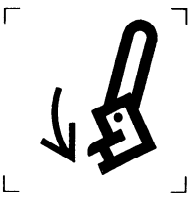
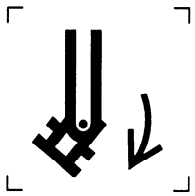
7 Delimber symbols

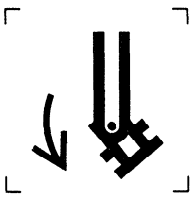
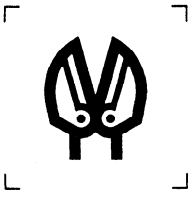
Symbol number	Symbol form/shape	Symbol description/application	ISO/IEC registration number
7.1		Sliding boom — Basic symbol	2051
7.2		Sliding boom — Out	2052
7.3		Sliding boom — In	2054
7.4		Butt plate — Basic symbol	2053
7.5		Butt plate — Up	2055

Symbol number	Symbol form/shape	Symbol description/application	ISO/IEC registration number
7.6		Butt plate — Down	2056
7.7		Fixed jaw — Basic symbol	2057
7.8		Fixed jaw — Open	2058
7.9		Fixed jaw — Close	2059
7.10		Mobile jaw — Basic symbol	2060
7.11		Mobile jaw — Open	2061

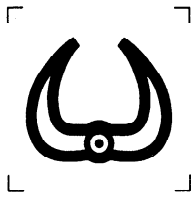
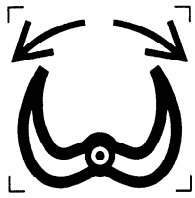
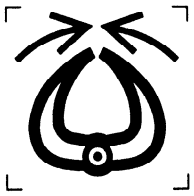
Symbol number	Symbol form/shape	Symbol description/application	ISO/IEC registration number
7.12		Mobile jaw — Close	2062

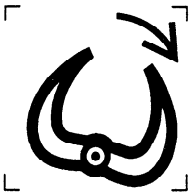
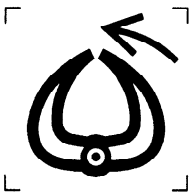
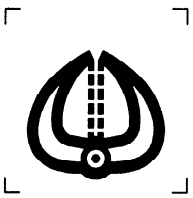
8 Felling equipment symbols

Symbol number	Symbol form/shape	Symbol description/application	ISO/IEC registration number
8.1		Felling head — Basic symbol	1717
8.2		Felling head — Tilt up	1718
8.3		Felling head — Tilt down	1719
8.4		Fixed boom felling head — Turn left	1715
8.5		Fixed boom felling head — Turn right	1716
8.6		Felling head — Side tilt — Tilt left/clockwise	1720

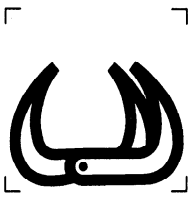
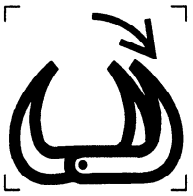
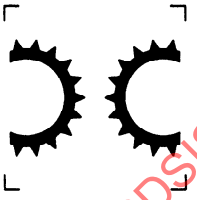
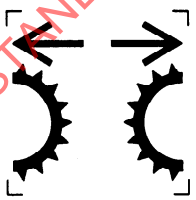
Symbol number	Symbol form/shape	Symbol description/application	ISO/IEC registration number
8.7		Felling head — Side tilt — Tilt right/counter-clockwise	1721
8.8		Felling shear — Basic symbol	1722
8.9		Felling shear — Open	1723
8.10		Felling shear — Close	1724

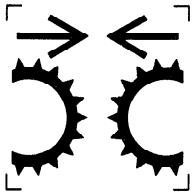
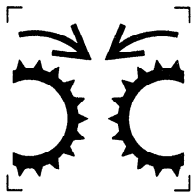
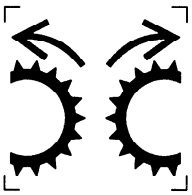
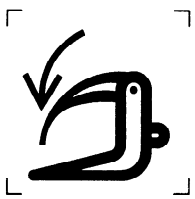
9 Bunk jaws/grab arms symbols

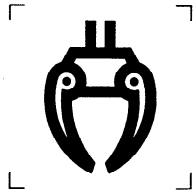
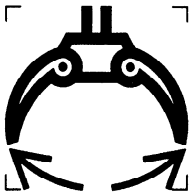
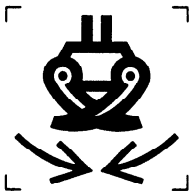
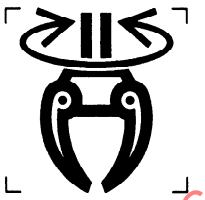
Symbol number	Symbol form/shape	Symbol description/application	ISO/IEC registration number
9.1		Bunk jaws/grab arms — Basic symbol	1725
9.2		Jaws/arms — Open	1726
9.3		Jaws/arms — Close	1727
9.4		Left jaw/arm — Out	1728
9.5		Left jaw/arm — In	1729

Symbol number	Symbol form/shape	Symbol description/application	ISO/IEC registration number
9.6		Right jaw/arm — Out	1730
9.7		Right jaw/arm — In	1731
9.8		Ropes — Tighten	1732
9.9		Ropes — Slacken	1733

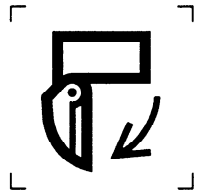
10 Log handling equipment symbols

Symbol number	Symbol form/shape	Symbol description/application	ISO/IEC registration number
10.1		Log accumulator — Basic symbol	1734
10.2		Log accumulator — Open	1735
10.3		Log accumulator — Close	1736
10.4		Log feeder — Basic symbol	1737
10.5		Log feeder — Open	1738

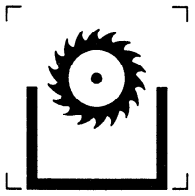
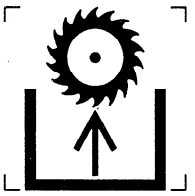
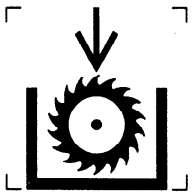
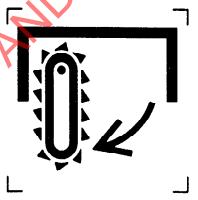
Symbol number	Symbol form/shape	Symbol description/application	ISO/IEC registration number
10.6		Log feeder — Close	1739
10.7		Log feeder — Feed In	1740
10.8		Log feeder — Feed out	1741
10.9		Log clamp — Basic symbol	1743
10.10		Log clamp — Open	1744
10.11		Log clamp — Close	1745

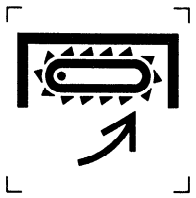
Symbol number	Symbol form/shape	Symbol description/application	ISO/IEC registration number
10.12		Log grapple — Basic symbol	1747
10.13		Log grapple — Open	1748
10.14		Log grapple — Close	1749
10.15		Log grapple — Rotate	1750
10.16		Log grapple — Rotate clockwise	1751
10.17		Log grapple — Rotate counter-clockwise	1752

11 Topping knife symbols

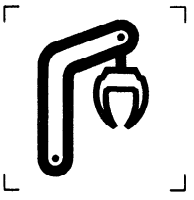
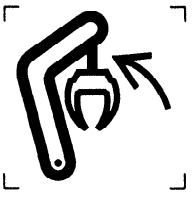
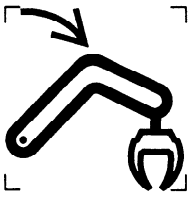
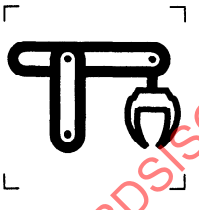
Symbol number	Symbol form/shape	Symbol description/application	ISO/IEC registration number
11.1		Topping knife — Basic symbol	1753
11.2		Topping knife — Open (Orient symbol as appropriate to machine operation.)	1754
11.3		Topping knife — Close (Orient symbol as appropriate to machine operation.)	1755

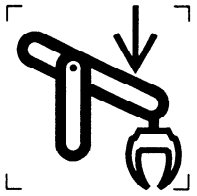
12 Saw symbols

Symbol number	Symbol form/shape	Symbol description/application	ISO/IEC registration number
12.1		Circular saw — Basic symbol[1)]	1756
12.2		Circular saw — Out[1)]	1757
12.3		Circular saw — In[1)]	1758
12.4		Chain-saw — Basic symbol[1)]	1759
12.5		Chain-saw — Out[1)]	1760

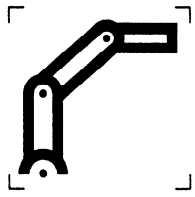
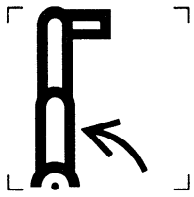
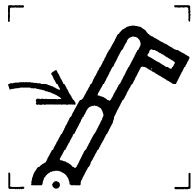
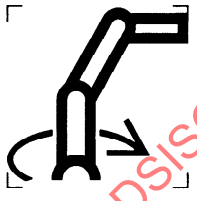
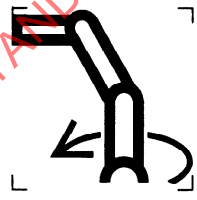
Symbol number	Symbol form/shape	Symbol description/application	ISO/IEC registration number
12.6		Chain-saw — In[1)]	1761
1) Symbol may be rotated to represent proper orientation to the machine.			

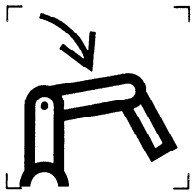
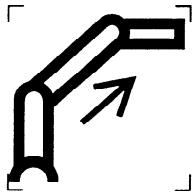
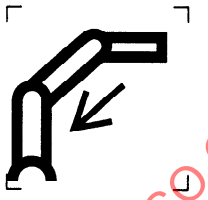
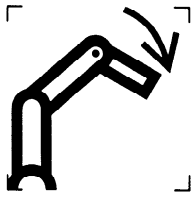
13 Grapple skidder symbols

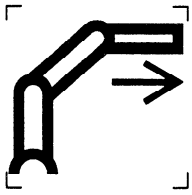
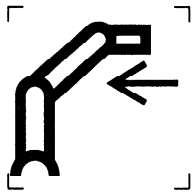
Symbol number	Symbol form/shape	Symbol description/application	ISO/IEC registration number
13.1		Single function boom — Basic symbol	1762
13.2		Single function boom — Up/in	1763
13.3		Single function boom — Down/out	1764
13.4		Double function boom — Basic symbol	1765
13.5		Double function boom — Out	1766

Symbol number	Symbol form/shape	Symbol description/application	ISO/IEC registration number
13.6		Double function boom — In	1767
13.7		Double function boom — Up	1768
13.8		Double function boom — Down	1769

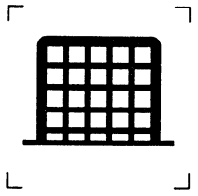
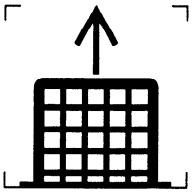
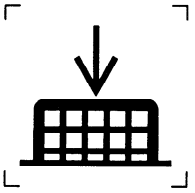
14 Log loader symbols

Symbol number	Symbol form/shape	Symbol description/application	ISO/IEC registration number
14.1		Log loader equipment — Basic symbol	1782
14.2		Pillar — Raise	1770
14.3		Pillar — Lower	1771
14.4		Pillar — Rotate clockwise	1772
14.5		Pillar — Rotate counter-clockwise	1773

Symbol number	Symbol form/shape	Symbol description/application	ISO/IEC registration number
14.6		Arm — Raise	1774
14.7		Arm — Lower	1775
14.8		Arm — Extend	1776
14.9		Arm — Retract	1777
14.10		Jib — Raise	1780
14.11		Jib — Lower	1779

Symbol number	Symbol form/shape	Symbol description/application	ISO/IEC registration number
14.12		Jib — Extend	1778
14.13		Jib — Retract	1781

15 Loadgate symbols

Symbol number	Symbol form/shape	Symbol description/application	ISO/IEC registration number
15.1		Gate — Basic symbol	1783
15.2		Gate — Up	1785
15.3		Gate — Down	1784