	SURFACE VEHICLE RECOMMENDED PRACTICE	J1362	REV. JAN2007
		Issued 1986-08 Revised 2007-01	
		Superseding J1362 DEC2003	
Graphical Symbols for Operator Controls and Displays on Off-Road Self-Propelled Work Machines			

RATIONALE

This revision of SAE J1362 corrects some errors in the December 2003 published edition, adds a number of new symbols, clarifies language related to sizing of symbols in actual usage, and adds a new clause about adaptation of symbols as digital display icons.

FOREWORD

SAE J1362 presents graphical symbols for use on operator controls and other displays on off-road work machines as defined in SAE J1116 plus mobile cranes. Symbols for agricultural equipment other than the basic agricultural tractor are covered by ASAE S304 and are therefore excluded from the scope of SAE J1362 of these symbols have been approved for DIS ballot by one or more ISO technical committees.

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1. SCOPE

SAE J1362 presents graphical symbols for use on operator controls and other displays on off-road work machines as defined in SAE J1116 plus mobile cranes. Symbols for agricultural equipment other than the basic agricultural tractor are covered by ASAE S304 and are therefore excluded from the scope of SAE J1362.

2. REFERENCES

2.1 Applicable Publications

The following publications form a part of this specification to the extent specified herein. The latest issue of SAE publications shall apply.

2.1.1 SAE Publication

Available from SAE, 400 Commonwealth Drive, Warrendale, PA 15096-0001, Tel: 877-606-7323 (inside USA and Canada) or 724-776-4970 (outside USA), www.sae.org.

2.1.2 ISO Publications

Available from ANSI, 25 West 43rd Street, New York, NY 10036-8002, Tel: 212-642-4900, www.ansi.org.

- ISO 3767-1 Tractors, machinery for agriculture and forestry, powered lawn and garden equipment—Symbols for operator controls and other displays—Part 1: Common symbols
- 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 3767-4 Tractors, machinery for agriculture and forestry, powered lawn and garden equipment—Symbols for operator controls and other displays—Part 4: Symbols for specialized forestry machinery
- ISO 6405-1 Earth-moving machinery—Symbols for operator controls and other displays—Part 1: Common symbols
- ISO 6405-2 Earth-moving machinery—Symbols for operator controls and other displays—Part 2: Specific symbols for machines, equipment, and accessories
- ISO 7000 Graphical symbols for use on equipment—Index and synopsis
- ISO 7296-2 Cranes—Graphical symbols—Part 2: Symbols for mobile cranes
- ISO 80416-2 Basic principles for graphical symbols for use on equipment—Part 2: Form and use of arrows
- 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)

2.1.3 Other Publications

- ASAE S304 Graphical symbols for operator controls and displays on agricultural equipment
- IEC 60417 Graphical symbols for use on equipment
- IEC 80416-1 Basic principles for graphical symbols for use on equipment—Part 1: Creation of symbol originals
- IEC 80416-3 Basic principles for graphical symbols for use on equipment—Part 3: Guidelines for the application of graphical symbols

3. DEFINITIONS

For the purpose of SAE J1362, the following definition from ISO 80416-1 applies:

3.1 Symbol

A visually perceptible figure used to transmit information independent of language. It may be produced by drawing, printing, or other means.

4. GENERAL

- 4.1 Use symbols as shown in SAE J1362. However, symbols which are shown in outline form may be filled in actual use for enhanced clarity of reproduction and improved visual perception by the operator, unless otherwise noted for individual symbols. Refer to IEC 80416-3.
- 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 is unchanged in its basic graphical 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 the symbol is applied, it may be necessary to change the line thickness or round the corners of a symbol. The graphic designer is normally free to make such changes, provided that the essential perceptual characteristics of the symbol are maintained.
- 4.4 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 original symbol as shown in this SAE J1362 in order to maintain the correct visual relationship among the symbols. Symbols shall be used in the orientation shown in SAE J1362 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 new symbols.
- 4.6 Symbols are generally intended to replace a word or words with a graphical representation 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.
- 4.7 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 grid 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 grid area shall be assumed.
- 4.8 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, from black-on-white to white-on-black and vice versa), it shall be done for the entire symbol.
- 4.9 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 toward the symbol shall effect the function depicted by that symbol.
- 4.10 Arrows used in symbols shall conform to the requirements of ISO 80416-2. IEC 80416-1 should be consulted for general principles for the creation of symbols.
- 4.11 ISO / IEC registration numbers are shown for symbols in SAE J1362. Registration numbers below 5000 refer to ISO 7000. Registration numbers above 5000 refer to IEC 60417. Absence of an ISO / IEC registration number indicates that no number has been assigned to that symbol. Symbols that have no ISO / IEC registration number, but are published in one or more ISO standards, are identified as "ISO". Symbols that have no ISO / IEC registration number, but have been approved by one or more ISO technical committees for DIS ballot, are identified as "DIS".
- 4.12 Symbols are shown in SAE J1362 within the outer limits of a 24 mm square grid (32 percent of original ISO graphics grid size). Corner marks delimit the corners of the 75 mm square graphics grid from IEC 80416-1. Corner marks are not part of the symbol itself.
5. COLOR
- 5.1 When used to indicate operating status or condition, the following colors have meaning as follows:
- 5.1.1 The color **red** shall denote a failure, serious malfunction, or dangerous operating condition that requires immediate attention.
- 5.1.2 The color **yellow** or **amber** denotes a condition outside normal operating limits or approaching a dangerous operating condition.
- 5.1.3 The color **green** or denotes a normal operating condition.

- 5.2 The color **blue** is used for the headlight high/upper beam display.
- 5.3 The color **green** is used for the turn signal displays.
- 5.4 The color **red** is used for the hazard warning display and for the hazard warning control. The hazard warning control may use either a red hazard warning symbol on a black control or a white hazard warning symbol on a red control.
- 5.5 If color is used on or in association with symbols for heating and cooling systems, the color **red** shall be used to indicate hot and the color **blue** shall be used to indicate cold.
- 5.6 Additional information on the use of color with specific symbols is noted for individual symbols in SAE J1362.


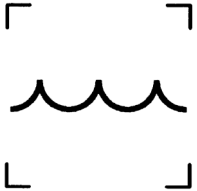
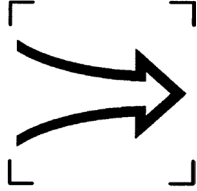
6. ADAPTATION OF SYMBOLS AS DIGITAL DISPLAY ICONS

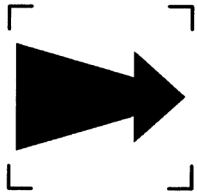
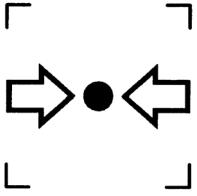
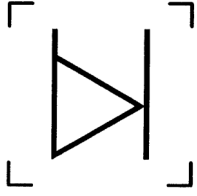
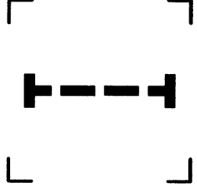
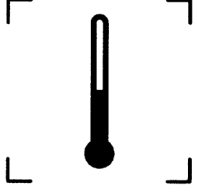

Symbols may be adapted for use as digital display icons on reconfigurable or other electronic displays. Such adaptations should follow the principles of ISO 80416-4. Special care should be taken to ensure that digital display icons preserve the visual impression of the symbol from which the icon is adapted.

7. DEVELOPMENT OF NEW SYMBOLS

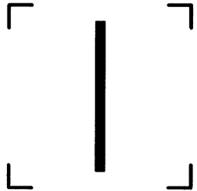
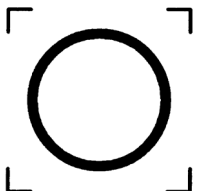
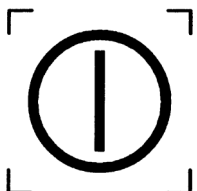
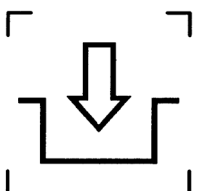
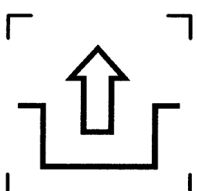
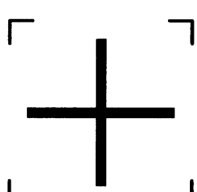
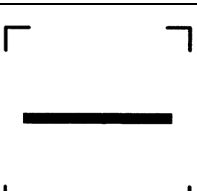
Annex A presents guidelines for use in the development and evaluation of graphical symbols. Following these guidelines should result in symbols appropriate in graphical form and content for potential inclusion in future revisions of SAE J1362. Symbols proposed for inclusion in SAE J1362 should include a short explanation of the function or expected use of the symbol.

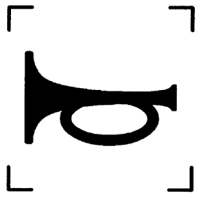

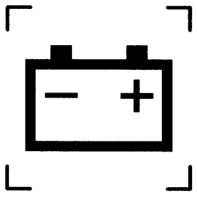
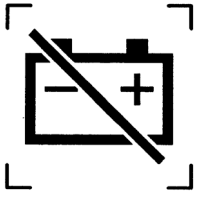
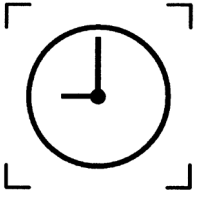
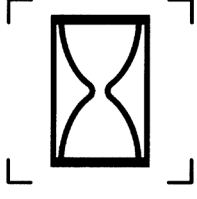
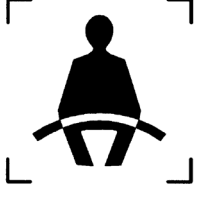
8. BASE SYMBOLS


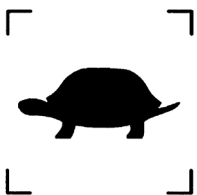
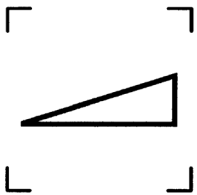
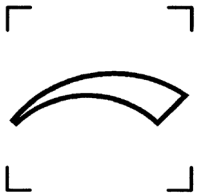
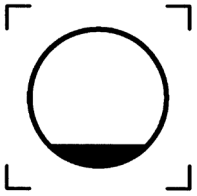
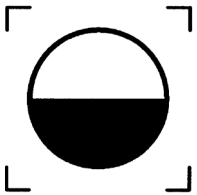
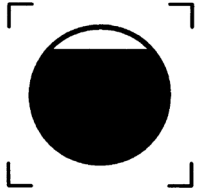
Symbol Number	Graphical Symbol	Symbol Description / Application	ISO / IEC Registration Number	ISO Standard
8.1		Oil	1056	ISO 3287 ISO 3767-1 ISO 6405-1 ISO 7296-2 ISO 8999
8.2		Water / Coolant	0536	ISO 3287 ISO 3767-1 ISO 6405-1 ISO 7296-2 ISO 8999
8.3		Intake Air Must be outline in all applications.	1604	ISO 3767-1 ISO 6405-1 ISO 7296-2 ISO 8999

8.4		Exhaust Gas Must be filled in all applications.	1605	ISO 3767-1 ISO 6405-1 ISO 7296-2 ISO 8999
8.5		Pressure To be used where the medium under pressure is not specified.	1701	ISO 3767-1 ISO 6405-1 ISO 7296-2 ISO 8999
8.6		Level Indicator	0159 Modified	ISO 3287 ISO 3767-1 ISO 6405-1 ISO 7296-2 ISO 8999
8.7		Filter	1369	ISO 3287 ISO 3767-1 ISO 6405-1 ISO 7296-2 ISO 8999
8.8		Temperature	0034	ISO 3287 ISO 3767-1 ISO 6405-1 ISO 7296-2 ISO 8999
8.9		Failure / Malfunction	1603	ISO 3287 ISO 3767-1 ISO 6405-1 ISO 7296-2 ISO 8999

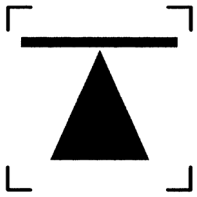
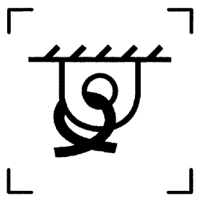
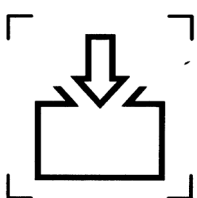
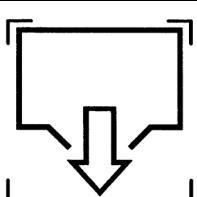
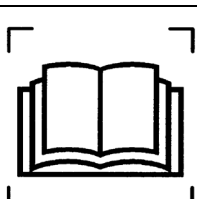

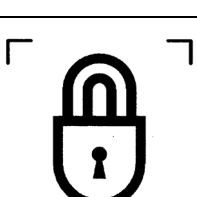
9. GENERAL SYMBOLS





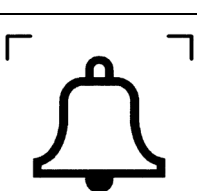
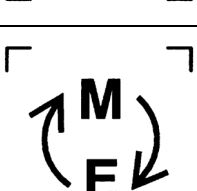
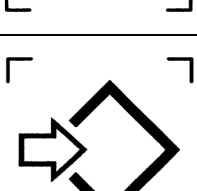
Symbol Number	Graphical Symbol	Symbol Description / Application	ISO / IEC Registration Number	ISO Standard
9.1		On / Start Use independently or in conjunction with other symbols. Do not use as a graphical element in developing combined symbols per Clause 4.5	5007	ISO 3287 ISO 3767-1 ISO 6405-1 ISO 8999
9.2		Off / Stop Use independently or in conjunction with other symbols. Do not use as a graphical element in developing combined symbols per Clause 4.5	5008	ISO 3287 ISO 3767-1 ISO 6405-1 ISO 8999
9.3		On and Off Use independently or in conjunction with other symbols. Do not use as a graphical element in developing combined symbols per Clause 4.5	5010	ISO 3287 ISO 3767-1 ISO 6405-1
9.4		Engage Symbol may be rotated 90° for a clearer visual representation.	0022	ISO 3287 ISO 3767-1
9.5		Disengage Symbol may be rotated 90° for a clearer visual representation.	0023	ISO 3287 ISO 3767-1
9.6		Plus / Increase / Positive Polarity	5005	ISO 3287 ISO 3767-1 ISO 6405-1 ISO 7296-2
9.7		Minus / Decrease / Negative Polarity	5006	ISO 3287 ISO 3767-1 ISO 6405-1 ISO 7296-2

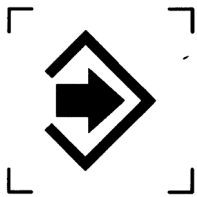


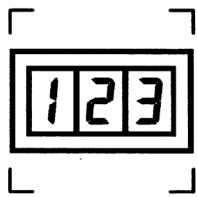



9.8		Horn	0244	ISO 3287 ISO 3767-1 ISO 6405-1
9.9		Lighter	0620	ISO 3767-1 ISO 6405-1 ISO 7296-2
9.10		Battery Charging Condition	0247	ISO 3287 ISO 3767-1 ISO 6405-1 ISO 7296-2 ISO 8999
9.11		Battery Power — Disconnect	2063	ISO 3287 ISO 3767-1
9.12		Clock / Time Switch / Timer	5184	ISO 3737-1 ISO 6405-1 ISO 7296-2
9.13		Hourmeter / Elapsed Operating Hours	1366	ISO 3287 ISO 3767-1 ISO 6405-1 ISO 7296-2 ISO 8999
9.14		Seatbelt — Lap Belt Only	1702	ISO 3287 ISO 3767-1 ISO 6405-1 ISO 7296-2




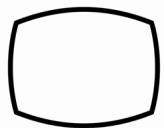

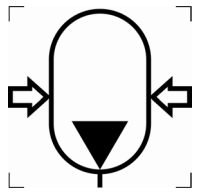
9.15		Fast This symbol is published without a registration number in the ISO standards indicated.	None	ISO 3287 ISO 3767-1 ISO 3767-3 ISO 6405-1
9.16		Slow This symbol is published without a registration number in the ISO standards indicated.	None	ISO 3287 ISO 3767-1 ISO 3767-3 ISO 6405-1
9.17		Continuously Variable — Linear	5004	ISO 3767-1 ISO 8999
9.18		Continuously Variable — Rotational	1364	ISO 3287 ISO 3767-1 ISO 6405-1 ISO 8999
9.19		Volume — Empty	1563	ISO 3287 ISO 3767-1 ISO 6405-1 ISO 7296-2
9.20		Volume — Half-Full	1564	ISO 3287 ISO 3767-1 ISO 6405-1 ISO 7296-2
9.21		Volume — Full	1565	ISO 3287 ISO 3767-1 ISO 6405-1 ISO 7296-2

9.22		Control Lever Operating Direction — Dual Direction Place appropriate symbols at arrowheads to indicate the action effected by movement of the control.	1436	ISO 3287 ISO 3767-1 ISO 6405-1 ISO 7296-2
9.23		Control Lever Operating Direction — Multiple Direction Place appropriate symbols at arrowheads to indicate the action effected by movement of the control.	1703	ISO 3287 ISO 3767-1 ISO 6405-1 ISO 7296-2
9.24		Clockwise Rotation	0258	ISO 3767-1 ISO 6405-1 ISO 7296-2 ISO 8999
9.25		Counter-Clockwise Rotation	0937	ISO 3767-1 ISO 6405-1 ISO 7296-2 ISO 8999
9.26		Grease Lubrication Point May also be combined with symbol 8.13 to indicate service intervals for components lubricated with grease.	0787	ISO 3287 ISO 3767-1 ISO 6405-1 ISO 7296-2 ISO 8999
9.27		Oil Lubrication Point May also be combined with symbol 8.13 to indicate service intervals for components lubricated with oil.	0391	ISO 3287 ISO 3767-1 ISO 6405-1 ISO 7296-2 ISO 8999
9.28		Lift Point	1368	ISO 3287 ISO 3767-1 ISO 6405-1 ISO 7296-2 ISO 8999

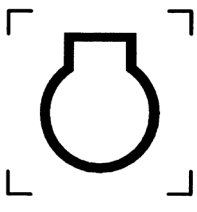
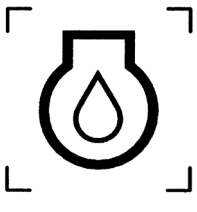
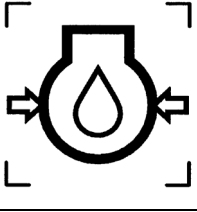
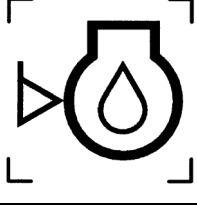
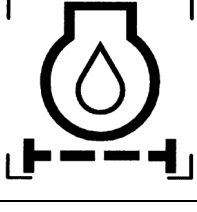
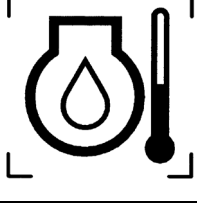
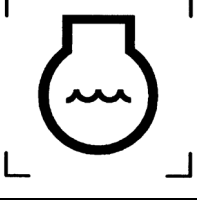
9.29		Jack or Support Point	0542	ISO 3287 ISO 3767-1 ISO 6405-1 ISO 7296-2
9.30		Tie Down Point	2069	ISO 3287 ISO 3767-1 ISO 6405-1
9.31		Filling	0028	ISO 3767-3 ISO 6405-1
9.32		Draining / Emptying	0029	ISO 3767-1 ISO 6405-1
9.33		Read Operator's Manual	0790	ISO 3287 ISO 3767-1 ISO 6405-1 ISO 7296-2 ISO 8999
9.34		Service Indicator / Read Technical Manual	1659	ISO 3287 ISO 3767-1 ISO 3767-2 ISO 6405-1
9.35		Lock	1656	ISO 3287 ISO 3767-2 ISO 7296-2

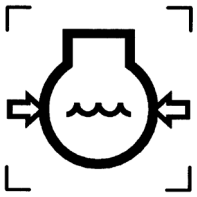
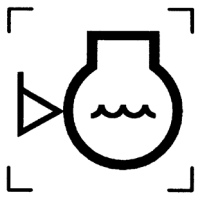
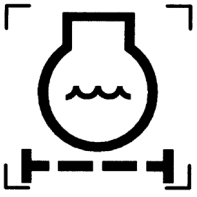

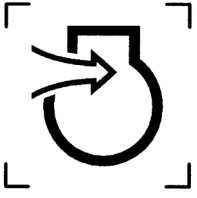
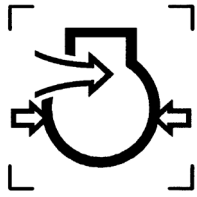
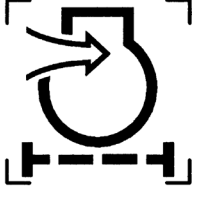
9.36		Unlock	None	—
9.37		Rearward Moving Machine Alarm	2104	ISO 3767-1 ISO 6405-1
9.38		Rearward Moving Machine Alarm — Cancel	2240	ISO 6405-1
9.39		Operator Alert To be shown as a black diamond and black exclamation mark on a yellow background.	None	—
9.40		8.40 Alarm Use as an “urgent alert” indicator to call attention to another (already existing) symbol.	2301	ISO 6405-1
9.41		Convert Digital Display Between Metric and English Units	None	—
9.42		Enter Data Use to identify the <i>Enter Data</i> control on electronic performance monitor.	1025 Modified	ISO 6405-1

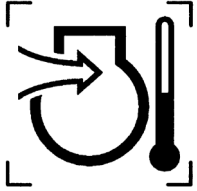
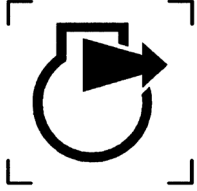
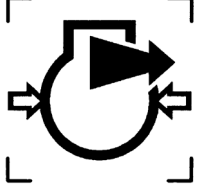

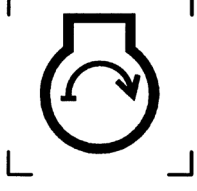


9.43		Save Entered Data Use to identify the <i>Save Previously Entered Data</i> control on electronic performance monitor.	2167	ISO 3767-1 ISO 6405-1
9.44		Cancel Entered Data Use to identify the <i>Cancel Previously Entered Data</i> control on electronic performance monitor.	1028 Modified	ISO 6405-1
9.45		Manual Operation / Manual Start Use as a symbol element in a combined symbol or in conjunction with a function symbol to indicate manual operating mode.	0096	ISO 6405-1
9.46		Digital Counter Concept is the same as symbol 0695 from ISO 7000. Numeral style in symbol 8.46 is an LED or LCD readout.	2168	ISO 3767-1 ISO 6405-1
9.47		Radar Sensor Used to determine actual ground speed of machine for calculation of area worked.	2241	ISO 6405-1
9.48		Roadway Travel Mode To indicate the machine is set up for travel on public roadways.	2310	ISO 6405-1
9.49	AUTO	Automatic Operation / Automatic Start Use as a symbol element in a combined symbol or in conjunction with a function symbol to indicate automatic operating mode.	None	—
9.50		Radio	5085	—

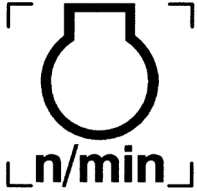

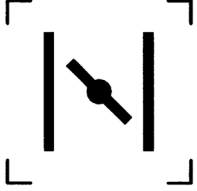

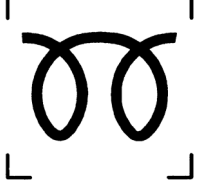


9.51		Wheel — Drive	None	—
9.52		Check / Update System	None	—
9.53		Display Mode — Rotate through Display	None	—
9.54		Monitor / Display	5049	—
9.55		Air Pressure (general)	None	—
9.56		Accumulator — Pressurized	None	—

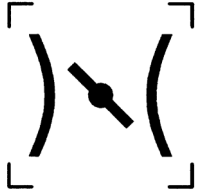
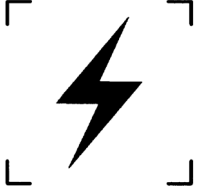


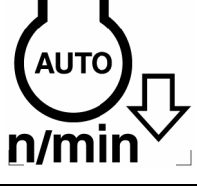
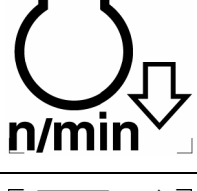
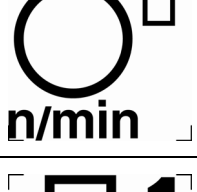
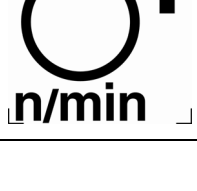
10. ENGINE SYMBOLS


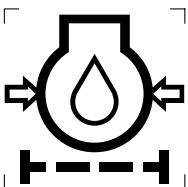
Symbol Number	Graphical Symbol	Symbol Description / Application	ISO / IEC Registration Number	ISO Standard
10.1		Engine	1156	ISO 3287 ISO 3767-1 ISO 6405-1 ISO 7296-2 ISO 8999
10.2		Engine Oil	1372	ISO 3767-1 ISO 6405-1 ISO 7296-2 ISO 8999
10.3		Engine Oil — Pressure	1374	ISO 3287 ISO 3767-1 ISO 6405-1 ISO 7296-2 ISO 8999
10.4		Engine Oil — Level	1373	ISO 3287 ISO 3767-1 ISO 6405-1 ISO 7296-2 ISO 8999
10.5		Engine Oil — Filter	1376	ISO 3287 ISO 3767-1 ISO 6405-1 ISO 7296-2 ISO 8999
10.6		Engine Oil — Temperature	1375	ISO 3287 ISO 3767-1 ISO 6405-1 ISO 7296-2 ISO 8999
10.7		Engine Coolant	1377	ISO 3767-1 ISO 6405-1 ISO 7296-2 ISO 8999

10.8		Engine Coolant — Pressure	1379	ISO 3287 ISO 3767-1 ISO 6405-1 ISO 7296-2 ISO 8999
10.9		Engine Coolant — Level	1378	ISO 3287 ISO 3767-1 ISO 6405-1 ISO 7296-2 ISO 8999
10.10		Engine Coolant — Filter	1562	ISO 3767-1 ISO 6405-1 ISO 7296-2
10.11		Engine Coolant — Temperature	1380	ISO 3287 ISO 3767-1 ISO 6405-1 ISO 7296-2 ISO 8999
10.12		Engine Intake / Combustion Air	1381	ISO 3287 ISO 3767-1 ISO 6405-1 ISO 7296-2 ISO 8999
10.13		Engine Intake / Combustion Air — Pressure	1382	ISO 3287 ISO 3767-1 ISO 6405-1 ISO 7296-2 ISO 8999
10.14		Engine Intake / Combustion Air — Filter	1170	ISO 3287 ISO 3767-1 ISO 6405-1 ISO 7296-2 ISO 8999

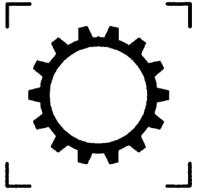
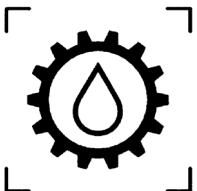
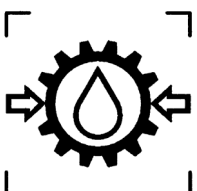
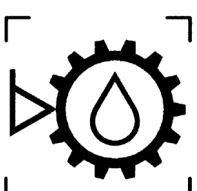

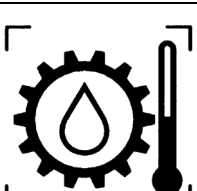
10.15		Engine Intake / Combustion Air — Temperature	1383	ISO 3287 ISO 3767-1 ISO 6405-1 ISO 7296-2 ISO 8999
10.16		Engine Exhaust Gas	1384	ISO 3287 ISO 3767-1 ISO 6405-1 ISO 7296-2 ISO 8999
10.17		Engine Exhaust Gas — Pressure	1385	ISO 3287 ISO 3767-1 ISO 6405-1 ISO 7296-2 ISO 8999
10.18		Engine Exhaust Gas — Temperature	1386	ISO 3287 ISO 3767-1 ISO 6405-1 ISO 7296-2 ISO 8999
10.19		Engine — Start Normally used to identify a key switch position on the starter control.	1387	ISO 3287 ISO 3767-1 ISO 6405-1 ISO 7296-2 ISO 8999
10.20		Engine — Stop Normally used to identify a key switch position on the starter control.	1388	ISO 3287 ISO 3767-1 ISO 6405-1 ISO 7296-2 ISO 8999
10.21		Engine — Run Normally used to identify a key switch position on the starter control.	2303	ISO 6405-1


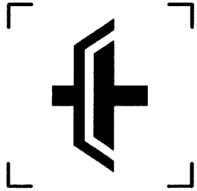
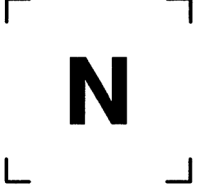
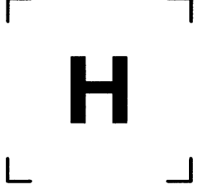
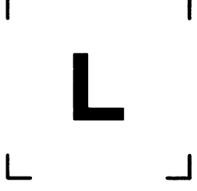
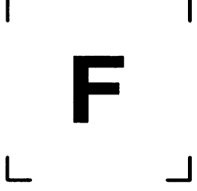
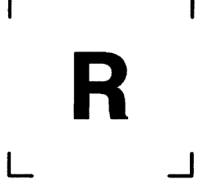
10.22		Engine — Rotational Speed	1389	ISO 3287 ISO 3767-1 ISO 6405-1 ISO 7296-2 ISO 8999
10.23		Engine — Failure / Malfunction	1371	ISO 3287 ISO 3767-1 ISO 6405-1 ISO 7296-2 ISO 8999
10.24		Engine — Choke	0243	ISO 3287 ISO 3767-1 ISO 6405-1 ISO 7296-2 ISO 8999
10.25		Engine — Primer (Start Aid)	1370	ISO 3287 ISO 3767-1 ISO 6405-1 ISO 7296-2 ISO 8999
10.26		Engine — Diesel Preheat / Glow Plugs (Low Temperature Start Aid)	0457	ISO 8999
10.27		Engine — Electrical Preheat (Low Temperature Start Aid)	1704	ISO 3767-1 ISO 6405-1 ISO 7296-2 ISO 8999
10.28		Engine — Gas Injection (Low Temperature Start Aid)	1547	ISO 3287 ISO 3767-1 ISO 6405-1 ISO 7296-2 ISO 8999

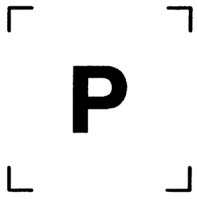
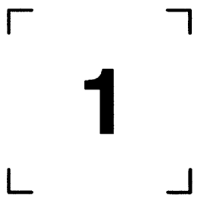
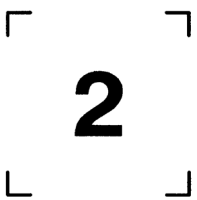


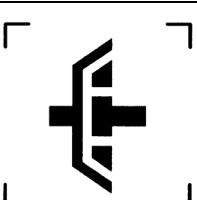

10.29		Engine — Hand Throttle	1367	—
10.30		Electrical Power — Accessories Normally used to identify a key switch position on the starter control. May also be used to denote the electrical system.	2302	ISO 6405-2
10.31		Engine — Urgent / Emergency Stop To be shown with white border, red background, and white letters. Instructs operator to stop engine as soon as possible.	None	ISO 3767-3 ISO 3767-5
10.32		Engine — Rotational Speed — Automatic Control	None	—
10.33		Engine — Rotational Speed — Automatic Decrease	2309	ISO 6405-1
10.34		Engine — Rotational Speed — Instantaneous Decrease	2308	ISO 6405-1
10.35		Engine — Rotational Speed — Instantaneous Increase	None	—
10.36		Engine — Rotational Speed — First Set Speed	None	—



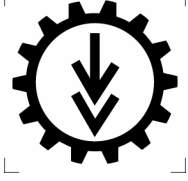
10.37		Engine — Rotational Speed — Second Set Speed	None	—
10.38		Engine — Oil Filter — Pressure	None	—

11. TRANSMISSION SYMBOLS

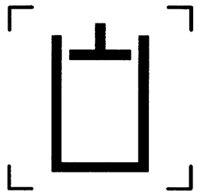
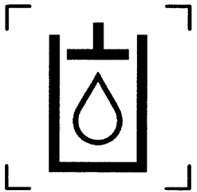
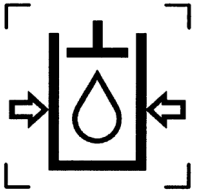
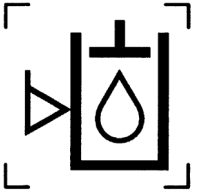
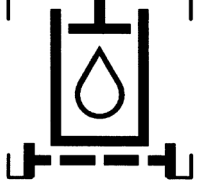
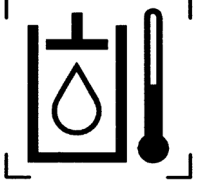
Symbol Number	Graphical Symbol	Symbol Description / Application	ISO / IEC Registration Number	ISO Standard
11.1		Transmission	1166	ISO 3287 ISO 3767-1 ISO 6405-1 ISO 7296-2
11.2		Transmission Oil	1397	ISO 3767-1 ISO 6405-1 ISO 7296-2
11.3		Transmission Oil — Pressure	1167	ISO 3287 ISO 3767-1 ISO 6405-1 ISO 7296-2
11.4		Transmission Oil — Level	1398	ISO 3287 ISO 3767-1 ISO 6405-1 ISO 7296-2
11.5		Transmission Oil — Filter	1169	ISO 3287 ISO 3767-1 ISO 6405-1 ISO 7296-2
11.6		Transmission Oil — Temperature	1168	ISO 3287 ISO 3767-1 ISO 6405-1 ISO 7296-2

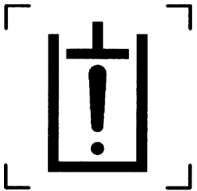
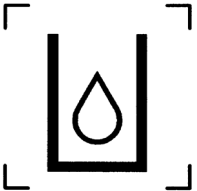
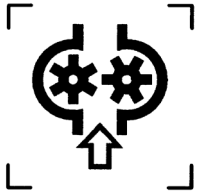
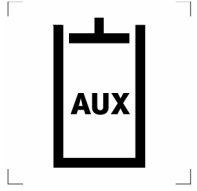
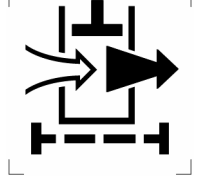
11.7		Transmission — Failure / Malfunction	1396	ISO 3767-1 ISO 6405-1 ISO 7296-2
11.8		Clutch	1308	ISO 3767-1 ISO 6405-1 ISO 7296-2
11.9		Transmission — Neutral	None	ISO 3767-1 ISO 6405-1 ISO 7296-2
11.10		Transmission — High Gear / High Gear Range	None	ISO 3767-1 ISO 6405-1 ISO 7296-2
11.11		Transmission — Low Gear / Low Gear Range	None	ISO 3767-1 ISO 6405-1 ISO 7296-2
11.12		Transmission — Forward Gear / Forward Gear Range	None	ISO 3767-1 ISO 6405-1 ISO 7296-2
11.13		Transmission — Reverse Gear / Reverse Gear Range	None	ISO 3767-1 ISO 6405-1 ISO 7296-2

11.14		Transmission — Park	None	ISO 3767-1 ISO 6405-1 ISO 7296-2
11.15		Transmission — Forward First Gear	None	ISO 3767-1 ISO 6405-1 ISO 7296-2
11.16		Transmission — Forward Second Gear	None	ISO 3767-1 ISO 6405-1 ISO 7296-2
11.17		Transmission — Forward Third Gear Use sequential numbers as needed for additional forward gears: 4 for fourth gear, etc.	None	ISO 3767-1 ISO 6405-1 ISO 7296-2
11.18		Transmission — Reverse First Gear Use sequential numbers as needed for additional reverse gears: R2 for reverse second gear, etc.	None	ISO 3767-1 ISO 6405-1 ISO 7296-2
11.19		Worn Clutch	2169	ISO 3767-1 ISO 6405-1
11.20		Transmission — Creeper Gear	None	ISO 3767-1 ISO 6405-1

11.21		Transmission Breather Filter	None	—
11.22		Transmission —Skip Shift — Up	None	—
11.23		Transmission —Skip Shift — Down	None	—






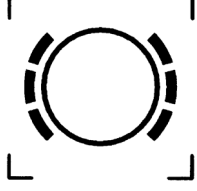
12. HYDRAULIC SYSTEM SYMBOLS

Symbol Number	Graphical Symbol	Symbol Description / Application	ISO / IEC Registration Number	ISO Standard
12.1		Hydraulic System	1409	ISO 3287 ISO 3767-1 ISO 6405-1 ISO 7296-2
12.2		Hydraulic Oil	1411	ISO 3767-1 ISO 6405-1 ISO 7296-2
12.3		Hydraulic Oil — Pressure	1413	ISO 3287 ISO 3767-1 ISO 6405-1 ISO 7296-2
12.4		Hydraulic Oil — Level	1412	ISO 3287 ISO 3767-1 ISO 6405-1 ISO 7296-2
12.5		Hydraulic Oil — Filter	1415	ISO 3287 ISO 3767-1 ISO 6405-1 ISO 7296-2
12.6		Hydraulic Oil — Temperature	1414	ISO 3287 ISO 3767-1 ISO 6405-1 ISO 7296-2


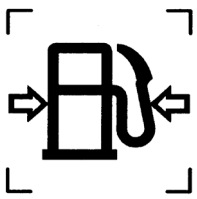
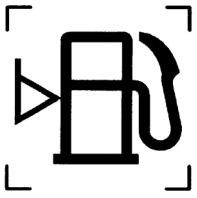



12.7		Hydraulic System — Failure / Malfunction	1410	ISO 3767-1 ISO 6405-1 ISO 7296-2
12.8		Hydraulic Oil — Unrestricted Flow to Sump	None	—
12.9		Hydraulic Motor	None	—
12.10		Auxiliary Hydraulics	None	—
12.11		Hydraulic Breather Filter	None	—

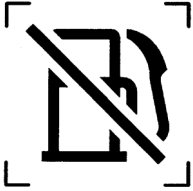

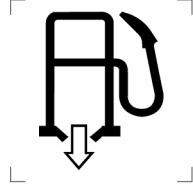
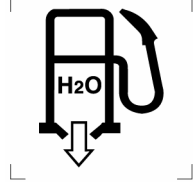
13. BRAKE SYSTEM SYMBOLS

Symbol Number	Graphical Symbol	Symbol Description / Application	ISO / IEC Registration Number	ISO Standard
13.1		Brake System	1399	ISO 3287 ISO 3767-1 ISO 6405-1 ISO 7296-2
13.2		Brake Oil / Fluid	1400	ISO 3287 ISO 3767-1 ISO 6405-1 ISO 7296-2
13.3		Brake System — Pressure	1402	ISO 3287 ISO 3767-1 ISO 6405-1 ISO 7296-2
13.4		Brake System — Filter	1404	ISO 3767-1 ISO 6405-1 ISO 7296-2
13.5		Brake System — Temperature	1403	ISO 3767-1 ISO 6405-1 ISO 7296-2
13.6		Park Brake	0238	ISO 3287 ISO 3767-1 ISO 6405-1 ISO 7296-2

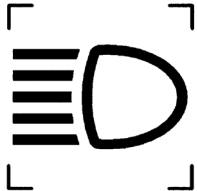


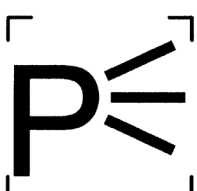


13.7		Park Brake — Release	None	—
13.8		Brake System — Failure / Malfunction	0239	ISO 3287 ISO 3767-1 ISO 6405-1 ISO 7296-2
13.9		Brake System — First Trailer — Failure / Malfunction	1405	—
13.10		Brake System — Second Trailer — Failure / Malfunction	1406	—
13.11		Anti-Lock Brake System — Failure / Malfunction	1407	ISO 6405-1 ISO 7296-2
13.12		Worn Brake Linings	1408	ISO 3287 ISO 3767-1 ISO 6405-1 ISO 7296-2

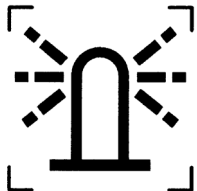
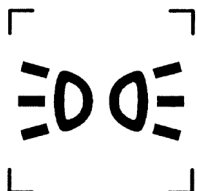
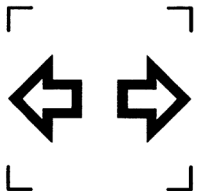
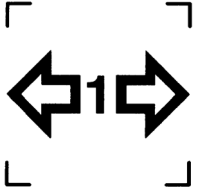

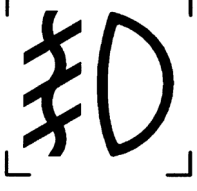
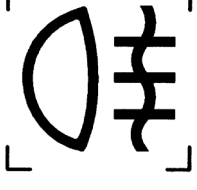
14. FUEL SYSTEM SYMBOLS


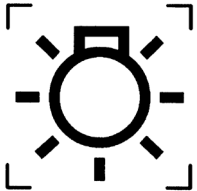
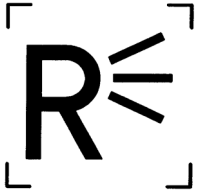

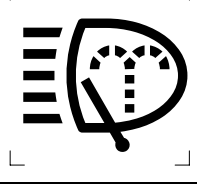
Symbol Number	Graphical Symbol	Symbol Description / Application	ISO / IEC Registration Number	ISO Standard
14.1		Fuel or Fuel System May also be used instead of symbol 13.4 to indicate <i>Fuel — Level</i> .	0245	ISO 3287 ISO 3767-1 ISO 6405-1 ISO 7296-2 ISO 8999
14.2		Fuel — Pressure	1392	ISO 3287 ISO 3767-1 ISO 6405-1 ISO 7296-2 ISO 8999
14.3		Fuel — Level	1551	ISO 3287 ISO 3767-1 ISO 6405-1 ISO 7296-2 ISO 8999
14.4		Fuel — Filter	1393	ISO 3287 ISO 3767-1 ISO 6405-1 ISO 7296-2 ISO 8999
14.5		Fuel — Temperature	1394	ISO 3287 ISO 3767-1 ISO 6405-1 ISO 7296-2 ISO 8999
14.6		Fuel System — Failure / Malfunction	1391	ISO 3767-1 ISO 6405-1 ISO 7296-2 ISO 8999

14.7		<p>Fuel Shut-Off Use only for fuel shut-off control. Use symbol 9.20 for <i>Engine — Stop</i> control. Use symbol 9.31 for <i>Engine — Urgent Stop</i> control.</p>	1395	<p>ISO 3287 ISO 3767-1 ISO 6405-1 ISO 7296-2 ISO 8999</p>
14.8		<p>Diesel Fuel Use only at fuel fill point, to indicate fuel type.</p>	1541	<p>ISO 3287 ISO 3767-1 ISO 6405-1 ISO 7296-2 ISO 8999</p>
14.9		<p>Fuel Drain</p>	None	—
14.10		<p>Fuel System — Water Drain</p>	None	—







15. LIGHTING SYMBOLS



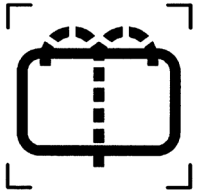
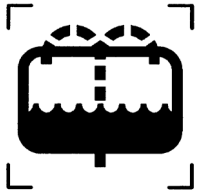

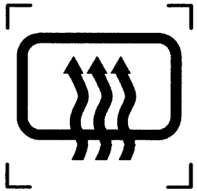

Symbol Number	Graphical Symbol	Symbol Description / Application	ISO / IEC Registration Number	ISO Standard
15.1		Headlights — High / Upper Beam Use blue for the <i>Headlights — High / Upper Beam</i> display. Illuminate the symbol on a blue background.	0082	ISO 3287 ISO 3767-1 ISO 6405-1 ISO 7296-2
15.2		Headlights — Low / Dipped Beam	0083	ISO 3287 ISO 3767-1 ISO 6405-1 ISO 7296-2
15.3		Front Work Light	1204	ISO 3287 ISO 3767-1 ISO 6405-1 ISO 7296-2
15.4		Parking Lights	0240	ISO 3287 ISO 3767-1 ISO 6405-1 ISO 7296-2
15.5		Hazard Warning Lights For the <i>Hazard Warning</i> display, use white triangles on a red background. For the <i>Hazard Warning</i> control, use red-on-black or white-on-red.	0085	ISO 3287 ISO 3767-1 ISO 6405-1 ISO 7296-2
15.6		Interior / Dome Light	1421	ISO 3287 ISO 3767-1 ISO 6405-1 ISO 7296-2

15.7		Beacon	1141	ISO 3287 ISO 3767-1 ISO 6405-1 ISO 7296-2
15.8		Clearance / Position Lights	0456	ISO 3287 ISO 3767-1 ISO 6405-1 ISO 7296-2
15.9		Turn Signals	0084	ISO 3287 ISO 3767-1 ISO 6405-1 ISO 7296-2
15.10		Turn Signal — First Trailer	1419	ISO 3767-2
15.11		Turn Signal — Second Trailer	1420	ISO 3767-2
15.12		Front Fog Lights If one control operates both front and rear fog lights, use symbol 0633 (Clause 14.12).	0633	ISO 3287 ISO 3767-1 ISO 6405-1 ISO 7296-2
15.13		Rear Fog Lights If one control operates both front and rear fog lights, use symbol 0633 (Clause 14.12).	0634	ISO 3287 ISO 3767-1 ISO 6405-1 ISO 7296-2

15.14		Instrument Illumination	1556	ISO 3767-1 ISO 6405-1
15.15		Master Lighting Switch	5012	ISO 3287 ISO 6405-1
15.16		Reverse / Back-Up Lights	2304	ISO 6405-1
15.17		Rear Work Light	None	DIS 6405-1
15.18		Headlight - Cleaner - Washer / Wiper	0250	ISO 2575

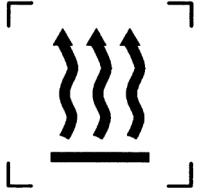

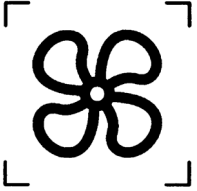




16. WINDOW/VISIBILITY SYMBOLS


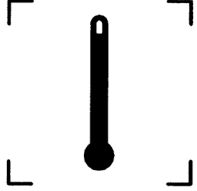
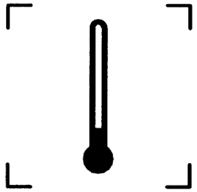

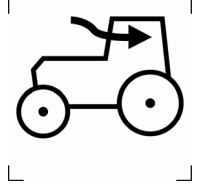
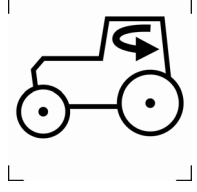
Symbol Number	Graphical Symbol	Symbol Description / Application	ISO / IEC Registration Number	ISO Standard
16.1		Windshield — Wiper	0086	ISO 3287 ISO 3767-1 ISO 6405-1 ISO 7296-2
16.2		Windshield — Wiper — Intermittent	0647	ISO 3767-1 ISO 6405-1
16.3		Windshield — Washer	0088	ISO 3287 ISO 3767-1 ISO 6405-1 ISO 7296-2
16.4		Windshield — Washer Fluid	1422	ISO 6405-1
16.5		Windshield — Washer and Wiper	0087	ISO 3287 ISO 3767-1 ISO 6405-1 ISO 7296-2
16.6		Windshield — Demister / Defroster	0635	ISO 3287 ISO 3767-1 ISO 6405-1 ISO 7296-2

16.7		Rear Window — Wiper	0097	ISO 3287 ISO 3767-1 ISO 6405-1 ISO 7296-2
16.8		Rear Window — Wiper — Intermittent	1424	ISO 3767-1 ISO 6405-1
16.9		Rear Window — Washer	1423	ISO 3767-1 ISO 6405-1
16.10		Rear Window — Washer Fluid	0099	ISO 3287 ISO 3767-1 ISO 6405-1 ISO 7296-2
16.11		Rear Window — Washer and Wiper	0098	ISO 3287 ISO 3767-1 ISO 6405-1 ISO 7296-2
16.12		Rear Window — Demister / Defroster	0636	ISO 3287 ISO 3767-1 ISO 6405-1 ISO 7296-2
16.13		Side / Lateral Window — Demister /Defroster	1425	ISO 3767-1 ISO 6405-1

16.14		Exterior Rear View Mirror — Demister / Defroster	1426	ISO 3767-1 ISO 6405-1
16.15		Exterior Rear View Mirror — Four-Way Adjustment	1427	ISO 3767-1 ISO 6405-1
16.16		Side Window — Wiper	None	—








17. CLIMATE CONTROL SYMBOLS





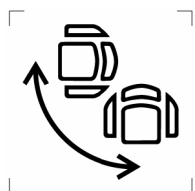
Symbol Number	Graphical Symbol	Symbol Description / Application	ISO / IEC Registration Number	ISO Standard
17.1		Heater / Interior Heating	0637	ISO 3287 ISO 3767-1 ISO 6405-1 ISO 7296-2
17.2		Air Conditioning / Cooling System	0027	ISO 3287 ISO 3767-1 ISO 6405-1 ISO 7296-2
17.3		Ventilating / Air Circulating Fan	0089	ISO 3287 ISO 3767-1 ISO 6405-1 ISO 7296-2
17.4		Ventilation Air Flow — Upper	1865	ISO 3767-1 ISO 6405-1
17.5		Ventilation Air Flow — Lower	1866	ISO 3767-1 ISO 6405-1
17.6		Ventilation Air Flow — Upper and Lower	1867	ISO 3767-1 ISO 6405-1
17.7		Ventilation Air Flow — Lower and Defrost	1860	ISO 6405-1

17.8		Dehumidifier	2068	ISO 3767-1 ISO 6405-1
17.9		Temperature — High May be red to signify warm/hot temperatures.	None	—
17.10		Temperature — Low May be blue to signify cool / cold temperatures.	None	—
17.11		Automatic Temperature Control — Heating and Cooling	None	—
17.12		Fresh (Outside) Air Flow — Tractor	None	—
17.13		Recirculating Air Flow — Tractor	None	—

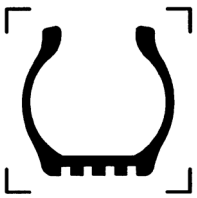
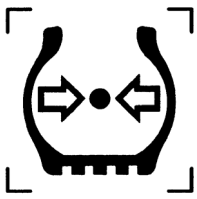

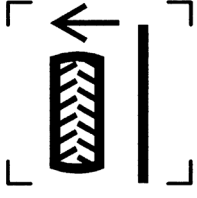
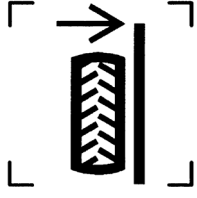
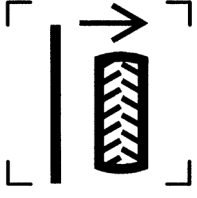
18. SEAT SYMBOLS

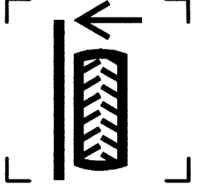
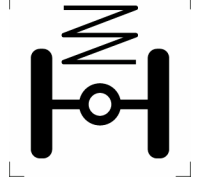
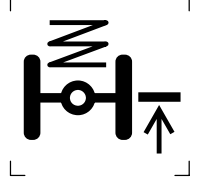
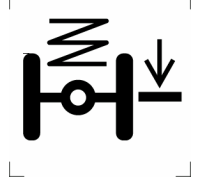

Symbol Number	Graphical Symbol	Symbol Description / Application	ISO / IEC Registration Number	ISO Standard
18.1		Seat	1705	ISO 3767-1 ISO 6405-1
18.2		Seat — Longitudinal Adjustment — Fore and Aft	1428	ISO 3287 ISO 3767-1 ISO 6405-1
18.3		Seat — Setback Adjustment — Fore and Aft	1429	ISO 3767-1 ISO 6405-1
18.4		Seat — Height Adjustment — Up and Down	1430	ISO 3767-1 ISO 6405-1
18.5		Seat — Height Adjustment — Up	1706	ISO 3767-1 ISO 6405-1
18.6		Seat — Height Adjustment — Down	1707	ISO 3767-1 ISO 6405-1

18.7		Seat — Height Adjustment — Cushion Front — Up and Down	1431	ISO 3767-1 ISO 6405-1
18.8		Seat — Height Adjustment — Cushion Rear — Up and Down	1432	ISO 3767-1 ISO 6405-1
18.9		Seat — Headrest Adjustment — Up and Down	1433	ISO 3767-1 ISO 6405-1
18.10		Heated Seat	0649	ISO 3767-1 ISO 6405-1
18.11		Seat — Overhead View	2170	ISO 3767-1 ISO 6405-1
18.12		Seat — Lumbar Adjustment — In and Out	2171	ISO 3767-1 ISO 6405-1
18.13		Seat — Fore and Aft Isolator	2172	ISO 3767-1 ISO 6405-1

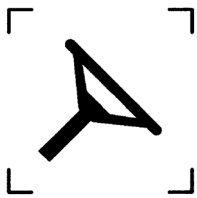


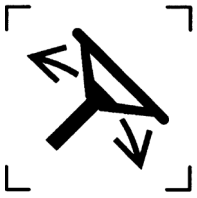
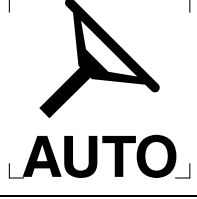
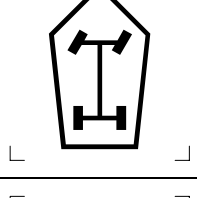
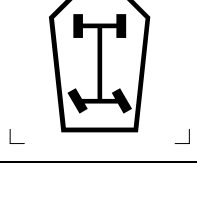
18.14		Seat — Lateral Isolator	2173	ISO 3767-1 ISO 6405-1
18.15		Seat — Swivel	2174	ISO 3767-1 ISO 6405-1
18.16		Seat — Weight Adjustment	2175	ISO 3767-1 ISO 6405-1
18.17		Seat — Ride Damping Adjustment	2242	ISO 6405-1
18.18		Seat Swing	None	—

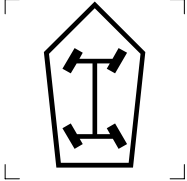
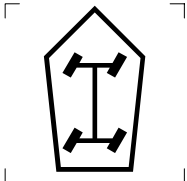
19. TIRE, WHEEL AND AXLE SYMBOLS

Symbol Number	Graphical Symbol	Symbol Description / Application	ISO / IEC Registration Number	ISO Standard
19.1		Tire	2176	ISO 2767-1 ISO 6405-1
19.2		Tire — Pressure	1435	ISO 3287 ISO 3767-1 ISO 6405-1
19.3		Tire — Failure / Malfunction	1434	ISO 3287 ISO 3767-1 ISO 6405-1
19.4		Wheel Adjustment — Left Wheel — Move Out	2129	ISO 3767-2
19.5		Wheel Adjustment — Left Wheel — Move In	2130	ISO 3767-2
19.6		Wheel Adjustment — Right Wheel — Move Out	2131	ISO 3767-2

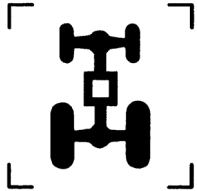
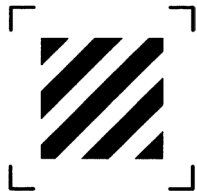



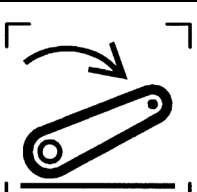

19.7		Wheel Adjustment — Right Wheel — Move In	2132	ISO 3767-2
19.8		Suspended Axle	None	—
19.9		Suspended Axle — Raise	None	—
19.10		Suspended Axle — Lower	None	—
19.11		Suspended Axle — Lock	None	—

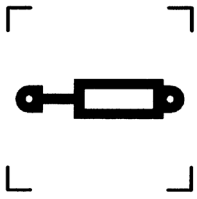
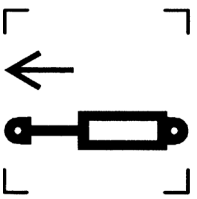
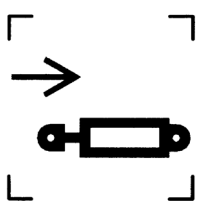
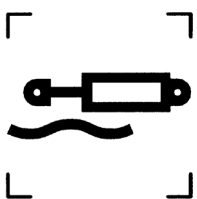

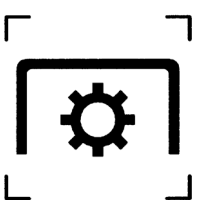
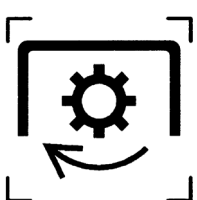

20. STEERING SYMBOLS


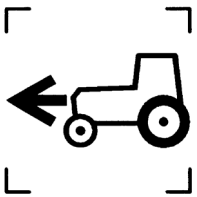

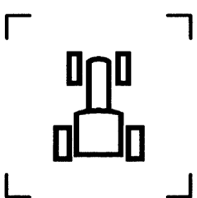
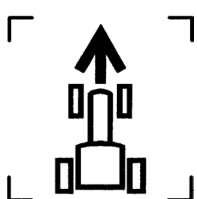
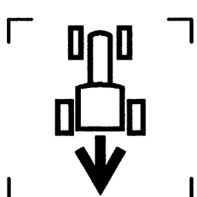
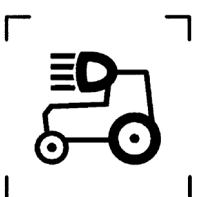
Symbol Number	Graphical Symbol	Symbol Description / Application	ISO / IEC Registration Number	ISO Standard
20.1		Steering System	2305	ISO 6405-1
20.2		Steering System — Filter	2306	ISO 6405-1
20.3		Steering System — Failure /Malfunction	2307	ISO 6405-1
20.4		Steering Wheel — Tilt Control	2064	ISO 3767-1 ISO 6405-1
20.5		Automatic Steering / Automatic Guidance	None	—
20.6		Two-Wheel Steering — Front	2391	ISO 3287 ISO 20381
20.7		Two-Wheel Steering — Rear	2392	ISO 3287 ISO 20381

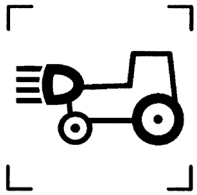
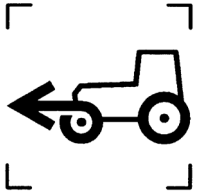


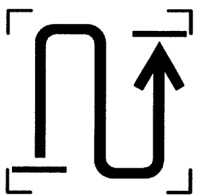
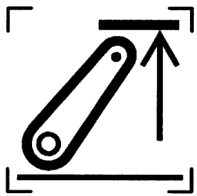
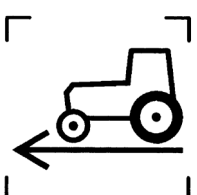
20.8		Four-Wheel Steering / All-Wheel Steering	2393	ISO 3287 ISO 20381
20.9		Crab Steering	2394	ISO 3287 ISO 20381



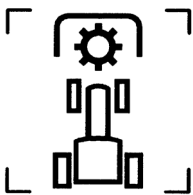
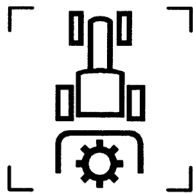
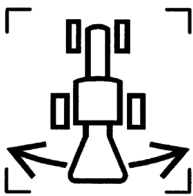
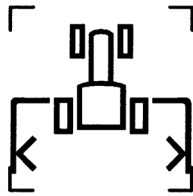
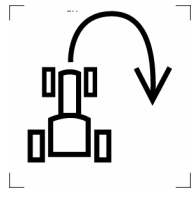
21. AGRICULTURAL TRACTOR SYMBOLS

Symbol Number	Graphical Symbol	Symbol Description / Application	ISO / IEC Registration Number	ISO Standard
21.1		Four-Wheel Drive	None	ISO 3767-2
21.2		Area Worked	1657	ISO 3767-2
21.3		Area Worked per Hour	1658	ISO 3767-2
21.4		Rockshaft	1566	ISO 3767-2
21.5		Rockshaft — Up / Raise	1567	ISO 3767-2
21.6		Rockshaft — Down / Lower	1568	ISO 3767-2
21.7		Rockshaft — Float	1660	ISO 3767-2

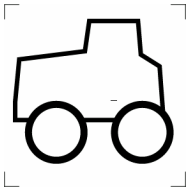
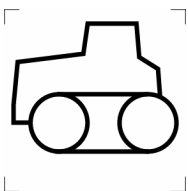

21.8		Remote Cylinder	1569	ISO 3767-2
21.9		Remote Cylinder — Extend	1570	ISO 3767-2
21.10		Remote Cylinder — Retract	1571	ISO 3767-2
21.11		Remote Cylinder — Float	1661	ISO 3767-2
21.12		Differential Lock	1662	ISO 3767-2
21.13		PTO / Power Take-Off May be used with a numerical indicator of rated PTO rotational speed.	1572	ISO 3767-2 ISO 3767-3
21.14		PTO / Power Take-Off — Rotational Speed	1664	ISO 3767-2
21.15		Tractor — Wheel Slip	1665	ISO 3767-2

21.16		Tractor — Side View of Machine	2133	ISO 3767-2
21.17		Tractor — Forward Movement — Side View of Machine	1666	ISO 3767-2
21.18		Tractor — Rearward Movement — Side View of Machine	1667	ISO 3767-2
21.19		Tractor — Overhead View of Machine	2134	ISO 3767-2
21.20		Tractor — Forward Movement — Overhead View of Machine	2135	ISO 3767-2
21.21		Tractor — Rearward Movement — Overhead View of Machine	2136	ISO 3767-2
21.22		Tractor — Auxiliary Headlights	2137	ISO 3767-2

21.23		Tractor — Main Headlights Use only with symbol 2137 (Clause 20.22). Otherwise, use symbol 0082 (Clause 14.1).	None	ISO 3767-2
21.24		Tractor — Front Wheel Drive	1663	ISO 3767-2
21.25		Tractor — Front Wheel Drive — Automatic Operation Front wheel drive is engaged and disengaged automatically based on operating conditions.	2420	ISO 3767-2
21.26		Tractor — Front Wheel Drive — Brake Front wheel drive is engaged when brakes are applied at travel speeds above a specified limit.	2421	ISO 3767-2
21.27		Work Distance Traveled	2177	ISO 3767-2
21.28		Rockshaft — Upper Limit Used for control that sets maximum height to which an implement can be raised.	2178	ISO 3767-2
21.29		Tractor — Ground Speed	2179	ISO 3767-2

21.30		Tractor with Front PTO — Side View of Machine	2180	ISO 3767-2
21.31		Tractor with Rear PTO — Side View of Machine	2181	ISO 3767-2
21.32		Tractor with Front PTO — Overhead View of Machine	2182	ISO 3767-2
21.33		Tractor with Rear PTO — Overhead View of Machine	2183	ISO 3767-2
21.34		Tractor with Towed Implement — Row Guidance	None	—
21.35		Towed Implement Width	2184	ISO 3767-2
21.36		Headland Turning Sequence — Tractor	None	—

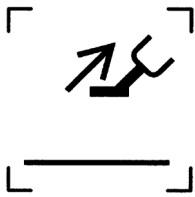
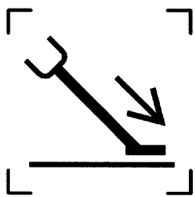
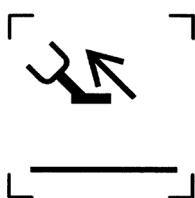
22. INDUSTRIAL TRACTOR SYMBOLS

Symbol Number	Graphical Symbol	Symbol Description / Application	ISO / IEC Registration Number	ISO Standard
22.1		Wheel Industrial Tractor — Side View	None	—
22.2		Track Industrial Tractor — Side View	None	—
22.3		Triangular Track Industrial Tractor — Side View	None	—

23. STABILIZER SYMBOLS

NOTE: In 21.2 through 21.9, the stabilizer is viewed from the perspective of a person looking forward along the axis of the machine.

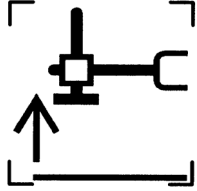
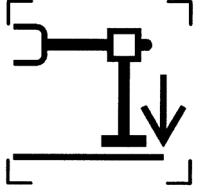
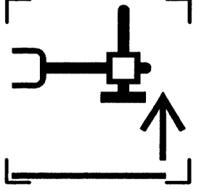
Symbol Number	Graphical Symbol	Symbol Description / Application	ISO / IEC Registration Number	ISO Standard
23.1		Stablizer	2072	ISO 3767-4 ISO 6405-2 ISO 7296-2
23.2		Left Stablizer — Up / Raise	2073	ISO 3767-4 ISO 6405-2 ISO 7296-2
23.3		Left Stabilizer — Down / Lower	2074	ISO 3767-4 ISO 6405-2 ISO 7296-2
23.4		Right Stablizer — Up / Raise	1292	ISO 3767-4 ISO 6405-2 ISO 7296-2
23.5		Right Stabilizer — Down / Lower	1291	ISO 3767-4 ISO 6405-2 ISO 7296-2
23.6		Left Stablizer — Extend	2075	ISO 3767-4 ISO 6405-2 ISO 7296-2

23.7		Left Stabilizer — Retract	2076	ISO 3767-4 ISO 6405-2 ISO 7296-2
23.8		Right Stabilizer — Extend	1536	ISO 3767-4 ISO 6405-2 ISO 7296-2
23.9		Right Stabilizer — Retract	1537	ISO 3767-4 ISO 6405-2 ISO 7296-2

24. OUTRIGGER SYMBOLS

NOTE: In 22.1 through 22.9, the outrigger is viewed from the perspective of a person looking forward along the axis of the machine.

Symbol Number	Graphical Symbol	Symbol Description / Application	ISO / IEC Registration Number	ISO Standard
24.1		Outrigger	2077	ISO 3767-4 ISO 6405-2 ISO 7296-2
24.2		Outrigger — Left Beam Out — Horizontal Extension Only	2078	ISO 3767-4 ISO 6405-2 ISO 7296-2
24.3		Outrigger — Left Beam In — Horizontal Retraction Only	2079	ISO 3767-4 ISO 6405-2 ISO 7296-2
24.4		Outrigger — Right Beam Out — Horizontal Extension Only	0747	ISO 3767-4 ISO 6405-2 ISO 7296-2
24.5		Outrigger — Right Beam In — Horizontal Retraction Only	0746	ISO 3767-4 ISO 6405-2 ISO 7296-2
24.6		Outrigger — Left Jack Down — Vertical Extension Only	2080	ISO 3767-4 ISO 6405-2 ISO 7296-2

24.7		Outrigger — Left Jack Up — Horizontal Retraction Only	2081	ISO 3767-4 ISO 6405-2 ISO 7296-2
24.8		Outrigger — Right Jack Down — Vertical Extension Only	0750	ISO 3767-4 ISO 6405-2 ISO 7296-2
24.9		Outrigger — Right Jack Up — Vertical Retraction Only	0751	ISO 3767-4 ISO 6405-2 ISO 7296-2

25. CLAMSHELL BUCKET SYMBOLS

NOTE: In 23.1 through 23.6, the clamshell bucket is viewed from the perspective of a person looking forward along the axis of the machine. Arrows indicating rotation of the bucket (see 23.4 through 23.6) are viewed from the perspective of a person looking at the bucket from above the machine.

Symbol Number	Graphical Symbol	Symbol Description / Application	ISO / IEC Registration Number	ISO Standard
25.1		Clamshell Bucket	1499	ISO 6405-2 ISO 7296-2
25.2		Clamshell Bucket — Open	1495	ISO 6405-2 ISO 7296-2
25.3		Clamshell Bucket — Close	1496	ISO 6405-2 ISO 7296-2
25.4		Clamshell Bucket — Rotate	2082	ISO 6405-2 ISO 7296-2
25.5		Clamshell Bucket — Rotate Clockwise	1497	ISO 6405-2 ISO 7296-2
25.6		Clamshell Bucket — Rotate Counter-Clockwise	1498	ISO 6405-2 ISO 7296-2

26. EARTHMOVING GRAPPLE SYMBOLS


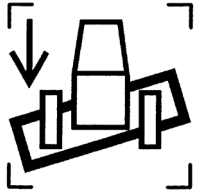
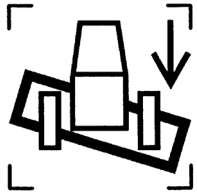
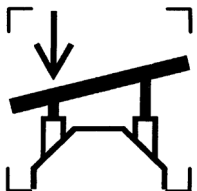
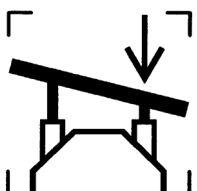
NOTE: In 24.1 through 24.3, the grapple is viewed from the perspective of a person looking forward along the axis of the machine. Arrows indicating rotation of the grapple (see 24.4 through 24.6) are viewed from the perspective of a person looking at the grapple from above the machine.

Symbol Number	Graphical Symbol	Symbol Description / Application	ISO / IEC Registration Number	ISO Standard
26.1		Grapple	1499	ISO 6405-2 ISO 7296-2
26.2		Grapple — Open	1500	ISO 6405-2 ISO 7296-2
26.3		Grapple — Close	1501	ISO 6405-2 ISO 7296-2
26.4		Grapple — Rotate	1502	ISO 6405-2 ISO 7296-2
26.5		Grapple — Rotate Clockwise	2083	ISO 6405-2 ISO 7296-2
26.6		Grapple — Rotate Counter-Clockwise	2084	ISO 6405-2 ISO 7296-2

27. DOZER SYMBOLS

NOTE: In symbols 25.8 and 25.9, the dozer blade is viewed from the perspective of a person looking forward along the axis of the machine. In symbols 25.10 and 25.11, the dozer blade is viewed from the perspective of a person looking at the blade from above the machine.

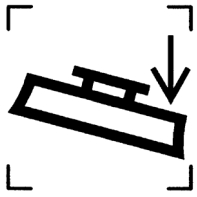
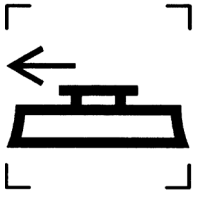





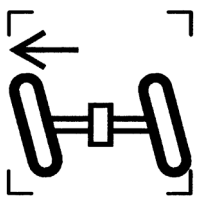
Symbol Number	Graphical Symbol	Symbol Description / Application	ISO / IEC Registration Number	ISO Standard
27.1		Dozer Blade	1451	ISO 6405-2
27.2		Dozer Blade — Raise	1452	ISO 3287 ISO 6405-2
27.3		Dozer Blade — Lower	1453	ISO 3287 ISO 6405-2
27.4		Dozer Blade — Hold	1454	ISO 3287 ISO 6405-2
27.5		Dozer Blade — Float	1455	ISO 3287 ISO 6405-2
27.6		Dozer Blade — Pitch Forward	1461	ISO 3287 ISO 6405-2

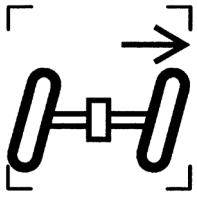
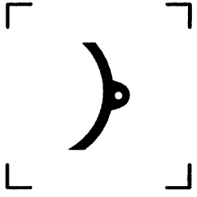
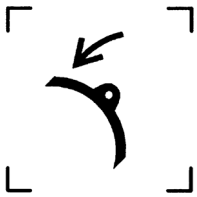
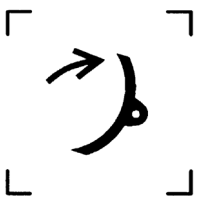
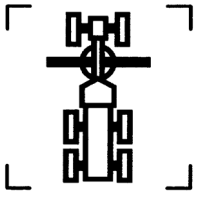
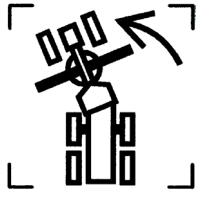
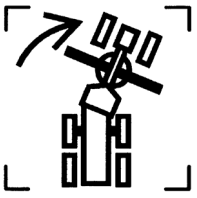
27.7		Dozer Blade — Pitch Rearward	1460	ISO 3287 ISO 6405-2
27.8		Dozer Blade — Tilt Left	1457	ISO 3287 ISO 6405-2
27.9		Dozer Blade — Tilt Right	1456	ISO 3287 ISO 6405-2
27.10		Dozer Blade — Angle Left	1459	ISO 3287 ISO 6405-2
27.11		Dozer Blade — Angle Right	1458	ISO 3287 ISO 6405-2

28. GRADER SYMBOLS



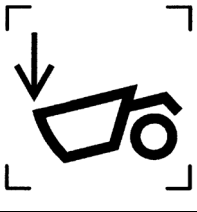



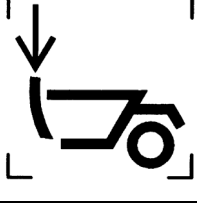
NOTE: In 26.1 through 26.9 and 26.14 through 26.15, the grader blade is viewed from the perspective of a person looking forward along the axis of the machine. In 26.10 through 26.13, the blade circle is viewed from the perspective of a person looking at the blade circle from above the machine. In 26.19 through 26.21, the grader is viewed from the perspective of a person looking at the grader from above the machine.




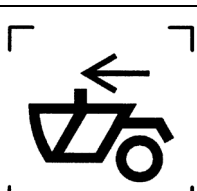


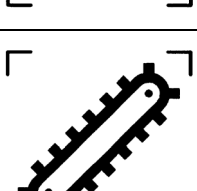
Symbol Number	Graphical Symbol	Symbol Description / Application	ISO / IEC Registration Number	ISO Standard
28.1		Grader Blade	1503	ISO 6405-2
28.2		Grader Blade — Raise Whole Blade	2085	ISO 6405-2
28.3		Grader Blade — Lower Whole Blade	2086	ISO 6405-2
28.4		Grader Blade — Raise Left Side	1506	ISO 6405-2
28.5		Grader Blade — Lower Left Side	1507	ISO 6405-2
28.6		Grader Blade — Raise Right Side	1504	ISO 6405-2



28.7		Grader Blade — Lower Right Side	1505	ISO 6405-2
28.8		Grader Blade Side Shift — Side Shift Left	1509	ISO 6405-2
28.9		Grader Blade Side Shift — Side Shift Right	1508	ISO 6405-2
28.10		Grader Blade Circle — Rotate Clockwise	1510	ISO 6405-2
28.11		Grader Blade Circle — Rotate Counter-Clockwise	1511	ISO 6405-2
28.12		Grader Blade Circle — Shift Left	1513	ISO 6405-2
28.13		Grader Blade Circle — Shift Right	1512	ISO 6405-2
28.14		Grader Wheel Lean — Lean Left	1518	ISO 6405-2

28.15		Grader Wheel Lean — Lean Right	1517	ISO 6405-2
28.16		Grader Blade — Side View	2243	ISO 6405-2
28.17		Grader Blade — Pitch Forward	2244	ISO 6405-2
28.18		Grader Blade — Pitch Rearward	2245	ISO 6405-2
28.19		Grader — Overhead View of Machine	2246	ISO 6405-2
28.20		Grader — Steer Left	2247	ISO 6405-2
28.21		Grader — Steer Right	2258	ISO 6405-2

29. SCRAPER SYMBOLS

Symbol Number	Graphical Symbol	Symbol Description / Application	ISO / IEC Registration Number	ISO Standard
29.1		Scraper Bowl	1523	ISO 6405-2
29.2		Scraper Bowl — Raise	1524	ISO 6405-2
29.3		Scraper Bowl — Lower	1525	ISO 6405-2
29.4		Scraper Bowl — Hold	1526	ISO 6405-2
29.5		Scraper Apron	2087	ISO 6405-2
29.6		Scraper Apron — Raise	1527	ISO 6405-2
29.7		Scraper Apron — Lower	1528	ISO 6405-2

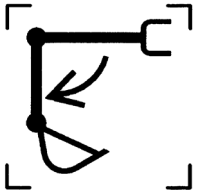
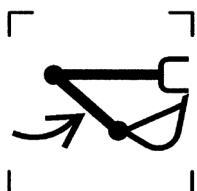
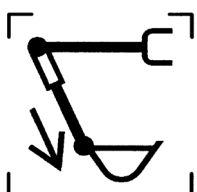

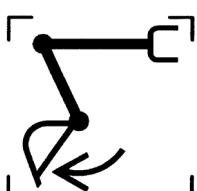
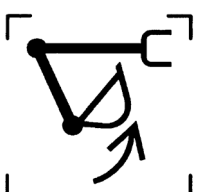
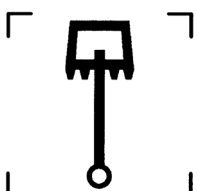
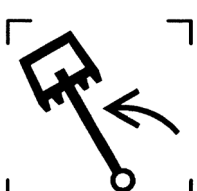
29.8		Scraper Apron — Hold	1529	ISO 6405-2
29.9		Scraper Apron — Float	1530	ISO 6405-2
29.10		Scraper Ejector	2088	ISO 6405-2
29.11		Scraper Ejector — Eject	1531	ISO 6405-2
29.12		Scraper Ejector — Return	1532	ISO 6405-2
29.13		Scraper Ejector — Hold	1533	ISO 6405-2
29.14		Scraper Elevator	2089	ISO 6405-2

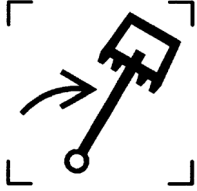
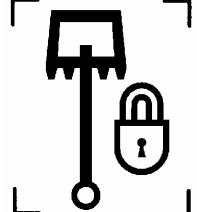
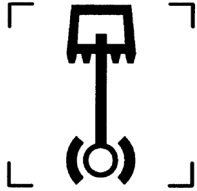
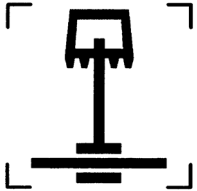
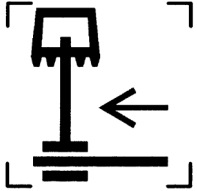
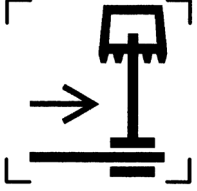
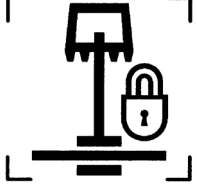
29.15		Scraper Elevator — Load	1534	ISO 6405-2
29.16		Scraper Elevator — Unload	1535	ISO 6405-2

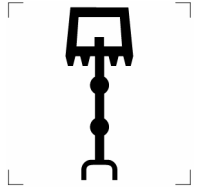
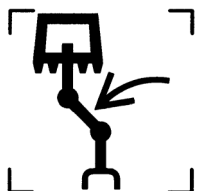
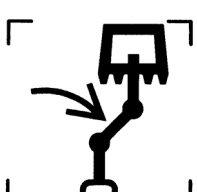
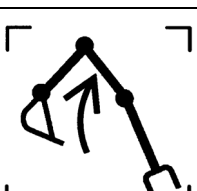
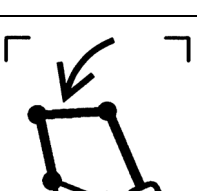
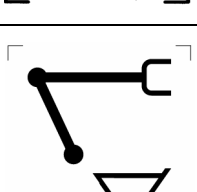
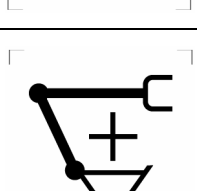
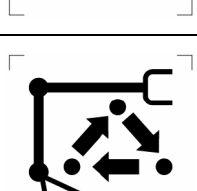
30. EXCAVATOR / BACKHOE SYMBOLS

NOTE: In 28.13 through 28.24, the excavator / backhoe boom and bucket are viewed from the perspective of a person looking at the boom and bucket from above the machine.

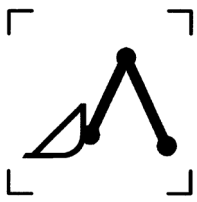

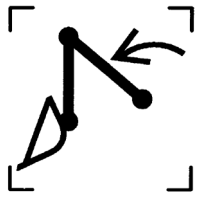

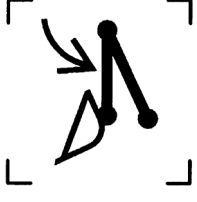
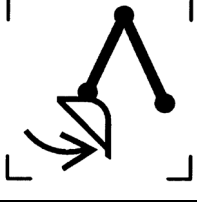
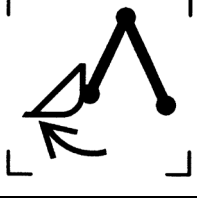
Symbol Number	Graphical Symbol	Symbol Description / Application	ISO / IEC Registration Number	ISO Standard
30.1		Excavator/Backhoe — Hoe Equipment	1468	ISO 6405-2
30.2		Excavator / Backhoe — Boom — Raise	1470	ISO 3287 ISO 6405-2
30.3		Excavator / Backhoe — Boom — Lower	1469	ISO 3287 ISO 6405-2
30.4		Excavator / Backhoe — Boom — Extend	1472	ISO 6405-2
30.5		Excavator / Backhoe — Boom — Retract	1471	ISO 6405-2
30.6		Excavator / Backhoe — Boom — Transport Lock	1486	ISO 6405-2

30.7		Excavator / Backhoe — Arm — Out	1474	ISO 3287 ISO 6405-2
30.8		Excavator / Backhoe — Arm — In	1473	ISO 3287 ISO 6405-2
30.9		Excavator / Backhoe — Arm — Extend	1475	ISO 6405-2
30.10		Excavator / Backhoe — Arm — Retract	1476	ISO 6405-2
30.11		Excavator / Backhoe — Bucket — Dump	1477	ISO 3287 ISO 6405-2
30.12		Excavator / Backhoe — Bucket — Dig / Rollback	1478	ISO 3287 ISO 6405-2
30.13		Excavator / Backhoe — Boom Swing	2090	ISO 6405-2
30.14		Excavator / Backhoe — Boom Swing — Swing Left	1480	ISO 3287 ISO 6405-2

30.15		Excavator / Backhoe — Boom Swing — Swing Right	1479	ISO 3287 ISO 6405-2
30.16		Excavator / Backhoe — Boom Swing — Swing Lock	1481	ISO 6405-2
30.17		Excavator / Backhoe — Boom Swing — Swing Brake	1482	ISO 6405-2
30.18		Excavator / Backhoe — Boom Side Shift	2091	ISO 6405-2
30.19		Excavator / Backhoe — Boom Side Shift — Shift Left	1483	ISO 6405-2
30.20		Excavator / Backhoe — Boom Side Shift — Shift Right	1484	ISO 6405-2
30.21		Excavator / Backhoe — Boom Side Shift — Shift Lock	1485	ISO 6405-2

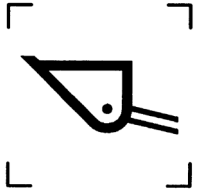
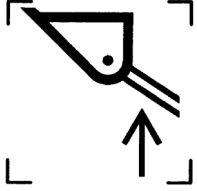
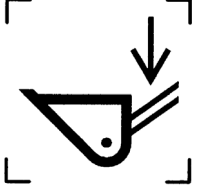
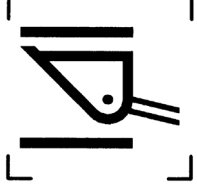
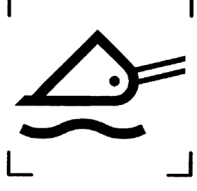
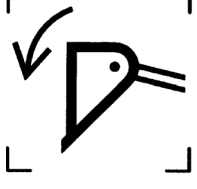
30.22		Excavator / Backhoe — Offset Boom	None	—
30.23		Excavator / Backhoe — Offset Boom Swing — Swing Left	2249	ISO 6405-2
30.24		Excavator / Backhoe — Offset Boom Swing — Swing Right	2250	ISO 6405-2
30.25		Excavator / Backhoe — Adjustable Boom — Raise	None	—
30.26		Excavator / Backhoe — Adjustable Boom — Lower	None	—
30.27		Excavator / Backhoe — Bucket — Detach	None	—
30.28		Excavator / Backhoe Equipment — Power Boost	None	DIS 6405-2
30.29		Excavator / Backhoe — Working Mode Selector	None	DIS 6405-2

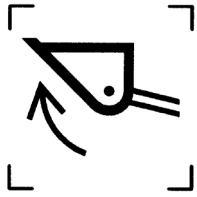
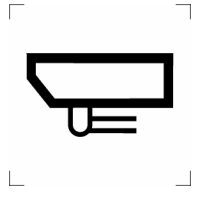
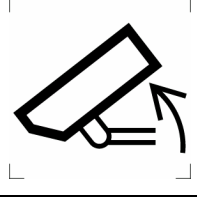
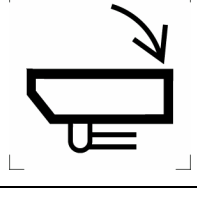
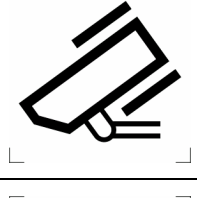
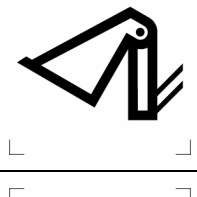
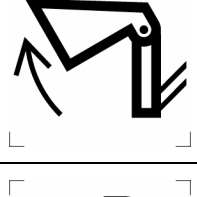
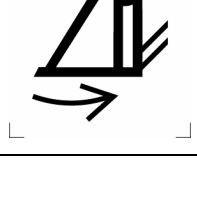
31. EXCAVATOR / SHOVEL SYMBOLS

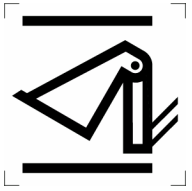
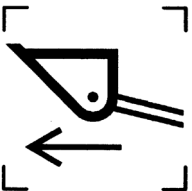
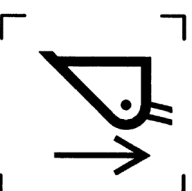

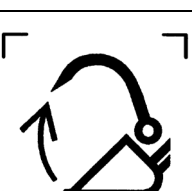
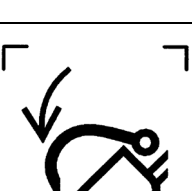
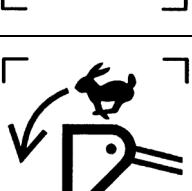
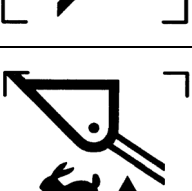
Symbol Number	Graphical Symbol	Symbol Description / Application	ISO / IEC Registration Number	ISO Standard
31.1		Excavator / Shovel — Shovel Equipment	1487	ISO 6405-2
31.2		Excavator / Shovel — Boom — Raise	1489	ISO 6405-2
31.3		Excavator / Shovel — Boom — Lower	1488	ISO 6405-2
31.4		Excavator / Shovel — Arm — Out	1490	ISO 6405-2
31.5		Excavator / Shovel — Arm — In	1491	ISO 6405-2
31.6		Excavator / Shovel — Bucket — Dump	1492	ISO 6405-2
31.7		Excavator / Shovel — Bucket — Dig / Rollback	1493	ISO 6405-2

32. LOADER SYMBOLS

Symbols and symbol titles in clauses 30.8 through 30.15 of J1362 December 2003 are interchanged. The symbols shown for "multipurpose bucket" are really for "side-dump bucket" and vice versa. The ISO 7000 registration numbers were correctly related to the symbols themselves, but incorrectly related to the symbol titles. The correct symbols and symbol titles are shown below as renumbered clauses 32.8 through 32.15.

Symbol Number	Graphical Symbol	Symbol Description / Application	ISO / IEC Registration Number	ISO Standard
32.1		Loader — Bucket	1437	ISO 3767-2 ISO 6405-2
32.2		Loader — Bucket — Raise	1438	ISO 3287 ISO 3767-2 ISO 6405-2
32.3		Loader — Bucket — Lower	1439	ISO 3287 ISO 3767-2 ISO 6405-2
32.4		Loader — Bucket — Hold	1440	ISO 3287 ISO 3767-2 ISO 6405-2
32.5		Loader — Bucket — Float	1441	ISO 3287 ISO 3767-2 ISO 6405-2
32.6		Loader — Bucket — Dump	1442	ISO 3287 ISO 3767-2 ISO 6405-2


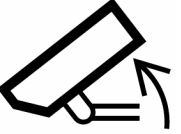
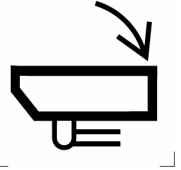


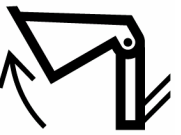
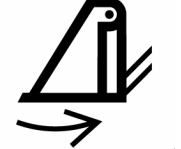

32.7		Loader — Bucket — Rollback	1443	ISO 3287 ISO 3767-2 ISO 6405-2
32.8		Loader — Side-Dump Bucket	2092	ISO 6405-2
32.9		Loader — Side-Dump Bucket — Dump	1449	ISO 6405-2
32.10		Loader — Side-Dump Bucket — Return	1450	ISO 6405-2
32.11		Loader — Side-Dump Bucket — Hold	2093	ISO 6405-2
32.12		Loader — Multi-Purpose Bucket	1445	ISO 6405-2
32.13		Loader — Multi-Purpose Bucket — Open	1446	ISO 6405-2
32.14		Loader — Multi-Purpose Bucket — Close	1447	ISO 6405-2

32.15		Loader — Multi-Purpose Bucket — Hold	1448	ISO 6405-2
32.16		Loader — Bucket — Extend	2161	ISO 3767-2
32.17		Loader — Bucket — Retract	2162	ISO 3767-2
32.18		Loader — Bucket — Grapple	2200	ISO 3767-2
32.19		Loader — Bucket Grapple — Open	2201	ISO 3767-2
32.20		Loader — Bucket Grapple — Close	2202	ISO 3767-2
32.21		Loader — Bucket — Quick Dump	None	—
32.22		Loader — Bucket — Quick Raise	None	—

32.23	 A schematic diagram of a loader bucket with a detachable attachment. The bucket is shown in profile, and the attachment is a small, rectangular component with a pin-like end, positioned to be attached to the bucket's rim. The diagram is enclosed in a square frame with corner crop marks.	Loader — Bucket — Detach	None	—
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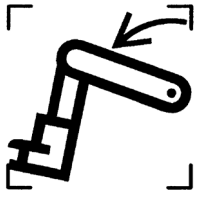
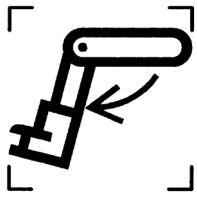
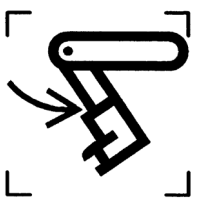
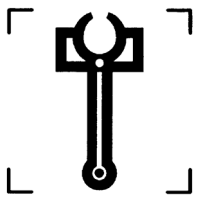
33. RIPPER OR SCARIFIER SYMBOLS


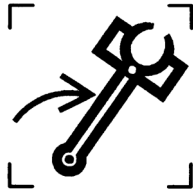
Symbol Number	Graphical Symbol	Symbol Description / Application	ISO / IEC Registration Number	ISO Standard
33.1		Ripper or Scarifier Identify multiple rippers and/ or scarifiers by Arabic numerals, with "1" indicating the most forward on the machine.	2096	ISO 6405-2
33.2		Ripper or Scarifier — Raise Identify multiple rippers and/ or scarifiers by Arabic numerals, with "1" indicating the most forward on the machine.	2097	ISO 6405-2
33.3		Ripper or Scarifier — Lower Identify multiple rippers and/ or scarifiers by Arabic numerals, with "1" indicating the most forward on the machine.	2098	ISO 6405-2
33.4		Ripper or Scarifier — Hold Identify multiple rippers and/ or scarifiers by Arabic numerals, with "1" indicating the most forward on the machine.	2099	ISO 6405-2
33.5		Ripper or Scarifier — Float Identify multiple rippers and/ or scarifiers by Arabic numerals, with "1" indicating the most forward on the machine.	2251	ISO 6405-2
33.6		Ripper or Scarifier — Pitch In Identify multiple rippers and/ or scarifiers by Arabic numerals, with "1" indicating the most forward on the machine.	2252	ISO 6405-2
33.7		Ripper or Scarifier — Pitch Out Identify multiple rippers and/ or scarifiers by Arabic numerals, with "1" indicating the most forward on the machine.	2253	ISO 6405-2

33.8		Loader — Side-Dump Bucket	2092	ISO 6405-2
33.9		Loader — Side-Dump Bucket — Dump	1449	ISO 6405-2
33.10		Loader — Side-Dump Bucket — Return	1450	ISO 6405-2
33.11		Loader — Side-Dump Bucket — Hold	2093	ISO 6405-2
33.12		Loader — Multi-Purpose Bucket	1445	ISO 6405-2
33.13		Loader — Multi-Purpose Bucket — Open	1446	ISO 6405-2
33.14		Loader — Multi-Purpose Bucket — Close	1447	ISO 6405-2
33.15		Loader — Multi-Purpose Bucket — Hold	1448	ISO 6405-2

34. TREE HARVESTER / FELLER BUNCHER SYMBOLS


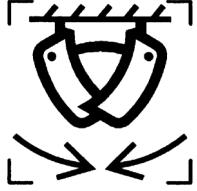



NOTE: In symbols 32.6 through 32.8, the tree harvester / feller buncher boom is viewed from the perspective of a person looking at the boom from above the machine.

Symbol Number	Graphical Symbol	Symbol Description / Application	ISO / IEC Registration Number	ISO Standard
34.1		Tree Harvester / Feller Buncher — Boom / Arm Movement	1709	ISO 3767-4
34.2		Tree Harvester / Feller Buncher — Boom — Raise	2050	ISO 3767-4
34.3		Tree Harvester / Feller Buncher — Boom — Lower	2049	ISO 3767-4
34.4		Tree Harvester / Feller Buncher — Arm — Out	1710	ISO 3767-4
34.5		Tree Harvester / Feller Buncher — Arm — In	1711	ISO 3767-4
34.6		Tree Harvester / Feller Buncher — Boom Swing	1712	ISO 3767-4

34.7		Tree Harvester / Feller Buncher — Boom Swing — Swing Left	1713	ISO 3767-4
34.8		Tree Harvester / Feller Buncher — Boom Swing — Swing Right	1714	ISO 3767-4

35. DELIMBER SYMBOLS

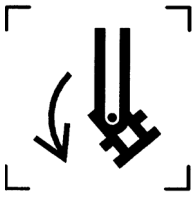



Symbol Number	Graphical Symbol	Symbol Description / Application	ISO / IEC Registration Number	ISO Standard
35.1		Delimber — Sliding Boom	2051	ISO 3767-4
35.2		Delimber — Sliding Boom — Out	2052	ISO 3767-4
35.3		Delimber — Sliding Boom — In	2054	ISO 3767-4
35.4		Delimber — Butt Plate	2053	ISO 3767-4
35.5		Delimber — Butt Plate — Up	2055	ISO 3767-4
35.6		Delimber — Butt Plate — Down	2056	ISO 3767-4
35.7		Delimber — Fixed Jaw	2057	ISO 3767-4

35.8		Delimber — Fixed Jaw — Open	2058	ISO 3767-4
35.9		Delimber — Fixed Jaw — Close	2059	ISO 3767-4
35.10		Delimber — Mobile Jaw	2060	ISO 3767-4
35.11		Delimber — Mobile Jaw — Open	2061	ISO 3767-4
35.12		Delimber — Mobile Jaw — Close	2062	ISO 3767-4


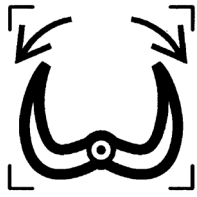




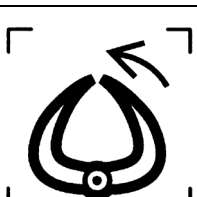
36. FELLING EQUIPMENT SYMBOLS

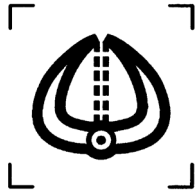

NOTE: In 34.4 and 34.5, the fixed boom and felling head are viewed from the perspective of a person looking at the boom and felling head from above the machine. In 34.6 and 34.7, the felling head is viewed from the perspective of a person looking forward along the axis of the machine. In 34.8 through 34.10, the felling shear is viewed from the perspective of a person looking at the felling shear from above the machine.

Symbol Number	Graphical Symbol	Symbol Description / Application	ISO / IEC Registration Number	ISO Standard
36.1		Felling Head	1717	ISO 3767-4
36.2		Felling Head — Tilt Up	1718	ISO 3767-4
36.3		Felling Head — Tilt Down	1719	ISO 3767-4
36.4		Fixed Boom Felling Head — Turn Left	1715	ISO 3767-4
36.5		Fixed Boom Felling Head — Turn Right	1716	ISO 3767-4
36.6		Felling Head — Side Tilt — Tilt Left	1720	ISO 3767-4

36.7		Felling Head — Side Tilt — Tilt Right	1721	ISO 3767-4
36.8		Felling Shear	1722	ISO 3767-4
36.9		Felling Shear — Open	1723	ISO 3767-4
36.10		Felling Shear — Close	1724	ISO 3767-4




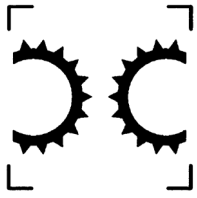
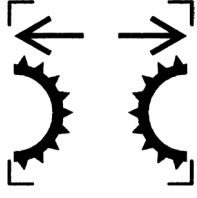
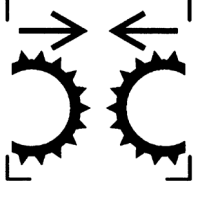
37. BUNK JAWS / GRAB ARMS SYMBOLS

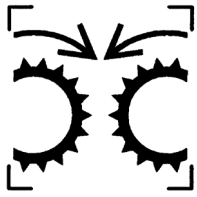
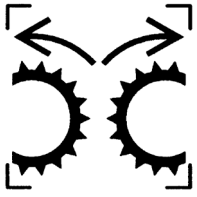
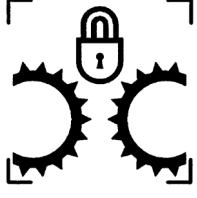
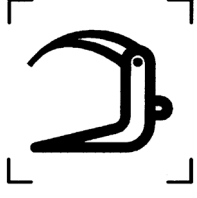
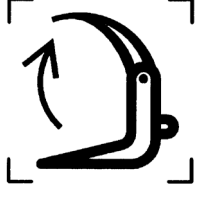

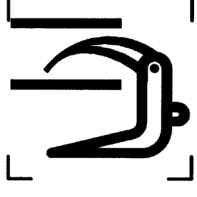
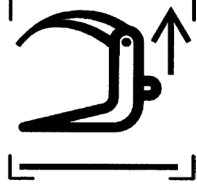
Symbol Number	Graphical Symbol	Symbol Description / Application	ISO / IEC Registration Number	ISO Standard
37.1		Bunk Jaws / Grab Arms	1725	ISO 3767-4
37.2		Bunk Jaws / Grab Arms — Open	1726	ISO 3767-4
37.3		Bunk Jaws / Grab Arms — Close	1727	ISO 3767-4
37.4		Bunk Jaws / Grab Arms — Left Jaw / Arm — Out	1728	ISO 3767-4
37.5		Bunk Jaws / Grab Arms — Left Jaw / Arm — In	1729	ISO 3767-4
37.6		Bunk Jaws / Grab Arms — Right Jaw / Arm — Out	1730	ISO 3767-4
37.7		Bunk Jaw / Grab Arms — Right Jaw / Arm — In	1731	ISO 3767-4

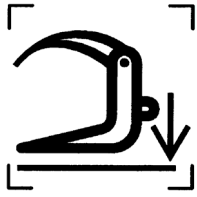




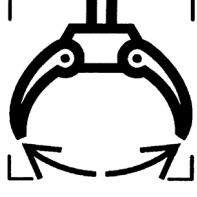


37.8		Bunk Jaws / Grab Arms — Ropes — Tighten	1732	ISO 3767-4
37.9		Bunk Jaws / Grab Arms — Ropes — Slacken	1733	ISO 3767-4

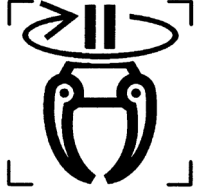

38. LOG HANDLING EQUIPMENT SYMBOLS

NOTE: In 36.1 through 36.3, the grapple is viewed from the perspective of a person looking forward along the axis of the machine. In 36.4 through 36.9, the grapple is viewed from the perspective of a person looking forward along the axis of the machine. Arrows indicating rotation of the grapple (see 36.21 through 36.24) are viewed from the perspective of a person looking at the grapple from above the machine.

Symbol Number	Graphical Symbol	Symbol Description / Application	ISO / IEC Registration Number	ISO Standard
38.1		Log Accumulator	1734	ISO 3767-4
38.2		Log Accumulator — Open	1735	ISO 3767-4
38.3		Log Accumulator — Close	1736	ISO 3767-4
38.4		Log Feeder	1737	ISO 3767-4
38.5		Log Feeder — Open	1738	ISO 3767-4
38.6		Log Feeder — Close	1739	ISO 3767-4


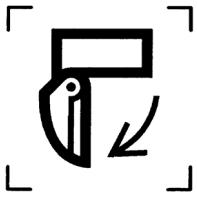

38.7		Log Feeder — Feed In	1740	ISO 3767-4
38.8		Log Feeder — Feed Out	1741	ISO 3767-4
38.9		Log Feeder — Stop / Lock	1742	ISO 3767-4
38.10		Log Clamp	1743	ISO 3767-4
38.11		Log Clamp — Open	1744	ISO 3767-4
38.12		Log Clamp — Close	1745	ISO 3767-4
38.13		Log Clamp — Hold	1746	ISO 3767-4
38.14		Log Clamp — Raise	None	ISO 3767-4

38.15		Log Clamp — Lower	None	ISO 3767-4
38.16		Log Clamp — Float	None	ISO 3767-4
38.17		Log Clamp — Tilt Forward	None	ISO 3767-4
38.18		Log Clamp — Tilt Rearward	None	ISO 3767-4
38.19		Log Grapple	1747	ISO 3767-4
38.20		Log Grapple — Open	1748	ISO 3767-4
38.21		Log Grapple — Close	1749	ISO 3767-4
38.22		Log Grapple — Rotate	1750	ISO 3767-4

38.23	 The icon shows a log grapple with a vertical bar above it. A curved arrow above the bar indicates a clockwise rotation.	Log Grapple — Rotate Clockwise	1751	ISO 3767-4
38.24	 The icon shows a log grapple with a vertical bar above it. A curved arrow above the bar indicates a counter-clockwise rotation.	Log Grapple — Rotate Counter-Clockwise	1752	ISO 3767-4

39. TOPPING KNIFE SYMBOLS

NOTE: Orient 37.1 through 37.3 as appropriate to actual machine operation.



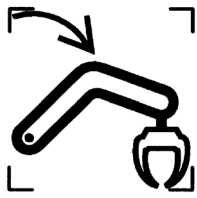
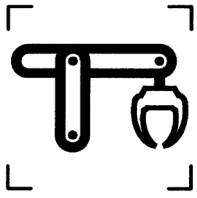



Symbol Number	Graphical Symbol	Symbol Description / Application	ISO / IEC Registration Number	ISO Standard
39.1		Topping Knife	1753	ISO 3767-4
39.2		Topping Knife — Open	1754	ISO 3767-4
39.3		Topping Knife — Close	1755	ISO 3767-4

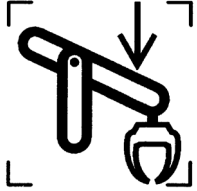
40. FORESTRY SAW SYMBOLS

NOTE: Orient 38.1 through 38.6 as appropriate to actual machine operation.

Symbol Number	Graphical Symbol	Symbol Description / Application	ISO / IEC Registration Number	ISO Standard
40.1		Circular Saw	1756	ISO 3767-4
40.2		Circular Saw — Out	1757	ISO 3767-4
40.3		Circular Saw — In	1758	ISO 3767-4
40.4		Chain Saw	1759	ISO 3767-4
40.5		Chain Saw — Out	1760	ISO 3767-4
40.6		Chain Saw — In	1761	ISO 3767-4

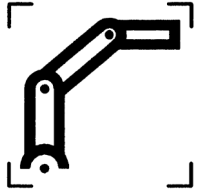
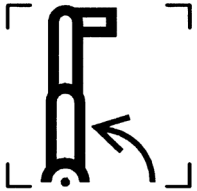

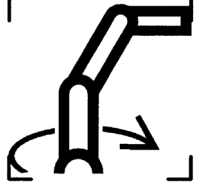
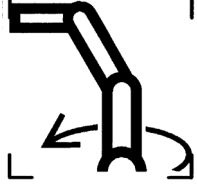
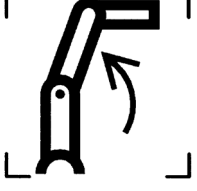
41. GRAPPLE SKIDDER SYMBOLS

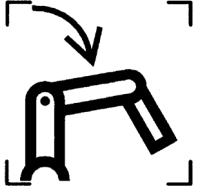

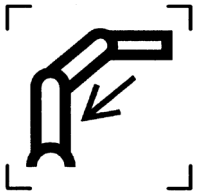
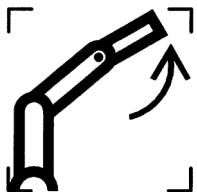
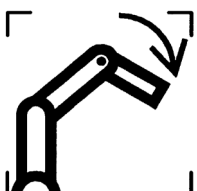
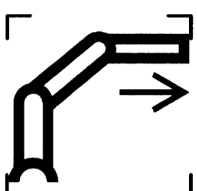

Symbol Number	Graphical Symbol	Symbol Description / Application	ISO / IEC Registration Number	ISO Standard
41.1	 A schematic diagram of a grapple skidder boom. The boom is shown in a vertical position, angled to the right. At the end of the boom is a grapple. The entire symbol is enclosed in a square frame with corner brackets.	Grapple Skidder — Single Function Boom	1762	ISO 3767-4
41.2	 A schematic diagram of a grapple skidder boom. The boom is shown in a vertical position, angled to the right. At the end of the boom is a grapple. An arrow points upwards and inwards towards the grapple. The entire symbol is enclosed in a square frame with corner brackets.	Grapple Skidder — Single Function Boom — Up / In	1763	ISO 3767-4
41.3	 A schematic diagram of a grapple skidder boom. The boom is shown in a vertical position, angled to the right. At the end of the boom is a grapple. An arrow points downwards and outwards away from the grapple. The entire symbol is enclosed in a square frame with corner brackets.	Grapple Skidder — Single Function Boom — Down / Out	1764	ISO 3767-4
41.4	 A schematic diagram of a grapple skidder boom. The boom is shown in a horizontal position. At the end of the boom is a grapple. The entire symbol is enclosed in a square frame with corner brackets.	Grapple Skidder — Double Function Boom	1765	ISO 3767-4
41.5	 A schematic diagram of a grapple skidder boom. The boom is shown in a horizontal position. At the end of the boom is a grapple. An arrow points outwards from the boom. The entire symbol is enclosed in a square frame with corner brackets.	Grapple Skidder — Double Function Boom — Out	1766	ISO 3767-4
41.6	 A schematic diagram of a grapple skidder boom. The boom is shown in a horizontal position. At the end of the boom is a grapple. An arrow points inwards towards the boom. The entire symbol is enclosed in a square frame with corner brackets.	Grapple Skidder — Double Function Boom — In	1767	ISO 3767-4
41.7	 A schematic diagram of a grapple skidder boom. The boom is shown in a horizontal position. At the end of the boom is a grapple. An arrow points upwards from the grapple. The entire symbol is enclosed in a square frame with corner brackets.	Grapple Skidder — Double Function Boom — Up	1768	ISO 3767-4

41.8		Grapple Skidder — Double Function Boom — Down	1769	ISO 3767-4
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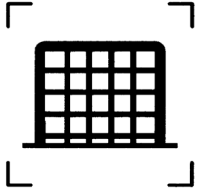
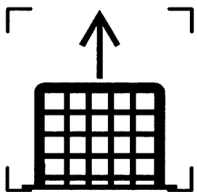
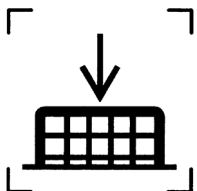
42. LOG LOADER SYMBOLS

NOTE: Arrows indicating rotation of the pillar (see 40.4 and 40.5) are viewed from the perspective of a person looking at the pillar from above the machine.

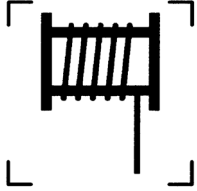
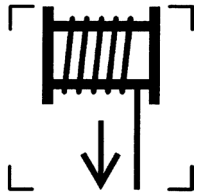
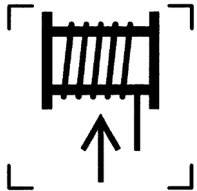
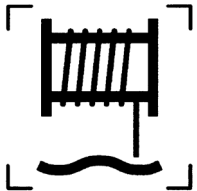
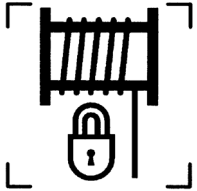
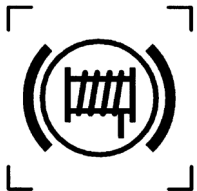
Symbol Number	Graphical Symbol	Symbol Description / Application	ISO / IEC Registration Number	ISO Standard
42.1		Log Loader Equipment	1782	ISO 3767-4
42.2		Log Loader — Pillar — Raise	1770	ISO 3767-4
42.3		Log Loader — Pillar — Lower	1771	ISO 3767-4
42.4		Log Loader — Pillar — Rotate Clockwise	1772	ISO 3767-4
42.5		Log Loader — Pillar — Rotate Counter-Clockwise	1773	ISO 3767-4
42.6		Log Loader — Arm — Raise	1774	ISO 3767-4

42.7		Log Loader — Arm — Lower	1775	ISO 3767-4
42.8		Log Loader — Arm — Extend	1776	ISO 3767-4
42.9		Log Loader — Arm — Retract	1777	ISO 3767-4
42.10		Log Loader — Jib — Raise	1780	ISO 3767-4
42.11		Log Loader — Jib — Lower	1779	ISO 3767-4
42.12		Log Loader — Jib — Extend	1778	ISO 3767-4
42.13		Log Loader — Jib — Retract	1781	ISO 3767-4

43. LOADGATE SYMBOLS



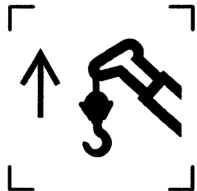
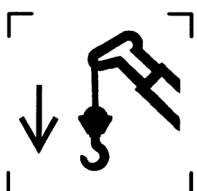
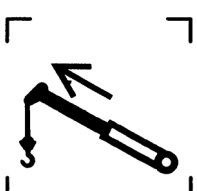
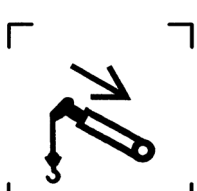
Symbol Number	Graphical Symbol	Symbol Description / Application	ISO / IEC Registration Number	ISO Standard
43.1		Loadgate	1783	ISO 3767-4
43.2		Loadgate — Up	1785	ISO 3767-4
43.3		Loadgate — Down	1784	ISO 3767-4

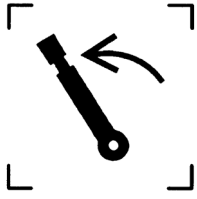


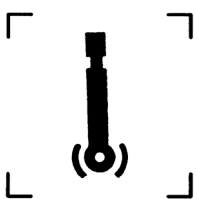
44. WINCH SYMBOLS

Symbol Number	Graphical Symbol	Symbol Description / Application	ISO / IEC Registration Number	ISO Standard
44.1		Winch	1176	ISO 3767-4 ISO 6405-2 ISO 7296-2
44.2		Winch — Spool Out	1539	ISO 3767-4 ISO 6405-2 ISO 7296-2
44.3		Winch — Spool In	1538	ISO 3767-4 ISO 6405-2 ISO 7296-2
44.4		Winch — Free Spool	1540	ISO 3767-4 ISO 6405-2 ISO 7296-2
44.5		Winch — Lock	2070	ISO 3767-4 ISO 7296-2
44.6		Winch — Brake	2071	ISO 3767-4 ISO 7296-2

45. TELESCOPING JIB (BOOM) CRANE SYMBOLS


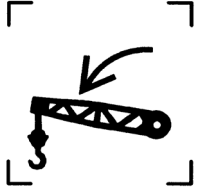
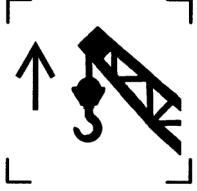
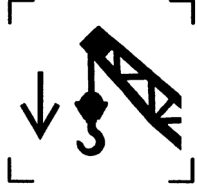
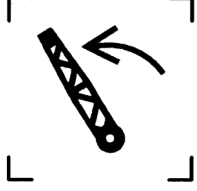
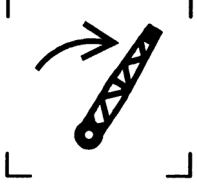
NOTE: In 43.7 through 43.10, the telescoping jib (boom) is viewed from the perspective of a person looking at the boom from above the machine.

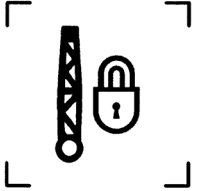
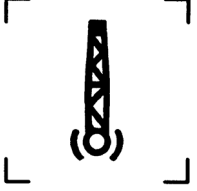
Symbol Number	Graphical Symbol	Symbol Description / Application	ISO / IEC Registration Number	ISO Standard
45.1		Telescoping Jib (Boom) Crane — Jib (Boom) — Luffing Up (Raise)	2220	ISO 7296-2
45.2		Telescoping Jib (Boom) Crane — Jib (Boom) — Luffing Down (Lower)	2221	ISO 7296-2
45.3		Telescoping Jib (Boom) Crane — Load — Hoist	2222	ISO 7296-2
45.4		Telescoping Jib (Boom) Crane — Load — Lower	2223	ISO 7296-2
45.5		Telescoping Jib (Boom) Crane — Telescope — Extend	2224	ISO 7296-2
45.6		Telescoping Jib (Boom) Crane — Telescope — Retract	2225	ISO 7296-2

45.7		Telescoping Jib (Boom) Crane — Jib (Boom) — Slew Left	2226	ISO 7296-2
45.8		Telescoping Jib (Boom) Crane — Jib (Boom) — Slew Right	2227	ISO 7296-2
45.9		Telescoping Jib (Boom) Crane — Jib (Boom) — Slew Lock	2228	ISO 7296-2
45.10		Telescoping Jib (Boom) Crane — Jib (Boom) — Slew Brake	2229	ISO 7296-2

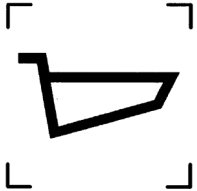
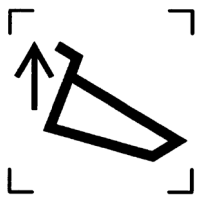
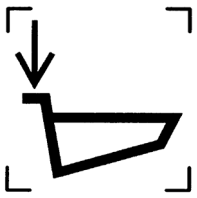


46. FIXED LENGTH JIB (BOOM) CRANE SYMBOLS

NOTE: In 44.5 through 44.8, the fixed length jib (boom) is viewed from the perspective of a person looking at the boom from above the machine.

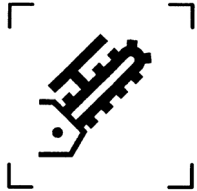

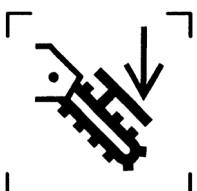



Symbol Number	Graphical Symbol	Symbol Description / Application	ISO / IEC Registration Number	ISO Standard
46.1		Fixed Length Jib (Boom) Crane — Jib (Boom) — Luffing Up (Raise)	2230	ISO 7296-2
46.2		Fixed Length Jib (Boom) Crane — Jib (Boom) — Luffing Down (Lower)	2231	ISO 7296-2
46.3		Fixed Length Jib (Boom) Crane — Load — Hoist	2232	ISO 7296-2
46.4		Fixed Length Jib (Boom) Crane — Load — Lower	2233	ISO 7296-2
46.5		Fixed Length Jib (Boom) Crane — Jib (Boom) — Slew Left	2234	ISO 7296-2
46.6		Fixed Length Jib (Boom) Crane — Jib (Boom) — Slew Right	2235	ISO 7296-2


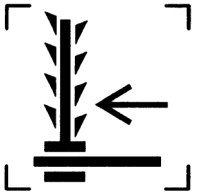
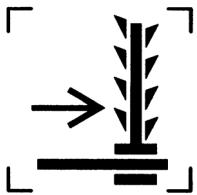

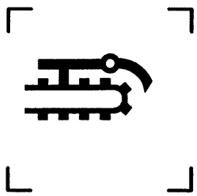
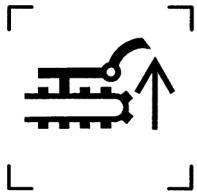
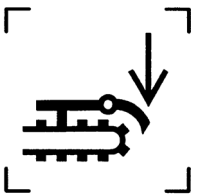
46.7		Fixed Length Jib (Boom) Crane — Jib (Boom) — Slew Lock	2236	ISO 7296-2
46.8		Fixed Length Jib (Boom) Crane — Jib (Boom) — Slew Brake	2237	ISO 7296-2

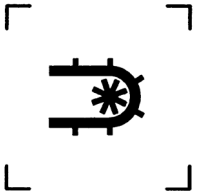
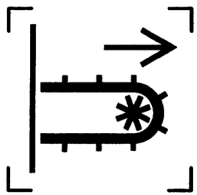
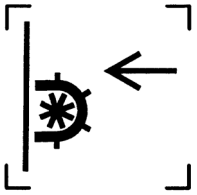
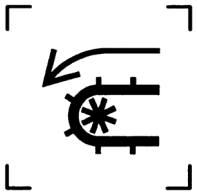
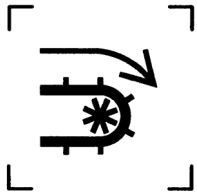
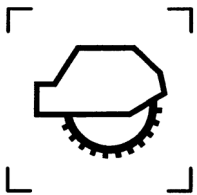
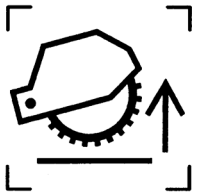
47. DUMPER / HAULER SYMBOLS

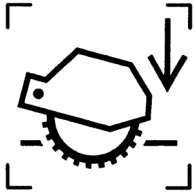
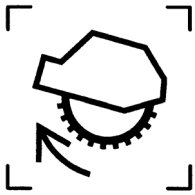
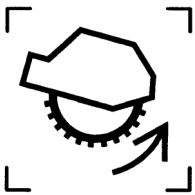
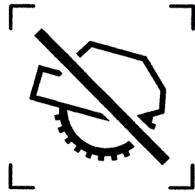
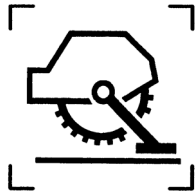
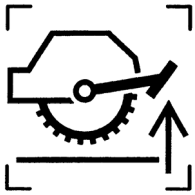
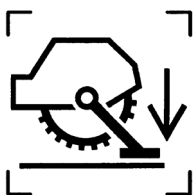
Symbol Number	Graphical Symbol	Symbol Description / Application	ISO / IEC Registration Number	ISO Standard
47.1		Dumper / Hauler Body	2094	ISO 6405-2
47.2		Dumper / Hauler Body — Raise / Dump	1519	ISO 6405-2
47.3		Dumper / Hauler Body — Lower	1520	ISO 6405-2
47.4		Dumper / Hauler Body — Hold	1521	ISO 6405-2
47.5		Dumper / Hauler Body — Float	1522	ISO 6405-2

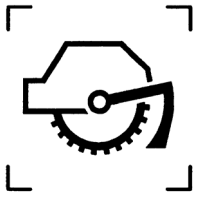

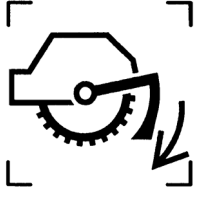


48. TRENCHER SYMBOLS

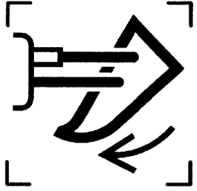
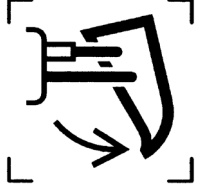


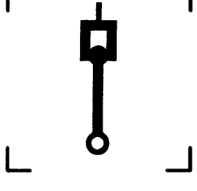
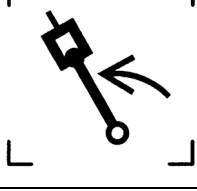
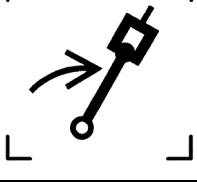
Symbol Number	Graphical Symbol	Symbol Description / Application	ISO / IEC Registration Number	ISO Standard
48.1		Digging Boom	2254	ISO 6405-2
48.2		Digging Boom — Raise	2255	ISO 6405-2
48.3		Digging Boom — Lower	2256	ISO 6405-2
48.4		Digging Chain — Forward Rotation	2257	ISO 6405-2
48.5		Digging Chain — Reverse Rotation	2258	ISO 6405-2
48.6		Digging Chain — Disengage	2259	ISO 6405-2

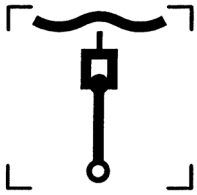
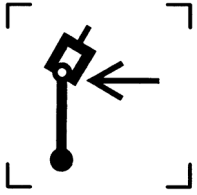
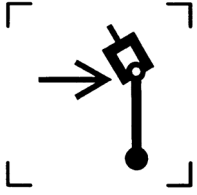
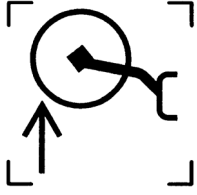
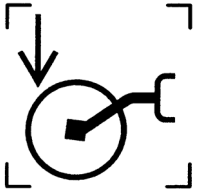
48.7		Trencher — Side Shift	2260	ISO 6405-2
48.8		Trencher — Side Shift — Shift Left	2261	ISO 6405-2
48.9		Trencher — Side Shift — Shift Right	2262	ISO 6405-2
48.10		Trencher — Side Shift — Shift Lock	2263	ISO 6405-2
48.11		Trench Cleaner	2264	ISO 6405-2
48.12		Trench Cleaner — Raise	2265	ISO 6405-2
48.13		Trench Cleaner — Lower	2266	ISO 6405-2

48.14		Conveyor	2267	ISO 6405-2
48.15		Conveyor — Side Shift — Shift Out / Right	2268	ISO 6405-2
48.16		Conveyor — Side Shift — Shift In / Left	2269	ISO 6405-2
48.17		Conveyor — Left Rotation	2270	ISO 6405-2
48.18		Conveyor — Right Rotation	2271	ISO 6405-2
48.19		Disk Trencher	2272	ISO 6405-2
48.20		Disk Trencher — Raise	2273	ISO 6405-2

48.21		Disk Trencher — Lower	2274	ISO 6405-2
48.22		Disk Trencher — Forward Rotation	2275	ISO 6405-2
48.23		Disk Trencher — Reverse Rotation	2276	ISO 6405-2
48.24		Disk Trencher — Disengage	2277	ISO 6405-2
48.25		Disk Trencher — Stabilizer	2278	ISO 6405-2
48.26		Disk Trencher — Stabilizer — Raise	2279	ISO 6405-2
48.27		Disk Trencher — Stabilizer — Lower	2280	ISO 6405-2



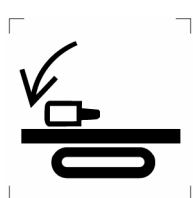
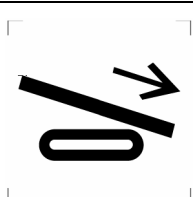
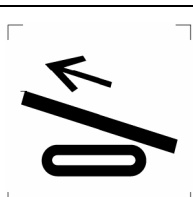
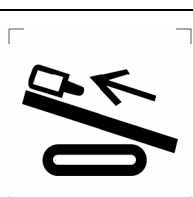
48.28		Disk Trencher — Trench Cleaner	2281	ISO 6405-2
48.29		Disk Trencher — Trench Cleaner — Raise	2282	ISO 6405-2
48.30		Disk Trencher — Trench Cleaner — Lower	2283	ISO 6405-2
48.31		Direct Burial Plow	1462	ISO 6405-2
48.32		Direct Burial Plow — Raise	1463	ISO 6405-2
48.33		Direct Burial Plow — Lower	1464	ISO 6405-2
48.34		Direct Burial Plow — Vertical Float	2284	ISO 6405-2

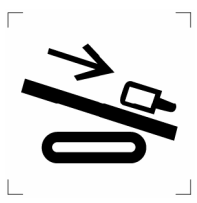
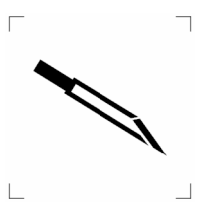




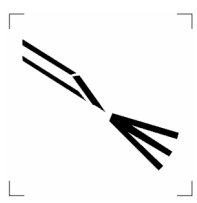
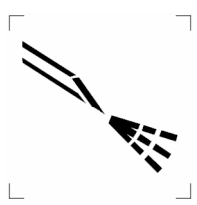
48.35		Direct Burial Plow — Pitch In	1466	ISO 6405-2
48.36		Direct Burial Plow — Pitch Out	1467	ISO 6405-2
48.37		Direct Burial Plow — Vibrator — Engage	2285	ISO 6405-2
48.38		Direct Burial Plow — Vibrator — Disengage	2286	ISO 6405-2
48.39		Direct Burial Plow — Plow Swing	2287	ISO 6405-2
48.40		Direct Burial Plow — Plow Swing — Swing Left	2288	ISO 6405-2
48.41		Direct Burial Plow — Plow Swing — Swing Right	2289	ISO 6405-2


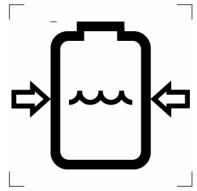
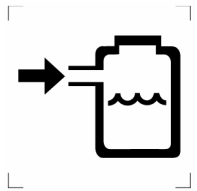
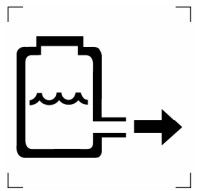




48.42		Direct Burial Plow — Plow Swing — Lateral Float	2290	ISO 6405-2
48.43		Direct Burial Plow — Plow Blade — Steer Left	2291	ISO 6405-2
48.44		Direct Burial Plow — Plow Blade — Steer Right	2292	ISO 6405-2
48.45		Reel Carrier — Raise	2293	ISO 6405-2
48.46		Reel Carrier — Lower	2294	ISO 6405-2

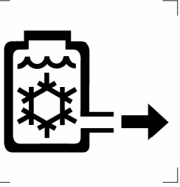
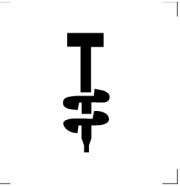
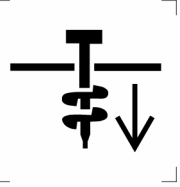
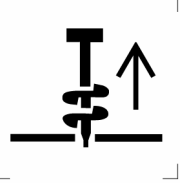
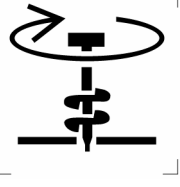
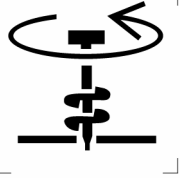
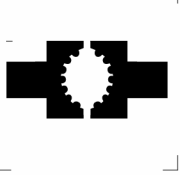
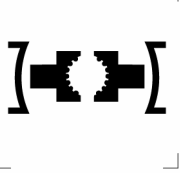
49. HORIZONTAL DIRECTIONAL DRILLING MACHINE SYMBOLS

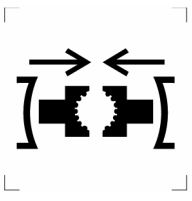
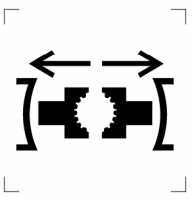
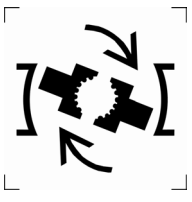
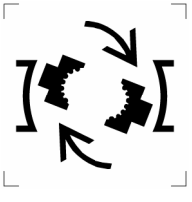
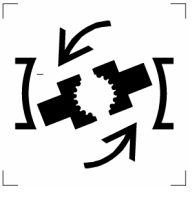
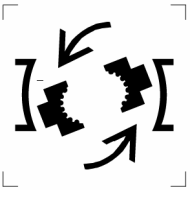
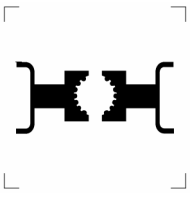
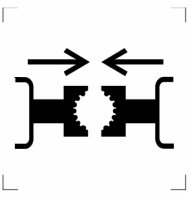
Symbol in clause 47.33 of J1362 December 2003 is incorrect. The correct symbol is shown below as renumbered clause 49.33.

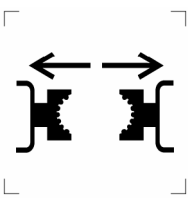
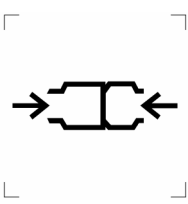
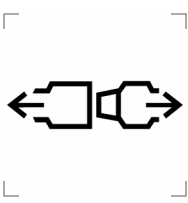
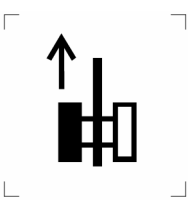
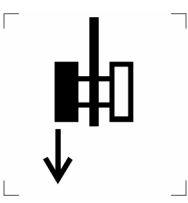
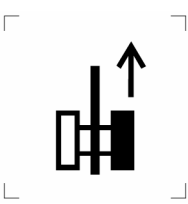
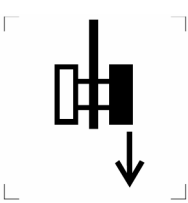
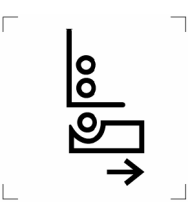
Symbol Number	Graphical Symbol	Symbol Description / Application	ISO / IEC Registration Number	ISO Standard
49.1		Horizontal Directional Drilling Machine	None	—
49.2		Horizontal Directional Drilling Machine — Feed Beam — Tilt Up	None	—
49.3		Horizontal Directional Drilling Machine — Feed Beam — Tilt Down	None	—
49.4		Horizontal Directional Drilling Machine — Feed Beam — Move Down	None	—
49.5		Horizontal Directional Drilling Machine — Feed Beam — Move Up	None	—
49.6		Horizontal Directional Drilling Machine — Carriage — Retract / Up	None	—

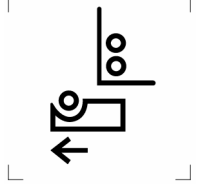
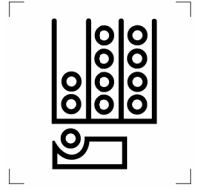
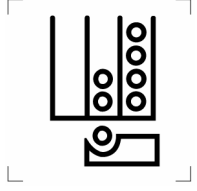
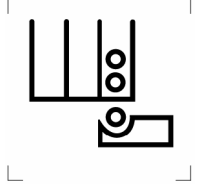
49.7		Horizontal Directional Drilling Machine — Carriage — Thrust / Down	None	—
49.8		Drill String	None	—
49.9		Drill String — Forward Rotation	None	—
49.10		Drill String — Reverse Rotation	None	—
49.11		Drill String — Retract	None	—
49.12		Drill String — Thrust	None	—
49.13		Drill String — Full Flow	None	—
49.14		Drill String — Reduced Flow	None	—

49.15		Fluid Pump — Pressure	2217	—
49.16		Fluid Tank — Pressure	2214	ISO 3767-2
49.17		Fluid Tank — Inlet	None	—
49.18		Fluid Tank — Outlet	None	—
49.19		Fluid Mixing Tank	None	—
49.20		Fluid Mixing Tank — Inlet	None	—
49.21		Fluid Mixing Tank — Outlet	None	—
49.22		Anti-Freeze Tank	None	—

49.23		Anti-Freeze Tank — Outlet	None	—
49.24		Earth Anchor	None	—
49.25		Earth Anchor — In / Down	None	—
49.26		Earth Anchor — Out / Up	None	—
49.27		Earth Anchor — Rotate Clockwise / In	None	—
49.28		Earth Anchor — Rotate Counter-Clockwise / Out	None	—
49.29		Clamp	None	—
49.30		Rotating Clamp	None	—

49.31		Rotating Clamp — Close	None	—
49.32		Rotating Clamp — Open	None	—
49.33		Rotating Clamp — Clamp and Rotate Clockwise	None	—
49.34		Rotating Clamp — Unclamp and Rotate Clockwise	None	—
49.35		Rotating Clamp — Clamp and Rotate Counter-Clockwise	None	—
49.36		Rotating Clamp — Unclamp and Rotate Counter-Clockwise	None	—
49.37		Stationary Clamp	None	—
49.38		Stationary Clamp — Close	None	—


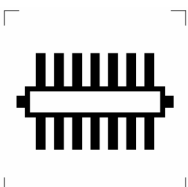
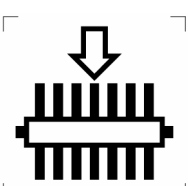
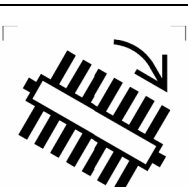
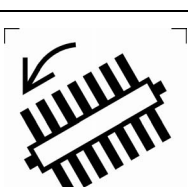
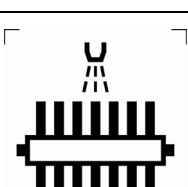
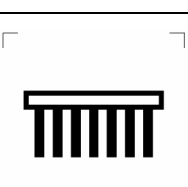
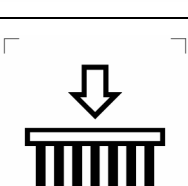
49.39		Stationary Clamp — Open	None	—
49.40		Tool Joint — Connect	None	—
49.41		Tool Joint — Disconnect	None	—
49.42		Left Track — Forward	None	—
49.43		Left Track — Reverse	None	—
49.44		Right Track — Forward	None	—
49.45		Right Track — Reverse	None	—
49.46		Drill Pipe Loader — In	None	—


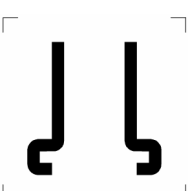
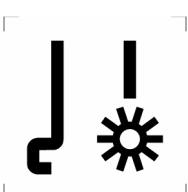
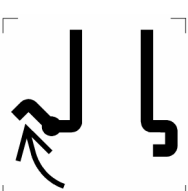
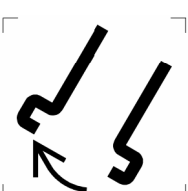
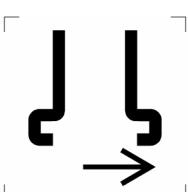
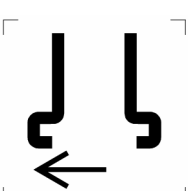
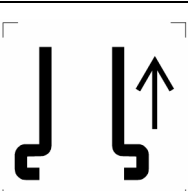
49.47		Drill Pipe Loader — Out	None	—
49.48		Drill Pipe Rack — Unload / Load — First Position	None	—
49.49		Drill Pipe Rack — Unload / Load — Second Position	None	—
49.50		Drill Pipe Rack — Unload / Load — Third Position	None	—

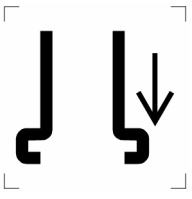
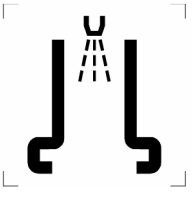
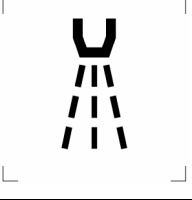
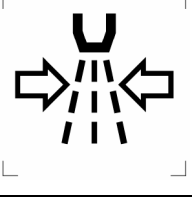
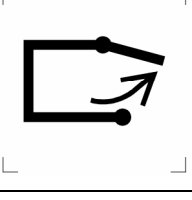
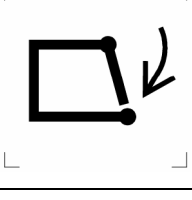
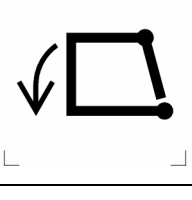
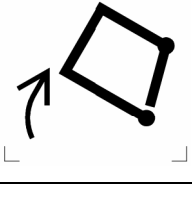
50. SWEEPER SYMBOLS

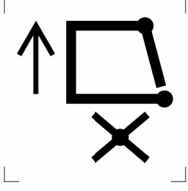
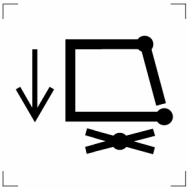



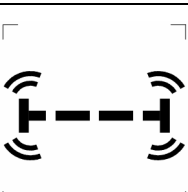
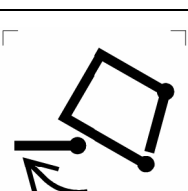
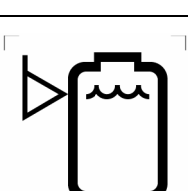
Symbols in clause 48.11 and 48.12 of J1362 December 2003 are incorrect. The correct symbols are shown below as renumbered clauses 50.11 and 50.12.

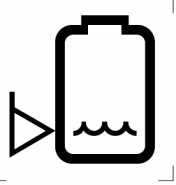
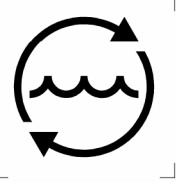
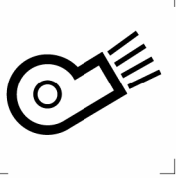
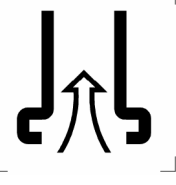

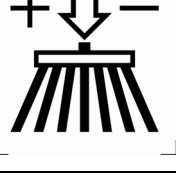


Symbol Number	Graphical Symbol	Symbol Description / Application	ISO / IEC Registration Number	ISO Standard
50.1		Gutter Broom / Side Broom	None	—
50.2		Gutter Broom / Side Broom — Down Pressure	None	—
50.3		Gutter Broom / Side Broom — Move Right	None	—
50.4		Gutter Broom / Side Broom — Move Left	None	—
50.5		Gutter Broom / Side Broom — Tilt Right	None	—
50.6		Gutter Broom / Side Broom — Tilt Left	None	—

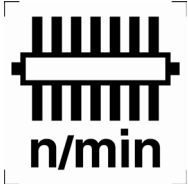
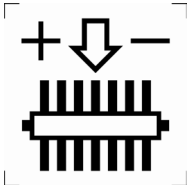
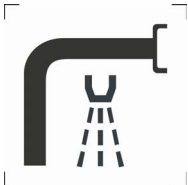
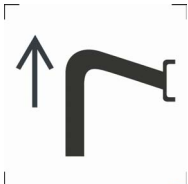
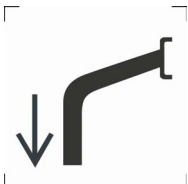
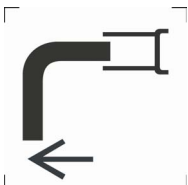
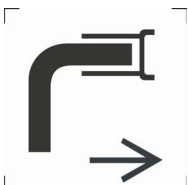
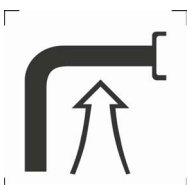
50.7		Gutter Broom / Side Broom — Spray Water	None	—
50.8		Main Broom / Transfer Broom	None	—
50.9		Main Broom / Transfer Broom — Down Pressure	None	—
50.10		Main Broom / Transfer Broom — Slew Right	None	—
50.11		Main Broom / Transfer Broom — Slew Left	None	—
50.12		Main Broom / Transfer Broom — Spray Water	None	—
50.13		Scrub Brush	None	—
50.14		Scrub Brush — Down Pressure	None	—

50.15		<p>Elevator Symbol is the same as shown in Clause 27.24, but is repeated here for the convenience of the user.</p>	2089	ISO 6405-2
50.16		<p>Pick-up Nozzle / Pick-up Head / Squeegee (without mechanical assistance)</p>	None	—
50.17		<p>Pick-up Nozzle / Pick-up Head / Squeegee (with mechanical assistance)</p>	None	—
50.18		<p>Pick-up Nozzle / Pick-up Head / Squeegee — Open</p>	None	—
50.19		<p>Pick-up Nozzle / Pick-up Head / Squeegee — Tilt</p>	None	—
50.20		<p>Pick-up Nozzle / Pick-up Head / Squeegee — Move Right</p>	None	—
50.21		<p>Pick-up Nozzle / Pick-up Head / Squeegee — Move Left</p>	None	—
50.22		<p>Pick-up Nozzle / Pick-up Head / Squeegee — Raise</p>	None	—

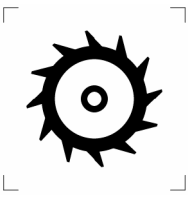

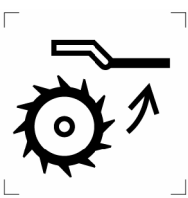
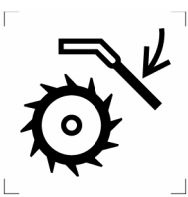
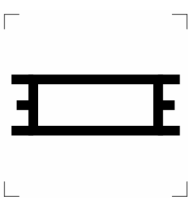
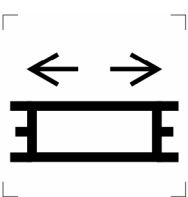
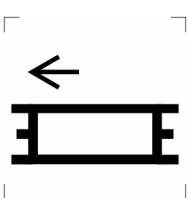
50.23		Pick-up Nozzle / Pick-up Head / Squeegee — Lower	None	—
50.24		Pick-up Nozzle / Pick-up Head / Squeegee — Spray Water	None	—
50.25		Water — Low Pressure	None	—
50.26		Water — High Pressure	None	—
50.27		Hopper — Door Open	None	—
50.28		Hopper — Door Close	None	—
50.29		Hopper — Lower	None	—
50.30		Hopper — Tip	None	—

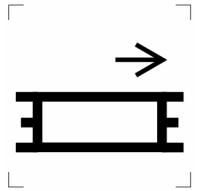
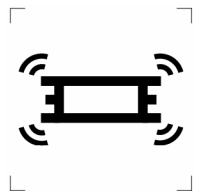
50.31		Hopper — Elevator	None	—
50.32		Hopper — Descend	None	—
50.33		Hopper — Overload (by volume)	None	—
50.34		Hopper — Overload (by mass)	None	—
50.35		Hopper — Load Discharge Vibrator	None	—
50.36		Hopper — Dust Filter Shaker	None	—
50.37		Hopper — Prop Release	None	—
50.38		Fluid / Solution Tank — High	None	—

50.39		Fluid / Solution Tank — Low	None	—
50.40		Fluid / Solution Tank — Recycle	None	—
50.41		Suction Fan / Water Pick-up Fan This symbol is ISO registered as symbol 1597 with the title “Cleaning Fan” for application on agricultural equipment.	1597	ISO 3767-2
50.42		Suction Fan / Water Pick-up Duct — Open	None	—
50.43		Gutter Broom / Side Broom — Speed Control	None	—
50.44		Gutter Broom / Side Broom — Ground Pressure Control	None	—
50.45		Gutter Broom / Side Broom — Left Hand	None	—
50.46		Gutter Broom / Side Broom — Right Hand	None	—




50.47		Main Broom / Transfer Broom — Speed Control	None	—
50.48		Main Broom / Transfer Broom — Ground Pressure Control	None	—
50.49		Wander Hose, Water	None	—
50.50		Wander Hose, Raise	None	—
50.51		Wander Hose, Lower	None	—
50.52		Wander Hose, Extend	None	—
50.53		Wander Hose, Retract	None	—
50.54		Wander Hose, Suction	None	—

51. ROAD-BUILDING EQUIPMENT SYMBOLS

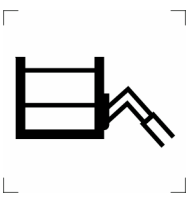
Symbol Number	Graphical Symbol	Symbol Description / Application	ISO / IEC Registration Number	ISO Standard
51.1		Pavement Cutter	None	—
51.2		Pavement Cutter — Service Door	None	—
51.3		Pavement Cutter — Service Door — Open	None	—
51.4		Pavement Cutter — Service Door — Close	None	—
51.5		Compactor	None	—
51.6		Compactor — Side Shift	None	—
51.7		Compactor — Side Shift Left	None	—

51.8		Compactor — Side Shift Right	None	—
51.9		Compactor — Vibrator	None	—

52. COUNTERWEIGHT SYMBOLS

Symbol Number	Graphical Symbol	Symbol Description / Application	ISO / IEC Registration Number	ISO Standard
52.1		Counterweight	None	—
52.2		Counterweight — Out	None	—
52.3		Counterweight — In	None	—

53. WORK PLATFORM SYMBOLS

Symbol Number	Graphical Symbol	Symbol Description / Application	ISO / IEC Registration Number	ISO Standard
53.1		Work Platform	None	—

54. NOTES

54.1 Marginal Indicia

The change bar (I) located in the left margin is for the convenience of the user in locating areas where technical revisions have been made to the previous issue of the report. An (R) symbol to the left of the document title indicates a complete revision of the report.

PREPARED BY THE SAE HUMAN FACTORS TECHNICAL COMMITTEE SC2—
MACHINE DISPLAYS AND SYMBOLS

APPENDIX A - GUIDELINES FOR DEVELOPMENT AND EVALUATION OF GRAPHICAL SYMBOLS

FOREWORD

The guidelines in SAE J1362 Annex A are consistent with guidelines promulgated in ISO symbols coordination meetings held in 1987 and 1990. These guidelines were also used in developing SAE J1362 JUN91 and subsequent revisions of that standard.

A.1 SCOPE

SAE J1362 Annex A presents guidelines for use in the development and evaluation of graphical symbols. Following these guidelines should result in symbols appropriate in graphical form and content for potential inclusion in SAE J1362.

A.2 BASIC PRINCIPLES

A.2.1 Symbols should be graphically as simple, clear, distinct, and logical as possible to enhance recognition and reproduction.

A.2.2 Symbols should incorporate basic symbol elements which can be used alone or combined as necessary into a logical symbolic language which, if not immediately obvious, is at least readily learned.

A.2.3 Graphical clarity should prevail in disputes with logical consistency, because no composite symbol is recognizable, no matter how logical it may be, if it cannot be distinguished from other composite symbols or if the individual symbol elements cannot be distinguished from each other.

A.2.4 A minimum of detail should be included in individual graphical elements and composite symbols; only details which enhance recognition should be allowed, even if other details are accurate renditions of the machine or component.

A.3 FUNDAMENTAL SYMBOL ELEMENTS

Symbol elements can be divided into a number of fundamental types, including those described below.

A.3.1 Operational System Symbols

Symbol elements representing operational systems (for example: engines, transmissions, hydraulics, brakes) or functional equipment (for example: dozer blades, loader buckets, grapples).

A.3.2 Vital Fluid Symbols

Symbol elements representing vital machine fluids (for example: oil, fuel, coolant, air).

A.3.3 Condition/Status Symbols

Symbol elements representing the status of vital fluids (for example: pressure, temperature, level) or the functional condition of operational systems (for example: lock/unlock, failure).

A.3.4 Movement/Location Symbols

Symbol elements representing spatial movement, settings, or location of machines, parts, or components (for example: direction of movement arrows).

A.3.5 Rotational Movement Symbols

Symbol elements representing rotational movement of machine parts or components.

A.3.6 Continuous Operation Symbols

Symbol elements representing continuous operation of machine parts, components, or functions.

A.4 BASIC COMPOSITE SYMBOLS

When necessary, symbols representing vital machine fluids should be combined with symbols representing operational systems to create basic composite symbols. For example, the oil symbol should be placed within the engine symbol to represent engine oil, within the transmission symbol to represent transmission oil, within the hydraulic symbol to represent hydraulic oil, and within the brake symbol to represent brake oil.

A.5 VITAL STATUS COMPOSITE SYMBOLS

Composite symbols representing the status of vital fluids or the functioning of operational systems should be formed by combining multiple symbol elements in logical relationship.

A.5.1 Fluid Monitoring/Status Symbols

In general, fluid monitoring or status indicating symbols (for example: temperature, pressure, level) should be placed outside the basic composite symbols (for example: engine oil, transmission oil, hydraulic oil). In some cases, the shape of basic composite symbols may not permit placement of a monitoring symbol outside the basic composite symbol; in such cases, the monitoring symbol may be placed inside the basic composite symbol (for example: brake system pressure, brake system filter, brake system temperature).

A.5.1.1 The relative position of fluid status symbols and basic composite symbols for operational systems may vary as needed for graphical clarity. For example, composite symbols for monitoring fluid temperature should combine a thermometer (the temperature symbol element) with the basic composite symbols, with the thermometer placed to the right-hand side of the basic composite symbol. Composite symbols for monitoring fluid level should place the level symbol element to the left of the basic composite symbol. And composite symbols for monitoring the status of fluid filters should place the filter symbol element below the basic composite symbol.

A.5.1.2 For application in practice, the vital status symbol elements can also be used in a series presentation, with the basic composite symbol located to the left or above the presentation of vital status symbol elements. For example, the engine oil symbol may be followed by pressure, level, or temperature symbol elements. This approach, however, is generally less desirable than developing and using individual composite symbols.

A.5.2 Failure/Malfunction Symbols

Composite symbols representing failure or malfunction of an operational system should place the failure/malfunction symbol element within the symbol for the operational system. For example, the brake system failure symbol would place an exclamation mark (the failure/malfunction symbol element) inside the brake system symbol. In some cases, the shape of a symbol for the operational system may not permit inside placement of a failure/malfunction symbol; in such cases, the failure/ malfunction symbol should be placed alongside the symbol for the operational system. To avoid confusion with the temperature symbol element, the failure/malfunction symbol should be placed to the left-hand side of the symbol for the operational system.

A.6 MOVEMENT/LOCATION SYMBOLS

A.6.1 Controlled Spatial Movement Symbols

Composite symbols which represent controlled spatial movement of equipment or machine elements, whether visible or invisible to the operator, should show both the final position of the equipment or machine element effected by actuation of the controls and arrows to indicate the direction of movement experienced by that equipment or machine element. For example, symbols on a control for raising a boom should show the boom in its raised position and a movement arrow pointing up, while symbols on a control for lowering a boom should show the boom in its lowered position and a movement arrow pointing down. The arrows should be located such that the two alternative motions of the boom are clearly differentiated by both the location of the boom and the location of the arrows.

A.6.2 Incremental Adjustment Symbols

Composite symbols which represent controls for incremental adjustment of component position or operating parameters rather than significant changes in location or orientation should use dimension lines and dimension arrows to indicate adjustment.

A.7 ROTATIONAL MOVEMENT SYMBOLS

Composite symbols which represent direction of rotational movement should combine a symbol element for the equipment or machine element with arrows differentiating clockwise or counter-clockwise rotation.

A.8 ISO STANDARDS ON SYMBOL DEVELOPMENT AND ARROW USAGE

The development of new symbols should conform to the basic principles for the creation of symbols for use on equipment (reference IEC 80416-1) and to the principles for the use of arrows (reference ISO 80416-2).

A.9 USE OF NON-STANDARD SYMBOLS

As a general rule, there should be only one symbol for a given function. However, an existing and well-established symbol may continue to be used in its original application even if a new standard symbol has been defined for composite application.

A.10 SYMBOLS FOR COMPONENT ACTUATION

Where symbols are associated with controls that actuate a functional component, indicator lights, symbols for engage/disengage, or comparable means should be used with the symbol representing the machine component being activated.