
**Graphic technology — Graphical symbols
for printing press systems and finishing
systems, including related auxiliary
equipment**

*Technologie graphique — Symboles graphiques pour systèmes de
presses à imprimer et systèmes de finition, y compris les équipements
auxiliaires associés*

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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

In exceptional circumstances, when a technical committee has collected data of a different kind from that which is normally published as an International Standard ("state of the art", for example), it may decide by a simple majority vote of its participating members to publish a Technical Report. A Technical Report is entirely informative in nature and does not have to be reviewed until the data it provides are considered to be no longer valid or useful.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

ISO/TR 15847 was prepared by Technical Committee ISO/TC 130, *Graphic technology*.

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Introduction

This Technical Report has been developed on the basis of existing ISO and IEC symbols and relevant national standards. It provides recommended graphical symbols for printing press systems and finishing systems. It is recognized that national standards or laws may dictate national requirements, and in cases where it is known that there is a national requirement that differs from the information provided in this Technical Report, that information is noted.

For symbols reproduced from ISO 7000 and IEC 60417, their source is indicated in square brackets following the description/use, although they may not be presented in accordance with their precise shapes and application rules. In cases where it was considered necessary to modify a symbol and/or description in order to make the symbol more relevant to the equipment used for printing press systems and finishing systems and to the conventions outlined in this Technical Report, this is indicated following the source indication. All new and modified graphical symbols have been submitted to ISO/TC 145/SC 3 for review and consideration for approval as ISO 7000 graphical symbols. Furthermore, the graphical symbols represented in this Technical Report have been reproduced for user's convenience and may not be presented in accordance with ISO 7000 and IEC 60417.

IEC 80416-1 and IEC 80416-2 provide requirements regarding the precise shapes and application rules for graphical symbols.

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Graphic technology — Graphical symbols for printing press systems and finishing systems, including related auxiliary equipment

1 Scope

This Technical Report defines graphical symbols for use on or near equipment in printing systems and finishing systems, including related auxiliary equipment. These graphical symbols are intended to identify the use of, or to indicate the function and/or state (condition/mode) of, the controls used in the operation of the equipment.

These graphical symbols are intended for use on equipment controls, including pushbuttons, touchscreens, keypads, etc.

2 Normative references

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

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

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

3 Requirements for design and placement of graphical symbols

3.1 Design of graphical symbols

General requirements for the design of graphical symbols are given in IEC 80416-1 and ISO 80416-2.

Additional requirements for graphical symbols used for printing press and finishing systems include the following. The design should be clearly legible. For this purpose, the dimensions of the symbol should be a minimum of 10 mm × 10 mm in size and should be clear in both line and pixel representation. However, in certain cases, for proper pixel representation a size larger than 10 mm × 10 mm representation may be required. Text (letters or numbers) that is an integral part of the graphical symbol should be a minimum of 4 mm in height, and should be easily read from the operating position.

The graphical symbol should be designed in a positive high-contrast layout and be two-dimensional.

NOTE Isometric drawings that depict three-dimensional objects are considered to be two-dimensional graphical symbols, since they have only width and height properties.

Graphical symbols with outline shapes (such as small squares, circles, triangles, etc.) should be preferably “filled” (have a black or dark-coloured filling), as opposed to being “hollow” (have a white or light-coloured filling). However, either may be used, provided there is contrast in the background. The meaning of the graphical symbols in this Technical Report should not be based on, or altered by, the use of colour or shading.

Graphical symbols should represent the function in the actuated condition.

3.2 Placement and orientation of graphical symbols

The graphical symbol for a control element (hardware key, pushbutton, switch, etc.) should be placed adjacent to, or on, the control element. When graphical symbols are placed adjacent to the control, their placement should be consistent throughout the panel and the relationship of the graphical symbol to the control should be clear.

Unless otherwise noted, orientation of the graphical symbol is to be as shown in this Technical Report. When it is indicated that a graphical symbol may be mirrored, it is meant that the graphical symbol may be depicted as a mirrored or reverse image with respect to the vertical plane.

3.3 Submission of proposed graphical symbols for use in printing press and finishing systems

It is recognized that, as technology changes, the need for new graphical symbols for this technology may arise. In the interest of controlling the proliferation of a diverse variety of graphical symbols on equipment, users of this Technical Report are encouraged to use the basic graphical symbols presented herein as the basis for the development of other graphical symbols that meet their specific needs.

In cases where the basis for new graphical symbols cannot be found in this Technical Report, users may submit proposed graphical symbols for consideration for inclusion in future revisions. Such proposals should comply with the guidelines given in Annex B. Proposals in compliance with Annex B will be kept on file by the ISO/TC 130 Secretariat until this Technical Report undergoes revision, at which time they will be considered by the Technical Committee ISO/TC 130.

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4 Grouping or organization and conventions for graphical symbols

4.1 Grouping or organization of graphical symbols

The grouping or organization of the graphical symbols in this Technical Report is as shown in Table 1.

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Table 1 — Grouping of graphical symbols

Symbol number	Group number	Group name	Subclause
0.001 to 0.999	0	Basic graphical symbols	5.1
1.001 to 1.999	1	Operation-related graphical symbols	5.2
2.001 to 2.999	2	Screen-related symbols	5.3
3.001 to 3.999	3	Printing- and process (action)-related graphical symbols	5.4
4.001 to 4.999	4	Design (component/device)-related graphical symbols	5.5
5.001 to 5.999	5	Job (customer project)-related graphical symbols	5.6
6.001 to 6.999	6	Safety-related graphical symbols	5.7

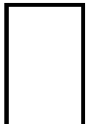
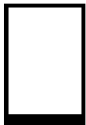

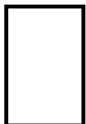

4.2 Conventions for graphical symbols

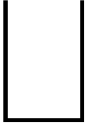
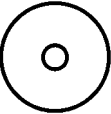

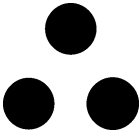



The reference source of the symbols given in Clause 5 is indicated in square brackets. In some cases, the precise shape of the graphical symbol may have been modified and is indicated after the reference source by the mention of "modified". In other instances, the symbol name or description/use may have been modified to be more relevant to the equipment used for printing press systems and finishing systems. In these cases, this is indicated after the reference source by the mention of "name" and/or "description modified".

5 Graphical symbols

5.1 Basic graphical symbols, Group 0




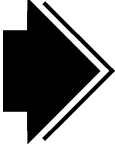
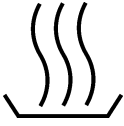


This group includes basic graphical symbols that are used for general components, such as devices (e.g. web, pump), or fluids (e.g. air, ink). They are commonly used as the basic elements for the creation of more complex graphical symbols by combining them with other lines or other symbol elements. See Annex A.

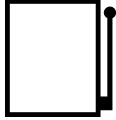

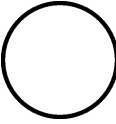
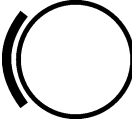
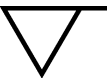
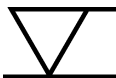
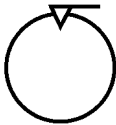
Number Symbol	Name	Description/use [Source]
0.001 	MACHINE OR SYSTEM MODULE/UNIT	Indicates a device or equipment that is part of a system and that gives it certain functions or processes. NOTE See A.2.4 for examples of how this symbol can be combined with other symbols. [ISO 7000-2729]
0.002 	DEVICE, EXTERNAL	Indicates a device or equipment, added to a system to give it certain functions or processes. [ISO 7000-2730]
0.003 	WEB	Indicates paper or similar materials used in web, rotary presses (in contrast to 0.004 SHEET) and certain finishing systems. This symbol does not require specific orientation. [ISO 7000-2731]
0.004 	SHEET	Indicates a piece of substrate of certain size, used in sheet-fed presses (in contrast to 0.003 WEB). This symbol does not require specific orientation.
0.005 	MATERIAL DIRECTION	Indicates direction of flow or movement of material or work as pointed by the arrow. This symbol does not require specific orientation. [ISO 7000-0953, modified]


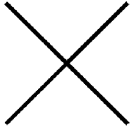
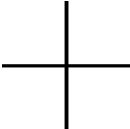


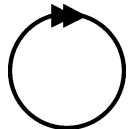

Number Symbol	Name	Description/use [Source]
0.006 	CONTAINER (tank)	Indicates a box, tank, or vessel that contains material in fluid or powder form, such as ink, dampening solution, washing solvent, spray powder, etc. Intended to be used in conjunction with another symbol.
0.007 	CYLINDER or ROLLER	Indicates a cylinder, roller, drum, or roll used on the press or finishing system. This symbol is only used in combination with other symbols. When this symbol is used in combination with other symbols, it may be necessary to eliminate the smaller centre circle. [ISO 7000-0566]
0.008 	MOVEMENT DIRECTION ARROW	Indicates direction of movement of a machine or equipment in motion or to be operated in the direction indicated by the arrow. The line may be either straight or curved.
0.009 	INK	Indicates materials or substances in the form of paste, liquid, toner, etc. used to give colour to substrates or works. [IEC 60417-5048, name and description modified] [ISO/TR 15847:2008] https://standards.iteh.ai/catalog/standards/sist/4bec064e-0be3-492d-b597-70bb152c075f/iso-tr-15847-2008
0.010 	COATINGS, VARNISH, ETC.	Indicates an emulsion, varnish, lacquer, or similar material applied to a substrate. [ISO 7000-2732]
0.011 	GLUE	Indicates glue or adhesive material. [ISO 7000-2733]
0.012 	LIQUID	Indicates a liquid, (e.g., water, solutions, etc.). This symbol does not require specific orientation. [ISO 7000-0536]


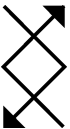


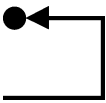


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Number Symbol	Name	Description/use [Source]
0.013 	WASHING SOLUTION	Indicates materials, solvents, or a mixture of those, used to wash and clean substrates or dampening, inking, coating rollers or devices, or washing devices. This symbol does not require specific orientation. [ISO 7000-2734]
0.014 	OIL	Indicates a liquid organic combustible used for lubrication, heating, etc. [ISO 7000-1056]
0.015 	HYDRAULIC	Indicates an operation using power produced by pressurized water, oil, or other liquid in motion. [ISO 7000-0525, modified]
0.016 	AIR	Indicates an air blast, air blow, or air vacuum by means of air pumps or fans. This symbol does not require specific orientation. NOTE Examples include air used to separate, to guide, to control, or to suck sheets or similar materials individually, or to blow-dry substrates or materials wetted in the printing or washing process. See A.2.2 for examples of combining this symbol to form other symbols. <small>ISO/TR 15847:2008 https://standards.iteh.ai/catalog/standards/sist/4bec064c-0bc3-492d-b897-70b150c0756e/iso-tr-15847-2008</small>
0.017 	HEATING/ DRYING	Indicates the transfer of heat in general, making the temperature higher, or indicates elements of a heating, or a drying or warming operation. [IEC 60417-5237]
0.018 	COOLING	Indicates the chilling or cooling of materials, substrates, equipment, or part of a machine to lower temperature. [ISO 7000-0027]
0.019 	ELECTRIC ENERGY	Indicates electric energy, used in combination with other symbols (e.g. 6.001). [ISO 7000-0232]


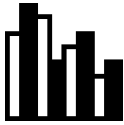

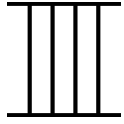
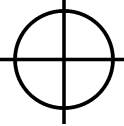


Number Symbol	Name	Description/use [Source]
0.020 	MAIN SHUT-OFF CONTROL	Indicates the main shut-off control of an electric, hydraulic, air, or other power source. It is used in combination with other symbols (e.g. 6.001).
0.021 	ON	Indicates connection to the main switches or their positions, and all those cases where safety is involved. [IEC 60417-5007]
0.022 	OFF	Indicates disconnection from the main switches or their positions, and all those cases where safety is involved. [IEC 60417-5008]
0.023 	BRAKE	Indicates a device or equipment that forces slowing or stopping the motion of rotational or linear movement of a machine, equipment, or part of a machine. This symbol may be mirrored. https://standards.iteh.ai/catalog/standards/sist/4bec064e-0be3-492d-b597-70bb152c075f/iso-tr-15847-2008
0.024 	SENSOR/ DETECTOR	Indicates a device that produces a signal by means of sensing a change of physical state of sound, light, temperature, pressure, etc. This symbol may be displayed rotated 180°.
0.025 	LEVEL (VOLUME)	Used to indicate a display of adjustment value, generally of volume. This symbol may be displayed rotated 180°. [ISO 7000-0159]
0.026 	MEASURING	Indicates switch that controls a measuring device (e.g. scanning densitometer).

Number Symbol	Name	Description/use [Source]
0.027 	PRESSURE	Indicates the pressure caused by compressed air, oil, or liquid, or pressure on an object. This symbol does not require specific orientation.
0.028 	CANCEL/ ESCAPE/ REJECT	Indicates the cancellation of, escape from, or rejection of, a control previously being used. NOTE This symbol means "multiplication" in ISO 7000-0654.
0.029 	INCREASE SETTING	Indicates the increase of a controlled quantity, to be used in combination with other symbols. NOTE This symbol means "plus; positive polarity" in IEC 60417-5005.
0.030 	DECREASE SETTING	Indicates the decrease of a controlled quantity; to be used in combination with other symbols. NOTE This symbol means "minus; negative polarity" in IEC 60417-5006. https://standards.iteh.ai/catalog/standards/sist/4bec064e-0be3-492d-b597-70bb152c075f/iso-tr-15847-2008
0.031 	VARIABILITY	Indicates the control device by means of which a quantity is controlled. The controlled quantity increases with the figure width. This symbol does not require specific orientation. NOTE Examples include speed of movement, amount of materials supplied, duration of functions such as washing or drying, temperature to be controlled, etc. [IEC 60417-5004, modified]
0.032 	SPEED	Indicates the rate of movement of a machine, equipment or part of a machine. This symbol may be mirrored.
0.033 	MANUAL OPERATION	Indicates an operation or control of a machine or equipment that is operated manually (in contrast to automatic operation). Other forms of the hands are acceptable. This symbol does not require specific orientation. [ISO 7000-0096]

Number Symbol	Name	Description/use [Source]
<p>0.034</p> 	<p>POSITIONING</p>	<p>Indicates the function of moving a machine, equipment, or a piece of substrate, into a certain position.</p>
<p>0.035</p> 	<p>CHANGE</p>	<p>Indicates the replacement of substrate, material, work, or a device, or to select the state, condition, or function of a machine or equipment. This symbol does not require specific orientation.</p> <p>[ISO 7000-0273, modified]</p>
<p>0.036</p> 	<p>PUMP</p>	<p>Indicates a device or equipment that forces the transfer of media such as air, oil, water, gas, etc., into or out of something. This symbol is used in combination with other symbols.</p> <p>[ISO 7000-0134]</p>
<p>0.037</p> 	<p>COMPRESSOR</p>	<p>Indicates a device or equipment that compresses media, such as air, gas, etc., for use in operating other equipment, such as pneumatic tools, etc.</p> <p>[ISO 7000-0137]</p>
<p>0.038</p> 	<p>RESET; RETURN TO INITIAL/ PREVIOUS STATE</p>	<p>Indicates the control that returns a device to its initial state. This can include returning to a previous or former process such as place, procedure, state, condition, function, etc. This symbol may be mirrored.</p> <p>[IEC 60417-5495]</p>
<p>0.039</p> 	<p>MODE</p>	<p>Indicates a function, condition, or state in which a specific operation can be done. This symbol is used in combination with other symbols.</p>
<p>0.040</p> 	<p>FEEDBACK CONTROL</p>	<p>Indicates a control used to initiate feedback</p> <p>[ISO 7000-0095, modified]</p>

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Number Symbol	Name	Description/use [Source]
0.041 	TEST (general)	Used with another symbol, indicates a testing process. [ISO 7000-2735]
0.042 	PROFILE	Used in conjunction with another symbol to indicate the graphic representation of the relation of two quantities, such as an ink profile or surface coverage profile. This symbol does not require specific orientation.
0.043 	JAM	Indicates the crumpling (jamming) of the materials in a machine. This symbol does not require specific orientation.
0.044 	ZONE (general)	Indicates a part of the area that allows an individual adaptation. NOTE In connection with printing presses, generally understood as ink zone (part of the entire inking range). See 3.026. https://standards.iteh.ai/catalog/standards/sist/4bec064e-0be3-492d-b597-70017207552a/iso-tr-15847-2008 [ISO 7000-2736]
0.045 	REGISTER	Indicates the congruent positioning of the individual colours of the image to be printed on the printing material, as well as that of the image area on both sides of the printing material. [ISO 7000-2737]
0.046 	DOUBLE PRODUCT OR SHEET	Indicates two sheets of material/substrate (such as paper) or two books or signatures being processed, transported, etc., together at the same time. This symbol does not require specific orientation.
0.047 	SAFETY COVER/ GUARD	Indicates a safety cover, guard, wire mesh or grate. This symbol does not require specific orientation. [ISO 7000-0550]