

# International Standard



# 4196

INTERNATIONAL ORGANIZATION FOR STANDARDIZATION • МЕЖДУНАРОДНАЯ ОРГАНИЗАЦИЯ ПО СТАНДАРТИЗАЦИИ • ORGANISATION INTERNATIONALE DE NORMALISATION

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## Graphical symbols — Use of arrows

*Symboles graphiques — Utilisation des flèches*

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**Descriptors** : symbols, graphic symbols, arrows, shape, motion, direction (of movement), utilization.

## Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of developing International Standards is carried out through ISO technical committees. Every member body interested in a subject for which a technical committee has been authorized 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.

Draft International Standards adopted by the technical committees are circulated to the member bodies for approval before their acceptance as International Standards by the ISO Council.

International Standard ISO 4196 was developed by Technical Committee ISO/TC 145, *Graphical symbols*, and was circulated to the member bodies in February 1983.

It has been approved by the member bodies of the following countries :

Australia	Finland	Japan
Austria	France	Romania
Canada	Germany, F.R.	South Africa, Rep. of
Czechoslovakia	Hungary	Spain
Denmark	India	Sweden
Egypt, Arab Rep. of	Italy	United Kingdom

No member body expressed disapproval of the document.

# Graphical symbols — Use of arrows

## 0 Introduction

This International Standard has been produced to promote the use of a reduced number of arrow forms as graphical symbols.

When symbols in current use become subject to revision, the principles established in this International Standard should apply.

## 1 Scope and field of application

This International Standard lays down the basic principles and the proportions to be adopted when designing graphical symbols which incorporate an arrow, or arrows, to indicate various movements, forces or functions.

The head of the arrow shall always point in the direction of movement; force or function to be indicated.

It is not applicable to arrows in those drawings and diagrams prepared for engineering design, construction or manufacturing purposes.

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This International Standard does not govern the design detail of arrows; such details are covered by ISO 3461.

## 2 References

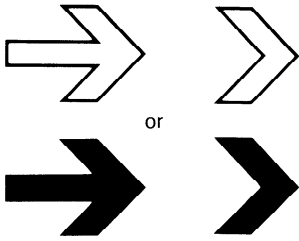
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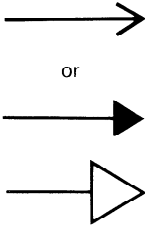
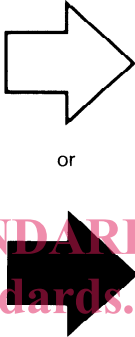
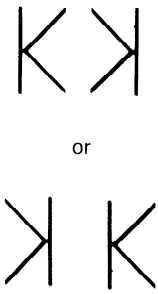
ISO 3461, *Graphic symbols — General principles for presentation.*

ISO 7001, *Public information symbols.*

## 3 Basic arrow form

One or other of the basic arrow forms shall be used according to the application; these are as follows:

Meaning	Basic arrow form	Application notes
<p><b>3.1 Direction of movement</b></p> <p><b>3.1.1</b> By reference to an observer/operator</p>	<p>In outline or solid:</p>  <p>Head angle (included): 84°            Head and shaft to be of uniform thickness            (Sometimes known in French as "flèche belge")</p>	<p>Normally used in public information graphical symbols to direct persons (see ISO 7001).</p> <p>Arrows with shafts should be used where possible. The alternative chevrons are for use when space is restricted.</p>

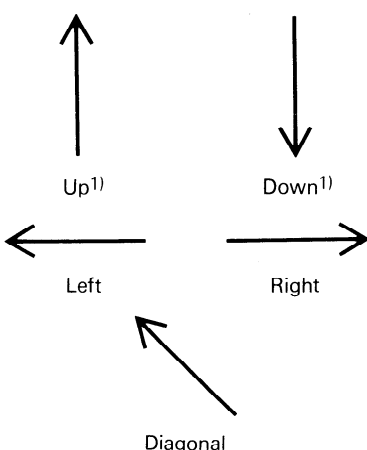

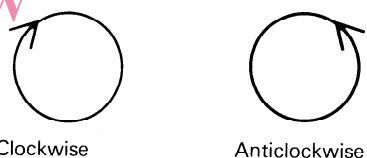

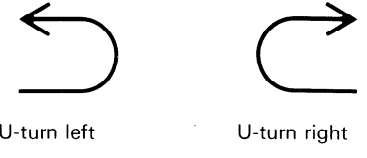


Meaning	Basic arrow form	Application notes
<p><b>3.1.2</b> By reference to a coordinate system</p> <p><b>3.1.2.1</b> Excluding value</p> <p><b>3.1.2.2</b> Including value</p>	 <p>Head angle (included) : 45° min. 60° max.</p> <p>Head and shaft to be of uniform thickness</p> <p>Length of shaft to be chosen to suit application</p>	<p>Normally used in symbols on equipment to indicate direction of motion of machine components or elements along the axes of motion of the machine.</p> <p>The arrow forms given in 3.1.2 are alternative graphical interpretations, but the differences shall not be used to make any distinction between functions.</p>
<p><b>3.2</b> Function and force</p>	<p>In outline or solid :</p>  <p>Head angle (included) : 84°</p> <p>Shaft width : 0,5 × head width</p> <p>Shaft length : 0,5 × head width (min.) 1,0 × head width (max.)</p>	<p>Normally used in symbols on equipment where an arrow form is required, but the function is not directly related to the coordinate axes of machine movements.</p> <p>The arrow is only used in conjunction with other symbol elements.</p> <p>The arrow forms are alternative graphical interpretations, but the differences shall not be used to make any distinction between functions.</p>
<p><b>3.3</b> Dimensions</p>	 <p>Head angle (included) : 90°</p> <p>Arrow and dimension lines to be of uniform thickness</p>	<p>Normally used on equipment where reference to the dimensional quantity of a machine element or function requires specifying. The arrow is only used in conjunction with other symbol elements.</p> <p>The arrow is always paired and used in conjunction with a limiting line positioned as shown.</p> <p>(This symbol does not apply to engineering drawings or diagrams.)</p>

**4 Use of arrow forms**

Alternative basic features (for example, movement, function, dimension) may be readily indicated in graphical symbols by using the appropriate arrow form shown in clause 3.

Examples of the use of arrows to indicate such features are given in 4.1, 4.2 and 4.3. In each example, for simplicity, one basic arrow has been used.

4.1 Movement (using arrow form 3.1)


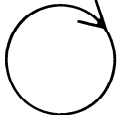
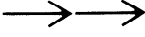

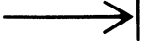
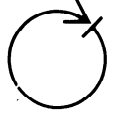
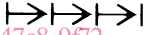
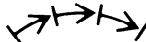

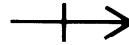
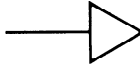

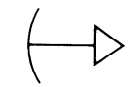
Indication		Examples of use
4.1.1 Direction	Linear	 <p>Up<sup>1)</sup>      Down<sup>1)</sup></p> <p>Left      Right</p> <p>Diagonal</p>
	Rotational, partial	 <p>Clockwise      Anticlockwise</p>
	Rotational, full circle	 <p>Clockwise      Anticlockwise</p>
	Turn	 <p>Left turn      Right turn</p>
	U-turn	 <p>U-turn left      U-turn right</p>
	Helical	 <p>Helical left      Helical right</p>
	Flow of material or work	 <p>Material to be shown as a line of double thickness continuous through the arrow head.</p>

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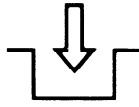
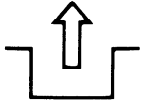
<sup>1)</sup> When shown in a vertical plane.

Indication		Examples of use
4.1.2 Nature	Continuous	  Linear                      Rotational
	Interrupted	  Linear                      Rotational
	Limited	  Linear                      Rotational, one revolution
	Repeated positioning	  Linear                      Rotational
	Override a limiting stop	 or 
4.1.3 Value	For example, normal speed <sup>1)</sup> For example, fast speed For example, slow speed	  


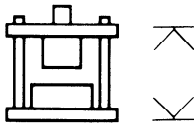
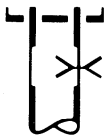
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1) "Normal speed" to be symbolized by an arrow. If there are faster or slower speeds in relation to "normal speed", these are to be symbolized by more than one arrow head (faster speeds) or one or more "parachutes" at the end of the arrow shaft (slower speeds).

4.2 Function (using arrow form 3.2)

Indication		Examples of use
A function or the application of a pressure or force on an element or product	For example, bend, roll, lock, close, press, engage, disengage, etc.	 

4.3 Dimension (using arrow form 3.3)

Indication		Examples of use
Dimensions and limits	For example, width, height, clearance, etc.	 <p>Indication of a scale division</p>  <p>Press shut height</p>  <p>Regulation of preform wall thickness</p>

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