








1.1. SYMBOLS AND TERMS USED IN PARTS 1–4

Table 1.1.3. Graphical symbols










(a) Symmetry planes normal to the plane of projection (three dimensions) and symmetry lines in the plane of the figure (two dimensions).

Symmetry plane or symmetry line	Graphical symbol	Glide vectors in units of lattice translation vectors parallel and normal to the projection plane	Printed symbol
Mirror plane, mirror line		None	<i>m</i>
Glide plane, glide line		$\frac{1}{2}$ along line parallel to projection plane; $\frac{1}{2}$ along line in plane	<i>a, b</i> or <i>c; g</i>
Glide plane		$\frac{1}{2}$ normal to projection plane	<i>c</i>

(b) Symmetry planes parallel to plane of projection.

















Symmetry plane	Graphical symbol	Glide vector in units of lattice translation vectors parallel to the projection plane	Printed symbol
Mirror plane		None	<i>m</i>
Glide plane		$\frac{1}{2}$ in the direction of arrow	<i>a, b</i> or <i>c</i>
'Double' glide plane		Two glide vectors; $\frac{1}{2}$ in either of the directions of the two arrows	<i>e</i>
'Diagonal' glide plane		$\frac{1}{2}$ in the direction of the arrow	<i>n</i>

(c) Symmetry axes normal to the plane of projection (three dimensions) and symmetry points in the plane of the figure (two dimensions).



Symmetry axis or symmetry point	Graphical symbol	Screw vector of a right-handed screw rotation in units of the shortest lattice translation vector parallel to the axis	Printed symbol
Twofold rotation axis, twofold rotation point		None	2
Twofold screw axis: '2 sub 1'		$\frac{1}{2}$	2 ₁
Threefold rotation axis		None	3
Threefold screw axis: '3 sub 1'		$\frac{1}{3}$	3 ₁
Threefold screw axis: '3 sub 2'		$\frac{2}{3}$	3 ₂
Fourfold rotation axis		None	4
Fourfold screw axis: '4 sub 1'		$\frac{1}{4}$	4 ₁
Fourfold screw axis: '4 sub 2'		$\frac{1}{2}$	4 ₂
Fourfold screw axis: '4 sub 3'		$\frac{3}{4}$	4 ₃

1. SUBPERIODIC GROUP TABLES: FRIEZE-GROUP, ROD-GROUP AND LAYER-GROUP TYPES

Table 1.1.3. *Graphical symbols (cont.)*

Symmetry axis or symmetry point	Graphical symbol	Screw vector of a right-handed screw rotation in units of the shortest lattice translation vector parallel to the axis	Printed symbol
Sixfold rotation axis		None	6
Sixfold screw axis: '6 sub 1'		$\frac{1}{6}$	6 ₁
Sixfold screw axis: '6 sub 2'		$\frac{1}{3}$	6 ₂
Sixfold screw axis: '6 sub 3'		$\frac{1}{2}$	6 ₃
Sixfold screw axis: '6 sub 4'		$\frac{2}{3}$	6 ₄
Sixfold screw axis: '6 sub 5'		$\frac{5}{6}$	6 ₅
Centre of symmetry, inversion centre: '1 bar'		None	$\bar{1}$
Twofold rotation axis with centre of symmetry		None	2/m
Twofold screw axis with centre of symmetry		$\frac{1}{2}$	2 ₁ /m
Inversion axis: '3 bar'		None	$\bar{3}$
Inversion axis: '4 bar'		None	$\bar{4}$
Fourfold rotation axis with centre of symmetry		None	4/m
'4 sub 2' screw axis with centre of symmetry		$\frac{1}{2}$	4 ₂ /m
Inversion axis: '6 bar'		None	$\bar{6}$
Sixfold rotation axis with centre of symmetry		None	6/m
'6 sub 3' screw axis with centre of symmetry		$\frac{1}{2}$	6 ₃ /m

(d) Symmetry axes parallel to plane of projection.

Symmetry axis	Graphical symbol	Screw vector of a right-handed screw rotation in units of the shortest lattice translation vector parallel to the axis	Printed symbol
Twofold rotation axis		None	2
Twofold screw axis		$\frac{1}{2}$	2 ₁

References

International Tables for Crystallography (1983). Vol. A. *Space-group symmetry*, edited by Th. Hahn. Dordrecht: Kluwer Academic Publishers. [Revised editions: 1987, 1992, 1995 and 2002. Abbreviated as *IT A* (1983).]