

1. SYMBOLS AND TERMS USED IN THIS VOLUME

1.4.6. Symmetry axes parallel to the 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 (partial elements in parentheses)
Twofold rotation axis		None	2
Twofold screw axis: '2 sub 1'		$\frac{1}{2}$	2 <sub>1</sub>
Fourfold rotation axis		None	4 (2)
Fourfold screw axis: '4 sub 1'		$\frac{1}{4}$	4 <sub>1</sub> (2 <sub>1</sub> )
Fourfold screw axis: '4 sub 2'		$\frac{1}{2}$	4 <sub>2</sub> (2)
Fourfold screw axis: '4 sub 3'		$\frac{3}{4}$	4 <sub>3</sub> (2 <sub>1</sub> )
Inversion axis: '4 bar'		None	$\bar{4}$ (2)
Inversion point on '4 bar'-axis		—	$\bar{4}$ point

\* The symbols for horizontal symmetry axes are given outside the unit cell of the space-group diagrams. *Twofold* axes always occur in pairs, at 'heights'  $h$  and  $h + \frac{1}{2}$  above the plane of projection; here, a fraction  $h$  attached to such a symbol indicates two axes with heights  $h$  and  $h + \frac{1}{2}$ . No fraction stands for  $h = 0$  and  $\frac{1}{2}$ . The rule of pairwise occurrence, however, is not valid for the horizontal *fourfold* axes in cubic space groups; here, *all* heights are given, including  $h = 0$  and  $\frac{1}{2}$ . This applies also to the horizontal 4 axes and the 4 inversion points located on these axes.

1.4.7. Symmetry axes inclined to the plane of projection (in cubic space groups only)

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 (partial elements in parentheses)
Twofold rotation axis		None	2
Twofold screw axis: '2 sub 1'		$\frac{1}{2}$	2 <sub>1</sub>
Threefold rotation axis		None	3
Threefold screw axis: '3 sub 1'		$\frac{1}{3}$	3 <sub>1</sub>
Threefold screw axis: '3 sub 2'		$\frac{2}{3}$	3 <sub>2</sub>
Inversion axis: '3 bar'		None	$\bar{3}$ (3, $\bar{1}$ )

\* The dots mark the intersection points of axes with the plane at  $h = 0$ . In some cases, the intersection points are obscured by symbols of symmetry elements with height  $h \geq 0$ ; examples:  $Fd\bar{3}$  (203), origin choice 2;  $Pn\bar{3}n$  (222), origin choice 2;  $Pm\bar{3}n$  (223);  $Im\bar{3}m$  (229);  $Ia\bar{3}d$  (230).