2.3.1 COORDINATE WORD

Table 2.4

Address		Description
Main axes	X, Y, Z	Position or distance in X, Y or Z coordinate direction.
4Th Axis†	A, B, C or U, V, W	These coordinate words are treated as commands in the directions of the 4th axes. A, B and C are used for rotary motion, and U, V and W are used for parallel motion.
Circular interpolation aux. data	Q	Circular arc increment in circle cutting (G12, G13)
	R	Generally, radius values of circles.
	I, J, K	Generally, distances from start point to arc center (in X, Y and Z components).

2.3.2 SIMULTANEOUS CONTROLLABLE AXES OF THREE-AXIS CONTROL

Table 2.3.2 shows simultaneously controllable axes.

Table 2.5

	Simultaneously controllable axes
Positioning G00	X, Y and Z axes
Linear interpolation G01	X, Y and Z axes
Circular interpolation G02, G03	Two axes: XY, YZ or ZX (see Note.)
Circle cutting† G12, G13	Two axes: X and Y
Helical interpolation† G02, G03	Circle in XY-plane and linear feed in Z-axis direction. Refer to 2.9.5 HELICAL INTERPOLATION.
Manual control	Simultaneous control of X, Y and Z

Note:

Circular arc plane is determined according to the currently effective G codes for plane designation. (G17 to G19)
For details, refer to 2.9.4 CIRCULAR INTERPOLATION (G02, G03).

2.3.3 SIMULTANEOUSLY CONTROLLABLE AXES OF FOUR-AXIS CONTROL†

Table 2.3.3 shows simultaneously controllable axes.

Table 2.6

	Simultaneously controllable axes
Positioning G00	X, Y, Z, and $\alpha^{(1)}$ axes
Linear interpolation G01	X, Y, Z, and $\alpha^{(1)}$ axes
Circular interpolation G02, G03	Two axes,[2][3] XY; YZ, ZX, $X\alpha^{(1)}$, $Y\alpha^{(1)}$, or $Z\alpha^{(1)}$
Circular cutting† G12, G13	Two axes: X and Y
Helical interpolation† G02, G03	Three axes: circle in XY-plane and linear feed in Z-axis direction. Refer to 2.9.5 HELICAL INTERPOLATION.
Manual control	One axis, X, Y, Z, or $\alpha^{(1)}$

(1) The α axis represents any one of axes A, B, C, U, V or W, selected as the 4th axis.

(2) Circular arc plane is determined according to the currently effective G codes for plane designation (G17 to G19). For details, refer to 2.9.4 CIRCULAR INTERPOLATION (G02, G03).

(3) For circular interpolation axis α, any one of linear axes U, V, and W should be designated.