

## ภาคผนวก ข

ตาราง G Code และ M Code

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## 01513 G Code

G Code		Group
G0	Rapid Traverse (linear)	Interpolation
G1	Linear Interpolation	Interpolation
G2	Circular / Helical CW	Interpolation
G2.01	Circular / Helical CW (absolute)	Interpolation
G2.02	Circular / Helical CW (incremental)	Interpolation
G3	Circular / Helical CCW	Interpolation
G3.01	Circular / Helical CCW (absolute)	Interpolation
G3.02	Circular / Helical CCW (incremental)	Interpolation
G4	Dwell	Non - modal
G7.1	Cylindrical Interpolation	Interpolation
G8	Suppress Interpolation	Interpolation
G9	Extract Stop	Non - modal Modifier
G12	Contouring Rotary Axis Unwind	Non - modal
G13.1	Cylindrical Interpolation Off	Interpolation
G15.1	Polar Coordinate Programming (bolt Circle)	
G15.2	Polar Coordinate Programming (Part Contour)	
G17	XY Plane Select	Plane Select
G18	YZ Plane Select	Plane Select
G19	ZX Plane Select	Plane Select
G22, G22.1	Milling Cycle Rectangular Face	Interpolation
G23, G23.1	Milling Cycle Rectangular Pocket	Interpolation
G24, G24.1	Milling Cycle Rectangular Inside Frame	Interpolation
G25, G25.1	Milling Cycle Rectangular Outside Frame	Interpolation
G26	Milling Cycle Circular Face	Interpolation
G26.1	Milling Cycle Circular Pocket	Interpolation
G27	Milling Cycle Circular Inside Frame	Interpolation
G27.1	Milling Cycle Circular Outside Frame	Interpolation

<b>G Code</b>		<b>Group</b>
G28	Auto Return to Reference Point	Non – modal
G29	Auto Return From Reference Point	Non – modal
G36	Move to Next Operation Location	Non – modal
G36.1	Test for End of Pattern	Non - modal
G37	Cancel Pattern	Pattern Cycles
G38	Rectangular Pattern	Pattern Cycles
G39	Circle Pattern	Pattern Cycles
G40	Cutter Diameter Compensation OFF	CDC
G41	Cutter Diameter Compensation On LEFT	CDC
G42	Cutter Diameter Compensation On RIGHT	CDC
G43	PQR Cutter Diameter Compensation On	CDC
G45	Acceleration/Deceleration ON	Acceleration/Deceleration
G45.01, G45.02	User Specific Acceleration	Acceleration/Deceleration
G45.03	User Specific Acceleration	Acceleration/Deceleration
G45.1	Acceleration/Deceleration ON (Die Roughing)	Acceleration/Deceleration
G45.2	Acceleration/Deceleration ON (Die Finishing)	Acceleration/Deceleration
G46	Acceleration/Deceleration OFF	Acceleration/Deceleration
G50	Pallet Coordinates	Non – modal Modifier
G51	Probe Multiple Axes	
G51.1	Vector Probe Surface and Set Offsets	
G51.2	Rotary Axis measurement	
G51.3	Angle Measurement in X or Y Plane	
G51.4	Measure feature to feature XY Plane	
G51.5	Measure feature to feature Z Plane	
G52	Local Coordinate System	Local Coordinates
G60	Positioning Mode	Cornering
G61	Contouring Mode	Cornering
G61.1	Automatic Corner Speed Override (Left)	Cornering
G61.2	Automatic Corner Speed Override (Right)	Cornering

<b>G Code</b>		<b>Group</b>
G68	Tool Probe Cycle Set Tool Length	Non – modal
G69	Tool Probe Cycle Check Tool Length	Non modal
G70	Inch Programming	Inch/Metric
G71	Metric Programming	Inch/Metric
G72	Set Stylus and Tip Dimension	Non – Modal
G73	Set Probe Stylus and Tip Dimension	Non – Modal
G74	Set Probe Length	Non – Modal
G75	Locate Internal Corner	Non – Modal
G76	Locate External Corner	Non – Modal
G77	Locate Surface	Non – Modal
G77.1	Stock Allowance	Non – Modal
G78	Locate and Measure Bore or Boss	Non – Modal
G79	Measure Pocket or Web	Non – Modal
G80	Reset Fix Cycle	Interpolation Hole making Cycle
G81	Drill Cycle	Interpolation Hole making Cycle
G82	Counterbore/Spot Drill with Dwell Cycle	Interpolation Hole making Cycle
G83	Deep Hole drill (Peck Drill) Cycle	Interpolation Hole making Cycle
G84	Tap Cycle (Conventional)	Interpolation Hole making Cycle
G85	Rapid Tap Cycle	Interpolation Hole making Cycle
G86	B ore/ Ream Cycle	Interpolation Hole making Cycle
G87	Bore Cycle	Interpolation Hole making Cycle

<b>G Code</b>		<b>Group</b>
G88	Web Drill / Bore Cycle	Interpolation Hole making Cycle
G89	Bore / Ream with Dwell Cycle	Interpolation Hole making Cycle
G90	Absolute Dimension Input	Absolute / Incremental
G91	Incremental Dimension Input	Absolute / Incremental
G92	Position Set	Non – modal
G92.1	Position Set Setup Offset	Non – modal
G92.2	Position Set Pallet Offset	Non – modal
G93	Inverse Time Feedrate(1/T)	Feedrate
G94	Feed Per Minute Feedrate Mode	Feedrate
G95	Feed Per Revolution Feedrate Mode	Feedrate
G96	Constant Surface Speed	Spindle
G97	Constant Spindle Speed (S=RPM)	Spindle
G97.1	Constant Spindle Speed (S=Surface Speed)	Spindle
G98	Machine Coordinate (Tool Tip)	Non –modal Modifier
G98.1	Machine Coordinates	Non –modal Modifier
G99	Positioning Cancel	Non - modal
G150	Scaling Off	Scaling
G151	Scaling On	Scaling

**01513 M Code**

<b>M Code</b>	<b>Group</b>	<b>Function</b>	<b>Start/ End Of Block</b>	<b>Modal</b>
0	Prog Control	Program Stop	End	No
1	Prog Control	Optional Stop	End	No
2	Prog Control	End of Program (do not put tool away)	End	No
3	Spindle Start	Spindle ON CW	Start	Yes
4	Spindle Start	Spindle ON CCW	Start	Yes
5	Spindle Stop	Spindle and Coolant OFF	End	Yes
6	Tool Control	Tool Change	End	No
8		External Flood Coolant ON	Start	Yes
8.1 through 8.8	Coolant Jet	Coolant Jet Position Control (Option)	Start	Yes
9		Coolant OFF	End	Yes
10/10.x		Clamp Rotary Axis # 1-4	End	Yes
11/11.x		Unclamp Rotary Axis # 1-4	Start	Yes
13	Spindle Start	Spindle ON CW, External Flood Coolant ON	Start	Yes
14	Spindle Start	Spindle ON CCW, External Flood Coolant ON	Start	Yes
19	Spindle Stop	Oriented Spindle Stop	End	Yes
26		Spindle Axis Full Retract	End	No
27		Through Spindle Coolant	Start	Yes
30	Prog Control	End of Program (put tool away)	End	No
34		Enable Data Acquisition	Start	Yes
35		Disable Data Acquisition	End	Yes
41	Spindle Mode	Select Spindle Constant Power Mode	Start	Yes
42	Spindle Mode	Select Spindle Constant Torque Mode	Start	Yes
48	Override	Feedrate & Spindle Speed Override Enable	Start	Yes

<b>M Code</b>	<b>Group</b>	<b>Function</b>	<b>Start/End of Block</b>	<b>Modal</b>
49	Override	Feedrate & Spindle Speed Override Disable	Start	Yes
58	Probe	Disarm Spindle Probe (Option)	Start	Yes
59	Probe	Arm Spindle Probe (Option)		
60	Swarf Wash	Swarf Wash ON	Start	Yes
61		Swarf Wash OFF	Start	Yes
70 thru 79	User	User Definable M Code (Option)	Start	
83		Part Complete		
91	Swarf	Swarf Conveyor ON	Start	Yes
92	Conveyor	Swarf Conveyor OFF	Start	Yes