Code	Parameters	Description
Motion	(X Y Z A B C U V W apply to all motions)	
G0		Rapid Move
G1		Linear Move
G2, G3	I J K or R, P	Arc Move
G4	P	Dwell
G5	I J P Q	Cubic Spline
G5.1	I J	Quadratic Spline
G5.2	P L	NURBS
G38.2 - G38.5		Straight Probe
G33	K ($)	Spindle Synchronized Motion
G33.1	K ($)	Rigid Tapping
G80		Cancel Canned Cycle
Canned cycles	(X Y Z or U V W apply to canned cycles, depending on active plane)	
G81	R L (P)	Drilling Cycle
G82	R L (P)	Drilling Cycle, Dwell
G83	R L Q	Drilling Cycle, Peck
G84	R L (P) ($)	Right-hand Tapping Cycle, Dwell
G73	R L Q	Drilling Cycle, Chip Breaking
G74	R L (P) ($)	Left-hand Tapping Cycle, Dwell
G85	R L (P)	Boring Cycle, Feed Out
G89	R L (P)	Boring Cycle, Dwell, Feed Out
G76	P Z I J R K Q H L E ($)	Threading Cycle
Distance Mode		
G90, G91		Distance Mode
G90.1, G91.1		Arc Distance Mode
G7		Lathe Diameter Mode
G8		Lathe Radius Mode
Feed Rate Mode		
G93, G94, G95	S ($)	Feed Rate Mode
Spindle Control		
M3, M4, M5	S ($)	Spindle Control
M19	R Q (P) ($)	Orient Spindle
G96, G97	S D ($)	Spindle Control Mode
Coolant		
M7, M8, M9		Coolant Control
Tool Length Offset		
G43	H	Tool Length Offset
G43.1		Dynamic Tool Length Offset
G43.2	H	Apply additional Tool Length Offset
G49		Cancel Tool Length Compensation
Stopping		
M0, M1		Program Pause
M2, M30		Program End
M60		Pallet Change Pause
Units		
G20, G21		Units (inch, mm)
Plane Selection	(affects G2, G3, G81…G89, G40…G42)	
G17 - G19.1		Plane Select
Cutter Radius Compensation		
G40		Compensation Off
G41,G42	D	Cutter Compensation
G41.1, G42.1	D L	Dynamic Cutter Compensation
Path Control Mode		
G61 G61.1		Exact Path Mode
G61.1		Exact Stop Mode
G64	P Q	Path Blending
Return Mode in Canned Cycles		
G98, G99		Canned Cycle Return Level
Other Modal Codes		
F		Set Feed Rate
S	($)	Set Spindle Speed
T		Select Tool)
M48, M49		Speed and Feed Override Control
M50	P0 (off) or P1 (on)	Feed Override Control
M51	P0 (off) or P1 (on) ($)	Spindle Speed Override Control
M52	P0 (off) or P1 (on)	Adaptive Feed Control
M53	P0 (off) or P1 (on)	Feed Stop Control
G54-G59.3		Select Coordinate System
Flow-control Codes		
o sub		Subroutines, sub/endsub call
o while		Looping, while/endwhile do/while
o if		Conditional, if/else/endif
o repeat		Repeat a loop of code
[]		Indirection

o call			Call named file
M70			Save modal state
M71			Invalidate stored state
M72			Restore modal state
M73			Save and Auto-restore modal state

Input/Output Codes

M62 - M65	P	Digital Output Control
M66	P E L Q	Wait on Input
M67	T	Analog Output,Synchronized
M68	T	Analog Output, Immediate

Non-modal Codes

M6	T	Tool Change
M61	Q	Set Current Tool
G10 L1	P Q R	Set Tool Table
G10 L10	P	Set Tool Table
G10 L11	P	Set Tool Table
G10 L2	P R	Set Coordinate System
G10 L20	P	Set Coordinate System
G28, G28.1		Go/Set Predefined Position
G30, G30.1		Go/Set Predefined Position
G53		Move in Machine Coordinates
G52, G92		Coordinate System Offset
G92.1, G92.2		Reset G92 Offsets
G92.3		Restore G92 Offsets
M101 - M199	P Q	User Defined Commands

Comments & Messages

; (…)		Comments
(MSG,…)		Messages
(DEBUG,…)		Debug Messages
(PRINT,…)		Print Messages