

G Code List for ServoWorks™ CNC Products



KEY: “✓” indicates G codes that are included with the product

G-Code	Description	ServoWorks MC-Quad	ServoWorks S-100M	ServoWorks S-120M	ServoWorks S-140M	ServoWorks S-200M*	ServoWorks S-100T
G00	Rapid traverse	✓	✓	✓	✓	✓	✓
G00.1	Rapid traverse with programmable (specified) acceleration/deceleration rate	✓				✓	
G01	Linear interpolation	✓	✓	✓	✓	✓	✓
G02	Clockwise circular interpolation						✓
G03	Counterclockwise circular interpolation						✓
G02	Clockwise circular or helical interpolation	✓	✓	✓	✓	✓	
G03	Counterclockwise circular or helical interpolation	✓	✓	✓	✓	✓	
G02.3	Positive exponential interpolation	✓	✓	✓	✓	✓	
G03.3	Negative exponential interpolation	✓	✓	✓	✓	✓	
G04	Dwell	✓	✓	✓	✓	✓	✓
G05	Dynamic look-ahead contour control on/off	✓	✓	✓	✓	✓	
G08	Dynamic look-ahead contour control on/off	✓	✓	✓	✓		
G08	Three-dimensional full circle specified by a center point					✓	
G09	Exact stop check						✓
G10	Program data input	✓	✓	✓	✓	✓	✓
G11	Specifies the second point for a three-dimensional arc					✓	
G11.1	Specifies the third point for a three-dimensional arc					✓	
G12	Specifies the second point for a three-dimensional full circle					✓	
G12.1	Specifies the third point for a three-dimensional full circle					✓	
G12.2	Completes the three-dimensional full circle command					✓	
G17	XY plane selection	✓	✓	✓	✓	✓	
G18	ZX plane selection	✓	✓	✓	✓	✓	
G19	YZ plane selection	✓	✓	✓	✓	✓	
G20	Inch data input	✓	✓	✓	✓	✓	✓
G21	Metric data input	✓	✓	✓	✓	✓	✓

G-Code	Description	ServoWorks	ServoWorks	ServoWorks	ServoWorks	ServoWorks	ServoWorks
		MC-Quad	S-100M	S-120M	S-140M	S-200M*	S-100T
G22	Barrier check on						✓
G23	Barrier check off						✓
G25	Spindle speed fluctuation detection off						✓
G26	Spindle speed fluctuation detection on						✓
G28	Automatic return to the reference point	✓	✓	✓	✓	✓	✓
G29	Automatic return from the reference point	✓	✓	✓	✓	✓	✓
G30	Automatic return to the 2nd, 3rd, and 4th reference points	✓	✓	✓	✓	✓	✓
G31	Skip cutting	✓	✓	✓	✓	✓	
G32	Thread cutting with a constant lead						✓
G40	Tool (nose) radius compensation cancel	✓	✓	✓	✓		✓
G41	Tool (nose) radius compensation left	✓	✓	✓	✓		✓
G42	Tool (nose) radius compensation right	✓	✓	✓	✓		✓
G40	Three dimensional cutter radius compensation cancel					✓	
G41	Three dimensional cutter radius compensation on (left)					✓	
G42	Three dimensional cutter radius compensation on (right)					✓	
G43	Positive tool length compensation	✓	✓	✓	✓	✓	
G44	Negative tool length compensation	✓	✓	✓	✓	✓	
G49	Tool length compensation cancel	✓	✓	✓	✓	✓	
G50	Coordinate system preset and maximum spindle RPM						✓
G50	Scaling off	✓	✓	✓	✓	✓	
G51	Scaling on	✓	✓	✓	✓	✓	
G50.1	Mirror image off	✓	✓	✓	✓	✓	
G51.1	Mirror image on	✓	✓	✓	✓	✓	
G52	Local coordinate system selection	✓	✓	✓	✓	✓	✓
G53	Machine coordinate system selection	✓	✓	✓	✓	✓	✓
G54	Workpiece coordinate system 1 selection	✓	✓	✓	✓	✓	✓
G54.1	Additional workpiece coordinate system selection		✓	✓	✓	✓	
G55	Workpiece coordinate system 2 selection	✓	✓	✓	✓	✓	✓
G56	Workpiece coordinate system 3 selection	✓	✓	✓	✓	✓	✓
G57	Workpiece coordinate system 4 selection	✓	✓	✓	✓	✓	✓
G58	Workpiece coordinate system 5 selection	✓	✓	✓	✓	✓	✓
G59	Workpiece coordinate system 6 selection	✓	✓	✓	✓	✓	✓
G61	Exact stop check mode	✓	✓	✓	✓	✓	✓
G64	Cutting mode	✓	✓	✓	✓	✓	✓
G64.1	Continuous cutting mode	✓	✓	✓	✓	✓	

G-Code	Description	ServoWorks	ServoWorks	ServoWorks	ServoWorks	ServoWorks	ServoWorks
		MC-Quad	S-100M	S-120M	S-140M	S-200M*	S-100T
G65	Simple macro call	✓	✓	✓	✓	✓	✓
G66	Modal macro call					✓	
G67	Modal macro call cancel					✓	
G68	Coordinate system rotation	✓	✓	✓	✓	✓	
G69	Coordinate system rotation cancel	✓	✓	✓	✓	✓	
G68	Three-dimensional coordinate conversion (specified by vector and coordinate datum)					✓	
G68.1	Three-dimensional coordinate conversion (specified by tool vector and another vector)					✓	
G69	Three-dimensional coordinate rotation cancel					✓	
G70	Finishing cycle						✓
G71	Stock removal in turning						✓
G72	Stock removal in facing						✓
G73	Pattern repeat cycle						✓
G73	High speed peck drilling cycle		✓	✓	✓	✓	
G74	End face peck drilling/grooving						✓
G74	Counter tapping cycle / rigid tapping		✓	✓	✓	✓	
G75	Outer diameter/inner diameter grooving						✓
G76	Multiple-pass threading cycle						✓
G76	Fine boring cycle		✓	✓	✓	✓	
G80	Hole machining canned cycle cancel						✓
G80	Canned cycle cancel		✓	✓	✓	✓	
G81	Drilling cycle, spot boring		✓	✓	✓	✓	
G82	Drilling cycle (dwell)		✓	✓	✓	✓	
G83	Face drilling cycle						✓
G83	Peck drilling cycle		✓	✓	✓	✓	
G84	Face tapping cycle / rigid tapping						✓
G84	Tapping cycle		✓	✓	✓	✓	
G85	Face boring cycle						✓
G85	Boring cycle		✓	✓	✓	✓	
G86	Boring cycle (spindle stop)		✓	✓	✓	✓	
G87	Side drilling cycle						✓
G87	Back boring cycle		✓	✓	✓	✓	
G88	Side tapping cycle						✓
G89	Side boring cycle						✓
G89	Boring cycle (dwell)		✓	✓	✓	✓	

G-Code	Description	ServoWorks	ServoWorks	ServoWorks	ServoWorks	ServoWorks	ServoWorks
		MC-Quad	S-100M	S-120M	S-140M	S-200M*	S-100T
G90	Outer diameter/inner diameter cutting cycle						✓
G90	Absolute command programming	✓	✓	✓	✓	✓	
G91	Incremental command programming	✓	✓	✓	✓	✓	
G92	Workpiece coordinate programming	✓	✓	✓	✓	✓	
G92	Thread cutting cycle						✓
G94	End face cutting cycle						✓
G94	Feed per minute mode		✓	✓	✓	✓	
G95	Feed per revolution mode		✓	✓	✓	✓	
G96	Constant surface speed control set						✓
G97	Constant surface speed control cancel						✓
G98	Per minute feed						✓
G99	Per revolution feed						✓
G98	Return to initial point in canned cycle		✓	✓	✓	✓	
G99	Return to R point in canned cycle		✓	✓	✓	✓	
G107	Cylindrical interpolation						✓
G112	Polar coordinate interpolation mode set						✓
G113	Polar coordinate interpolation mode cancel						✓
G130	Tool vector smooth interpolation off					✓	
G131	Tool vector smooth interpolation on					✓	
G164	Continuous cutting mode						✓
G310	Linear interpolation feedrate include rotary axes	✓	✓	✓	✓	✓	
G311	Linear interpolation feedrate exclude rotary axes	✓	✓	✓	✓	✓	

* Under development



Soft Servo Systems, Inc.
Control the Future

Send inquiries to: info_usa@softservo.com

Revised March 12, 2008

39 Whitcomb Street, Waltham, MA 02453, USA Tel: 1.781.891.9555 Fax: 1.781.891.3853 www.softservo.com