APPENDIX C

List of Macro Variables

Variable	Purpose	Page
#0	Null variable	22
#1 – #33	Local variables	28
#34 – #99	Not available	28
#100 – #199	Common variables	28
#200 – #499	Not available	28
#500 – #999	Permanent common variables (same as common variables, with the difference that the stored values in these are not cleared by reset or power cycle)	28/29
#1000 – #1015 and #1032	Correspond to input interface signals (G54.0 – G54.7, G55.0 – G55.7)	40/41
#1100 – #1115 and #1132	Correspond to output interface signals (F54.0 – F54.7, F55.0 – F55.7)	40/41
#2001 – #2064	X-axis wear offsets (on a lathe with 64 offset numbers)	42
#2001 – #2200	Tool length wear offsets (with parameter 6000#3 = 0, on a milling machine with 200 offset numbers)	44
#2101 – #2164	Z-axis wear offsets (on a lathe with 64 offset numbers)	42
#2201 – #2264	Nose radius wear offsets (on a lathe with 64 offset numbers)	42
#2201 – #2400	Tool length geometry offsets (with parameter 6000#3 = 0, on a milling machine with 200 offset numbers)	44
#2301 – #2364	Tool-tip directions (on a lathe with 64 offset numbers)	42
#2500 – #2800	External offsets (on milling machines only)	55
#2501 – #2801	G54 offsets (on milling machines only)	55
#2502 – #2802	G55 offsets (on milling machines only)	55
#2503 – #2803	G56 offsets (on milling machines only)	55

Variable	Purpose	Page
#2504 – #2804	G57 offsets (on milling machines only)	55
#2505 – #2805	G58 offsets (on milling machines only)	55
#2506 – #2806	G59 offsets (on milling machines only)	55
#2501	X-axis WCS shift amount (on lathes only)	44
#2601	Z-axis WCS shift amount (on lathes only)	44
#2701 – #2764	X-axis geometry offsets (on a lathe with 64 offset numbers)	42
#2801 – #2864	Z-axis geometry offsets (on a lathe with 64 offset numbers)	42
#2901 – #2964	Nose radius values (geometry offsets) (on a lathe with 64 offset numbers)	42
#3000	Macro alarm (terminates program execution with an *alarm* , which cannot be restarted)	45
#3001	Current session total on-time timer (with 1-ms increment)	46
#3002	All sessions run-time timer (stores cumulative on-time of CYCLE START lamp, in hour)	46
#3003	Automatic operation control (single block execution and completion of auxiliary functions)	47
#3004	Automatic operation control (feed hold, feed override and exact stop check)	47
#3006	Macro message (temporarily stops program execution which can be restarted by pressing CYCLE START button again)	48
#3007	Mirror-image information	48
#3011	Current date (in YYYYMMDD decimal format)	46
#3012	Current time (in 24-hour HHMMSS decimal format)	46
#3901	Number of parts completed (in the current machining session)	49
#3902	Number of parts required (in the current machining session)	49

Variable	Purpose	Page
#4001 – #4120	Modal information on a lathe #4001 : G00, G01, G02, G03, G32, G34, G71 – G74 (G71 – G74 apply to grinding machines only) #4002 : G96, G97 #4004 : G68, G69 #4005 : G98, G99 #4006 : G20, G21 #4007 : G40, G41, G42 #4008 : G25, G26 #4009 : G22, G23 #4010 : G80 – G89 #4012 : G66, G67 #4014 : G54 – G59 #4016 : G17, G18, G19 #4109 : F-code (feedrate) #4113 : M-code number #4114 : Sequence number #4115 : Program number #4119 : S-code (stores rpm in G97 mode and surface speed in G96 mode) #4120 : T-code (tool number with offset number)	50/51
#4001 – #4130	Modal information on a milling machine #4001 : G00, G01, G02, G03, G33 #4002 : G17, G18, G19 #4003 : G90, G91 #4005 : G94, G95 #4006 : G20, G21 #4007 : G40, G41, G42 #4008 : G43, G44, G49 #4009 : G73, G74, G76, G80 – G89 #4010 : G98, G99 #4011 : G50, G51 #4012 : G66, G67	51/52

Variable	Purpose	Page
#4001 – #4130	Modal information on a milling machine #4013 : G96, G97 #4014 : G54 – G59 #4015 : G61 – G64 #4016 : G68, G69 #4102 : B-code number #4107 : D-code number #4109 : F-code (feedrate) #4111 : H-code number #4113 : M-code number #4114 : Sequence number #4115 : Program number #4119 : S-code (stores rpm in G97 mode and surface speed in G96 mode) #4120 : T-code (tool number) #4130 : P-code number of (if currently active) G54.1 P1 – G54.1 P48	51/52
#5001 – #5004	Block end point in WCS	53
#5021 – #5024	Current tool position in MCS	53
#5041 – #5044	Current tool position in WCS	53
#5061 – #5064	Skip-signal position in WCS	53
#5081	X-axis wear offset value currently active on a two-axis lathe	53
#5082	Z-axis wear offset value currently active on a two-axis lathe	53
#5083	Tool-length wear offset value currently active on a VMC	53
#5101 – #5104	Deviated servo position	53
#5201 – #5204	External offsets	54
#5221 – #5224	G54 offsets	54
#5241 – #5244	G55 offsets	54
#5261 – #5264	G56 offsets	54
#5281 – #5284	G57 offsets	54
#5301 – #5304	G58 offsets	54
#5321 – #5324	G59 offsets	54

Variable	Purpose	Page
#7001 – #7004	G54.1 P1 offsets	54
#7021 – #7024	G54.1 P2 offsets	54
#7041 – #7044	G54.1 P3 offsets	54
Continued series	G54.1 P4 – P47 offsets	54
#7941 – #7944	G54.1 P48 offsets (Note: G54.1 P1 to P48 are optionally available on milling machines only)	54
#10001 – #10099	X-axis wear offsets (on a lathe with 99 offset numbers)	43
#10001 – #10400	Tool length wear offsets (with parameter 6000#3 = 0, on a milling machine with 400 offset numbers)	44
#11001 – #11099	Z-axis wear offsets (on a lathe with 99 offset numbers)	43
#11001 – #11400	Tool length geometry offsets (with parameter 6000#3 = 0, on a milling machine with 400 offset numbers)	44
#12001 – #12099	Nose radius wear offsets (on a lathe with 99 offset numbers)	43
#12001 – #12400	Tool radius wear offsets (with parameter 6000#3 = 0, on a milling machine with 400 offset numbers)	44
#13001 – #13099	Tool-tip directions (on a lathe with 99 offset numbers)	43
#13001 – #13400	Tool radius values (geometry offsets) (with parameter 6000#3 = 0, on a milling machine with 400 offset numbers)	44
#15001 – #15099	X-axis geometry offsets (on a lathe with 99 offset numbers)	43
#16001 – #16099	Z-axis geometry offsets (on a lathe with 99 offset numbers)	43
#17001 – #17099	Nose radius values (geometry offsets) (on a lathe with 99 offset numbers)	43