Instructional Video Series
GenTurn SL20Y2
Video Support Document

Contents

Introduction

The Purpose of this document is to give additional information for the instructional videos. Please click on the Table of Content to jump to the desired information.

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G Code List

■ G CODE LIST

CODE	DESCRIPTION	CODE	DESCRIPTION
G00	Positioning (Rapid traverse)		
G01	Linear interpolation (Cutting feed)	G87	S1 deeping cycle(X axis)
G02	Circular interpolation CW	G88	S1 cross tapping(X axis)
G03	Circular interpolation CCW	G90	Outer diameter/internal diameter cutting cycle
G04	Dwell	G92	Thread cutting cycle(auto)
G12.1	Polar coordinate interpolation mode	G96	Constant round speed.
G13.1	Polar coordinate interpolation cancel mode	G97	Constant speed.
G17	Xp Yp plane selection	G98	Per minute feed（mm/min）
G18	Zp Xp plane selection	G99	Per revolution feed（mm/rpm）
G19	Yp Zp plane selection	G320	British Imperial System (Restart machine.)
G28	Return to reference position	G321	Metric System (Restart machine.)
G30	2nd reference position return	G300	Return to programme reference point
G32	Thread cutting	G800	Main spindle angle deflection settingof C axis
G40	Tool nose radius compensation cancel	G900	Main and sub spindle angle deflection setting
G41	Tool nose radius compensation right		
G42	Tool nose radius compensation left		
G50	Coordinate system setting		
	Max. spindle speed setting		
G70	Fine cutting cycle		
G71	Horizontal cutting repeated cycle		
G72	Vertical cutting repeated cycle		
G73	Forming Processing repeated cycle		
G74	End face grooving cycle		
	End face peck drilling cycle		
G75	Side grooving cycle		
	Side peck drilling cycle		
G76	Threading Canned Cycle		
G80	Cancel machining cycle		
G83	Cycle for Z axis deep face drilling		
G84	Cycle for Z axis face tapping		

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M Code List

■ M CODE LIST FOR MAIN SYSTEM

CODE	DESCRIPTION	CODE	DESCRIPTION
M00	Programme stop	M114	Side/ Face drilling CCW
M01	Optional programme stop	M115	Side/Face drilling stop
M02	End of program	M133	Main/Sub spindle synchronous CW
M03	Spindle CW	M134	Main/Sub spindle synchronous CCW
M04	Spindle CCW	M135	Main/Sub spindle synchronous stop
M05	Spindle stop	M142	Main/Sub Z axis synchronous running
M06	Spindle position start	M143	Main/Sub Z axis synchronous running cancel
M07	Spindle position cancel	M144	Main/Sub C axis synchronous running
M08	Coolant oil start	M145	Main/Sub C axis synchronous running cancel
M09	Coolant oil cancel	M191	Sub program for top cutting by new bar（non guide bush mode）
M10	Spindle chuck close	M192	Sub program for top cutting by new bar（guide bush mode）
M11	Spindle chuck open	M211	Start the first backup M code
M13	Spindle CW+ coolant oil	M212	concel the first backup M code
M14	Spindle CCW+ coolant oil cancel	M213	Start the second backup M code
M30	End of program	M214	Cancel the second backup M code
M32	Cut off detection	M215	Start the third backup M code
M34	Threading 45° back-off	M216	Cancel the third backup M code
M35	Threading 90° back-off	M217	Start the forth backup M code
M38	C axis mode enable	M218	Cancel the forth backup M code
M39	C axis mode unable	M219	Start the fifth backup M code
M43	Cut-off tool turning head of bar automatically	M220	Cancel the fifth backup M code
M60	Bar feeder pressure off	M500 ~ M660	Spindle load detector
M61	Bar feeder pressure on		
M62	bar feeder backward by bar change	M1000 ~ M1100	Main/Sub system Waiting command
M63	Confirm bar change finished		
M94	Single block bypass mode OFF		
M95	Single block bypass mode ON		
M98	Call sub programmeme		
M99	Programmeme cycle/sub programmeme finish		
M100	Spindle position (M100 C___;)		
M110	Sub spindle chuck close		
M111	Sub spindle chuck open		
M113	Side/Face drilling CW		

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■ M CODE LIST FOR SUB SPINDLE

CODE	DESCRIPTION	CODE	DESCRIPTION
M00	Programme stop	M211	Start the first backup M code(W/ $1share)
M01	Optional programme stop	M212	Cancel the first backup M code (W/ $1share)
M02	End of programme	M213	Start the second backup M code(W/ $1share)
M03	Spindle CW	M214	Cancel the second backup M code (W/ $1share)
M04	Spindle CCW	M215	Start the third backup M code(W/ $1share)
M05	Spindle stop	M216	Cancel the third backup M code (W/ $1share)
M06	Spindle position	M217	Start the forth backup M code(W/ $1share)
M07	Spindle position cancel	M218	Cancel the forth backup M code (W/ $1share)
M08	Coolant oil	M219	Start the fifth backup M code(W/ $1share)
M09	Coolant oil cancel	M220	Cancel the fifth backup M code (W/ $1share)
M10	Spindle chuck close	M231	Start inner coolant oil for sub spindle
M11	Spindle chuck open	M232	Stop inner coolant oil for sub spindle
M13	Spindle CW+ coolant oil	M500 ~ M660	Spindle load detector
M14	Spindle CCW+ coolant oil cancel		
M18	Parts conveyor active	M1000 ~ M1100	Main/Sub system Waiting command
M24	Sub Spindle air blow on		
M25	Sub Spindle air blow off		
M30	End of programme		
M31	Pusher forward (Cylinder pusher)		
M32	Pusher backward (Pnumatic cylinder pusher)		
M33	Pnumatic cylinder pusher		
	Enjecting parts detection		
M34	Threading 45° back-off		
M35	Threading 90° back-off		
M38	C axis mode enable		
M39	C axis mode unable		
M98	Call sub programmeme		
M99	Programmeme cycle/sub programmeme finish		
M100	Spindle position (M100 C___;)		
M113	Face drilling CW		
M114	Face drilling CCW		
M115	Face drilling stop		

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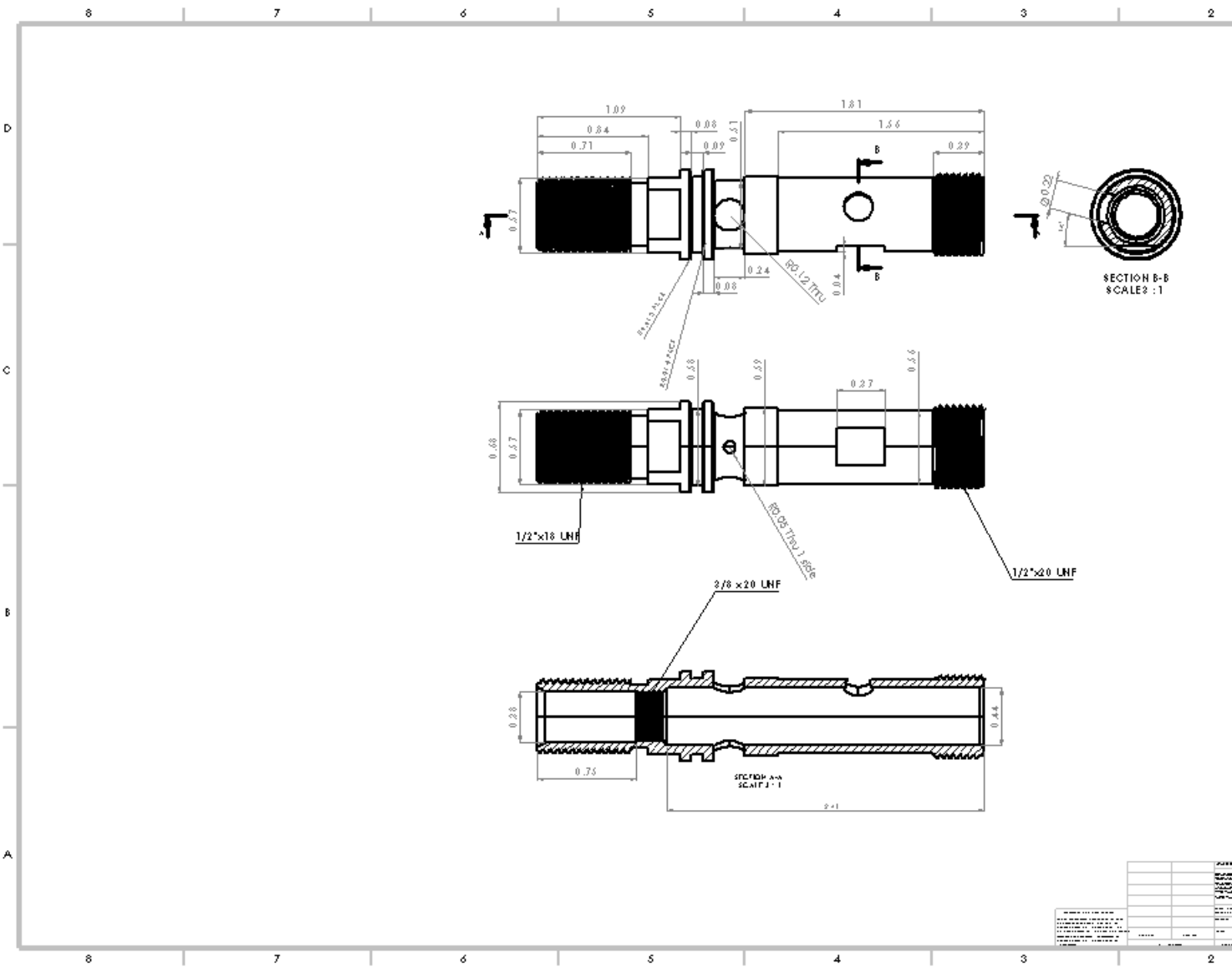
Sample Part



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Sample Program

```
$1
(DEMO SL20Y2)
(MAIN SPINDLE)
(.6875 TITANIUM MATERIAL)

M43S1500F0.0005
M11
G4X1.0
G300X-0.02Z3.75T0101
G50Z0.
M0
M10
G4X1.0
M0
G0X1.0Z-0.005
M1000
M1

N11(INSERT DRILL .435)
G97M13S1091T1111
G99G0X0Y0Z-.1M9
M9
Z-.1
M217
G1Z.25F.001
Z2.5F.0025
G0Z-.1
M218
M5
M1

N12(DRILL .325)
G97M13S1468T1212
G99G0X0Y0Z-.1
Z-.1
Z2.3
G1Z2.45F.0025
G0Z-.1
```

```
Z2.43
G1Z2.5
G0Z-.1
Z2.49
G1Z2.55
G0Z-.1
M5
M1

N13(BB R.015 ROUGH)
G97M13S800T1313
G99G0X.5265Y0Z-.1
Z-.1
G1Z-.005F.0035
G3X.4253Z.0456R.0506
G1Z2.4121
X.4
G0Z-.05
X.5265
G1Z-.0015
G3X.4323Z.0456R.0471
G1Z2.4135
X.4
G0Z-.005
G1X.69
G0Z-.1
M5
M1

N14(BB R.008 FINSH)
G97M13S750T1414
G99G0X.5113Y0Z-.2
Z-.1
Z-.02
G1Z0F.001
G3X.4353Z.038R.038
G1Z2.4097F.002
X.3397Z2.4575F.0005
X.3255Z2.4504
G0Z-.1
M5
M1

N2222(TURN R.016 ROUGH)
G97M13S1431T0202
```

```
G99G0X.690Y0Z-.01
G1X-.035F.0025
G0X.7Z-.02
G1X.63F.005
Z.477
X.69
G0Z-.0026
G1X.63
X.57
Z-.0078
X.63
G0Z-.0026
G1X.57
X.5172
Z-.0025
X.5345
G2X.5601Z.0028R.0181
G1X.614Z.0298
G2X.6246Z.0426R.0181
G1Z.3987
G2X.6186Z.4087R.0181
G1X.57Z.4454
Z.500
G0X.69
G0Z-.02
M5
M9
M1

N3(TURN R.008 FINSH)
G97M13S1600T0303
G99G0X.71Y0Z-.1
Z-.001
G1X.4F.0025
G0X.5497Z-.02
G1Z-.0005F.005
G2X.5617Z.002R.0085
G1X.6156Z.0289
G2X.6206Z.0349R.0085
G1Z.3711
G2X.6156Z.3771R.0085
G1X.5637Z.403
G0X.69
Z-.01
X.5497
```

```
G1Z0F.0025
G2X.561Z.0023R.008
G1X.6149Z.0293
G2X.6196Z.0349R.008
G1Z.3711
G2X.6149Z.3767R.008
G1X.5627Z.4028
G0X.69
Z0
X.65
G1X.3
G0Z-.1
M5
M1

N5(EXTERNAL THREADING)
G97M13S1000T0505
G99G0X.690Y0Z-.15
G92X.6Z.44F.050
X.595
X.590
X.585
X.580
X.575
X.570
X.565
X.564
X.564
G0X.75
Z-.1
M5
M1

(SECOND ROUGH)

N22(TURN R.016 ROUGH ROUGH SECOND TIME)
G97M13S1431T0202
G99G0X.690Y0Z.3
Z.4
G1X.63F.005
Z1.25
X.69
G0Z.4
G1X.63
X.57
```

```
Z1.25
G0X.75
M5
M1

N33(TURN R.008 FINSH SECOND TIME)
G97M13S1600T0202
G99G0X.7Y0Z.3997
X.69
G1X.6946F.0025
X.6239Z.3644
X.55Z.4013
Z1.25
G0X.7
Z1.25
G0X.69
Z.4
M5
M1

N222(.3125 END MILL )
M38
T2222
M113S3=1100
G98G0Y.75X.9Z.904C0.
G1Y.482F5.
X-.9
Z.961
X.9
Z.903
X-.9
Z.962
X.9
G0Y.750
M115
M39
M1

N23(.218 CARBIDE DRILL )
M38
T2323
M113S3=1500
G98G0Y.750X0Z.952C104.
Y.6
G1Y.25F1.0
```

```
Y.6F5.0
G0Y.750
M115
M39
M1

N22(TURN R.016 ROUGH THIRD TIME)
G97M13S1431T0202
G99G0X.690Y0Z1.2
X.6
G1Z1.560F.005
G0X.69
Z1.2
G1X.57
X.5677
Z1.56
X.57Z1.5603
X.6
Z1.85
G0X.75
M5
M1

N33(TURN R.008 FINSH THIRD TIME)
G97M13S1600T0202
G99G0X.710Y0Z1.23
G1X.55Z1.24F.0025
Z1.562
X.5563
G2X.5843Z1.575R.013
G1Z1.85
G0X.73
M5
M1

(FOURTH ROUGH)

N222(TURN R.016 ROUGH FOURTH TIME)
G97M13S1500T0202
G99G0X.7Y0Z2.0
X.6894
G1Z2.7F.005
G0X.75
M5
M1
```

N333(TURN R.008 FIN FOURTH TIME)
G97M13S1500T0303
G99G0X.710Y0Z2.0
X.6847
G1Z2.7F.0025
G0X.75
M5
M1

N4(GROOVE TOOL)
G97M13S1200T0404
G99G0X.690Y0Z1.8762
X.69
G1X.65F.0035
G0X.69
X.666
G1X.61
G0X.69
X.626
G1X.5957
G0X.69
Z1.8935
G1X.65
G0X.69
X.666
G1X.61
G0X.69
X.626
G1X.5957
G0X.69
Z1.9188
G1X.65
G0X.69
X.666
G1X.61
G0X.69
X.626
G1X.57
G0X.69
X.586
G1X.53
G0X.69
X.546
G1X.5177

G0X.69
Z1.9442
G1X.65
G0X.69
X.666
G1X.61
G0X.69
X.626
G1X.57
G0X.69
X.586
G1X.53
G0X.69
X.546
G1X.5177
G0X.69
Z1.9695
G1X.65
G0X.69
X.666
G1X.61
G0X.69
X.626
G1X.57
G0X.69
X.586
G1X.53
G0X.69
X.546
G1X.5177
G0X.69
Z1.9948
G1X.65
G0X.69
X.666
G1X.61
G0X.69
X.626
G1X.57
G0X.69
X.586
G1X.53
G0X.69
X.546
G1X.5177

G0X.69
Z2.0202
G1X.65
G0X.69
X.666
G1X.61
G0X.69
X.626
G1X.57
G0X.69
X.586
G1X.53
G0X.69
X.546
G1X.5177
G0X.69
Z2.0455
G1X.65
G0X.69
X.666
G1X.61
G0X.69
X.626
G1X.57
G0X.69
X.586
G1X.53
G0X.69
X.546
G1X.5177
G0X.69
Z2.062
G1X.6897
G0X.69
Z2.0827
G1X.6897
G0X.69
Z2.1033
G1X.6897
G0X.69
Z2.124
G1X.6897
G0X.69
Z2.1477
G1X.6897

```
G0X.69
Z2.1713
G1X.6897
G0X.69
Z2.195
G1X.6897
G0X.69
Z2.2115
G1X.65
G0X.69
X.666
G1X.61
G0X.69
X.626
G1X.5857
G0X.69
Z2.2175
G1X.65
G0X.69
X.666
G1X.61
G0X.69
X.626
G1X.5857
G0X.69
Z2.234
G1X.6897
G0X.69
( MAIN SPINDLE )
Z1.882
G1X.5907F.0015
G2X.5727Z1.891R.009
G1X.5149
X.5138Z1.8911
G3X.5127Z1.892R.001
G1Z2.000
G0X.7
( MAIN SPINDLE )
Z2.067
G1X.6847
G3X.6567Z2.053R.014
G1X.5149
X.5138Z2.0529
G2X.5127Z2.052R.001
G1Z1.99
```

```
G0X.69
( MAIN SPINDLE )
Z2.195
G1X.6847
G2X.6567Z2.209R.014
G1X.5827
G3X.5807Z2.21R.001
G1Z2.211
G0X.69
( MAIN SPINDLE )
Z2.239
G1X.6847
G3X.6567Z2.225R.014
G1X.5827
G2X.5807Z2.224R.001
G1Z2.210
G0X.71
(BACK GROOVE)
Z2.632
G1X.481F.002
G0X.71
Z2.68
G1X.481
G0X.71
Z2.686
G1X.5619F.0015
G3X.5596Z2.6832R.004
G1X.5554Z2.6811
G3X.5356Z2.677R.014
G1X.4807
Z2.65
G0X.71
Z2.615
G1X.6847
G2X.6567Z2.629R.014
G1X.4807
Z2.665
G0X.75
M5
M1

N25(.234 CARBIDE DRILL )
M38
T2525
M113S3=1468
```

```
G98G0Y1.00X0Z1.930C90.
Y.72
G1Y.3F1.0
Y.7F5.0
G0H180.
G1Y.3F1.0
Y.7F5.0
G0Y1.0
M115
M39
M1

N24(.093 CARBIDE DRILL )
M38
T2424
M113S3=2600
G98G0Y1.00X0Z1.930C0.
Y.72
G1Y.3F1.0
Y.7F5.0
G0Y1.0
M115
M39
M1

N99(CUT OFF W.098)
G97M13S1000T0101
G99G0X0.710Z3.487
M1007
M133S1000R0
M1008
M1009
M8
G1X-0.05F0.001
M1010
M1011
M135
M9
M95
G4U0.1
G4U0.1
(/M192S1600F0.0016)
G4U0.1
M94
M1012
```

```
M5
M30

$2
(DEMO SL20Y2)
(SUB SIDE)
G28W0.
M1000

N1(TURN R.016)
G97M14S1600T3131
G99G0X0.72Y0
Z.005
G1X-.035F.0025
G0X.63Z.05
G1Z-.8345
X.6535
G3X.6897Z-.8526R.0181
G1Z-.8676
X.69
G0Z.0026
G1X.63
X.57
Z-.8345
X.63
G0Z.0026
G1X.57
X.51
Z-.0093
X.5577Z-.0331
G3X.5683Z-.046R.0181
G1Z-.8345
X.57
G0Z.0026
G1X.51
X.45
Z.0025
X.4714
G3X.497Z-.0028R.0181
G1X.51Z-.0093
G0Z.0026
G1X.45
X.39
Z.0025
X.45
```

```
G0Z.0026
G1X.39
X.3768
Z.0025
X.39
G0X.69
Z.1
M5
G28W0
M1

N36(DRILL .375)
G97M13S500T3636
G99G0X0Y0
Z.1
G83Z-.865Q.075F.0035
G0G80Z.1
M5
G28W0
M1

N35(DRILL .323)
G97M13S400T3535
S4=400M113
G99G0X0Y0
Z-.65
G83Z-1.0Q.035F.0025
G0G80Z.1
M5
M115
G28W0
M1

N37(BB R.008 ROUGH)
G97M13S1696T3737
G99G0X.33Y0
Z.1
G1Z.0026F.005
Z-.9595
X.31
G0Z.0026
G1X.33
X.35
Z-.7672
X.3362Z-.7741
```

G2X.33Z-.7815R.0105
G0Z.0026
G1X.35
X.37
Z-.7572
X.35Z-.7672
G0Z.0026
G1X.37
X.39
Z-.0575
X.3816Z-.0647
G2X.3788Z-.07R.0105
G1Z-.7528
X.37Z-.7572
G0Z.0026
G1X.39
X.41
Z-.0402
X.39Z-.0575
G0Z.0026
G1X.41
X.43
Z-.0228
X.41Z-.0402
G0Z.0026
G1X.43
X.45
Z-.0055
X.43Z-.0228
G0Z.0026
G1X.45
X.47
Z.0025
G2X.4532Z-.0027R.0105
G1X.45Z-.0055
G0Z.0026
G1X.47
X.49
Z.0025
X.4714
X.47
G0Z.0026
G1X.49
X.495
Z.0025

```
X.49
G0X.31
G0Z.05
M5
G28W0
M1

N301(TURN R.016)
G97M14S1550T3131
G99G0X.4714Y0
Z.1
G1Z0F.0025
G3X.4935Z-.0046R.0156
G1X.5542Z-.0349
G3X.5633Z-.046R.0156
G1Z-.837
X.6535
G3X.6847Z-.8526R.0156
G1
G0X.72
Z0
X.6
G1X.3
G0Z.1
M5
G28W0
M1

N33(BB R.008 FINSH)
G97M13S1696T3333
G99G0X.4829Y0
Z.1
G1Z0F.0025
G2X.4518Z-.009R.018
G1X.3886Z-.0637
G2X.3838Z-.0727R.018
G1Z-.7538
X.3827Z-.7543
X.3455Z-.7729
G2X.335Z-.7856R.018
G1
G0Z.25
M5
G28W0
M1
```

```
N32(THREADING EXTERNAL)
G97M13S1000T3232
G99G0X0.65Y0Z.3
Z.25
G76P010060Q.0015R.001
G76X.496Z-.8R0.0P.0415Q.002F.0556
G0X.65
Z.25
M5
G28W0
M1

N38(THREADING INTERNAL)
G97M13S1000T3838
G99G0X0.32Y0Z.3
Z-.65
G76P010060Q.0015R.001
G76X.375Z-1.1R0.0P.020Q.002F.0416
G0X.32
Z.25
M5
G28W0
M1

N34(1/4 END MILL)
T3434
G0G53Z0
G97M113S4=1000
M8
M38
G0G98Y0.C0.
X1.1803
Z.1
G12.1
G1X.5281C.2633F200.
Z-1.087F6.
G41X.4281F5.
C-.4285
X-.4289
C.4285
X.4281
C.2633
G40X.5281
Z.25F200.
```

```
G13.1
G0X1.1803
( OPERATION 10, MILL CONTOUR )
X1.1535Y0.C0.
G12.1
G1X.5131C.2633F200.
Z-1.087F6.
G41X.4131F5.
C-.4135
X-.4139
C.4135
X.4131
C.2633
G40X.5131
Z.25F200.
G13.1
G0X1.1535
( OPERATION 11, MILL CONTOUR )
X1.1447Y0.C0.
G12.1
G1X.5081C.2633F200.
Z-1.087F6.
G41X.4081F5.
C-.4085
X-.4089
C.4085
X.4081
C.2633
G40X.5081
Z.25F200.
G13.1
G0G53Z0
M9
M115
M39(INDEXING OFF)
M1

N90(PART EJECTION)
T3939
G0X0.
Z-1.5
M24
M11
G4X.5
M31
```

```
G4X0.5
M32
G04X1.
M31
G4X1.
M18
G28W0.
M32
T3030
M24
G4U0.5
M32
G4U0.5
M25
M1

N99(PICK OFF)
T3030
G0X0.
M11
M1007
M1008
G0Z.2
G98G1Z-2.0F10.
Z-2.125F5.0
M10
G4U0.5
M1009
M1010
G1W0.04F40
M1011
G28W0.
M1012
M1
M30
%
```

END OF PROGRAM

Tool Layout

MAIN SPINDLE

T0101 CUT OFF

T0202 ROUGH TURN R.016

T0303 FINISH TURN R.008

T0404 OD GROOVE W.094

T0505 EXT THREADING -20

T1111 INSERT DRILL .435

T1212 DRILL .325

T1313 BB ROUGH ID R.015

T1414 BB FINSH ID R.008

T2222 END MILL .3125

T2525 CARBIDE.234 DRILL

T2323 CARBIDE DRILL .218

T2424 MICRO DRILL .093

SUB SPINDLE

T3131 ROUGH TURN

T3232 EXTERNAL THREADING

T3636 DRILL .375

T3535 .328 DRILL

T3737 BORING BAR ROUGH

T3333 BORING BAR FINISH

T3838 INTERNAL THREADING

T3434 1/4 END MILL

How To Take Tool Offsets

Overview:

The tool change macros automatically set the tool offsets at a predetermined location for standard swiss style tooling. When installing a tool, you call the empty tool station to a known position over the material and place the tool in the tool block while letting it rest on the material. **Your offset values will be zero.**

If you have **non-standard tooling**, it may be necessary to "Measure" the tool offset.

When measuring the tool, the offsets value will be the difference between the macro position and the tool position. The main spindle reference tool is T101. The sub spindle reference tool is T3030.

Please read the tool setting procedure for both cases below.

MAIN SPINDLE

Setting reference tool (T101) for standard swiss style tooling

IMPORTANT!!
Before you set any tools, you must set T101 parting/reference tool. (Standard Metric Tooling)

1. Make sure the tool #1 offsets in length and wear are set to zero.
2. Always start by calling up T0100 to the stock diameter in X without a tool mounted in the tool block.
   i.e. T0100 G0 X.75; for .750" (diameter stock).
3. Place the Parting tool in the tool block and drop it down on top of the .750" material.
4. Tighten the tool in place. (The X axis offset value should be zero)
5. Use the handwheel to move the material to a Z position to create a "top cut" (make a clean face on the stock material).
6. Run the first section of the program to create a clean face on the material and establish the Z1 axis zero reference.
7. Your parting tool and Z reference zero are now set. Use this material face to set the remaining tools.

IMPORTANT NOTE: If you unclamp the material or turn the machine off, you must repeat steps 5 thru 6 before setting other tools.

Setting STANDARD Turning Tools

1. Before setting tools, make sure the parting/refence tool has been set. (Steps 5-6 of reference tool setting must be run before proceeding to the next steps)
2. Use MDI to call the empty tool position to the stock value.
   i.e. G0 T0200 X.75;
3. Place tool in tool block and drop it down to the top of the .750" diameter material.
4. Tighten tool. If this is a standard right hand turning tool, you are done.
   If the tool is not standard, see NON-STANDARD TOOL SETTING below.

Setting ID tools

1. Place the ID tool in the tool station. Leave the tool loose and push the tool as far back from the spindle possible.
2. In MDI call up the tool to Z zero.
   i.e. G0 T1100 Z0. ; (The machine will move to the center of T1111 and the material will be at Z zero)
3. Move the tool against the face of the material.
4. Tighten tool.
5. If the tool is a center working tool, like drill, you are done.
6. If tool is a boring bar, find the distance from the tool tip to the center of the tool, multiply it by 2 and enter it in the X axis offset "Length" value.

NON-Standard Tool Setting

If you are using a back turn (left hand) tool or a long ID tool, you will need to measure the tool offset.

Non-Standard Tool Offset Setting X Axis

1. Clear offset values from the Length and Wear offset table for the desired tool.
2. In MDI, call tool to be measured
   i.e. T0200
3. In Manual Mode, use hand wheel to turn a diameter.
4. Measure the diameter i.e. .748"
5. Go the Monitor page and select "Offsets".
6. Select "Length" Offsets
7. Cursor to the desired X Length offset
8. Input ".748"
9. Press "Measure"

Non-Standard Tool Offset Setting Z Axis

1. Clear offset values from the Length and Wear offset table for the desired tool.
2. In MDI, call tool to be measured
   i.e. T0200
3. In Manual Mode, use hand wheel to touch off part face using a .250" diameter pin.
4. Go the Monitor page and select "Offsets".
5. Select "Length" Offsets
6. Cursor to the desired Z Length offset
7. Input ".250"
8. Press "Measure"

SUB SPINDLE

Note: The X and Y offsets for the center of the ID tool stations are preset by the tool change macros.

Setting Length Offsets for driven or fixed tooling in ID stations

1. Clear offset values from the Length and Wear offset table for the desired tool.
2. In MDI, call tool to be measured
   i.e. T3100
3. In Manual Mode, use hand wheel to touch off part face using a .250" diameter pin.
4. Go the Monitor page and select "Offsets".
5. Select "Length" Offsets
6. Cursor to the desired Z Length offset
7. Input ".250"
7. Press "Measure" If center tool like a drill, your done.
   If the tool is a boring bar, find the distance from the tool tip to the center of the tool, multiply it by 2 and enter it in the X axis offset "Length" value.

Using Sub Spindle Turning Tool Stations 1-3

1. Clear offset values from the Length and Wear offset table for the desired tool.
2. In MDI, call tool to be measured
   i.e. T0100
3. In Manual Mode, use hand wheel to turn a diameter.
4. Measure the diameter i.e. ".498"
5. Go the Monitor page and select "Offsets".
6. Select "Length" Offsets
7. Cursor to the desired X Length offset
8. Input ".498"
9. Press "Measure"

Notes on taking offsets:

It is very important to call up the tool with no offset before using the “Measure” Function.