Instructional Video Series
GenTurn SL42Y2
Video Support Document

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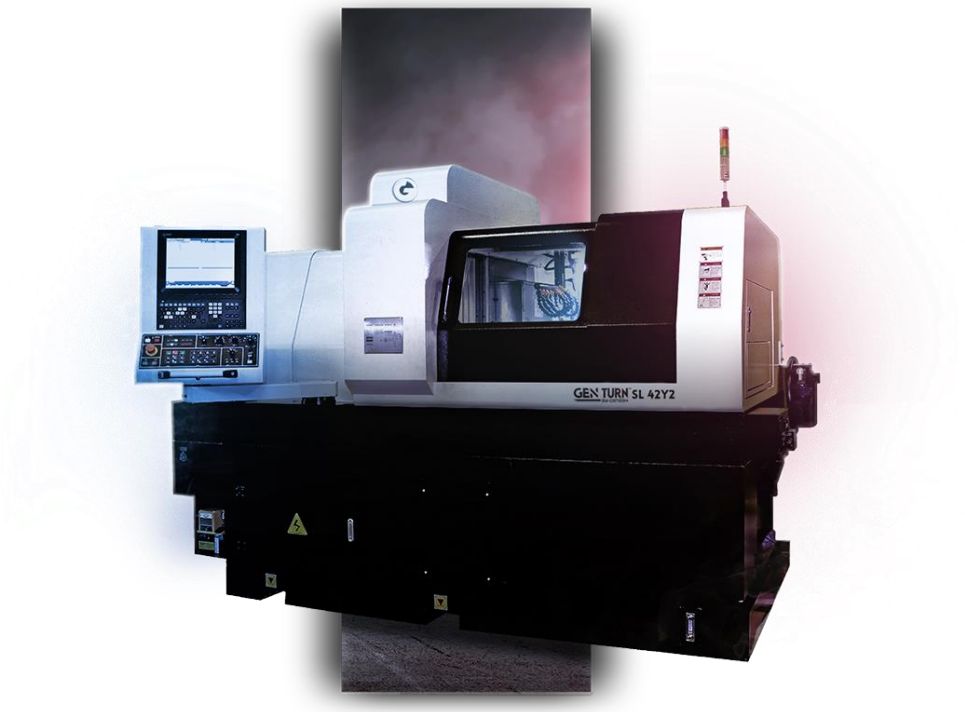

Introduction

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

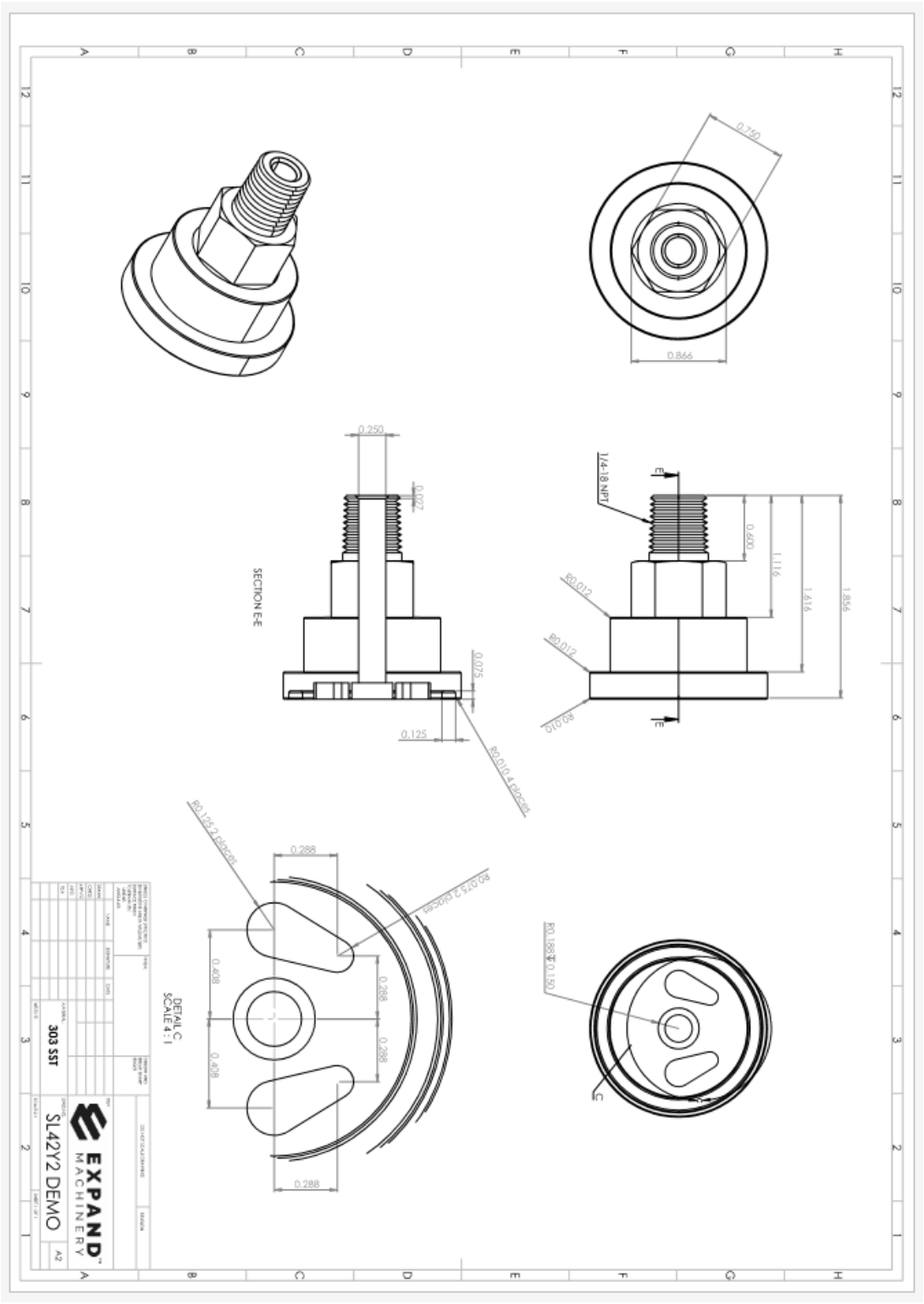
■ M CODE LIST FOR MAIN SYSTEM

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		

■ 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		

Sample Part



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Sample Program

```
$1

(IMTS 2018 SL42Y2)
(MAIN SPINDLE)

M43S1500F0.0035
M11
G4X1.0
G300X-0.04Z3.275T0101
G50Z0.
M10
G4X1.0
G0X1.6Z-0.65
M1000(WAIT CODE)
M1

N6(TURNING TOOL DEG R.015 ROUGH)
G97M03S1800T0606
G99G0X1.65Z-.0025
G1X1.62F0.0035
G0X1.625Z-.1
G71U.049R.02
G71P10Q20U.005W.0025F.0135
N10G1X.4427F.0025
Z0
X.5118Z.0345
X.54Z.5412
Z.6
X.7229
X.866Z.6192
Z1.1155
X1.25
Z1.6155
X1.61
G1Z1.990
N20X1.625
G0Z-.05
G0X1.7
M1
```

```
N3(TURNING TOOL  R.015)
G97M03S2200T0303
G99G0X.9Z-.05
Z.599
G1X.545F.005
Z.597
G0X1.3
Z1.1145
G1X.876
Z1.1135
G0X1.7
Z1.6145
G1X1.255
Z1.6135
G0X1.65
Z-.05
X.4427
G1Z0F.0045
X.5118Z.0345
X.54Z.5412
Z.6
X.7229
X.825Z.6137
G2X.866Z.6404R.0276
G1Z1.1155
X1.1587
G2X1.25Z1.1612R.0456
G1Z1.6155
X1.5188
G2X1.61Z1.6612R.0456
G1Z1.999
G0X1.65
Z0
X.625
G1X-.035
G0Z-.05
X1.6
M1

N5(NPT THREADING)
G97M03S1800T0505
G99G0X.75Z-.15
G76P010060Q.01R.001
G76X.4884Z.5R-.0187P.0445Q.020F.055556
```

```
G0X1.00
Z-.05
G0X1.6
M1

N11(5/16 SPOT DRILL)
G97M03S1100T1111
G99G0X0Z-0.1
G83Z.15Q0.1F0.0035
G80
G0Z-.5
M1

N12(.250 DRILL )
G97M03S1300T1212
G99G0X0Z-0.1
G83Z1.35Q0.15F0.0045
G80
G0Z-.5
M05
M1

N21(1/2" 4FLT STUB E/MILL)
M38
T2121
M113S3=1400
G0G98X1.65Y1.7378Z-.1C0.
Z.6555
G1X.75F150.
G42Z.6055F15.
X.7501Y-.463
X.75Z.8655
Y1.6636
G40Z.8155

G0Y1.7378Z.6555C-60.

G1X.75F150.
G42Z.6055F15.
X.7501Y-.463
X.75Z.8655
Y1.6636
G40Z.8155

G0Y1.7378Z.6555C-120.
```

```
G1X.75F150.
G42Z.6055F15.
X.7501Y-.463
X.75Z.8655
Y1.6636
G40Z.8155

G0Y1.7378Z.6555C-180.

G1X.75F150.
G42Z.6055F15.
X.7501Y-.463
X.75Z.8655
Y1.6636
G40Z.8155

G0Y1.7378Z.6555C-240.

G1X.75F150.
G42Z.6055F15.
X.7501Y-.463
X.75Z.8655
Y1.6636
G40Z.8155

G0Y1.7378Z.6555C-300.

G1X.75F150.
G42Z.6055F15.
X.7501Y-.463
X.75Z.8655
Y1.6636
G40Z.8155
G0X1.
X1.65
M115
Z-.1
M39
M1

N23(ENGRAVING)
M38
T2323
M113S3=4000
```

G0G98X1.65Y0.Z-.16C-360.495
Z1.4086
X1.5
G1X1.24F15.
X1.2399Z1.3743C-360.969F387.5446
C-374.52F916.7325
X1.2397Z1.3964C-374.662F64.8534
X1.2394Z1.4185C-374.519F65.2814
X1.239Z1.4401C-374.1F189.8341
X1.2387Z1.461C-373.412F310.7157
X1.2386Z1.4807C-372.468F424.907
X1.2385Z1.4982C-371.328F530.9477
Z1.5135C-370.016F626.5998
Z1.5265C-368.557F709.5595
X1.2386Z1.5372C-366.975F778.641
X1.2388Z1.5456C-365.294F833.5225
X1.2389Z1.5516C-363.538F874.3736
X1.2391Z1.5553C-361.731F901.4963
X1.2392Z1.5565C-359.897F915.0556
X1.2394Z1.5552C-358.061F914.9292
X1.2396Z1.5515C-356.246F900.6809
X1.2397Z1.5452C-354.476F871.6659
X1.2398Z1.5363C-352.777F827.2726
X1.2399Z1.5249C-351.171F767.2864
Z1.5108C-349.684F692.3092
Z1.494C-348.338F604.0929
X1.2398Z1.4688C-346.867F492.2392
X1.2397Z1.4429C-345.891F348.3473
Z1.4167C-345.379F191.6384
Z1.3907C-345.297F32.78
X1.2396Z1.3653C-345.615F124.3642
Z1.341C-346.299F268.9983
X1.2397Z1.3182C-347.318F401.0949
Z1.2973C-348.638F520.1149
Z1.2787C-350.228F626.3144
Z1.263C-352.056F719.5908
X1.2398Z1.2505C-354.088F798.6973
Z1.2417C-356.294F860.8156
Z1.237C-358.64F901.6991
Z1.2368C-361.094F916.7206
X1.2399Z1.2417C-363.625F902.8534
Z1.252C-366.199F860.7487
Z1.2973C-364.262F387.5339
Z1.2907C-362.644F859.2973
X1.2398Z1.2874C-361.036F900.6146

```
Z1.2871C-359.458F916.5539
Z1.2895C-357.933F907.1892
Z1.2944C-356.479F875.1545
X1.2397Z1.3017C-355.117F824.0625
Z1.311C-353.868F757.1475
Z1.3221C-352.753F676.5612
Z1.3348C-351.792F583.2641
Z1.3489C-351.005F477.3067
Z1.3641C-350.414F358.3763
Z1.3802C-350.038F226.5879
Z1.3969C-349.898F83.6389
Z1.4141C-350.015F68.7675
X1.2398Z1.4314C-350.41F220.7915
X1.2399Z1.4488C-351.102F366.6491
Z1.4643C-352.018F496.5389
X1.24Z1.4773C-353.096F614.3999
Z1.4878C-354.307F716.2456
X1.2401Z1.496C-355.625F797.8371
Z1.5017C-357.022F857.6155
Z1.5052C-358.471F896.0415
Z1.5063C-359.946F914.5186
X1.24Z1.5051C-361.419F914.4446
Z1.5018C-362.862F896.624
Z1.4963C-364.249F861.0472
Z1.4886C-365.553F806.9883
X1.2399Z1.4788C-366.746F733.4202
Z1.467C-367.801F639.764
Z1.4532C-368.691F526.8931
Z1.4374C-369.389F398.0505
Z1.4197C-369.868F259.0969
X1.2401C-367.159F916.7234
X1.2406C-364.449F916.7071
X1.2407C-361.74F916.7314
X1.2399C-359.031F916.6501
X1.24Z1.4086C-359.505F387.4931
G0X1.65
Z-.1
M115
M39
G18
M1

N99(CUT OFF W.118)
T0101
G99G0X1.7Z1.995
```

```
M1007(WAIT CODE)
M133S50R0
M1008(WAIT CODE)
M1009(WAIT CODE)
M39
M1010
S1300
(M8)
M1011
M1012
G1X-.02F0.0032
M1013(WAIT CODE)
M1014(WAIT CODE)
M135
M5
(***Remove parenthesis for Bar Feed***)
(M95)
G4U0.1
(/M192S1600F0.0016)
G4U0.1
(M94)
M1015
M30


$2

(SUB SPINDLE IMTS)
M5
G28W0
M1000
N1
T0101
G99G97G80G40G18G0
G97S2=2300M4
G0X1.65Y0
Z.01
G1G99X.375F.005
G0Z.1
X1.65
Z-.05
G1X1.625F.0025
Z-.0256
G2X1.5737Z0.R.0256
G1X.375
```

```
G0Z2.5
M05
M1

N36(FACE GROOVING)
M05
G4X.5
G97M03S1300T3636
G99G0X1.555Y0
Z.1
G1Z.0025F.002
G0Z.05
X1.52
G1Z-.01
Z-.005
Z-.02
Z-.005
Z-.03
Z-.025
Z-.04
Z-.035
Z-.05
Z-.045
Z-.06
Z-.055
Z-.067
G0Z.05
X1.518
G1Z-.01
Z-.005
Z-.02
Z-.005
Z-.03
Z-.025
Z-.04
Z-.035
Z-.05
Z-.045
Z-.06
Z-.055
Z-.065
Z-.06
Z-.069
G0Z.05
X1.518
```

```
G1Z-.0708
G0Z.05

X1.561
G1Z0.F.001
G2X1.525Z-.018R.018
G1Z-.068
G3X1.511Z-.075R.007
G0Z.05

X1.475
G1Z0.
G3X1.511Z-.018R.018
G1Z-.068
G2X1.518Z-.074R.007
X1.525Z-.068R.007
G1Z-.018
G3X1.561Z0.R.018
G0Z.1
G0Z2.5M5
M1

N38(.250 DRILL )
G97M03S1500T3838
G99G0X0Z.1
G83Z-.75Q0.1F0.0045
G80
G0Z2.5
M05
M1

N37(BORING BAR)
G97M03S1900T3737
G99G0X.27Z.1
G1Z.0026F.0095
Z-.1475
X.266
G2X.25Z-.1512R.0105
G0Z.0026
G1X.27
X.29
Z-.1475
X.27
G0Z.0026
G1X.29
```

X.31
Z-.1475
X.29
G0Z.0026
G1X.31
X.33
Z-.1475
X.31
G0Z.0026
G1X.33
X.35
Z-.1475
X.33
G0Z.0026
G1X.35
X.37
Z-.1475
X.35
G0Z.0026
G1X.37
X.39
Z.0025
G2X.37Z-.008R.0105
G0Z.0026
G1X.39
X.41
Z.0025
X.391
X.39
G0Z.0026
G1X.41
X.43
Z.0025
X.41
G0Z.0026
G1X.43
X.4357
Z.0025
X.43
G0X.25
Z.05
X.411
G1Z0.F.0035
G2X.375Z-.018R.018
G1Z-.15

```
X.266
G2X.25Z-.158R.008
G1
G0Z2.5
M05
M1

N32(END MILL .125)
M38
M113S4=4000
T3232
G17
G0C0.
G0G98X.7578Y.1447C0.
Z.1
G1Z-.05F2.
X.7018Y.1314F6.0
X.6629Y.1223
X.6982Y-.0276
G3X.9171Y.0631R.06
G1X.5933Y.5868
G3X.5568Y.5717R.01
G1X.6629Y.1223
X.7018Y.1314
G0Z.05
X.7578Y.1447
Z.05
G1Z-.1F2.
X.7018Y.1314F6.0
X.6629Y.1223
X.6982Y-.0276
G3X.9171Y.0631R.06
G1X.5933Y.5868
G3X.5568Y.5717R.01
G1X.6629Y.1223
X.7018Y.1314
G0Z.02
X.7578Y.1447
Z0.
G1Z-.15F2.
X.7018Y.1314F6.0
X.6629Y.1223
X.6982Y-.0276
G3X.9171Y.0631R.06
G1X.5933Y.5868
```

```
G3X.5568Y.5717R.01
G1X.6629Y.1223
X.7018Y.1314
G0Z.01
( OPERATION 10, MILL ROUGHING )
( BACK SIDE )
( TOOL POSITION 1, .125 DIA. FINISH ENDMILL )
G0G98X-.7531Y.1427
G1Z-.05F2.
X-.8021Y.173F6.0
X-.8361Y.194
X-.9171Y.0631
G3X-.6982Y-.0276R.06
G1X-.5568Y.5717
G3X-.5933Y.5868R.01
G1X-.8361Y.194
X-.8021Y.173
G0Z.02
X-.7531Y.1427
Z.02
G1Z-.1F2.
X-.8021Y.173F6.0
X-.8361Y.194
X-.9171Y.0631
G3X-.6982Y-.0276R.06
G1X-.5568Y.5717
G3X-.5933Y.5868R.01
G1X-.8361Y.194
X-.8021Y.173
G0Z.02
X-.7531Y.1427
Z0.
G1Z-.15F2.
X-.8021Y.173F6.0
X-.8361Y.194
X-.9171Y.0631
G3X-.6982Y-.0276R.06
G1X-.5568Y.5717
G3X-.5933Y.5868R.01
G1X-.8361Y.194
X-.8021Y.173
G0Z.02
( OPERATION 12, MILL CONTOUR )
( BACK SIDE )
( TOOL POSITION 1, .125 DIA. FINISH ENDMILL )
```

```
X.8542Y.0982
G1Z-.14F15.
Z-.15F1.5
X.8883Y.1192F8.5
X.9213Y.0657
G2X.6933Y-.0287R.0625
G1X.552Y.5706
G2X.5976Y.5894R.0125
G1X.8883Y.1192
X.8542Y.0982
G0Z.02
( OPERATION 13, MILL CONTOUR )
( BACK SIDE )
( TOOL POSITION 1, .125 DIA. FINISH ENDMILL )
X-.7167Y.0465
G1Z-.14F15.
Z-.15F1.5
X-.6778Y.0373F8.5
X-.6933Y-.0287
G2X-.9213Y.0657R.0625
G1X-.5976Y.5894
G2X-.552Y.5706R.0125
G1X-.6778Y.0373
X-.7167Y.0465
G0Z.1
G28W0
M39
M05
M115
G18
M1

N33(CHAMFER MILL 6MM)
M38
M113S4=2600
T3333
G17
G0C0.
G0G98X.9267Y.1806C0.
Z.1
G1Z-.03F25.
X.9522Y.1964F16.
X1.0021Y.1157
G2X.6009Y-.0505R.11
G1X.4595Y.5487
```

```
G2X.6784Y.6394R.06
G1X.9522Y.1964
X.9267Y.1806
G0Z.1

X-.5938Y.11
G1Z-.03F25.
X-.5646Y.1031F16.
X-.6009Y-.0505
G2X-1.0021Y.1157R.11
G1X-.6784Y.6394
G2X-.4595Y.5487R.06
G1X-.5646Y.1038Y.11
G0Z.1
G28W0
M39
M05
M115
G18
M1

N39(PART EJECTION)
G0G53Z0
T3939
G0X0.
Z0
M24
M11
G4X.5
M31
G4X0.5
M32
G04X1.
M18
G4U0.5
M25
G0G28W0
M1

N99(PICK OFF)
T3030
M11
G4X.2
M1007
M1008
```

```
G0Z2.0M24
G98G1Z0F100.
M1009
M25
M1010
M1011
M10
G4U.5
M1012
M1013
G1W0.04F40
M1014
G28W0.
M1015
M30
%
```

END OF PROGRAM

Tool Layout

EXPAND MACHINERY

Job Number: IMTS DEMO SL42Y

GenTurn SL42Y2
Tooling Layout

TOOL#	Tool Description
T0101	CUT-OFF W.118 SANDVIK
T0606	80 DEGROUGH TURN ,SANDVIK R.015
T0303	55 DEG FINSH TURN , SANDVIK R.015
T0505	NPT THREADING SANDVIK
T1111	SPOT DRILL 90DEG 5/16
T1212	1/4 CARBIDE DRILL ,SANDVIK
T2121	1/2 END MILL , SANDVIK
T2323	1/8 BALL END MILL
	SUB SPINDLE
T0101	35 DEG TURNING FACE OFF, SANDVIK
T3636	FACE GROOVE W.118 ,SANDVIK
T3838	7.5 MM DRILL ,SANDVIK
T3737	BORING BAR SANDVIK
T3232	1/8 END MILL SANDVIK
T3333	6MM 90DEG CHAMFER 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.