ENGT 3652 Project 4: Bottle opener-Milling

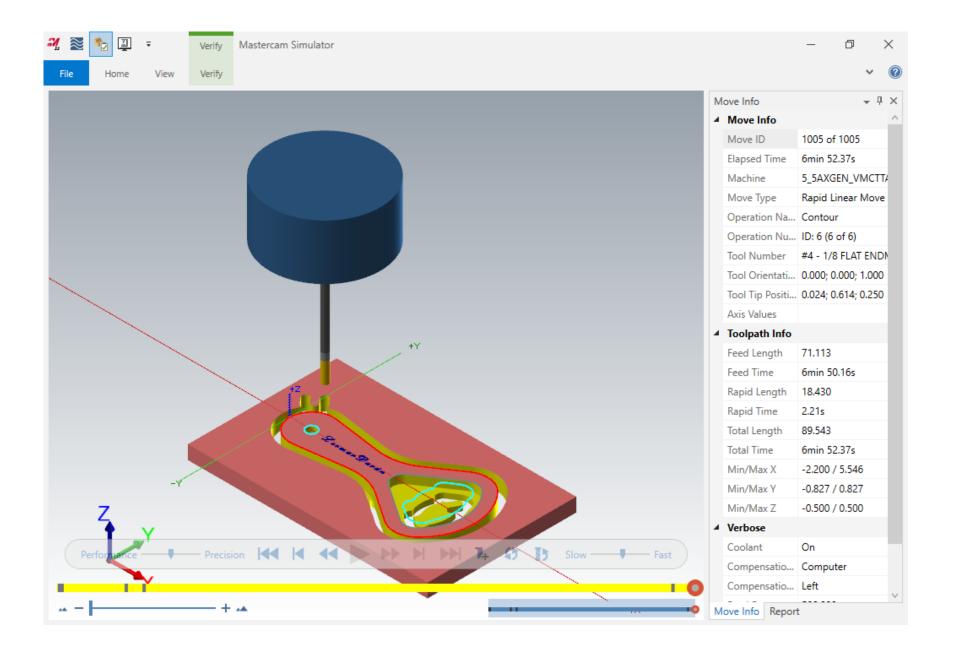
Leomar Durán

3rd April 2023

Chapter 1

Verification of operations in Mastercam





Chapter 2

Gcode

```
088928 (BOTTLE OPENER TOP)
(DATE=DD-MM-YY - 03-04-23 TIME=HH:MM - 19:57)
(MATERIAL - ALUMINUM INCH - 6061)
( T1 | 2" FACE MILL (SFM 600.0) | H1 )
( T2 | 3/16 DRILL (SFM 200.0) | H2 )
( T3 | 5/16 FLAT ENDMILL | H3 )
( T4 | 1/8 FLAT ENDMILL | H4 )
( T5 | 1/4 INCH ENGRAVING TOOL 60 DEGREE X .001 TIP | H5 )
N100 G20
N110 GO G17 G40 G49 G80 G90
N120 T1 M6
N130 GO G90 G54 X-2.2 YO. . S1146 M3
N140 G43 H1 Z.25 M8
N150 Z.2
N160 G1 Z0. F.76
N170 X5.5464 F2.29
N180 GO Z.25
N190 M5
N200 G91 G28 Z0. M9
N210 .
N220 M01
N230 T2 M6
N240 GO G90 G17 G54 X.3937 YO. . S4074 M3
N250 G43 H2 Z.5 M8
N260 G99 G81 Z-.5 R.5 F7.82
N270 G80
N280 M5
N290 G91 G28 Z0. M9
N300 .
N310 M01
N320 T3 M6
N330 G0 G90 G17 G54 X2.5077 Y-.2201 . S6723 M3
N340 G43 H3 Z.25 M8
N350 Z.2
N360 G1 Z.1 F12.12
N370 G2 X2.3763 YO. Z.0859 I.1186 J.2201 F33.35
N380 X2.6263 Y.25 Z.0653 I.25 JO.
N390 X2.8763 YO. Z.0447 IO. J-.25
```

- N400 X2.6263 Y-.25 Z.0242 I-.25 J0.
- N410 X2.5077 Y-.2201 Z.0177 IO. J.25
- N420 X2.3763 YO. Z.0036 I.1186 J.2201
- N430 X2.6263 Y.25 Z-.017 I.25 JO.
- N440 X2.8763 YO. Z-.0376 IO. J-.25
- N450 X2.6263 Y-.25 Z-.0581 I-.25 JO.
- N460 X2.5077 Y-.2201 Z-.0646 IO. J.25
- N470 X2.3763 YO. Z-.0788 I.1186 J.2201
- N480 G1 X2.6049
- N490 G3 X2.5463 Y.0586 I-.0586 JO.
- N500 X2.4877 YO. IO. J-.0586
- N510 X2.6244 Y-.1367 I.1367 JO.
- N520 X2.7611 YO. IO. J.1367
- N530 X2.5463 Y.2148 I-.2148 JO.
- N540 X2.3314 YO. IO. J-.2148
- N550 X2.6244 Y-.293 I.293 JO.
- N560 X2.9174 YO. IO. J.293
- N570 X2.5499 Y.3711 I-.3711 JO.
- N580 G1 X2.2002 Y.134
- N590 G3 X2.1752 YO. I.3461 J-.134
- N600 X2.1944 Y-.1301 I.4492 JO.
- N610 G1 X2.6628 Y-.4476
- N620 G3 X2.8624 Y-.381 I-.0384 J.4476
- N630 G1 X2.7884 Y.4685
- N640 G3 X2.7516 Y.4857 I-.2421 J-.4685
- N650 X2.7416 Y.4864 I-.01 J-.0692
- N660 X2.7023 Y.4744 IO. J-.0699
- N670 G1 X2.0399 Y.0253
- N680 G3 X2.0265 YO. I.0171 J-.0253
- N690 X2.0399 Y-.0253 I.0305 JO.
- N700 G1 X2.7023 Y-.4744
- N710 G3 X2.7416 Y-.4865 I.0393 J.0579
- N720 X2.7892 Y-.4677 IO. J.07
- N730 X2.9834 YO. I-.4664 J.4677
- N740 X2.7892 Y.4677 I-.6606 JO.
- N750 X2.7516 Y.4857 I-.0476 J-.0512
- N760 G1 Z.1212 F12.12
- N770 GO Z.1713
- N780 X2.5077 Y-.2201
- N790 Z.1212
- N800 G1 Z.0213 F12.12
- N810 G2 X2.3763 YO. Z.0072 I.1186 J.2201 F33.35
- N820 X2.6263 Y.25 Z-.0134 I.25 JO.
- N830 X2.8763 YO. Z-.034 IO. J-.25
- N840 X2.6263 Y-.25 Z-.0546 I-.25 JO.
- N850 X2.5077 Y-.2201 Z-.0611 IO. J.25
- N860 X2.3763 YO. Z-.0752 I.1186 J.2201
- N870 X2.6263 Y.25 Z-.0958 I.25 JO.
- N880 X2.8763 YO. Z-.1164 IO. J-.25
- N890 X2.6263 Y-.25 Z-.1369 I-.25 JO.
- N900 X2.5077 Y-.2201 Z-.1434 IO. J.25
- N910 X2.3763 YO. Z-.1575 I.1186 J.2201
- N920 G1 X2.6049
- N930 G3 X2.5463 Y.0586 I-.0586 JO.

- N940 X2.4877 YO. IO. J-.0586
- N950 X2.6244 Y-.1367 I.1367 JO.
- N960 X2.7611 YO. IO. J.1367
- N970 X2.5463 Y.2148 I-.2148 JO.
- N980 X2.3314 YO. IO. J-.2148
- N990 X2.6244 Y-.293 I.293 JO.
- N1000 X2.9174 YO. IO. J.293
- N1010 X2.5499 Y.3711 I-.3711 JO.
- N1020 G1 X2.2002 Y.134
- N1030 G3 X2.1752 YO. I.3461 J-.134
- N1040 X2.1944 Y-.1301 I.4492 JO.
- N1050 G1 X2.6628 Y-.4476
- N1060 G3 X2.8624 Y-.381 I-.0384 J.4476
- N1070 G1 X2.7884 Y.4685
- N1080 G3 X2.7516 Y.4857 I-.2421 J-.4685
- N1090 X2.7416 Y.4864 I-.01 J-.0692
- N1100 X2.7023 Y.4744 IO. J-.0699
- N1110 G1 X2.0399 Y.0253
- N1120 G3 X2.0265 YO. I.0171 J-.0253
- N1130 X2.0399 Y-.0253 I.0305 JO.
- N1140 G1 X2.7023 Y-.4744
- N1150 G3 X2.7416 Y-.4865 I.0393 J.0579
- N1160 X2.7892 Y-.4677 IO. J.07
- N1170 X2.9834 YO. I-.4664 J.4677
- N1180 X2.7892 Y.4677 I-.6606 JO.
- N1190 X2.7516 Y.4857 I-.0476 J-.0512
- N1200 G1 Z.0425 F12.12
- N1210 GO Z.0925
- N1220 Z.2
- N1230 X2.9749 Y-.0839
- N1240 G1 Z-.0788 F12.12
- N1250 X2.7995 Y.1748 F33.35
- N1260 G3 X2.5408 Y.312 I-.2587 J-.1753
- N1270 X2.3655 Y.2581 IO. J-.3125
- N1280 G1 X2.0342 Y.0336
- N1290 G3 X2.0164 YO. I.0228 J-.0336
- N1300 X2.0342 Y-.0336 I.0406 JO.
- N1310 G1 X2.6967 Y-.4827
- N1320 G3 X2.7416 Y-.4965 I.0449 J.0662
- N1330 X2.7962 Y-.4749 IO. J.08
- N1340 X2.9933 YO. I-.4734 J.4749
- N1350 X2.7962 Y.4749 I-.6705 JO.
- N1360 X2.7416 Y.4964 I-.0546 J-.0584
- N1370 X2.6967 Y.4827 IO. J-.0799
- N1380 G1 X2.3655 Y.2581
- N1390 G3 X2.2284 Y-.0005 I.1753 J-.2586
- N1400 X2.2822 Y-.1759 I.3124 JO.
- N1410 G1 X2.2993 Y-.2012
- N1420 Z.1212 F12.12
- N1430 GO Z.1713
- N1440 X2.9749 Y-.0839
- N1450 Z.1212
- N1460 G1 Z-.1575 F12.12
- N1470 X2.7995 Y.1748 F33.35

```
N1480 G3 X2.5408 Y.312 I-.2587 J-.1753
```

- N1490 X2.3655 Y.2581 IO. J-.3125
- N1500 G1 X2.0342 Y.0336
- N1510 G3 X2.0164 YO. I.0228 J-.0336
- N1520 X2.0342 Y-.0336 I.0406 J0.
- N1530 G1 X2.6967 Y-.4827
- N1540 G3 X2.7416 Y-.4965 I.0449 J.0662
- N1550 X2.7962 Y-.4749 IO. J.08
- N1560 X2.9933 YO. I-.4734 J.4749
- N1570 X2.7962 Y.4749 I-.6705 JO.
- N1580 X2.7416 Y.4964 I-.0546 J-.0584
- N1590 X2.6967 Y.4827 IO. J-.0799
- N1600 G1 X2.3655 Y.2581
- N1610 G3 X2.2284 Y-.0005 I.1753 J-.2586
- N1620 X2.2822 Y-.1759 I.3124 JO.
- N1630 G1 X2.2993 Y-.2012
- N1640 Z.0425 F12.12
- N1650 GO Z.25
- N1660 M5
- N1670 G91 G28 Z0. M9
- N1680 .
- N1690 MO1
- N1700 T4 M6
- N1710 GO G90 G17 G54 X2.5509 Y.2894 . S8862 M3
- N1720 G43 H4 Z.0925 M8
- N1730 Z.0425
- N1740 G1 Z-.28 F11.74
- N1750 X2.614 Y.3973 F14.44
- N1760 G2 X2.7219 Y.4592 I.1079 J-.0631
- N1770 X2.785 Y.4422 IO. J-.125
- N1780 X2.8516 Y.3262 I-.0678 J-.116
- N1790 X2.8513 Y.3182 I-.1344 JO.
- N1800 G1 X2.8502 Y.3006
- N1810 X2.8585 Y.2851
- N1820 G2 X2.9296 YO. I-.5357 J-.2851
- N1830 X2.8585 Y-.2851 I-.6068 JO.
- N1840 G1 X2.8502 Y-.3006
- N1850 X2.8513 Y-.3182
- N1860 G2 X2.8515 Y-.3262 I-.1341 J-.008
- N1870 X2.7172 Y-.4605 I-.1343 JO.
- N1880 X2.6444 Y-.439 IO. J.1343
- N1890 G1 X2.4731 Y-.3285
- N1900 G2 X2.4477 Y-.2819 I.0301 J.0466
- N1910 X2.4646 Y-.242 I.0555 J0.
- N1920 G3 X2.4837 Y-.197 I-.0434 J.045
- N1930 X2.4789 Y-.173 I-.0625 JO.
- N1940 G2 X2.4443 YO. I.4147 J.173
- N1950 X2.4789 Y.173 I.4493 JO.
- N1960 G3 X2.4837 Y.197 I-.0577 J.024
- N1970 X2.4646 Y.242 I-.0625 JO.
- N1980 G2 X2.4477 Y.2819 I.0386 J.0399
- N1990 X2.4731 Y.3285 I.0555 JO.
- N2000 G1 X2.6444 Y.439
- N2010 G2 X2.7172 Y.4605 I.0728 J-.1128

```
N2020 X2.785 Y.4422 IO. J-.1343
```

N2030 X2.847 Y.3342 I-.0631 J-.108

N2040 X2.8298 Y.2712 I-.1251 JO.

N2050 G1 X2.7668 Y.1632

N2060 Z-.08 F11.74

N2070 GO Z.0925

N2080 M5

N2090 G91 G28 Z0. M9

N2100 .

N2110 MO1

N2120 T5 M6

N2130 GO G90 G17 G54 X.7395 Y.0275 . S7640 M3

N2140 G43 H5 Z.25 M8

N2150 Z.2

N2160 G1 Z-.001 F12.22

N2170 G3 X.735 Y.0339 I-.2076 J-.1392 F30.56

N2180 G1 X.7309 Y.0397

N2190 X.7225 Y.0265

N2200 X.7157 Y.013

N2210 X.7421 Y.0259

N2220 X.751 Y.0324

N2230 X.7611 Y.0433

N2240 X.7644 Y.0534

N2250 X.7628 Y.0584

N2260 X.7579 Y.06

N2270 X.7476 Y.056

N2280 X.7462 Y.0551

N2290 X.7325 Y.0417

N2300 X.7372 Y.0353

N2310 X.7387 Y.0315

N2310 A.7307 1.031

N2320 X.7384 Y.031 N2330 X.7378 Y.0309

N2340 X.735 Y.0339

N2350 Z.199 F12.22

N2360 GO Z.249

N2370 Z.25

N2380 X.7072 Y.0596

N2390 Z.2

N2400 G1 Z-.001 F12.22

N2410 X.6874 Y.065 F30.56

N2420 X.683 Y.0652

N2430 X.6722 Y.0642

N2440 X.6559 Y.0568

N2450 X.6552 Y.0563

N2460 X.6471 Y.0464

N2470 X.6444 Y.0348

N2480 X.6484 Y.0224

N2490 X.6557 Y.0158

N2500 X.673 Y.0095

N2510 X.6849 Y.0086

N2520 X.6924 Y.0089

N2530 X.7018 Y.0103

N2540 X.7144 Y.0288

N2550 X.7272 Y.0438

- N2560 X.7116 Y.0572
- N2570 X.7072 Y.0596
- N2580 Z.199 F12.22
- N2590 GO Z.249
- N2600 Z.25
- N2610 X.7082 Y.0614
- N2620 Z.2
- N2630 G1 Z-.001 F12.22
- N2640 X.6963 Y.0655 F30.56
- N2650 X.6839 Y.0669
- N2660 X.6668 Y.0644
- N2670 X.653 Y.0569
- N2680 X.644 Y.0456
- N2690 X.641 Y.0317
- N2700 X.6437 Y.0195
- N2710 X.6518 Y.01
- N2720 X.6644 Y.0038
- N2730 X.6807 Y.0017
- N2740 X.6891 Y.002
- N2750 X.6981 Y.0027
- N2760 X.6804 Y-.027
- N2770 X.6705 Y-.0385
- N2780 X.651 Y-.0339
- N2790 X.6385 Y-.0325
- N2800 X.6275 Y-.0349
- N2810 X.6266 Y-.0355
- N2820 X.6233 Y-.0387
- N2830 X.6222 Y-.0426
- N2840 X.6262 Y-.0496
- N2850 X.6274 Y-.0503
- N2860 X.6413 Y-.0531
- N2870 X.6544 Y-.0511
- N2880 X.669 Y-.0443
- N2890 X.69 Y-.0512
- N2900 X.7028 Y-.0531
- N2910 X.7173 Y-.0491
- N2920 X.7179 Y-.0488
- N2930 X.7355 Y-.0366
- N2940 X.7401 Y-.0313
- N2950 X.7422 Y-.0283
- N2960 X.7418 Y-.0278
- N2970 X.7414 Y-.0274
- N2980 X.7381 Y-.0304
- N2990 X.7359 Y-.0334
- N3000 X.722 Y-.0433
- N3010 X.7082 Y-.0463 N3020 X.6931 Y-.0445
- N3030 X.676 Y-.0401
- N3040 X.6954 Y-.0208
- N3050 X.7124 Y.0069
- N3060 X.7385 Y.0197
- N3070 X.7517 Y.0297
- N3080 X.7625 Y.0423
- N3090 X.7662 Y.0536

- N3100 X.7638 Y.0594
- N3110 X.7578 Y.0617
- N3120 X.7459 Y.0578
- N3130 X.729 Y.0455
- N3140 X.7109 Y.06
- N3150 X.7082 Y.0614
- N3160 Z.199 F12.22
- N3170 GO Z.249
- N3180 Z.25
- N3190 X.7884 Y-.0295
- N3200 Z.2
- N3210 G1 Z-.001 F12.22
- N3220 X.7867 Y-.0321 F30.56
- N3230 X.7869 Y-.0325
- N3240 X.7873
- N3250 X.7885 Y-.0316
- N3260 X.7908 Y-.0288
- N3270 X.7903 Y-.0323
- N3280 X.7902 Y-.0357
- N3290 X.7926 Y-.0463
- N3300 X.794 Y-.0484
- N3310 X.7984 Y-.0519
- N3320 X.8042 Y-.0531
- N3330 X.8147 Y-.0502
- N3340 X.8279 Y-.0402
- N3350 X.8348 Y-.0328
- N3360 X.8364 Y-.0302
- N3370 X.836 Y-.0296
- N3380 X.8352 Y-.0291
- N3390 X.8317 Y-.033
- N3400 X.8262 Y-.04
- N3410 X.8145 Y-.0487
- N3420 X.8049 Y-.0514
- N3430 X.8005 Y-.0495
- N3440 X.7987 Y-.0441
- N3450 X.7988 Y-.042
- N3460 X.7993 Y-.0374
- N3470 X.8199 Y-.0301
- N3480 X.8238 Y-.0278
- N3490 X.8307 Y-.0214
- N3500 X.833 Y-.0147
- N3510 X.8305 Y-.0091
- N3520 X.8234 Y-.0068
- N3530 X.8097 Y-.0108
- N3540 X.8086 Y-.0115
- N3550 X.7928 Y-.0239
- N3560 X.7884 Y-.0295
- N3570 Z.199 F12.22
- N3580 GO Z.249
- N3590 Z.25
- N3600 X.8196 Y-.0254
- N3610 Z.2
- N3620 G1 Z-.001 F12.22
- N3630 X.8271 Y-.0158 F30.56

- N3640 X.8279 Y-.0119
- N3650 X.8267 Y-.0098
- N3660 X.8247 Y-.0085
- N3670 X.8158 Y-.0125
- N3680 X.8119 Y-.0162
- N3690 X.8015 Y-.0325
- N3700 X.8005 Y-.0351
- N3710 X.8162 Y-.028
- N3720 X.8196 Y-.0254
- N3730 Z.199 F12.22
- N3740 GO Z.249
- N3750 Z.25
- N3760 X.8572 Y-.0325
- N3770 Z.2
- N3780 G1 Z-.001 F12.22
- N3790 X.8576 F30.56
- N3800 X.8588 Y-.0321
- N3810 X.8613 Y-.0301
- N3820 X.8606 Y-.0339
- N3830 X.8604 Y-.0372
- N3840 X.8627 Y-.0484
- N3850 X.8632 Y-.0492
- N3860 X.8666 Y-.0521
- N3870 X.8712 Y-.0531
- N3880 X.8814 Y-.0501
- N0000 K:0014 I :000.
- N3890 X.8931 Y-.041
- N3900 X.8943 Y-.0411
- N3910 X.8967
- N3920 X.9052 Y-.039
- N3930 X.9129 Y-.0325
- N3940 X.9146 Y-.0307
- N3950 X.915 Y-.0305
- N3960 X.9153 Y-.0302
- N3970 X.9149 Y-.0295
- N3980 X.9143 Y-.0291
- N3990 X.9139 Y-.0295
- N4000 X.9129 Y-.03
- N4010 X.9111 Y-.0319
- N4020 X.9046 Y-.0374
- N4030 X.8974 Y-.0394
- N4040 X.8955 Y-.0392
- N4050 X.8951 Y-.039
- N4060 X.9026 Y-.0283
- N4070 X.905 Y-.0188
- N4080 X.9018 Y-.0101
- N4090 X.8933 Y-.0068 N4100 X.8802 Y-.0108
- N4110 X.879 Y-.0115
- N4120 X.8639 Y-.0237
- N4130 X.8581 Y-.0302
- N4140 X.857 Y-.0321
- N4150 X.8572 Y-.0325
- N4160 Z.199 F12.22
- N4170 GO Z.249

- N4180 Z.25
- N4190 X.8684 Y-.0501
- N4200 Z.2
- N4210 G1 Z-.001 F12.22
- N4220 X.8718 Y-.0514 F30.56
- N4230 X.8792 Y-.0487
- N4240 X.888 Y-.0419
- N4250 X.8966 Y-.0293
- N4260 X.8999 Y-.017
- N4270 X.8982 Y-.0109
- N4280 X.8933 Y-.0085
-
- N4290 X.8855 Y-.0119
- N4300 X.8763 Y-.0222
- N4310 X.8695 Y-.0348
- N4320 X.8673 Y-.0457
- N4330 X.8684 Y-.0501
- N4340 Z.199 F12.22
- N4350 GO Z.249
- N4360 Z.25
- N4370 X.9378 Y-.0324
- N4380 Z.2
- N4390 G1 Z-.001 F12.22
- N4400 X.9381 Y-.0325 F30.56
- N4410 X.9418 Y-.029
- N4420 X.9463 Y-.0246
- N4430 X.9591 Y-.0119
- N4440 X.9658 Y-.0085
- N4450 X.9678 Y-.0092
- N4460 X.9684 Y-.0111
- N4470 X.9644 Y-.0188
- N4480 X.9637 Y-.0199
- N4490 X.9626 Y-.0212
- N4500 X.9413 Y-.0531
- N4510 X.9524 Y-.0523
- N4520 X.9574 Y-.046
- N4530 X.9821 Y-.0179
- N4540 X.9912 Y-.01
- N4550 X.9948 Y-.0085
- N4560 X.9969 Y-.0091
- N4570 X.9976 Y-.011
- N4580 X.9964 Y-.0141
- N4590 X.9918 Y-.0212
- N4600 X.9704 Y-.0531
- N4610 X.9823 Y-.0523
- N4620 X1.0084 Y-.0203
- N4630 X1.0173 Y-.0115 N4640 X1.0226 Y-.0085
- N4650 X1.0241 Y-.0094
- N4660 X1.025 Y-.011
- N4670 X1.021 Y-.0176
- N4680 X1.0202 Y-.0185
- N4690 X1.0175 Y-.0217
- N4700 X1.0097 Y-.0342
- N4710 X1.0079 Y-.042

- N4720 X1.0098 Y-.0501
- N4730 X1.0151 Y-.0531
- N4740 X1.0215 Y-.05
- N4750 X1.0325 Y-.0394
- N4760 X1.0336 Y-.0388
- N4770 X1.0404 Y-.0306
- N4780 Y-.0302
- N4790 X1.04 Y-.0296
- N4800 X1.0392 Y-.0291
- N4810 X1.0362 Y-.0323
- N4820 X1.0323 Y-.0374
- N4830 X1.0215 Y-.0478
- N4840 X1.0153 Y-.0514
- N4850 X1.0134 Y-.0509
- N4860 X1.013 Y-.0489
- N4870 X1.0143 Y-.0439
- N4880 X1.0202 Y-.035
- N4890 X1.022 Y-.032
- N4900 X1.0294 Y-.0192
- N4910 X1.0302 Y-.015
- N4920 X1.0285 Y-.0092
- N4930 X1.0238 Y-.0068
- N4940 X1.0155 Y-.0108
- N4950 X1.0142 Y-.0119
- N4960 X.9951 Y-.0318
- N4970 X1.001 Y-.0224
- N4980 X1.0027 Y-.0136
- N4990 X1.0006 Y-.009
- N5000 X.9959 Y-.0068
- N5010 X.9866 Y-.0108
- N5020 X.9844 Y-.0126
- N5030 X.9661 Y-.032
- N5040 X.9719 Y-.0225
- N5050 X.9736 Y-.0148
- N5060 X.9715 Y-.009
- N5070 X.9669 Y-.0068
- N5080 X.9592 Y-.0098
- N5090 X.9466 Y-.0204
- N5100 X.9413 Y-.0265
- N5110 X.9381 Y-.0302
- N5120 X.9376 Y-.032
- N5130 X.9378 Y-.0324
- N5140 Z.199 F12.22
- N5150 GO Z.249
- N5160 Z.25
- N5170 X1.0629
- N5180 Z.2
- N5190 G1 Z-.001 F12.22
- N5200 X1.0634 Y-.0325 F30.56
- N5210 X1.065 Y-.0316
- N5220 X1.0668 Y-.029
- N5230 X1.0663 Y-.0329
- N5240 X1.0662 Y-.0369
- N5250 X1.0684 Y-.0487

- N5260 X1.0712 Y-.052
- N5270 X1.0752 Y-.0531
- N5280 X1.0852 Y-.0497
- N5290 X1.0957 Y-.0401
- N5300 X1.0954 Y-.0434
- N5310 X1.0953 Y-.0457
- N5320 X1.0971 Y-.0512
- N5330 X1.1022 Y-.0531
- N5340 X1.1101 Y-.0505
- N5350 X1.1232 Y-.0391
- N5360 X1.1292 Y-.033
- N5370 X1.1313 Y-.0301
- N5380 X1.1308 Y-.0295
- N5390 X1.1301 Y-.0291
- N5400 X1.1271 Y-.0323
- N5410 X1.122 Y-.0374
- N5420 X1.1098 Y-.0483
- N5430 X1.1028 Y-.0521
- N5440 X1.1008 Y-.0514
- N5450 X1.1004 Y-.0492
- N5460 X1.1016 Y-.0449
- N5470 X1.108 Y-.0358
- N5480 X1.1264 Y-.0078
- N5490 X1.115 Y-.0082
- N5500 X1.1081 Y-.0178
- N5510 X1.1087 Y-.0158
- N5520 X1.109 Y-.0144
- N5530 X1.1066 Y-.009
- N5540 X1.0997 Y-.0068
- N5550 X1.0864 Y-.0108
- N5560 X1.086 Y-.011
- N5570 X1.0702 Y-.0232
- N5580 X1.0647 Y-.0292
- N5590 X1.0627 Y-.0321
- N5600 X1.0629 Y-.0324
- N5610 Z.199 F12.22
- N5620 GO Z.249
- N5630 Z.25
- N5640 X1.074 Y-.0502
- N5650 Z.2
- N5660 G1 Z-.001 F12.22
- N5670 X1.0769 Y-.0514 F30.56
- N5680 X1.0838 Y-.0487
- N5690 X1.0925 Y-.0409
- N5700 X1.1033 Y-.0266
- N5710 X1.1073 Y-.0144
- N5720 X1.1056 Y-.0101
- N5730 X1.1013 Y-.0085
- N5740 X1.0924 Y-.0124
- N5750 X1.0825 Y-.0222
- N5760 X1.0756 Y-.0355
- N5770 X1.073 Y-.0462
- N5780 X1.074 Y-.0502 N5790 Z.199 F12.22

- N5800 GO Z.249
- N5810 Z.25
- N5820 X1.152 Y-.0324
- N5830 Z.2
- N5840 G1 Z-.001 F12.22
- N5850 X1.1524 Y-.0325 F30.56
- N5860 X1.1561 Y-.029
- N5870 X1.1606 Y-.0247
- N5880 X1.1733 Y-.012
- N5890 X1.18 Y-.0085
- N5900 X1.1821 Y-.0092
- N5910 X1.1827 Y-.0112
- N5920 X1.1787 Y-.0188
- N5930 X1.1779 Y-.0199
- N5940 X1.1769 Y-.0212
- N5950 X1.1557 Y-.0531
- N5960 X1.1667 Y-.0524
- N5970 X1.181 Y-.0357
- N5980 X1.1923 Y-.0251
- N5990 X1.1915 Y-.0301
- N6000 X1.1913 Y-.0333
- N6010 X1.1931 Y-.038
- N6020 X1.1983 Y-.0394
- N6030 X1.2069 Y-.0358
- N6040 X1.2119 Y-.0302
- N6050 X1.2114 Y-.0299
- N6060 X1.2106 Y-.0291
- N6070 X1.2061 Y-.0334
- N6080 X1.1971 Y-.0377
- N6090 X1.1941 Y-.0366
- N6100 X1.193 Y-.0335
- N6110 X1.1944 Y-.0266
- N6120 X1.2001 Y-.0204
- N6130 X1.2023 Y-.0187
- N6140 X1.2115 Y-.0107
- N6150 X1.2119 Y-.0096 N6160 X1.2106 Y-.0076
- N6170 X1.2076 Y-.0068
- N6180 X1.2004 Y-.0099
- N6190 X1.1941 Y-.0204
- N6200 X1.1796 Y-.0339
- N6210 X1.1795 Y-.034
- N6220 X1.1863 Y-.0222
- N6230 X1.1879 Y-.0143
- N6240 X1.1858 Y-.009
- N6250 X1.1812 Y-.0068
- N6260 X1.1735 Y-.0098
- N6270 X1.1609 Y-.0204
- N6280 X1.1556 Y-.0266
- N6290 X1.1524 Y-.0303
- N6300 X1.1519 Y-.0321
- N6310 X1.152 Y-.0324
- N6320 Z.199 F12.22
- N6330 GO Z.249

- N6340 Z.25
- N6350 X1.236 Y.0142
- N6360 Z.2
- N6370 G1 Z-.001 F12.22
- N6380 X1.2397 Y.0282 F30.56
- N6390 X1.2502 Y.0463
- N6400 X1.2594 Y.0553
- N6410 X1.2725 Y.0627
- N6420 X1.2867 Y.0652
- N6430 X1.2968 Y.0637
- N6440 X1.305 Y.0593
- N6450 X1.2804 Y.0492
- N6460 X1.2673 Y.0384
- N6470 X1.2566 Y.0227
- N6480 X1.253 Y.0059
- N6490 X1.254 Y-.0018
- N6500 X1.2593 Y-.0108
- N6510 X1.2666 Y-.0155
- N6520 X1.276 Y-.0171
- N6530 X1.2906 Y-.0136
- N6540 X1.3038 Y-.0042
- N6550 X1.3157 Y.0136
- N6560 X1.3199 Y.0333
- N6570 X1.3178 Y.0458
- N6580 X1.312 Y.0569
- N6590 X1.3189 Y.0578
- N6600 X1.3252 Y.0583
- N6610 X1.3443 Y.0552
- N6620 X1.3596 Y.0468
- N6630 X1.3359 Y.0194
- N6640 X1.3169 Y-.0109
- N6650 X1.3117 Y-.02
- N6660 X1.298 Y-.039
- N6670 X1.2946 Y-.0422
- N6680 X1.2862 Y-.0475
- N6690 X1.2778 Y-.0493
- N6700 X1.2656 Y-.0469
- N6710 X1.2503 Y-.0445
- N6720 X1.2447 Y-.0457
- N6730 X1.2427 Y-.0479 N6740 X1.2467 Y-.0518
- N6750 X1.2471 Y-.0519
- N6760 X1.2589 Y-.0531
- N6770 X1.269 Y-.053
- N6780 X1.2762
- N6790 X1.2862
- N6800 X1.2966 Y-.0531
- N6810 X1.3222 Y-.0503
- N6820 X1.3247 Y-.0496
- N6830 X1.3475 Y-.039
- N6840 X1.3649 Y-.0214
- N6850 X1.3688 Y-.0152
- N6860 X1.3745 Y-.0009
- N6870 X1.3764 Y.014

- N6880 X1.3735 Y.0305
- N6890 X1.365 Y.0453
- N6900 X1.3768 Y.0548
- N6910 X1.3833 Y.0591
- N6920 X1.3829 Y.0593
- N6930 X1.3821 Y.06
- N6940 X1.3738 Y.0569
- N6950 X1.3615 Y.0485
- N6960 X1.345 Y.0581
- N6970 X1.344 Y.0584
- N6980 X1.3218 Y.0617
- N6990 X1.3156 Y.0613
- N7000 X1.3084 Y.0604
- N7010 X1.2982 Y.0653
- N7020 X1.2874 Y.0669
- N7030 X1.2687 Y.0629
- N7040 X1.2619 Y.0592
- N7050 X1.2512 Y.0501
- N7060 X1.2428 Y.038
- N7070 X1.2363 Y.0223
- N7080 X1.2342 Y.009
- N7090 X1.2344 Y.0073
- N7100 X1.2348 Y.0069
- N/100 X1.2540 1.0003
- N7110 X1.236 Y.0142
- N7120 Z.199 F12.22
- N7130 GO Z.249
- N7140 Z.25
- N7150 X1.2653 Y-.0117
- N7160 Z.2
- N7170 G1 Z-.001 F12.22
- N7180 X1.2748 Y-.0154 F30.56
- N7190 X1.2763
- N7200 X1.2898 Y-.0126
- N7210 X1.3017 Y-.0044
- N7220 X1.313 Y.0116
- N7230 X1.3139 Y.0135
- N7240 X1.3182 Y.0333
- N7250 Y.0336
- N7260 X1.3159 Y.0458
- N7270 X1.3089 Y.056
- N7280 X1.2885 Y.0457
- N7290 X1.2754 Y.0329
- N7300 X1.265 Y.0159
- N7310 X1.2616 Y-.001
- N7320 X1.264 Y-.0101
- N7330 X1.2653 Y-.0117
- N7340 Z.199 F12.22
- N7350 GO Z.249
- N7360 Z.25
- N7370 X1.2926 Y-.0513
- N7380 Z.2
- N7390 G1 Z-.001 F12.22
- N7400 X1.2996 Y-.0514 F30.56
- N7410 X1.3229 Y-.0486

- N7420 X1.3253 Y-.0479
- N7430 X1.3464 Y-.0376
- N7440 X1.3466 Y-.0375
- N7450 X1.3633 Y-.021
- N7460 X1.3672 Y-.0147
- N7470 X1.3743 Y.0064
- N7480 X1.3747 Y.0129
- N7490 X1.3717 Y.0293
- N7500 X1.3633 Y.0434
- N7510 X1.3485 Y.0226
- N7520 X1.3444 Y.0154
- N7530 X1.3292 Y-.011
- N7540 X1.3091 Y-.0356
- N/040 X1.0001 1 .0000
- N7550 X1.307 Y-.0376
- N7560 X1.2873 Y-.05
- N7570 X1.2847 Y-.0509
- N7580 X1.2926 Y-.0513
- N7590 Z.199 F12.22
- N7600 GO Z.249
- N7610 Z.25
- N7620 X1.4057 Y-.0325
- N7630 Z.2
- N7640 G1 Z-.001 F12.22
- N7650 X1.4061 F30.56
- N7660 X1.4106 Y-.0278
- N7670 X1.4114 Y-.027
- N7680 X1.42 Y-.0167
- N7690 X1.4186 Y-.0184
- N7700 X1.4083 Y-.0381
- N7710 X1.4073 Y-.0428
- N7720 X1.4096 Y-.0504
- N7730 X1.4164 Y-.0531
- N7740 X1.4259 Y-.0493
- N7750 X1.4386 Y-.0385
- N7760 X1.4383 Y-.0411
- N7770 X1.4382 Y-.0426
- N7780 X1.4401 Y-.0503
- N7790 X1.4456 Y-.0531
- N7800 X1.4536 Y-.0494 N7810 X1.4659 Y-.0383
- N7820 X1.4711 Y-.0322
- WEGGG WA ARGA W GGGG
- N7830 X1.4724 Y-.0301
- N7840 X1.472 Y-.0295 N7850 X1.4712 Y-.0291
- N7860 X1.4679 Y-.0322
- N7870 X1.4639 Y-.0372
- N7880 X1.4519 Y-.0483
- N7890 X1.4456 Y-.0514
- N7900 X1.4437 Y-.0509
- N7910 X1.4433 Y-.0489
- N7920 X1.4473 Y-.0393
- N7930 X1.4475 Y-.039
- N7940 X1.4677 Y-.0068
- N7950 X1.4562 Y-.0078

- N7960 X1.4372 Y-.035
- N7970 X1.4327 Y-.0399
- N7980 X1.4227 Y-.0485
- N7990 X1.4148 Y-.0514
- N8000 X1.413 Y-.0505
- N8010 X1.4124 Y-.0489
- N8020 X1.4164 Y-.0402
- N8030 X1.4197 Y-.0351
- N8040 X1.421 Y-.0334
- N8050 X1.4384 Y-.0068
- N8060 X1.4254 Y-.0078
- NOOOO XI.4254 I .0070
- N8070 X1.4104 Y-.0252 N8080 X1.4056 Y-.0322
- NOOOO KI.4000 I .0022
- N8090 X1.4057 Y-.0325
- N8100 Z.199 F12.22
- N8110 GO Z.249
- N8120 Z.25
- N8130 X1.4932 Y-.0324
- N8140 Z.2
- N8150 G1 Z-.001 F12.22
- N8160 X1.4936 Y-.0325 F30.56
- N8170 X1.4972 Y-.029
- N8180 X1.5017 Y-.0247
- N8190 X1.5145 Y-.012
- N8200 X1.5212 Y-.0085
- N8210 X1.5232 Y-.0092
- N8220 X1.5239 Y-.0112
- N8230 X1.5199 Y-.0188
- N8240 X1.5191 Y-.0199
- N8250 X1.5181 Y-.0212
- N8260 X1.4969 Y-.0531
- N8270 X1.5078 Y-.0524
- N8280 X1.5221 Y-.0357
- N8290 X1.5334 Y-.0251
- N8300 X1.5327 Y-.0301
- N8310 X1.5324 Y-.0333
- N8320 X1.5342 Y-.038
- N8330 X1.5395 Y-.0394
- N8340 X1.5481 Y-.0358
- N8350 X1.553 Y-.0302
- N8360 X1.5526 Y-.0299
- N8370 X1.5517 Y-.0291
- N8380 X1.5473 Y-.0334 N8390 X1.5382 Y-.0377
- N8400 X1.5353 Y-.0366
- N8410 X1.5342 Y-.0335
- N8420 X1.5356 Y-.0266
- N8430 X1.5413 Y-.0204
- N8440 X1.5434 Y-.0187
- N8450 X1.5526 Y-.0107
- N8460 X1.553 Y-.0096
- N8470 X1.5517 Y-.0076
- N8480 X1.5488 Y-.0068
- N8490 X1.5416 Y-.0099

- N8500 X1.5352 Y-.0204
- N8510 X1.5207 Y-.0339
- N8520 X1.5206 Y-.034
- N8530 X1.5274 Y-.0222
- N8540 X1.529 Y-.0143
- N8550 X1.5269 Y-.009
- N8560 X1.5223 Y-.0068
- N8570 X1.5146 Y-.0098
- N8580 X1.502 Y-.0204
- N8590 X1.4967 Y-.0266
- N8600 X1.4935 Y-.0303
- N8610 X1.493 Y-.0321
- N8620 X1.4932 Y-.0324
- N8630 Z.199 F12.22
- N8640 GO Z.249
- N8650 Z.25
- N8660 X1.5737
- N8670 Z.2
- N8680 G1 Z-.001 F12.22
- N8690 X1.5742 Y-.0325 F30.56
- N8700 X1.5759 Y-.0316
- N8710 X1.5777 Y-.029
- N8720 X1.5772 Y-.0329
- N8730 X1.577 Y-.0369
- N8740 X1.5792 Y-.0487
- NOTIO MILOTOL I LOTOT
- N8750 X1.5821 Y-.052
- N8760 X1.5861 Y-.0531
- N8770 X1.596 Y-.0497 N8780 X1.6066 Y-.0401
- N8790 X1.6062 Y-.0434
- N8800 Y-.0457
- N8810 X1.6079 Y-.0512
- N8820 X1.6131 Y-.0531
- N8830 X1.621 Y-.0505
- N8840 X1.6341 Y-.0391
- N8850 X1.64 Y-.033
- N8860 X1.6422 Y-.0301
- N8870 X1.6417 Y-.0295
- N8880 X1.6409 Y-.0291
- N8890 X1.6379 Y-.0323
- N8900 X1.6328 Y-.0374
- N8910 X1.6207 Y-.0483
- N8920 X1.6137 Y-.0521
- N8930 X1.6117 Y-.0514
- N8940 X1.6113 Y-.0492
- N8950 X1.6125 Y-.0449
- N8960 X1.6188 Y-.0358
- N8970 X1.6373 Y-.0078
- N8980 X1.6259 Y-.0082
- N8990 X1.619 Y-.0178
- N9000 X1.6195 Y-.0158
- N9010 X1.6199 Y-.0144
- N9020 X1.6174 Y-.009
- N9030 X1.6106 Y-.0068

- N9040 X1.5972 Y-.0108
- N9050 X1.5968 Y-.011
- N9060 X1.581 Y-.0232
- N9070 X1.5756 Y-.0292
- N9080 X1.5736 Y-.0321
- N9090 X1.5737 Y-.0324
- N9100 Z.199 F12.22
- N9110 GO Z.249
- N9120 Z.25
- N9130 X1.5849 Y-.0502
- N9140 Z.2
- N9150 G1 Z-.001 F12.22
- N9160 X1.5877 Y-.0514 F30.56
- N9170 X1.5947 Y-.0487
- N9180 X1.6034 Y-.0409
- N9190 X1.6142 Y-.0266
- N9200 X1.6182 Y-.0144
- N9210 X1.6165 Y-.0101
- N9220 X1.6121 Y-.0085
- N9230 X1.6033 Y-.0124
- N9240 X1.5934 Y-.0222
- N9250 X1.5865 Y-.0355
- N9260 X1.5839 Y-.0462
- N9270 X1.5849 Y-.0502
- N9280 Z.199 F12.22
- N9290 GO Z.249
- N9300 Z.25
- N9310 X1.6161 Y-.0024
- N9320 Z.2
- N9330 G1 Z-.001 F12.22
- N9340 X1.6244 Y.002 F30.56
- N9350 X1.6364 Y.0103
- N9360 X1.6404 Y.0191
- N9370 X1.639 Y.0226
- N9380 X1.6354 Y.024
- N9390 X1.6297 Y.02
- N9400 X1.6278 Y.0161
- N9410 X1.6251 Y.0095
- N9420 X1.6165 Y.0019
- N9430 X1.6113 Y-.0026
- N9440 X1.6115 Y-.0032
- N9450 X1.6122 Y-.0034
- N9460 X1.6161 Y-.0024
- N9470 Z.199 F12.22
- N9480 GO Z.249
- N9490 Z.25
- N9500 X1.6629 Y-.0324
- N9510 Z.2
- N9520 G1 Z-.001 F12.22
- N9530 X1.6633 Y-.0325 F30.56
- N9540 X1.6669 Y-.029
- N9550 X1.6714 Y-.0246
- N9560 X1.6842 Y-.0119
- N9570 X1.6909 Y-.0085

- N9580 X1.6929 Y-.0092
- N9590 X1.6936 Y-.0111
- N9600 X1.6896 Y-.0188
- N9610 X1.6891 Y-.0196
- N9620 X1.6878 Y-.0212
- N9630 X1.6666 Y-.0531
- N9640 X1.6775 Y-.0523
- N9650 X1.7052 Y-.0207
- N9660 X1.7147 Y-.0121
- N9670 X1.7203 Y-.0092
- N9680 X1.7222 Y-.0095
- N9690 X1.7227 Y-.011
- N9700 X1.7187 Y-.0176
- N9710 X1.7179 Y-.0185
- N9720 X1.7152 Y-.0217
- N9730 X1.7074 Y-.0342
- N9740 X1.7056 Y-.042
- N9750 X1.7075 Y-.0501
- N9760 X1.7128 Y-.0531
- N9770 X1.7193 Y-.05
- N9780 X1.7302 Y-.0394
- N9790 X1.7314 Y-.0388
- N9800 X1.7381 Y-.0306
- N9810 X1.7382 Y-.0302
- N9820 X1.7377 Y-.0296
- N9830 X1.7369 Y-.0291
- N9840 X1.7339 Y-.0323
- N9850 X1.7301 Y-.0374
- N9860 X1.7193 Y-.0478
- N9870 X1.713 Y-.0514
- N9880 X1.7111 Y-.0509
- N9890 X1.7107 Y-.0489
- N9900 X1.712 Y-.0439
- N9910 X1.7179 Y-.035
- N9920 X1.7198 Y-.032
- N9930 X1.7271 Y-.0192
- N9940 X1.7279 Y-.015
- N9950 X1.7262 Y-.0095 N9960 X1.7215 Y-.0075
- N9970 X1.7127 Y-.0115
- N9980 X1.7109 Y-.0129
- N9990 X1.6912 Y-.032 N100 X1.6971 Y-.0225
- N110 X1.6987 Y-.0148
- N120 X1.6967 Y-.009
- N130 X1.692 Y-.0068
- N140 X1.6843 Y-.0098
- N150 X1.6717 Y-.0204
- N160 X1.6665 Y-.0265
- N170 X1.6632 Y-.0302
- N180 X1.6627 Y-.032 N190 X1.6629 Y-.0324
- N200 Z.199 F12.22
- N210 GO Z.249

- N220 Z.25
- N230 X.6475 Y-.0374
- N240 Z.2
- N250 G1 Z-.001 F12.22
- N260 X.6368 Y-.036 F30.56
- N270 X.6285 Y-.0381
- N280 X.6256 Y-.0428
- N290 X.6296 Y-.0489
- N300 X.6301 Y-.0492
- N310 X.6414 Y-.0514
- N320 X.6531 Y-.0493
- N330 X.6644 Y-.0427
- N340 X.6475 Y-.0374
- N350 Z.199 F12.22
- N360 GO Z.25
- N370 M5
- N380 G91 G28 Z0. M9
- N390 .
- N400 MO1
- N410 T4 M6
- N420 GO G90 G17 G54 X-.1647 Y.4501 . S8862 M3
- N430 G43 H4 Z.25 M8
- N440 Z.2
- N450 G1 Z-.26 F11.74
- N460 X-.0825 Y.3559 F14.44
- N470 G3 X.0117 Y.313 I.0942 J.0821
- N480 X.0939 Y.3438 IO. J.125
- N490 G2 X.3937 Y.4562 I.2998 J-.3438
- N500 X.4557 Y.452 IO. J-.4562
- N510 G1 X.8532 Y.3974
- N520 X.9255 Y.3875 Z-.187
- N530 X1.3305 Y.3319
- N540 G3 X1.4004 Y.3251 I.12 J.8742
- N550 X1.4505 Y.3237 Z-.2371 I.0501 J.881
- N560 X1.4733 Y.324 Z-.26 IO. J.8824
- N570 X1.9455 Y.4756 I-.0228 J.8821
- N580 G1 X2.4637 Y.8267
- N590 G2 X2.7416 Y.912 I.2779 J-.4102
- N600 X3.0995 Y.7592 IO. J-.4955
- N610 X3.3253 Y.418 I-.7767 J-.7592
- N620 X3.3511 Y.3497 Z-.187 I-1.0025 J-.418
- N630 X3.4089 YO. I-1.0283 J-.3497
- N640 X3.4019 Y-.1227 I-1.0861 JO.
- N650 X3.3913 Y-.1949 Z-.26 I-1.0791 J.1227
- N660 X3.0995 Y-.7592 I-1.0685 J.1949
- N670 X2.7416 Y-.912 I-.3579 J.3427
- N680 X2.4637 Y-.8267 IO. J.4955
- N690 G1 X1.9502 Y-.4788
- N700 X1.9455 Y-.4756 Z-.2542
- N710 G3 X1.8884 Y-.44 Z-.187 I-.495 J-.7305
- N720 X1.4505 Y-.3237 I-.4379 J-.7661
- N730 X1.4297 Y-.3239 IO. J-.8824
- N740 X1.3569 Y-.3287 Z-.26 I.0208 J-.8822
- N750 X1.3305 Y-.3319 I.0936 J-.8774

```
N760 G1 X.4557 Y-.452
```

N770 G2 X.3937 Y-.4562 I-.062 J.452

N780 X-.0625 YO. IO. J.4562

N790 X.0939 Y.3438 I.4562 JO.

N800 G3 X.1367 Y.438 I-.0822 J.0942

N810 X.1059 Y.5202 I-.125 JO.

N820 G1 X.0237 Y.6144

N830 Z-.06 F11.74

N840 GO Z.25

N850 M5

N860 G91 G28 Z0. M9

N870 G28 XO. YO. .

N880 M30

%

Chapter 3

Plot in NCViewer



