



Steuerungstechnik

# MTC - Manual Turning Control Zyklusfunktionen für die Bearbeitung

N0010 G95 F0.12 EBENE\_XZ  
N0020 G94 F3000 T2  
N0030 M03  
N0040 G00 G440 G90 X81 Z4  
N0050 G95 F0.15 G01 Z-94.9  
N0060 G01 X58  
N0070 G94 G00 Z4  
N0080 G00 X65  
N0090 G95 F0.15 G01 Z-94.9  
N0100 G01 X63  
N0110 G94 G00 Z4  
N0120 G00 X69  
N0130 G95 F0.15 G01 Z-94.9  
N0140 G01 X67  
N0150 G94 G00 Z4  
N0160 G00 X73  
N0170 G95 F0.15 G01 Z-94.9  
N0180 G01 X71  
N0190 G94 G00 Z4  
N0200 G00 X77  
N0210 G95 F0.15 G01 Z-94.9  
N0220 G01 X75  
N0230 G94 G00 Z4  
N0240 G00 X81  
N0250 G95 F0.15 G01 Z-94.9  
N0260 G01 X79  
N0270 G94 G00 Z4  
N0280 G00 X85  
N0290 G95 F0.15 G01 Z-95  
N0300 F0.2 G01 X57  
N0310 G94 G00 Z200  
N0320 M05  
N0330 M00

# MTC – Funktionen

- ✓ Hand
- ✓ Gerade und Radius
- ✓ Kontur und Konturfolge
- ✓ Standard- und Sonderzyklen
- ✓ Abspannen Kontur
- ✓ Quittung (Arbeitsschritt看ette)
- ✓ NC-Programmbetrieb (DIN/ISO)

## Drehen à la Carte



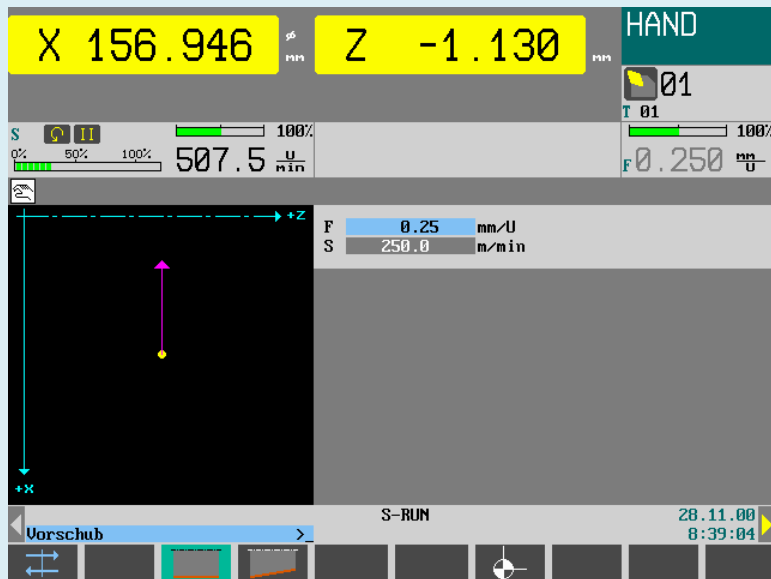
N0010 G95 F0.12 EBENE\_XZ  
 N0020 G94 F3000 T2  
 N0030 M03  
 N0040 G00 G440 G90 X61 Z4  
 N0050 G95 F0.15 G01 Z-94.9  
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 N0270 G94 G00 Z4  
 N0280 G00 X85  
 N0290 G95 F0.15 G01 Z-95  
 N0300 F0.2 G01 X57  
 N0310 G94 G00 Z200  
 N0320 M05  
 N0330 M00



# Bearbeitungsmenü HAND

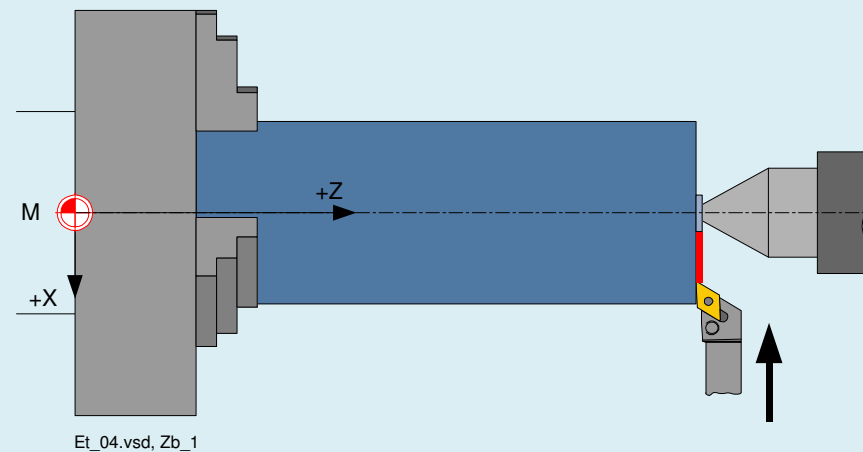


Steuerungstechnik



Bearbeitung von

- Zylinder-, Plan- und Kegelflächen
- Referenzpunkt anfahren
- Kopieren mittels elektronischer Schablone



```
N0010 G95 F0.12 EBENE_XZ
N0020 G94 F3000 T2
N0030 M03
N0040 G00 G440 G90 X61 Z4
N0050 G95 F0.15 G01 Z-94.9
N0060 G01 X58
N0070 G94 G00 Z4
N0080 G00 X65
N0090 G95 F0.15 G01 Z-94.9
N0100 G01 X63
N0110 G94 G00 Z4
N0120 G00 X69
N0130 G95 F0.15 G01 Z-94.9
N0140 G01 X67
N0150 G94 G00 Z4
N0160 G00 X73
N0170 G95 F0.15 G01 Z-94.9
N0180 G01 X71
N0190 G94 G00 Z4
N0200 G00 X77
N0210 G95 F0.15 G01 Z-94.9
N0220 G01 X75
N0230 G94 G00 Z4
N0240 G00 X81
N0250 G95 F0.15 G01 Z-94.9
N0260 G01 X79
N0270 G94 G00 Z4
N0280 G00 X85
N0290 G95 F0.15 G01 Z-95
N0300 F0.2 G01 X57
N0310 G94 G00 Z200
N0320 M05
N0330 M00
```



# Bearbeitungsmenü GERADE

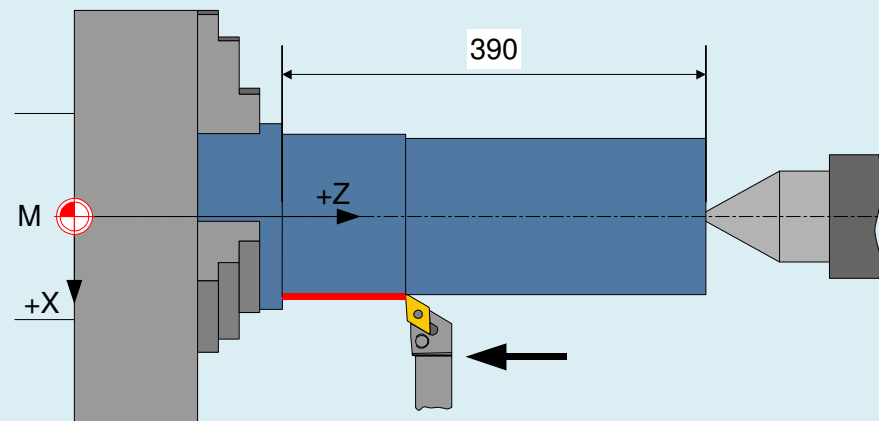


Steuerungstechnik

X 175.000 Z-305.979 GERADE  
01  
F 0.25 mm/U T 1 CRC0  
S 250.0 m/min  
Z -390.000 ABS  
HOLD S-RUN 28.11.00  
MOVE 9:36:03  
X Z

Bearbeitung von

- Zylinder-, Plan- und Kegelflächen



Et\_04.vsd, Zb\_1

```
N0010 G95 F0.12 EBENE_XZ  
N0020 G94 F3000 T2  
N0030 M03  
N0040 G00 G440 G90 X61 Z4  
N0050 G95 F0.15 G01 Z-94.9  
N0060 G01 X58  
N0070 G94 G00 Z4  
N0080 G00 X65  
N0090 G95 F0.15 G01 Z-94.9  
N0100 G01 X63  
N0110 G94 G00 Z4  
N0120 G00 X69  
N0130 G95 F0.15 G01 Z-94.9  
N0140 G01 X67  
N0150 G94 G00 Z4  
N0160 G00 X73  
N0170 G95 F0.15 G01 Z-94.9  
N0180 G01 X71  
N0190 G94 G00 Z4  
N0200 G00 X77  
N0210 G95 F0.15 G01 Z-94.9  
N0220 G01 X75  
N0230 G94 G00 Z4  
N0240 G00 X81  
N0250 G95 F0.15 G01 Z-94.9  
N0260 G01 X79  
N0270 G94 G00 Z4  
N0280 G00 X85  
N0290 G95 F0.15 G01 Z-95  
N0300 F0.2 G01 X57  
N0310 G94 G00 Z200  
N0320 M05  
N0330 M00
```



# Bearbeitungsmenü KREIS

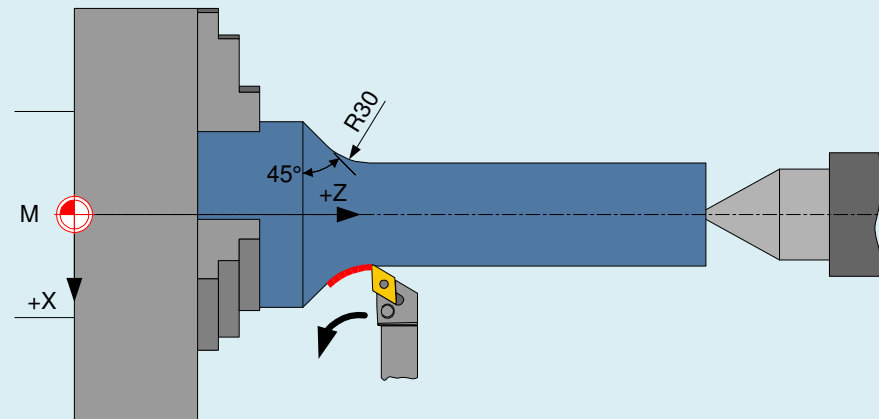


Steuerungstechnik



## Bearbeitung Kreisbögen

- Winkelparameter
- Radius mit Endpunkt-Koordinaten
- Mittelpunkt-Koordinaten



Et\_04.vsd, Zb\_2

```
N0010 G95 F0.12 EBENE_XZ
N0020 G94 F3000 T2
N0030 M03
N0040 G00 G440 G90 X61 Z4
N0050 G95 F0.15 G01 Z-94.9
N0060 G01 X58
N0070 G94 G00 Z4
N0080 G00 X65
N0090 G95 F0.15 G01 Z-94.9
N0100 G01 X63
N0110 G94 G00 Z4
N0120 G00 X69
N0130 G95 F0.15 G01 Z-94.9
N0140 G01 X67
N0150 G94 G00 Z4
N0160 G00 X73
N0170 G95 F0.15 G01 Z-94.9
N0180 G01 X71
N0190 G94 G00 Z4
N0200 G00 X77
N0210 G95 F0.15 G01 Z-94.9
N0220 G01 X75
N0230 G94 G00 Z4
N0240 G00 X81
N0250 G95 F0.15 G01 Z-94.9
N0260 G01 X79
N0270 G94 G00 Z4
N0280 G00 X85
N0290 G95 F0.15 G01 Z-95
N0300 F0.2 G01 X57
N0310 G94 G00 Z200
N0320 M05
N0330 M00
```



# Bearbeitungsmenü KREIS

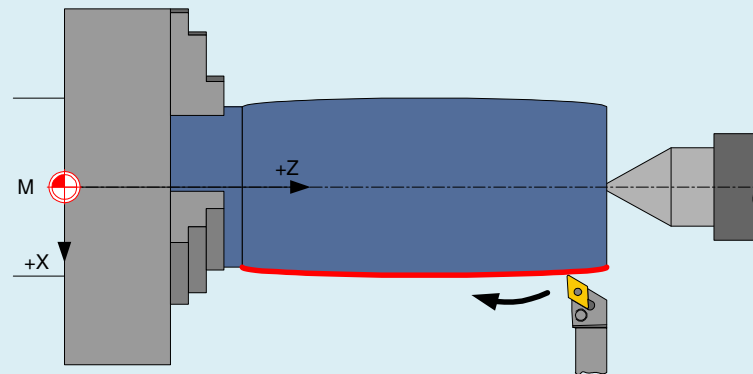


Steuerungstechnik



## Bearbeitung von balligen Elementen

- Eingabe von Radius  $> 10^6$  oder Segmenthöhe



Et\_04.vsd, Zb\_2

```
N0010 G95 F0.12 EBENE_XZ
N0020 G94 F3000 T2
N0030 M03
N0040 G00 G440 G90 X61 Z4
N0050 G95 F0.15 G01 Z-94.9
N0060 G01 X58
N0070 G94 G00 Z4
N0080 G00 X65
N0090 G95 F0.15 G01 Z-94.9
N0100 G01 X63
N0110 G94 G00 Z4
N0120 G00 X69
N0130 G95 F0.15 G01 Z-94.9
N0140 G01 X67
N0150 G94 G00 Z4
N0160 G00 X73
N0170 G95 F0.15 G01 Z-94.9
N0180 G01 X71
N0190 G94 G00 Z4
N0200 G00 X77
N0210 G95 F0.15 G01 Z-94.9
N0220 G01 X75
N0230 G94 G00 Z4
N0240 G00 X81
N0250 G95 F0.15 G01 Z-94.9
N0260 G01 X79
N0270 G94 G00 Z4
N0280 G00 X85
N0290 G95 F0.15 G01 Z-95
N0300 F0.2 G01 X57
N0310 G94 G00 Z200
N0320 M05
N0330 M00
```



# Bearbeitungsmenü FREISTICH

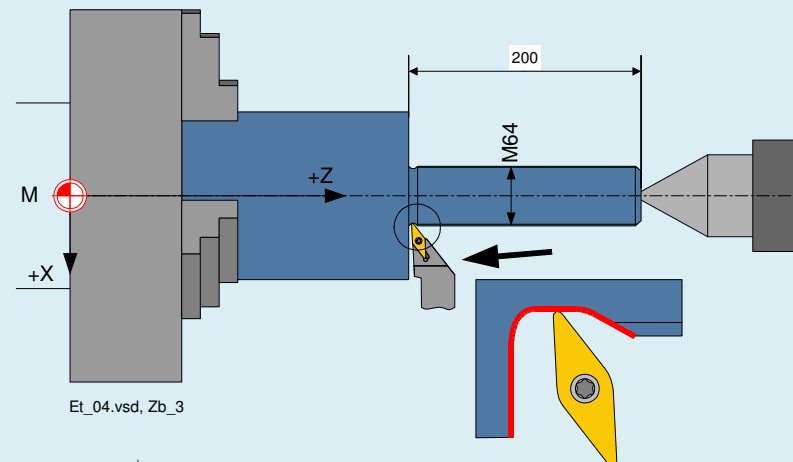


Steuerungstechnik

**X 78.290** **Z -200.000** **FREISTICH**  
DIN 76  
02  
107.710 0.000  
100%  
732.5  $\frac{\mu}{\text{min}}$   
F 0.250  $\frac{\text{mm}}{\text{U}}$   
S 180.0  $\frac{\text{m}}{\text{min}}$   
T 02  
F 0.25  $\frac{\text{mm}}{\text{U}}$  T 2  
S 180.0  $\frac{\text{m}}{\text{min}}$   
X0 3.5  
P 64.000 ABS  
Z0 -200.000 ABS  
 $\alpha$  60.0000 °  
U 60.000 INK  
D 2.500 INK  
U 0.500 INK  
HOLD S-RUN 28.11.00  
MOVE 10:49:50  
Lage > F E DIN

## Bearbeitung Freistichen

- Freistich nach DIN 509 – Form E und F
- Freistich nach DIN 76 – Gewinde
- Freistich frei definiert



N0010 G95 F0.12 EBENE\_XZ  
N0020 G94 F3000 T2  
N0030 M03  
N0040 G00 G440 G90 X61 Z4  
N0050 G95 F0.15 G01 Z-94.9  
N0060 G01 X58  
N0070 G94 G00 Z4  
N0080 G00 X65  
N0090 G95 F0.15 G01 Z-94.9  
N0100 G01 X63  
N0110 G94 G00 Z4  
N0120 G00 X69  
N0130 G95 F0.15 G01 Z-94.9  
N0140 G01 X67  
N0150 G94 G00 Z4  
N0160 G00 X73  
N0170 G95 F0.15 G01 Z-94.9  
N0180 G01 X71  
N0190 G94 G00 Z4  
N0200 G00 X77  
N0210 G95 F0.15 G01 Z-94.9  
N0220 G01 X75  
N0230 G94 G00 Z4  
N0240 G00 X81  
N0250 G95 F0.15 G01 Z-94.9  
N0260 G01 X79  
N0270 G94 G00 Z4  
N0280 G00 X85  
N0290 G95 F0.15 G01 Z-95  
N0300 F0.2 G01 X57  
N0310 G94 G00 Z200  
N0320 M05  
N0330 M00



# Bearbeitungsmenü KONTUR

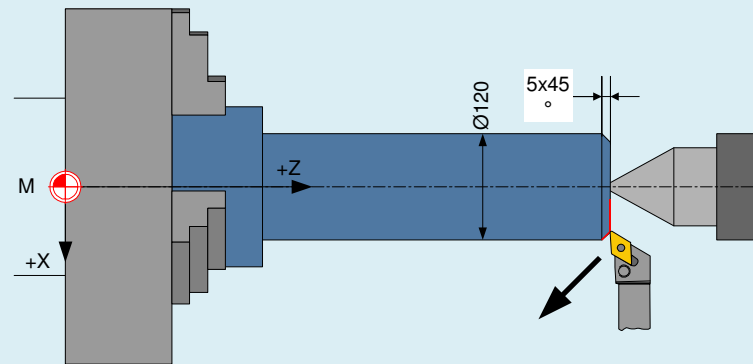


Steuerungstechnik

X 117.902    Z -5.438    KONTUR  
Fase 01  
T 01  
S 675.6 mm/min  
F 250.0 m/min  
X 120.000 ABS  
FS -5.000 INK  
übergang Fase von    HOLD S-RUN MOVE    28.11.00 11:43:09

## Bearbeitung Übergängen

- Fasen und Radien
- Konturfolgen



Et\_04.vsd, Zb\_2

```
N0010 G95 F0.12 EBENE_XZ  
N0020 G94 F3000 T2  
N0030 M03  
N0040 G00 G440 G90 X61 Z4  
N0050 G95 F0.15 G01 Z-94.9  
N0060 G01 X58  
N0070 G94 G00 Z4  
N0080 G00 X65  
N0090 G95 F0.15 G01 Z-94.9  
N0100 G01 X63  
N0110 G94 G00 Z4  
N0120 G00 X69  
N0130 G95 F0.15 G01 Z-94.9  
N0140 G01 X67  
N0150 G94 G00 Z4  
N0160 G00 X73  
N0170 G95 F0.15 G01 Z-94.9  
N0180 G01 X71  
N0190 G94 G00 Z4  
N0200 G00 X77  
N0210 G95 F0.15 G01 Z-94.9  
N0220 G01 X75  
N0230 G94 G00 Z4  
N0240 G00 X81  
N0250 G95 F0.15 G01 Z-94.9  
N0260 G01 X79  
N0270 G94 G00 Z4  
N0280 G00 X85  
N0290 G95 F0.15 G01 Z-95  
N0300 F0.2 G01 X57  
N0310 G94 G00 Z200  
N0320 M05  
N0330 M00
```





# Bearbeitungsmenü KONTUR



Steuerungstechnik

The screenshot shows the 'KONTUR' menu with the following data:

- X: 227.584 mm
- Z: 9.427 mm
- Spindle speed (S): 349.6 U/min
- Feed rate (F): 0.250 mm/U
- Tool (T): 01
- Sequence (Folge): 01

The interface includes a graph of the contour path, a numeric keypad, and a status bar at the bottom showing 'GP: OK' and the date/time '29.11.00 9:52:38'.

## Konturfolgen mit Geometrieprozessor

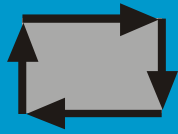
- Einlesen von DXF-Daten

This screenshot shows the 'KONTUR' menu with detailed parameters:

- X: 227.584 mm
- Z: 9.427 mm
- Spindle speed (S): 349.6 U/min
- Feed rate (F): 0.250 mm/U
- Tool (T): 01
- Sequence (Folge): 01
- Feed rate (F): 0.25 mm/U
- Spindle speed (S): 250.0 m/min
- Z: -100.000 ABS
- Z: -20.000 INK
- Angle (α): -90.0000 INK °
- FS: 0.000
- GP: OK

The interface includes a graph of the contour path, a numeric keypad, and a status bar at the bottom showing 'Übergangswinkel' and the date/time '29.11.00 10:00:20'.

N0010 G95 F0.12 EBENE\_XZ  
N0020 G94 F3000 T2  
N0030 M03  
N0040 G00 G440 G90 X81 Z4  
N0050 G95 F0.15 G01 Z-94.9  
N0060 G01 X58  
N0070 G94 G00 Z4  
N0080 G00 X65  
N0090 G95 F0.15 G01 Z-94.9  
N0100 G01 X63  
N0110 G94 G00 Z4  
N0120 G00 X69  
N0130 G95 F0.15 G01 Z-94.9  
N0140 G01 X67  
N0150 G94 G00 Z4  
N0160 G00 X73  
N0170 G95 F0.15 G01 Z-94.9  
N0180 G01 X71  
N0190 G94 G00 Z4  
N0200 G00 X77  
N0210 G95 F0.15 G01 Z-94.9  
N0220 G01 X75  
N0230 G94 G00 Z4  
N0240 G00 X81  
N0250 G95 F0.15 G01 Z-94.9  
N0260 G01 X79  
N0270 G94 G00 Z4  
N0280 G00 X85  
N0290 G95 F0.15 G01 Z-95  
N0300 F0.2 G01 X57  
N0310 G94 G00 Z200  
N0320 M05  
N0330 M00



# Bearbeitungsmenü ZYKLUS



Steuerungstechnik

**ZYKLUS**  
Längsgewinde  
04

X 63.200 mm Z -51.075 mm  
0.000 -148.850

S 100% 150.1 U/min F 6.000 mm

F 6.0 mm/U T 4  
S 150.0 U/min

G 1

X0	64.000	ABS	D	0.400	
Z0	0.000	ABS			
Z1	-200.000	ABS	U	2.000	INK
R1	0.000		U	0.200	INK
W	12.000	INK	L	3	°
R	0.000	INK	A	1.000	INK
K	3.681	INK	N	0	
I	0.000	INK	P	0	
D	0.400	INK	G	0.000	mm/U <sup>2</sup>
E	0.000	INK			

START S-RUN 29.11.00  
MOVE 8:57:59

Zustellung Linear

Zyklen für

- Längs-, Kegel- und Plangewinde
- Abspannen (Wellenabsätze)

**ZYKLUS**  
Abspannen  
01

X 278.024 mm Z -25.169 mm  
0.000 -35.865

S 100% 500.4 U/min F 0.500 mm

F 0.50 mm/U T 1  
S 500.0 U/min

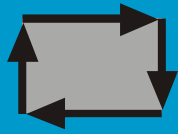
Z =

X0	300.000	ABS	F1	20.000	INK
Z0	0.000	ABS	R2	20.000	INK
X1	200.000	ABS			
Z1	-60.000	ABS			
α1	90.0000	°			
α2	90.0000	°			
FS	20.000	INK			
D	6.000	INK			
U	1.000	INK			

HOLD S-RUN 9.04.02  
MOVE 13:17:42

Z-Achse parallel

N0010 G95 F0.12 EBENE\_XZ  
N0020 G94 F3000 T2  
N0030 M03  
N0040 G00 G440 G90 X81 Z4  
N0050 G95 F0.15 G01 Z-94.9  
N0060 G01 X58  
N0070 G94 G00 Z4  
N0080 G00 X65  
N0090 G95 F0.15 G01 Z-94.9  
N0100 G01 X63  
N0110 G94 G00 Z4  
N0120 G00 X69  
N0130 G95 F0.15 G01 Z-94.9  
N0140 G01 X67  
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N0180 G01 X71  
N0190 G94 G00 Z4  
N0200 G00 X77  
N0210 G95 F0.15 G01 Z-94.9  
N0220 G01 X75  
N0230 G94 G00 Z4  
N0240 G00 X81  
N0250 G95 F0.15 G01 Z-94.9  
N0260 G01 X79  
N0270 G94 G00 Z4  
N0280 G00 X85  
N0290 G95 F0.15 G01 Z-95  
N0300 F0.2 G01 X57  
N0310 G94 G00 Z200  
N0320 M05  
N0330 M00



# Bearbeitungsmenü ZYKLUS



Steuerungstechnik

F	0.20	mm/U	T	3
S	120.0	n/min		

X0	300.000	ABS	BS	5.000	INK
Z0	-70.000	ABS	BS	0.000	INK
B	40.000	INK	U	0.200	INK
T	40.000	INK	D	7.000	INK
α1	10.0000	°	W	0.0000	°
α2	10.0000	°	P	-80.000	INK
F1	2.000	INK	N	3	
R2	5.000	INK			
F3	2.000	INK			
R4	5.000	INK			

HOLD S-RUN 8.11.01  
MOVE 7:58:38

Zyklen für

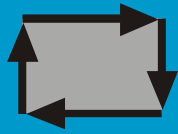
- Einstiche
- Bohren

F	1.75	mm/U	T	7
S	50.04	U/min		

20	0.000	ABS	P	1.750	mm/U
U	5.000	INK			
Z1	40.000	INK	t2	0.50	s

START S-RUN 4.12.00  
MOVE 18:14:15

N0010 G95 F0.12 EBENE\_XZ  
N0020 G94 F3000 T2  
N0030 M03  
N0040 G00 G440 G90 X61 Z4  
N0050 G95 F0.15 G01 Z-94.9  
N0060 G01 X58  
N0070 G94 G00 Z4  
N0080 G00 X65  
N0090 G95 F0.15 G01 Z-94.9  
N0100 G01 X63  
N0110 G94 G00 Z4  
N0120 G00 X69  
N0130 G95 F0.15 G01 Z-94.9  
N0140 G01 X67  
N0150 G94 G00 Z4  
N0160 G00 X73  
N0170 G95 F0.15 G01 Z-94.9  
N0180 G01 X71  
N0190 G94 G00 Z4  
N0200 G00 X77  
N0210 G95 F0.15 G01 Z-94.9  
N0220 G01 X75  
N0230 G94 G00 Z4  
N0240 G00 X81  
N0250 G95 F0.15 G01 Z-94.9  
N0260 G01 X79  
N0270 G94 G00 Z4  
N0280 G00 X85  
N0290 G95 F0.15 G01 Z-95  
N0300 F0.2 G01 X57  
N0310 G94 G00 Z200  
N0320 M05  
N0330 M00



# Bearbeitungsmenü ZYKLUS



Steuerungstechnik

**X 380.000** **Z-202.645** **ZYKLUS**  
**C 125.290** **11**  
**NUTENFRÄSEN**

S 0% 50% 100% 0.000 U/min S2 0% 50% 100% 850.8 U/min F 220.0 mm/min T 11

F 220.000 mm/min T 11  
ZF 100.000 mm/min S2 850 U/min

X0 400.000 ABS  
Z0 -140.000 ABS  
C0 0.000 ABS

W 3.000 INK  
T 10.000 INK

Z1 -360.000 INK  
FG -180.000 mm/U

Art der Nut: Spirale HOLD 22.03.02  
MOVE S2RUN 11:21:11

Zyklen für

- Fräsen (Nut, Tasche)
- Sonder- und Kundenzyklen

**X 200.000** **Z 0.000** **ZYKLUS**  
**C 0.000** **01**  
**Profilgewinde**

S 0% 50% 100% 0.000 U/min S2 0% 50% 100% 0.000 U/min F 30.00 mm/min T 01

F 30.000 mm/U T 1  
S 30 U/min

X0 150.000 ABS BS 4.000 INK  
Z0 5.000 ABS U 1.000 INK  
Z1 -50.000 INK B 20.000 INK  
W = R α1 15.0000 °  
R 18.000 INK α2 0.0000 °  
U 5.000 INK R1 0.000 INK  
D 4.000 INK R2 0.000 INK  
DX 1.000 INK R3 0.000 INK  
DZ 2.000 INK R4 0.000 INK  
E 0.000 INK Q 0.0000 °

Flankenwinkel 6.11.06  
13:00:22

D=0 S=0 1

N0010 G95 F0.12 EBENE\_XZ  
N0020 G94 F3000 T2  
N0030 M03  
N0040 G00 G440 G90 X61 Z4  
N0050 G95 F0.15 G01 Z-94.9  
N0060 G01 X58  
N0070 G94 G00 Z4  
N0080 G00 X65  
N0090 G95 F0.15 G01 Z-94.9  
N0100 G01 X63  
N0110 G94 G00 Z4  
N0120 G00 X69  
N0130 G95 F0.15 G01 Z-94.9  
N0140 G01 X67  
N0150 G94 G00 Z4  
N0160 G00 X73  
N0170 G95 F0.15 G01 Z-94.9  
N0180 G01 X71  
N0190 G94 G00 Z4  
N0200 G00 X77  
N0210 G95 F0.15 G01 Z-94.9  
N0220 G01 X75  
N0230 G94 G00 Z4  
N0240 G00 X81  
N0250 G95 F0.15 G01 Z-94.9  
N0260 G01 X79  
N0270 G94 G00 Z4  
N0280 G00 X85  
N0290 G95 F0.15 G01 Z-95  
N0300 F0.2 G01 X57  
N0310 G94 G00 Z200  
N0320 M05  
N0330 M00



# Bearbeitungsmenü ABSPANEN KONTUR

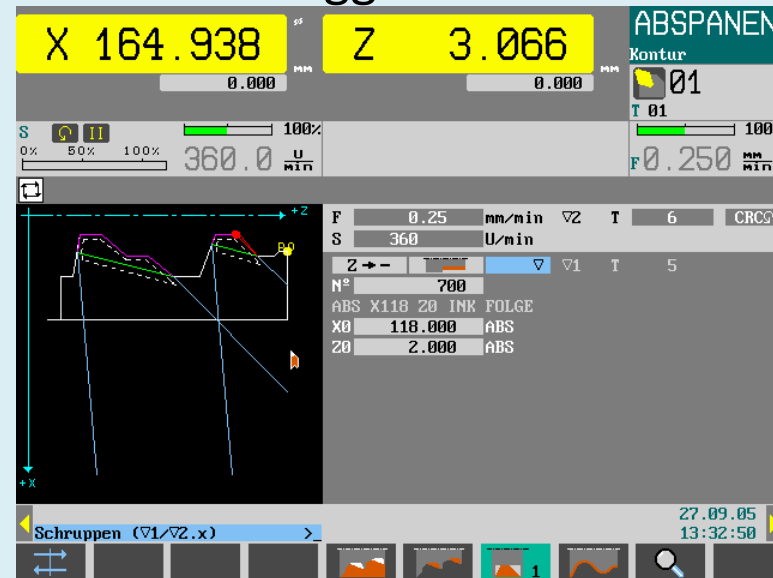


Steuerungstechnik



## Zyklen für Konturen

- Konturen und Restmaterial unter Beachtung der Werkzeuggeometrie



N0010 G95 F0.12 EBENE\_XZ  
N0020 G94 F3000 T2  
N0030 M03  
N0040 G00 G440 G90 X61 Z4  
N0050 G95 F0.15 G01 Z-94.9  
N0060 G01 X58  
N0070 G94 G00 Z4  
N0080 G00 X65  
N0090 G95 F0.15 G01 Z-94.9  
N0100 G01 X63  
N0110 G94 G00 Z4  
N0120 G00 X69  
N0130 G95 F0.15 G01 Z-94.9  
N0140 G01 X67  
N0150 G94 G00 Z4  
N0160 G00 X73  
N0170 G95 F0.15 G01 Z-94.9  
N0180 G01 X71  
N0190 G94 G00 Z4  
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N0210 G95 F0.15 G01 Z-94.9  
N0220 G01 X75  
N0230 G94 G00 Z4  
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N0250 G95 F0.15 G01 Z-94.9  
N0260 G01 X79  
N0270 G94 G00 Z4  
N0280 G00 X85  
N0290 G95 F0.15 G01 Z-95  
N0300 F0.2 G01 X57  
N0310 G94 G00 Z200  
N0320 M05  
N0330 M00



# Bearbeitungsmenü QUITTUNG



Steuerungstechnik

**QUITTUNG**

X 165.000 Z 14.000

S 150 U/min

Nº 4	CRC0	Nº 5	DIN 76
Nº 23	X0 40.000 ABS		
X0 0.000 ABS	Z0 -30.000 ABS		
Z 2.000 ABS	D 1.200 INK		
D 5.000 INK	P 1.0		
U 0.500 INK	F 0.25 mm/U		

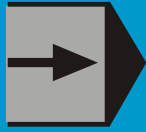
30.08.02 9:21:02

FREISTICH DIN 76

Kettung von

- Geometrie- und Technologiedaten
- Date der Menüs GERADE bis ABSPANEN KONTUR
- Technologiedaten, wie Spindel EIN/AUS
- Hinweistexte

N0010 G95 F0.12 EBENE\_XZ  
N0020 G94 F3000 T2  
N0030 M03  
N0040 G00 G440 G90 X61 Z4  
N0050 G95 F0.15 G01 Z-94.9  
N0060 G01 X58  
N0070 G94 G00 Z4  
N0080 G00 X65  
N0090 G95 F0.15 G01 Z-94.9  
N0100 G01 X63  
N0110 G94 G00 Z4  
N0120 G00 X69  
N0130 G95 F0.15 G01 Z-94.9  
N0140 G01 X67  
N0150 G94 G00 Z4  
N0160 G00 X73  
N0170 G95 F0.15 G01 Z-94.9  
N0180 G01 X71  
N0190 G94 G00 Z4  
N0200 G00 X77  
N0210 G95 F0.15 G01 Z-94.9  
N0220 G01 X75  
N0230 G94 G00 Z4  
N0240 G00 X81  
N0250 G95 F0.15 G01 Z-94.9  
N0260 G01 X79  
N0270 G94 G00 Z4  
N0280 G00 X85  
N0290 G95 F0.15 G01 Z-95  
N0300 F0.2 G01 X57  
N0310 G94 G00 Z200  
N0320 M05  
N0330 M00



# Bearbeitungsmenü NC-PROGRAMMBETRIEB



Steuerungstechnik

X 188.604    Z 93.513    N0000

000004712 (QUITTING WELLE 4711 22.12.2000)↓

N0010 (M-BEFEHL) G21 G95 F0.2 G96 S180 G38 ↓

N0020 (M-BEFEHL) F0.25 G97 S180 M04 M42 ↓

N0030 (WERKZEUG) T1 ↓

N0040 (ABSPANEN KOMTUR) G70 G40 G90 X100 Z0 G91 I0 K0 P206:5P208

:0.2P215:60P216:2P220: 4711P221:0.800000P240:1↓

N0050 (WERKZEUG) T2 ↓

N0060 (ABSPANEN KOMTUR) G70 G90 X100 Z0 G91 I0 K0 P206:5P208:0.2

P215:60P216:2P220: 4711P221:0.800000P241:1↓

N0070 (WERKZEUG) T3 ↓

N0080 (EINSTICH) G71 G90 X100 Z-35 G91 I0 K0 PF1.2PG0.2PK10PL10P

M15PM10P02PP2PQ2PR2PW4PX1PY1P227:2P228:5P240:1P241:1↓

N0090 (ENDE ) M30↓

12.01.01  
8:22:56

## NC-Programme

- Editieren
- Verwalten
- Konvertieren
- Datentransfer

N0010 G95 F0.12 EBENE\_XZ  
N0020 G94 F3000 T2  
N0030 M03  
N0040 G00 G440 G90 X61 Z4  
N0050 G95 F0.15 G01 Z-94.9  
N0060 G01 X58  
N0070 G94 G00 Z4  
N0080 G00 X65  
N0090 G95 F0.15 G01 Z-94.9  
N0100 G01 X63  
N0110 G94 G00 Z4  
N0120 G00 X69  
N0130 G95 F0.15 G01 Z-94.9  
N0140 G01 X67  
N0150 G94 G00 Z4  
N0160 G00 X73  
N0170 G95 F0.15 G01 Z-94.9  
N0180 G01 X71  
N0190 G94 G00 Z4  
N0200 G00 X77  
N0210 G95 F0.15 G01 Z-94.9  
N0220 G01 X75  
N0230 G94 G00 Z4  
N0240 G00 X81  
N0250 G95 F0.15 G01 Z-94.9  
N0260 G01 X79  
N0270 G94 G00 Z4  
N0280 G00 X85  
N0290 G95 F0.15 G01 Z-95  
N0300 F0.2 G01 X57  
N0310 G94 G00 Z200  
N0320 M05  
N0330 M00

# MENU

# Bearbeitungsmenü MENÜ

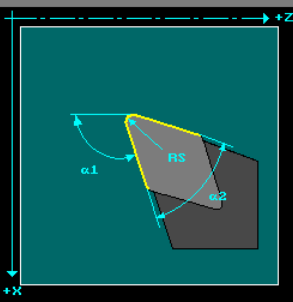


Steuerungstechnik

X 150.000 Z 0.000 **WERKZEUG**  
 Geometrie  
01  
 S 100% 530.5 mm/min F 0.250 mm  

N°	XL (mm)	ZL (mm)	RS (mm)
01	71.254	102.487	1.200
02	75.214	100.500	1.200
03	70.548	110.257	0.200
04	0.000	105.482	4.250
05	0.000	65.872	5.000
06	0.000	120.548	7.000
07	0.000	85.250	8.000
08	0.000	0.000	25.000
09	74.594	98.987	0.400
10	105.658	65.158	0.400
11	78.542	102.546	0.400
12	0.000	0.000	0.000
13	0.000	0.000	0.000
14	0.000	0.000	0.000
15	0.000	0.000	0.000
16	0.000	0.000	0.000

- Werkzeugverwaltung
- Verschleißkorrekturen
- Nullpunktverschiebungen

X 150.000 Z 0.000 **WERKZEUG**  
 Auswahl  
01  
 S 100% 500.0 mm/min F 0.250 mm  


Parameter	Value	Unit	Label
XL	75.214	mm	
ZL	100.500	mm	
RS	1.200	mm	
alpha.1	90.0000	°	(P1)
alpha.2	85.0000	°	(P2)

N0010 G95 F0.12 EBENE\_XZ  
 N0020 G94 F3000 T2  
 N0030 M03  
 N0040 G00 G440 G90 X61 Z4  
 N0050 G95 F0.15 G01 Z-94.9  
 N0060 G01 X58  
 N0070 G94 G00 Z4  
 N0080 G00 X65  
 N0090 G95 F0.15 G01 Z-94.9  
 N0100 G01 X63  
 N0110 G94 G00 Z4  
 N0120 G00 X69  
 N0130 G95 F0.15 G01 Z-94.9  
 N0140 G01 X67  
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 N0160 G00 X73  
 N0170 G95 F0.15 G01 Z-94.9  
 N0180 G01 X71  
 N0190 G94 G00 Z4  
 N0200 G00 X77  
 N0210 G95 F0.15 G01 Z-94.9  
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 N0240 G00 X81  
 N0250 G95 F0.15 G01 Z-94.9  
 N0260 G01 X79  
 N0270 G94 G00 Z4  
 N0280 G00 X85  
 N0290 G95 F0.15 G01 Z-95  
 N0300 F0.2 G01 X57  
 N0310 G94 G00 Z200  
 N0320 M05  
 N0330 M00





# Vorteile – MTC

- ✓ Statt langer Einarbeitung, sofort Späne machen
- ✓ Integration anwendungsbezogener Zyklen
- ✓ Facharbeitergerechtes Steuerungskonzept
- ✓ Klar strukturierte Bearbeitungsmenüs

N0010 G95 F0.12 EBENE\_XZ  
N0020 G94 F3000 T2  
N0030 M03  
N0040 G00 G440 G90 X61 Z4  
N0050 G95 F0.15 G01 Z-94.9  
N0060 G01 X58  
N0070 G94 G00 Z4  
N0080 G00 X65  
N0090 G95 F0.15 G01 Z-94.9  
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N0210 G95 F0.15 G01 Z-94.9  
N0220 G01 X75  
N0230 G94 G00 Z4  
N0240 G00 X81  
N0250 G95 F0.15 G01 Z-94.9  
N0260 G01 X79  
N0270 G94 G00 Z4  
N0280 G00 X85  
N0290 G95 F0.15 G01 Z-95  
N0300 F0.2 G01 X57  
N0310 G94 G00 Z200  
N0320 M05  
N0330 M00



# MTC - Datentransfer

- ✓ Ferndiagnose per Ethernet oder Mobilfunk
- ✓ Erstellen eines Netzlaufwerkes auf dem internen Speichermedium der MTC
- ✓ Direkter Austausch von Daten unter mehreren MTC-Steuerungen

N0010 G95 F0.12 EBENE\_XZ  
N0020 G94 F3000 T2  
N0030 M03  
N0040 G00 G440 G90 X61 Z4  
N0050 G95 F0.15 G01 Z-94.9  
N0060 G01 X58  
N0070 G94 G00 Z4  
N0080 G00 X65  
N0090 G95 F0.15 G01 Z-94.9  
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N0110 G94 G00 Z4  
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N0130 G95 F0.15 G01 Z-94.9  
N0140 G01 X67  
N0150 G94 G00 Z4  
N0160 G00 X73  
N0170 G95 F0.15 G01 Z-94.9  
N0180 G01 X71  
N0190 G94 G00 Z4  
N0200 G00 X77  
N0210 G95 F0.15 G01 Z-94.9  
N0220 G01 X75  
N0230 G94 G00 Z4  
N0240 G00 X81  
N0250 G95 F0.15 G01 Z-94.9  
N0260 G01 X79  
N0270 G94 G00 Z4  
N0280 G00 X85  
N0290 G95 F0.15 G01 Z-95  
N0300 F0.2 G01 X57  
N0310 G94 G00 Z200  
N0320 M05  
N0330 M00



# MTC – Kompatibilität zu Siemens

- ✓ Abmessungen im 19“-Raster (kompatibel zu Siemens SINUMERIK Komponenten)
- ✓ Betrieb mit aktuelle Siemens SINAMICS S120 Antrieben
- ✓ Anschluss PROFINET und PROFIBUS
- ✓ Einsatz von abstandkodierte Meßsystemen / Endat

N0010 G95 F0.12 EBENE\_XZ  
N0020 G94 F3000 T2  
N0030 M03  
N0040 G00 G440 G90 X61 Z4  
N0050 G95 F0.15 G01 Z-94.9  
N0060 G01 X58  
N0070 G94 G00 Z4  
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N0090 G95 F0.15 G01 Z-94.9  
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N0120 G00 X69  
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N0140 G01 X67  
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N0180 G01 X71  
N0190 G94 G00 Z4  
N0200 G00 X77  
N0210 G95 F0.15 G01 Z-94.9  
N0220 G01 X75  
N0230 G94 G00 Z4  
N0240 G00 X81  
N0250 G95 F0.15 G01 Z-94.9  
N0260 G01 X79  
N0270 G94 G00 Z4  
N0280 G00 X85  
N0290 G95 F0.15 G01 Z-95  
N0300 F0.2 G01 X57  
N0310 G94 G00 Z200  
N0320 M05  
N0330 M00



Steuerungstechnik

**Vielen Dank für  
Ihre  
Aufmerksamkeit**

N0010 G95 F0.12 EBENE\_XZ  
N0020 G94 F3000 T2  
N0030 M03  
N0040 G00 G440 G90 X81 Z4  
N0050 G95 F0.15 G01 Z-94.9  
N0060 G01 X58  
N0070 G94 G00 Z4  
N0080 G00 X65  
N0090 G95 F0.15 G01 Z-94.9  
N0100 G01 X63  
N0110 G94 G00 Z4  
N0120 G00 X69  
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N0140 G01 X67  
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N0190 G94 G00 Z4  
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N0220 G01 X75  
N0230 G94 G00 Z4  
N0240 G00 X81  
N0250 G95 F0.15 G01 Z-94.9  
N0260 G01 X79  
N0270 G94 G00 Z4  
N0280 G00 X85  
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N0300 F0.2 G01 X57  
N0310 G94 G00 Z200  
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N0330 M00