

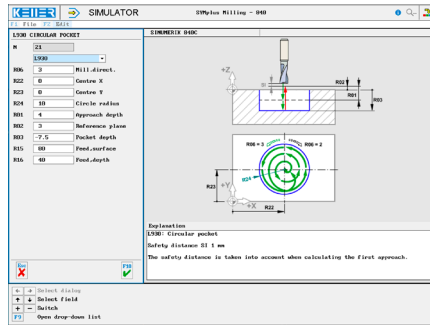
CONTROLS

Control simulator SINUMERIK 840C (milling)

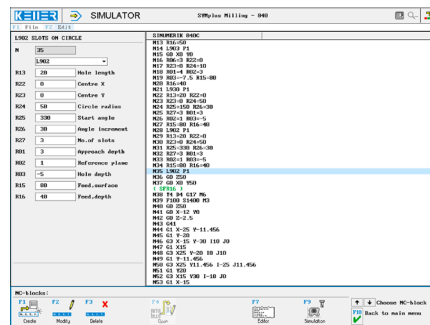


The control related simulator is an additional module for SYMplus. This simulator is used to learn the control system programming. A program generated by a postprocessor can also be edited and simulated.

Help pictures and texts (for all input dialogues)

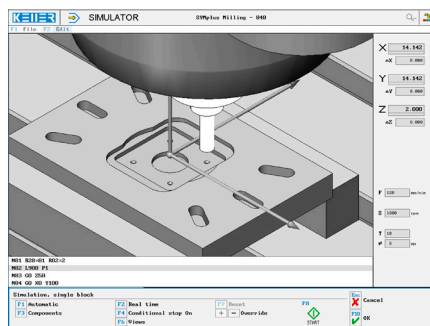


NC editor incl. input dialogue and syntax control



3D simulation

(without display: 2D simulation with the possibility to measure the workpiece)



Keyboard information system:

Getting familiar with the meaning of all keys of the control system by moving the mouse cursor over the keys



COMMANDS/ FUNCTIONS/CYCLES

- G0 Rapid traverse
- G1 Distance
- G2 Arc, clockwise
- G3 Arc, counter-clockwise
- G4 Dwell time
- G10 Rapid traverse (polar)
- G11 Distance (polar)
- G12 Arc, clockwise (polar)
- G13 Arc, counter-clockwise (polar)
- G17/G18/G19 Plane
- G40/G41/G42 Radius compensation
- G54-G57, G53 Zero offset
- G59 ZPD absolute
- G63/G60 Feed correction switch effective/not effective
- G90/G91 Dimension reference
- Comment Explanations
- L Subprogram call
- M Additional function
- R Parameter list
- T Tool call
- X/Y/Z/F/S/M Modal commands
- G80 Undo G81...G89 selection
- G81...G89 See L81 to L89, modally effective
- L81 Drilling/centering
- L82 Drilling/spot facing
- L83 Deep hole drilling
- L84 Tapping
- L85...89 Boring 1...5
- L900 Point pattern on circle
- L901 Groove milling on circle
- L902 Slots on circle
- L903 Rectangular pocket
- L904 Circular grooves on circle
- L905 Single position
- L906 Point pattern on straight line
- L930 Circular pocket



Example program

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% MPF 840
( SIM      : SINUMERIK 840C)
( RP      : 150 X 100 X 20)
( TOOLS   : PAL/PRO 1..12)
N1 G90
N2 G59 X75 Y50 Z0
N3 G0 X0 Y50
( LFR08 )
N4 T7 D7 G17 M6
N5 S2800 M3
N6 G0 Z50
N7 G0 X0 Y0
N8 R06=3 R12=45
N9 R13=45 R22=0
N10 R23=0 R24=4
N11 R01=3 R02=2
N12 R03=-5 R15=100
N13 R16=50
N14 L903 P1
N15 G0 X0 Y0
N16 R06=3 R22=0
N17 R23=0 R24=10
N18 R01=4 R02=3
N19 R03=-7.5 R15=80
N20 R16=40
N21 L930 P1
N22 R13=20 R22=0
N23 R23=0 R24=50
N24 R25=150 R26=30
N25 R27=3 R01=3
N26 R02=1 R03=-5
N27 R15=80 R16=40
N28 L902 P1
N29 R13=20 R22=0
N30 R23=0 R24=50
N31 R25=330 R26=30
N32 R27=3 R01=3
N33 R02=1 R03=-5
N34 R15=80 R16=40
N35 L902 P1
N36 G0 Z50
N37 G0 X0 Y50
( SFR16 )
N38 T4 D4 G17 M6
N39 F100 S1400 M3
N40 G0 Z50
N41 G0 X-12 Y0
N42 G0 Z-2.5
N43 G41
N44 G1 X-25 Y-11.456
N45 G1 Y-20
N46 G3 X-15 Y-30 I10 J0
N47 G1 X15
N48 G3 X25 Y-20 I0 J10
N49 G1 Y-11.456
N50 G3 X25 Y11.456 I-25 J11.456
N51 G1 Y20
N52 G3 X15 Y30 I-10 J0
N53 G1 X-15
N54 G3 X-25 Y20 I0 J-10
N55 G1 Y11.456
N56 G3 X-25 Y-11.456 I25 J-11.456
N57 G1 Y-13
N58 G3 X-15 Y-23 I10 J0
N59 G40
N60 G0 Z50
N61 G0 X0 Y0
N62 G0 X0 Y-50
( NCA12 )
N63 T1 D1 G17 M6
N64 F100 S1400 M3
N65 G0 Z2
N66 R02=1 R03=-6 R10=5
N67 R22=0 R23=0
N68 R24=20 R25=45
N69 R26=0 R27=4
N70 R28=81 R02=2
N71 L900 P1
N72 G0 Z50
N73 G0 X0 Y50
( SPB08 )
N74 T10 D10 G17 M6
N75 F120 S1800 M3
N76 G0 Z2 M0
N77 R03=-10
N78 R22=0 R23=0
N79 R24=20 R25=45
N80 R26=0 R27=4
N81 R28=81 R02=2
N82 L900 P1
N83 G0 Z50
N84 G0 X0 Y100
N85 M30

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