



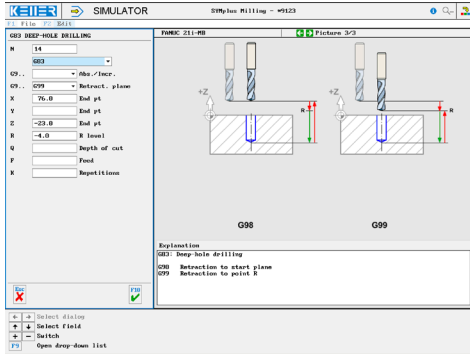
CONTROLS

Control simulator FANUC 31i (milling)

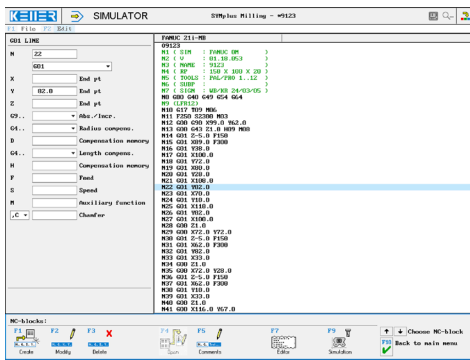


The control related simulator is an additional module for SYMplus. This simulator is used to learn the control system programming. A program generated by a postprocessor can also be edited and simulated.

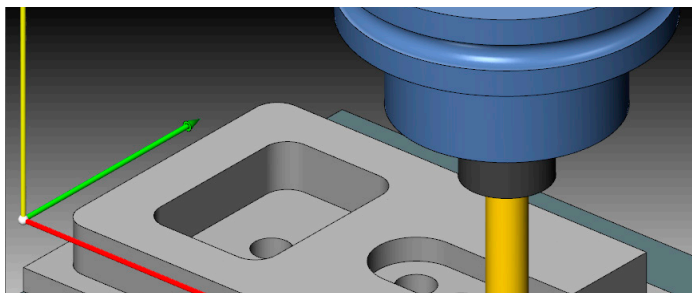
Help pictures and texts (for all input dialogues)



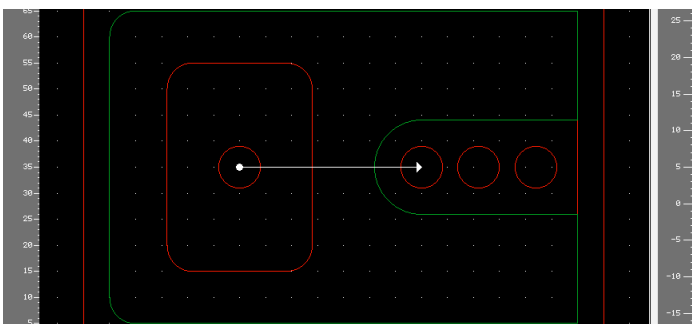
NC editor incl. input dialogue and syntax control



3D simulation with freely adjustable perspective, including continuous display of NC blocks



Measuring the workpiece in the 2D simulation (top view)



COMMANDS/ FUNCTIONS/CYCLES

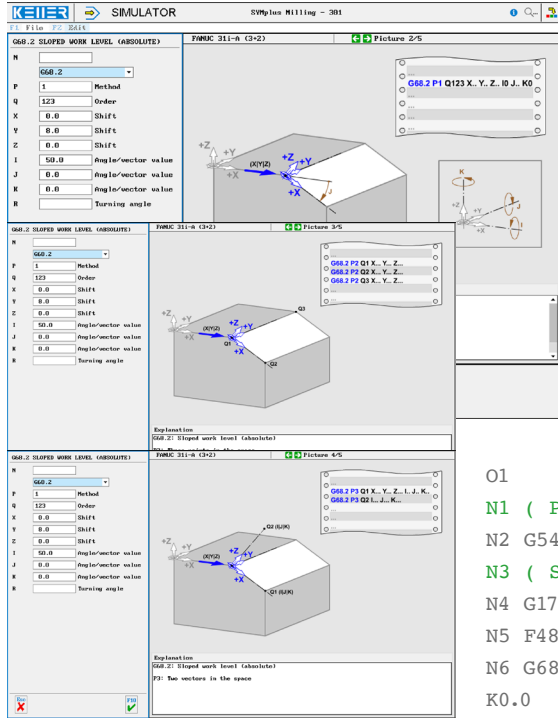
- G00 Rapid traverse
- G01 Line
- G02 Arc, clockwise
- G03 Arc, counter-clockwise
- G04 Dwell time
- G09 Exact positioning
- G15 Polar coordinates cancel
- G16 Polar coordinates
- G28 Return to reference point
- G29 Return from reference point
- G40/G41/G42 Radius compensation
- G43/G44/G49 Length compensation
- G50 Scaling mode cancel
- G50 1 Programmable mirror image cancel
- G51 Scaling mode
- G51 1 Programmable mirror image
- G52 Local coordinate system setting
- G53 Machine coordinates
- G54-G59 Workpiece coordinate system
- G65 Macro call
- # Parameter
- GOTO/IF/WHILE Jumps and loops
- G68 Coordinate rotation
- G69 Coordinate rotation end
- G73 Deep-hole drilling
- G74 Tapping left
- G76 Fine boring
- G80 Terminate canned cycle
- G81 Spot drilling
- G82 Countersink
- G83 Deep-hole drilling
- G84 Tapping
- G85 Boring
- G86 Boring with stop
- G87 Back drilling
- G88 Special boring
- G89 Boring
- G90/G91 Dimensional reference
- G92 Set zero point
- G94 Feed
- M Additional functions
- T Tool call
- Comment Explanations
- X/Z/F/S/M Modal commands

Optionally also with plane tilt:
G68.2, G68.4, G53.1, G56.1, G69.

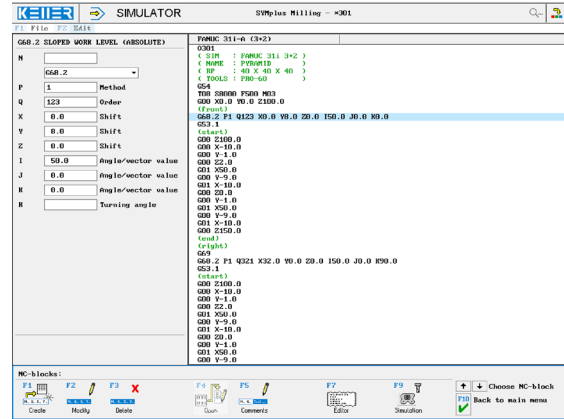
(See next page)

As an extension to the FANUC 31i simulator the G68.2, G68.4, G53.1 and G56.1 function for programming and simulating a plane tilt (multi-sided processing) is optionally available.

Help pictures and texts (for all parameters)



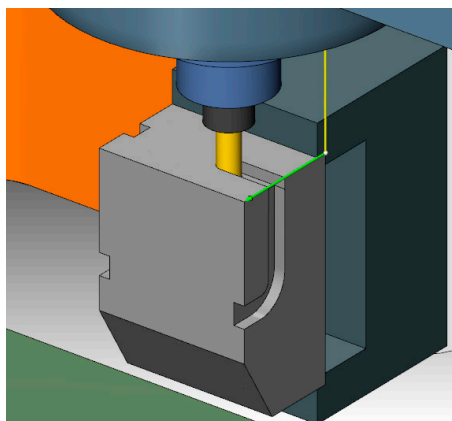
Program listing



```

O1
N1 ( PART: FLYER, CODE: FANUC 31i )
N2 G54
N3 ( SFR20 )
N4 G17 T03 M06
N5 F480 S1250 M03
N6 G68.2 P1 X70.0 Y0.0 Z0.0 I0.0 J30.0
K0.0
N7 G53.1
N8 G00 G90 G43 G40 H03 X0.0 Y-12.0
Z17.0
N9 G01 Z0.0 M08
N10 G01 G91 Y94.0
N11 G01 G91 X15.0
N12 G01 G91 Y-94.0
N13 G01 G91 X15.0
N14 G01 Y94.0
N15 G00 G90 Z100.0 M09
N16 G69
N17 (LFR10)
N18 G17 T08 M06
N19 F200 S2500 M03
N20 G68.2 P3 Q1 X0.0 Y0.0 Z-50.0 I1.0
J0.0 K0.0
N21 G68.2 P3 Q2 I0.0 J-1.0 K0.0
N22 G53.1
N23 G00 G90 G43 G40 H08 X-7.0 Y30.0
Z2.0 M08
N24 G00 Z-5.0
N25 G01 X40.0
N26 G03 X50.0 Y40.0 R10.0
N27 G01 Y57.0
N28 G00 Z100.0
N29 G69
N30 G68.2 P3 Q1 X100.0 Y70.0 Z-50.0
I-1.0 J0.0 K0.0
N31 G68.2 P3 Q2 I0.0 J1.0 K0.0
N32 G53.1
N33 G00 X107.0 Y30.0 Z2.0
N34 G00 Z-5.0
N35 G01 X60.0
N36 G02 X50.0 Y40.0 R10.0
N37 G01 Y57.0
N38 G00 Z100.0
N39 G69
N40 G68.2 P3 Q1 X0.0 Y70.0 Z-50.0 I0.0
J-1.0 K0.0
N41 G68.2 P3 Q2 I-1.0 J0.0 K0.0
N42 G53.1
N43 G00 X-7.0 Y30.0 Z2.0
N44 G00 Z-5.0
N45 G01 X77.0
N46 G00 Z100.0
N47 G69
N48 G53.1
N49 G00 X50.0 Y-7.0 Z2.0
N50 G00 Z-5.0
N51 G01 Y77.0
N52 G00 Z100.0 M09
N53 M30
    
```

Simulation in 3D, where you can choose between different machine kinematics



IF	
WHILE	
END	
G68	COORDINATE ROTATION
G68.2	SLOPED WORK LEVEL (ABSOLUTE)
G68.4	SLOPED WORK LEVEL (INCREM.)
G69	COORDINATE ROTATION END