

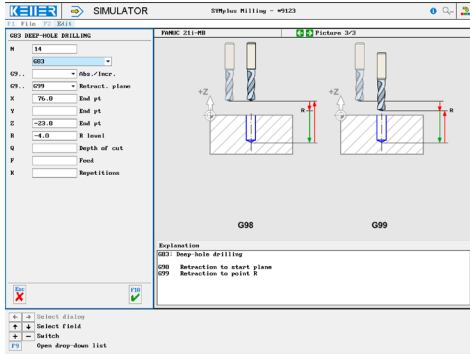
# CONTROLS

Control simulator FANUC 21i (milling)

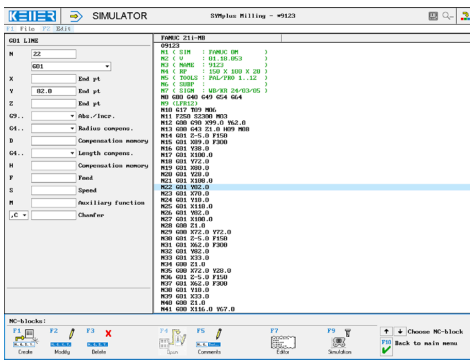


The control related simulator is an additional module for SYMplus. This simulator is used to learn the control system programming. A program generated by a postprocessor can also be edited and simulated.

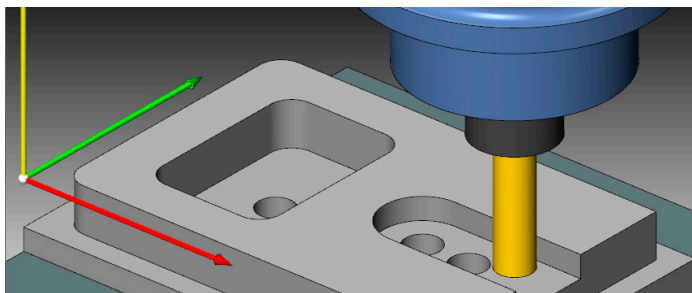
## Help pictures and texts (for all input dialogues)



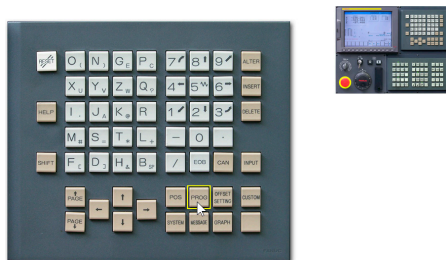
## NC editor incl. input dialogue and syntax control



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



## 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

- 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

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O21
N1 ( RP      : 100 X 70 X 20)
N2 ( TOOLS  : PAL/PRO 1..12)
N3 G80 G40 G49 G54 G64
N4 ( SFR25 )
N5 G17 T02 M06
N6 F300 S900 M03
N7 ( CONTOUR )
N8 G00 G90 X115.0 Y-7.5
N9 G00 G43 Z-10.0 H02 M08
N10 G01 G41 H51 Y5.0
N11 G01 X5.0 ,R5.0
N12 G01 Y65.0 ,R5.0
N13 G01 X95.0
N14 G01 Y-15.0
N15 G01 G40 X107.5
N16 G00 Z100.0 M09
N17 ( SFR16 )
N18 G17 T04 M06
N19 F300 S2000 M03
N20 ( GROOVE 18 )
N21 G00 G90 X105.0 Y35.0
N22 G00 G43 Z-5.0 H04 M08
N23 G01 G41 H53 Y44.0
N24 G01 X65.0
N25 G03 X65.0 Y26.0 R9.0
N26 G01 X105.0
N27 G01 G40 Y35.0
N28 G00 Z100.0 M09
N29 ( LFR10 )
N30 G17 T08 M06
N31 F250 S2300 M03
N32 ( POCKET 28 X 40 )
N33 G00 G90 X30.0 Y45.0
N34 G00 G43 Z1.0 H08 M08
N35 G01 Z-10.0 F60
N36 G01 G41 Y15.0 F120
N37 G01 G91 X14.0
N38 G01 Y40.0
N39 G01 X-28.0
N40 G01 Y-40.0
N41 G01 X15.0
N42 G01 G40 Y10.0
N43 G00 G90 Z1.0
N44 G00 Z100.0 M09

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N45 ( SPB08 )
N46 G17 T10 M06
N47 F300 S2200 M03
N48 G00 G90 X30.0 Y35.0
N49 G00 G43 Z1.0 H10 M08
N50 G83 G98 Z-23.0 R-9.0
N51 G00 X65.0
N52 G83 G99 Z-23.0 R-4.0
N53 G83 G99 X76.0 Z-23.0 R-4.0
N54 G83 G99 X87.0 Z-23.0 R-4.0
N55 G00 G90 Z1.0
N56 ( EXIT )
N57 G00 Z100.0 M09
N58 G00 Y150.0
N59 M30

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