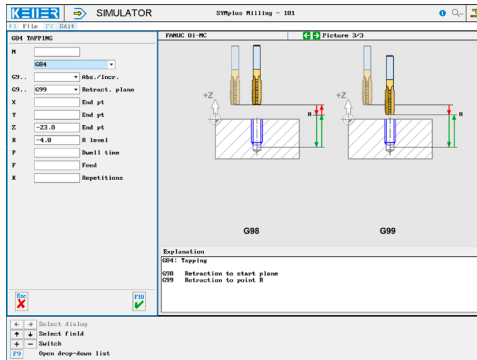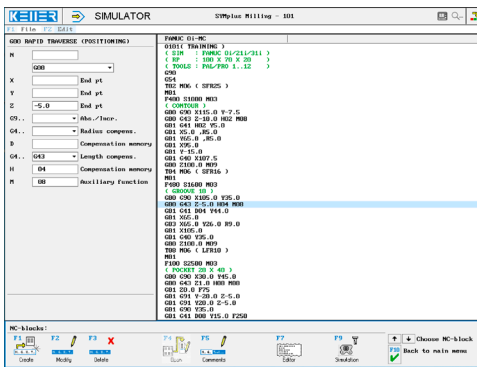# CONTROLS
Control simulator FANUC 0i (milling)

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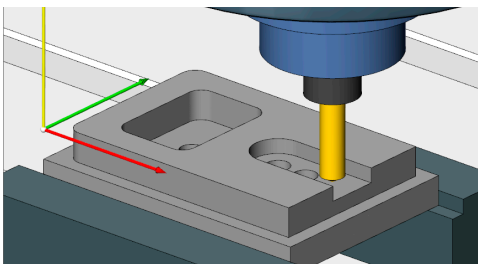
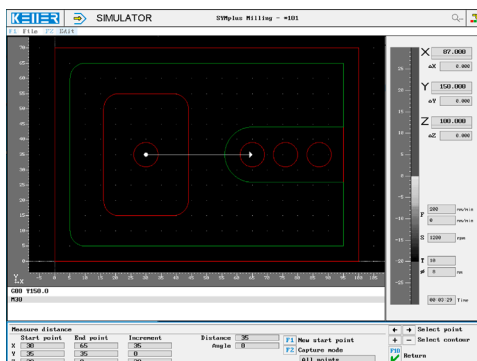## Help pictures and texts (for all input dialogues)

NC editor incl. input dialogue and syntax control

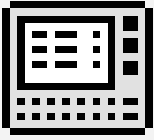## 3D simulation with freely adjustable perspective, including continuous display of NC blocks

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

COMMANDS/ FUNCTIONS/CYCLES

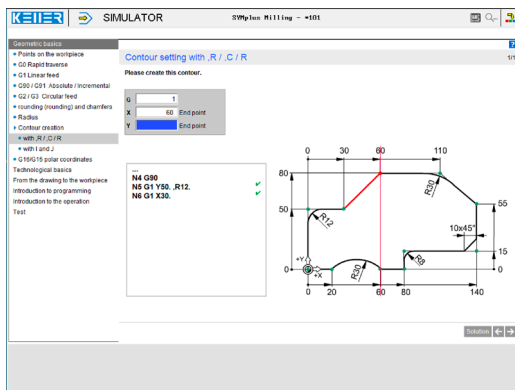|	
G0	Rapid traverse
G1	Line
G2	Arc, clockwise
G3	Arc, counter-clockwise
G4	Dwell time
G9	Exact positioning
G15	Polar coordinates cancel
G16	Polar coordinates
G28	Return to reference point
G29	Return from reference point
G40/G41/G42	Radius compensation
G43/G44/G49	Length compensation
G50	Scaling mode 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 function
T	Tool call
Comment	Explanations
X/Z/F/S/M	Modal commands

CONTROLS
Interactive training

The FANUC simulator also includes a multimedia, interactive training module. Here, the learner can independently practice programming the FANUC controls and take a test in the end.

The contents are divided into 4 main chapters:
- Geometrical basics
- Technological basics
- From the drawing to the workpiece
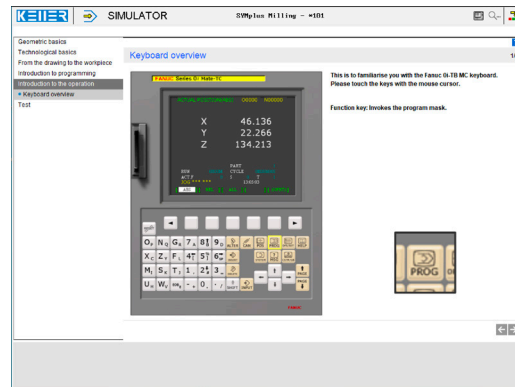- Introduction to programming
- Introduction to the operation

In this exercise you learn how to use the G43 command for length compensation using an animation.

**Cycles are introduced here.
Later you „write" your own small programs interactively (guided by the software).**

Exercises are included for the following functions/topics, among others:
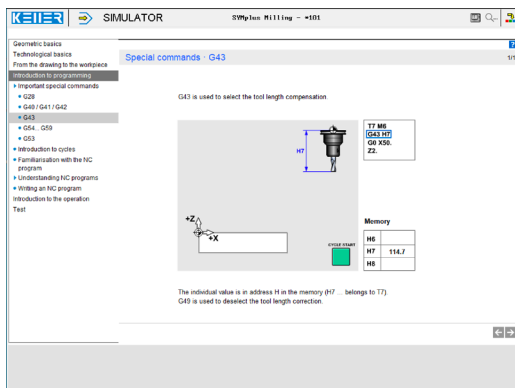
G0/G1/G2/G3
Contour creation with rounding and chamfer
G15/G16
G28
G40/G41/G42/G43
G53/G54-G59
G81, …

In addition, there is general learning content on cutting data with numerous practical examples and a final test with randomized tasks for all chapters.

You learn the meaning of each key …

… and you can check yourself in a test.