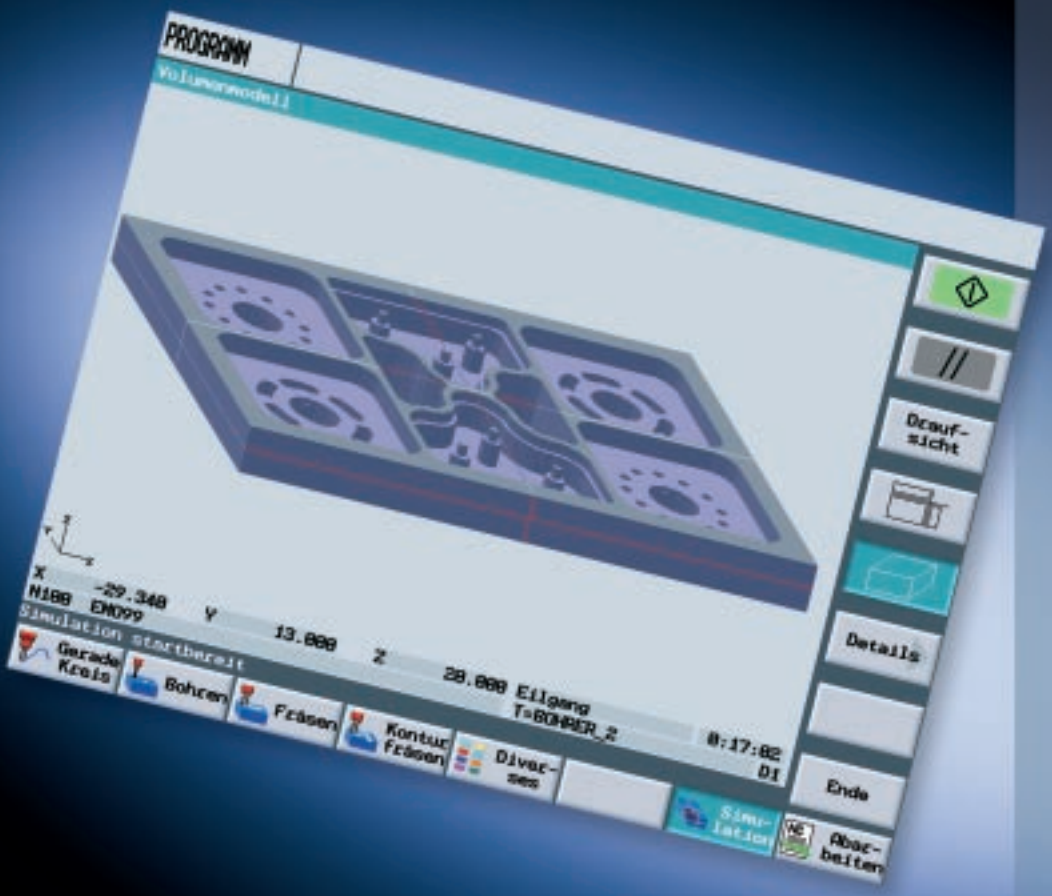
# Milling and Drilling with ShopMill




**The technology package for the shopfloor**

*Graphical programming*

- Extremely short programming time for single parts and small series
- Operator-friendly implementation of technological production steps in ShopMill machining plans without DIN/ISO know-how
- Clear display of all technological information in machining steps
- Input without documentation thanks to dynamic help displays
- Avoidance of invalid inputs through dynamic online graphics

*DIN/ISO programming*

- Complete flexibility thanks to high-performance DIN/ISO programming for a maximum number of machining options
- Wide range of standard cycles for machining and measuring tasks

*Mold making*

- High-performance text editor for large mold making programs
- Simple programming of the mold making functions with high-speed-settings cycle

*Simulation*

- Maximum process reliability thanks to simulation with real tool data
- Calculation of the expected program execution time
- Uniform simulation for graphic programs, DIN/ISO programs as well as programs generated externally by CAM systems

*Machine setup*

- Extremely short setup times thanks to operator prompting for determining workpiece zero points and tool lengths
- Simple management of tools through clear display of geometry and magazine loading in a single table

Overview • August 2005

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SHOP MILL

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# Essential features at a glance

**Graphical programming**

Transparent, clearly structured programming in machining steps

Programming without DIN/ISO know-how

Easily understandable symbols for characterizing the machining steps

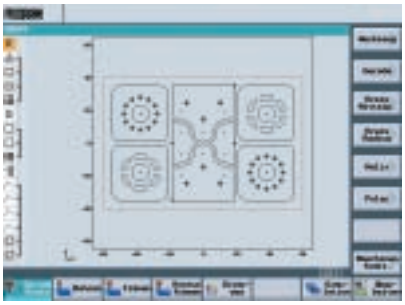
Linking of contours with solid machining cycles

Linking of drilling and milling operations with position patterns

Simple modification, insertion and deletion of machining steps

Significant reduction in programming time compared to the DIN/ISO programming

- Dynamic broken-line graphics for to-scale representation of the workpiece
- Dynamic auxiliary graphics as input support for cycle parameters



Dynamic broken-line graphic

**Contour programming**

- High-performance contour calculator for the creation of contours in the milling plane and on the peripheral surface of cylindrical workpieces
- Automatic calculation of partially defined geometry elements
- To-scale display of contours with up to 255 contour elements
- Import of DXF files possible via optional CAD reader

**Machining cycles**

*Milling cycles for free contours*

- Machining of contour pockets with up to 12 islands
- Cutting of contour spigots with up to 12 isolated contours
- Automatic detection and remachining of residual material
- Automatic or manual specification of the machining starting point with the option of pre- drilling
- Insertion strategy: straight, inclined, helical

*Milling cycles for standard contours*

- Face milling cycle with side delimitation
- Rectangular and circular pockets with different insertion strategies
- Rectangular and circular spigots
- Longitudinal and circumferential groove
- Thread milling
- Combined drill and thread milling
- Engraving of arbitrary texts

*Drilling cycles*

- Centering, reaming, boring
- Drilling with chip breakage and chip removal function
- Tapping with chip breakage and chip removal function

*High-speed-settings*

- Mold making cycle for selecting the machining type and the contour tolerance

*Position pattern*

- Arbitrary position pattern in the milling plane and on the peripheral surface of cylindrical workpieces
- Position pattern such as line, circle or grid
- Suppression of individual positions in position patterns

**Complete machining**

*Peripheral surface machining*

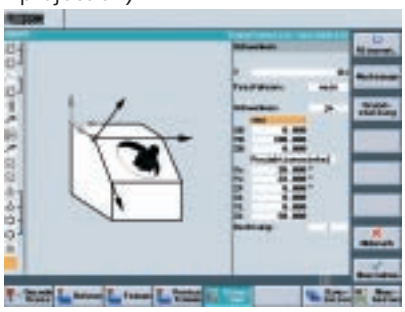
- Arbitrary drilling and milling operations on the peripheral surface
- Milling of guiding grooves with parallel flanks on cylindrical workpieces

*Multiple clamping*

- Runtime-optimized machining of identical parts in several clamping positions

*Swivel cycle*

- Arbitrary drilling and milling operations in swiveled machining planes on 5-axis milling machines
- Flexible input of the swivel angles in the workpiece coordinated system (axis angle, solid angle or angle of projection)



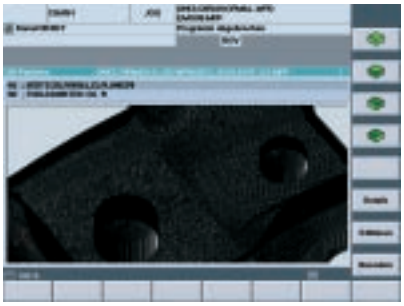
Swivel cycle

**DIN/ISO programming**

- Text editor for large mold making programs
- Input support for standard machining cycles
- Input support for automatic measuring cycles

**Simulation**

- High-performance simulation of machining step and DIN/ISO programs
- Display in front and side view as well as 3D view
- Quick view of mold making programs (PCU50)



Simulation

**Tools**

- Clear display of tool and setup data in a single table
- Quantity and tool life monitoring with replacement tools

**Setup functions**

- Menu-assisted contact function for determining the work offset also in swiveled machining planes
- Tool measuring through scratching or tool probe
- Face milling cycle for workpiece premachining
- Swivel cycle for setup and measuring tasks

**Automatic functions**

- Block search also on certain machining operations in position patterns
- Display of traversing paths of machining steps in G code (basic block display)

**Accessories**

- PC training and programming tool
- CAD reader for PC

**NCs**

ShopMill is available on the following NCs

- SINUMERIK 810D/840D/840Di
- SINUMERIK 840D sl



**Siemens AG**
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