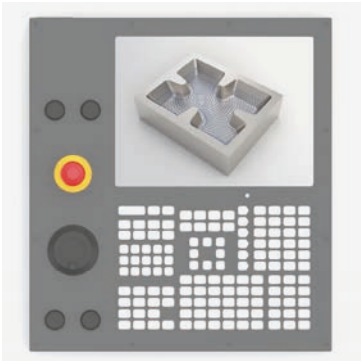
CNC and Machine Tools
Component

ModuleWorks
Get There Faster.

For CNC manufacturers and machine tool builders, ModuleWorks offers the full range of industry-proven toolpath generation and simulation technology directly on the CNC controller.



Path Planning Integrated on Controls

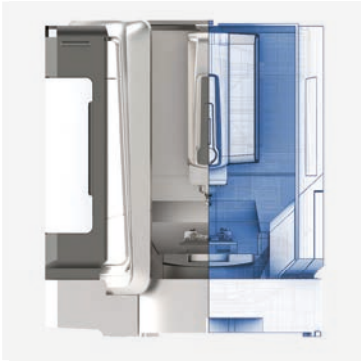
Toolpath Cycles

Extend your high-quality production machines with:

Advanced cycles:
- Adaptive roughing
- Turn-milling

Feature-based machining:
- Deburring
- Automatic 3+2 roughing

Innovative user experience:
- 3D machining
- Simulation and collision checking

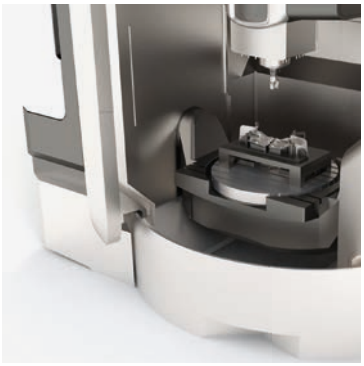


Digital Twin

Digital Twin

Turn your virtual CNC control into a full digital twin.

Features:
- 3D simulation and visualization
- Material removal and additive simulation
- Full-scene collision detection and safety distance violation detection
- Powerful APIs to add custom PLC functionality
- Supports high-frequency data
- Can be integrated into Windows/Linux x64 and x86 environments



5-Axis Milling Machine

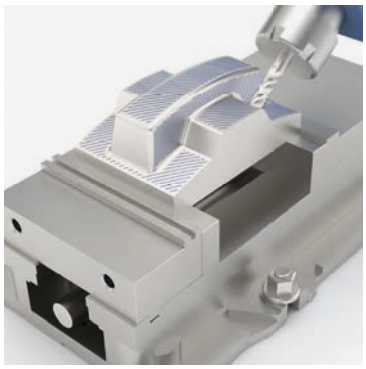
Simulation

Enhance your CNC control with a complete virtual environment for:
- Large and complex toolpath simulation
- High-performance verification
- Full-scene collision checking
- Toolpath analysis and optimization

Job Setup

- Handles all the necessary tool data including adapters and holders
- Stock, fixture and target 3D models
- Can be linked to tool management systems and libraries
- Can be integrated into CAM systems

Fact Sheet: CNC and Machine Tools Component

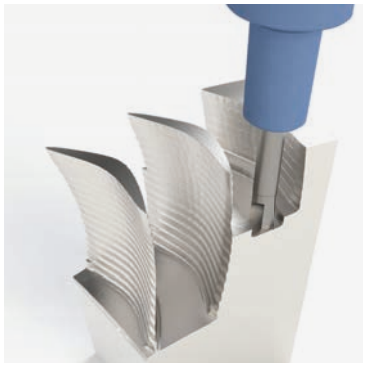


Finishing Strategy

Machining Strategies

The toolpath machining component uses 3D geometries to generate accurate gouge-free toolpaths.

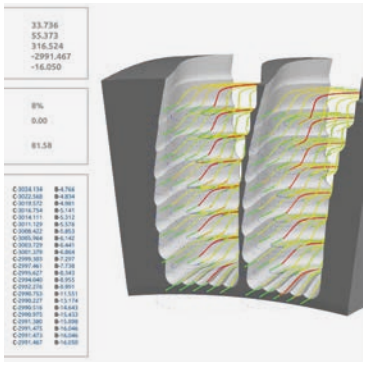
- Adaptive roughing for simple 2D geometries and 3D models
- 3-axis cycles including high-speed machining
- Turning including adaptive and B-axis turning
- Rotary cycles for 4-axis machining
- Full range of 5-axis cycles



Milling Simulation

Cutting Simulation

- Interactive navigation between the NC-line and the simulation model
- Collision checking between the tool holder, tool shaft and workpiece
- Toolpath coloring for air cuts and collisions
- Comparison with the CAD model



Toolpath Analysis

Toolpath Statistics and Analysis

- Percentage of air cuts
- Removed material volume
- Tool engagement calculation
- Axis reversal detection
- Feedrate-based coloring

For more information about real-time collision avoidance, advanced cutting and machine simulation visit: **www.moduleworks.com**

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