

Pro/TOOLMAKER™

Harness High-Speed Precision Machining

With Pro/TOOLMAKER, PTC offers the power of high-speed machining for toolmaking and other precision machining applications, with a fast, easy-to-use, NC toolpath programming application. Manufacturing engineers and machinists can now have the most powerful package of NC programming capabilities, including NC post-processing and tooling libraries, in a single, standalone product package. You can easily create machining programs for CNC milling machines either from a Pro/ENGINEER model or from any CAD data source.

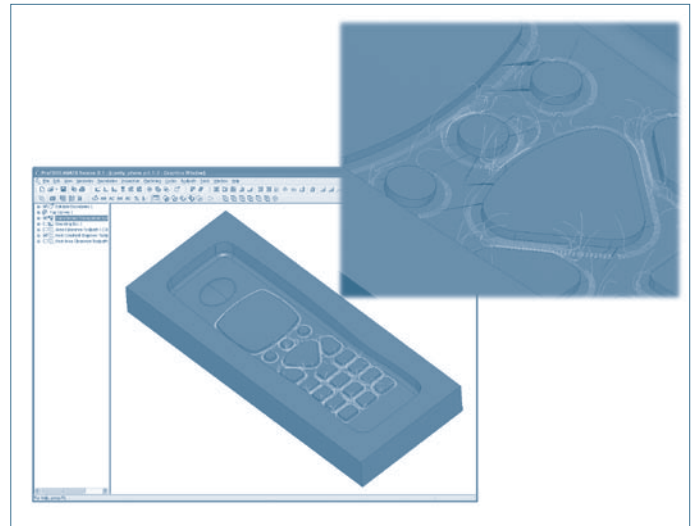
Optimize Toolmaking

Today's toolmakers require best-in-class solutions in order to meet the challenging demands of their discrete manufacturing customers, and to compete in a global marketplace. Pro/TOOLMAKER helps you get to market faster by improving operational efficiency, and by leveraging the latest capabilities offered by high-speed precision machining technology.

With Pro/TOOLMAKER, manufacturing engineers can work with data from any CAD system, create associative NC toolpaths directly from CAD models, and leverage concurrent engineering. The result: you have the power to increase product quality, reduce scrap, and shave production time and costs for any design.

Key Benefits

- Easy to learn and use, with valid toolpath parameters being set after the tooling has been specified
- Quickly computes efficient, reliable toolpaths for even the most complex geometries, with highest-quality surface finishes
- Provides multi-CAD support, enabling fully associative, reliable NC toolpath programming for Pro/ENGINEER and other CAD systems



Pro/TOOLMAKER creates a broad range of NC toolpaths, including rest milling with optimized connections for high-speed machining.

- Assembles all high-speed precision machining processes into a single package:
 - High-speed machining strategies, optimized approach, exit and connections for roughing, rest-roughing, finishing and rest milling, including pencil trace
 - Complete gouge protection on tool and holder geometry
 - Tooling library with material/feed/speed/cutting conditions
 - Automatic hole detection on imported geometry, for automated hole-making
 - Support for 5-axis positioning (3+2)
 - Provides machined part inspection capabilities
 - Includes PTC's Pro/NC-GPOST, for creating and updating post-processors for any type of CNC machine

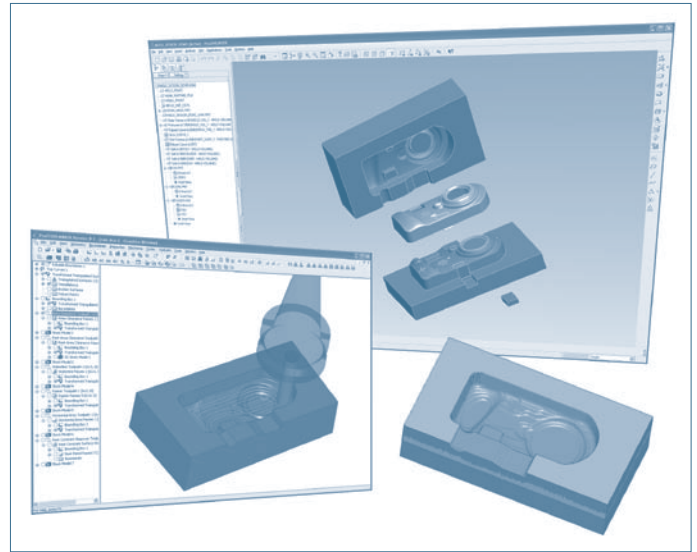
Key Benefits (cont.)

- Features a multi-threaded architecture that saves time by allowing you to continue working in Pro/TOOLMAKER while toolpaths are calculated in the background
- Extends tool life and reduces wear on machines with its optimized toolpaths, feed-rate optimization, and anti-vibration capabilities
- Provides in-process stock models to visualize the part after each machining step and to optimize subsequent toolpaths

Key Features, Specifications and Capabilities

Advanced Machining Capabilities

- 3+2 machining (5-axis positioning)
- Automatic 3D roughing and rest-roughing, for smooth and efficient toolpaths
- Specialized core and cavity machining strategies with area clearance, core, and rest-roughing to maximize material removal
- Slope-based machining allows steep and shallow angle control:
 - Raster machining
 - Waterline (or Z-level) machining
- Flat-surface machining easily detects all flat surfaces on a part
- Spiral and radial toolpaths maintain toolpath efficiency with constant contact
- Morph and boundary machining provide excellent surface finish
- Pencil single-pass and multiple-pass milling
- Rest-milling for all finishing toolpaths and tool shapes
- Automatic creation of in-process stock model:
 - STL export
 - CLD toolpath export
 - Create from one or more toolpaths
 - Visualize machined part on screen
- Gouge-free machining for tools and holders and shaft profile calculation:
 - Libraries capture tool, holder, feed, speed, and cutting conditions
- Feature recognition for hole-making
- Part inspection



Pro/TOOLMAKER lets you quickly create NC toolpath programs, animate machining on screen with process times, and view in-process stock models.

Toolpath Optimization

- Generic “linker” for all toolpaths
- Feed-rate optimization
- Anti-vibration options reduce vibrations to maintain consistent cutting conditions

Process Automation

- Automatic shop floor documentation
 - XML/ HTML-based
- Automation, with macro-programming, lets you quickly change input parameters and recalculate toolpaths, or reuse processes on similar parts
- Process Manager helps you leverage the multi-threaded architecture and enables multi-tasking

Key Features, Specifications and Capabilities (cont.)

Post-Processing

- Pro/NC-GPOST post-processor provides graphic NC post-processor generator, interactive, online, context-sensitive help, and an extensive library of machine tools and CNC controls
- Standard APT output for existing post-processor system

Data Interoperability

- Supports IGES, VDA-fs, STL, RAW, CLD, SolidWorks and Parasolid
- CATIA v4 and CATIA v5 (optionally available)
- Pro/ENGINEER with GRANITE® kernel integrated in Pro/TOOLMAKER
- Model associativity for Pro/ENGINEER and SolidWorks models

Language Support

English, German, French, Italian, Spanish, Japanese, Chinese (Simplified and Traditional), Korean

Platform Requirements

Microsoft Windows (XP, 2000, NT 4.0)

For the most up-to-date platform support information, please visit: www.ptc.com/partners/hardware/current/support.htm

The Pro/ENGINEER Advantage

Pro/TOOLMAKER, a stand-alone solution that's ideal for shop floor programming, is part of the Pro/ENGINEER product family. Pro/ENGINEER's integrated 3D CAD/CAM/CAE solutions deliver a distinct advantage for engineers and designers because every Pro/ENGINEER module is fully associative. That means any change made to the design is automatically reflected in all downstream deliverables—without any translation of model information. By eliminating data translation, you not only save time, but you also avoid the possibility of translation errors in your design. Pro/ENGINEER packages are the first choice of engineers and designers because no other product development package offers more power and speed in a single, fully scalable platform.

Pro/TOOLMAKER and other Pro/ENGINEER NC and Tooling solutions enable designers to work side-by-side with manufacturing engineers, making real-time changes to designs and collaboratively arriving at the optimal product design created for manufacturability. Concurrent engineering enables product development teams to arrive at the best possible designs in the fastest time possible.

For more information on Pro/TOOLMAKER or other Pro/ENGINEER NC and Tooling Solutions, visit www.ptc.com