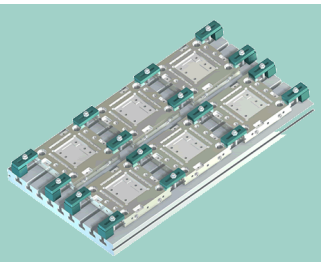


Machining Intelligence for Automation™

CAMWorks 2004

Fully integrated to operate within SolidWorks

New features include . . .

Usability & Interface Enhancements
- Features without operations and operations without toolpaths display in a different color in trees.
- Set View command on Part Setup shortcut menu provides an easy way to set the orientation in the Setup direction.

General CAM
- Define Mill stock shape from STL file based on WIP model.
- Select multiple operations to Combine.
- Separate shortcut menu commands for inserting 2.5 Axis and 3 Axis operations.
- Improved roughing with hog nose tool reduces occurrence of small unmachined areas that could form directly below the end radius of tool.
- When Link to F/S library is active for rough and finish mill, the feed/speed values will consider not only the radial cut depth but also the axial cut depth.

2½ Axis Milling
- SolidWorks/VB Macro to set global Optimization options for multiple non-3 Axis operations.
- Option to modify machining depth in Rough Mill based on tops of islands within the feature.

3 Axis Milling
- Advanced 3 Axis cutting cycles:
  Level I: Rough, Pattern Project, Z-Level, Pencil Mill, XY Stepover.
  Level II: 3D Constant Stepover, Curve Project, Flat Area and Rest Machining.
- Update command for existing 3 Axis operations assists in transitioning to Adv. 3 Axis operations.
- Options to select multiple closed shapes, machine over avoid areas and set tool condition for Adv. 3 Axis operation contain and avoid areas.

Turning
- Option to reverse machining direction in Bore Rough operation.

Simulation
- Create STL File based on WIP model.

Wire EDM
- Interactive feature definition, toolpath generation and post processing for 4 Axis wire EDM.

CAM Solution for SolidWorks

Considered the most advanced CAM solution available for solid machining, CAMWorks is also the first CAM solution to offer knowledge-based, feature recognition and associative machining capabilities within the SolidWorks environment.

This close integration means:

- When you are using SolidWorks, the CAMWorks machining tree and commands are available with the click of a button. You never have to leave SolidWorks to generate toolpaths.
- CAMWorks uses the same SolidWorks geometry to generate toolpaths to ensure the part you machine is the same part you have modeled.
- Time-consuming file transfers using standard file formats such as IGES and SAT are eliminated.

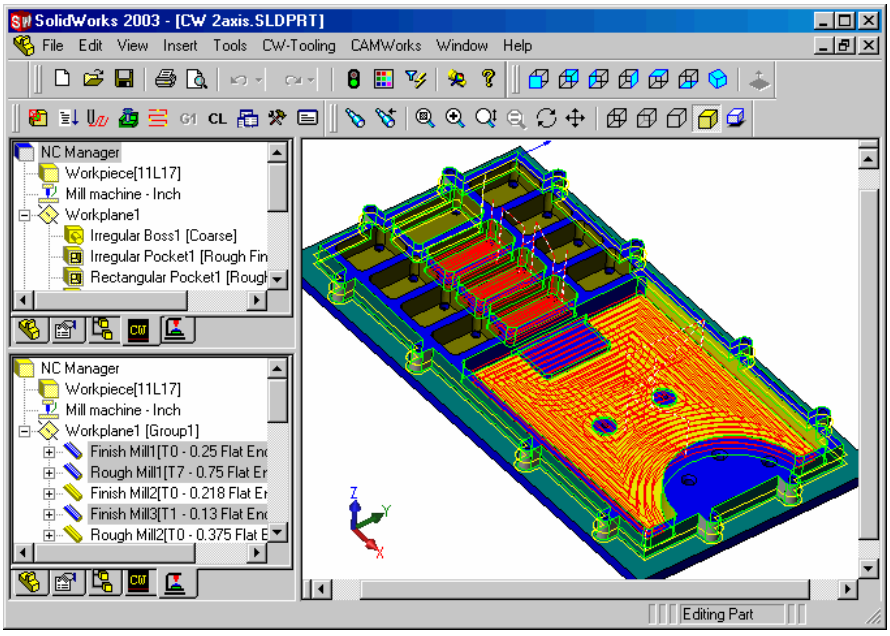
Ease of Use

CAMWorks uses the familiar SolidWorks interface, so it is easy to learn and easy to use. The CAMWorks trees are similar to the SolidWorks FeatureManager design tree. Items in the tree can be suppressed, expanded, renamed and moved using the same procedures as SolidWorks. Online help, an Installation and Quick Start Guide and tutorials help you generate toolpaths and code quickly. The tutorials are provided electronically in Adobe PDF files.

Best-in-Class Choice

SolidWorks Certified Gold Product

CAMWorks is a best-in-class choice for users who want an optimum modeling system (SolidWorks) and an innovative manufacturing, feature-based CAM solution.



Knowledge-Based Machining

TekSoft's proprietary TechDB™, a Microsoft Access database, is the intelligence behind the machining automation in CAMWorks. Using Knowledge-Based Machining technology, the tooling, cutting conditions, and operation defaults are associated with the features defined by Automatic Feature Recognition (AFR) and the operations are generated automatically. The toolpath is then calculated. To further enhance the automation process, the knowledge-based rules in the TechDB are fully customizable to represent your current machining environment.

Technology Database

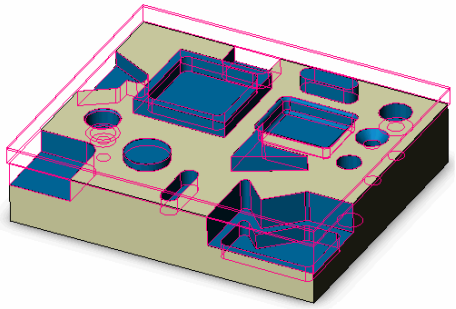
The Technology Database is shipped with data that is considered generally applicable to most machining environments. In order to take full advantage of CAMWorks, the user can modify this data and input additional knowledge that represents the user's expertise and the facility's capabilities.

The machining information in the database is divided into these categories:

- Machine - "Virtual" machines for all the CNC machines in your facility and the associated controller and tool crib.
- Tools - The tool library can contain all the tools in your facility.
- Cutting Parameters - Information for calculating feed rates and spindle speeds, stock materials and tool materials.
- Feature and Operations - The machining sequences and operations for each combination of feature type, end condition, and size.

Automatic Feature Recognition

CAMWorks is a feature-based machining CAM system. To make feature-based machining even more powerful, CAMWorks provides the ability to automatically recognize many two-dimensional features including tapers.



Interactive Feature Wizards

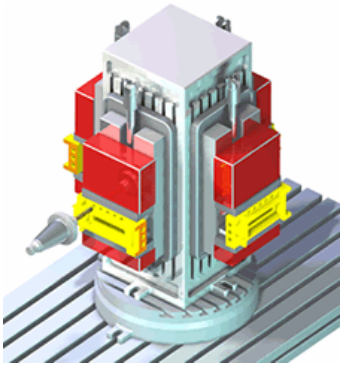
CAMWorks provides Interactive Feature wizards for defining features that are not recognized automatically or features that are not recognized the way you want to machine them. Similar 2½ and 3 Axis Mill features can be created quickly using the Copy command. Exiting features can be modified easily.

Machining Operations

After machinable features have been defined, the user can generate an Operation Plan to machine the features on the part. Machining operations include roughing, finishing, drilling, etc. Operations are associated to machinable features.

The Operations tree provides an outline view of the operations. Before generating toolpaths, operations can be customized including:

- Suppress, delete and rename
- Combine similar operations
- Change machining parameters
- Add machinable features
- Change the machining order



Assembly Mode for Milling

CAMWorks leverages the power and flexibility of SolidWorks Assembly mode to support NC programming of multiple parts for production machining and to more accurately represent the virtual machining environment.

Some of the key benefits include:

- The entire machining environment can be modeled including machine components, parts, stock, clamps, and fixtures. As much or as little detail as desired can be modeled in the SolidWorks assembly document.
- Multiple copies of a part can be positioned in the assembly document and machined with CAMWorks.
- The same part can be machined with multiple different machine tools.

Additional Features and Tools

CAMWorks provides numerous integrated features and visual tools to improve productivity including:

- Mill and EDM stock shapes can be defined as a bounding box, extruded sketch, STL file or SolidWorks part document. Turning stock can be defined as a bounding box or revolved sketch.
- Drag and drop reordering of operations.
- Graphical toolpath generation display.
- Material removal simulation can reduce the need for dry runs at the machine tool.
- Step Thru Toolpath command to view toolpath movements.
- Reorder Tool command assigns tool numbers sequentially.
- Integrated post processor supports virtually any CNC machine tool.
- Universal Post Generator can be used to customize G-code output.
- CAMWorks API's to further customize CAMWorks.

Machining Modules

CAMWorks is available in a variety of configurations, so you can purchase exactly what you need now and add to your system as your business grows.

- **2½ Axis Milling** includes automatic roughing, finishing, thread milling and single point (drilling, boring, reaming and tapping) cycles.
- **3 Axis Milling Level I** includes Adv. 3 Axis Roughing, Pattern Project, Z Level, XY Stepover and Pencil Mill cutting cycles.
- **3 Axis Milling Level II** includes Level I cycles plus Adv. 3 Axis Curve Project, Flat Area and 3D Stepover cycles. Also includes rest machining support for all Adv. 3 Axis cycles.
- **2 and 4 Axis Turning** includes automatic roughing, finishing, threading, grooving and single point (drilling, boring, reaming, and tapping) cycles.
- **Wire EDM** includes feature recognition, toolpath generation and post processing for 2 Axis, 2 Axis with constant taper and 4 Axis wire EDM.

System Requirements

- Platform: Intel® Pentium® / AMD Athlon™
- RAM: 128MB (512MB recommended)
- Windows 2000 or XP
- SolidWorks 2003 or 2004
- Microsoft Access 2000, 2002 or 2003

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