PartMaker
World-leading CAM software for production machining
www.partmaker.com
PartMaker is the ideal CAD/CAM system for companies involved in production machining. From large multinational organizations, to mid-sized contract manufacturers and smaller job shops, PartMaker’s unique, patented technology combines power with ease-of-use enabling you to get the job done faster, whatever CNC machines you use.

**Ease-of-Use**
PartMaker applies a Patented, Visual Programming approach making it quick to learn and easy to use for both new and advanced users.

**Powerful**
PartMaker provides you with a wide array of powerful machining strategies, enabling you to tackle the most demanding of jobs.

**Flexible**
PartMaker programs all types of CNC machines, including 3 to 5-axis mills, 2-axis lathes, 2 to 4-axis wire EDMs, multi-tasking turn-mill centers and Swiss-type lathes.

**Accurate**
PartMaker generates accurate NC code first time, every time for all your CNC machines via robust, well supported and fully customizable post-processors.

**Interoperable**
PartMaker Modeling eliminates data translation headaches; import models from any CAD source, repair problem data, and make manufacturing changes quickly and easily.

It would be almost impossible to write the code for the complex parts we make by hand. But with PartMaker, it’s easy.

Pete Vellenga, Micron Manufacturing

www.delcam.tv/micron
Are you fully in control of your Swiss machines?

PartMaker SwissCAM automates the programming of multi-axis, sliding headstock Swiss-type lathes, with unique patented technologies. By allowing you to create and validate CNC programs off-line at a PC before sending them to your machine, PartMaker SwissCAM reduces both programming and machine set-up times, saving you time and money. PartMaker SwissCAM has been specifically developed to support the unique capabilities of Swiss-type lathes, such as sliding headstock, tool shifts, thread whirling and process synchronization.

PartMaker SwissCAM has a comprehensive library of fully proven post-processors, covering virtually every Swiss lathe built in the past 15 years from:

- Star
- Tornos
- Citizen
- Precision
- Tsugami
- Hanwha
- Nomura

...and many others.

With PartMaker SwissCAM, once a part is programmed for one machine, it can be re-generated in moments for use on a completely different Swiss machine simply by loading a new post-processor.

PartMaker is second to none when it comes to controlling the functionality of our Swiss machines. It helps take advantage of all our machines’ programmable axes.

Nathan Esslinger, C&A Tool Engineering

**BENEFITS**

- Automate programming and set-up of complex Swiss machines.
- Achieve optimal cycle times with patented visual synchronization approach.
- Eliminate costly machine crashes through accurate NC code and machine simulation.

**DID YOU KNOW?**

PartMaker SwissCAM lets you see a part from a machine’s perspective.

www.delcam.tv/catool
Are you getting the best from your Turn-Mill machines?

Turn-Mill centers enable you to machine complete parts in a single set-up, reducing cycle times and increasing precision. PartMaker Turn-Mill enables you to take full advantage of your machine’s capabilities, by programming and simulating Turn-Mill parts off-line at your computer.

**BENEFITS**

- Reduce machine programming and set-up time
- Improve cycle time optimization with visual synchronization
- Eliminate costly machine crashes through accurate NC code and machine simulation

**DID YOU KNOW?**

By generating and proving CNC programs on screen with PartMaker you will reduce lead times, increasing your profitability.

PartMaker fully supports virtually every multi-tasking Turn-Mill machine built in the past 15 years. Ready-to-use, and easily customizable, post-processors are available for every model from leading builders including:

- DMG
- Mazak
- OKUMA
- Nakamura-Tome
- DOOSAN
- Miyano
- Infracore

...and many others.

Should any of your machines become unavailable, simply change the post-processor and output the same part to a different Turn-Mill machine.

PartMaker is the best CAM system for multi-axis turning. It has really reduced our response time to our customers. PartMaker makes us efficient at processing parts as well as in quoting by providing accurate cycle times.

Doug Halenza, DuPage Machine Products

www.delcam.tv/dupage
Are you making parts as quickly as you could?

PartMaker Mill provides the best of both worlds - the ease-of-use to program your parts quickly with the power and flexibility to handle even the toughest of jobs. PartMaker’s Knowledge Based Machining captures your shop-specific knowledge about feeds and speeds, tooling and repetitive processes to speed programming. PartMaker’s intuitive user interface has easy-to-follow graphics to guide you through every step of programming a part, making it quicker to learn and easier to use.

2.5-axis Milling

PartMaker Mill 2.5-axis milling provides a comprehensive solution to all your 2D milling needs. PartMaker Mill automates drilling, tapping, reaming, thread milling, contouring, pocketing, multi-piece setups and multi-sided milling.

High Speed Machining

Delcam has been at the leading edge of High Speed Machining (HSM) technologies for many years, helping our customers machine parts in the shortest possible time. Trochoidal machining, Raceline and Profile smoothing, Vortex and other specialist HSM tools ensure rapid delivery of high quality machined components by maintaining constant cutter loads and minimizing sudden changes in cutting motion.

Kinematic Milling Simulation

PartMaker’s Kinematic Milling Simulation (KMS) simulates the entire machining environment, including holders and fixtures, ensuring that parts will run safely and collision free. You can import custom fixtures as 3D CAD models, or design them yourself using PartMaker Modeling. KMS comes with a ready-to-use library of common machines, which is fully customizable enabling you to add your own machine should you need to.

3, 4 and 5-Axis Surface Machining

PartMaker’s Advanced Surface Machining (ASM) module provides a wide range of powerful 3D surface machining strategies, for both roughing and finishing operations. Suitable for all CNC platforms, including Mills, Turn-Mill Centers, and Swiss-type lathes, ASM delivers high quality parts in the shortest possible time, using sophisticated machining algorithms based on PowerMILL, Delcam’s industry-leading CAM system for the manufacture of complex shapes. Nest roughing and stock model machining ensure that all your toolpaths are as efficient as possible.

Production Milling Module – for 4 and 5-axis Mills and Horizontal Machining Centers

Whatever type of machining center you use, PartMaker’s Production Milling Module (PMM) will program it. From multi-axis milling machines, to vertical machining centers with 4th and 5th axis rotary attachments, or Horizontal Machining Centers, PMM programs them with ease.

BENEFITS

Faster programming with an intuitive Visual Programming Approach
Better surface finishes and reduced cycle time using Delcam’s sophisticated machining algorithms
Optimization of production machining techniques including multi-piece set-ups and tombstone fixtures

DID YOU KNOW?

High Speed Machining is available for all machine set-ups, including 5-axis.

PartMaker Mill software allows us to do multi-axis work very easily by allowing us to complete a number of operations all at once using our Haas rotary fixtures. For example, PartMaker helped us arrange our parts on a fixture to make eight parts at a time instead of one.

Rob Kurtz, RJD Machine

www.delcam.tv/rjd
Can you guarantee that all your programs run safely?
Modern machine tools are an expensive investment. Damage caused by inaccurate programming can be expensive in terms of both repair bills and down-time.

PartMaker simulates machining on-screen, in vivid 3D, with full collision detection for the entire machining environment. By simulating the whole machining process, not just the toolpaths, you can be certain that the finished part will be perfect, and at the same time avoid costly errors.

WHAT MAKES PARTMAKER UNIQUE?

PartMaker is a production oriented, full spectrum CAM system for all CNC applications. PartMaker’s automation tools cut programming and cycle times on all types of NC machines, especially multi-axis Turn-Mill Centers and Swiss-type lathes. Patent protected technology enables you to produce high quality parts in the shortest possible time.

BENEFITS
- Simplify the programming of parts with a combination of turned and milled features
- Speed up programming by setting coordinate systems automatically
- Eliminate programming errors by selecting the correct machining functions

Do you wish programming complex parts was easy?
PartMaker’s patented ‘Divide & Conquer’ technology breaks complex parts into a set of simpler features. Each feature is then machined fully automatically, using PartMaker’s extensive Knowledge-Based Machining rules, leading to improved part finish and shorter machining cycles. PartMaker’s Knowledge-Based Machining is user-configurable, so you can capture your own machining techniques and manufacture parts the way you want to. Divide & Conquer is especially suited to the complex programming requirements of Turn-Mill Centers, Swiss-type lathes and Bar-Fed Mills.

BENEFITS
- Take full advantage of your machine’s simultaneous machining capabilities to optimize part cycle times
- Speed up the creation of complex, multi-channel NC programs
- Determine the optimal synchronization strategy for any part, quickly and easily

Do you need a CAM system that talks your machine’s language?
PartMaker provides robust, well documented and continually supported post-processors for all your machines, including CNC Mills, 2-axis lathes, Wire EDMs, multi-tasking Turn-Mill Centers and Swiss-type lathes.

PartMaker post-processors are fully user configurable with ConfigPost™, through PartMaker’s ‘Config-by-Click™’ Technology. Edit your post-processor interactively by simply clicking on the line of NC code you wish to change. ConfigPost™ comes standard with any PartMaker CAM module, enabling you to tailor your post-processor to your exact requirements.

BENEFITS
- Customize post-processor output to your exact requirements
- Understand why your post-processor is outputting NC code the way it is
- Achieve total control over your NC code output

DID YOU KNOW?
- Customize post-processor output to your exact requirements
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PartMaker is based on two patent protected technologies.

Can you guarantee that all your programs run safely?
Modern machine tools are an expensive investment. Damage caused by inaccurate programming can be expensive in terms of both repair bills and down-time. PartMaker simulates machining on-screen, in vivid 3D, with full collision detection for the entire machining environment. By simulating the whole machining process, not just the toolpaths, you can be certain that the finished part will be perfect, and at the same time avoid costly errors.

BENEFITS
- Avoid costly machine collisions and crashes
- Reduce machine set-up time by proving out your process off-line
- Eliminate machine alarms by finding and fixing problems before sending code to the machine

Do you want to optimize your machining times?
PartMaker’s patented Visual Synchronization technology shows you precisely what each tool on your machine is doing, and when it is doing it. Visual Synchronization lets you add ‘Wait Codes’ automatically to multi-channel NC code, eliminating potential machine alarms and tool collisions. To optimize machining times, the software lets you perform ‘What if’ scenarios by simply dragging and dropping processes to new positions and seeing the immediate impact on your cycle time.

BENEFITS
- Take full advantage of your machine’s simultaneous machining capabilities to optimize part cycle times
- Speed up the creation of complex, multi-channel NC programs
- Determine the optimal synchronization strategy for any part, quickly and easily
**ADVANCED SURFACE MACHINING**

Do you want power without sacrificing ease-of-use?

PartMaker's Advanced Surface Machining (ASM) provides sophisticated 3D toolpaths across all CNC platforms, including Mills, Turn-Mill Centers and Swiss-type lathes. ASM is based on machining algorithms from PowerMILL, Delcam's industry-leading CAM system for the manufacture of complex parts such as molds, dies and aerospace structures, and delivers superior surface finishes with a minimal amount of calculation time.

**Powerful Roughing and Rest Roughing Strategies**

ASM provides powerful roughing strategies to remove excess material from a complex part quickly, efficiently and safely. All roughing strategies support High Speed Machining options such as Race-line and Profile Smoothing and Trochoidal Milling to minimize machining time and extend tool life. PartMaker ASM's roughing toolpaths also feature intelligent Rest Roughing to improve efficiency and eliminate air cutting.

**Wide Array of Finishing Strategies**

ASM includes a wide selection of finishing and corner machining strategies to ensure that parts have the best surface finish possible. High Speed Machining options can be applied to finishing operations, ensuring optimal cycle times and prolonging tool life. Intuitive, interactive parameters enable you to edit toolpaths for optimal cycle time and/or surface finish.

**Unique Undercut Machining Functionality**

PartMaker ASM provides unique technology for machining complicated undercuts. PartMaker looks at the entire tool geometry, including the shank, when calculating a toolpath for a feature with an undercut. This is particularly helpful when using lollipop and other special shaped cutters to perform backside machining, filleting and chamfering as well as when cutting complicated interior concave features.

**Stock Model Support**

PartMaker ASM fully supports Stock Model Machining to ensure maximum machining efficiency. Stock Model Machining enables PartMaker ASM to "know" where material remains and calculate appropriate toolpaths automatically. By avoiding sudden changes of tool loading, Stock Model Machining reduces cutter breakage and improves part quality.

**BENEFITS**

- Program complex 3D parts quickly and easily
- Reduce cycle time by applying high speed machining techniques automatically
- Improve part quality with superior control over surface finish

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**4 & 5-AXIS SIMULTANEOUS MACHINING**

Do you need to program 4 and 5-axis simultaneous milling operations?

PartMaker ASM-MX is the solution for programming highly complex parts that require 4 and 5-axis simultaneous milling operations. Suitable for today’s advanced CNC Mills, Turn-Mill Centers, Bar-Fed Mills and Swiss-type lathes, ASM-MX gives you a fast return on your machine tool investment. ASM-MX enables you to make parts that other shops cannot, giving you the competitive edge.

ASM-MX lets you take advantage of the benefits that 5-axis simultaneous machining has to offer, including improved surface finish and better cycle time, with just a few mouse clicks. With PartMaker’s ASM-MX module, once you know how to program 3-axis work, you can become proficient in 5-axis simultaneous programming in very little time.

ASM-MX includes unique 4-axis simultaneous machining strategies specially developed to automate rotary milling operations. These strategies allow you to project a toolpath inward or outward using a line or curve as the central axis of projection. This technology will let you program parts such as angled dental abutments quickly and cost-effectively.

**BENEFITS**

- Improved part surface finish
- Use shorter, more rigid tools
- Better utilization of your most sophisticated machine tools

**DID YOU KNOW?**

- ASM-MX can convert toolpaths to full 5-axis, simply by changing the tool orientation.

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Did you know the machining strategies in ASM are the same as those found in Delcam’s PowerMILL.

**DID YOU KNOW?**

- ASM-MX lets you take advantage of all the benefits that 4 and 5-axis simultaneous machining has to offer, including improved surface finish and better cycle time.

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- PartMaker programs everything, from the horizontal mills, to the 4th and 5th Axis mills, to the Swiss machines, to the multi-tasking Turn-Mills.
- PartMaker has done a wonderful job of growing with us and listening to what we need.

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Brendan Slabe, Slabe Machine

Scott Livingston, Horst Engineering

Brendan Slabe, Slabe Machine
Can you program your bar-fed mills reliably?

Bar-Fed Mills are unique machine tools with special programming requirements. PartMaker simplifies the programming of Bar-Fed Mills from manufacturers such as Willemin-Macodel, Bumotec, Chiron, Star, Mazak and others. PartMaker includes a user interface specifically dedicated to the unique programming requirements of these sophisticated machines. Realistic 3D Full Machine Simulation and robust post-processors help you achieve continuous production of complex parts such as medical devices, fluid power and aerospace components.

PartMaker is a very powerful yet easy-to-use tool for allowing us to harness the capability of our Bar-Fed Mills and program them in a productive manner. The ease of post-processor customization has enabled us to output edit free NC code direct from PartMaker. The ability to do complex surfacing and simultaneous 5-axis machining sets Delcam’s solution apart from others.

Craig Michaud, Implants Seabrook International

DID YOU KNOW?

PartMaker has developed a specialist solution for the unique programming requirements of Bar-Fed Mills.

DID YOU KNOW?

Over 50% of all 3D CAD models are created using Parasolid™.

PARTMAKER MODELING

3D Wireframe
PartMaker Modeling’s patented Intelligent Cursor lets you create the 2D or 3D wireframe sketches you need quickly, simply and accurately, with no need to fully constrain a sketch before you can use it. Draw directly in 3D space using the Intelligent Cursor to find key points such as midpoints, intersections, angles, tangencies and other key geometric information.

Solid Doctor
PartMaker Modeling’s Solid Doctor lets you find and fix faults in imported data to create perfect Parasolid™ bodies for CNC programming in PartMaker. Solid Doctor reads data from all major CAD sources including IGES and STEP as well as native files from CATIA, Solidworks, Siemens NX, Pro/ENGINEER and more.

Direct Modeling
Direct Modeling tools make manufacturing changes quick and simple. Faces of the solid can be moved, offset or rotated to provide machining allowance, or to re-position a feature. All other faces affected by the change are re-trimmed automatically to maintain a perfect solid.

DID YOU KNOW?

PartMaker Modeling is a 3D modeling tool developed specifically for the needs of CNC machinists. Create 3D models from scratch, or repair and modify imported 3D CAD data of any origin, using any combination of surfaces and solids. PartMaker Modeling enables more efficient machining, faster CNC programming and more vivid 3D machining simulation.

BENEFITS
Fast, powerful and versatile, yet easy to use
Specifically designed to meet the needs of CNC machinists
Creates complex parts quickly and simply
Makes manufacturing changes simple

DID YOU KNOW?

Over 50% of all 3D CAD models are created using Parasolid™.

Solid Modeling
PartMaker Modeling is based on Parasolid™, the world’s most widely used solid modeling kernel, so it is robust, flexible and powerful. Create feature-based solid models with editable history allowing you to make design changes quickly and accurately.

Drafting
Create comprehensively annotated part drawings quickly and easily from 3D models, to your own company standard. Powerful 2D view creation, including sectioned and detail views, dimensioning and annotation tools make the creation of fully detailed and tolerated part drawings quick and easy.

PARTMAKER FOR BAR-FED MILLS
**PARTMAKER TURN**

Are you looking for intuitive software to speed up the programming of your 2-axis lathe?

PartMaker Turn is an intuitive, easy to learn CAM system that automates programming for 2-axis lathes, shortening lead times while improving part quality. Vivid 3D simulation, with full collision detection, eliminates the possibility of damaging your machines. PartMaker Turn includes a comprehensive library of robust, user customizable post-processors for virtually any 2-axis lathe machine/control combination on the market today. PartMaker Turn can be cost effectively upgraded to enable programming of multi-axis Turn-Mill Centers or Swiss-type lathes.

“PartMaker Turn was the best investment I ever made in my business.”

Peter Galinski, PA Machine

**PARTMAKER WIRE EDM**

Do you need complete control of your Wire EDM?

PartMaker’s Wire EDM module automates the programming of parts with 2-axis, tapered and full 4-axis features. PartMaker Wire EDM enables you to program multiple skim cuts with alternate direction for each pass, with full control of cut direction, glue stops and path overlaps. For tapered cutting, PartMaker Wire EDM lets you specify varying tapers for different sections of the part and adjust land size with ease.

PartMaker’s Wire EDM performs full 4-axis XYZU contouring operations, synchronizing wire cutting on upper and lower curves with ease while allowing you to adjust the distance between curves at any time.

“PartMaker’s Wire EDM module provides an intuitive and powerful programming tool for automating the programming of our wire machines.”

Jeff Moyer, Springs Windows Fashions

**CONFIGPOST**

Do you want your NC code to match your style?

Each PartMaker post-processor is fully user customizable with ConfigPost™. Customize post-processor output for any application including Mill, Turn, Wire EDM, Turn-Mill and Swiss, using a simple point-and-click interface. PartMaker’s unique ‘Config-by-Click’™ Technology enables you to customize post-processor output rapidly and easily by clicking on the line of NC code you wish to change. ConfigPost™ comes standard with any PartMaker CAM module, enabling you to tailor your post-processor to your exact needs.

**DOCUMENTATION WIZARD**

Do you need easy to read documentation for your shop-floor?

PartMaker’s Documentation Wizard (PDW) automates the creation of set-up documentation. Provide your machine operators with accurate, detailed manufacturing drawings, complete with vivid graphics, dimensions and annotation. Machine set-up documentation can be exported in a variety of formats, including HTML, Microsoft Excel or PDF, or printed for immediate use.

PartMaker can generate all your machine set-up documentation automatically with the click of a button.
To keep our customers at the cutting edge and to ensure that PartMaker is current with the latest in machining technology, Delcam maintains close, collaborative relationships with many of the industry’s leading machine tool builders as well as cutting tool suppliers and CAD companies. We meet with our industry partners regularly to learn about the new technologies they are developing and ensure that PartMaker stays current with these developments. Close working relationships with our machine tool partners ensures that PartMaker’s post-processors are as robust as possible.

Technical Collaboration
Delcam has developed strong relationships with a wide range of key stakeholders in the CAD CAM industry, helping you to take advantage of the latest generation of machine tools, cutters and cutting strategies.

Post-processors
With machines of all types becoming more sophisticated and complex, close relationships are vital in the development of post-processors to ensure a smooth transfer of CAM programs to any new machines.

Learn more about these partnerships at:
http://www.partmaker.com/CNC-Compatibility

SUPPORT & MAINTENANCE
With PartMaker, you get your support directly from Delcam, the developer of the product. This means that support is not only highly responsive, but expert as well. The answer to even the most in depth technical question is just a moment away with PartMaker’s unique direct Technical Support, which emails your question to our applications department automatically, complete with the project files, so we can respond faster.

Protect Your Investment
Your machine tools are an expensive investment and it is essential that they perform as efficiently as possible. PartMaker is under continuous development, becoming ever more efficient and cost-effective. Software maintenance ensures you are always at the forefront, using the latest technology available and maximizing your return.

Stay Up-to-Date
Software development moves rapidly with new features and functions added every release. By staying current with maintenance, you will be eligible to receive all the latest software releases free of charge.

Get Help and Support
What happens when you hit a problem? With a maintenance contract, help is just a phone call or email away, direct from Delcam. Delcam’s support engineers are located at more than 300 offices worldwide and have thousands of man years of experience between them. This knowledge and experience covers not only PartMaker but also your specific manufacturing technologies and processes. The combination of all these resources ensures that whenever a problem occurs, your downtime is kept to a minimum by getting the help you need, when you need it.

Weekly Webinars
Every week, we offer free, one hour live webinars on a variety of technical topics, to help you explore new areas of PartMaker, improve your skills or come up to speed on new features in the product.

Quickly Learn New Features
With every major release you’ll receive a DVD kit containing a detailed ‘What’s New’ booklet to keep you fully up-to-date with all the latest tools and how to use them. You can also view tutorial videos on the new features and improvements from the Learning Zone at www.delcam.tv/lz.

The support on PartMaker has been great. They offer webinars on various subjects all the time which have been a real asset to us.
Tom Secresto, Otto Engineering