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new!

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PTC Product Focus

Pro/TOOLMAKER

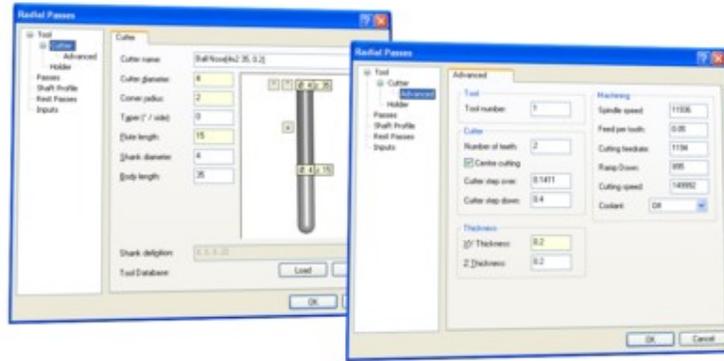
PTC announces Pro/TOOLMAKER for High Speed 3 Axis surface machining. This product, recently acquired along with NC Graphics of Cambridge, England was formerly known as DEPOCAM. It's High Speed machining algorithms are licensed by 5 of the top 10 NC machining companies in the world. As a complimentary product to Pro/NC, Pro/TOOLMAKER will address the ever-changing needs of the complex, precision surface machining industry. This industry consists of Mold Tool and Die Machining, Automotive Component Machining, Forgings, Pattern Making, Prototyping, and Medical Component Machining.

Pro/TOOLMAKER is a standalone, Windows-based application. It installs in minutes and is so easy to use that training is only one day. Pro/TOOLMAKER has a multi-threaded architecture for fast and reliable toolpath creation. Even though it is a standalone application, Pro/TOOLMAKER maintains associativity with Pro/ENGINEER data. A change made in Pro/ENGINEER is reflected in a modified toolpath in Pro/TOOLMAKER. Along with being able to accept Pro/ENGINEER data, it also accepts the following file formats for machining:

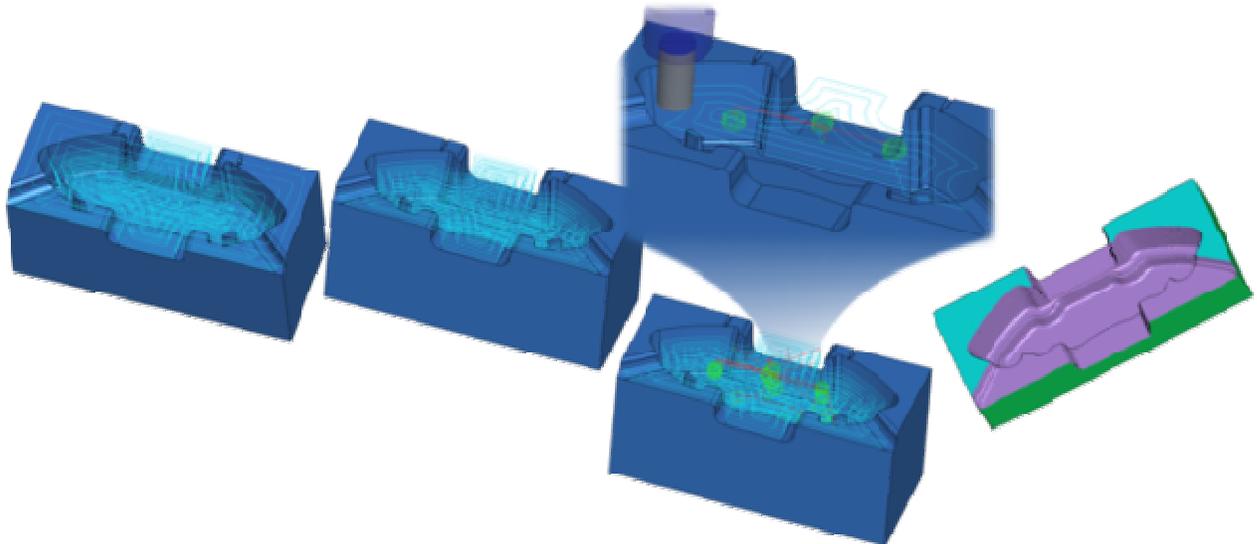
- Catia V4, V5 (*.exp, *.model, *.mod, *.dlv, *.cat, *.CATPart, *.CATProduct)
- SolidWorks (*.sldprt, *.sldasm, *.slddrw)
- Parasolid (*.x_t, *.x_b, *.p_t, *.p_b)
- along with IGES, STEP, and STL neutral file formats.

When objects are imported, Pro/TOOLMAKER has some basic model manipulation capabilities that include trimming, hole filling, offsetting and more.

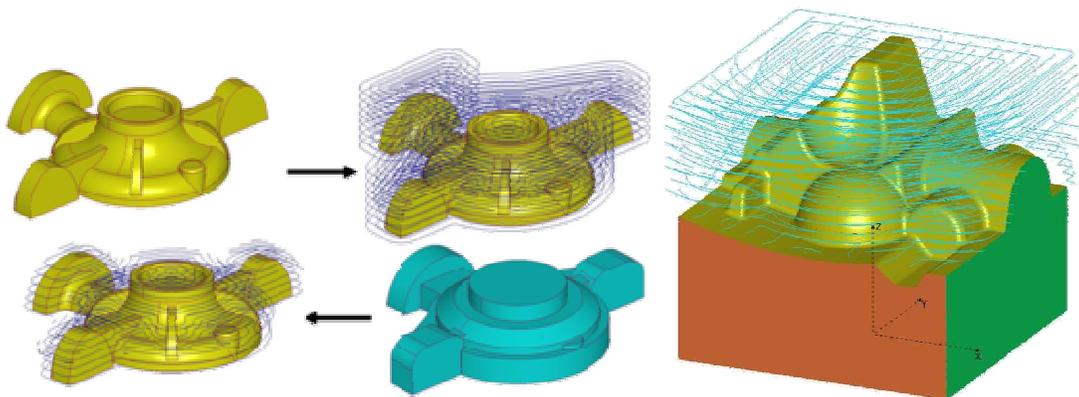
Pro/TOOLMAKER is ready to use out-of-the-box. Complete with a thorough tutorial, tool library, and a material feed/speed database, it requires no customization.



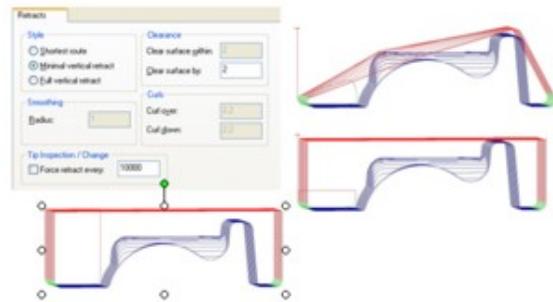
The workflow is virtually the same every time you use Pro/TOOLMAKER. It begins by creating tool passes. The user simply selects the strategy and tool for the sequence. Pro/TOOLMAKER quickly creates the passes. All parameters are driven by internal relations and rules based on 30 years of CAM experience.



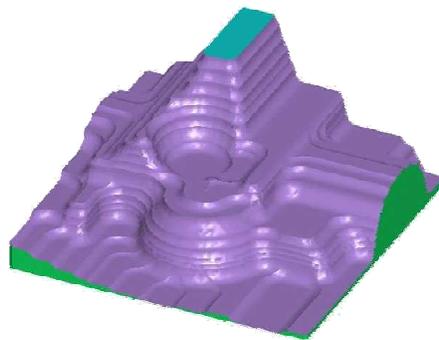
The next step in the process is to have Pro/TOOLMAKER “Edit” the existing toolpath for optimization of movement.



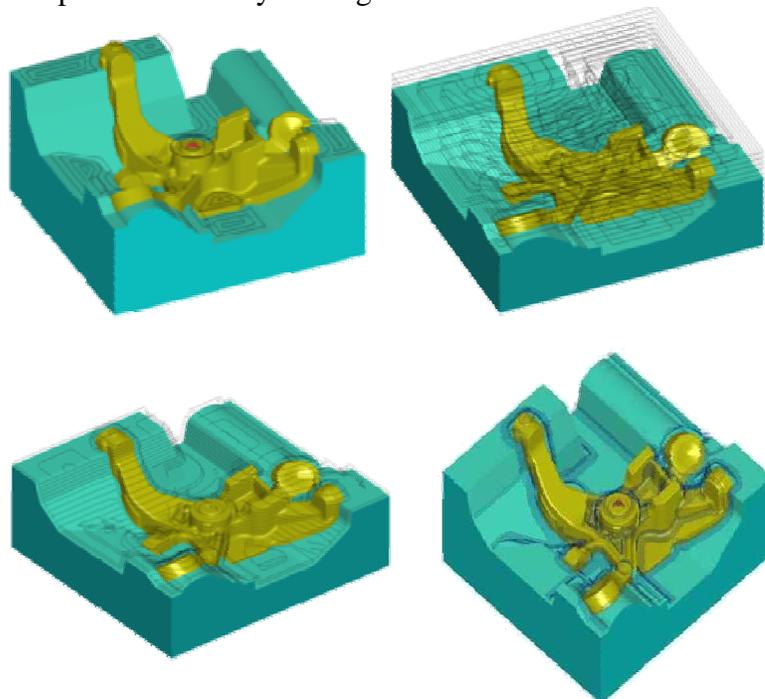
After editing the toolpath comes the “Linking” of the individual passes. During this step the system creates optimized connections, approaches, retracts, and plunges. Aircuts are minimized here.



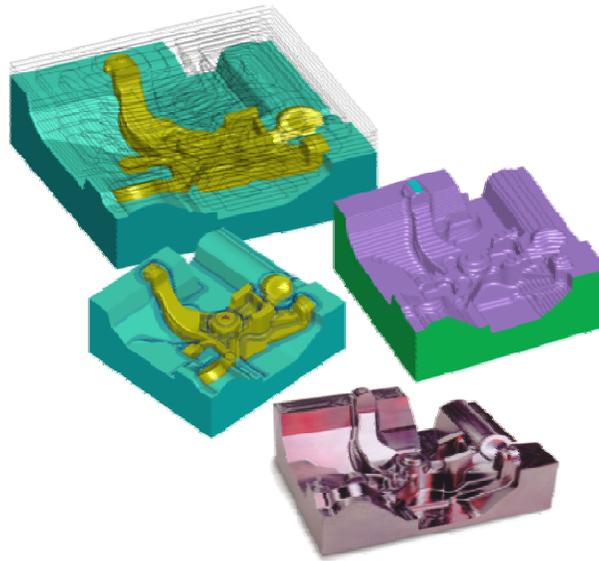
Finally the stock model is created. In this final step, the material is quickly and accurately removed showing the material left after machining.



Pro/TOOLMAKER provides a complete range of specialized toolpaths including automatic 3D roughing and rest milling, slope-based milling, flat surface milling, spiral and radial toolpaths, pencil (local) milling, morph and boundary milling.



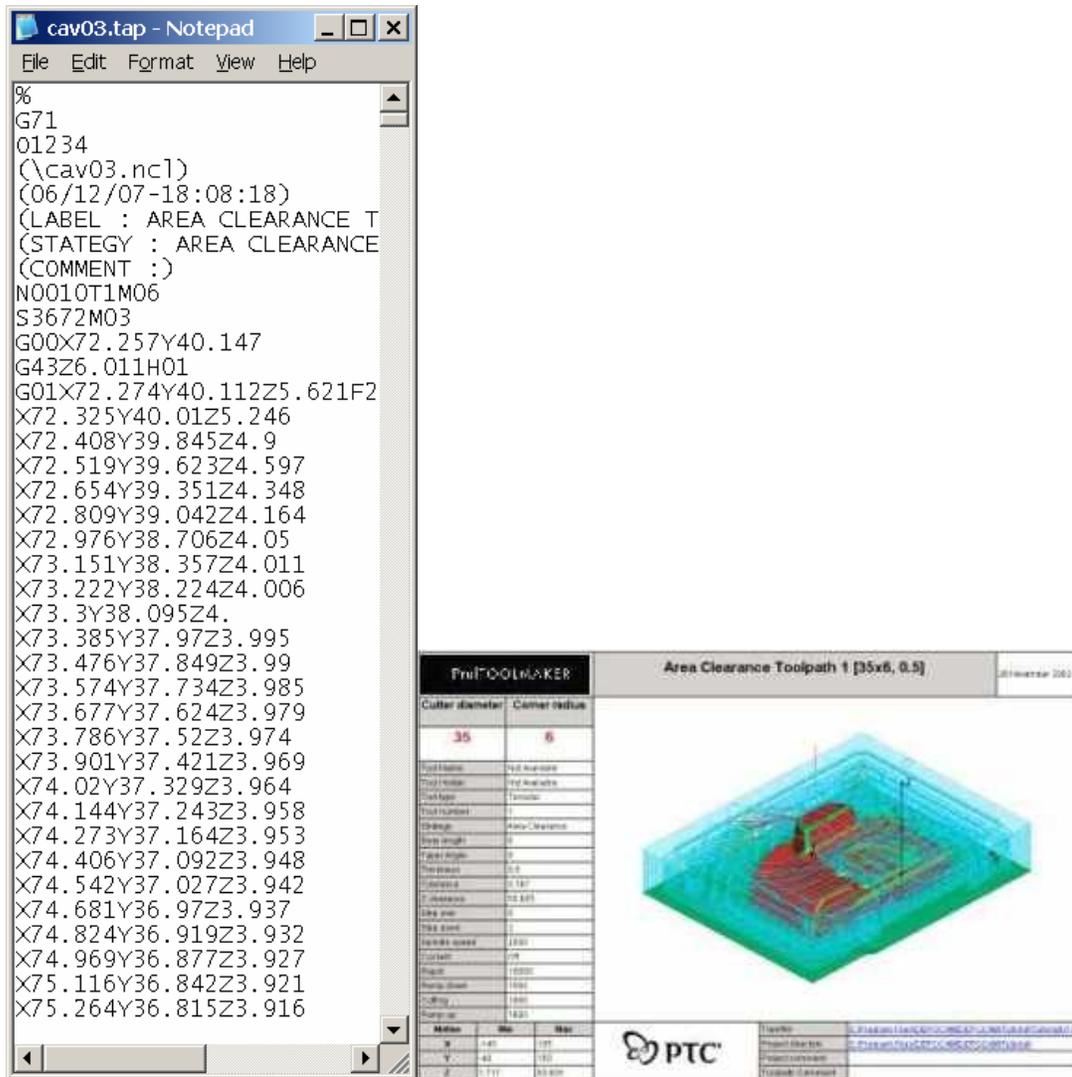
All finished toolpaths have rest milling option based on prior tools (Ball, Bull, and Flat)



Deliverables from Pro/TOOLMAKER include:

- NC Files,
- Toolsheets, with and without graphics,
- and STL output of models depicting material removal (stock models).





For more information regarding Pro/TOOLMAKER, visit <http://www.ptc.com/appserver/mkt/products/home.jsp?&k=5178>

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PTC Product Focus

ProjectLink Role Configuration

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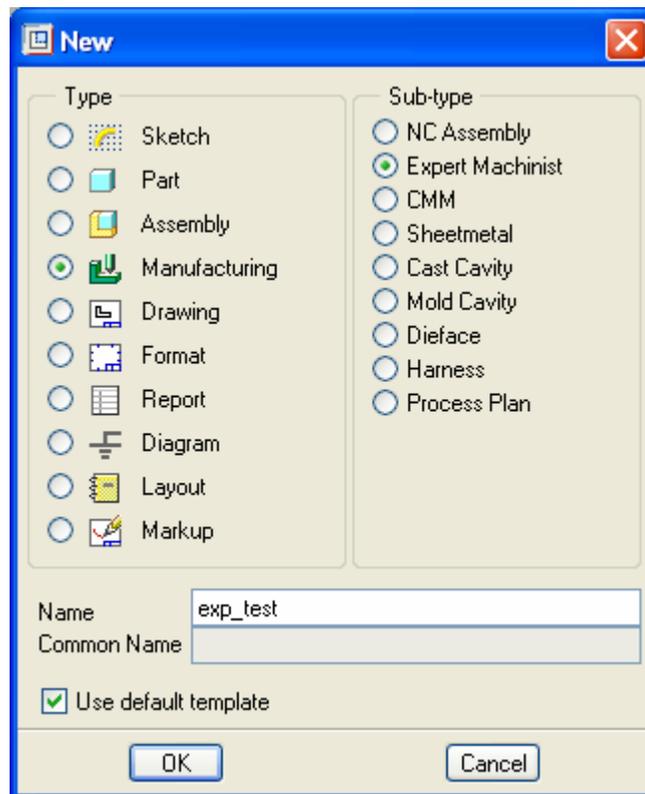
Tips of the Month

Expert Machinist – Less is More

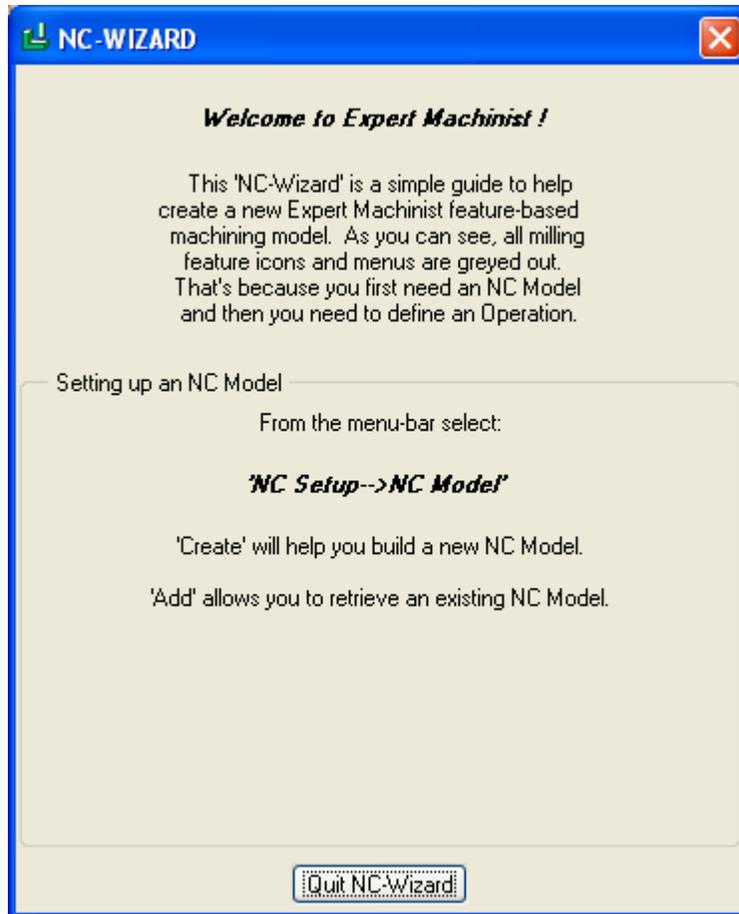
How often are the machining needs of a company limited to simple 2 ½ axis operations. Parts that would be machined with these operations can be described as having vertical walls and flat bottoms. For these types of parts, the cutter moves continuously in X and Y directions while incrementing down in the Z direction. Surprisingly, these types of parts represent a sizable percentage of the parts being machined today.

Expert Machinist is a Feature-Based Production Milling tool encompassing commonly-used 2 ½ axis operations. These operations consist of Face Milling, Profile Milling, Pocket Milling, Slot Milling, Flange Milling, Chamfer Milling, and other milling options. Many existing customers don't know it but Expert Machinist is included in every Milling seat that PTC sells today (and has sold for the last 6 years). It is included in the Prismatic and Multi-Surface Milling Option, the Production Machining Option, as well as the Complete Machining Option.

Expert Machinist is simply a user-friendly Graphical User Interface (GUI) placed on top of Pro/NC. While you can toggle easily from Pro/NC to Expert Machinist and back again via the Applications menu, the easiest way to begin using the tool is by starting an Expert Machinist Manufacturing File from the beginning.

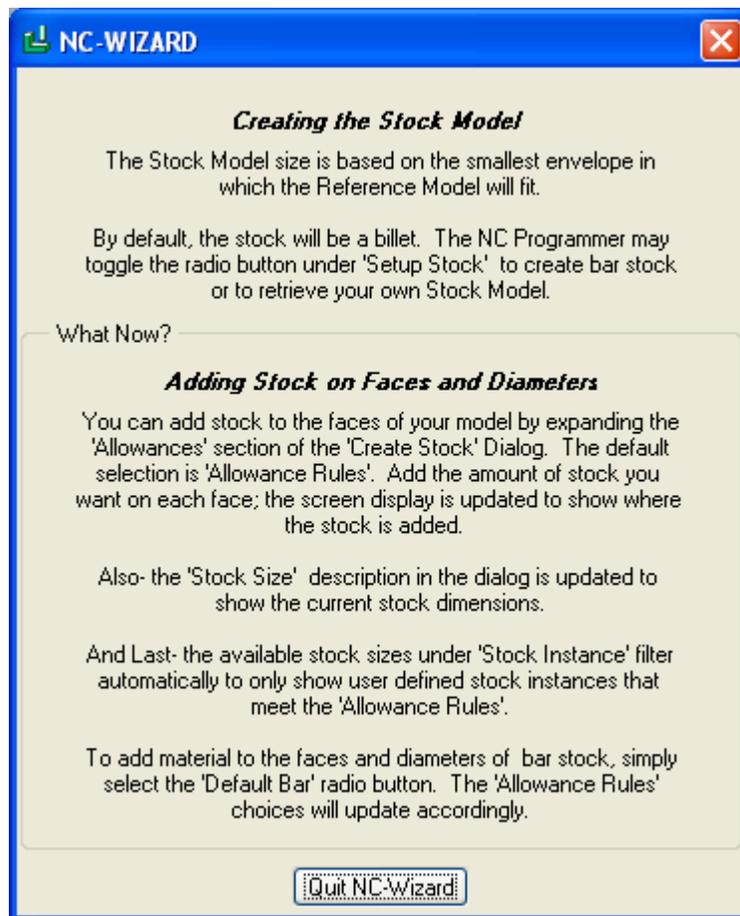


After choosing the previous options, a wizard pops up in the lower right corner of the screen that looks like the following:

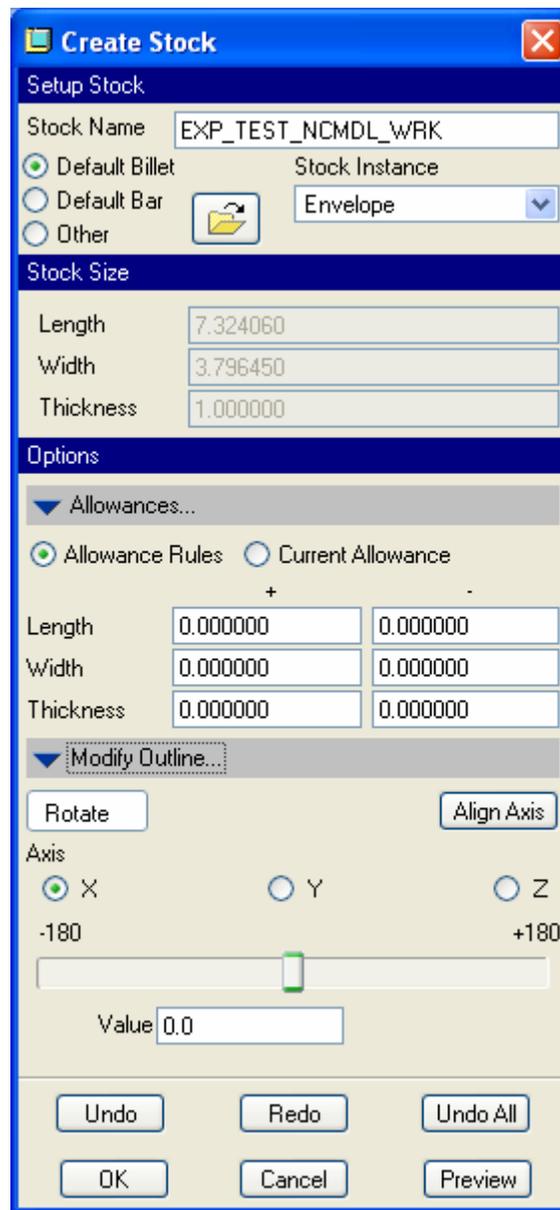


Even if you have never seen the tool before, you would be able to follow what to do. The bold print tells you to pick NC Setup and then NC Model. After choosing to “Create” a new NC Model, the system prompts you for the name of the Expert Machinist model. The default is sufficient (it defaults to the original name followed by _NCMDL). At this point, you will be prompted for the part that you want to machine and you simply double-click on that part after you locate it. Try to have a coordinate system on that part with the Z axis pointing up (into where the machine spindle will be).

The next wizard option walks you through the automatic creation of the workpiece:

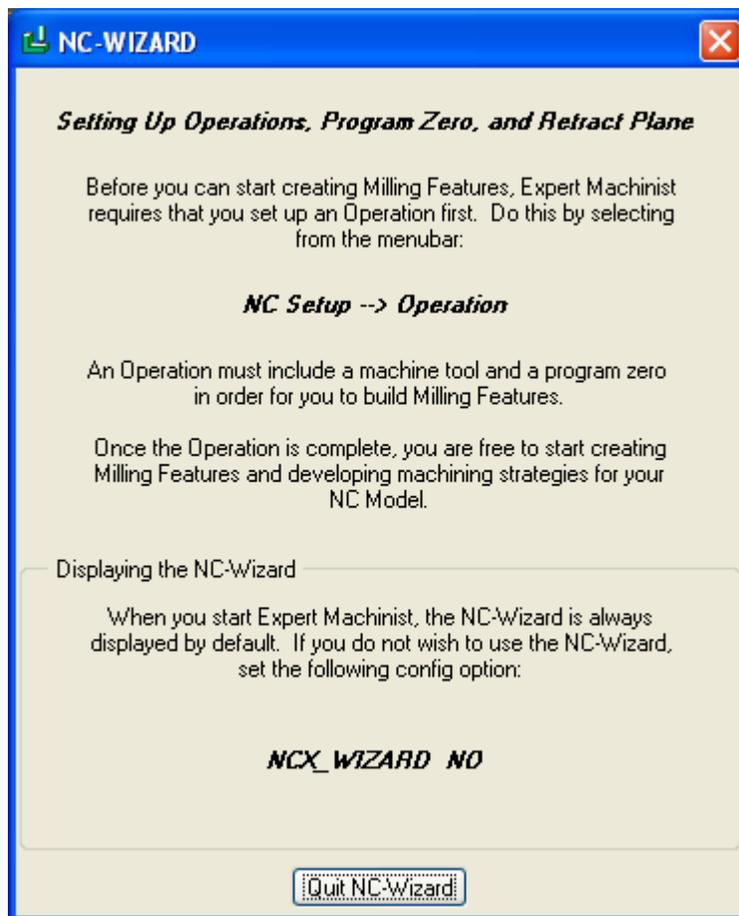


The entire Stock menu looks like the following:

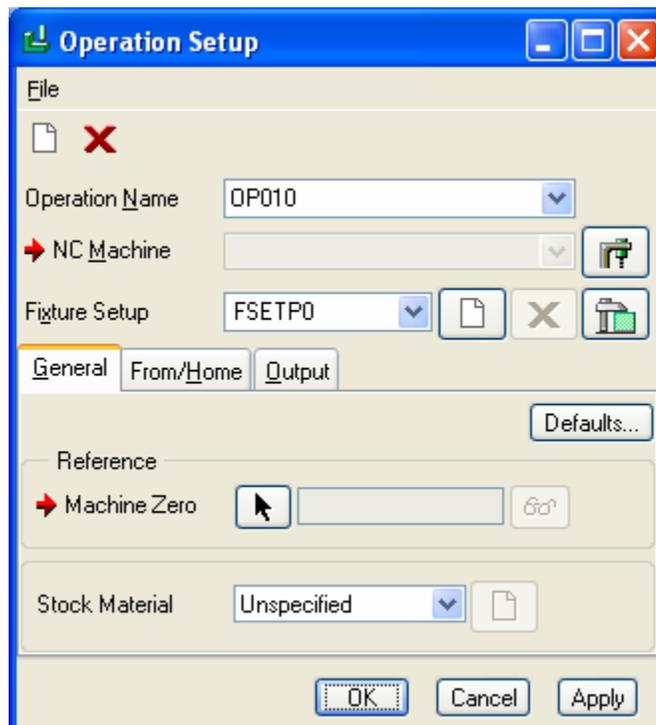


If you did not change any values in this window, your stock would be a billet completely enveloping your reference part with no added material to allow for clearance. To add this clearance, you simply adjust the “+” and “-” values under the Allowance Rules. The Length, Width, and Thickness really coincide with the large X, Y, and Z coordinate system that Expert Machinist displays. Experiment by adding additional stock and see the outline of the model preview update. When complete, choose OK and Done.

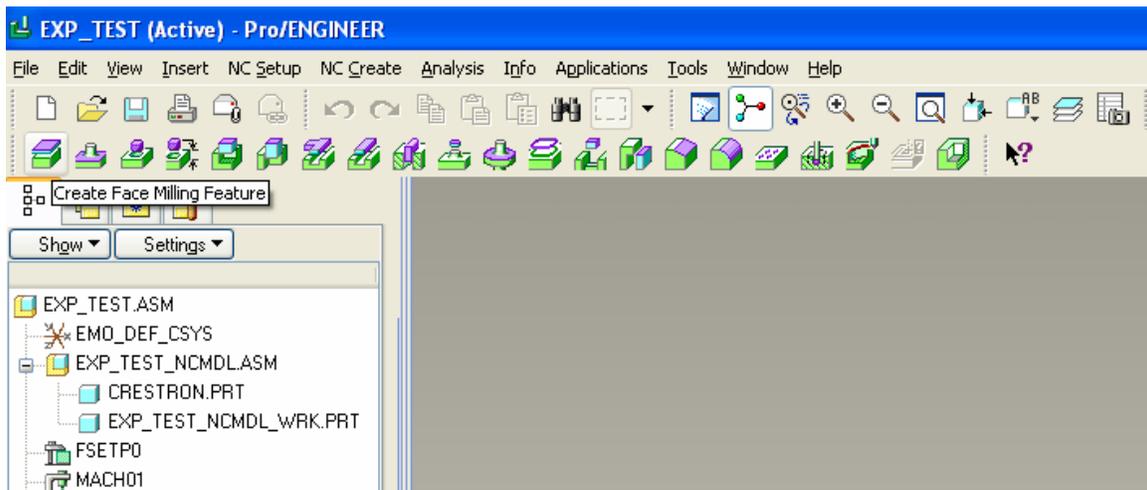
At this point, the model needs to be located. I usually choose the “default” option in the assembly dialog. The stock is created and based on the following wizard, it is now time to determine the machine that I want to use to machine the part as well as a machining coordinate system.



This next dialog box looks the same as it does in Pro/NC.

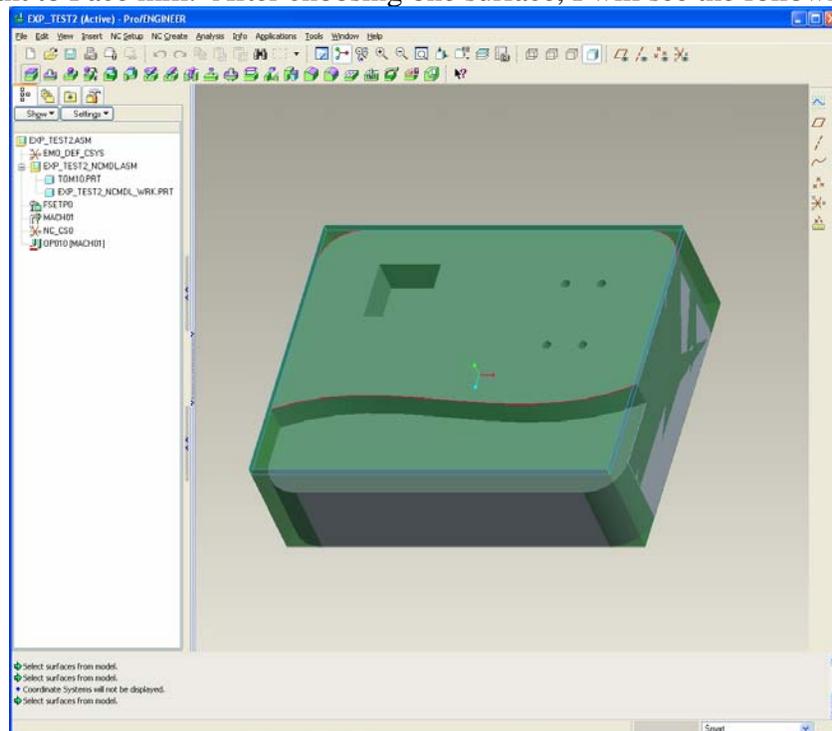


The two red arrows show where information MUST be entered. In other words, you need to tell Expert Machinist the type of machine that you are using along with the toolpath origin. (Try to have a coordinate system with the Z axis pointing in the correct direction on your part before you get to this stage) After entering this information, the wizard goes away because it is no longer necessary. The actual product acts like a wizard from this point on. If you followed everything correctly up to this point and you still do not see the icons available as below, simply choose Applications / Expert Machinist and you should see them.

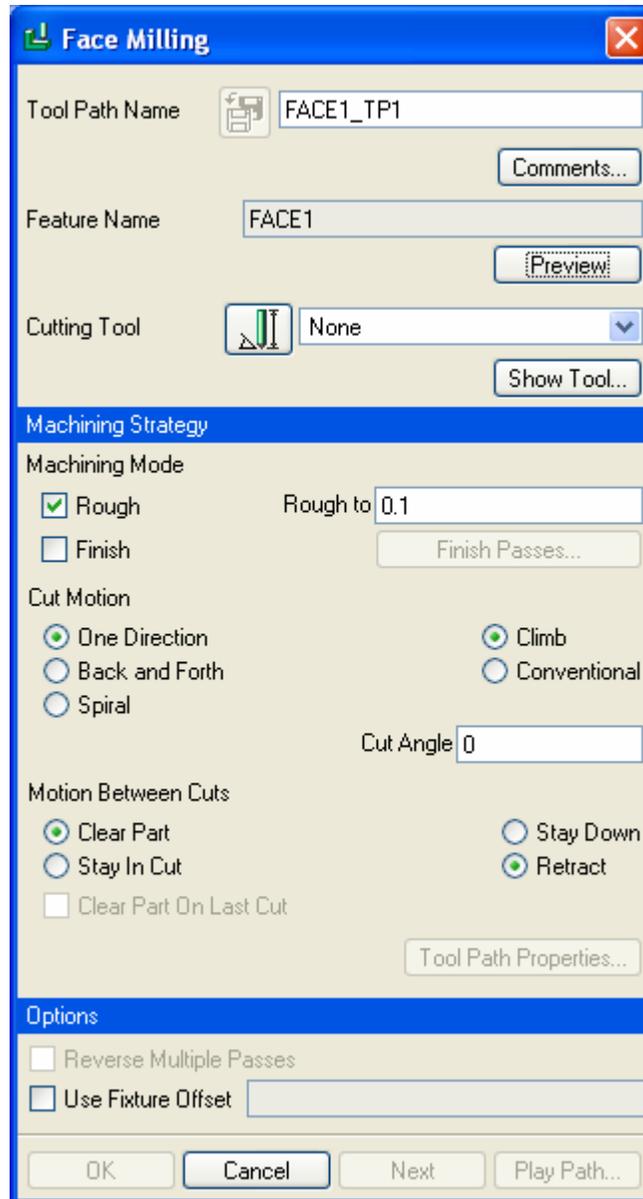


Lets go through a simple sequence.

In my example I want to perform a Face Milling sequence. The first thing I do is choose the Face Milling Feature Icon . Expert Machinist then asks me to choose the surface of the model that I want to Face mill. After choosing one surface, I will see the following:

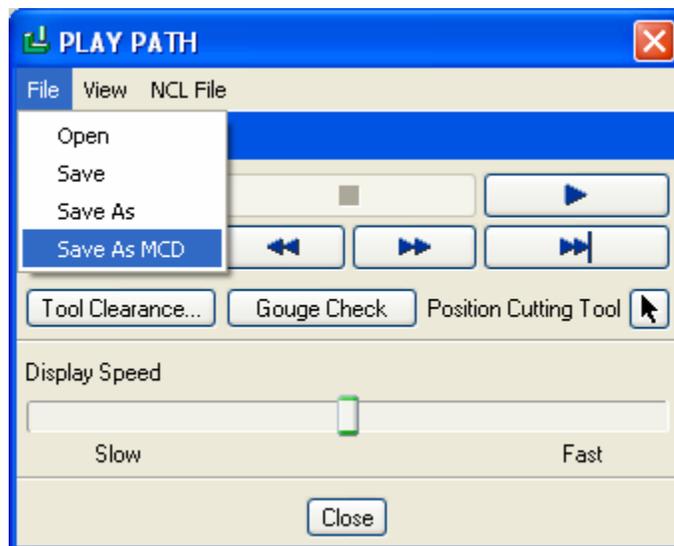


The red outlined surface is known as a “hard wall.” My cutter is not allowed to pass through that surface under any circumstance. The blue surfaces represent “soft walls.” My cutter IS allowed to pass freely across these imaginary walls. When I choose OK, I will see a Face feature in my model tree. To actually create my toolpath strategy, I right-click on the face feature in the model tree and choose “Create Toolpath.” The following dialog will appear:



After providing a cutting tool, I choose the intuitive commands and can easily generate a toolpath for this sequence. Notice that the step over and step down are automatically calculated based on the diameter of the cutter. The feeds and speeds are default but can be left unchanged.

To output the toolpath file to a post processor, pick File / Save as MCD where MCD stands for Machine Control Data. Give the toolpath file a name, choose a machine tool, and find the posted g-code in your current working directory (if not specified in config.pro file).



This is just a simple way of getting started using Expert Machinist. All of the previous setup for Pro/NC can be used with Expert Machinist because the two products are really the same. Expert Machinist just has a streamlined GUI on top. Experiment with other sequence types. PTC Tech Support has a great step-by-step tutorial on using Expert Machinist. Simply use your username and Tech Support password to access the following tutorial:

http://www.ptc.com/cs/cs_25/howto/exm015/exm015.htm

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Tips of the Month

E-mailing a Page From Anywhere in Windchill

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Announcements

Educational Resource Library

Learn things you always wanted to do - but didn't know you could.

This one stop educational resource library will help you learn more about PTC Solutions and provide you with technical materials developed by the product experts to help you become more productive.

Get tutorials, how-to videos and expert advice for:

- Pro/ENGINEER
 - Conceptual and Industrial Design
 - Detailed Design
 - Simulation/Analysis
 - Production
 - Design Collaboration
- Windchill PDMLink
- Windchill ProjectLink
- Pro/INTRALINK
- PTC Online Tools

Check out the [Educational Resource Library](#) today.

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It's better than finding the Covenant of the Ark!

PTC Tips & Techniques Webcasts: Work Smarter. Not Harder.

Click below to see regularly scheduled Tips & Techniques technical Webcasts that are designed to provide you with the most popular time-saving tricks that Pro/ENGINEER users of all skill levels will find useful. Get more out of your maintenance dollars!

[Tips & Techniques: Work Smarter Not Harder!](#)

E-PROFILES IS HERE!!

We have been eagerly anticipating the debut of the new electronic version of Profiles Magazine and now it is here! This new web site will supplement the print edition of the magazine and will

provide new useful features not feasible with paper media. e-Profiles will provide you with 24x7, worldwide access to key information previously available exclusively in the print version. "Tips & Tricks," a popular feature pioneered by Pro/USER, has also moved to the web and will be expanded as the site matures.

Please take a few minutes to check out this new web site. We don't think you will be disappointed.

<http://profilesmagazine.com/>

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Upcoming Events & Training Class Schedules

Upcoming, 2007 Your local Pro/Engineer User Groups
<http://www.ptcuser.org/rugs/>

2008 USA
PTC/USER World Event
<http://www.ptcuser.org/>

Events

Our seminars and conferences seek to provide you with relevant information regarding product development trends in your industry as well as innovative software learning experiences. Think of them as a constructive day off where you can share experiences and swap ideas with your peers.

If you can't manage to get away, we'll bring it to you. Check back often for regularly scheduled live webcast events.

[You're Invited to Attend...](#)

Please visit the [PTC Education Services](#) website for the latest training information including course descriptions, schedules, locations, and pricing.

- Attend a course at any PTC Center and receive a **free** copy of Pro/ENGINEER Wildfire Student Edition!

<http://www.ptc.com/services/edserv/index.htm>

Live Instructor-Lead Virtual PTC Training Courses

Virtual Classrooms provide interactive learning with a trained PTC instructor in convenient and manageable sessions that last approximately 4 hours over a series of days. It's easy to join a class right from your desk using a phone or voice-over IP technology.

Sessions are performed just like a traditional ILT (including interactive exercises where you and the instructor can work on lab exercises together) and feature some of our most popular ILT courses. These sessions cover the exact same material as the traditional ILT in-center courses. Also look for some of our most frequently requested mini-topics delivered in the same format that are only an hour - two hours in duration.

If you have any questions about these sessions or would like to see getting other courses, not on this list, on the schedule please feel free to contact me for more details. They are a great way to bring training to you without you having to worry about location or being out from work for long stretches.

You can register for these sessions just as you would for any normal ILT class either by:

1. calling order admin at <http://www.ptc.com/services/edserv/training/registra.htm> or
2. you can go to PTC University directly at <http://www.ptc.com/learning> and submit a registration request directly. All you have to do is search the catalog by typing in “virtual” in the search field and you will see a listing.

PTC

Note: This PTC E-Newsletter will continue to be used for the following:

- 1) Inform you on events related to PTC products (user groups, conferences, training schedules, etc.)
- 2) Educate you on solutions that are available at PTC
- 3) Tips & Techniques using PTC Products

Note: These messages are compiled in the local PTC office and will be distributed via e-mail.

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