



new!

PTC Product Focus: A) [Point Clouds to Models](#)

B) [PTC's Visualization Advantage](#)

new!

Tips of the Month: A) [Decrease Component Assembly Picks by at Least 50%](#)

B) [ProductView – Product Structure Search and Color Coding](#)

Announcements: [Most Recent Announcements](#)

Upcoming Events & Training Schedule: [Events & Training Schedule](#)

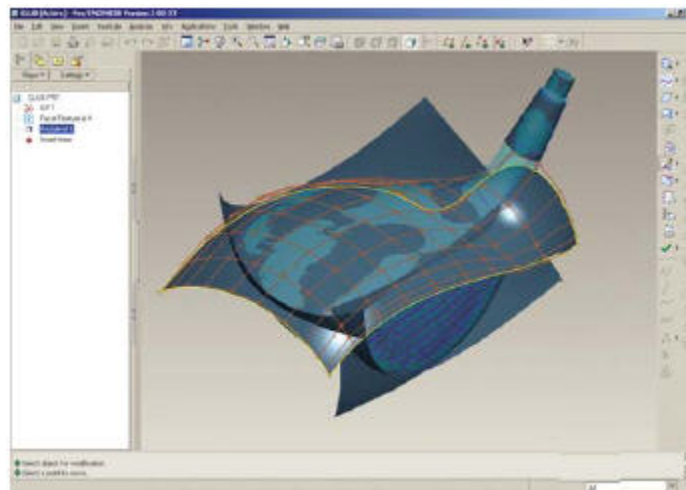
PTC Product Focus

Pro/ENGINEER's Reverse Engineering Extension

Capture Existing Designs

Do you have prototypes, current products, or finished tooling, but no related drawings? Are you dreading having to create the CAD model from scratch? Perhaps you design highly customizable products such as medical devices that require a perfect fit with the human body. Are you wondering how you'll get the parts to fit? Relax.

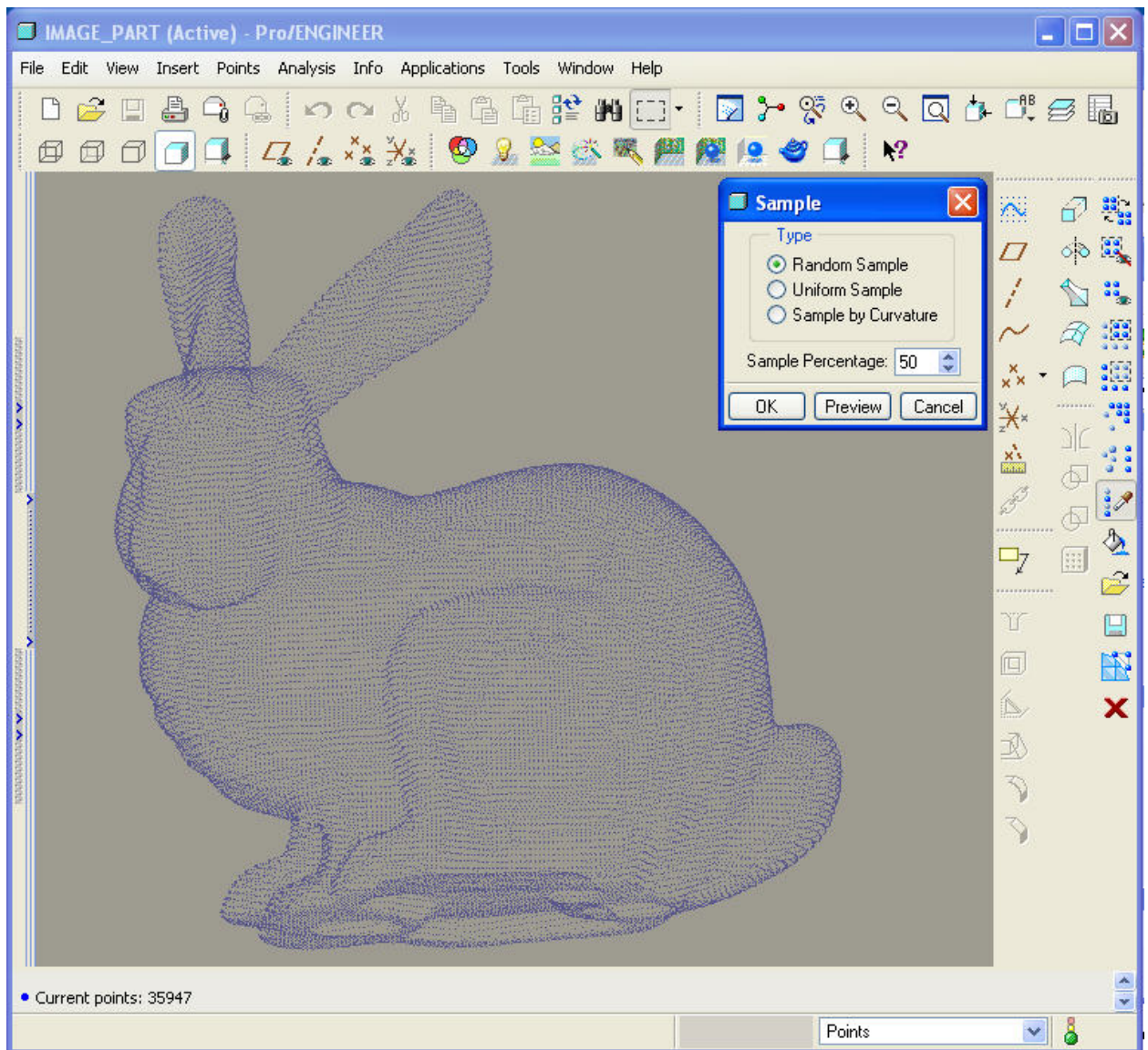
With Pro/ENGINEER Reverse Engineering Extension (REX), you can easily create - or recreate the electronic 3D CAD model of your physical product, without spending an enormous amount of time, effort or money. REX allows engineers to work with 'point cloud' data obtained by scanning physical prototypes.



Capabilities & Benefits:

Point Cloud Refinement:

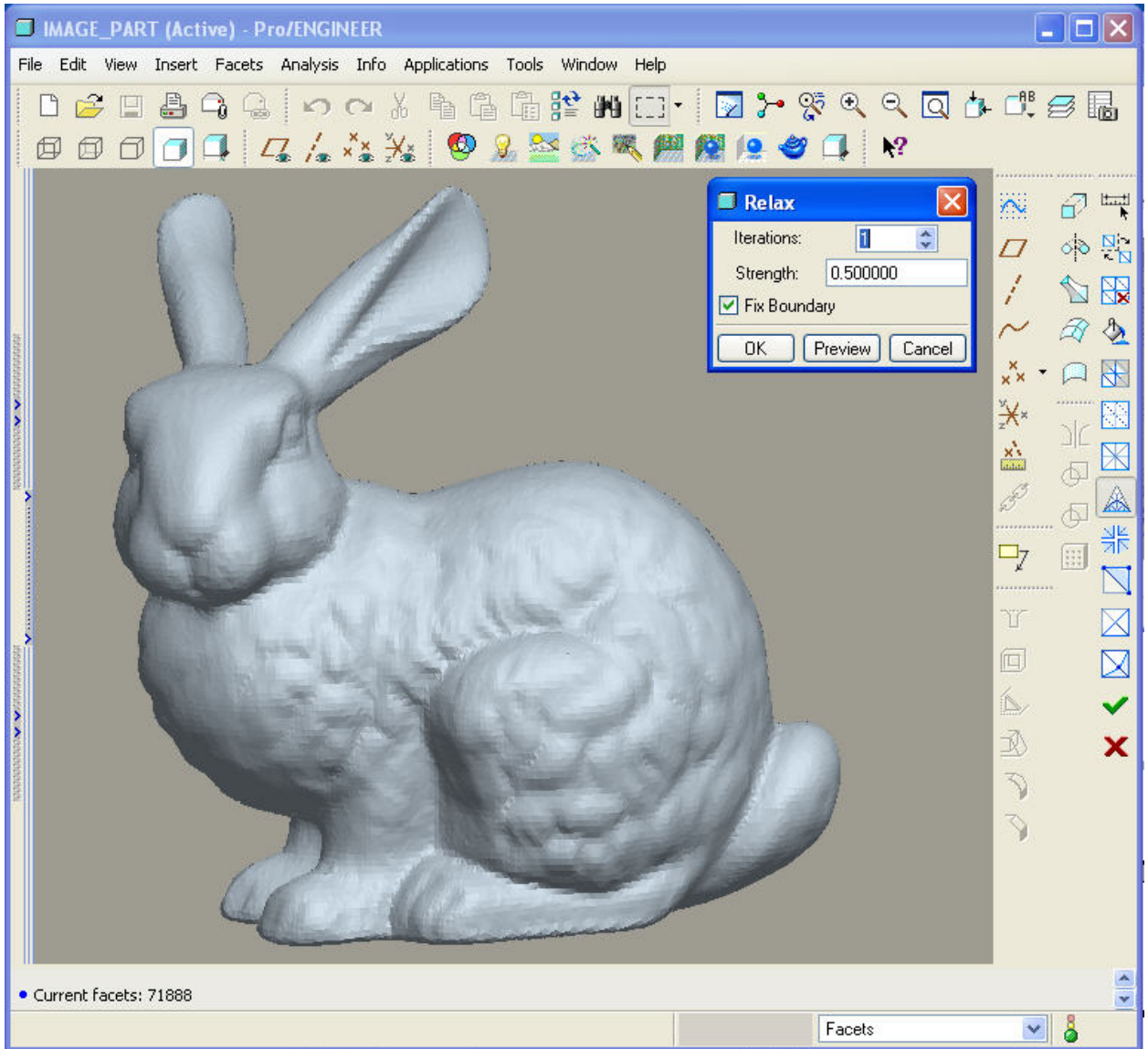
- Point Cropping
- Noise Reduction
- Automatic deletion of outlying points
- Point Sampling (random, uniform and curvature sampling)
- Fill holes in scanned data



Dynamic Facet Modeling

- Automatic removal of webbing

- Removal of facets as singles, groups or user-defined cropping
- Hole filling
- Cleaning operations to redistribute the facets for a cleaner representation
- Decimating and refining operations to reduce or increase the number of facets
- Relax facets to generate a smoother representation



Flexible Curve Creation

- Construct curves on a surface, from a surface boundary and through points
- Construct a curve from the results of an analysis feature such as along the fringe of a colored analysis plot



Flexible Surface Creation

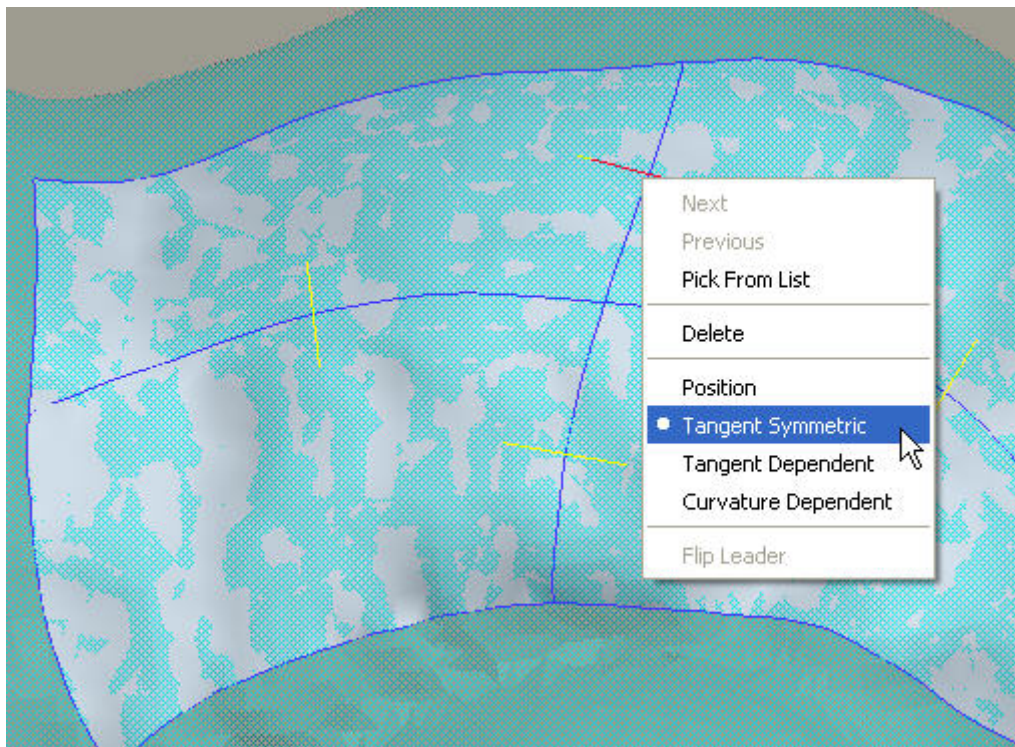
- Develop analytical surfaces such as planes, cylinders, cones, revolutions and extrusions



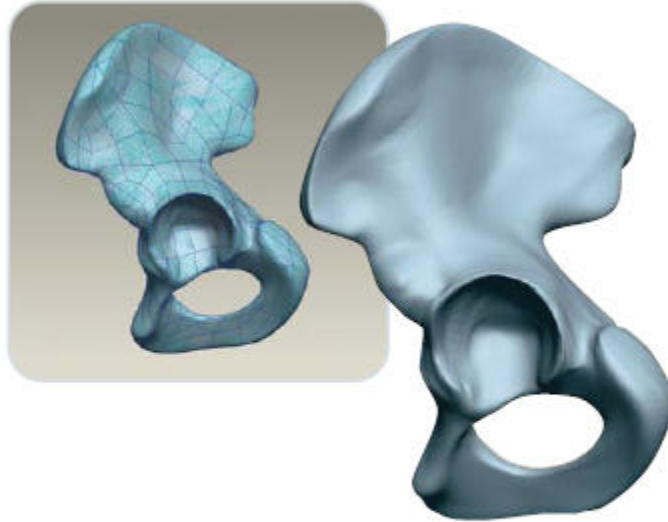
- Create a surface from a bounding box or boundary
- Loft through multiple curves in one or two directions



- Create tangent, curvature and normal boundary conditions



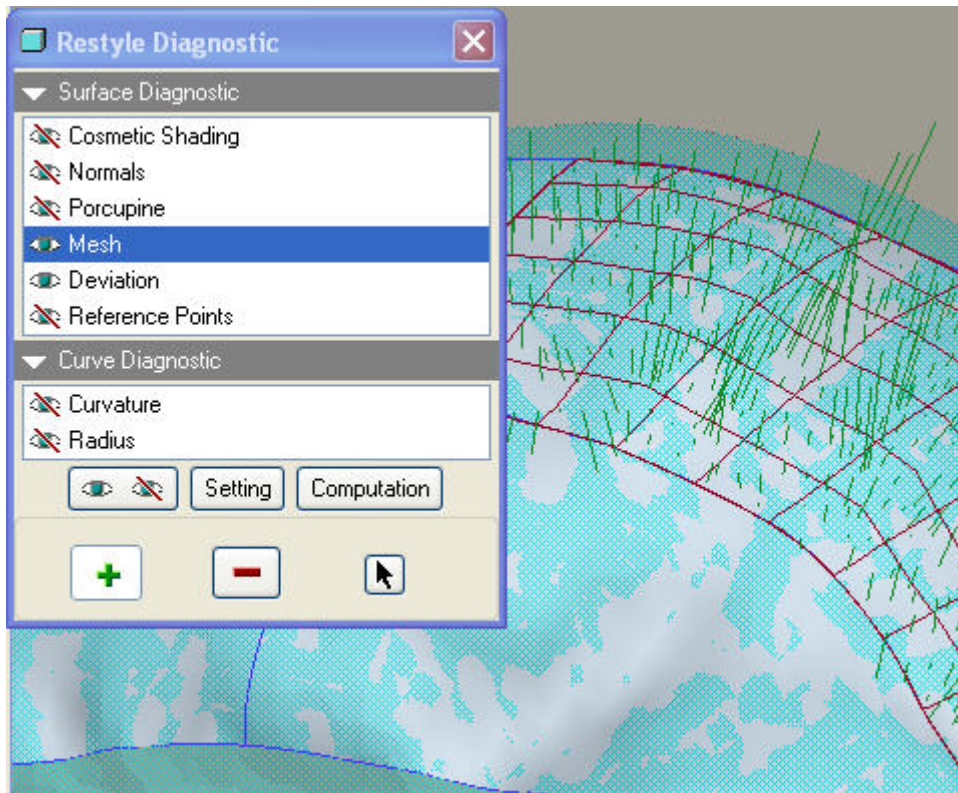
- Automatically surface complex shapes



With Pro/ENGINEER Reverse Engineering, you are able to capture valuable data without having the original CAD files. The above image shows the resulting facet model from a scanned point cloud of a hip bone. Verification tools ensure that the resulting CAD model accurately represents the scanned data. Finally, we have our complete model.

Verification

- Analyze the deviation between individual surfaces and the facets
- Fit new point cloud data to an existing model to implement design changes
- Analyze the deviation between the completed model and the original point cloud



Pro/ENGINEER Reverse Engineering Extension gives you the tools to model physical prototypes quickly and accurately without ever leaving Pro/ENGINEER. The resulting features can be redefined if changes are required.

[Back To Top](#)

PTC Product Focus

PTC's Visualization Advantage

[Click Here To View](#)

[Back To Top](#)

Tips of the Month

Component Interfaces Speed Component Assembly

How would you like to cut the picks required to assemble components in half?

Ever needed to zoom out to find a small component that is being assembled into a large assembly?

What if you never had to pick the component references for a component being assembled? This would cut your picks in half and mean that you would not need to see the component to select its' references. This is exactly what 'Component Interfaces' enables. They are also the gateway to enabling drag and drop assembly – eliminating all assembly picks.

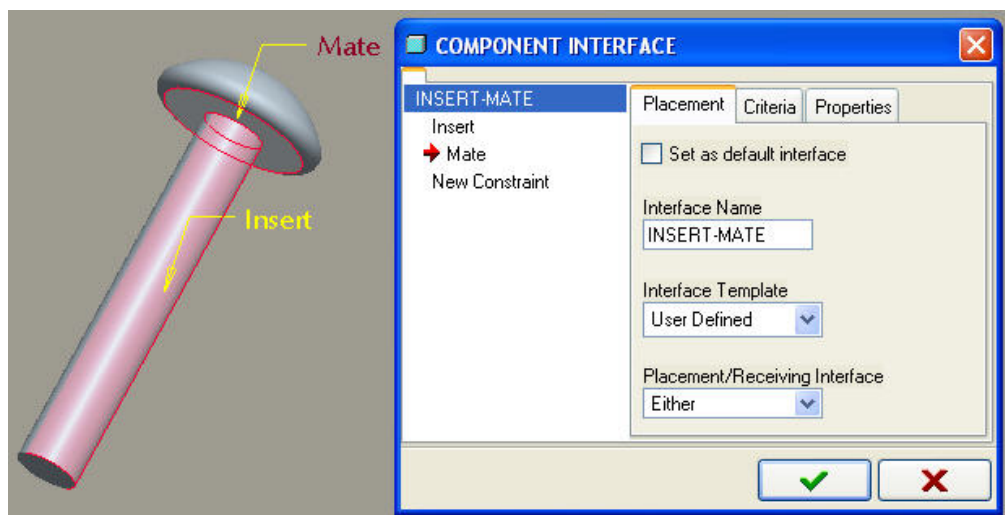
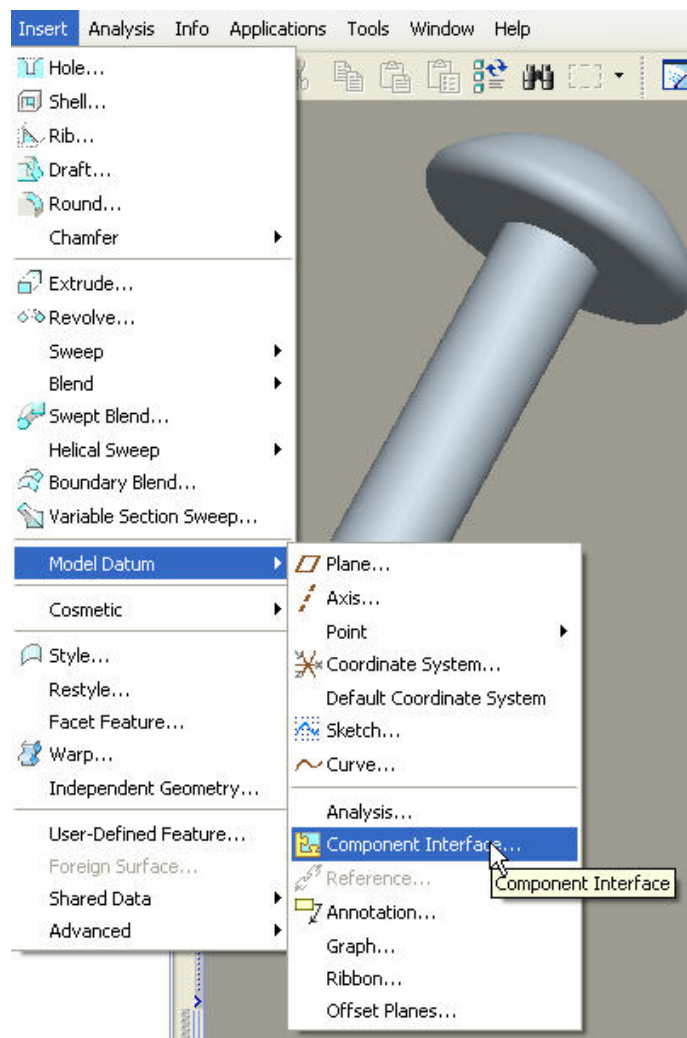
Creating Component Interfaces:

To get started, we will define how a simple screw will be assembled in any assembly. We will define an insert and a mate at the part level. These references will travel with the part to any assembly.

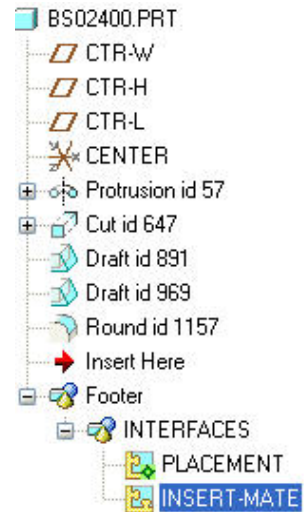
The component interface command is accessed through the 'Insert' toolbar.

The component interfaces icon can also be added to your toolbars via 'Tools'; 'Customize Screen.'

Once in the dialog for the component interface give the interface a name and define the assembly references that will be used wherever this part goes.

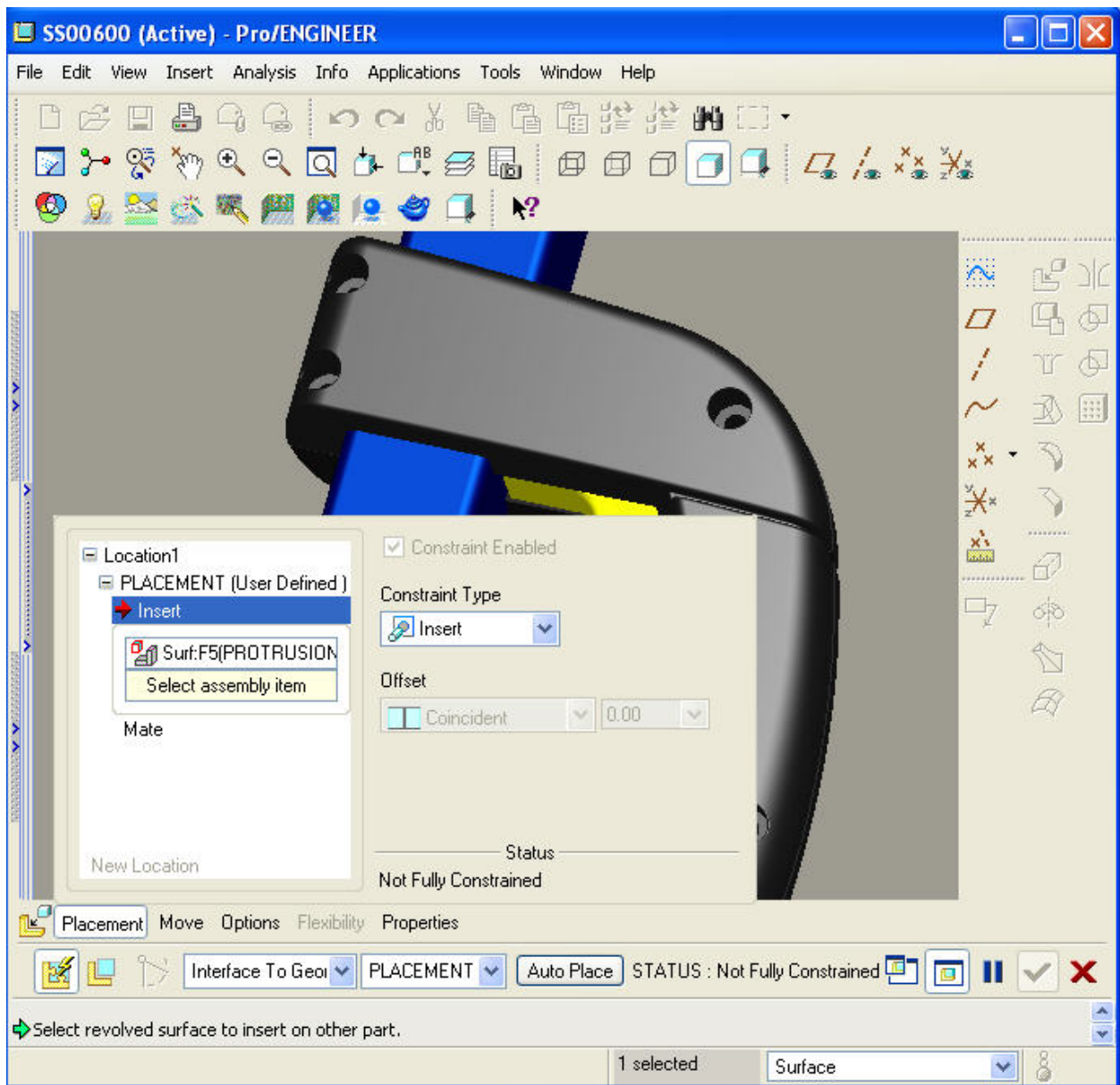


When you complete the feature you will see the component interface in the model tree. In this example on the right you can see the component interface in the footer of the model tree.

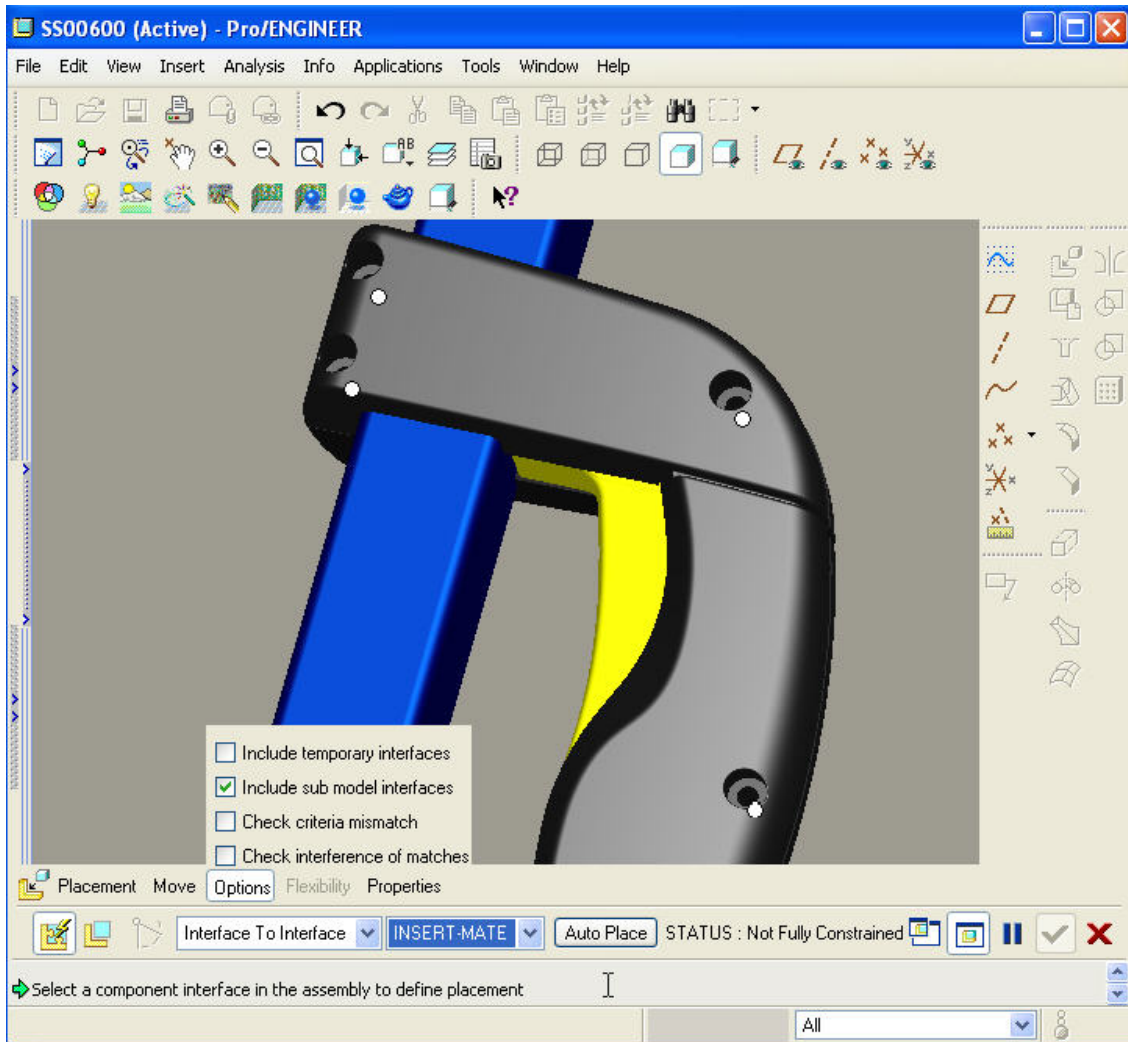


If the part is a generic for a family table, verify the instances.

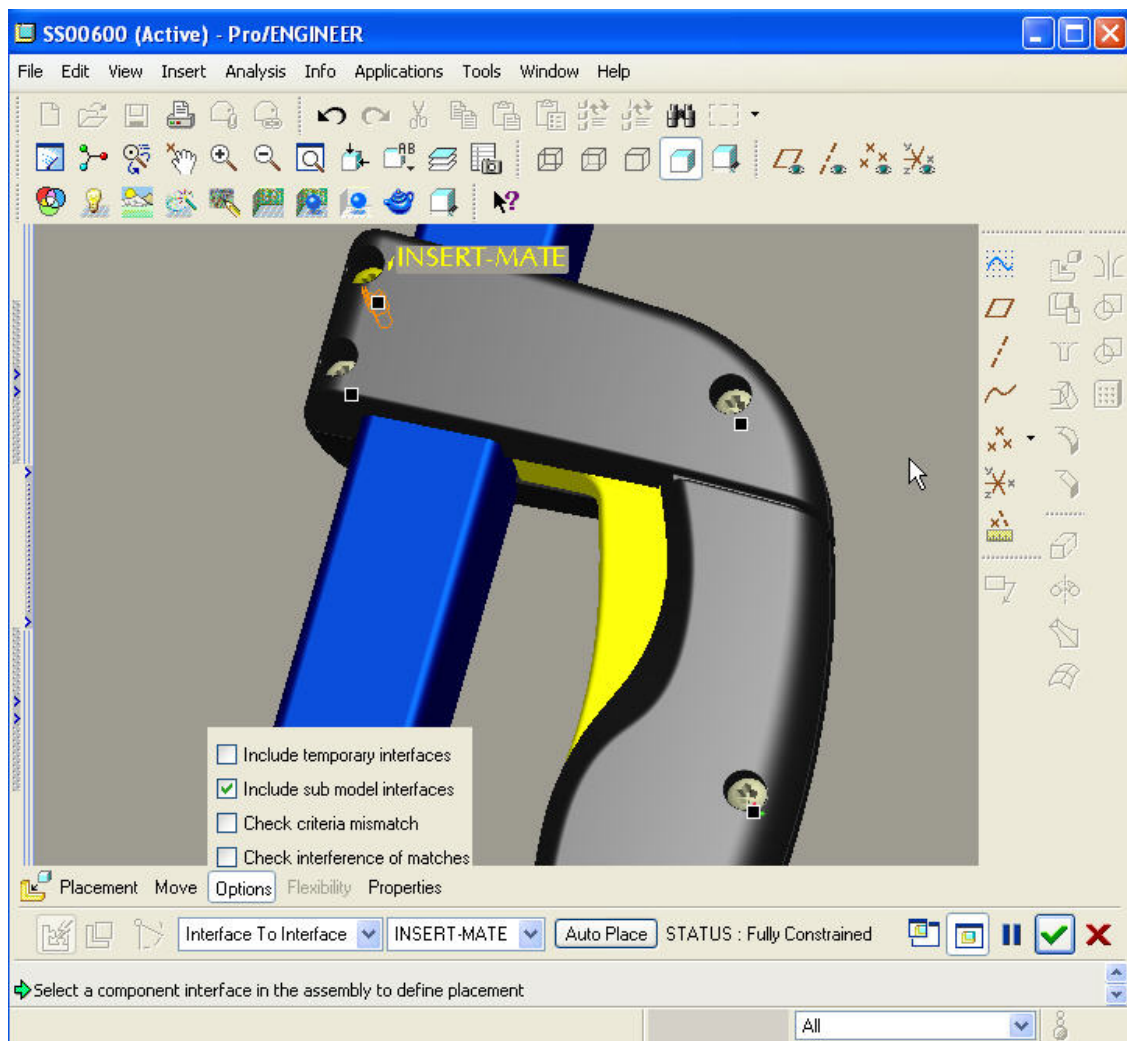
Now when I assemble this screw to an assembly the assembly dashboard already has insert and mate chosen. And there is more: the component references are already selected as well. I only need to select assembly insert and mate surfaces. Two picks to assemble a part.



Even more interesting is the capability to look for similar interfaces in the assembly. With 'Interface to Interface' chosen in the assembly dashboard and the 'Insert-mate' interface selected from the part, all of the possible assembly locations are presented to me as white dots.



I select all four white dots with the left mouse button. I have just assembled 4 parts with 4 picks.



Note: The dashboard has options to check for interferences.

This should get you started. Here are some other things to explore:

- You can drag a part with interfaces into an assembly, release the part near the place that you want it assembled and Pro/ENGINEER will search for compatible references to auto-assemble the part.
- You can match component interfaces to geometry at the assembly. Useful when interfaces are not designated throughout the assembly.
- You can also use ‘Temporary Interfaces.’ Whenever a component is placed in an assembly, the system "remembers" the placement set definition. When the same component is again placed in the assembly, you can place it using the temporary interface. You can activate this functionality under ‘Tools,’ ‘Assembly Settings,’ ‘Placement Settings.’ Or you can set the config.pro option ‘create_temp_interfaces’ to ‘yes.’

The picks shown above are for Wildfire 3. The component interfaces can also be defined in Wildfire 2. The menu can be found under ‘Edit’;’Setup’

[Back To Top](#)

Tips of the Month

ProductView – Product Structure Search and Color Coding

[Click Here To View](#)

[Back To Top](#)

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.

PTC Tips & Techniques Newsletter Archives

Miss an issue! Can't find that awesome technique you read about? Fear not, you can click on the link below and go through our Customer PTC E-Newsletter archives.

[Click Here To Access](#)

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/>

[Back To Top](#)

Upcoming Events & Training Class Schedules

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

June 3 - 6, 2007 Tampa, Florida
PTC/USER International Conference
<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.

[Back To Top](#)