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## PTC Product Focus

### Pro/ENGINEER Wildfire 5.0 Spark Analysis Extension

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## PTC Product Focus

### Smart Assemblies

Is your company looking to achieve any of the following?

- Standardization of CAD modeling (assemblies, parts, features)
- Common shared components across multiple divisions
- Focus on design and process
- Ease of use
- Intelligent/Robust features & models
- Knowledge Base Engineering Capture
- Design thru Mfg
- Design Variations and Options

The following list is a set of tools many companies use to enhance their use of Pro/Engineer:

#### Programming Level

- Java
- Web Link
- Toolkit

## User Level

- Pro/Program
- Smart Assemblies
- Family Tables
- UDF's
- Mapkeys

We have classified the tools into two categories; programming level and user level. The difference between the two is that programming level tools typically requires a background in a higher level programming language such as C++, java, ... The tool being mentioned here is called Smart Assemblies and you can read more about it [here](#).

This tool is listed in the user level since any user of Pro/Engineer that has used Pro/Program, UDF's, or Family Tables can use the tool. The typical training class is only a single day.

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## Tips of the Month

### Obtaining Real Structural Results of Plastic Deformation

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## Tips of the Month

### Toroidal Bend Enhancements in WF 5.0

2 typical use cases for this feature are:

- Tire industry – automotive, recreational vehicles, farm or heavy equipment tires, also toy plastic tires.
- Wrapping a logo or lettering to a model or surface that has curvature in 2 directions similar to a sphere or torus surface.

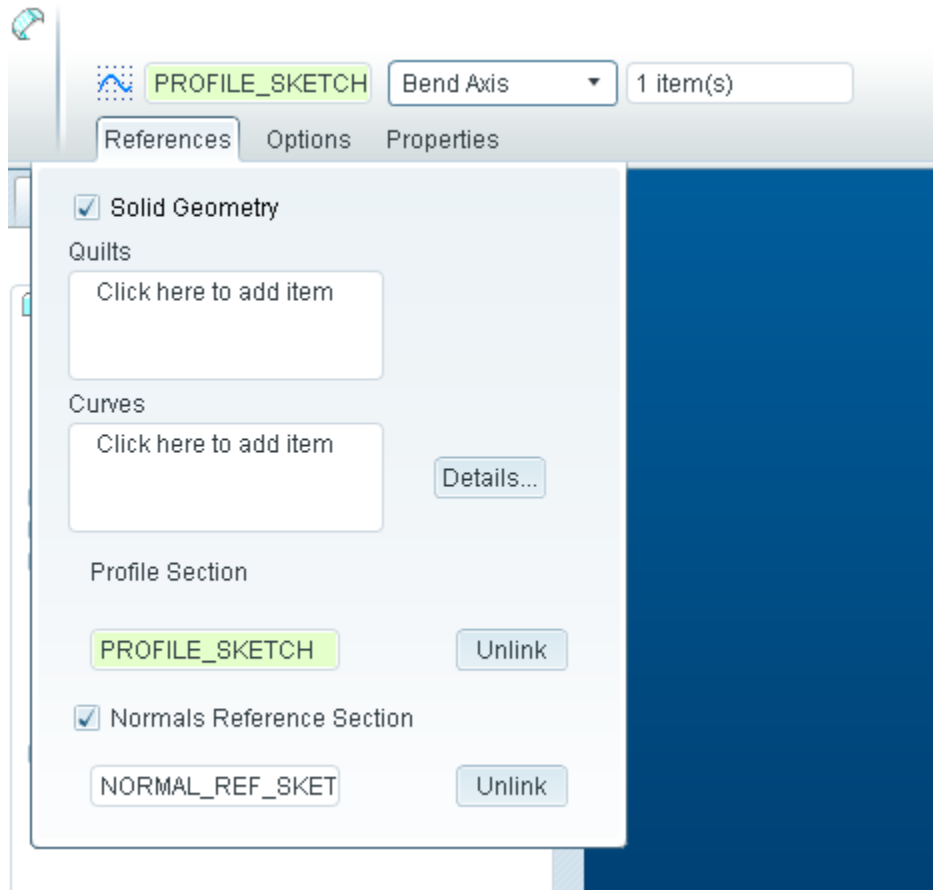
The toroidal bend feature in Pro Engineer has been enhanced for WF 5.0. These enhancements include:

- New dashboard interface – easy to use
- Preview of the feature
- Elimination of selecting 2 parallel planes to define the length of the bend
- Ability to select a datum axis to bend around
- Selecting a pre-defined sketch for the profile
- Optionally selecting a Normals Reference Section Sketch

It is important to note that the profile sketch must contain a “Geometry Coordinate System” in the sketch in order to fulfill the feature requirements.

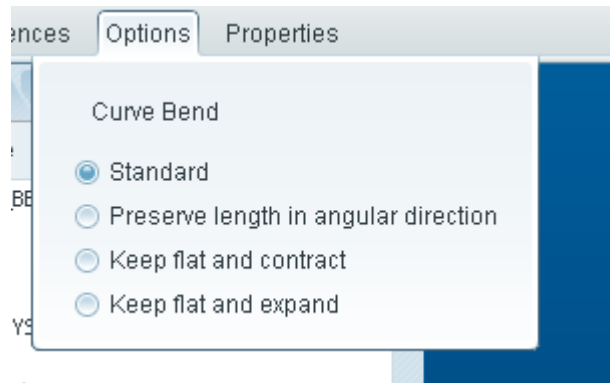
The feature can be located under Insert → Advanced → Toroidal Bend.

Here is the dashboard:

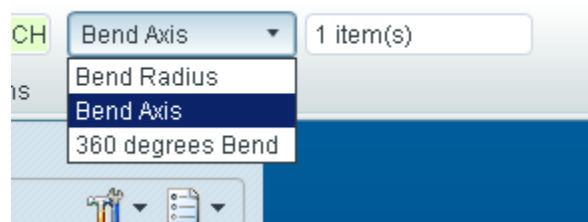


You can bend solid geometry, quilts, and surfaces.

Options allow you to control the distortion of the feature:



Users can select from either bend radius and enter a value, bend axis and select an axis to bend the model around (most common), or create a 360 degree bend.

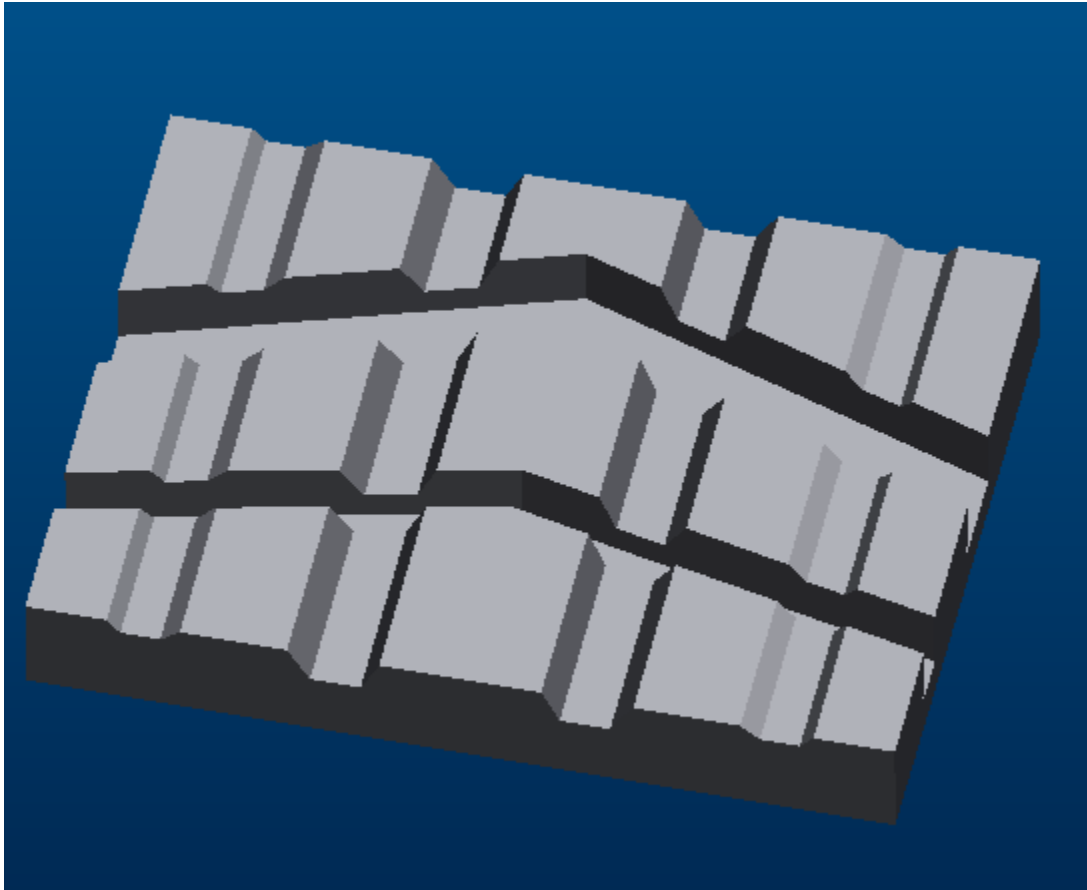


Note the axis selected for the feature must be in the same plane as the profile sketch or the feature will not work.

A formula that is helpful is the following to determine the resulting angle:

$$\text{Resulting Bend Angle} = 360 / ((3.14159 * \text{outer\_diameter}) / \text{width})$$

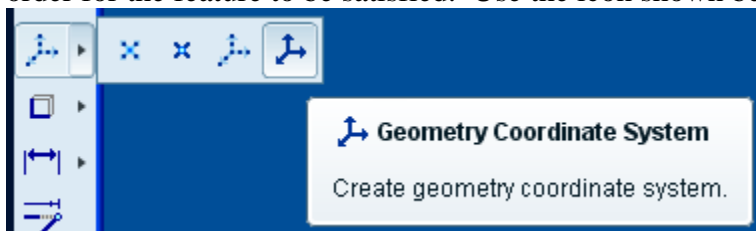
In this example we will take a look at bending a section of a tire. Below is a picture of what our tire looks like in the flat state:

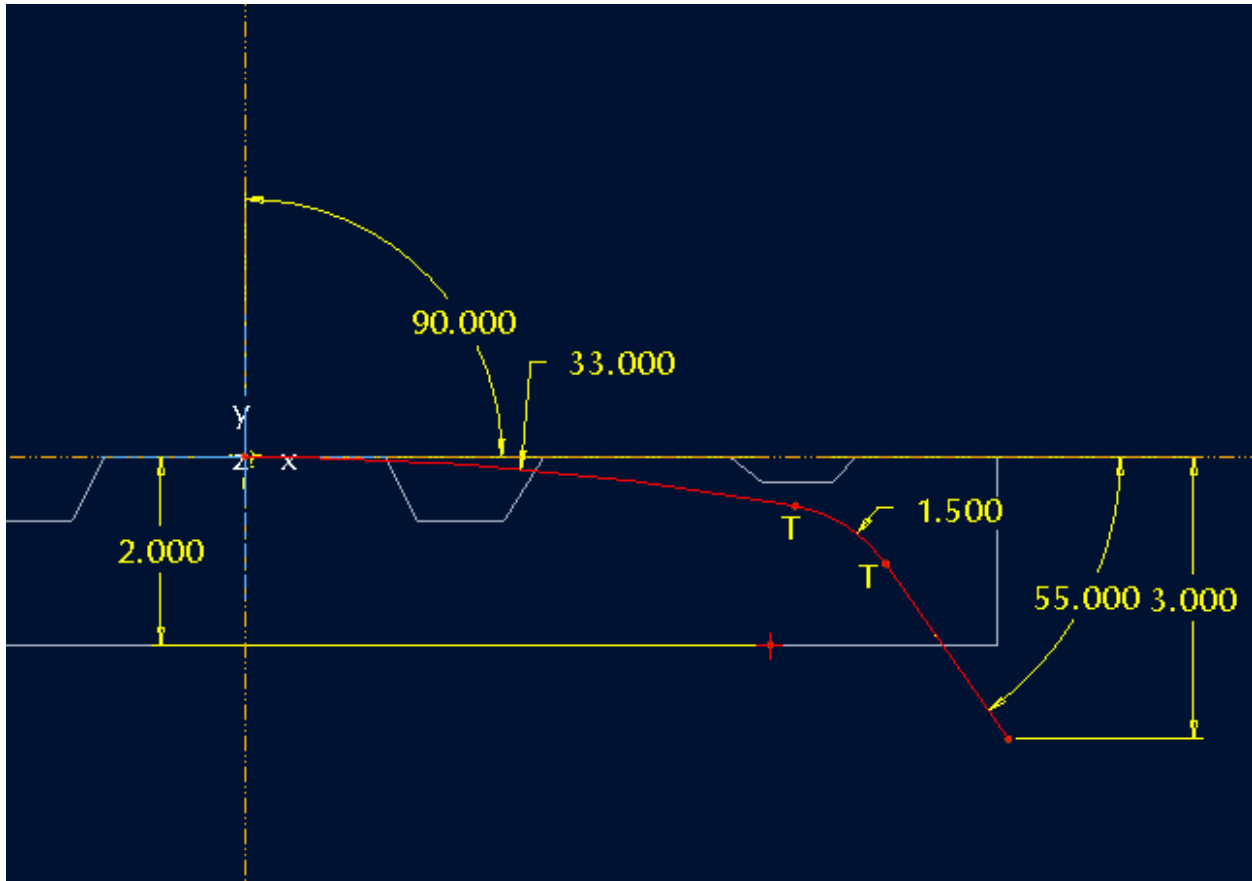


Next define the profile bend curve.

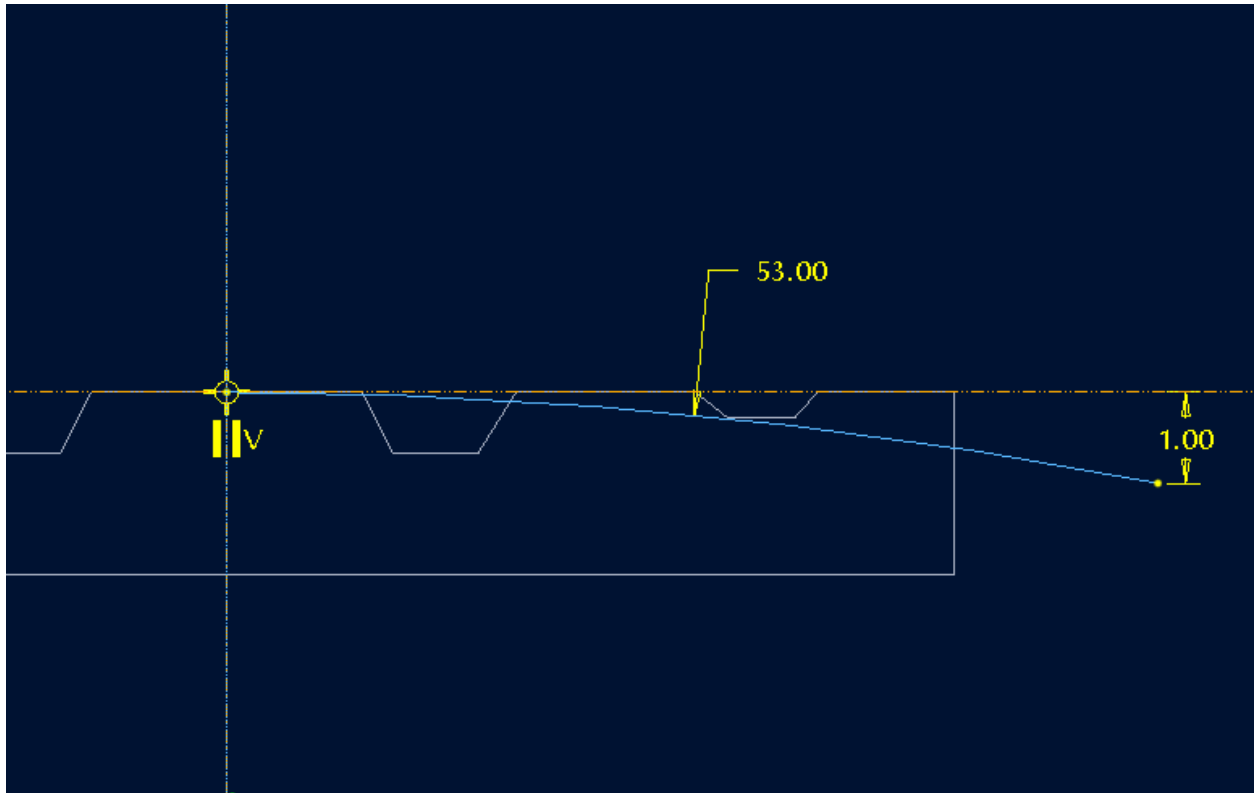
This is a sketched curve like the following:

Notice that only half of the curve is required since the tire is symmetric on both halves. The sketch is made up of 3 simple entities: 33 Radius arc tangent to a 1.5 Radius arc tangent to a 55 degree line. Again it is important that the sketch contain a “Geometry Coordinate System” in order for the feature to be satisfied. Use the icon shown below to create this:





Optionally the user can also specify a Normals Reference Section Sketch. This sketch is optional and is shown below: The sketch does not have to contain a geometry coordinate system nor does the sketch have to contain the same number of entities as the profile sketch. The idea of this normals reference sketch is to smooth out vertical surfaces that result from high curvature areas from the profile curve such as in the 1.5 radius area. Also if the thickness of the model is greater than this 1.5 radius the feature will fail with only the profile curve defined. In our example the thickness is 2 and the radius 1.5 so if you only use the profile curve it will not work. You will have to also use a normals reference curve to avoid this.



[Click Here To Download A Sample File](#)

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## Announcements

### PTC Tips & Techniques Newsletter Archives

Did you 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.

[Customer Care Zone](#)

### 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!](#)

### Special Hardware offers for PTC Customers

- <http://www.hp.com/go/ptc>
- <http://www.hp.com/go/ptcworkstation>

### PTC Sponsored Events

- <http://www.ptc.com/company/news/events/index.htm>

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Explore what is new with the Pro/ENGINEER Wildfire family!

<http://www.ptc.com/go/showcase>

Connect with PTC using the latest Social Networking resources:

 facebook



 Linked in

 You Tube

Also visit <http://social-product-development.blogspot.com/>

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### **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, 2009                      Your local Pro/Engineer User Groups  
<http://www.ptcuser.org/rugs/>

June 6 – 9, 2010                      Orlando, FL 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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