

# Pro/ENGINEER Interactive Surface Design Extension

## Fast, Flexible Surface Modeling

Pro/ENGINEER Interactive Surface Design Extension delivers the ultimate integration of 3D design and engineering. By combining the power of parametric modeling with the flexibility of free-form surfacing, you can now create complex, free-form curves and surfaces directly within a single, intuitive, and interactive design environment.

Pro/ENGINEER Interactive Surface Design Extension combines industry leading freeform surfacing tools within the parametric modeling environment of Pro/ENGINEER. Designers and engineers can create conceptual designs and freeform surfaces while having the ability to model the specific engineered components essential in every successful product.

This unique environment allows designers and engineers to not only utilize the power of freeform surfacing but, to also leverage rich functionality such as behavioral modeling, drafting, simulation, and manufacturing from within a single application, making Pro/ENGINEER the ultimate solution for product design.

## Key Benefits

### Intuitive, interactive curve and surface modeling

- Build free-form geometry at any point in the design, using as many or as few constraints as desired, for maximum design flexibility
- Focus on adding value to your design, not on transferring and interpreting data
- Easy to learn and use to quickly define curves and surfaces resulting in a faster ROI
- Full associativity allows the surfaces and curves to instantly adapt to design changes, reducing product development time



This juicer was produced by Orangex and designed by Smart Design whose engineers reduced development time by nearly 30% using Pro/ENGINEER Interactive Surface Design Extension

## Features and Specifications

### Curve Creation

- Create 3D curves by specifying interpolation or control points in one or more views
- Set up references dynamically by snapping to any object
- Create Planar curves referencing a plane or radial to another curve
- Create Curve-on-Surface (COS)
  - Sketch on surface
  - Project on surface
- Create style curve copies of imported or native Pro/ENGINEER curves/edges
- Copy curves proportionally
- Offset COS

### Curve Edit

- Move control points dynamically or numerically
- Edit multiple curves simultaneously
- Interactively delete or change references to any object
- Modify tangent constraints dynamically or numerically
- Connect curves and surfaces with positional, tangent, and curvature continuity.

- Add interpolation or control points interactively
- Extend dynamically with or without constraints
- Delete individual points or curve segments
- Combine and split curves
- View dynamic curve and surface analysis
- Change curve types from free to planar or COS
- Unlink curves and individual points from references

### Surface Creation

- Create surfaces from any curve, surface edge, solid edge and imported geometry, including composite edges
- Add multiple internal curves in two directions
- Create surfaces from un-trimmed boundaries
- Create three- and four-sided boundary surfaces, multi-curve lofts and blends

### Surface Edit

- Regenerate surfaces in real time
- Make automatic surface connections
- Reshape surfaces by editing the defining curves
- Add or remove multiple internal curves in two directions
- Replace boundary curves/edges to redefine surface shape
- Change surface types between boundary, loft, and blend while maintaining all references
- Trim surfaces

### Connections

View surface connections interactively to define the following:

- G0 Positional
- G1 Tangent
- G2 Curvature continuous
- Establish leader/follower relationships (G1 or G2)

### Modeling Environment

- Import images and scale accurately to modeling environment to use as underlays
- Work within a four-view window
- Reference defining geometry such as points, planes, axes, curves, surfaces, and solids
- Create reference geometry asynchronously while modeling
- Work directly off imported geometry, facets, and sample data
- Drive model changes through parametric modifications

- Optimize designs using Pro/ENGINEER Behavioral Modeling (available separately)
- Benefit from downstream use for additional geometry creation, engineering, simulation and manufacturing

### Scan Tools

Includes entry-level tools for transforming imported surfaces, quilts, triangulation data or raw data into manufacturable models.

- Import, generate, and filter raw data
- Import geometry, including curves, surfaces, and faceted data
- Create and modify curves
- Heal geometry manually or automatically (part of Pro/ENGINEER Foundation Advantage package)
- Collapse geometry from later features into the style feature (part of Foundation Advantage package)

### Language Support

English, German, French, Italian, Spanish, Japanese, Chinese (Simplified and Traditional), Korean

### Platform Requirements

- Microsoft Windows (XP, 2000)
- UNIX platforms (Solaris, HP-UX, IRIX)

For specific operating system levels, visit:

[www.ptc.com/partners/hardware/current/support.htm](http://www.ptc.com/partners/hardware/current/support.htm)

Pro/ENGINEER Interactive Surface Design provides all the freeform surfacing capabilities you need to quickly and easily sculpt curves and style multiple surfaces. It's the ideal solution for maximizing your product's aesthetic appeal and for quickly creating complex geometry.

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