

# Pro/ENGINEER Tool Design Option

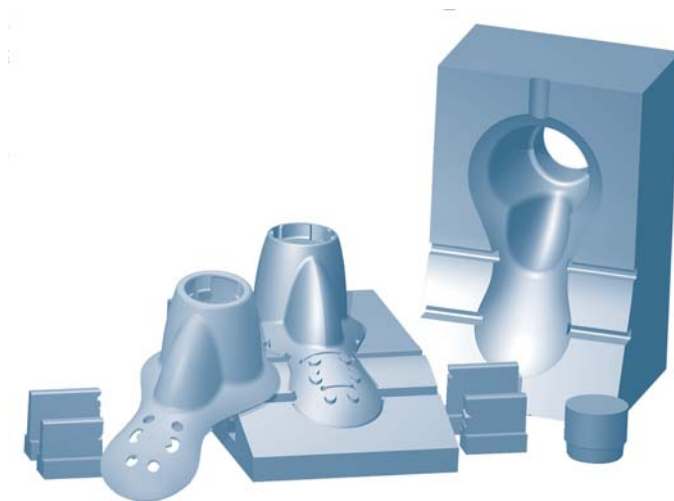
**Go From Design to Fabrication in Record Time**

Pro/ENGINEER Tool Design Option is the essential 3D CAD tool for professional designers who need to rapidly create higher quality mold inserts, casting cavities, and patterns. Using the Tool Design Option's powerful parametric surfacing capabilities, engineers can easily create even the most complex parting surfaces with unprecedented ease. By automating many time-consuming, complex processes, Pro/ENGINEER Tool Design Option enables you to focus less on tedious tasks and more on creating innovative, top quality tool designs.

## Easy Interfaces for Mold and Casting

Pro/ENGINEER Tool Design features a variety of 3D CAD tools specifically engineered to accelerate the design of molds and castings. With its robust functionality and two easy-to-use process-driven GUIs, mold and casting designers can quickly develop inserts, casting cavities, and patterns, regardless of the complexity of geometry.

And since the 3D models you create in Pro/ENGINEER automatically reference your mold and casting designs in the Tool Design Option, any changes you make are instantly reflected in your tooling and patterns, further adding speed to the process.



Pro/ENGINEER Rendering of a multi-insert core and cavity

## Capabilities

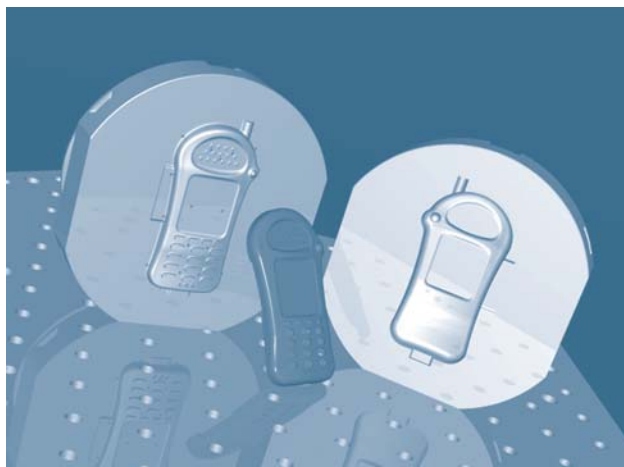
- Graphically evaluate mold draft, undercut, thickness, and projected area, then make instant repairs
- Design within two process-driven user interfaces—one for mold, one for casting—each guiding you step-by-step through the process of creating mold and casting cavity and patterns
- Create and modify any feature such as drafts, rounds, complex surfaces, and parting lines to improve moldability
- Compensate for shrinkage both iso-tropically and aniso-tropically
- Build patterns and sand cores that reference design part geometry
- Automatically...
  - Create parting lines by simply selecting the mold opening direction
  - Design parting surfaces, including steel-to-steel shutoff surfaces
  - Check for mold lock condition with mold opening and interference checks
  - Calculate fill volume
  - Split using the parting surface, and create solid model mold components such as cores, cavities, and sliders

### Mold Assembly Functionality

- Create multi-cavity layout configurations, including single, rectangular, circular, and variable
- Access the online components catalog, then select, assemble, and modify mold parts and mold bases, including DME, HASCO, Futaba, National, DMS, and Progressive
- Automate the placement, trimming, and clearance of holes for over 9,000 different ejector pins
- Select and quickly assemble user-customized injection molding machine mock-ups in order to check for possible interference
- Create waterlines and instantly analyze for thin wall conditions
- Simulate the mold opening sequence, including interference-checking
- Generate production-quality detail drawings, including BOMs and balloon notes
- Produce runners, gates and sprues instantly

### Benefits

- Dramatically shortens time-to-develop mold inserts, casting cavity and pattern geometry while reducing modeling complexity
- Automates the difficult, time-consuming process of creating parting surfaces
- Ensures optimal quality: because your mold inserts are built by referencing design part geometry, the cavity is always current with the design part
- Compensates for model shrinkage by enabling you to dimension or scale the entire model in X, Y, and Z
- Seamlessly integrates with Pro/ENGINEER Plastic Advisor for mold filling simulation
- Produces solid models of inserts that maintain an associative link to Pro/ENGINEER NC applications; if the design part changes, the mold inserts and NC tool paths automatically update
- Eliminates the need to translate between part design, mold design, and NC due to seamless integration with other Pro/ENGINEER applications
- Erases costly rework from interference-checking and mold-opening simulation
- Enables new users to be productive immediately, with easy-to-use interfaces both for mold and casting



Automatic Core/Cavity creation

### For More Information

To learn more about the Pro/ENGINEER Tool Design Option, or the many other PTC CAD tools for professional designers and engineers, visit [www.ptc.com](http://www.ptc.com).

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