

# PTC Creo® Parametric

THE ESSENTIAL 3D PARAMETRIC CAD SOLUTION

PTC Creo Parametric gives you exactly what you need: the most robust, scalable 3D product design toolset with more power, flexibility and speed to help you accelerate your entire product development process.

## Where breakthrough products begin

Engineering departments face countless challenges as they strive to create breakthrough products. They must manage exacting technical processes, as well as the rapid flow of information across diverse development teams. In the past, companies seeking CAD benefits could opt for tools that focused on ease-of-use, yet lacked depth and process breadth. Or, they could choose broader solutions that fell short on usability. With PTC Creo Parametric, companies get both a simple and powerful solution, to create great products without compromise.

PTC Creo Parametric, helps you quickly deliver the highest quality, most accurate digital models. With its seamless Web connectivity, it provides product teams with access to the resources, information and capabilities they need – from conceptual design and analysis to tooling development and machining. In addition, high-fidelity digital models have full associativity, so that product changes made anywhere can update deliverables everywhere. That's what it takes to achieve the digital product confidence needed before investing significant capital in sourcing, manufacturing capacity and volume production.

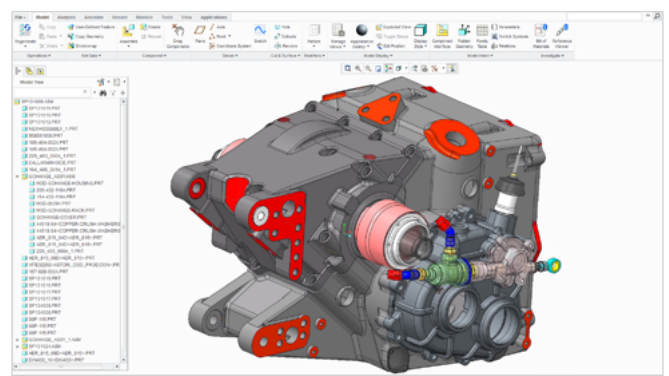
## Key Benefits

- Quickly create the highest quality and most innovative products
- Accelerate concept design with Freestyle design features

- Increase productivity with more efficient and flexible 3D detailed design capabilities
- Increase model quality, promote native and multi-CAD part reuse, and reduce model errors
- Handle complex surfacing requirements with ease
- Instantly connect to information and resources on the Internet – for a highly efficient product development process

## The superior choice for speed-to-value

Through its flexible workflow and sleek user interface, PTC Creo Parametric drives personal engineering productivity like no other 3D CAD software. The industry-leading user experience enables direct modeling, provides feature handles and intelligent snapping, and uses geometry previews, so users can see the effects of changes before committing to them. Plus, the software is based on familiar Windows® UI standards – providing immediate user accessibility and extending those standards to the unique challenges of 3D product design.



The intuitive user interface streamlines design tasks.

Though most discrete manufacturers invest in computer-aided design and other technologies for product development, their investments do not always generate the desired returns. Lack of interoperability, capability shortcomings, poor usability and discontinuities across the concept-design-manufacturing continuum often hamper engineering teams in their effort to develop high-quality digital product models more efficiently.

Deep and broad capabilities allow engineers to design to customer needs, not to the limitations of software. The software creates seamless digital product information throughout all engineering processes, with associative CAD, CAM and CAE applications spanning conceptual design to NC toolpath generation. In addition, it excels in multi-CAD environments and guarantees upward compatibility of data from earlier Pro/ENGINEER® releases.

Fast, secure collaboration means more productivity and less risk. PTC Creo Parametric offers instant connectivity to valuable resources via an embedded Web browser. As part of PTC's integral Product Development System (PDS), the software provides a seamless user experience with PTC Windchill®.

### Never Compromise

Based on the proven technology of Pro/ENGINEER – chosen by over 600,000 designers and engineers at nearly 19,000 companies worldwide – PTC Creo Parametric offers the newest, most innovative 3D CAD capabilities for your detailed design process. There's simply no better value, quality or capability – anywhere. As a design professional, you can't risk having CAD tools that compromise your product, process or productivity. With the software, you never compromise because you have the exact tools you need to get the entire job done – accurately and quickly.

## PTC Creo Parametric Capabilities

### 3D Solid Modeling

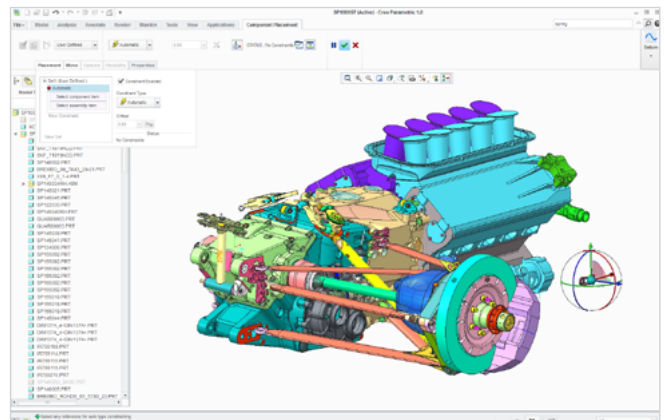
- Create precise geometry, regardless of model complexity
- Automatically dimension sketches for fast, easy reuse
- Quickly build robust engineering features such as rounds, chamfers, holes and more
- Create part variants using family tables

### Robust Assembly Modeling

- Enjoy smarter, faster assembly modeling performance
- Create simplified representations 'on-the-fly'
- Share lightweight, yet fully accurate model representations using the unique Shrinkwrap™ tool
- Leverage real-time collision detection
- Use AssemblySense™ to embed fit, form and function knowledge to create assemblies quickly and accurately

### Detailed Documentation Including 2D and 3D Drawings

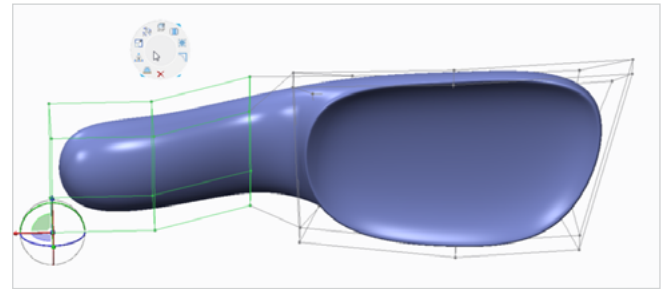
- Create 2D and 3D drawings according to international standards, including ASME, ISO and JIS
- Create an associative bill-of-material (BOM) and associated balloon notes automatically
- Automate the creation of drawings with templates



Build assembly models of any size faster using best-in-class component placement capabilities.

## Technical Surfacing

- Create complex freeform shapes faster with Freestyle features
- Develop complex surface geometry using sweeps, blends, extends, offsets, and a variety of other specialized features
- Trim/extend surfaces using tools such as extrude, revolve, blend, and sweep
- Perform surface operations such as copy, merge, extend, and transform
- Define complex surface geometry explicitly



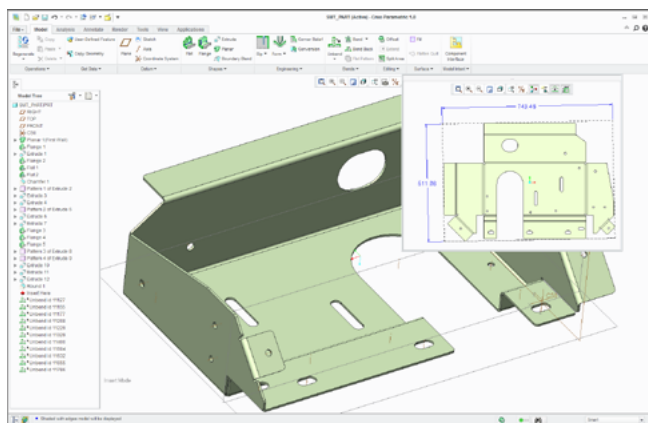
Freestyle design capabilities enable industrial designers to quickly create even the most complex shapes.

## Freestyle Surfacing

- Quickly create freeform shapes and surfaces using sub-divisional modeling capabilities
- High-quality, parameterized surfaces can be immediately reused in a 3D detailed design process
- Multilevel subdivisional modeling for more control over the surface, enabling finer detailing without altering the existing shape

## Revolutionary Warp Technology

- Make global deformations of selected geometry in 3D
- Dynamically scale, stretch, bend and twist models
- Apply Warp to geometry imported from other CAD tools



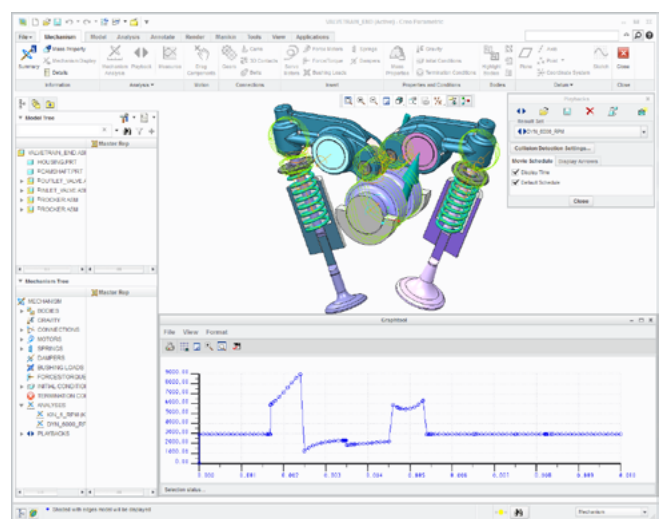
Flat pattern previews in sheetmetal design update dynamically so you can see your design edits in real-time.

## Sheetmetal Modeling

- Create walls, bends, punches, notches, forms, and reliefs using the streamlined user interface
- Automatically generate flat patterns from 3D geometry
- Use a variety of bend allowance calculations to create flat patterns of the designs

## Digital Human Modeling

- Insert and manipulate a digital human inside your CAD model with PTC Creo Manikin Lite capabilities
- Gain valuable insight about interactions between your product and people who manufacture, use and service the product earlier in the design cycle



Mechanism Design lets you create mechanical connections and simulate motion on kinetic assemblies.

## Weld Modeling and Documentation

- Define joining requirements
- Extract valuable information from the model, such as mass properties, clearances, interferences, and cost data
- Easily produce complete 2D weld documentation

## Analysis Features

- Perform basic static structural analysis on parts and assemblies with CAE Lite capabilities
- Validate the kinematic motion of your design
- Interoperability with PTC Mathcad® engineering calculation software, lets you integrate PTC Mathcad worksheets with your design to predict behavior and drive critical parameters and dimensions (PTC Mathcad optionally available)
- Add Microsoft® Excel® files to your design

## Real-Time Photo Rendering

- Create accurate, photorealistic images of products quickly, while rendering even the largest assemblies
- Make dynamic geometry changes while maintaining photorealistic effects such as shadows, reflections, textures, and transparency

## Integrated Design Animation

- Create assembly/disassembly animations directly from the modeling environment
- Reuse models easily, with the option to include mechanism simulation

## Integrated NC Capabilities

- Create 2-1/2-axis milling programs in less time with integrated CAM Lite capabilities
- Machine prismatic parts with 5-axis positioning
- Control drawing entities with 2D drawing import wizards

## Data Exchange

Work with a number of standard file formats including STEP, IGES, DXF, STL, VRML, AutoCAD DWG, DXF (import of 3D with associated 2D), ACIS import/export, Parasolid import/export\*

Create parametric, full-feature 3D designs from 2D drawings using the AutobuildZ conversion wizard

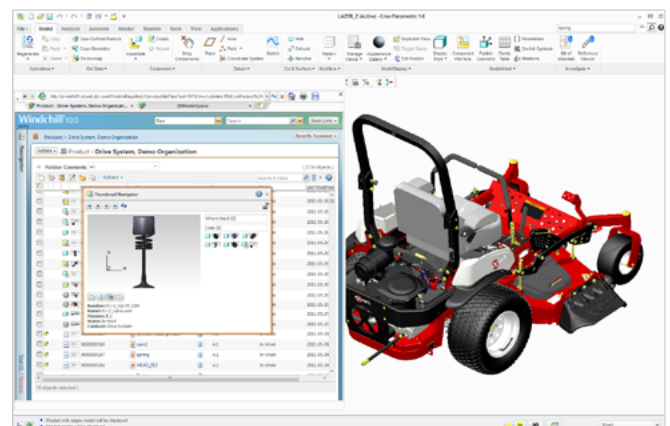
\* Support for import and export of CATIA® V4, CATIA V5 and NX®, including PTC's patented Associative Topology Bus™, can be purchased separately.

## Web Capabilities Provide Instant Access

- Internet/Intranet support, for fast access to email, FTP and the Web – all from within PTC Creo Parametric
- Seamless access to PTC Windchill for content and process management

## Complete Library of Parts, Features, Tools and More

- Download predefined parts and symbols using J-Link Programmatic Interface
- Customize the software user interface to serve your specific needs
- Get up to speed faster with integrated tutorials, help resources, and access to additional PTC University training content



Leverage Web connectivity for information-gathering, part catalogs, and optional Product Data Management (PDM) and collaboration solution access.

## Easy to Expand, Impossible to Outgrow

The unlimited scalability of the software means you can easily add new users, new modules, and new capabilities as your business and your needs continue to grow, and you'll never have to worry about importing incompatible data or learning a new user interface. Add-on extensions seamlessly provide extended capabilities including the following products:

### 3D CAD – Advanced Design Solutions

PTC Creo provides a number of advanced, specialized capabilities to meet the broad range of designers' needs. From structural frameworks to digital human models, PTC Creo extensions help you capture more of your design in 3D.

- PTC Creo Flexible Modeling Extension
- PTC Creo Options Modeling
- PTC Creo Layout
- PTC Creo Advanced Assembly Extension
- PTC Creo ECAD-MCAD Collaboration Extension
- PTC Creo Advanced Framework Extension
- PTC Creo Manikin Extension
- PTC Creo Piping and Cabling Extension

### 3D CAID Extensions

PTC Creo delivers the capabilities you need to create the precise shapes, surfaces and aesthetics of your design. Unleash your creativity and show your designs “in the best light” with PTC Creo CAID products.

- PTC Creo Interactive Surface Design Extension
- PTC Creo Advanced Rendering Extension
- PTC Creo Reverse Engineering Extension

### 3D CAE Extensions

Verifying the performance of your designs early in the process can help you get to the end-result faster. That's why PTC Creo provides design engineers with a broad range of integrated simulation and analysis capabilities to help them design with confidence.

- PTC Creo Simulation Extension
- PTC Creo Advanced Simulation Extension
- PTC Creo Behavioral Modeling Extension
- PTC Creo Fatigue Advisor
- PTC Creo Mechanism Dynamics Extension
- PTC Creo Plastic Advisor
- PTC Creo Spark Analysis Extension
- PTC Creo Manikin Analysis Extension
- PTC Creo Tolerance Analysis Extension

### 3D NC and Tooling Extensions

Streamlining tooling design and manufacture can accelerate your time to market. PTC Creo NC and Tooling solutions provide a broad range of mold, tool and die design and machining capabilities so you can leverage your 3D CAD data – thereby saving time and reducing errors.

- PTC Creo Progressive Die Extension
- PTC Creo Expert Moldbase Extension
- PTC Creo NC Sheetmetal Extension
- PTC Creo Prismatic and Multi-Surface Milling Extension
- PTC Creo Production Machining Extension
- PTC Creo Complete Machining Extension
- PTC Creo Complete Mold Design Extension
- PTC Creo Computer-Aided Verification Extension
- PTC Creo Tool Design Extension

## Multi-CAD Data Exchange and Other Products

PTC Creo Parametric provides native data exchange with numerous 2D and 3D file formats. The following add-on extensions also provide associative interoperability and other capabilities, such as digital right management for protecting your IP, distributed processing, interoperability with 3rd-party applications and more.

- PTC Creo Rights Management Extension
- PTC Creo Distributed Batch Extension
- PTC Creo Interface for PTC CADD5® 5
- PTC Creo Interface for CATIA V4
- PTC Creo Interface for CATIA V5
- PTC Creo Interface for JT
- PTC Creo Interface for NX
- PTC Creo Legacy Data Migration Extension
- PTC Creo Toolkit
- GRANITE Interoperability Kernel

## Platform Support and System Requirements

- Visit the [PTC support page](#) for platform support and system requirements.

### To Learn More

Visit: [PTC.com/product/creo](http://PTC.com/product/creo) or contact your local sales representative.

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