

PTC® CREO® PARAMETRIC ESSENTIALS PACKAGES

Powerful 3D CAD solutions optimized for your product development tasks

Product design firms and manufacturing companies are under constant pressure to develop more products in less time, without sacrificing innovation or quality.

PTC's 3D product design solution, PTC Creo Parametric, provides engineers with the right tools to achieve the highest quality designs in the fastest possible time.

PTC delivers the most scalable range of 3D CAD product development packages on the market today. Available exclusively through PTC Value Added Resellers, the Essentials Packages are easy to use, competitively priced and always upgradeable—to meet the varied needs of your

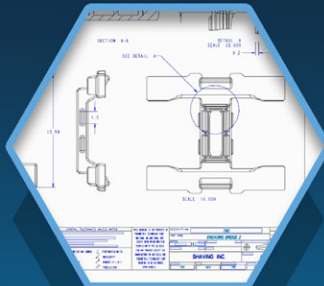
specific engineering design tasks and business requirements as you grow.

No matter which package you choose, users will be able to take advantage of a powerful, intuitive, and comprehensive set of 3D CAD capabilities.

And since it is an integral part of PTC's Product Development System, your 3D CAD solution will seamlessly connect to PTC's other industry-leading solutions, including PTC Windchill® for product data/product lifecycle management (PDM/PLM) and PTC Mathcad® for engineering calculations.



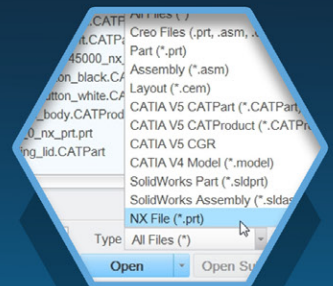
3D Part & Assembly Design



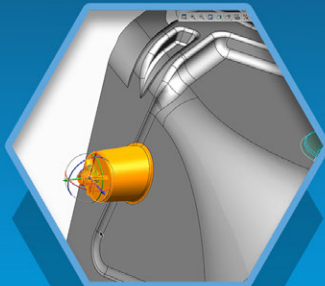
Automated 2D
Drawing Creation



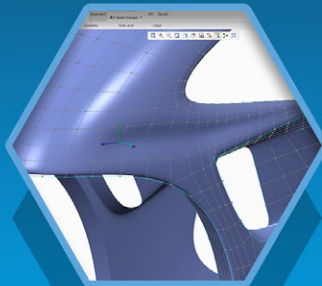
Assembly
Performance



Unite Technology



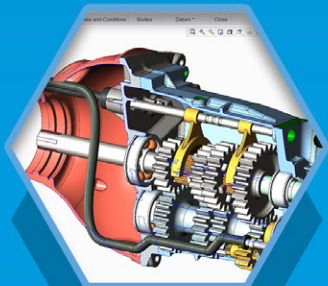
Direct Modeling



Parametric &
Freestyle Surfacing

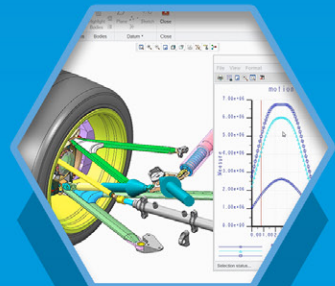


Realistic Rendering

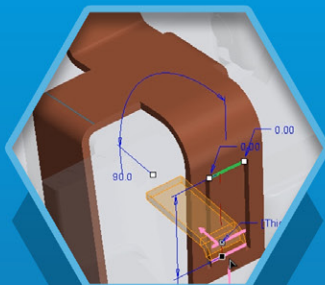


Mechanism Design

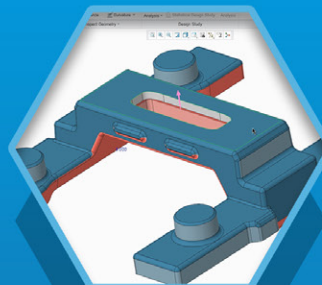
PTC® Creo® Parametric Essentials Packages



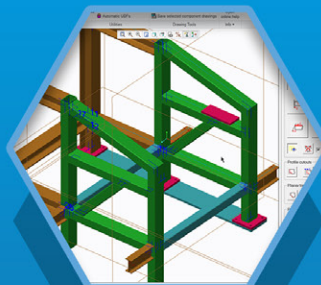
Motion Analysis



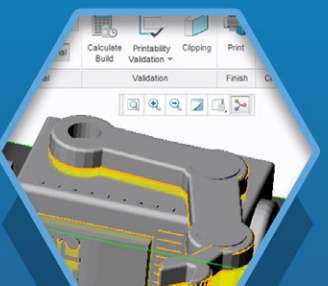
Sheetmetal Design



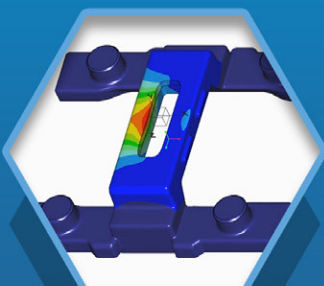
Plastic Part Design



Structure Framework
& Weld Design



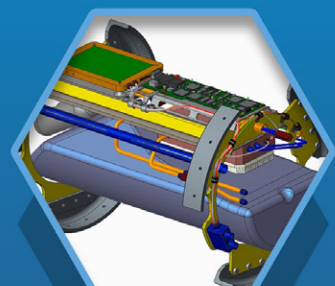
Design for Additive
Manufacturing



Structural Analysis

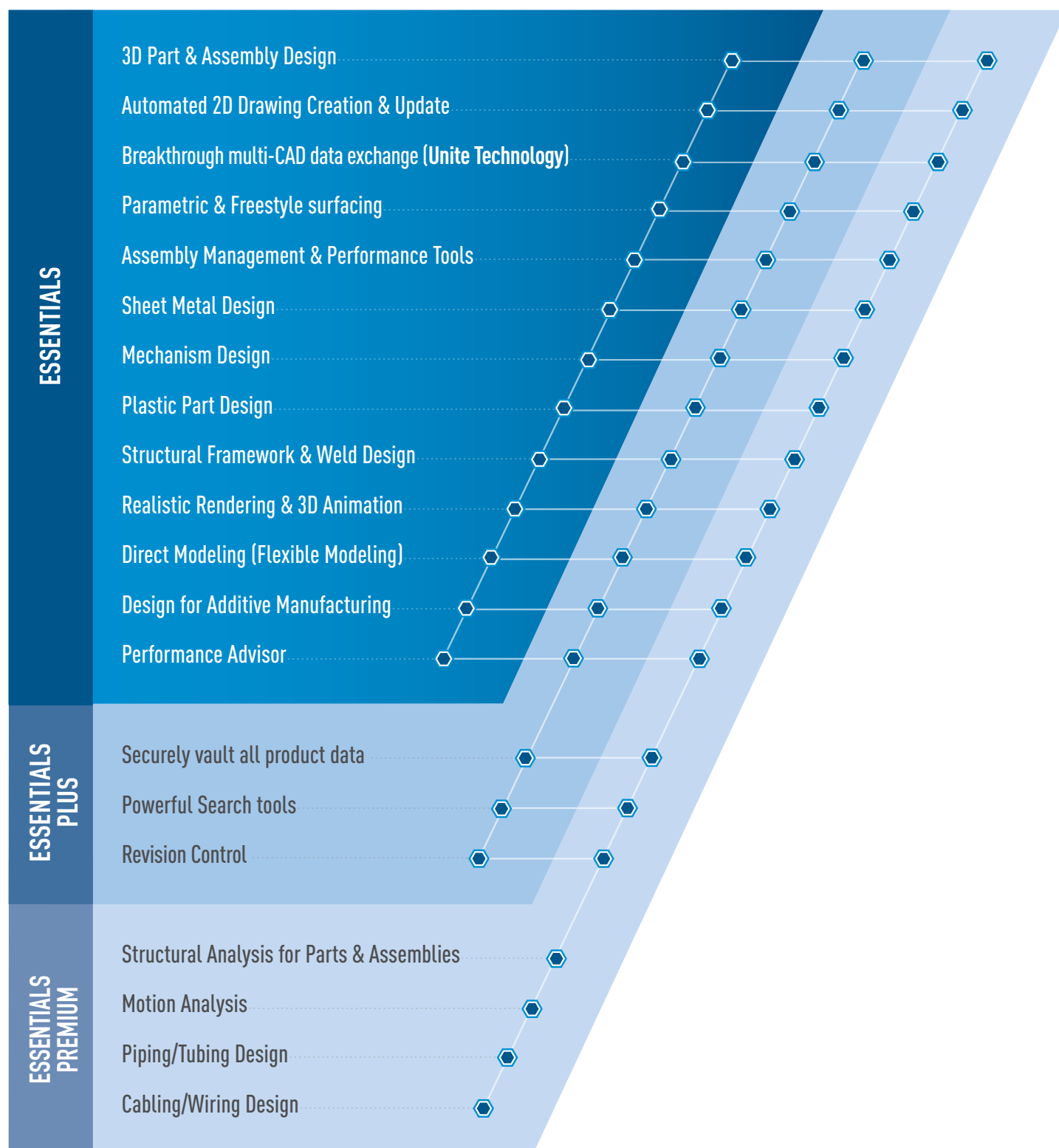


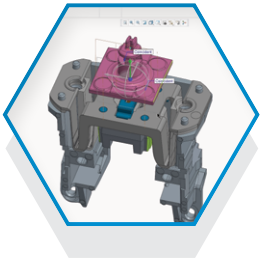
Product Data Management



Piping & Cabling Design

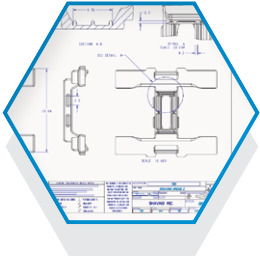
PTC Creo Parametric Essentials Packages - At a Glance





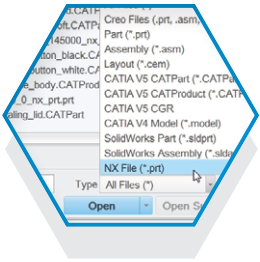
3D Part & Assembly Design

- Create precise geometry, regardless of model complexity
- Quickly build robust engineering features such as rounds, chamfers, holes, and more
- Create design variants using family tables
- Smarter, faster assembly modeling performance
- Static and dynamic interference detection



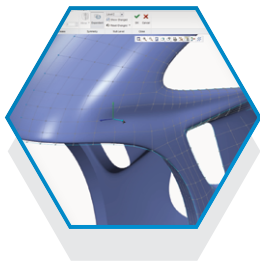
Automated 2D Drawing Creation & Update

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



Breakthrough Multi-CAD 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
- Using Unite technology, convert data from other CAD systems including: CATIA®, Siemens® NX™, SolidWorks®, Autodesk Inventor®, and Solid Edge®
- Incorporate non-PTC Creo data directly into your designs without creating additional business objects or files to manage



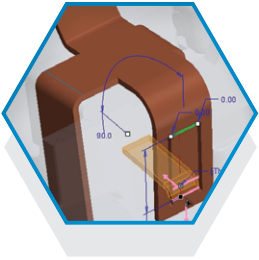
Parametric & Freestyle surfacing

- Develop complex surface geometry using sweeps, blends, extends, offsets, and a variety of other specialized features
- Quickly create freeform shapes and surfaces using sub-divisional modeling capabilities
- Multilevel subdivisional modeling for more control over the surface, enabling finer detailing without altering the existing shape
- Parametrically control Freestyle geometry by aligning to existing curves or edges with tangency control



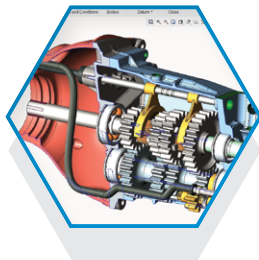
Assembly Management & Performance Tools

- Load large assemblies quickly using lightweight representations
- Create simplified representations 'on-the-fly'
- Share lightweight yet fully accurate model representations using the unique Shrinkwrap™ tool



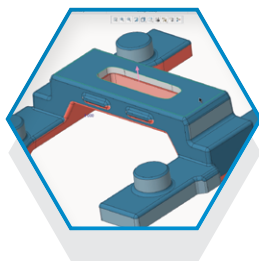
Sheet Metal Design

- Easily create walls, bends, punches, flanges, forms, and reliefs using the streamlined user interface
- Automatically generate flat patterns from 3D geometry
- Dynamically preview formed and flattened sheetmetal designs simultaneously
- Easily convert solid parts to sheetmetal
- Simply define sheetmetal design parameters, e.g. bend allowances



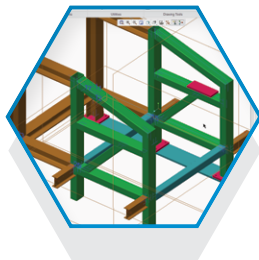
Mechanism Design

- Create mechanical connections
- Validate the kinematic motion of your design
- Establish motion envelopes to detect and avoid interferences



Plastic Part Design

- Comprehensive analysis tools including draft and 3D thickness evaluation
- Mold filling simulation capabilities
- Integrated measurement tools



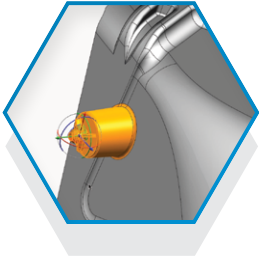
Structural Framework & Weld Design

- Optimized user interface for the structural framework design process
- Extract valuable information from the model, such as mass properties, clearances, interferences, and cost data
- Easily produce complete 2D weld documentation



Realistic Rendering and 3D Animation

- Create accurate, realistic images of products quickly, while rendering even the largest assemblies
- Shade with reflections for displaying different material classes such as metal, glass, paint, and plastic
- Create assembly/disassembly animations directly from the modeling environment



Direct Modeling (Flexible Modeling)

- Make changes to PTC Creo data regardless of design intent
- Modify non-PTC Creo data regardless of origin (Solidworks, STEP, etc...)
- Recognize rounds, chamfers, patterns and symmetry on imported geometry
- Create or recreate design intent and record edits as features



Design for Additive Manufacturing

- Define settings for multiple 3D printers
- Position, scale and show a clipped view of the 3D model and support material on the printer tray
- Quickly perform 3D printability checks and easily correct identified issues
- Print parts and assemblies, define surface finishes, materials, colors and calculate build and support material directly from PTC Creo using a Stratasys Connex printer



Product Data Management (PDM)

- Secures CAD models, their structures and relationships (PTC Creo, AutoCAD, SolidWorks, Inventor, Pro/ENGINEER, PTC Creo Elements/Direct, and PTC Mathcad) improving control and collaboration. Manage office documents, such as Microsoft Word and Excel, tracking changes through check in and check out functionality
- Embedded 3-D view and markup utilities – Allows non-CAD consumers to view, section, measure and markup designs
- Powerful searching tools – Quickly and easily search, copy or rename designs improving product information discovery and design reuse
- Fast deployment through installation and configuration wizards which greatly simplify set-up time and provide your organization with quicker time-to-value



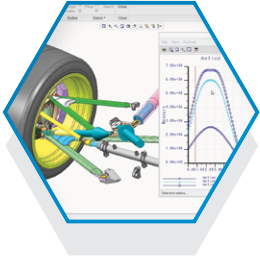
Structural Analysis for Parts and Assemblies

- Conduct standard linear static analysis on parts and assemblies
- Fast, automatic meshing and solution convergence
- Comprehensive customizable materials library



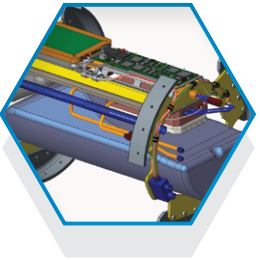
Performance Advisor

- Provides insight into PTC Creo environment health with configurable dashboard
- Proactively provides approved solutions to identified issues
- User friendly dashboard configurable for your environment
- Review PTC Creo performance through hardware, product, and individual user views



Motion Analysis

- Incorporate springs, dampers, motors, friction, gravity and custom dynamic loads to evaluate product performance
- Use design studies to optimize the mechanism's performance over a range of input variables
- Create accurate motion envelopes for use in interference and space claim studies
- Create high-quality animations directly from dynamic simulations

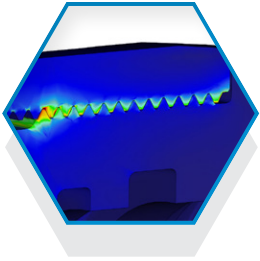


Piping & Cabling Design

- Full routing capabilities, including automated ribbon cabling and specification-driven design and auto-routing, speeds design and adheres to design rules and schematic logic
- Customizable library of standard fittings and connectors
- Manufacturability and interference checking
- Associative harness manufacturing capabilities include automatic development of flat patterns
- Automatic creation of supporting documentation including isometric drawings, bend tables, nail board drawing, associative wire lengths, bills of material

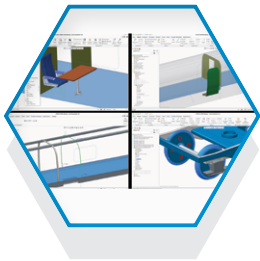


Expand design capabilities as your product development needs grow:



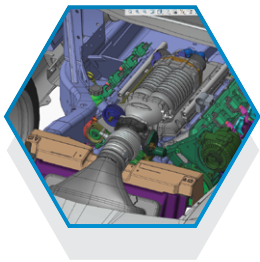
Advanced Simulation Capabilities

- Solve nonlinear large displacement, pre-stress, dynamic and transient thermal analyses
- Simulate advanced materials behaviors such as hyper-elasticity, anisotropic, orthotropic and composite laminates
- Support for advanced modeling entities such as mass/spring idealizations, pre-loaded bolts and friction on assembly contact points
- Conduct fatigue analysis



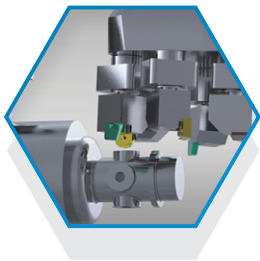
Concurrent Engineering Capabilities

- Establish and enforce design criteria to support concurrent engineering efforts
- Manage and control assembly references and unwanted relationships
- View graphical representation of dependencies to understand component relations and change propagation
- Enhanced capabilities to work with assembly data and manage system performance



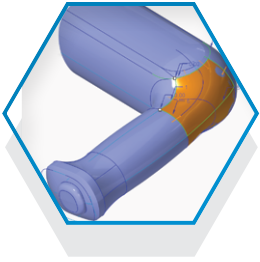
Top Down Design Tools

- Plan assembly structure and manage assembly design process
- Define configuration rules and automate the creation of design-to-order products
- Specialized capabilities to streamline the creation of assembly process planning documentation



Computer Aided Manufacturing Capabilities

- Generate NC toolpaths directly from 3D designs
- 2 1/2- to 5-axis milling, multi-axis turning and mill/turn (live tooling), and 4-axis wire EDM
- Integrated CAD/CAM software solution, no data translation is required with associated toolpath updates to design changes
- Automate the creation of mold core, cavity, moldbase assemblies and applicable documentation
- NC programming for turret punch presses, contouring laser/flame machines, nibbling and shearing
- Conduct digital inspections of machined parts and assemblies for quality assurance purposes on both CMM machines and laser scanners



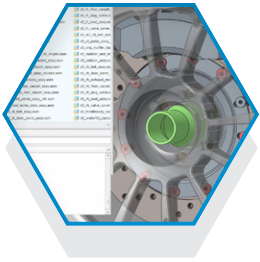
Freeform Surfacing

- Design precise curves and surfaces to achieve highly engineered, manufacturable products
- Unique integration between freeform and parametric curves/surfaces
- View dynamic curve and surface analysis
- Intuitive four view user interface provides real-time feedback



Design Exploration Extension

- Explore design changes safely without risking original designs or committing to any change
- Simultaneously develop different ideas and evaluate all options before making decisions
- Eliminate manual data duplication and tedious session clean-up for loading and reloading different versions



Collaboration with SolidWorks data

- Supports bidirectional exchange of both parts and assemblies
- Associative updates allow concurrent design and production work to proceed with confidence
- Native data import and export without requiring a SolidWorks license

PTC Creo Essentials Packages are available in both perpetual and subscription licensing. Many other capabilities are available. Please visit PTC.com for more information.

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