

PTC Creo® Elements/Direct® Sheet Metal Productivity Package

Accelerate Sheet Metal Design using the Leading Direct 3D CAD System, Plus Sheet Metal Tools with Full Data Management

The PTC Creo Elements/Direct Sheet Metal Productivity Package is a complete set of direct 3D design modules – packaged specifically for sheet metal designers. It enables you to create highly precise sheet metal designs while carefully managing all product development data. By leveraging the strengths of PTC Creo Elements/Direct Modeling, the world's #1 direct 3D CAD system, you have the power to get products to market faster, reduce ECO frequencies and lead times, improve team collaboration, and ultimately decrease development costs.

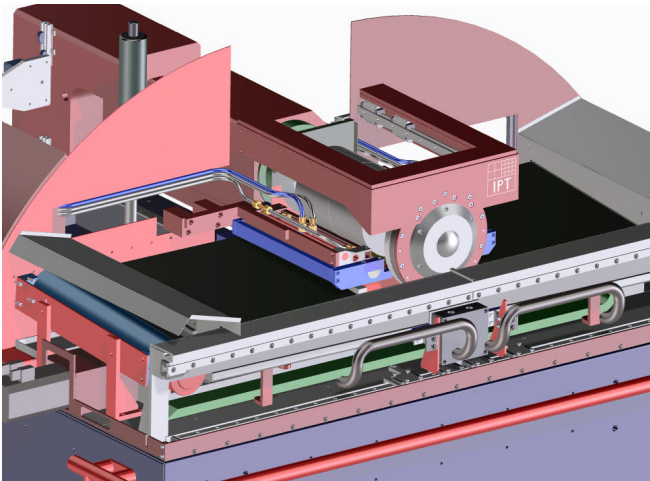
Package includes the following PTC Creo Elements/Direct modules:

- PTC Creo Elements/Direct Modeling
- PTC Creo Elements/Direct Sheet Metal
- PTC Creo Elements/Direct Model Manager

Key benefits

- Generate model geometry and new designs faster using the flexible and lightweight design process of a direct approach to 3D design in PTC Creo Elements/Direct Modeling
- React instantly to unanticipated design changes at any stage of the product development process
- Design sheet metal parts faster as you rapidly iterate product designs for build-to-order products
- Avoid the trial-and-error associated with traditional 2D sheet metal design and manufacturing. Instead, use 3D CAD to see and analyze the complicated physical behaviors and material deformations from manufacturing processes so that your first prototype is often your only prototype
- Expand your design options to include the custom tooling available within your supply chain by incorporating your suppliers' custom sheet metal manufacturing capabilities into your 3D CAD process
- Calculate manufacturing costs in just minutes, either to provide fast and accurate bids for sheet metal projects to customers or to support cost/benefit analysis for sheet metal capital equipment purchases

- Optimize product design by using industry - standard sheet metal tooling within the manufacturing process while eliminating unnecessary, customized tooling costs.



PTC Creo Elements/Direct Sheet Metal Productivity is packed with an extensive list of features. You can easily add even more capabilities with a complete set of add-on modules.

Drive major new initiatives

Reduce ECO frequency and lead times

Create digital prototypes for visualizing, validating and analyzing product designs under real-world conditions so you can reduce errors in manufacturing and save time by building fewer physical prototypes.

Build robust and appealing products faster

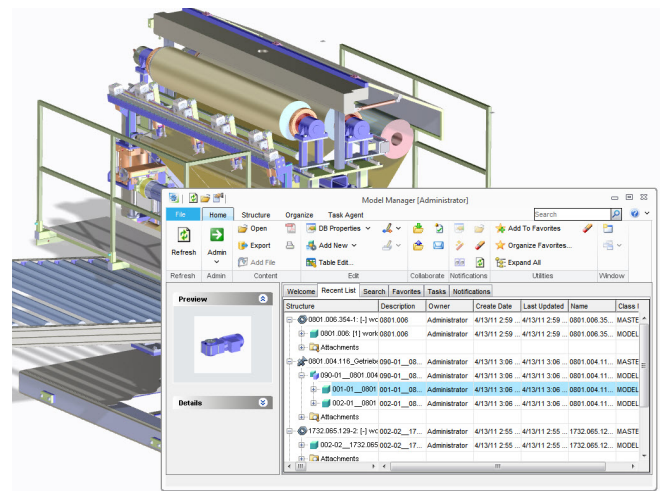
Create complex industrial equipment quickly and easily by incorporating manufacturing processes, thus ensuring design for manufacturability (DFM). Avoid re-creating models by using standard, off-the-shelf parts and components to accurately create the bill-of-materials (BOM). Save time and manage build-to-order products with integrated data management.

Eliminate physical prototypes: Simulate real-world conditions on the desktop

Simulate real-world operating conditions virtually. Identify and reduce errors when designing for physical behaviors and material deformations of sheet metal components.

Streamline working with design and manufacturing partners

Promote the use of preferred and user-defined sheet metal manufacturing capabilities into your 3D CAD process, and expand your design options to include the custom tooling available within your supply chain. Leverage and reuse existing parts, assembly designs, and common library components to speed product development.



Build complete digital prototypes and accurately simulate real-world operating conditions.

Minimize component and tooling costs

Generate sheet metal drawings of precise flat patterns containing the exact dimensions, tooling and process information needed to manufacture the parts.

Design products in a single, integrated environment

Design, validate, and simulate parts and assemblies, as well as moving mechanisms – all in 3D – using the same environment you use for mechanical design.

Integrated data management

Provide a real-time, seamless data management experience for the workgroup using PTC Creo Elements/Direct Modeling and PTC Creo Elements/Direct Model Manager.

Capabilities and specifications

The PTC Creo Elements/Direct Sheet Metal Productivity Package includes the following products and add-on modules:

- **PTC Creo Elements/Direct Modeling:** the industry's most popular direct 3D CAD system that provides a fast, lightweight, and flexible approach to 3D design
- **PTC Creo Elements/Direct Sheet Metal:** a precision sheet metal module that eliminates surprises in manufacturing by embedding sheet metal knowledge when designing parts with predefined bends, corner reliefs, and stamp & punch tools
- **PTC Creo Elements/Direct Model Manager:** an integrated data management solution that helps you orchestrate product development efforts and manages all 3D and 2D CAD design data associated with the product development process within a central database

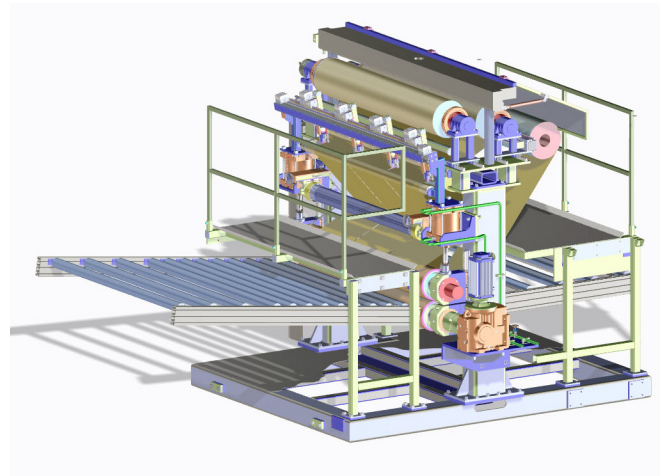
PTC Creo Elements/Direct Modeling

- Naturally create and interact with 3D geometry using familiar behaviors such as cut & paste, copy & paste, and drag & drop techniques
- Create and modify 3D designs faster through direct, on-the fly interactions with model geometry, enabling you to reach a given design solution as quickly as possible
- Effectively communicate your designs using 3D-to-2D associative drawings, including shaded and rendered views
- Repurpose designs as if they were native design data by importing IGES, STEP, ASIC SAT, and Printed Circuit Board IDF formats
- Render in real time as you design and create photorealistic images for mockups, illustrations, or product walkthroughs
- Create product manufacturing information (PMI) such as 3D notes, geometric dimensions and tolerances (GD&T), symbols, and analysis results to improve downstream communication

- Maintain legacy 2D drawings with PTC Creo Elements/Direct Drafting, a stand-alone 2D CAD system, for document control and engineering change orders (ECOs)

PTC Creo Elements/Direct Sheet Metal

- Design ready-to-manufacture sheet metal parts in 3D
- Embed sheet metal knowledge and preferred materials, and leverage pre-defined punch & stamp tools
- Simulate folding and unfolding
- Generate associative 2D flat patterns for manufacturing drawings
- Perform cost estimation on sheet metal designs per manufacturing requirements



Integrated data management improves team design and downstream communication with other departments and suppliers.

PTC Creo Elements/Direct Model Manager

- Integrated data management for PTC Creo Elements/Direct Modeling and PTC Creo Elements/Direct Drafting design data and other integrated add-on modules
- Easy out-of-the-box installation
- Manage 3D-to-2D associative drawings
- Intuitive workspace, including convenient access to My Recent Items, favorites, and saved searches

- Manual workflow including ownership, revision, and state control
- Real-time status and notifications
- Improve large assembly performance through lightweight graphics and partial load capabilities

Language support

English, French, German, Italian, Japanese, and Spanish

Platform support and system requirements

Visit the [PTC Support Page](#) for the most up-to-date platform support and system requirements.

For more information, visit:

[PTC.com/products/creo-elements-direct](https://www.ptc.com/products/creo-elements-direct)

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