

# Creo™ Elements/Direct™ Machine Productivity Package

A COMPLETE SET OF DIRECT 3D CAD AND PDM TOOLS TO ACCELERATE INDUSTRIAL EQUIPMENT DESIGN

Formerly CoCreate®

The Creo Elements/Direct Machine Productivity Package gives you all the fast and flexible 3D design and data management tools you need for high-quality industrial machine design. The package features Creo Elements/Direct Modeling™—the world's #1 direct 3D CAD system, along with a library of standard 3D parts, plus fully integrated data management and an advanced design module. Altogether, this package helps you deliver higher-quality, innovative products to market faster, and decrease product development costs.

The Creo Elements/Direct Machine Productivity package lets you easily create highly precise 3D designs, and quickly modify them through on-the-fly interactions with model geometry. This powerful toolset includes essential assembly, parametric, and part library capabilities for streamlining the design and manufacturing of industrial equipment. Additionally, its integrated data management capabilities help you orchestrate development efforts without imposing overhead on the team, and let you manage every form of CAD and design data associated with the development process within a central database.

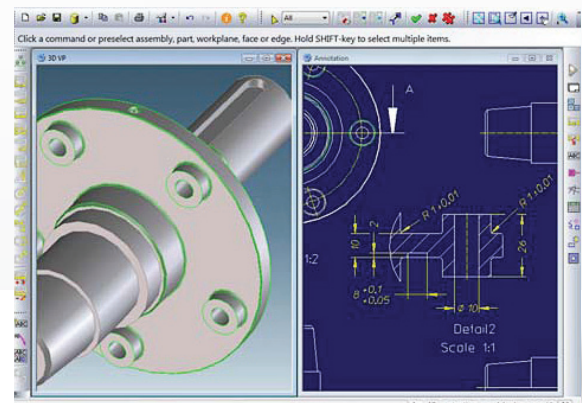
## Drive Major New Product Development Initiatives

- Reduce both the number and impact of engineering change orders (ECOs)
- Decrease time-to-market by building robust, appealing products—fast
- Eliminate physical prototypes by simulating real-world mechanisms on the desktop

- Increase engineering productivity by streamlining collaboration with design and manufacturing partners.
- Minimize component and tooling costs
- Complete 3D machinery design in a single, integrated environment
- Build digital prototypes and easily export a complete bill-of-materials (BOM)

## The Creo Elements/Direct Machine Productivity Package Includes:

- Creo Elements/Direct Modeling
- Creo Elements/Direct Advanced Design
- Creo Elements/Direct Part Library
- Creo Elements/Direct Model Manager™



Build complete digital prototypes to validate the manufacturability of parts, assemblies, standard library components, and assembly mechanisms.

## Key Benefits

- Reduce both the frequency and time spent on ECOs that are the direct result of error-related rework.
- Validate assembly mechanisms to increase the quality and refinement of new and revised product designs.
- Perform digital prototyping, and eliminate the cost of extra physical prototypes, while speeding development.
- Find failure-prone areas within a product and resolve issues early, boosting design quality and saving costs and time.
- Subject your product designs to simulated real-world conditions.
- Achieve faster realization of optimal designs and avoid both failure-prone and over-engineered components.

## Drive Major New Initiatives

### Reduce ECO Frequency and Lead Times

Create digital prototypes for visualizing, validating and analyzing product designs under real-world conditions, which enables you to 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, while ensuring design for manufacturability (DFM). Avoid re-creating models, by using standard, off-the-shelf parts and components to create a fully accurate 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

Build complete digital prototypes, then analyze the physical behaviors of assemblies and components, and identify collisions within moving mechanisms. Generate an accurate BOM by also including standard components in the top-level product assembly.

## Streamline Collaboration with Design and Manufacturing Partners

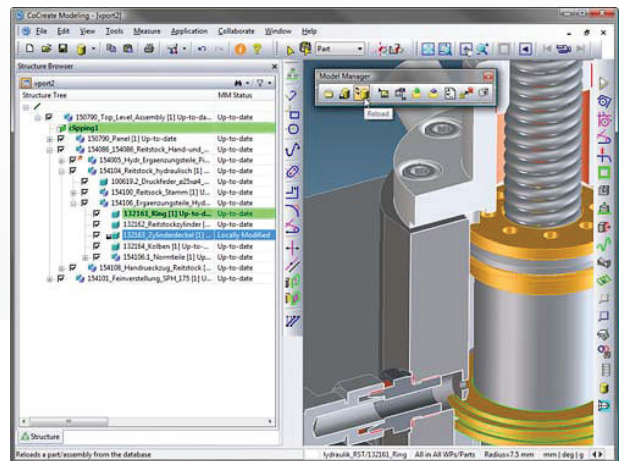
Promote the use of preferred, off-the-shelf mechanical components, manufacturing materials, and processes. Tailor libraries to match parts that are preferred and available to you and your partners. Leverage and reuse existing parts, assembly designs, and common library components to speed product development.

## Minimize Component and Tooling Costs

Effectively reuse parts, assemblies and standard components with integrated data management for the workgroup. Manage and track ownership, revision and state controls both for designers and external suppliers.

## Manage the Entire Design in One Integrated Environment

Design and validate parts and assemblies, moving mechanisms, and the BOM—all in 3D—using the same tool you use for mechanical design.



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

## Capabilities and Specifications

The Creo Elements/Direct Machine Productivity Package includes:

- **Creo Elements/Direct Modeling:** an direct 3D CAD system that provides a fast, lightweight, and flexible approach to 3D design
- **Creo Elements/Direct Advanced Design:** lets you simulate realistic motion, simplify design geometry, create parametric design variations, and define inspection plans for metrology departments
- **Creo Elements/Direct Part Library:** makes it easy to use preferred parts and supplier parts during design, so you can reduce cost and shorten lead times
- **Creo Elements/Direct Model Manager:** a fully integrated data management solution that helps orchestrate product development efforts, and manages all 3D and 2D CAD design data associated with the product development process within a central database

### Creo Elements/Direct Modeling

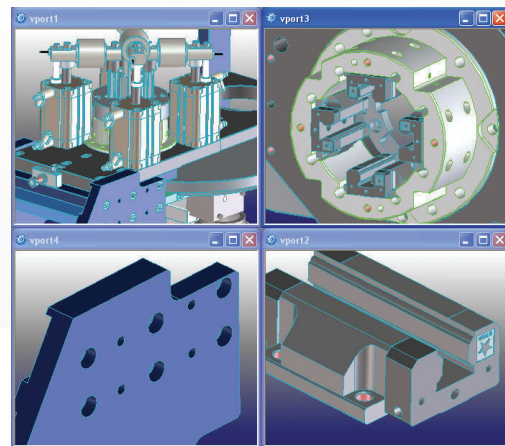
- Naturally create and interact with 3D geometry using familiar behaviors, such as cut/copy & paste, and drag & drop techniques
- Create and modify 3D designs faster through direct, on-the-fly interactions with model geometry, enabling you to reach a given design solution as quickly as possible
- Effectively 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
- Maintain legacy 2D drawings with Creo Elements/Direct Drafting™, a stand-alone 2D CAD system for document control and engineering change orders (ECOs)

### Creo Elements/Direct Advanced Design

- Add assembly relationships and constraints for physical simulation of mechanisms and for detecting clashes in moving assemblies
- Add parametric relationships and constraints for design variants and downstream modifications
- Streamline the design of plastic parts with plastic-specific capabilities, such as creating core and cavities, and leveraging predefined rib features
- Simplify part and assembly geometry to protect intellectual property, as well as improve assembly performance

### Creo Elements/Direct Part Library

- Take advantage of DIN, ISO, ANSI and JIS standards with more than 170,000 parts: screws, nuts, washers, rings, bolts, section steel, bearings and more
- Reuse company-specific standards
- Improve efficiency with the fixture connection wizard



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

### Creo Elements/Direct Model Manager

- Integrated data management both for Creo Elements/Direct Modeling and Creo Elements/Direct Drafting design data, as well as any 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

### Supported Operating Systems

- Windows® 7 32-bit and 64-bit Editions of Ultimate, Enterprise and Professional
- Windows Vista® 32-bit and 64-bit Editions of Ultimate, Enterprise and Business
- Windows XP Professional 32-bit and 64-bit Editions

For the most up-to-date platform support information, visit:

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

For more information about the Creo Elements/Direct product family, visit:

<http://www.ptc.com/products/creo-elements-direct>

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