PTC®

the product development company®

Creo™ Elements/Direct™ Advanced Design

EXTENDED 3D DESIGN CAPABILITIES FOR YOUR CREO ELEMENTS/DIRECT MODELING™ ENVIRONMENT

Formerly CoCreate®

The Creo Elements/Direct Advanced Design module extends your Creo Elements/Direct Modeling-based 3D product development platform with a complete set of powerful capabilities.

Creo Elements/Direct Advanced Design helps you create design variations, simulate realistic motion, simplify design geometry, define inspection plans, and utilize dedicated design capabilities for plastic parts.

Evaluate real-world motion

Visualize moving mechanisms within Creo Elements/Direct Modeling, and easily identify design interference. Generate product design animation sequences for assembly procedures and team communication.

Develop relationships and conditions

Generate and create design variants with part and assembly relationships and conditions. Attach logical, value, and measure relations to product design data from both Creo Elements/Direct Modeling and imported CAD data.

### Optimize for injection molding

Directly use your 3D design to create parting surfaces and produce accurate core and cavity mold blocks. Manufacture plastic injection molds with industry-standard moldbases, and automatically generate all required components.

Protect intellectual property and system performance

Create simplified representations of your designs. Protect intellectual property by suppressing product details when you share design data with external teams. Or, use it to speed system performance when working with large assemblies.

Prepare for inspection

Prepare and export dimensional measurement plans for Quality Control departments by providing accurate measurement points for comparing manufactured products with 3D CAD specifications. Inspection uses 3D documentation to attach tolerances and design specifications to your design.
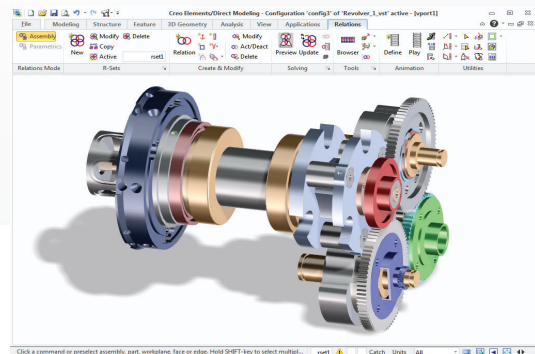
Easily create relations within parts and assemblies. You can easily generate design alternatives by changing relation interactively or via predefined table values.

Key benefits

- Reduces design time by establishing relationships on both parts and assemblies to automatically create design variations (such as family of parts) and add intelligence for design modification.

- Shows the realistic motion of mechanisms and helps you quickly identify clash interferences.

- Protects intellectual property: you can simplify product designs, so you share only relevant product data with external teams.

- Saves time and reduces errors by creating mold designs directly from 3D models. Automatically generates mating cores and cavities, and speeds the development of manufacturing tooling

Features and specifications

Realistically simulate motion

- Add motion simulation to parts and assemblies, including assembly, disassembly, and mechanism studies

- Review multiple simulation studies for identical parts and assemblies

- Run predefined mechanism motions, including rack, gear, screw, cam

- Detect clashes dynamically and "stop on clash" based on model data

- Record and playback simulations, including optional AVI output

- Generate animation AVIs with photorealistic frames

- Analyze physical behavior, interactively and in simulations

Create part and assembly relation to add intelligence for design modification

- Add logical relations such as parallel, coincident, and tangent

- Add value relations such as distance, angle, radius, and diameter

- Add measure values such as distance or angle

- Specify formulas for value relations and table editing

- Apply relations to both native and imported parts and assemblies

- Create and modify relations-based feature patterns

- Support curve and surface modification
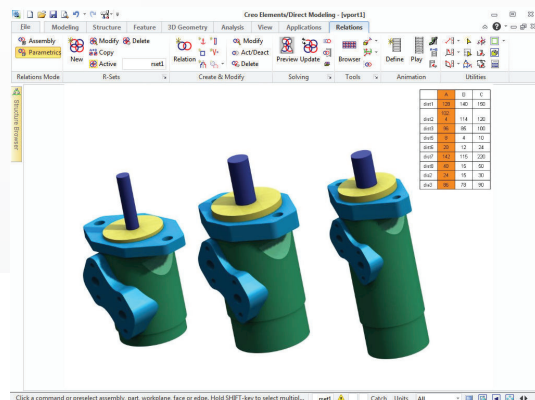
Virtually define and simulate the motion of assemblies. Creo Elements/Direct Advanced Design helps you identify and solve clash and touching issues immediately, reducing the need for physical prototyping.

Design with plastics: dedicated capabilities for plastic parts

- Design and analyze: Broad range of predefined plastic form features, user-definable design rules, isotropic and anisotropic scaling

- Analyze undercuts, draft, and wall thickness

Simplify part and assembly geometry

- Automatically detect and remove features such as through holes, bosses, pockets, rips, slots, blends, and helical surfaces

- Remove certain features based on parameters such as height, depth, radius, and box size

- Remove small parts, hidden parts, and selected parts

- Maintain assembly structure and simplify all parts in one step

- Merge assemblies to create a single geometrically merged structure

- Maintain associativity between original and simplified parts in Creo Elements/Direct Model Manager™

Improve surface quality

- Create, modify, and analyze surfaces, and design ergonomic products, with confidence

Work on imported designs

- Work on imported models as if they were native:

  - All operations also work on designs imported through standard interfaces or optional CAD interfaces

  - Automatic detection of gaps in the design

  - Ideal for repairing designs coming from other CAD systems

Prerequisites

- Creo Elements/Direct Modeling

Platform requirements

Creo Elements/Direct Advanced Design 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:
PTC.com/partners/hardware/current/support.htm

For more information, visit:
PTC.com/products/creo-elements-direct/