



COMPUTER AIDED MANUFACTURING **IN CREO**

Creo offers you a full spectrum solution that takes you from design through to part inspection and additive manufacturing.

>>> THE CREO DIFFERENCE:

Creo is a 3D CAD solution that helps you build better products faster by accelerating product innovation, reusing the best of your design and replacing assumptions with facts. Go from the earliest phases of product design to a smart, connected product with Creo. And with augmented reality in each seat of Creo, everyone can easily visualize your designs. In the fast-changing world of the Industrial IoT, no other company can get you to substantial value as quickly and effectively as PTC.

>>> CREO CAM SOLUTIONS

Creo NC and Tool Design solutions give you everything you need to achieve the highest quality, highest precision machining in the fastest possible time. Now you can handle every aspect of the machine process from mold/cast design and advanced NC to 3D simulation and verification.

Description	Prismatic & Multi-Surface Milling	Production Machining	Complete Machining	Mold Machining	NC Sheetmetal
• 2-Axis Feature-based Machining	✓	✓	✓		
• 3-Axis Milling	✓	✓	✓	✓	
• 4/5-Axis Positioning Milling	✓	✓	✓	✓	
• Comprehensive Holmaking	✓	✓	✓	✓	
• 3-Axis Trajectory	✓	✓	✓	✓	
• 2-4 Axis Turning		✓	✓		
• 2-4 Axis Wire EDM		✓	✓		
• Live Tooling for Turning (Mill/ Turn: CBY)			✓		
• 5-Axis Continuous Milling and Contouring Machines, including 5-Axis Trajectory sequence			✓		
• Multi-task machining synchronization			✓		
• Dynamic tool axis definition in Turning			✓		
• High-speed machining (HSM) Roughing				✓	
• High-speed machining (HSM) Rest Roughing				✓	

>>> EXTENSIONS

• Prismatic & Multi-Surface Milling • Production Machining • Mold Machining • Complete Machining • Tool Design • NC Sheetmetal
• Expert Moldbase • Progressive Die • Computer-Aided Verification • Additive Manufacturing • Additive Manufacturing Plus

Description	Prismatic & Multi-Surface Milling	Production Machining	Complete Machining	Mold Machining	NC Sheetmetal
• High-speed machining (HSM) Finishing				✓	
• High-speed machining (HSM) Rest Finish				✓	
• Extraction of Manufacturing Annotation Features	✓	✓	✓	✓	
• Tool and Fixture Library	✓	✓	✓	✓	
• Manufacturing Process Documentation Pro/PROCESS for Manufacturing	✓	✓	✓		
• Automatic Nesting					✓
• Punch Press and 2-Axis Laser Programming					✓
• GPOST: NC Post-Processor Generator	✓	✓	✓	✓	✓
• ModuleWorks-based material removal simulation	✓	✓	✓	✓	

All of the options above require a seat of Creo Parametric.

Description	Expert Moldbase	Progressive Die	Computer Aided Verification	Tool Design
• Moldbase Design, including Moldbase Component Library	✓			
• Progressive Die Design		✓		
• First Article Inspection (compare 3D model with cloud of points)			✓	
• CMM Programming (DMIS output)			✓	✓
• Automatic Core/Cavity creation				
• Moldbase Design, including Moldbase Component Library				○

○ Basic moldbase layout functionality.

CREO CAM SOLUTIONS

PRISMATIC AND MULTI-SURFACE MILLING EXTENSION >



Achieve the highest quality, highest precision machining in the fastest time possible:

- Multi-Surface 3-axis milling with 4- and 5-axis positioning
- High speed machining (for rapid prototyping and manufacturing)
- Automatic change propagation and associative update of NC toolpaths

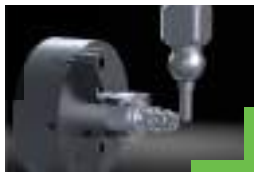
PRODUCTION MACHINING EXTENSION >



Includes all capabilities of Prismatic & Multi-Surface Milling along with:

- 4-Axis Turning
- 4-Axis Wire Electrical Discharge Machine

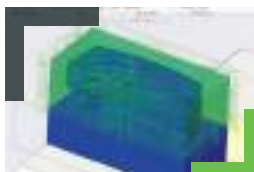
COMPLETE MACHINING >



Comprehensive capabilities to support advanced NC machining strategies:

- Includes production machining capabilities in previous packages
- 2.5- to 5-axis Milling (Advanced machining strategies)
- Support for Mill-Turn and live tooling and multi-task machines synchronization

MOLD MACHINING >



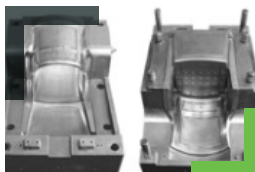
Deliver rapid production of mold, die, electrode and prototype parts:

- 3-axis trajectory milling
- Comprehensive holemaking
- High speed 3-axis machining powered by ModuleWorks

CREO CAM SOLUTIONS



TOOL DESIGN >



Accelerate the design of high-quality production mold and cast tooling:

- Easy to use process driven UI for Mold and Cast design
- Automated creation of parting line and parting surface geometry
- Associative design and tooling updates

EXPERT MOLDBASE EXTENSION >



Automate manual, time-consuming tasks to speed the creation of moldbase tooling:

- 2D process-driven workflow for moldbase design and detailing
- Customizable “smart” mold component library
- Automatic ejector pin, waterline, and fittings functions; automatic runners, and waterline checks

NC SHEETMETAL >



Use materials efficiently and optimize design for manufacturing:

- Automatically create and optimize toolpaths using standard and form tools
- Smart auto-nesting for utilization of maximum sheet area, reduction of scrap and material costs, and shortened lead times

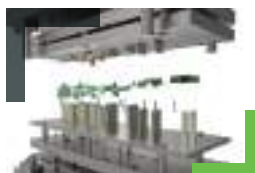
COMPUTER-AIDED VERIFICATION >



Digital quality-checking process:

- Gain absolute confidence in the QA process by performing digital inspections of machined parts and assemblies.

PROGRESSIVE DIE EXTENSION >



Eliminate error-prone manual tasks:

- Easy-to-use wizards guide you through automatic strip layout definition, cut stamp creation, and placement/ modification of die components.
- Automatically create clearance cuts, drilled holes, and documentation

ADDITIVE MANUFACTURING

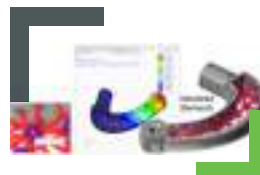


With Creo you can design, optimize, validate, and run a print-check all in one environment, reducing overall process time, tedium, and mistakes. Make use of the out-of-the-box capabilities including: print check, creation of print trays, direct connect to Stratasys and 3D system plastic printers, and i.materialize Print Bureau.

You can design for additive manufacturing in polymers and in metal and then connect direction to your chosen printer with its optimized printer profile and support structures. No switching between software packages, and no hassle. Our metal printing capabilities cover 70% of the metal printers currently on the market.



»»» ADDITIVE MANUFACTURING >



Create and optimize lattice structures and define printer tray setup:

- Automated creation of 2.5D and 3D lattice structures
- Seamless analysis and optimization of lattice
- Printer tray setup and nesting optimization

»»» ADDITIVE MANUFACTURING PLUS >



Connect to 3D metal printers and automatically generate 3D metal support structures:

- Includes lattice structure creation and optimization capabilities of previous packages
- 3D metal printer connectivity
- Generate and customize metal support structures

Please visit the [PTC support page](#) for the most up-to-date platform support and system requirements.

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