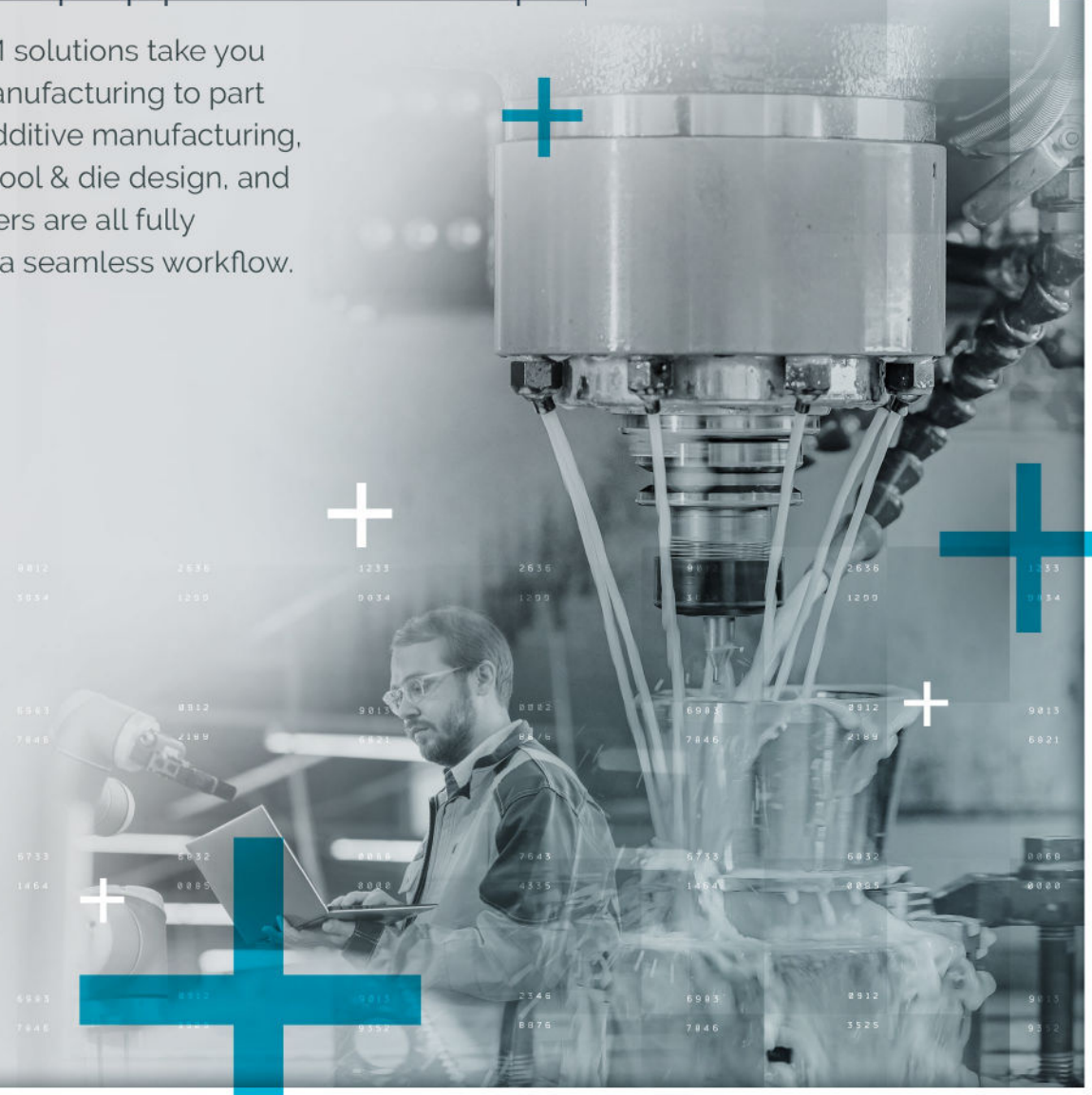
creo® 9

COMPUTER-AIDED MANUFACTURING IN CREO

Creo's easy-to-use CAM solutions take you from design through manufacturing to part inspection. Moreover, additive manufacturing, production machining, tool & die design, and machining for tool-makers are all fully integrated into Creo for a seamless workflow.

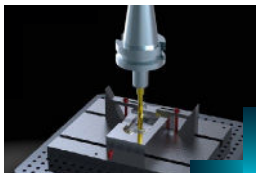


ptc

DIGITAL TRANSFORMS PHYSICAL

CREO PRODUCTION MACHINING EXTENSIONS

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
- Automatic change propagation and associative update of NC toolpaths

PRODUCTION MACHINING EXTENSION

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

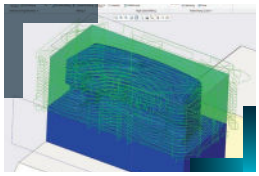
- 4-Axis Turning
- 4-Axis Wire Electrical Discharge Machine

COMPLETE MACHINING

Comprehensive capabilities to support advanced NC machining strategies:

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

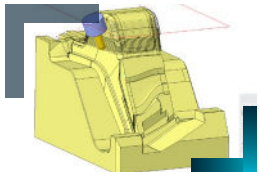
HIGH-SPEED MILLING EXTENSION (HSM)



3-Axis High-Speed Milling toolpaths with no need to switch to external CAM Solutions:

- Basic holemaking
- 3-Axis trajectory Milling
- 3-Axis High-Speed Milling (HSM) Rough, Rest Rough, Finish and Rest Finish sequences
- Constant load scan-type for Roughing sequences is comparable to expensive third-party software products
- Adaptive feed-rates for roughing and rest-roughing

HIGH-SPEED MILLING ADVANCED EXTENSION



All capabilities in HSM:

- Comprehensive holemaking
- 5-Axis continuous High-Speed Milling toolpaths with with high level of automation and collision-checking
- 5-Axis High-Speed Milling, Roughing and Rest Rough, including automatic 3+2 Axis Rough and Rest Rough
- 3 to 5-Axis High-Speed Milling Conversion for Finish and Rest Finish; 5-Axis Auto Deburring
- 5-Axis geodesic finishing and trajectory Milling

CREO CAM SOLUTIONS

Creo Production Extensions*	Prismatic & Multi-Surface Milling	Production Machining	Complete Machining	High-Speed Milling	High-Speed Milling Advanced
• 2-Axis Feature-Based Machining & 3-Axis Milling	✓	✓	✓		
• 3-Axis High-Speed Milling (HSM) Roughing, Rest Roughing, Finish and Rest Finish				✓	✓
• 5-Axis High-Speed Milling (HSM) Roughing, Rest Roughing, including automatic 3+2 Axis Roughing and Rest Roughing and 5-Axis Auto-Deburring • 3-to-5 Axis Conversion for Finish / Rest Finish toolpaths • Geodesic 5-axis Finish					✓
• 4/5-Axis Position Milling	✓	✓	✓		
• Hole-Making	Basic	Basic	Comprehensive	Basic	Comprehensive
• Trajectory Milling	3-Axis	3-Axis	5-Axis	3-Axis	5-Axis
• 2-4 Axis Turning & Wire EDM		✓	✓		
• Live Tooling for Turning (Mill / Turn), 5-Axis Continuous Milling, Multi-Task Machining Synchronization, Dynamic Tool Axis Definition in Turning			✓		
• Associative NC Process Planning using Manufacturing Annotation Features and Tool / Fixture Library	✓	✓	✓	✓	✓
• Manufacturing Process Documentation	✓	✓	✓		
• GPOST NC Post-Processor Generator	✓	✓	✓	✓	✓
• ModuleWorks-based Material Removal Solution	✓	✓	✓	✓	✓

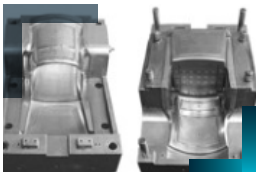
>>> EXTENSIONS

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

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

CREO TOOL & DIE EXTENSIONS

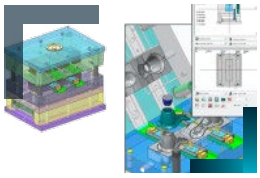
TOOL DESIGN



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:

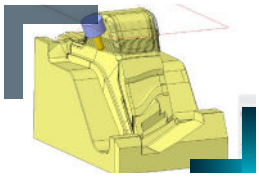
- 2D process-driven workflow for moldbase design and detailing
- Customizable "smart" mold component library
- Automatic ejector pin, waterline, and fittings functions; automatic runners, and waterline checks

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

HIGH-SPEED MILLING ADVANCED EXTENSION



All capabilities in HSM:

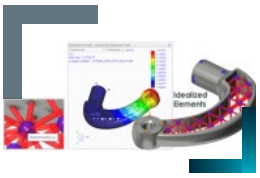
- Comprehensive holemaking
- 5-Axis High-Speed Milling, continuous toolpaths with high level of automation and collision-checking
- 5-Axis High-Speed Milling, Roughing and Rest Rough, including automatic 3+2 Axis Rough and Rest Rough and adaptive feed-rates for roughing and rest-roughing
- 3 to 5-Axis High-Speed Milling Conversion for Finish and Rest Finish; 5-Axis Auto Deburring
- 5-Axis geodesic finishing and trajectory Milling

ADDITIVE MANUFACTURING

With Creo, you can design, optimize, validate, and run a print-check all in one environment reducing time, tedium, and mistakes. Creo 9 helps you easily optimize your designs for additive manufacturing. With the new additive capabilities, you can use advanced lattice structures to minimize weight, or apply variable lattice structures based on simulation results.

Use Creo's strength in generative design and simulation technology to create high-quality, innovative designs you can additively manufacture. With Creo, all these capabilities are fully integrated into the easy-to-use interface. Take your design process to the next level with Creo.

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 ADVANCED

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

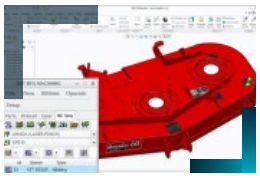
- Includes lattice structure creation and optimization capabilities of previous packages
- 3D metal printer connectivity
- Generate and customize metal support structures

3MF CONSORTIUM

The 3D manufacturing format (3MF) is an industry-supported file format that applications can use to send full-fidelity 3D CAD models to a mix of other applications, platforms, services, and printers. With the 3MF specification, companies can focus on innovation rather than on basic interoperability issues. PTC is a Steering Member of the 3MF Consortium.

ADDITIONAL CREO PRODUCTION EXTENSIONS

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
- Automatic Nesting, Punch Press & 2-Axis Laser Programming

COMPUTER-AIDED VERIFICATION

Coordinate Measuring Machine (CMM) programming for digital quality inspection:

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

THE CREO ADVANTAGE

Creo is the 3D CAD solution that helps you accelerate product innovation so you can build better products faster. Easy-to-learn Creo seamlessly takes you from the earliest phases of product design to manufacturing and beyond. You can combine powerful, proven functionality with new technologies such as generative design, augmented reality, real-time simulation, additive manufacturing and the IIoT, to iterate faster, reduce costs and improve product quality. The world of product development moves quickly, and only Creo delivers the transformative tools you need to build a competitive advantage and gain market share.

creo® 9

Please visit the PTC support page for the most up-to-date platform support and system requirements.

204699 –Computer–Aided–Manufacturing–Capabilities–in–Creo 9–0722