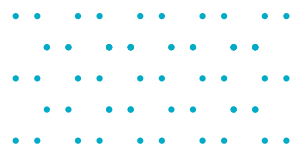# creo®

ADDITIVE MANUFACTURING CAPABILITIES IN CREO

CREO CLOSES THE GAP BETWEEN 3D CAD AND ADDITIVE MANUFACTURING.
WITH CREO, WHAT YOU DESIGN IS ACTUALLY WHAT YOU PRINT.

With Creo you can design, optimize, validate, and run a print-check all in one environment, reducing overall process time, tedium, and mistakes. When you're ready, simply send the file straight to the 3D printer.* You can design for additive manufacturing in polymers and in metal and then connect directly 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.

ptc

ptc.com

A TRULY COMPREHENSIVE SUITE OF ADDITIVE MANUFACTURING CAPABILITIES.
WITH CREO YOU CAN DESIGN, OPTIMIZE, VALIDATE, AND PRINT-CHECK THE HIGHLY COMPLEX GEOMETRY THAT CAN ONLY BE PRODUCED THROUGH ADDITIVE MANUFACTURING. NOW WITH SIMULATION-DRIVEN LATTICES.

LATTICE CREATION

It's no secret that lattices improve strength-to-weight ratio, improve flexibility, and help to minimize cost. AM is ideally suited to designs with lattices, which come in an almost limitless variety. With Creo Additive Manufacturing Extension, you can leverage a database of advanced lattice structures, including custom-defined cells.
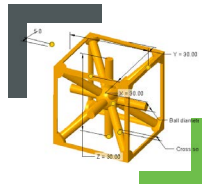
CONNECTIVITY WITH PRINTERS

Whether you're printing with polymers or metal, Creo has you covered.

For polymers, you can directly connect to several printing manufacturers' platforms such as 3D Sprint of 3D Systems, and Materialise-enabled printers to understand build time, material usage, and materials/color assignment. Print directly to from Creo.

For metal printing, you can do all of the above, as well as generate and customize the support structures that metal printing requires.

Also available is the ability to export to one of these standard file formats and send to 3D printers: CLI, AMF, 3MF, and legacy STL file formats, as well the ability to use the Windows 10 3D printer driver.

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Creo Versions	4	5	6	7	8
Creo Parametric					
Create Print Trays	•	•	•	•	•
Print Check	•	•	•	•	•
Connection to 3D System Plastic Printers (understand material usage and Print Times)	•	•	•	•	•
Connection to i.materialize Print Bureau	•	•	•	•	•
Connection to Plastic Printers in the Materialise Library (Manage print drivers and profiles)		•	•	•	•
Connection to 3D Systems ODM Print Bureau		•	•	•	•
Creo Additive Manufacturing Extension					
Lattice Modeling (2 ½ D and 3D Beam lattices, uniformly distributed)	•	•	•	•	•
Formula-based lattices (Triple-periodic minimal surface cells: Gyroids, Primitive and Diamond)			•	•	•
Advanced beam lattices (Stochastic – conformal and foam, transitions)			•	•	•
Stochastic lattices with Delaunay algorithm and edges recognition				•	•
Stochastic lattices, Trabecular shape option for Voronoi triangulation					•
Homogenized lattice representation for fast simulation and light weight files storage			•	•	•
Custom defined cells (based on Creo .prt files)			•	•	•
Improvements to custom defined cells, support of Quilts and Curves				•	•
Selective removal of dangling beams					•
Lattice variability based on geometric references	•	•	•	•	•
Simulation and optimization of lattices using idealizations in Creo Simulate		•	•	•	•
Real-time simulation of lattices using Creo Simulation Live			•	•	•
Automatic Lattice variability based on simulation results, (for beam-based lattices)					•
Modify, Manage and Save Print Tray Assemblies	•	•	•	•	•
Automatic Positioning, Nesting and Global Interference Check in Print Tray Assemblies	•	•	•	•	•
Insert multiple parts in the Tray Assembly in one step					•
Define the Print Build Direction in Part Mode and direct placement in the Print Tray			•	•	•
3MF Core specification export		•	•	•	•
3MF Materials and colors extension support and 3MF beam lattice extension support			•	•	•
Windows 10 driver support for 3D printing			•	•	•
Creo Additive Manufacturing Plus Extension for Materialise					
Support of Metal Printers in the Materialise Library (Manage print drivers & profiles)		•	•	•	•
Generate and Customize Metal Support Structures		•	•	•	•
Additional support structures: Tree, Cone and Hybrid				• 7.0.1.0	•
Optimization of the Print Build Direction in Part Mode and direct placement in the Print Tray			•	•	•
Multi-objective Optimization of the Print Build Direction and detection of overhang edges and vertices					•
Amphyon Additive Process Simulation for Creo*					
Simulation of parts, lattices and supports on the Tray Assembly. For Powder-bed metal 3D Printers				•	•
Creation of compensated models and insert them on the Tray Assembly model tree				•	•

Creo Versions	4	5	6	7	8
Creo Generative Topology Optimization Extension (GTO)					
Set constraints and requirements, including materials and manufacturing processes •				•	•
Work with both additive manufacturing and more traditional processes •				•	•
Output is rich, B-rep geometry. •				•	•
Creo Generative Design Extension (GDX)					
Turn to cloud-based GDX to evaluate multiple scenarios in parallel				•	•

>>> 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 IoT, 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 competitive advantage and gain market share.

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

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