Cimatron™ 13

Easier. Faster. Stronger

Mold Design - Die Design - NC Programming
“With traditional cooling for injection molding there was no perfect situation... Now with Cimatron 13, we no longer have to accept compromises. Using conformal cooling designs, we are able to reduce injection cycle times and overall costs.”

Ben Staub, CEO, Bastech

With over 250 new features and enhancements as well as numerous bug fixes, Cimatron 13 offers major benefits to mold, die and manufacturing shops to keep them more competitive across their entire range of operations.

Increase Productivity | Decrease Project Completion Time | Improve Cost Efficiency
Intuitive User Experience

**New User Interface** – The totally new user interface has been vastly improved and is more intuitive, easier to learn and faster to use, bringing with it improved productivity.

**Display** – The graphic engine enables better performance with large models, making full use of the computer’s GPU (video card) and allowing advanced technologies when shading.

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Comprehensive CAD for Tooling

**Direct Modeling** – Allows quick and easy change of: design values of drafts angle, offsets, and radii of rounds as well as face positions.

**Assembly** – Copy Array allows a higher level of automation by copying assembly components in linear or circular array patterns while Distributed Add allows automatic or manual distribution of components added to an assembly into its different sub-assemblies.

**Drafting** – Capabilities were boosted with Dynamic Creation of Multiple Views from selected parts and assemblies in a single operation and many drafting enhancements were added such as Split ID numbers, user defined hatch, reconnect disconnected symbols, copy attributes and style, vertical text, symmetry ordinate dimension and partial section break lines.

**FEA Analysis** – The Finite Element Analysis tool performs stress, normal modes, buckling, and heat transfer analysis on mechanical parts.
Innovative Tools for Mold Design

**Gate Design** – A new dedicated tool for designing injection gates faster includes easy definition of the gate shape and its trajectory.

**Conformal Cooling Design** – Allows faster Conformal Cooling design using predefined sections in various shapes, sizes and orientations to reduce injection cycle time, increase cooling efficiency and uniformity and avoid warping problems.

Superior Capabilities for Die Design

**Dedicated environments for Progressive and Transfer Dies** – Separated assembly structures and different tool sets are now provided for progressive dies and transfer dies.

**Springback Enhancements** – A set of auxiliary tools to compensate for springback deformations allows reducing the number of die tryouts.

**Extend by Draft Angles** – A new tool for unfolding “challenging” cases that require multiple intermediate stages like deep draws, allows easier and faster unbending of specific areas in the part.
Advanced Automation for Plate Machining

**Solution Content** - A new seat with a complete set of capabilities required for fast, efficient and automated programming of mold and die plates.

**A New Manufacturing Feature Recognition (MFR) Tool** – A new analysis tool recognizes pockets for safer and faster programming. The new tool automatically recognizes Pocket (and slot) geometries, including open edges, and considers each Pocket’s heights, shape and draft angle.

**A New Rough Pocket Procedure** – A new 2.5 axis Pockets procedure that handles open and closed pockets, supports HSM options (i.e. round motions) as well as delivering holder collision avoidance.

**A New 2D Cleanup Procedure** – A new 2.5 axis procedure to machine the remaining material in pockets using either 2D Cleanup Pocket to remove un-machined material left in a pocket by the Previous Cutter or 2D Cleanup Profile to remove un-machined material mostly along open contours or pockets.

**A New Chamfer Procedure** – A new 2.5 axis procedure for fast and safe machining programming of horizontal Chamfers with several side and down passes that avoids gouging or collision with the Shank and Holder.

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**On-the-fly Measurement on CNC Machines**

New NC procedures allow measurement on the CNC machine while the part is still mounted as part of the machining process.

**Machine Home Setup** – Automatically measures and sets the machine home zero based on orientation, location and the stock dimensions.

**In-Process Measurement** – Measures a specific dimension on the CNC machine, and validates the current machining results.

**On-Machine Part Inspection** – Enables programming multiple probing measurements at the end of machining while the part is still on the CNC machine, automatically generating a QA report.
Superior NC Capabilities and Strategies

**Safe Milling** – A new capability automatically takes into account a “part procedure” in 3-axis milling operations preventing user errors. The part’s procedures surfaces will not be gouged even if they are not selected by the certain procedure.

**Keep Milling Direction (Climb/Conventional) After Mirroring** – Faster and simpler programming of mirror parts (e.g.: a car’s left and right headlights) using a new option in the Transformation procedure that automatically keeps the operation’s original machining technologies after mirroring.

**Cutter Improvements** – Users can now define cutters with dual shanks as well as cutters of any shape. The shank is now checked with the stock with greater accuracy to avoid collisions, thus allowing long tools with small diameters to fit into deep narrow cavities.

**Finish Operations** – An impressive array of new finish operations include: improved toolpath pattern to support a “flow-line” machining style by using a new parameter: Morph with Variable Sidestep resulting in a better surface quality. Cleanup supports Conic tools and the user has control over the waterfall motions. Improved approaches/retracts in all finish functions and shorten layers in finish by layers were enhanced to improve surface quality. In 5-Axis tilting, the Maintain Tilt was improved to minimize tilt axis movements. Surface quality is improved thanks to a new option that generates equal, user defined distances between TP Nodes.

**VoluMill Enhancements** – improved pocket strategy with Spiral trajectory and wider D-Slot toolpaths resulting in better chip evacuation, faster machining and a longer tool life. In addition, there is a new mixed cutting condition strategy option to shorten the machining time commonly used for soft materials.
Ultra-Quick Electrode Design & Manufacturing

**Solid Electrode** – A new capability for quickly creating electrodes and extensions using Solid operations for fast design of an Electrode.

**Mirror Electrodes** – Fast creation and editing of mirrored electrodes is done by intelligently mirroring the electrode’s geometry, without mirroring the holder and the base.

![Image of Electrode Design](image1)

The new solid electrode function showing a 3-directional electrode extension

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Fully Attuned Enterprise Solutions

**Concurrency** – Concurrency spaces can be defined in a central location on the network or in the cloud, allowing several users to work on the same project simultaneously.

**PLM interface** – This new API allows system integrators to control Cimatron’s operations (e.g.: save, open, save as, etc.) according to the PLM logic and rules.
3D Systems provides advanced and comprehensive 3D digital design and fabrication solutions, including 3D printers, print materials, software solutions and custom-designed parts. Its powerful ecosystem transforms entire industries by empowering users to bring their ideas to life using its vast material selection, including plastics, elastomers, metals and bio-compatible materials. 3D Systems’ leading personalized medicine capabilities include end-to-end simulation, training and planning, and printing of patient-specific surgical instruments and medical and dental devices. Its 3D digital design, fabrication and inspection software products provide seamless interoperability and incorporate the latest immersive computing technologies. 3D Systems’ products and services disrupt traditional methods, deliver improved results and empower its customers to manufacture the future now.

Cimatron is a comprehensive, end-to-end CAD/CAM solution for toolmaking, with tens of thousands of users worldwide. Version 13 is the most powerful version yet, and features many new capabilities and updates.

For more information visit: www.3dsystems.com, www.cimatron.com