

NX Mach 3 Mold Design

The fastest and most complete mold design process

fact sheet

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► Summary

NX Mach 3 Mold Design delivers a state-of-the-art solution to the shrinking lead times and tighter cost controls facing mold manufacturers today. By combining industry knowledge and best practices with process automation, NX Mold Design streamlines the entire mold development process: from part design to tool assembly layout, tool design and tool validation. NX Mold Design excels at even the most challenging mold designs, providing advanced functionality, step-by-step guidance and associativity with part designs to ensure fast response to design changes and quality molds.

Business challenges

- Job turnaround and project time
- Cost control
- Process efficiency
- Waste and human error
- Tool quality
- Process connectivity between tool design and machining

Benefits

- Highly automated core/cavity design
- Comprehensive mold base, molding component system and standard part design
- Fast and efficient design change propagation across entire process (tool design through machining)
- Reduce tool design errors
- Collaboration with customers and suppliers
- Eliminate convention drawings – achieve paperless processes
- Effective data and process management
- Decrease CNC programming time

NX Mach 3 Mold Design offers a wealth of industry best practices and process solutions for:

Part and assembly design

Import part geometry and drawings using data translators. Easily model and perform design changes to ensure desired design intent and achieve manufacturability.

Manufacturability assessment

Validate part designs for manufacturability using wall thickness checking functions, draft analysis and undercut region detection.

Core and cavity design

Automate hole patching and parting of core/cavity based on manufacturability considerations. Design parting surfaces quickly and associatively. Split model to accommodate complex slider designs.

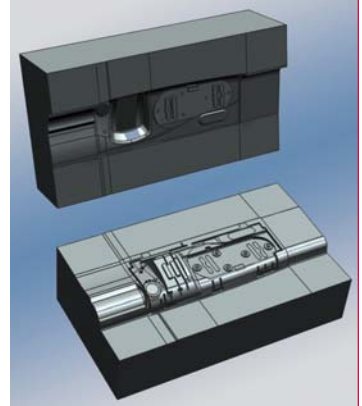
Mold design and assembly

Layout the core, cavity, component systems and mold base for both prototype and production-scale multi-cavity molds.

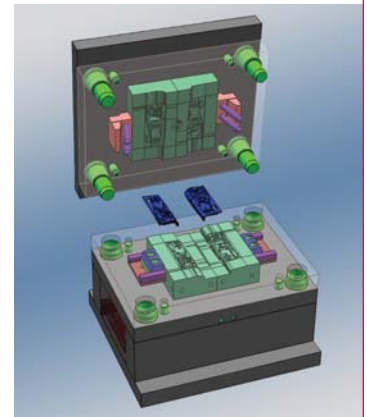
Configure the mold based on libraries of standard parts, component systems and mold bases. Easily customize library content without programming.

Design sliders and lifters for undercut areas with automated trimming. Quickly add and trim ejector pins. Insert cooling channels with parametric patterns.

Design electrodes following a series of steps to define the coordinate system, envelope, head, blank and drawing.



Effective parting surface and patching functions automate the core and cavity design.



Comprehensive libraries of mold bases, standard parts and component systems accelerate the complete mold assembly.

Mold tool validation

Validate the mold design within the assembly context for proper clearances and reliefs in various positional states.

Documentation and manufacturing information

Document the mold design using automated drawing creation and/or 3D annotation. 3D annotation enables paperless communication and manufacturing.

Automate manufacturing processes and operation selection via integration of NX Mold Design and NX CAM.

Design change management

Graphically compare versions of designs for similarities and differences. Swap design versions and efficiently update related features, drawings and toolpaths.

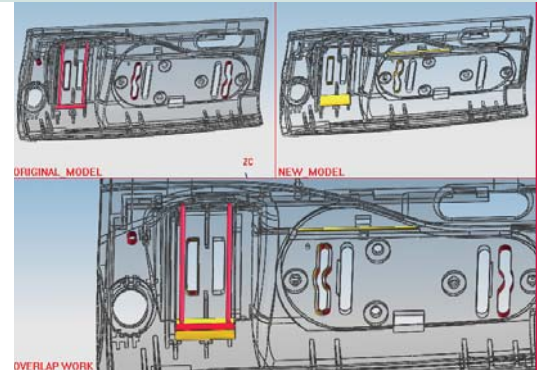
Process and data management

Enable team oriented design with multiple designers working concurrently on a single mold design. This approach is an extension of the traditional concept of product/tooling concurrency.

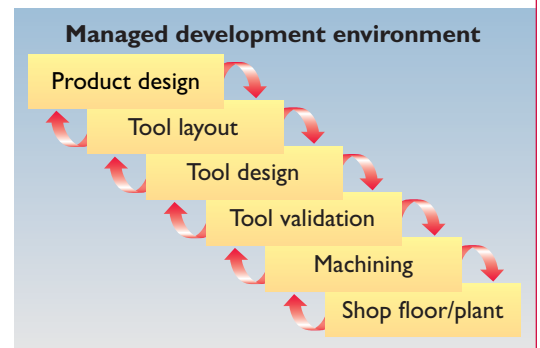
Synchronize and distribute product and process data across tool design and manufacturing teams and re-use proven design practices.

Collaboration

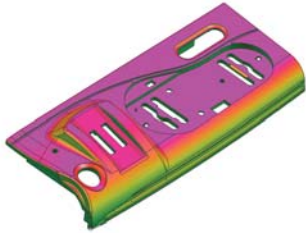
Streamline the collaboration process by packaging 2D drawing and 3D design information with other electronic documentation into a lightweight file that can be emailed and viewed by non-CAD participants in the design process.



Design change comparison and propagation tools provide high levels of efficiency.



Work concurrently with team members, search, access and re-use project and process data all within the managed development environment.



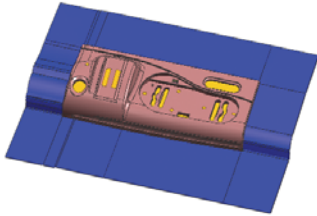
NX Mach 3 Mold Design product content

Mold design

- Shrinkage
- Parting line and surfaces
- Shut-off surfaces
- Core and cavity split
- Runners and gates
- Subinserts
- Sliders/Lifters
- Electrodes
- Automated drawing creation and hole charting
- GD&T, 3D annotation, BOM

Standard catalog offerings

- Mold bases supported in English and Metric units: DME, Futaba, HASCO, LKM, Meusburger, Omni, PCS, Progressive, Rabourdin, Strack, Superior, Universal
- Standard parts and molding systems supported in English and Metric units (injection, ejection, cooling, sliders/lifters, guides, locks, dowels, screws, springs, pillars): DME, Futaba, HASCO, National, Meusburger, Omni, Progressive, Rabourdin, Strack, Yates
- Die base management
- Standard part management

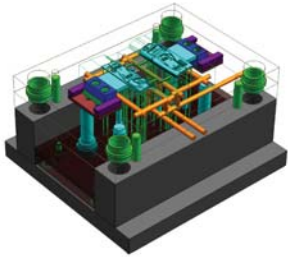


Validation

- Molded part validation
- Product validation

Part and assembly modeling

- Solid and feature modeling
- Free form modeling, basic
- Free form modeling, advanced
- DesignLogic
- Straight break sheet metal
- UDF
- Assembly modeling

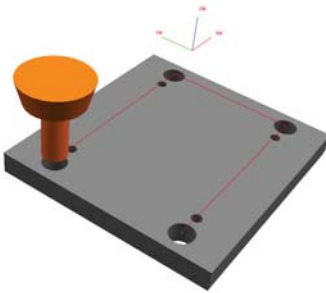


Managed development environment

- Vaulting and version management of product and process data
- Web infrastructure for data accessibility
- 2D drawing and 3D part and assembly visualization/mark-up independent of CAD system
- Supports distributed concurrent team design

Collaboration

- Package design documents for quoting and design review
- Web publishing



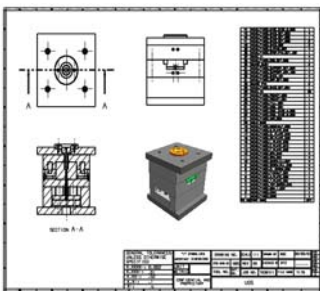
Automation

- NX Open and Knowledge Fusion Runtime package

Translators

- DXF/DWG
- IGES
- STEP AP 203 and AP 214

Note: all capabilities described above are also available within NX Mach 4 Manufacturing.



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