Case Study on Plastic Injection Mold Design and Manufacturing

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Advanced Tooling Solution Overview

The UGS Advanced Tooling Solution brings together specific applications and supporting information and process management technology to create an end-to-end, process-driven capability for tool design and manufacture.

- Single integrated environment that manages product data and processes
- Best in class applications for tool design, electrode design, NC programming all based on the NX software.
- Tools to enable and support collaboration across multiple teams and locations
- Provided by UGS, a major global engineering software supplier
Mold Design

- Shrink design lead time and perform rapid design changes with process-oriented and productivity-focused tool design applications
- Capture and re-use standard component and process knowledge
- Integrate tool design within a design through production environment and related applications
Manufacturing Planning

- Create and manage the manufacturing process plan
- Link tool design, machining operations and resources
- Define manufacturing location, shop, workcell and machine tool with each part
Electrode Design

- Leverage a full set of capabilities necessary to design, validation, and document electrodes for manufacturing
- Design electrodes concurrently within a team environment
NC Programming

- Machine mold faces and the associated structures and bases via a range of techniques
- Automation and process capture improves efficiency and repeatability
Simulation

- Digitally simulate, validate, and optimize tools for design and production processes
- Simulate performance digitally earlier in the design cycle
Quality Inspection

- Improve overall quality of the end product through inspection planning
- Automate data collection and validation to ensure quality
- Process and analyze the data for the NC machine, first article, production, and pass & fail inspections
Product Data Management

- Integrate and manage the BOM, drawings, related manufacturing information, processes, resources, and reports.

- Complex design changes and manufacturing process plans can be managed and integrated among tool design, machining, manufacturing, process planning and the shop floor while controlling versions and revisions.
Process Management and Integration

- Integrate planning, CAM data management, and resource management with the shop floor
- Connect NC programs to the NC machine and back optimize
- Take advantage of digital tool setup sheets and work instructions
- Connect with ERP for order-related resource requests
Collaboration

- Share product and process information within and across the design team, shop floor, and the extended enterprise
- Globally distribute team activities and work concurrently
- Visually perform quoting and project design reviews in a distributed work environment, real-time