



TOTAL PROGRAM MANAGEMENT

# Tooling Engineering

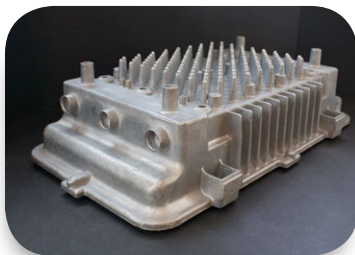


We engineer hybrid tooling to combine shorter cycle times with tool durability (which means no increase in preventive maintenance requirements compared to P20 tools).

- » Experience with plastic and non-ferrous components
- » Ongoing investments in state-of-the-art CAD/CAM platform
- » Concurrent engineering and rapid prototyping
- » Reduced lead times and shorter development costs
- » ISO registered QMS

**Full-service tooling capabilities in plastics and metal forming for leading OEMs and suppliers in the following industries:**

- Appliances
- Automotive
- Consumer products
- Electronics
- Lawn & garden
- Medical technologies
- Power generation
- Power tools
- Returnable packaging



An electrical box with designed-in heat sink — JMMS die cast engineering includes part design and optimization.

We deliver a tooling engineering process designed to optimize your manufacturing, with deep, industry-specific experience in forming both plastic and non-ferrous components. This process, reinforced by our ISO registered quality management system, gives you better part quality, faster cycle times and reduced material usage, for a superior return on your strategic investment.

JMMS tooling engineering includes part design and engineering, part to print dimensional analysis, rapid prototyping for design validation, and support from PPAP through multi-year production. Our goal is to deliver the required part quality, with lower development costs and shorter lead times.

The JMMS tag on the tool means that it will meet your specifications for quality (design, workmanship and materials), cycle time and dimensional stability. We build tooling with warranties up to one million shots, providing that we build to SPI standards.

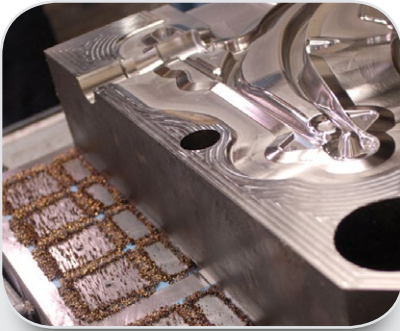
**For more information or to request a quote, contact us at 864.855.0450 or email [info@jmmsinc.com](mailto:info@jmmsinc.com)**



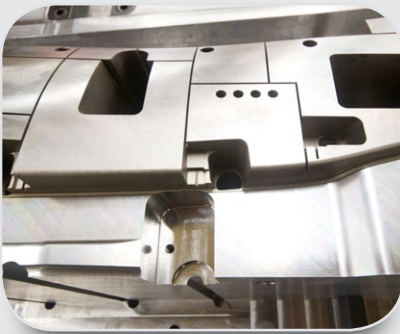
A fixed insert for the core side of a thermo-plastic injection mold, made with MoldMax to ensure localized cooling for deep ribs.

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**ISO 9001:2015 Registered Management System**



*JMMS offers high-quality CNC machining of predesigned forge dies.*



*Core insert with lifter pockets on a thermoplastic injection mold made with MoldMax and P20.*



*Highly engineered thermoplastic aluminum core insert for faster cooling and shorter cycle times.*

## CONCURRENT ENGINEERING AND RAPID PROTOTYPING FOR DESIGN VALIDATION

We recommend early involvement to work with your manufacturing and maintenance engineers on tooling development. Our cradle-to-grave Cimatron 13.0 capabilities support concurrent engineering between our customers and JMMS engineers in Easley, South Carolina and Dong Guan, China. We also offer part design assistance (including Finite Element Analysis) and part-to-print dimensional analysis.

Once we've completed manufacturing feasibility studies and part design enhancements, including reducing heavy wall sections, part weight and material usage, we can move to rapid prototyping for design validation. We work with you side by side in our plant and yours, to review tryout data and capitalize on opportunities to reduce cycle time and improve part quality.

## A PROVEN MATURATION AND OPTIMIZATION PROCESS

JMMS engineers and project managers are veteran toolmakers, so they understand how to combine design and materials for specific performance and production characteristics. Our hybrid tooling, for example, delivers better thermal conductivity with improved tool durability, for increased productivity with no additional preventive maintenance requirements compared to P20 tools.

Once we've completed tryouts and optimization in South Carolina, we can send the tool to the customer plant for PPAP. Our tools' reduced cycle times means they can exceed the capabilities of other molding machines, so we can help with final process adjustments to align our tools with your production.

## ENGINEERING A LOWER COST OF OWNERSHIP

JMMS tooling engineering delivers the highest quality part at the lowest possible price. We do this with industry-specific experience and rigorous QA that supports your strategic quality objectives at every point in the tool's lifespan — from design and development, through prototyping to production tool quantities, operations and maintenance, repair and overhaul.

To learn more about our next generation approach to tooling engineering — and how we've become the preferred tooling supplier for some of the world's leading OEMs, contact us at 864.855.0450 or [info@jmmsinc.com](mailto:info@jmmsinc.com).

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