How Portage Casting & Mold uses Tebis to manage manufacturing complexity

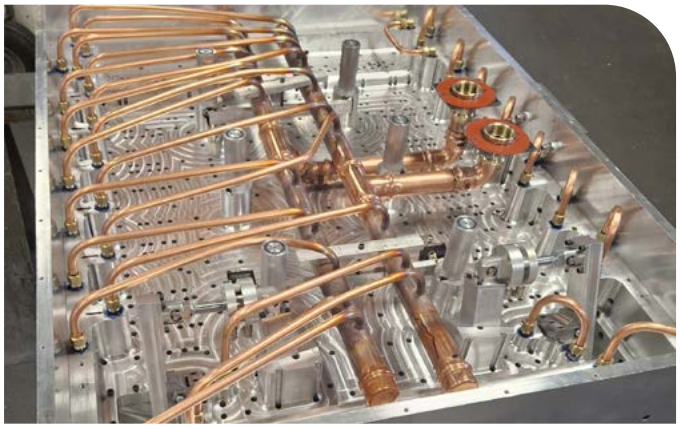
Situation

Portage Casting & Mold (PCM) specializes in highly engineered, one-of-a-kind manufacturing projects, including precision thermoforming castings, molds, tools and dies. With integrated foundry, design, tooling, and machining operations, PCM manages complex projects that demand short lead times, efficiency, accuracy, reliability, and consistency across its operations.

More than 30 years ago, PCM recognized that its existing CAD/CAM systems would not support the company's long-term growth objectives or increasing manufacturing complexity. As customer expectations evolved and project requirements became more demanding, PCM needed a manufacturing platform capable of standardizing processes, reducing programming risk, and supporting future automation initiatives across the organization.

When a trusted manufacturing partner in Germany recommended Tebis, PCM decided to evaluate the software. What began as a CAD/CAM solution quickly became a foundational component of the company's digital manufacturing strategy.





Solution

Unlike traditional CAD/CAM systems primarily focused on NC programming, Tebis provided PCM with a scalable manufacturing platform capable of connecting design, machining, simulation, automation, and process knowledge within a single environment.

While initially incorporating Tebis as a core part of its manufacturing strategy, PCM has expanded its use of Tebis to support increasingly complex and sophisticated work. Today, Tebis enables a connected, digital approach to machining that spans CAD/CAM programming, virtual machine simulation, digital twins, and robotic trimming.

A key advantage for PCM has been the ability to link design, tooling, and machining processes within a single environment, allowing the company to reuse

continued >



SOLUTION *continued*

manufacturing data across multiple stages of production with minimal reprogramming. This reduces manual intervention, improves efficiency, and helps maintain consistency across all departments.

By validating NC programs against digital twins before production, PCM can identify potential issues earlier in the process, reducing programming risk, minimizing machine downtime, and increasing confidence before any chips are cut.

As manufacturing requirements have evolved, PCM has also extended its Tebis environment beyond traditional CNC machining into robotic trimming applications, enabling a consistent programming approach across multiple manufacturing technologies.

RESULTS

By standardizing on Tebis as a single, integrated CAD/CAM environment, PCM has strengthened its ability to manage complex manufacturing work with greater consistency, visibility, and control. This translates into measurable operational and strategic benefits, including:

- **Greater protection against crashes and downtime** by identifying issues before they reach the shop floor
- **More efficient use of programming and machining resources** through data reuse and reduced rework
- **Improved process visibility and shop-floor confidence** with clearer insight into machine motion, setup, and tool access before cutting begins
- **Support for unattended and advanced manufacturing**, enabling more lights-out machining and seamless expansion into robotic trimming
- **Stronger customer responsiveness and competitive differentiation** through more predictable lead times, reliable execution, and earlier design-for-manufacturing input

CONCLUSION

By building its manufacturing processes around Tebis over three decades, Portage Casting & Mold has created a more controlled, scalable, and future ready production environment. From digital twins and collision avoidance to data reuse and robotic trimming, Tebis continues to be a core part of PCM's manufacturing strategy, helping to reduce risk, improve execution, and confidently support growth in increasingly complex manufacturing applications.