

# Enhancing Precision in Manufacturing: CAM-TOOL and Little Lakes Machine & Tool

**LITTLE LAKES**  
**MACHINE & TOOL CO.**



**CAM-TOOL**  
*CAD/CAM System for Molds & Dies*

## Introduction

In the competitive landscape of precision manufacturing, the integration of cutting-edge technology is crucial for maintaining a competitive edge. Little Lakes Machine & Tool Co. (LLMT), a renowned precision machining specialist since 1960, has exemplified this by adopting CAM-TOOL CAD/CAM Software. This case study explores how CAM-TOOL's advanced surface-based CAM calculation engine has revolutionized LLMT's manufacturing process, driving efficiency, precision, and quality to new heights.

# Background

## CAM-TOOL CAD/CAM Software



Developed with precision 3D machining in mind, CAM-TOOL CAD/CAM Software stands out for its exceptional NC data accuracy, primarily due to its advanced surface-based CAM calculation engine. This technological prowess offers numerous benefits over traditional triangulation mesh approaches, including extended cutter lifespan, improved surface quality, and unmatched precision. These advantages are particularly beneficial for industries where the margin for error is minimal.

## Little Lakes Machine & Tool Co. (LLMT)



Founded in Stratford, ON, LLMT has built a reputation for its high precision, specialty machining capabilities. Catering to diverse industries such as nuclear, defense, automotive, alternative energy, and aerospace, LLMT has continually delivered top-quality products with ultra-tight tolerances. The company prides itself on its hard milling, turning, sink and wire EDM, precision grinding, and polishing capabilities. LLMT's dedication to quality is further evidenced by its state-of-the-art in-house QA department, which ensures all products meet stringent customer requirements.

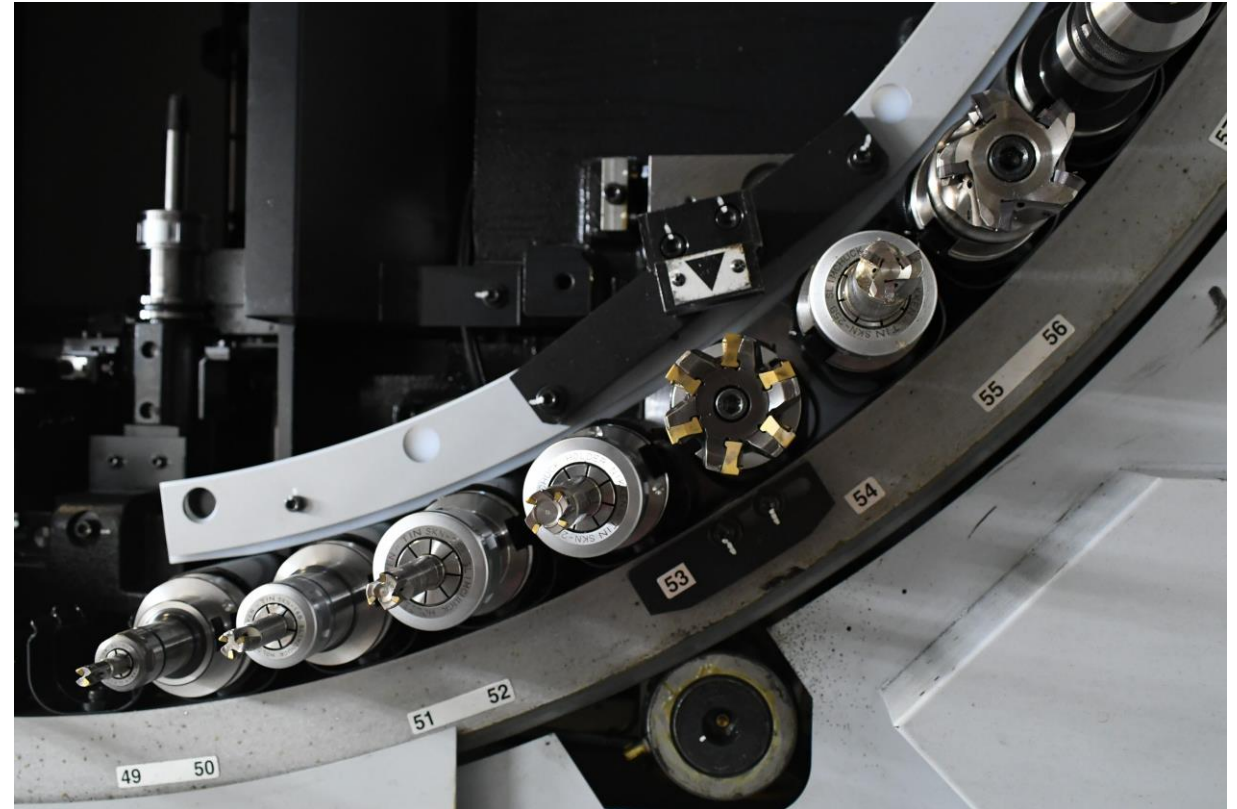
## Challenge

LLMT faced the challenge of further enhancing its manufacturing precision to meet the evolving demands of its customers, particularly for engineering-intensive components and tooling made from a variety of materials, including composites, soft metals, and hardened tool steels. The company needed a solution that could not only handle the complexity of these materials but also maintain cost-effectiveness and efficiency in production.



## Solution

The adoption of CAM-TOOL CAD/CAM Software provided LLMT with the technological edge needed to address these challenges. CAM-TOOL's surface-based CAM calculation engine allowed for the production of exceptionally accurate NC data, which is crucial for machining parts with ultra-tight tolerances and complex geometries.



## Results

The implementation of CAM-TOOL CAD/CAM Software led to significant improvements in LLMT's manufacturing process, including:

- **Enhanced Precision and Quality:** The precision was particularly beneficial for LLMT's hard milling processes, which require milling steel parts with a Rockwell hardness of 60Rc+, where traditional methods such as grinding and sink EDM are either not suitable or too costly.
- **Extended Tool Life:** Optimized tool paths resulted in less wear on cutters, reducing tooling costs 15%
- **Increased Efficiency:** CAM-TOOL's accuracy has lessened the requirement for manual adjustments and rework, and in some cases, completely eliminated them, leading to a streamlined production process and reduced lead times.
- **Expanded Capabilities:** With CAM-TOOL, LLMT was able to tackle more complex and intricate designs, broadening their service offerings to customers.



## Conclusion

The partnership between CAM-TOOL CAD/CAM Software and Little Lakes Machine & Tool Co. highlights the transformative impact of advanced CAM technology in precision manufacturing. By leveraging CAM-TOOL's superior surface-based CAM calculation engine, LLMT has not only enhanced its manufacturing precision and efficiency but has also reinforced its position as a leader in the production of high-precision parts and tooling. This case study underscores the importance of embracing technological innovation to meet the demands of modern manufacturing challenges.

