



Machining

## The Impact of Metalworking Fluid Upgrades: By the Numbers

Brought To You by Master Fluid Solutions | Jan 07, 2025

We all want our shops to run better, but upgrades are expensive, and the budget isn't always there. But what if the math pointed to something as simple as a fluid upgrade giving a fast ROI?

Upgrading to higher-quality cutting fluids is transformational for an entire operation, enhancing productivity and driving significant cost savings. By examining real-world examples from different industries, Master Fluid Solutions will see how these upgrades have boosted efficiency and profitability across different shops.

### Why Metalworking Fluid Quality Matters

Cutting fluids are more than just an operational necessity in machining — they play a critical yet often unsung role in the overall effectiveness of the production process.

**These fluids serve multiple purposes: cooling, lubrication, and chip removal.** Each of these functions is vital to maintaining the integrity of machines and cutting tools, which in turn influence productivity and cost.

For example, a precision stamping company that makes automotive, aerospace, and defense parts **upgraded to a premium metalworking fluid** and experienced an immediate improvement in tool life — from 50 parts per edge to 150 parts per edge in a matter of three days.

This change allowed the company to increase its output and significantly reduce waste, resulting in a noticeable boost in overall productivity.

**The benefits of high-quality cutting fluids are also obvious in other sectors.** In the tool manufacturing industry, for example, a shop that upgraded its cutting fluids experienced lower machine downtime and extended tool life. In fact, the company's cost per part was reduced by 20%, and with less cutting fluid mist, workers experienced a cleaner, more pleasant work environment.

These improvements translated to more efficient operations, lower costs, and better air quality.

A global HVAC industry leader achieved **significant cost savings** by upgrading their coolant. The switch

reduced coolant usage by 50%, cutting the makeup rate from 10 to 5 gallons per day. Tool life extended by 25%, decreasing annual tool changes from 1,083 to 813. The cost per part dropped 8.48%, lowering total annual production costs from \$156,807 to \$142,688. Despite a higher initial cost, the upgrade resulted in \$14,119 in annual savings.

## **Benefits of Metalworking Fluid Upgrades: The Broader Impact**

While the numbers are impressive, the impact of upgrading to higher-quality cutting fluids goes beyond just the financials.

### **Better fluids means safer and happier employees**

Enhanced fluid performance leads to a safer work environment, improved employee satisfaction, and better compliance with industry standards. Employees benefit from reduced exposure to harmful substances, fewer accidents, and less machine downtime, all of which contribute to a more positive and productive workplace culture.

There are also clear sustainability benefits. High-quality metalworking fluids are designed to reduce waste and lower energy consumption. By extending the life of tools and machinery, manufacturers can cut down on waste production and contribute to more sustainable practices.

### **Upgrading cutting fluids delivers substantial long-term ROI**

While the initial testing and conversion may seem challenging, the long-term benefits of reduced operational expenses, improved productivity, and enhanced sustainability far outweigh the upfront costs. Companies that prioritize the quality of their cutting fluids see significant returns in the form of higher efficiency, better product quality, and, ultimately, increased profitability.

### **Maximizing Efficiency With the Right Fluid**

Investing in higher-quality metalworking fluids is a strategically smart decision. The tangible benefits in productivity, cost efficiency, employee satisfaction, and sustainability make a compelling case for manufacturers to consider an upgrade. Choosing the right fluid can lead to transformational changes in how a shop operates, turning cost savings and efficiency gains into a significant competitive advantage.

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