



Xometry | SUPPLIES

10 Tips & Tricks for Improving Machine Shop Efficiency

At Xometry Supplies, our mission is to help your shop be as efficient and profitable as possible. That's why we provide instant quotes and fast shipping on high-quality materials and tools. Visit us at www.xometry.com/supplies and check out our selection of top tooling brands and custom cuts.

But we want to do more than provide you materials—we want to help you run your shop more efficiently. Below are 10 tips for running a more efficient shop. If you have anything you think we should add to this list, please reach out to us at supplies@xometry.com.



1. Learn About Lean Manufacturing Principles

One of the most popular ways to improve almost any manufacturing process is to adopt a [Lean Manufacturing](#) framework. Lean management is all about improving operations continuously (you can always get better!) and reducing waste wherever you find it. Some key concepts from lean manufacturing to keep in mind are:

- **Customer Value:** Define what your customer thinks is most valuable and optimize your operations to deliver on these things. By keeping the customer in mind, you ensure that everything you do will have an impact
- **Flow:** Lean is all about making things flow faster. Every day, look for ways to simplify your procedures, keep your manufacturing floor organized, and have the right people doing the right jobs at the right times.
- **Respect & Empowerment:** Create a culture where every employee—from the highest ranking to the lowest—feels comfortable pointing out opportunities for improvement and is empowered to fix things and make changes.

2. Set Timelines That Are Stretching, But Realistic

We all want to deliver high-quality parts quickly. Sometimes this leads shops to set unrealistic goals and timelines. And missing deadlines or getting behind can have an even worse impact on efficiency than starting off with a longer timeline.

The key to boosting worker productivity is setting clearly defined goals, communicating them clearly, and create an environment where people feel empowered to share ideas that can help you get better, faster.

3. Push Your Machines and Tooling Hard



Today's CNC machines are truly high performance machines. They can handle more throughput and rpms than ever. "CNC machines are some of the most profitable assets your business has, but when they're idle, they're overhead," wrote CNC Cookshop, a key influencer. "Shop after shop has found that the first order of business is to keep the chips flying. The more production the machine is capable of, the more we want to keep it busy making money for the shop."

Many machinists mistake premature tool failure with running parameters that were too aggressive. In fact, not pushing the tool to its full potential can actually cause it to decay at an accelerated rate in certain situations.

If you need more jobs to occupy downtime on your machines, you can apply to become a [Xometry Partner](#) and get high-quality jobs from our job board.

4. Watch for Inefficient Coolant Usage



One primary, but sometimes overlooked expense of a machine shop is coolant. A 55-gallon drum can cost \$2,000 or more. Sometimes, shops are applying too much. Some machines need very little. They may even have a Minimum Quantity Lubricant (MQL) functionality, which applies coolant as an extremely fine mist or aerosol, providing just enough coolant to perform a given operation effectively. Doing this can save thousands of dollars a year.

While drowning a workpiece in coolant, known as a “Flood Coolant,” is sometimes needed—Modern Machine Shop recommends increasing coolant concentration to 18 percent to help you get more tool life in titanium and Inconel—it is sometimes used for jobs that need much less.

5. Avoid Unnecessary Tool Wear

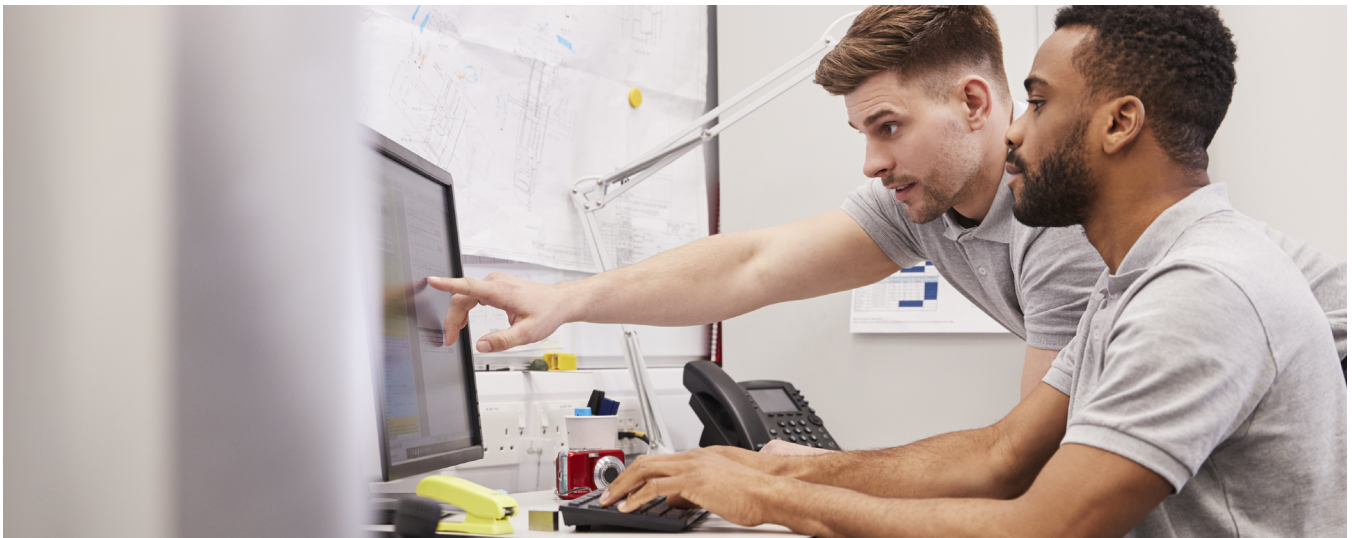
While it’s good to work your machines hard, you will want to be careful to avoid tool wear. Tool wear is the breakdown and gradual decline of a cutting tool due to regular operation. Every tool will experience tool wear at some point in its life, but you can work to limit it. Excessive wear will show inconsistencies and have unwanted effects on your workpiece, so it is important to avoid tool wear in order to achieve optimal end mill performance. Tool wear can also lead to failure, which in turn can lead to serious damage, rework, and scrapped parts.

6. Make Your People More Productive

It's a cliché, but it's true: People are your most important asset. The more you invest in your people, the more they will produce, improving overall shop efficiency. Here are some ideas from our most efficient [Xometry partner shops](#):

- **Develop an apprenticeship program:** Many shops have developed apprenticeship programs within the company, improving employees' skills and keeping them engaged.
- **Simplify documentation:** Have all the needed documentation targeted at the lowest skill level of personnel. This helps everyone learn and prevents errors.
- **Institute employee reviews:** Giving employees a quarterly or annual review helps them learn and shows that you are invested in their professional growth.
- **Build a magnetic culture:** Companies with strong cultures and happy employees have lower turnover, which in the long run may be the biggest efficiency driver of all.

7. Improve Your Floor Management System



A system that manages every customer interaction from quote to cash is the holy grail of efficiency. The good news is that software is getting cheaper every day, so now even the smallest job shop or custom manufacturer can afford an integrated shop floor management system.

Yet many shops still rely primarily on hard copy documents and spreadsheets which aren't connected to what's happening on the shop floor. This slows shops down and increases the odds of errors occurring. Even worse, some shops attempt to hire more people to manage these less efficient processes, which decreases efficiency further. It's a downward spiral—one that no shop wants to be in.

With an integrated shop floor management system, however, shops can:

- Integrate all business information from first contact to payment
- Avoid hiring additional staff to manage inefficient processes
- Allow current staff to become more efficient so they can focus on better serving customers
- Make better business decisions with better data.

8. Put Your Stuff in Clear Containers



It may seem like a little thing, but it's hard to run an organized, efficient shop when you don't know where anything is. And when you put small supplies in opaque containers, you won't be able to find them easily. You can get inexpensive plastic containers online or at big box stores, so it's easy to give this tip a try.

9. Consolidate Your Vendors

Simply put, the more vendors you have, the more time you have to spend managing them. Cutting your list of vendors in half can save you time and money—and generally

make your life easier. You may even be able to save on overhead since less time needs to be spent on the phone or on e-mail communicating with vendors.

Vendor managed inventory systems (VMIs) can help you strengthen your partnership with remaining vendors and improve customer service. Research which ones are best for your shop.

10. Get Your Materials and Tooling From Xometry Supplies



When you order materials and machine tooling from Xometry Supplies, you'll have immediate access to crucial pricing and lead time information that might take you days to gather through other services. Xometry Supplies aims to bring you competitively priced materials with compressed processing times, [including same-day shipping](#) on standard and custom cuts ordered before 12:00 pm EST. This way, you can spend your time making products, not ordering materials and tooling.

Bonus #11: Paint Your Shop Green

The shop environment, especially wall color, has a calming effect that contributes to focus and patience. Mark Rohlf of East Coast Precision Manufacturing in Killingworth, Connecticut did this to improve his team's ability to make tiny, precise parts (Source: [Easy Does It](#))