Skills Gap

# Ask an Expert: Manufacturing and Machine Cutting Tips

Don Sears | Nov 28, 2017

**Expertise matters. We sat down with a metalworking specialist in the field with 30 years of manufacturing experience to get the lowdown on how he helps solve complex cutting problems, unique custom tooling challenges and nagging cost issues.**

Today's manufacturing and metal cutting is complex and has its share of practical challenges. Staying on top of the latest innovations in tooling and machining techniques is a full-time job.

At the same time, there is pressure to keep production on schedule while continuously driving cost out of the shop floor. How do you minimize tool changeovers or reduce the need for machine maintenance to maximize efficiencies in part production? What about working with complex composite materials that don't cut the same as the metal? How do machinists on the floor keep up?

Metalworking expert Tom Prisaznuk shared with us how he helps companies manage the complexities of contemporary manufacturing every day. We also discussed how he adjusts to each customer's machining and metalworking environments to help manufacturers where they are right now. No two companies do it the same. Often the bridge between a vendor or tool maker and his customers, Prisaznuk helps manufacturers find common ground and solutions to technical issues while reducing total cost of ownership in metalworking.

## How did you become a metalworking specialist? What field did you work in, and for how many years?

**Prisaznuk:** I've been in the field of manufacturing for about 30 years. I started at Niagara Cutter in tool design and then advanced into engineering, creating machine tool layouts, programing and fixture design at a high-volume specialty gas valve manufacturer.

I've always focused on process improvements, cost reductions and advanced technologies. This is where my qualifications excelled and allowed me to become a metalworking specialist. Over the years, I have gained knowledge in the most current tooling geometries and advanced machining of aerospace and medical components. And with advanced training and exposure to many customers' real-world working environments, it has helped expand my comprehension in 3D printing and additive. I've also worked around robotics and the integration of machining in cellular manufacturing.

## What are the most common challenges in metalworking for your customers? How do you advise them on how to resolve these issues?

**Prisaznuk:** One of the common themes I hear is the lack of qualified personnel and getting them up to speed in a particular customer's specific manufacturing environment. I typically ask customers what area they believe they are lacking in, such as mills or lathes, and then I work with them to schedule "lunch and learns" with key suppliers to aid in technical advice. I also suggest, if they haven't already, to connect with the local technical colleges and high schools to build a network and a pipeline of future machinists.

Another challenge many customers face is the advancement of materials, especially in the composite styles like glass-filled reinforced plastics, Durafilm and very hard superalloys including Hexoloy.

> **Name:** Tom Prisaznuk
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> **Title:** Metalworking Specialist
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> **Industry Background:** Manufacturing engineering, process improvements, process development, have worked with all material groups including superalloys and composites for the aerospace, medical and firearms industries.
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> **Certifications:** SME Tooling Master Certificate I, Kennametal Advanced Manufacturing, SECO Pro 3 Certification.
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> **Years at MSC:** 8 1/2
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> **Region(s):** Western and central NY
>
> ***Learn more*** about how MSC metalworking specialists can help your business.

## What are some less frequent metalworking problems that can be difficult for your customers to overcome without the right guidance? How do you advise your customers on these issues?

**Prisaznuk:** A less frequent issue is vendor support by region, knowing what representative is covering the account and what each of their strengths are … I strive to network with all local technical representatives from all the tooling and parts suppliers.

## What are some of the most interesting, provocative or emerging trends or approaches in metalworking that could have a major impact on the industry?

**Prisaznuk:** I believe additive manufacturing has advanced faster than the cutting tools. The major tooling companies have done a good job on new substrates, coatings and geometries. The aerospace and medical fields are vastly expanding in the market to reduce costs and increase speed to market by removing a manufacturing step or two.

In additive, you only have to take a look at what's being done in small ***customized medical device and instrument parts*** and what Boeing is doing with ***aircraft parts*** with the 787 Dreamliner to see the evolution in the industry.

## Are there technologies or methods that have impressed you in their ability to increase output, save on material costs or reduce tooling changeovers? Can you cite some examples?

**Prisaznuk:** One of the items that impresses me is machine tool builders that have adapted their equipment as a "done-in-one" process like ***DMG Mori*** has in their equipment. ***Mazak*** and a few others are also fine-tuning their equipment to the changes in the needs of the end users. There is a large need in the medical field for micro tools, and there are many manufacturers that supply micro drills and inserts down to 0.4 mm or smaller (0.0157 inches).

## What is your favorite part of your job as a metalworking specialist?

**Prisaznuk:** The interaction with the customer, the collaboration we are exposed to with them and the ability to work as a team to solve complex machining and manufacturing challenges. The ultimate goals are to create long-term partnerships with them and help to make them continuously competitive.

## What is the most important non-technical aspect of your job that helps you meet or exceed your customers' needs?

**Prisaznuk:** I'd say listening. It is a very important element. Understanding the details of a complex or even minor machining process will determine how quick you can solve the problem. It's vital to know all the moving parts of the project: the material being machined, the equipment, fixturing and the tolerance required. It's also good to discuss with customers how they may be running the components in their specific environment to get their input and really listen to their needs.

## Do you have to show a return on investment for your customers? If so, how do you accomplish it?

**Prisaznuk:** Yes. Our "app opt" tool, short for application optimization, is our method that helps us report the data on the existing process and the new process. I work closely with floor personnel on the actual baseline data so we know what we are comparing against … If there is no baseline already in use, we work with our customers to develop a quantitative method for a machine or tooling output calculation, whether it be the speed and feed of the tool, depth and width of cut, tool life, coolant use and cost of existing tools versus new tooling.

The ultimate result is the customer or owner being satisfied on the results. One company I was able to ***work closely with*** on application optimization was full-service CNC machining outfit Modern-Tec Manufacturing, in Lockport, New York, outside of Buffalo. I worked with a vendor-partner to help slash the cycle time more than 30 percent and reduced the cost of the part more than 300 percent and saved nearly $25,000.

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**If a customer is having an issue with a machine, tool or vendor's approach, how do you help to resolve these issues? Without naming names, feel free to cite an example and how it was resolved.**

**Prisaznuk:** I try to be very aware of the customers' preferences for specific vendors, so I can typically help resolve their problems. I've had instances where there's been a delivery or quality issue with a specialty piece of tooling. I ask for the customers' trust that I will work with any supplier to reconcile a concern.

For example, I currently have a customer that had a custom indexable step tool made. The customer was disappointed in the local vendor support on a different tool. I had confidence in the supplier's tools, so I reassured the customer by asking them to have me work directly with them and the vendor to solve the issue. The customer agreed, and we are working on a test date with the tools.

**Do you receive any additional industry training from vendors or as part of any additional certifications? Can you tell us about any recent training or areas in which you will receive training that help you perform your job?**

**Prisaznuk:** As metalworking specialists, we are required to do continuous professional technical development. I also go above and beyond that with consistent review of trade publications, as well as via networking on LinkedIn and other local manufacturing forums. Recently, I had training with Norton Abrasives in Worcester, Massachusetts. Norton Abrasives is the industry leader in grinding, finishing and close-tolerance manufacturing. I am in many facilities that use Norton product to deliver cost savings on process improvements.

***Where do you get your metalworking guidance and advice?***


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