



WHITE PAPER:

Cutting Tools Go Digital with GTC

The Digital Transformation of the Cutting Tool Industry



- Easily select the right cutting tools,
- Quickly create cutting tool assemblies,
- Improve cutting tools job management and reporting, and
- Simplify the CNC cutting tool workflow

While leading cutting tool brands such as Iscar, Kennametal and Sandvik Coromont are involved with GTC, MachiningCloud is the only brand-neutral GTC app with:

1. The ability to upload any cutting tool catalog in ISO/GTC format. As a result, the cutting tool product data is always up-to-date, available to everyone and typically includes global and local stock availability.
2. With filterable searches, users can download their choice of tooling items and associated files. GTC standards give the results, files and data a uniform format and similar appearance, regardless of the catalog being sourced.
3. The 3D CAD models that come from MachiningCloud are in the ubiquitous STEP format, so they can be used in the shop's software. Most commonly they are needed for simulation of the CNC programs.
4. For tool management and CAM programming the cutting tool descriptive dimensional data is needed. MachiningCloud provides this data in ISO 13399 format using GTC for classifying the tool type. If the shop's software has a cloud connection, this data is automatically fed into the software. Alternately, the CAM programmer types the data manually into the software as is done now from websites and catalogs.
5. MachiningCloud provides the manufacturers' speed and feed recommendations in the MTConnect format. As with the descriptive data, if the cloud connection software exists it is automatically imported otherwise manually typed into the shop software.

Collaboration and Integration

Easy collaboration fills the gaps in a cutting tool workflow. After CAD/CAM programmers identify the right tools and create an assembly, their tooling packages are securely saved on MachiningCloud for future reference and use. Everyone who needs tooling information gains the ability to collaborate:

- Share tooling packages with people anywhere, anytime and even if they don't use the app, tool lists can be downloaded as standard reports.
- Export reports into ERP, MES and other software applications to make a smoother workflow for purchasing, programming, inventory, presetting and machining.
- Create, store and share jobs with the MachiningCloud app. Job reports output to PDF and Excel to help aid a Bill-of-Material which can include 3D tool drawings, spare parts, callouts, as well as descriptive and usage data.



Next Steps

CAD/CAM programmers are only recently hearing about the innovations that are taking place around GTC. As they learn more, they'll find that tool catalog availability and integrations are a major concern. A one-stop-shop destination is what they want, but the industry is still working to get there.



Each cutting tool manufacturer needs to digitize and connect their catalogs with their preferred platforms. Due to the resources required for the conversion, ISO 13399/GTC data is not yet available from every cutting tool manufacturer, but growing demand from customers promotes wider adoption. As more brands digitize and more software integrations are developed, open-platform libraries become more useful.

As word spreads, CAD/CAM programmers are slowly adopting tools that leverage the GTC standard and demanding their suppliers support it. Some brands may feel like the decision is simple, "If it helps our users, it helps us." But, some brands do have reservations, when put in the context of the Mega Trend happening in every aspect of society - education, medicine, transportation and manufacturing - going digital is happening and each company's survival will be based upon their ability to quickly adapt to this new reality.

Benefits for Brands

The perceived risks are understandable concerns, but there are considerable pros for brands beyond fulfilling users' demands, such as:

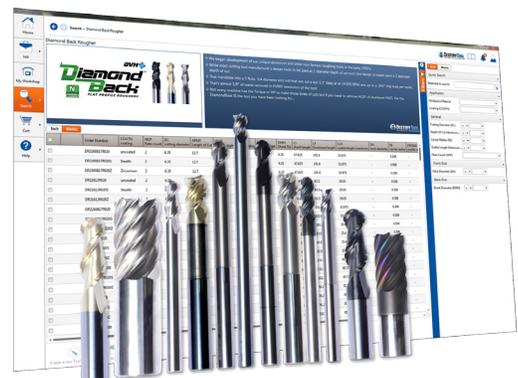
- **Better customer data** – Users can transmit results to brands resulting in better recommendations and product refinements.
- **Increased efficiency** – Once a digital catalog is created, maintaining up-to-date information is much easier.
- **More customers** – 3rd party integrations increase reach, exposure, and shows a cutting tool brand among their competition.
- **Ease of use** – GTC allows cutting tool brands to go digital without the need to create a proprietary system.

While not a pro or a con, there is a need to keep up with the competition. As more cutting tool brands digitize their catalogs in the GTC format and integrate with 3rd parties, those who don't might eventually experience a loss in customers. There is an advantage to converting to GTC sooner than later. Over time, if CAD/CAM programmers prefer to use brand neutral tooling selection software, brands who aren't present will experience a loss of market share as competitors gain new users.

Brands Transitioning to GTC

To help cutting tool brands transition, MachiningCloud provides a free service for converting cutting tool brands' data into ISO/GTC/MTConnect and provide connectivity with shop software through the cloud. This means that the data can be accessed via the internet from a local computer without downloading entire catalogs, which are very large files.

The free service provided by MachiningCloud eliminates the need for a cutting tool manufacturer to wait for a full ISO conversion before stepping into the new digital world of Industry 4.0. As a result, many brands are currently developing their digital catalogs, but announcements will not be made until they are public. If you want to make sure cutting tool data is available on your platform, check with your preferred cutting tool manufacturer to make sure they are on board.





Long Term Industry Benefits of GTC

The benefits of GTC for the workforce should be clear cut at this point; as CAD/CAM programmers develop faster, more efficient methods for cutting tool related process, they are free to innovate elsewhere and focus on higher level tasks, such as training others. Beginning programmers don't even know where to start with cutting tools. Calling manufacturer's support lines, rifling through paper catalogs and websites for the information you need isn't a familiar workflow for newcomers, and it shouldn't have to be. Instead of educating rookie CAD/CAM programmers on unnecessarily cumbersome processes, they can use apps like MachiningCloud that are familiar, easy-to-use and efficient.



A technology first approach is attractive to students who enter manufacturing because it's innovative and creates new opportunities for advancement. Introducing digitization of data at the training level creates a workforce that expects technology to be at the forefront of manufacturing. Data collection and use is taking over every part of manufacturing. As the industry moves forward, the GTC format will play a vital role in bringing CAD/CAM programmers along for the ride.

About MachiningCloud

MachiningCloud is dedicated to leading a digital shift within the discrete manufacturing industry to deliver a new level of operational efficiency. Cloud-based applications, resources, services, knowledge, and digital product data from the world's leading manufacturers of cutting tools, machine tools, workholding and specialty products are providing efficiency improvements by facilitating the flow of data to and from today's data intensive shop-floor.

For cutting tool manufacturers and their customers, the MachiningCloud app is an Industry 4.0 solution delivering up-to-date cutting tool manufacturers' product knowledge and data, fast-tracking cutting tool selection, CNC programming, simulation and shop floor operations. By providing data from the world's leading suppliers, MachiningCloud eliminates the hassles of searching through printed catalogs, telephone calls and multiple websites to find optimal tooling, while also removing the burden of manually typing tooling data into CAD/CAM software.

For more information about MachiningCloud, Smart Manufacturing and Industry 4.0 solutions, please visit www.machiningcloud.com or email info@machiningcloud.com