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Digitalisation for regrinding of tools – Transparency and efficiency courtesy of c-Com

Reconditioning tools represents a significant expense for manufacturing companies. But regrinding and recoating to manufacturer quality are essential to continuously make use of the full potential of the tools. There's nothing especially critical about that. What often is critical about reconditioning, though, is the process of registering and managing the tools at the regrinding company. To create transparency for customers, safeguard a reconditioning service that takes just a few days and take some of the strain off its own employees, MILLER GmbH & Co. KG therefore uses c-Com GmbH for its regrinding management.

MILLER in Altenstadt has digitized the reconditioning of solid carbide tools

Every week, around 6,000 tools arrive at MILLER in Altenstadt, Germany, for regrinding. "We are seeing robust growth of roughly 20% every year in tool reconditioning," says Stephan Loska, Director of Technical Projects and International Service at the manufacturer of solid carbide tools. Consequently, something of a "company within a company" has grown up over the years, dedicated solely to regrinding solid carbide drills and milling cutters. It is important to note that exactly the same machinery, software and grinding wheels are used here as for manufacturing new tools. "That is how we reliably ensure that tools are reconditioned to manufacturer quality," says Loska. There are around 30 employees working on the machines over three shifts, plus another four employees in incoming goods and five in customer service working exclusively on regrinding.

In 2018, the supervisors under Stephan Loska faced the challenge to align a significant upturn in incoming orders with the customer expectation of a few days of run-through time. "It was clear that we would need either to expand our capacity

**MAPAL Präzisionswerkzeuge
Dr. Kress KG**
Postfach 1520 | D-73405 Aalen

Contact:
Andreas Enzenbach

Phone: +49 7361 585-3683
Fax: +49 7361 585-1019
E-mail: presse@mapal.com

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considerably or to refine and simplify our processes,” explains Loska. Incoming goods in particular offered a great deal of potential.

A manual process - time-consuming and prone to mistakes

“We sometimes receive parcels full of various unsorted tools,” explains Tobias Spiegl, who is responsible for customer service at MILLER’s regrinding department.

The only information

about these tools, if there is any at all, is printed on the delivery note. “That meant that our

employees had to sort through all the tools and compare their order numbers, which on tools with small diameters can often be read only with the aid of a magnifying glass, against the items on the delivery note,” says Spiegl. The next item on the agenda was to inspect the tools to determine whether they could be reground.

Criteria that could rule a tool out include its condition, its minimum length or customer specifications such as the maximum number of regrinding operations. Following tool identification, the check Thanks to c-Com and the specifically developed scanner, registering tools at incoming goods is now a much faster process. Measurements are automatically transferred from the Bluetooth-enabled callipers to c-Com at the touch of a button. as to whether the items and quantities match those on the delivery note and the diagnostic process to determine whether the tools can be reground, all this information needed to be entered manually in the ERP system (SAP) so that a service report and order confirmation could be created. “For a delivery of 80 tools, this largely manual process took around two hours,” explained Spiegl. In addition to the amount of time taken, this process was susceptible to typographical and transcription errors.

New process with regrinding management from c-Com

“As a member of the MAPAL Group, we got to know the c-Com GmbH regrinding management system very early on,” recalls Loska. The supervisors quickly established that the module of the c-Com platform visualised the very processes that

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MILLER needed. "We worked closely with the people at c-Com to adapt the module to suit our specific needs", says Loska, "and thus gradually made the entire process digital." The c-Com module for efficient regrinding management went live at the start of 2019.

"Since then, the process for tools from three pilot customers has looked completely different," reports Spiegl, who is clearly delighted with the improvement. Tools still arrive at incoming goods in an unsorted state and with nothing but the information printed on the delivery note. Yet the similarities with the "old" process end there. "Firstly, an employee at incoming goods scans the delivery note. A text recognition system automatically enters all the data in c-Com," explains Spiegl. This applies to the quantities items and customer data. Each tool from the three pilot customers is assigned a data matrix code to make it accurately identifiable.

Service report with one click

Once all tools have been scanned, colour-coding is used to indicate whether all items on the delivery note are fully accounted for. The c-Com module keeps up constant correspondence with SAP, which means that a single mouse click is all it takes to create an automated internal service report. "With c-Com, we have also switched straight to labels," adds Spiegl. In other words, instead of having to deal with multiple sheets of A4 paper for each order, the new c-Com process involves generating a label and affixing it to the relevant box.

When the box reaches the diagnostics area, this label is scanned, and the tools are inspected to determine whether they can be reground. All criteria concerning the tool in question and all exclusion criteria are entered in c-Com. The employee scans the tool again and is shown information about it immediately; for example, that a tool needs to be checked for minimum length. The employee uses a set of callipers linked to c-Com via Bluetooth to measure the tool before transmitting the findings to c-Com at the push of a button. c-Com compares the actual measurement with the intended measurement and indicates whether the tool can in fact be reground. If the employee

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identifies chipping on the cutting edge, for example, he or she selects this on the list of exclusion criteria. Once all tools have been inspected, the order confirmation is issued by a single click. This automatically shows which tools cannot be reground and why.

Impressive time savings through the new process

“If we take the example of the delivery of 80 tools again, the new process means that instead of the previous two hours, we need just 15 minutes,” says Loska – an impressive amount of time saved. The enormous reduction in administrative work is not the only benefit of the process, as it also frees up a lot of capacity for employees. “Employees no longer have to spend hours entering data in SAP. Instead, they can work on much more varied and challenging tasks”, says Loska. That is just one of the reasons that employees at incoming goods are excited about using c-Com for regrinding management. Despite the high level of automation, there is still always the option to intervene in the process manually.

Transparency - a complete overview for the customer

Another benefit offered by the new process with c-Com, and one that Loska deems the most important, is the transparency that it creates for customers. “Customers can use the c-Com service portal at any time to see where each tool is at the moment, how many times each tool has already been reground or why a particular tool can no longer be reground,” he explains. Thanks to c-Com and tool serialisation, customers can see the big picture at all times and trace the history of each tool. That also means that it is possible to determine the best time to order more tools. “We can offer a lot more transparency and be much more open with customers – and that has been very well received,” says Loska. As a result, MILLER is gradually rolling c-Com out across the entire factory for purposes such as transferring measurement data directly from setting fixtures to machinery.

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About c-Com

At c-Com GmbH, it's all about digital services. c-Com was established in 2017 and is part of the global MAPAL Group. The start-up is the company behind c-Com, an open-cloud platform for data management for tools from any manufacturer. There are numerous applications that can be used to enhance the platform.

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Captions:



C-Com's digital regrinding management to record and manage its solid carbide milling cutters and drills. After the tools have been scanned in goods receipt, colour-coding takes place to show whether all items on the digitised delivery note are complete.

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Without c-Com's regrinding management, all tools must be sorted in goods receipt and their material numbers must be compared with the items on the delivery note.



Often the material numbers can only be read using a magnifying glass.

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At just the touch of a button, measurement results are transferred from the Bluetooth caliper to c-Com.



Thanks to c-Com and the specially developed scanner, registering incoming goods is much faster.

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Responsible at MILLER for the new regrinding management process (from left):
Stephan Loska and Tobias Spiegl.

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The DataMatrix codes required for the unique identification of the tools are applied to the tools at MILLER using a laser system.

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Around 6,000 tools are reground to original quality at MILLER every week.

If published, please send a voucher copy
by mail to Patricia Müller
or by e-mail to patricia.mueller@mapal.com.