



Case Study: Cut the scrap! And That's No Bull

.....user case study



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Scrap is waste. For many years, precision manufacturers have been searching for proven methods and technology to reduce scrap. Advanced Green Components (AGC) is a quality manufacturer of forgings and machined rings used in the manufacture of bearings. Keith Kegley, AGC's Senior Production Analyst, realized that due to the sheer volume of production in his facility, one small operator error could result in thousands of parts of scrap in just a few hours before it was ever detected.

In the manufacturing process of quality bearing parts, AGC runs many advanced and highly technical production lines. According to Kegley, 22 out of the 28 lines have 4 CNC machines and the other 6 have 5 CNC machines. Some machines have multiple tools in each operation that perform a unique function in machining the part. As an example, AGC could be running numerous different part numbers on any of the 28 lines. To maximize productivity for a specific part only running on 2 lines, they may decide to add 2 more lines to boost production for that part. This required frequent change-over in production.

A change-over, whether planned or unplanned, is a detailed and sometimes lengthy process. In a change-over, the line operator is required to change the tools in a machine on his/her line according to the engineered specifications for machining the newly assigned part. This process interrupts the work flow and creates many challenges. Challenges such as:

- Lengthy walk to the tool crib to get the necessary tools
- Haphazardly selecting the tools for the part
- Downtime in production
- Inventory Stock-outs
- Potential for incorrect tool selection

Although AGC had security procedures for the tool crib, it wasn't uncommon to find the gate unlocked or not properly secured. Inside the tool crib were

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metal cabinets with drawers containing an assortment of insert boxes, spare parts, and other MRO. Some of the drawers were labeled for easy identification but many were not labeled at all. The operator just grabbed 2 or 3 boxes depending on how many lines he/she was operating hoping one was the correct size. "Retrieving the right tools was more or less a grab-bag style", states Kegley.

After returning to the line, the operator would change out the tools on the machine. Many of these inserts are visibly identical to the human eye but precisely engineered and when used correctly will machine flawless parts. If the wrong size is used, it could result in thousands of bad parts or scrap. Scrapped parts represent a significant amount of raw material and machining time wasted.

What about tool life? AGC uses special cutting tools in manufacturing bearings that go through a reconditioning or regrinding process to prolong use. This regrinding process provides manufacturers significant cost savings. Given the choice of a shiny new tool or a reground one, machine operators would naturally choose the shiny new tool leaving the remaining regrinds pushed to the back of the drawer.

Seeking a cost savings solution for these challenges, AGC looked to Cutting Tools Inc, a Louisville, KY based industrial distributor providing quality products and value-added informational services. Brian Davis, Territory Manager, was confident to recommend a customized solution using CribMaster, an inventory management solution for tools and indirect materials.

The first step was to bring the tools in proximity of the machining lines or otherwise know in the industry as point of use. All the tools and insert boxes previously placed haphazardly in the cabinet drawers were now



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securely housed in these point-of-use devices. The dispensing mechanism in these devices varies from the popular helix-style vending (CribMaster Toolbox) to a secure modular storage system containing drawers and individual storage spaces (CribMaster ToolCube). Both the ToolBox and the ToolCube are just a few devices in a full suite of dispensing devices all driven by CribMaster software.

Operation is simple. The operator scans his/her badge and selects the item on the touch screen. They then are provided access to only the approved quantity of the exact item requested. In the ToolCube, drawers come with moveable dividers and can easily be adjusted to accommodate many different types of inventory. AGC immediately began to see noticeable improvements with this system. Improvements such as:

- Efficient work flow processes
- Reduced downtime
- Accurate inventory replenishment

With the user-friendly and feature-rich capabilities of CribMaster, Kegley had the flexibility to streamline a process for the operator which eliminated any guess work at the time of issue. With minimal training on the software, the operator would go through a simple "drill down" process to get the exact insert assigned to his line. The operator only needed to enter his line number, and through a "drill down" series of steps, he/she would select the part number assigned to the line, the operation in that line, and the slide in the machine on that line. "When the product was issued, it was absolutely, without a doubt, the correct insert to machine that part", boasts Kegley. This eliminated the guess work which drastically reduced scrap.



Additionally, Davis was able to provide a more value-added solution to AGC for managing the reground cutting tools. According to Davis, tool life can be

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significantly extended through a reconditioning or regrinding process. For AGC, the regrinding process can be used on a tool a maximum of three times after which it is no longer used. Each time a tool is returned after regrinding, it is identified in the system as a different version of the same tool, otherwise known as Item Morphing. The software ensures cycling in the regrinds over the new tool usage providing additional costs savings.

With CribMaster's ability to generate custom reports of tool costs and tool usage by line, Kegley has been able to identify potential maintenance issues that otherwise may not be detected by the lines operator. For example, if one line shows higher tool costs over another line, it could be an early warning of a malfunctioning machine in need of repair.

Kegley's 16 years of experience in manufacturing and his 5 years as Senior Production Analyst has given him the knowledge and the skills to understand the importance of driving down tool costs in precision machining environments. Through his efforts, AGC has greatly benefitted from these results and will continue to manufacture quality bearing parts. CribMaster's proven technology in managing indirect material has provided AGC substantial cost savings and more importantly has enabled them to "cut the scrap". And, that's no bull!



AGC's facility located in Winchester, KY