Young Manufacturing Inc.

Young Times

Volume 2
Issue 1

Winter 2008

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Jeff Bontrager and Dewy Lawdermilt (Process Development) inspect a part before production run.

Process Development Team Evolves at YMI

Technology + Customers' Needs = Change

Advancements in manufacturing technology and constantly varying customers' needs have helped determine the future at Young Manufacturing. With the addition of laser cutting equipment in 1999 and the acquisition of CNC press brakes in 2004, YMI experienced a paradigm shift. Parts being manufactured in the past were primarily crafted using traditional tool and die processes. Hard tooling can take days or weeks to create and the cost of the dies is hard to justify for small quantities of parts. The addition of laser cutting equipment and CNC press brakes has provided more efficient means of producing parts. The ability to react quickly, and the customers' demand for shorter lead times, has prompted the company to examine how they had traditionally produced parts.

In order to see success in any area of work there needs to be a good plan. But sometimes recognizing a change in the business environment is just as important. At YMI, seeing customer needs continually changing, coupled with the availability of new technology, encouraged the company to plan in a new direction. This change brought with it some positive results for the customer. "Cost, lead time and quality usually drive the demands of the customer. These demands carried YMI to a new level of thinking that included continuous improvement in everything we do." explained Jon Heffernan. "Without examining the process we could be missing a huge item when it comes to reducing cost."

"With the addition of lasers, we saw that we could produce a part faster, and reduce or eliminate tooling costs, which is good for everyone," explained Dave Young. "The addition of new equipment and skilled personnel helps us use our time and resources more efficiently, and it really helps our customers by putting a quality product in their hands quickly, at a reasonable cost. That's what it's all about."

Over the years YMI used different means of handling the work that came through the door. At one point, employees chose the jobs they wanted to run from a set of clipboards arranged in order of due date. All the customer/job infor-

Process Development Team

Back Row ***Left to Right***

Dean Diers
Mike Schmidt
Dewy Lawdermilt
Jon Heffernan

Front Row ***Left to Right***

Jeff Bontrager
Billy Pederson

Billy Pederson & Jeff Bontrager, take critical measurements of a part with the new Faro Arm purchased this fall.

Billy Pederson, (left) and Jon Heffernan, (right) attended a two day extensive training at Faro Technologies in Orlando, Florida in December of 2007. This training was very valuable for YMI to jumpstart the use of this new tool.

Process Development Team

mation was handwritten in those days. Later, the computer made life easier by allowing for better job tracking and less handwritten paperwork. As the workforce grew, the jobs were assigned and tracked by supervisors to assure their completion.

The addition of CNC equipment required work to be scheduled around specific employees since special training is needed to run those machines. It also became critical to develop a specific system to move the work through the shop. Without a good system, paperwork could be lost or not completed correctly, delaying job completion.

Another issue that came up as the company was growing was the creation of work instructions. Some parts are run quite often and may have a life span of ten years or more. Setting the machines is simple when jobs are routine because of familiarity from repetition. Other parts may only be run every other year (or less often) and small details may be forgotten from run to run. To make consistent runs of parts year after year, instructions need to be complete and simple. Instructions also need to be understandable by employees with no prior experience with the job.

Over the years the responsibility for creating work instructions shifted from the toolmakers who designed the dies to setup personnel in the production department. Neither was fully effective because both were busy trying to keep ahead of the daily schedule and did not always have time to finish recording the proper information, leaving gaps in the information chain.

As the workload increased, while quantities of parts and lead times decreased, even more pressure was put on setup personnel, leaving even less time for paperwork. This led YMI to reconsider the flow of information again and to rethink who should be responsible to follow it through the system.

YMI soon realized that there had to be specific employees who could prepare each part for manufacturing and record the information required to make the part in a manner that allowed for little variance.

Thus the Process Development Team was born. A core group of employees with skills in several areas (tooling, setup, press brake and laser) were assembled together to develop and record the process and information flow of each new job. The Process Development Team is also adept at prototyping and specialty work. This team looks at every new part being produced at YMI carefully. They work directly with the production staff, quality assurance, and the customer to insure the integrity of the part being produced.

Process development begins with a customer print or CAD file to produce an initial sample for approval. After the customer approves the sample, the information required to make the parts is logged into the system and is passed on to quality assurance for identification of "criticals." "Criticals are what we call the dimensions that must be controlled at each production station to ensure good parts consistently produced during each run," explained Dave Young. After quality assurance is finished identifying criticals, the purchasing manager enters material information for the job. Routers can now be cut and the production department is ready to accept a work order to start making parts.

The addition of the Process Development Team has provided a means for YMI to be agile in today's quickly changing manufacturing arena. Young Manufacturing is committed to responding to our customers' needs and making it a top priority. The Process Development Team is now a key factor in the production of all parts at YMI. They can take a part from a simple drawing to a 3D drawing or a prototype piece ready for production.

Young Manufacturing Purchases New Equipment

In November of 2007, Young Manufacturing purchased a FARO arm for the Process Development and Quality Assurance areas. The capabilities of this equipment vary from checking the accuracy of a part to reverse engineering. The reverse engineering function of this tool is crucial in taking the needed measurements from a sample part that has no print or recorded measurements. Process development can use the FARO arm to take the needed measurements from the existing part to create a CAD drawing. From there, the drawing can be used to create an exact replica of the original part, which is easily modified on the computer.

This tool has been a welcome addition to our Process Development and Quality Assurance areas.

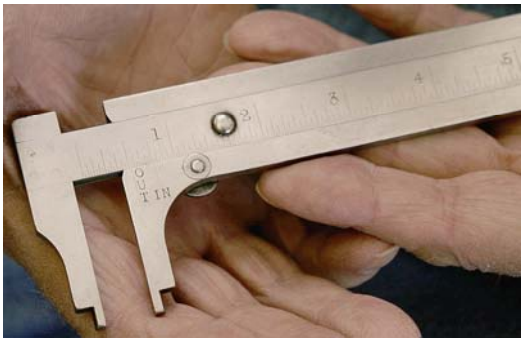
A Toolmakers Bag of Tricks

By Dick Young

On October 26, 1941 I was joined in marriage to my wife, DeLoris. We settled into an apartment in Moorhead, MN and I was employed by a local machine shop geared to serve the general public. On December 7, 1941 the bombing of Pearl Harbor shook the whole world.

The owner of the shop where I worked, Wes Withnell, recognized that there was a lack of qualified machinists available to serve the war effort and thought it wise to convert his shop into a training center for aspiring machine operators.

Though I was still quite young, early training at home and a position at the Grand Forks Foundry helped prepare me to achieve a position as shop foreman. Part of the job required that I teach practical machining techniques to the trainees.



Dick Young Sr. holding the caliper he made in 1941

One young man was learning to sharpen tools and tested them by machining down a fairly large piece of shafting. The work-piece was not for a particular use, but only to practice on. Knowing the shaft was of a high quality material, I stopped him from machining it completely away. I decided to slice the shaft into slabs to be used for other purposes and for some odd reason had a desire to make a slide caliper.

Though I could easily purchase one, the thought of making a caliper stuck in my mind. With no other direct purpose for the slabs I salvaged, I decided to proceed with my plans.

My first task was to machine the material to a uniform thickness, but thin enough so the tool would not be bulky in my pocket. The job of cutting the basic outside shape of the caliper was a relatively simple process and went quickly. Cutting the V-shape of the slide in the main body of the caliper, and the slide itself proved to be a bit more of a challenge. The slide needed to move freely but remain in alignment with the body for the full length of the bearing area. Any "slop", even very slight, may allow the jaws to move out of parallel and give false measurements. Fortunately my care in machining paid off and the caliper had a tight, but freely gliding action. I also included a cam-action thumb lock to maintain a dimension I may check.

The real challenge came in laying out and marking the measuring lines. Those who have used pocket slide calipers know they are capable of inside and outside measuring. To make sure my caliper was effective for both, I had to take great care in laying out the lines in respect to the jaw configuration.

I scribed the lines in the standard design of a ruler. Each inch was divided into 1/32" segments, and the lines varied in length from halves, quarters, eighths, sixteenths and thirty-seconds of an inch for easy identification. To make the lines I held the workpiece in a shaper vice and made a stop block to measure the placement of each line using an inside micrometer. The scribing tool had to be extremely sharp to achieve the thinnest lines possible for accurate measuring. Since the machines I had to use were manual, (no CNC in those days) and every movement of the machine was directed by me, I had plenty of chances to make a mistake that could ruin the work I had previously done.

Thankfully, everything came out right and the caliper was very accurate. It has been one of my most regularly used tools since 1941. At the time of this writing, this caliper has been in existence for 66 years, and has been used in all the shops I have worked in over my life. Though it shows some wear from years of use, it still is a functional tool.

To the tool and die maker, the ability to make special tools adds greatly to our bag of tricks.

Dick Young Sr. Founder of YMI

"Though I could easily purchase one, the thought of making a caliper stuck in my mind."

Dave Young, President YMI

"Though many people are demanding change it seems most don't really comprehend what simple "change" may do for them, or to them".

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This Publication is provided to our customers and friends of Young Mfg. Inc. This publication is intended to help communicate information and services available at YMI. Address questions to Chuck Crummy, Customer Service.

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Making Response to Customers a Top Priority Since 1947

Change is on The Horizon at YMI

By Dave Young

Change seems to be a buzzword these days. Everyone wants change. Politicians promise change every day, but leave out the specifics of how they intend to accomplish the task. Though many people are demanding change it seems most don't really comprehend what simple "change" may do for them, or to them. Not all change is good. Whether global warming is a real threat or not, it is a change (even though we prefer it would not happen) and many people are trying hard to prevent it. When you stop and think about it, doesn't it seem ironic that so much of the world is calling for change to prevent change?

On the other hand, when change comes as a result of a well thought out plan designed to meet specific goals, it can be a benefit to all involved.

YMI is preparing for some future changes, and is in the middle of some changes that are not yet complete. For a quite some time we had our eyes open for a production manager. Our past managers had moved on to other positions in the company and we decided to try a team approach to manage our production department. This worked fairly well, but there are times when decisions made by committee just take too long or become compromises that don't always produce the desired results.

We began to feel a need to once again have a single decision-maker for issues that come up on the shop floor, such as customer schedule changes, press usage, work flow, etc., and started looking for someone to fill that role.

To be effective in the position, the person would need to be familiar with our processes, (laser cutting, stamping, welding, tooling, etc.) and have some experience in supervisory/ management practices. It would also be good to find a person familiar with our customer base and their needs. Pretty big shoes to fill!

The short version of the story is this: Jon Heffernan, our quality assurance manager for several years, stepped forward and requested the challenge of filling the Production Manager position. He comes with the qualifications to meet our desired needs. Jon's former employment involved a management position. He worked in our tool and die department in the past and as our quality manager for several years. Jon is well aquatinted with our customers and their needs, and has been a part of the team effort to develop manufacturing procedures for the company.

I must say that I was skeptical of taking Jon out of the quality assurance position. Not because I was concerned about his credentials, but because he had gained a lot of experience in the quality position and I was worried about affecting the relationships he had developed with so many of our customers. (I have a hard time with change sometimes, too!)

Now I can see that my fears were not justified. Billy Pederson, a member of the Process Development Team, has worked closely with Jon for several months to cross-train on quality related procedures and is easily transitioning into the QA position. As a detail-oriented individual, he holds a high standard for maintaining quality He is very personable and I believe you will enjoy working with him. We applaud Jon and Billy for their willingness to step out of their personal comfort zones.

These are not the only changes that will be coming to YMI. There are many more on the horizon. We'll keep you posted.

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