



# Tooling Tales

### Special Summer 2007 Dates and Facts to Remember:

- Independence Day, July 4th, 2007, falls on a Wednesday.
- Labor Day, 2007, will be observed on Monday, September 3rd.
- On July 4th, 1966, a state record hailstone with the circumference of 12" fell in the Detroit Lakes, MN area.
- The most rain officially recorded in 24 hours in Minnesota was 10.84", July 22, 1972, at Fort Ripley.
- Minnesota has 90,000 miles of shoreline, more than California, Florida, and Hawaii combined.

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## VMC Department Links Programming, Accuracy and Speed

After 3-D CNC, Inc. acquired CAMWorks CNC programming software in 2006, it didn't take long to realize the opportunity the software presented with the potential upgrade of our machining center capabilities. This upgrade was accomplished early in 2007 with the purchase of a Haas VM-2 and a Haas TM-2 vertical machining centers. The two machines were purchased for different reasons, but ultimately together, form a vital link enhancing our CNC programming capability with improved machining accuracy and speed.



A birds eye view of the 3-D CNC, Inc. VMC department. The new Haas VM-2 is in the foreground.

The Haas VM-2 vertical machining center features a 30-hp in-line dual direct drive 12,000-rpm 40-taper spindle. The machine came equipped with a probing option used to efficiently pick-up part features and provide in-process dimensional verifications. In addition to the machine's excellent accuracy and impressive speed, it offers improved machining rigidity allowing for specific hard milling applications.

The Haas TM-2 vertical machining center was purchased to offer ease of operation along with extreme flexibility. It is designed to be used in any of three

modes of operation: manual, combined manual and fully programmable CNC, and fully programmable CNC. The machine is highly accurate in either mode making it the machine of choice over standard tool room mills. Future plans include replacing existing tool room mills at 3-D CNC, Inc. with additional TM-2 machines.

Both machines have enhanced our ability to utilize the technology of solid model programming to efficiently machine close tolerance prototype and small run production parts.

## Project Leader Position Added

In January 2007, 3-D CNC, Inc. added a new project leader. Kevin Remus, a 3-D CNC, Inc. shop floor lead, was promoted to fill the position. Kevin is very excited about the opportunity to utilize his talents in machining and shop floor leadership to fulfill his new role.



Kevin Remus, new Project Leader at 3-D CNC, Inc.

details along with estimating and customer service will be Kevin's primary duties.

Kevin joined 3-D CNC, Inc. in June, 1999. He lives in rural Brownnton, MN with his wife Cindy. They have two adult children.

Keeping orders flowing smoothly through the shop by focusing on

# WEDM Department Adds Agie Machine

Complimenting the Agie, Agiecut Vertex 2F WEDM machine purchased in late 2006, is the Agie, Agiecut Progress V2 WEDM machine acquired in early 2007. The two machines provide 3-D CNC, Inc. with the next generation of high-end WEDM precision technology. The Vertex 2F offers unmatched accuracy and surface finish with exceptional cutting speeds while the Progress V2 offers nearly comparable accuracy and surface finish with double the cutting speed of the Vertex 2F.

The Progress V2 is considered the high-end work horse of the three Charmilles WEDM machines and the two Agie WEDM machines at 3-D CNC, Inc. The machine cuts at an amazing 47 square inches per hour making it ideal for precision production type work. Wire size can go down to .003" diameter. A big time saver for the operator is he/she does not have to change wire guides when switching wire sizes in the machine. Surface finishes in the 5 to 6



The new Agie, Agiecut Progress V2 wire EDM machine.

RMS range can be achieved on a consistent basis.

Important time saving features found on both Agie machines include: A user friendly Windows XP based controller combined with an IPG-V digital power supply, advanced wire off-set which aides in tipping the cutting wire during the cutting process to compensate for irregular material erosion producing precise tolerance and cylindricity control, wire bend control producing smoother radius transitions on smaller part radius cutting, and probing capabilities to probe the top surface of a part to adjust the cutting wire perpendicular to part datum features.

3-D CNC, Inc. can now offer customers a variety of unique high-end precision technology WEDM capabilities. The wire EDM department at 3-D CNC, Inc. runs week days 24-hours per day and offers a week-end shift to minimize lead times.

## Quality Update

3-D CNC, Inc. is currently addressing three important quality documents. The three documents include improving our Nonconforming Product / Process Form, creating a new improved Corrective Action Form, and implementing a new Preventive Action Form.

Improvements to our Nonconforming Product / Process Form will detail specifically if feed back is required back to the originating source of the nonconfor-

*"Quality means doing it right when no one is looking."*  
Henry Ford

mance. In conjunction, a new improved Corrective Action Form will detail a specific plan for corrective action and follow through. Flow charts have been added to both documents to help route the form effectively through the shop.

The newly implemented Preventive Action Form will be used to identify any potential nonconformity before it can occur and determine the need for action to prevent its occurrence.

## Safety Committee Makes Progress

Established in April, 2006, the 3-D CNC, Inc. Safety Committee was formed to ensure a safe working environment for all 3-D CNC employees. The goals of the committee were to implement a formal safety program including creating an employee safety handbook, offer employee safety training, and act as a watchdog for compliance to OSHA standards. The employee safety handbook has been completed and



Brad Quast, Safety Admin.

the group has now transitioned to implementing various safety training opportunities for employees. Periodic shop walk-throughs by the committee help identify potential preventive safety concerns. An employee buddy system has also been implemented to aide in quick building evacuations.

The committee meets monthly.

## Customer Focus: Worldwide Dispensers

Worldwide Dispensers is one of the world's leading manufacturers of high quality, injection molded plastic taps, plastic dispensers and dispensing fittings. With an international reputation for innovation and excellence, Worldwide Dispensers provides liquid dispensing solutions to many of the world's leading companies.

Worldwide Dispensers expertise includes:

- Precision manufacturing (ISO9001:2000 standard)
- Innovative product design and engineering
- World-class testing and quality control
- Extensive product research and development
- Management of complex projects
- Consultancy on market impact of new dispensing techniques

Worldwide dispensers currently employs approximately 250 people and is located in London, England and Lester

Prairie, Minnesota.

The Lester Prairie, Minnesota facility houses a world-class plastic injection molding department along with a high volume assembly automation department. The highly precise manufacturing operation is supported by an in-house tooling department responsible for maintaining the many multi-cavity precision molds. The facility is staffed with engineering and production manufacturing professionals including several toolmakers.

Worldwide Dispensers has developed a unique proprietary mold tooling technique conducive to the liquid dispensing industry. 3-D CNC, Inc. has supported this special mold tooling technique by providing tooling component parts and offering specialized tooling services. Other areas of support include building assembly automation equipment and production machining services.

## Continuous Improvement Team

Completion of the latest Continuous Improvement Team project produced some very productive insight into recent upgrades of the JobBoss manufacturing software system used at 3-D CNC, Inc. The JobBoss system upgrades were reviewed to help streamline and better understand inventory management challenges.

The Team was able to add all active finished parts inventory into the JobBoss system along with adding spe-

*"What we see depends mainly on what we look for."*  
Sir John Lubbock

cific raw stock materials used on a regular basis. Job costing data was also examined and revised to effectively present information for job cost evaluating purposes.

Up next on the Continuous Improvement Team project agenda is a team working to implement manufacturing work flow improvements to achieve 100% on-time delivery. Work is already underway and will include evaluating ways to reduce scrap and rework.

## SolidWorks Training Keeps Orders Moving

To keep orders moving through the shop without costly delays is critical in meeting customer on-time delivery expectations. One delay 3-D CNC, Inc. has targeted to reduce is the issue of part print questions from shop personnel during the manufacturing process. SolidWorks CAD software training through Ridgewater College in Hutchinson, has helped several shop em-



SolidWorks access is possible at computer stations throughout 3-D.

ployees prevent order delays and assist other employees with part geometry questions. Access to SolidWorks geometry files can be accomplished from several computer stations located throughout the shop.

To date, seven 3-D CNC, Inc. employees have completed basic SolidWorks training. Plans are in place to train several more.

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*A Precision Technology Manufacturer of Tooling,  
Prototypes, EDM Services, and Automated  
Machines.*



## **News Briefs**

### **Recent Equipment Acquisitions:**

- Agie, Agiecut Progress V2 — Wire EDM machine.
- Haas, VM 2 — CNC vertical machining center.
- Haas, TM 2 — CNC vertical machining center.
- Roper Whitney, Model 125 — Sheet shear.

### **Employment Anniversaries:**

#### **One Year**

- 1/3/07 — Bob Trettin, 1st Shift Toolmaker
- 3/27/07 — Larry Stoffer, 2nd shift WEDM Operator

#### **Five Year**

- 11/19/006 — Cheryl Helland, Business Manager

### **Ten Year**

- 4/21/07 — Kevin Brecht, 1st shift WEDM Operator
- Congratulations to all!!!

### **AmCon Denver Show:**

3-D CNC, Inc. participated in the Denver American Contract Manufacturing Show (AmCon) held on April 24th and 25th. The two day event featured visitors from the Colorado area working in purchasing, engineering, production, and management. Exhibitors from around the country were present allowing visitors excellent exposure to a variety of contract manufacturing companies.

3-D CNC, Inc. currently has customers in the Colorado area and will use the important sales leads obtained from the event to further expand business in this high technology marketplace.