

WINTER 2010 **Daman** 35 ISSUE

CELEBRATING 34 YEARS OF CONTINUOUS IMPROVEMENT



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Anatomy of collaboration

Collaboration between a supplier and a buyer can turn the most complex project into a learning experience for everyone.

ANY TEACHER KNOWS THAT LEARNING BECOMES MORE EFFECTIVE WHEN LEARNERS PARTICIPATE ACTIVELY IN A PROCESS, RATHER THAN WATCHING PASSIVELY FROM THE SIDELINES.

DAMAN FEATURE

PLENTY OF PEOPLE AT DAMAN WERE ACTIVELY involved in a dynamic learning process last summer to design, manufacture and deliver the largest manifold ever built at Daman.

A long-time customer needed a custom manifold that appeared to fit within Daman's maximum capabilities when originally quoted. But as the customer provided more information about the bill of materials and hydraulic circuitry, the job specifications grew bigger and bigger.

Creative problem-solving leads to solution.

As details of the order circulated through the plant, the challenge was on: Figure out how to design a manifold that stretched the capacities of virtually every facet of Daman's capabilities.

"We had to use some creative problem-solving techniques to make sure we could build it and build it right," explained Gordon Weiler, Daman's National Sales Manager.

A tight delivery schedule added to the complexity of the order. The end-user needed six manifolds for an extrusion press that had to be completed before the end of the year. That gave Daman limited time to design, build and deliver the manifolds.

Daman used its computer numeric control machine (CNC) with its 4,000-pound, horizontal capacity to build the large manifold. Since installing the CNC machine in 2006, Daman had built manifolds that weighed between 2,000 and 3,000 pounds. Operators and engineers knew the machine could handle larger jobs, depending on the manifold layout details. But they also knew a 4,000-pound job would push the machine to its maximum capacity for size and weight.

"Every manifold has its own needs," John Cook, Design Engineer, explained. "But the size and complexity of this one was a new challenge for us."



Cook and a team of design engineers used 3D-design software to build the technical drawings with the layout for the valves, ports and mounting holes. They referred to the customer's circuit schematic to identify port locations and placement of the over 500 holes, including some with large diameters.

At several points during the process, dimensions, data and specifications changed. But everyone knew the manifold had to fit within the machinery's maximum capacity. So the engineers modified the designs to efficiently squeeze all the components and circuitry into a ductile iron block that the CNC could manage. "With routine custom manifold jobs, we may have 200 or 300 holes for the circuitry. This job had nearly twice as many holes," Cook said.

MANIFOLD SPECIFICATIONS

Material:

Ductile iron

block weight, uncut raw

Material:

3,738 pounds weight, finished

block: 3,078 pounds

Finished dimension:

17" x 17" x 49-3/4"

Circuitry:

Approximately 550 holes

Collaborative effort proves essential.

The design process captured more than 360 hours of collaborative design time. Engineers from Daman and the customer methodically worked through problems and issues that emerged during the design process, and they looked for errors in the designs that could result in field failure.

The communication and collaboration paid off. Daman delivered the manifolds on schedule, meeting all the delivery requirements of the end-user. Most important, the manifolds performed in the field exactly as specified. In addition, everyone involved in the process at Daman considered the process a success.

"This was a tremendous learning experience for us," Weiler said. "Now, we're ready to take the next 4,000 pound manifold job."

Baptism by fire – again

AFAMILIAR ADAGE SAYS YOU CANNOT control the events in your life, but you can control how you respond to them. How you respond also determines the outcome.

Daman has responded to harsh economic times by finding ways to remain stable – and competitive in its marketplace. The company has an obvious de-

Systems built on principles of lean manufacturing have allowed Daman to react quickly to downturns in sales. Acting aggressively, the company has lessened some of the impact of the changes to production schedules, and therefore, revenues.

Mischler also points to Daman's people as a source of positive influence. "Our people are performing at a high level – better than ever," he said.

"They are making the right decisions and performing more efficiently," which makes a significant difference in the company's performance.

Opportunities open for improvement.

Efficient performance also has led Daman to identify opportunities for growth and improvement. The company found resources – particularly time – to introduce a new line of flange parts in the fall (see Marketing News, page 6). Managers and team leaders also have found ways to schedule meaningful projects into workdays. A common task



Despite harsh economic times, Daman has been determined to keep a positive focus on its future and use available resources to continue improving key measures of manufacturing performance.

termination to get through current difficult conditions, yet keep a positive focus on its future.

Survival is not the end goal at Daman. "We will come out of this a stronger company," Gordon Weiler, National Sales Manager, said.

Moving forward with the basics.

In the beginning of the downturn, everybody had to adjust, Weiler said. That meant adapting budgets and forecasts, altering production schedules, and aligning workflow.

"We've focused on the basics," said Dave Mischler, Vice President, "and kept a tight watch on expenses."

that has appeared on schedules is to 5S an area. Everyone at Daman knows that means to follow 5S principles of organizational methodology to sort, set in order, shine (clean and calibrate), standardize and sustain everything from tool boxes to tooling systems.

People have been honing their skills to improve performance. The results are evident in process improvements and efficiency rates. Production team leaders point to a significant reduction in scrap material as a sign that they are doing things right. They also have concentrated on identifying opportunities to improve and enhance processes and systems in various areas.

"We are doing things today that will benefit us tomorrow," Weiler explained.

Essence of partnership

IN A PARTNERSHIP, PEOPLE OR GROUPS DEVELOP a cooperative relationship and agree to share responsibility for achieving specific goals.

Daman agreed to support one of its primary vendors in the spirit of partnership, even though the arrangement would provide Daman with little short-term benefit. Over the long term, however, Daman recognized that it would reap other rewards by honoring the partnership.

Purchase orders go online.

The call for this new level of partnership came from Daman's primary metals supplier, Alro Steel Corporation in Michigan.

"We order materials from Alro every day, and we receive their shipments daily," Mike Linsky, Purchasing Manager, explained. "Alro wanted to process our orders more quickly so they could deliver more efficiently."

That meant electronically marrying Daman's highly developed internal purchase order system with Alro's system.

Daman agreed to give Alro real-time access to its schedules as jobs were released. IT specialists from each company worked together to create an online program that protected systems and data, yet allowed a regular transmission of information. After trial tests, Daman took the final step to fully automate the material procurement process in November

Automated system improves efficiency.

Daman's willingness to adopt the electronic delivery method allowed Alro to enhance the speed and efficiency of processing and delivering tons of aluminum to its customer. Previously, Alro dedicated hours each day to manually re-entering

purchase order data received from Daman. The process compromised Alro's scheduling process, oftentimes resulting in overtime hours to fulfill Daman's orders within 24 hours. The manual re-entry process also increased the chance of errors filtering into the work orders, according to Chris Hanley, general manager at Alro's facility in Niles, Mich.

"Manual entry used to take us one or two hours, depending on the volume of data and when the order reached our queue," Hanley said. "Now, we still review orders as they come in, but we no longer have to re-enter all the data Daman has given us."

Alro's computer system automatically grabs or-



ders at regular intervals every day and converts data into its work order format.

Partnership adds value.

Although everyone agrees that Alro has the most to gain from this e-business partnership, Daman clearly recognizes the value of supporting Alro's request to continuously improve its operations.

"We usually have only enough material on the floor at any time for 24 hours of work," Linsky said. "So we place a high degree of trust in Alro to deliver materials on time so our jobs stay on schedule."

In the long term, that mutual level of trust and commitment to continuously improve means both Daman and Alro achieve their goals.

Introducing flanges

FOR YEARS, CUSTOMERS HAVE TOLD us they value our commitment to service, on-time delivery processes and design accuracy. Now we have expanded our offerings to bring those same characteristics to the flange market.

In the fall, we introduced an inventory of over 4,000 flange parts to the fluid power industry. A 124-page catalog, created by Daman's systems administrator, Mark Pettifor, illustrates every standard

type
Daman's Hydraulic
Flange Products Catalog is
available online at
www.daman.com. The
124-page catalog includes over
4,000 flange parts now
available to the fluid
power industry. It is divided
into five categories of hydraulic
flange parts with illustrations
and specification drawings for
easy reference. Intelligent Part
Numbers identify aspects or
features of each part.



available, from clamps and fittings to plates and adaptors. The catalog also highlights our custom capabilities. We rely on our well-known expertise with integrated circuit manifolds to create unique solutions that incorporate relief valves, inline check valves, load sense and counter-balance valves into flange products.

Quick reference features highlight categories, parts.

Customers have let us know that the user-friendly features in the catalog are a welcome change. We have organized our product line into five categories of hydraulic flange parts for easy reference in the catalog. Illustrations and specification drawings of parts throughout the catalog help identify the correct components for each application.

The catalog features our Intelligent Part Number system, which streamlines the inventory and ordering process. Instead of strings of numbers, part numbers carry information pertinent to the various aspects, or features, of the part. For example, a part number for a flange clamp carries information about the flange size, its material, the product type, rating code and mounting information. Part number information is easily identified in the Ordering Information section for each category in the catalog.

Ordering information in the catalog clearly defines the types of mounting kits available for standard flange parts. Customers can specify UNC or metric mounting hardware, or use intelligent part numbers to specify no kit.

Packaging protects precision surfaces.

We also have brought our engineered packaging system to the flange shipping process. By packaging parts separately and securely, we ensure that orders arrive undamaged and free of rust or other debris. This packaging system allows for easy physical inventorying and storage.

Better system connections begin with a standard or custom-design flange part from Daman.

OUTLOOK

DID YOU KNOW

Fluid Power Challenge

By Larry M. Davis

The National Fluid Power Association (NFPA) has given us a wonderful opportunity to impact education in our area and yours. A Canadian technical school teacher who tired of the lack of basic mechanical and hydraulic knowledge among students coming into his program created the Fluid Power Challenge for seventh and eighth graders across Canada. The chal-



lenge – to build machines using predefined kits of wood, paper, syringes and tubing – has proved rich in mechanical and hydraulic content, yet inexpensive.

In 2009, NFPA expanded the competition's reach in the U.S. from one campus to four, including Harper College in Illinois. With the college's proximity to our home base, we decided to urge our local South

Bend Community School system to form teams to participate in the challenge. Four teams of four eighth graders each traveled to Illinois for a challenge workshop in November where they learned how to make a simple lift from supplied materials. The teams returned to their schools with a clear mission – to design and build a machine that would move small wooden cylinders without touching the machine.

On Competition Day in December, the South Bend teams rose to the challenge and scored well. The profound value came from lessons learned by solving a real-world challenge. Additional reward came from the enthusiasm among parents, teachers and students.

Our goal is to host a Fluid Power Challenge in South Bend this year. We challenge you to do the same in your area. To learn more about how to develop a challenge, contact Carrie Schwartz at NFPA or me.

As always, there is more to do.

AME's Manufacturing Excellence Award Winner.

The Association for Manufacturing Excellence recently recognized Daman's journey toward enterprise excellence through continuous improvement over a three-year period by awarding the company its Manufacturing Excellence Award for the Great Lakes Region.

The award recognizes Daman's move to a culture of personal accountability and continuous improvement where teams fully understand their roles and have the tools and systems in place to execute their jobs. Like other regional recipients, Daman continues to strive for "real control over process versus the alternative illusion of control – trying to manage people and outcomes," according to Larry Davis, President.

A place for everything.

Daman employees take 5S seriously – and they take it home. They have applied the organizational methodology to their pantries, cupboards, closets and bedrooms. All of their efforts to sort, set in order, shine (clean and calibrate), standardize and sustain have led to personal records filed and ordered, spice cabinets without duplicates (or triplicates), and closets arranged for putting on and putting away a day's attire. Even the kids have joined the 5S craze, creating labels and pictures to identify where crayons and Spiderman belong. Now, they are considering the next area at home to 5S. The garage, maybe?

Nowhere to hide.

Performance feedback at Daman now comes from every direction. The company started a 360-degree feedback program last fall that has taken the place of traditional performance appraisals.

"We wanted to help our people better understand their strengths and weaknesses," Krysten Shoulders, Human Resources Manager, explained. "Our team-oriented environment demands that we understand how our team members think we are performing, as well as our managers."

Overall, employees have welcomed the feedback from their peers, managers and subordinates. And they have realized feedback will help them perform better.

Spotlight: Biking for angels

On the third Saturday in August, you always know where you can find John Petzold, Machine Operator in Cell C. He is on his Vulcan 1500 Classic with 100 or so other riders for a 60-mile ride to raise money for the Angel of Hope Memorial Garden in Pinhook Park in South Bend, Ind.

John and fellow members of his motorcycle club, The Pack of Indiana, have organized the annual ride since 2000. The one-day event raises an average of \$6,000 each year for the park.

"All the proceeds go to the park," John explained. "We work year-round to get donations for everything from benefit prizes and entertainment to security."

Funds raised help the Angel of Hope Foundation maintain the garden, which is a place of reflection and remembrance for all who have lost a child. The Pack also dedicates funds to purchase memorial bricks for the Path of Lost Dreams in remembrance of children of all ages who have left at too early an age.



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Partners in continuous improvement

When the largest home builder in the country asked for help, Daman gladly opened the doors and welcomed visitors from Pulte Homes, Inc. The group participated in a day-and-a-half workshop at Daman in December to learn firsthand what a continuously improving culture looks like.

Daman has hosted workshops for about 100 of Pulte's managers in the past two years. The participants are part of Pulte's Lean Coaches group and the company's continuous improvement initiative. The coaches draw on best practices across all industries to identify programs that can be shared and adopted across all of Pulte's operations to drive efficiency and consistency.



"We are particularly impressed with Daman's focus on the customer," Chase Kushak, National Director of Supply Chain and

Continuous Improvement at Pulte, explained. "Daman is helping us to understand how to listen to our customers. We want every one of our employees to have that same level of dedication to our customers."

In each workshop held at Daman, continuous improvement coaches participate in a question and answer session with Daman employees and tour the entire facility.

"These site visits help our coaches see the end game," Kushak said. "Our people can hear and see firsthand what they face on their 'continuous improvement' journey." Pulte's coaches also learned about the importance of ongoing communication with employees in their process improvement groups to help break down cultural barriers that can occur with change.

Daman's employees also welcomed the opportunity to share their tales from their ongoing continuous improvement journey. By all accounts, the exercise helps everyone appreciate the successes and refreshes a dedication to look for opportunities to improve the company's focus on customer value and efficiency.