

Diversify and CONQUER

Diversified Chemical Technologies' subsidiaries utilize unique pumps to improve overall performance **By Tom Zuckett**

Founded in 1971 in Detroit as a manufacturer of chemicals used in various industrial and food applications, Diversified Chemical Technologies, Inc., has grown into a global powerhouse that now consists of six closely integrated subsidiaries that operate in Detroit and nearby Ferndale, Michigan, with a client list featuring some of the world's most recognizable and successful brands from the automotive, food and beverage, packaging, electrical and consumer-products industries.

To meet the daily needs of this global client base, Diversified Chemical Technologies (DCT) and its subsidiaries manufacture a diversified array of chemicals, adhesives, polymers, epoxies, lighting solutions and recycled rubber products at its nine manufacturing facilities in the greater Detroit area. To keep an operation this ambitious running and meeting the needs of its clients, DCT relies on thousands of pieces of equipment at its various facilities.

A crucial component in the manufacturing cycles of DCT's subsidiaries are industrial pumps, but the keen eye of a new hire noticed that while the company was usually meeting the manufacturing quotas demanded by its clients, it was not always doing so with pumps that offered the best solutions for time and cost-effectiveness, maintenance needs, operational efficiencies, energy consciousness and, in the end, return on investment.

The Man With The Plan

Almost from the moment he began working at DCT in 2005 as its Corporate

Director of Maintenance, Santos Flores sensed the minor inefficiencies in its operations, including pump sizing and flow rates that would have almost imperceptible effects on a specific operation at any one time, but would result in lost efficiency and revenue in the long run.

"I saw a lot of processes that they had here that I knew could have great improvement, especially with a lot of our fluid-processing, our pumping different things, our metering," said Flores.

In his previous life as a metal-fabrication business owner, Flores had become familiar with the work of American Controls, Inc., Farmington Hills, Mich., a leading distributorship for industrial pumps, meters and accessories. Through the relationship he had built up with Tom Matheson, a Field Specialist with ACI, Flores immediately began forging a plan to makeover DCT's production processes with an eye toward improved operational efficiencies and cost savings in the areas of maintenance and utility expenses.

"I became familiar with ACI and Tom through the different processes that they had that I used to use when I owned my company," said Flores. "I got a lot of suggestions from ACI in the way to improve the processes here."

Finding Solutions

At its facilities, Flores estimates that DCT has as many as 1,000 pumps that are in operation at any one time. With the help of ACI, the journey in replacing those 1,000

pumps with more efficient options began with one step—choosing air-operated double-diaphragm (AODD) pumps from Wilden®, Grand Terrace, Calif., a part of the New York-based Dover Corporation's Pump Solutions Group (PSG™), which was formed in 2008 and is a conglomeration of the industrial pump manufacturers.

Specifically, DCT chose Wilden's Advanced™ lines of metal and plastic AODD pumps that featured Wilden's patented Pro-Flo™ air-distribution system (ADS) to meet its diverse production needs.

"The old pumps we were using were very maintenance-intensive to take apart, put back together and get back online," said Flores. "We had a competitor pump that we almost had daily failures on. Tom's team came in and showed us how the Wilden's worked and how they operated. They were good enough to come in and do little maintenance classes with our people, show them how they operated, how to do preventive maintenance, how to do repairs. We've reduced downtime 50 percent with the Wilden pumps. We get stuff back up and running a lot faster."

According to Matheson, DCT began installing Wilden AODD pumps four years ago with approximately 30 currently in use at various locations. Most of the pumps being used are Wilden Pro-Flo® Series (bolted) pumps from the P200 (one-inch) to P1500

www.finishthompson.com

5 Year
LIMITED WARRANTY
LIFETIME SERVICE

Finish Thompson Pumps
The Engineer's Choice
for aggressive chemical applications.

Drum/Barrel Pumps
Mag Drive
Stainless Steel
Self-Priming
Polypro or PVDF Mag Drive
Ansi Dimensional

Chemical Processing · Plating & Finishing · Anodizing · Mining · Pulp & Paper · Aerospace · Pharmaceutical · Water/Wastewater Treatment

PH 800-934-9384 · Email fti@finishthompson.com

Write In **000**

Valveless
NEW!
Programmable, Digital
Dispensing & Metering
PDS-100

Fluid Metering, Inc.
50th Anniversary
1959 - 2009

Ideal for...
Analytical Lab, Process,
& Production

- Many Dispense & Metering Modes
- Intuitive Set-up & Programming
- Single, Dual Channel & "Pulseless Flow"
- Easy Integration with Process Controls
- Dispense from 500 nL

FMI Pumps feature:
One Moving Part
Ceramic Internals
1% Accuracy

CE US

FMI FLUID METERING, INC.
516-922-6050 / 800-223-3388
or visit us at www.fmipump.com

Write In **000**

8 pumps and seals

(three-inch) sizes with flow rates from 56 to 260 gpm.

Pro-Flo® Series pumps ensure total product containment since they are bolted together and won't leak. This design makes them ideal for pumping raw materials from holding tanks to batch tanks, and pumping finished products into totes, drums, five-gallon pails and, in some cases, tanker trucks, chores that are performed on a continual basis at DCT's facilities. The Pro-Flo® Series' metal or



plastic construction also gives them the versatility to handle products with a wide range of characteristics, while a variety of elastomer options, including Teflon® PTFE, allow them to conquer abrasion, temperature and chemical compatibility concerns. Advanced™ metal pumps are offered in die-cast aluminum, stainless steel and alloy C, while the plastic pumps are available in polypropylene, PVDF and Teflon® PFA.

DCT also benefits from the pumps' Pro-Flo™ ADS operation. The Pro-Flo™ ADS incorporates only three moving parts: an unbalanced air-valve spool, a pilot spool and the main shaft/diaphragm assembly. This design gives the pumps an enviable operating cycle where pressure in the pump is directed in a way that allows the liquid to be pumped in the most efficient manner possible.

"Pro-Flo® ADS is a big deal," said Flores. "It cuts the time down in half when you have to do a rebuild because there's only one moving part, really simple. You put it back together again, put it back online—there's no issues, no leaks. With the competitors' pumps, everything had to be absolutely perfect. You're losing time for repairs, it takes time to put the pump back in place. That was the big thing we wanted to eliminate. As far as the time we save in labor and loss of product, the pumps completely make up the cost."

In fact, Flores estimates that his maintenance staff, which includes full-time employees at each facility working three eight-hour shifts, as well as a staff at a main maintenance crib where fabricating duties and equipment rebuilds are done, is now spending only 25 percent of its time on maintenance in the areas where the Wilden pumps are used, as opposed to the 75 percent of the time that was spent on maintenance with the competitors' pumps.

"Now, it's just normal preventive maintenance that we do—we have not had a failure on a Wilden pump to date," said Flores. "For preventive maintenance we check fittings, check for leaks on the pump, check the daily operation on it. Some PMs come up annually, weekly, depending on which process it is. The only maintenance that we are doing on those pumps is just the preventive maintenance that is recommended by the manufacturer. We haven't had any failures after having almost daily failures on some pumps in the past."

Jack Of All Trades

This pump reliability and dependability is paramount to the success of DCT's operations because it's impossible to overstate how varied its operations are. Flores points to two examples that help quantify the versatility that the Wilden pumps offer.

The first involves working with a "rubinate" at

DCT's Recycled Polymeric Materials facility. Rubinates, which are combined with polyals to make recycled-rubber seals for use in the automotive products industry, are tricky things to handle in that once they come into contact with air, they immediately solidify. This property means that they have to be handled by pumps that will not develop leaks, which falls right into the sweet spot of Wilden's Pro-Flo® Series pumps.

"If there's a little leak whatsoever and the rubinate solidifies, that pump seizes up and creates a lot of problems, plus it's just a big mess," said Flores. "Now with the Wildens, we haven't had any leaks or problems like that at all and our downtime is cut tremendously."

Secondly, Flores points out a finished product that is manufactured at DCT's Coat-It facility in Ferndale. The polymeric material known as 60B4 is used in a wide range of industries, including automotive, furniture, aerospace and electronics. It presents its own set of handling problems in that it is a very viscous and very delicate material, meaning that it can sheer if it is run through the wrong pump or at the wrong speeds.

"With the Wildens, it just doesn't do that; it's almost like a free-flowing movement through the pump so it isn't creating the friction or the heat that some of the other



Feeding Difficult Materials:
ActiFlow™ Intelligently
 Detects, Destroys
 Bridges and Ratholes

New!

- Monitors Feeder for the First Sign of a Flow Problem
- Computes and Applies Optimized Vibration to Destroy Bridges and Ratholes
- External Mounting Speeds Hopper Cleaning
- No Product Contact or Internal Obstructions
- Eliminates Mechanical or Flexible Side Wall Agitators and Aeration Pads

One Click Gets It All!
 Download your free Hopper/Bin Systems Info-Pak today.

Info-Paks.com
 Other Subjects Also Available

K-TRON
Feeder Premier
 K-TRON PROCESS GROUP

Pneumatic Loaders & Receivers:
Handle a Wide Range of Materials, from Easy to Hard to Flow

- Rugged, Modular Design
- Interchangeable Components
- Quick-Connect Clamps for Easy Separation
- Easy and Efficient Operation
- SS, Aluminum or Carbon Steel
- Covers Conveying Rates up to 15,000 lb/hr (6,800 kg/hr)
- Complete Systems

One Click Gets It All!
 Download your free Loaders & Receivers Info-Pak today.

Info-Paks.com
 Other Subjects Also Available

K-TRON
Feeder Premier
 K-TRON PROCESS GROUP

pumps in the past have done, which would scrap the entire batch," explained Flores. "You can make the whole finished product and when it's time for the last pumping step to put the product in a tote or a drum or whatever the container may be, with Wilden, at the end, we're confident that we know that if we pump it, it won't add the heat or the sheering effect. That saves us a ton of money."

And That's Not All

In addition to the benefits realized with the switch to Wilden AODD pumps, DCT is also reaping the benefits of using the pumping technology offered by another member of the PSG™—Griswold Pump Company of Grand Terrace, Calif. Griswold®'s 811 ANSI Series of centrifugal pump was the perfect solution to an on-going problem that Flores was having within the air-compressor system at DCT's Adhesives Systems facility. The environment at Adhesives Systems, where adhesives for consumer and industrial packaging are produced, is harsh, especially in the area where hot-melt adhesive is made. Therefore, keeping the facility's air-compressor system properly cooled with a steadily pumped stream of water is a demanding, 24-hour job, which was made less demanding when Flores replaced the competitors' centrifugal pump that had been used with a Griswold 811.

"There were a lot of problems in that area in the

Write In **000**

past,” Flores said. “It’s a harsh environment, there’s a lot of powders in the air, and also little fines and silts that get into the water system. When we had the competitors’ pump, when that compressor would die off, even though there was a back-up compressor, that compressor doesn’t keep us at 100 percent capacity. We would bring in a rental sometimes and that just got very, very expensive, let alone that we could miss shipments, and we don’t like doing that.

“Ever since we have put in the Griswold we have had no problems. That air compressor runs all of the pumps, all of the actuated valves, is used in the hot-melt process with three different reactors, used for the pelletizer; if that compressor is not running correctly, we are in deep trouble. For example, for me to rent a compressor would cost \$2,000 a month, and that’s savings right off the bat because I don’t have to do that any longer. We also experience savings from not having to shut the process down, or missing shipments if I can’t make my product,” Flores concluded.

The Griswold 811 ANSI Series pump has performed so far beyond Flores’ expectations that he’s anticipating he’ll place an order for three additional 811 pumps in the future.

Conclusion

Being the manager of an operation as expansive and diverse as DCT’s is a big task. Not only does it involve managing a lot of moving parts, in these difficult economic times, every penny saved is one to be cherished. That’s why operational inefficiencies are no longer tolerated, no matter how minuscule they may seem. When he arrived at Diversified Chemical Technologies four years ago, Santos Flores put into place a plan to streamline the operations at all of the company’s facilities and to eliminate waste of any kind—be it time, product, environmental or monetary.



In utilizing the pumping technologies from Wilden and Griswold, Flores has found willing partners in the effort to make DCT as lean and efficient as possible, while also continuing to meet the high expectations of its client base. To that end, Flores is prepared not to rest until every operation has best-in-class equipment at its disposal.

“We really have thousands of pumps here, tons of applications, and we want to make sure we go through them correctly, methodically, so we can fix them once then move on to the next project,” he said. “That’s why I brought Tom and ACI in

here, to make sure we size the pumps correctly and have the right one for the product. The ones that we’re losing the most money on are top priority and then we’ll go right down the list. The Wilden and Griswold pumps have made my job a lot easier.”

Tom Zuckett is a Regional Manager for Pump Solutions Group (PSG™), Redlands, Calif. He can be reached at 330-923-2848 or Tom.Zuckett@pumpsg.com. PSG is comprised

of six leading pump companies—Wilden®, Blackmer®, Griswold®, Neptune®, Almatec® and Mouvex®. You can find more information on PSG at www.pumpsg.com.

Pump Solutions Group

www.pumpsg.com

Write In **500**

Guess which ANSI pump engineers prefer?



Right. Goulds voted most reliable.

In a recent survey by *Processing* magazine, respondents rated ITT Goulds highest for overall preference and reliability by almost two to one over the closest competitor. And now that our entire family of ANSI process pumps has been upgraded with *i-FRAME*™ technology, they just got even better. Including, as standard features, *i-ALERT*™ intelligent monitoring, plus robust enhancements in bearing technology, oil sump design, and stainless steel bearing isolators. For more information, visit gouldspumps.com/i-frame, or call 1-800-734-7867. **Think about ITT.**

Goulds *i-FRAME*



ITT

Engineered for life

Write In **000**