



American Castings Pours Again

American Cast Iron Pipe Co. purchased an undercapitalized facility in 2003 and is quickly turning it into a world-class iron metalcaster.

A MODERN CASTING Staff Report

David Nieto started working for American Castings, Pryor, Okla., in the least enviable position in a metalcasting facility. He was a manual grinder, spending his days in the noisiest part of the plant passing castings under a relentlessly turning wheel. For safety reasons, he was trapped in a full air-respirator suit.

On an October day last year, he could be found strolling languidly around the finishing room after nearly everyone else had gone home. It was quiet, and he was dressed in the standard company uniform—maybe not the most comfortable thing in his wardrobe, but respirator-free.

Nieto is now an integral part of American Castings' newly installed automatic grinding operations. As a programmer, he "writes" the program for the robotic grinding stations, guiding them along the required path before setting them loose to do the job of two men.

Nieto is a success story, but it hasn't been easy for the metalcasting facility as a whole to forget its past. Five years ago, American Castings lacked not only the automatic grinding system that Nieto now works on, but casting production altogether. The facility had just been purchased by American Cast Iron Pipe Co. (ACIPCO), Birmingham, Ala., after having

been closed by previous owners.

Since those challenging times, an influx of capital and technical resources brought in by the new owners has put the hulking 415,000-sq.-ft plant on track to becoming a profitable producer of large gray and ductile iron commercial castings.

Rule by the Golden Rule

Prior to ACIPCO entering the picture, American Castings was shut down in November 2001. Another management team reopened the plant in May 2002 but for a variety of reasons the monstrous plant never lived up to the potential ACIPCO sees in it.

"ACIPCO [gave] us support for the capital projects that hadn't been done," said Jack Smith, vice president and director of manufacturing. "That, coupled with the management culture that ACIPCO brings, focused us on improving management-worker relations, with safety as a core value."

If you ask an American Castings employee these days—they're now easier to find, having lowered their collective rate of absenteeism from 12% to about 3%—infusing the business with much needed capital was only a small part of the story. The bigger part is the hard work and positive example set by the new management.

"The main change to get into alignment with ACIPCO's culture was to value our employees and allow them to speak directly to any level of management," Smith said. "ACIPCO was founded on the principle of the golden rule. We try

American Castings, Pryor, Oklahoma



Casting Process: Green sand and nobake.
Alloys Cast: Ductile and gray iron.
Casting Size: 100-3,500 lbs.
Plant Capacity: 50,000 tons shipped per year.
Facility Size: 415,000 sq. ft.
Value Added: Painting.

to treat our employees how we would like to be treated.”

That management practice also has improved American Castings’ turnover rate.

“The turnover rate was very high [when ACIPCO bought the plant], and we’re working on that,” said Jim Diel, an assistant plant manager and metalcasting veteran the company brought in to manage employees, scrap and casting output.

Equipment Disconnect

Above all else, ACIPCO purchased American Castings to build a top notch supplier of green sand and nobake ferrous castings. After four years of aggressive marketing and upgrades totaling approximately \$14 million, that goal has been reached.

On the floor of the plant, it’s clear American Castings has become an upper echelon metalcaster. The facility has significantly improved its overall quality, on-time delivery, scrap rate and tolerances. It now produces the mold hardness to produce castings consistently on par with its customers’ demands, and it has not missed a delivery date in 19 months. “We’re 100% on-time to customers,” said Mike Fuller, plant manager.

The biggest obstacle to getting to that point was the sand system inherited at American Castings. It wasn’t capable of maintaining the temperature needed to produce the required mold quality, and the products the facility produced consistently fell below customers’ specifications. Despite extensively improving process controls, plant engineers continually

turned up excessively hot and dry green sand mixtures that resulted in unacceptable internal rejection levels, as well as excessive cleaning room efforts.

The answer was for the plant to make its largest single capital investment in a 200-ton/hour sand cooler, which hit the budget rolls at \$2 million. The positive results were immediate. “Our green sand process controls have been improved dramatically,” Smith said.

The state-of-the-art automated nobake molding side of the building also has been updated, with the installation of a massive manipulator, which plucks castings from shakeout after they have cooled, a new sand conveyor and a mixer that incorporates a complete heating and cooling system.

More than half of the castings in the building, whether they come off the green sand or nobake line, will benefit from two new robotic finishing cells (a third is on order). “Our grinding time is way down, reduced by nearly 60%,” Fuller said.

In order to improve its new product launch velocity and expedite sample approvals, American has upgraded its product engineering team in terms of personnel and equipment to include solid modeling capabilities.

At 415,000 sq. ft., American isn’t your average jobbing metalcasting facility. The plant has multiple levels and a labyrinthine layout that could be the setting for a modern video game. So when ACIPCO came into the picture, the sprawling space needed a number of infrastructure improvements. Just to put the building into position to support its production schedule, investments have been made to replace or refurbish nearly all of its air compressors, install a new air drier, rebuild most of the bag-houses and the wet scrubbers, extensively rework the cranes, update the hydraulic system in the melt shop, and refurbish the pre-heater.

“We budget upgrades every year, and ACIPCO has supported these upgrades and improvements 110%,” Fuller said. “We’ve made a lot of infrastructure changes. The investments have reduced our operating costs and made us more competitive.”

All Customers Are Created Equal

American Castings hasn’t reached all



American Castings removed the smaller automatic molding line previous owners had utilized to focus on large ferrous jobs.



Visit www.moderncasting.com for an expanded American Castings photo gallery.

its lofty goals. It is still building its customer list and looking to diversify from the construction and agriculture markets that have been a natural fit for it.

Originally built as a short run, large size iron casting plant, previous owners attempted a variety of parts and alloys, even attempting to produce automotive parts. According to Ron Crawford, director of sales and marketing for American Castings, a smaller automatic molding line was shut down and removed. That line was operating at molding rates far below its competition, producing 100 molds per hour in an effort to compete with facilities that could crank out 300.

So in addition to improving its human resources and upgrading the plant through capital investments, American Castings has focused its product mix, pouring only the large ductile and gray iron castings for which it was originally purchased by ACIPCO.

The available space created by removing the smaller molding line allows the metalcasting facility to focus on its core competency and develop new business. While the metalcasting facility has proven it can provide castings to the ACIPCO family of companies, the plant is not and has no plans to ever be a captive producer for the cast iron pipe conglomerate.

"We forecast our sales annually for each customer and would not consider missing a delivery of construction or agriculture castings to make waterworks castings any more than we would miss delivery dates on a waterworks casting to make castings for another customer," Crawford said. "We treat the ACIPCO family just like all of our customers." Ninety percent of the castings produced at American Castings go to commercial customers other than ACIPCO. It's anything but a captive facility; it's a true commercial casting facility, according to Crawford.

A Work in Progress

To continue developing the customer list that will make American Castings more profitable on its own merits, the metalcaster employs an extensive sales team, using both inside sales administration, direct outside salesmen and independent outside sales representa-



American Castings plans to increase its already large flask size in the near future.

tives around the country.

According to Crawford, the plant in 2008 will find itself in its most profitable position since it was purchased by ACIPCO. The increases in efficiency and scrap reduction related to capital improvements, as well as the manufacturing teams' drive to improve quality, are the primary

causes of the improvement. However, the increased value is partly due to international exchange rates beginning to shift in the favor of the U.S. metalcasters, as ACIPCO management predicted when they bought the plant.

The plant's customer list, which includes companies in the construction, material handling, agriculture, waterworks, mining, heavy truck (axles), machine tool, energy, and natural gas and oil component markets, continues to grow as parts come straggling back from overseas.

"We're trying to start 12-15 new products, in addition to the 70 new starts we launched last year," Smith said.

American Castings already has increased its capacity, and the management team is looking to the future with optimism. The plant has the local energy resources and room needed to expand as sales increase. According to Smith, the existing plant footprint offers ample space for two impending expansions to

increase the flask size of its molding lines, and the company owns 90 acres surrounding the plant.

"I don't believe any large scale building additions are going to be necessary for at least the next couple years," Smith said. "The planning, the thought and the effort that went into [the existing building] were pretty impressive." **MC**



American Castings' new automated grinding cells have reduced grinding time by nearly 60%.