
PED MANUFACTURING ACHIEVES TOP SAFETY RECORD AND MORE

What does a growing, safety conscience manufacturing company do once they've just become the first metals foundry named to an elite list of Oregon employers with outstanding safety programs? If you're PED Manufacturing you do more. You seek further opportunities for safety and ergonomic improvements and you take immediate action.

Started in 1969, PED was a one-customer foundry producing stainless steel castings for Gerber Legendary blades. In 1972, a 6,000 square foot facility was constructed on the land at the company's present location in Oregon City, Oregon. By 1974 the forest product business grew rapidly, amounting to between 70-80 percent of total sales. In 1979, the facility was expanded to accommodate additional growth in the pump and compressor, commercial and military application markets with sales growing to \$4.6 million by 1986.

In 1992, PED began casting medical implants and quickly became a world leader in supplying implants to the medical industry. As a result of the increased medical demand, in 1994 the company expanded its facility to its current size of 80,000 square feet on seven acres with 175 employees and sales of \$23 million per year.

The company, in 1997, became part of DONCASTERS, a United Kingdom company that forms one of the largest casting, forging, and machining groups in the world. By 2000 PED was ISO 9002 certified with medical implants accounting for the majority of the current business while the pump, compressor components, industrial gas turbine and petrochemical markets growth continued.

In April, 2001 when Oregon OSHA added PED to fifty-four other companies approved as SHARP (Safety and Health Achievement Recognition Program) employers, the company was already underway on a new safety project that would better protect workers at its cutoff saw operations.

Cutting exotic alloy medical castings from molds meant manually pushing castings into vertical friction band saws running at 15,000 feet per minute. This is a dangerous operation directly exposing employees to various ergonomic, safety and environmental hazards including; metal dust, noise, strains, and awkward exposure of hands and arms to the cutoff blade.

Manufacturing and maintenance engineering had previously installed numerous safety and mechanical improvements to the existing band saw equipment; but it became evident that something more would be required. Here was a priority opportunity to significantly improve safety; but one that would be a difficult challenge and require a complete custom equipment solution.

At about the same time that various design and new equipment options were being explored, Cindy Overstreet, the company's safety environmental engineer, heard about the Oregon OSHA (OR-OSHA) Worksite Redesign program at an ergonomic training seminar sponsored by Clackamas Community College. Part of that seminar included an explanation of Oregon OSHA's Worksite Redesign program presented by Pat Kraft,

Manufacturing Consultant for the Oregon Manufacturing Extension Partnership (OMEP). The qualifications to be eligible to participate in the worksite redesign program appeared to apply to PED, so Cindy reported her findings back to PED Management. She initially had three areas in mind for ergonomic assistance. The cutoff saw operation was number one on the list.

Based on the overall experience and expertise that OMEP had in managing these types of development projects, PED elected to partner with OMEP. With assistance from OMEP's Manufacturing Consultants, Pat Kraft and Mark Biederbeck, PED applied for and received a grant from the Oregon Department of Consumer and Business Services to begin engineering, fabricating, and installing a custom automated cutoff system. The goal was to improve safety and ergonomics for the saw operator by improving dust extraction and exposure, reducing the physical force required to do their job and reducing noise levels. In addition, productivity should be matched or improved. Recognizing that this project would require additional funding beyond the total grant fund of \$150,000, PED provided a 40% share of matching funds.

After completion of an ergonomics baseline assessment, several concept meetings were held to evaluate machinery equipment manufacturers. PED selected Cranston Machinery Company, Inc. to design and fabricate the new saw. Cranston is highly respected for their design and manufacturing of custom and special purpose equipment. Additionally, Cranston impressed the team with their overall understanding of the cutoff process and how best to engineer and utilize state-of-the-art components in the design of their equipment.

A project timeline was developed with Cranston to include project engineering, mechanical engineering, electrical engineering, manufacturing, testing and delivery. The eleven month project began in January 2001 and successfully completed in November 2001. The new saw was completely enclosed for operator protection from the cutoff blade, dust, and noise. It was also ergonomically designed and fully automated. Instead of production workers having to push metal castings into a saw blade, they now simply open a door, load a casting mold, laser-sight the mold position, close the door and select a numbered cutoff program from the touch-screen operator interface. The saw does the rest.

A custom-designed, 4-jaw hydraulic clamp picks up the casting mold and, while turning it, feeds it into a 24" rotating abrasive cutoff wheel. As individual castings are removed from the mold, they fall onto an 8' conveyor that delivers them to a tray ready for further processing.

Subsequent ergonomic, health, safety, and environmental evaluations have determined that the new saw has significantly reduced the risk of employee injury. The fully enclosed machine, interior sound absorption panels, ventilation extraction to the dust collection system, and the ergonomic design for loading and unloading have enhanced worker health and safety. Additionally, other operational and production efficiencies now allow workers to rotate to, and learn other skilled jobs in the production area. The saw also became part of a new lean manufacturing cell that has significantly reduced the processing time for these medical castings.

Needless to say, PED Management is extremely pleased with the overall results of this project. By partnering and working as a team with OR-OSHA, OMEP and Cranston Machinery Company; PED Manufacturing has done more to improve the health and safety of their employees. PED looks forward to, and encourages other organizations to seek further opportunities for safety improvements using this same type of partnership.

Information on improving safety and health in your workplace can be obtained from Oregon OSHA (www.orosha.org).
Phone: 503/378-3273.
Phone: 800/922-2689.
Website: [http:// www.cbs.state.or.us/external/osha/](http://www.cbs.state.or.us/external/osha/)

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