



Dosatron dispensers provide on-demand, consistent coolant dilution, compensating for changes in water pressure and flow.

Lean and efficient are the buzzwords in today's global manufacturing environment. One can find daily examples of products and jobs being outsourced overseas due to lower cost production facilities. Such a competitive arena requires forward thinking American companies to continually review their operations, seeking better methods for quality and cost improvements. To attain that goal, certain organizations have had the foresight to partner with vendors that share a similar vision and possess the necessary expertise.

US Manufacturing Corporation in Warren, Mich., is an example of one of those companies constantly re-examining how they can make changes to increase efficiency and cost effectiveness. The company was founded by Joseph A. Simon in 1964, and is continued on today by his successors, sons Brian Simon and Joe Simon. US Manufacturing Corporation is a leading manufacturer of highly specialized cold extruded axle housings, steering racks, axle and transmission shafts, and a variety of machined products serving the transportation industry. In accordance with US Manufacturing's commitment to maintaining the most efficient manufacturing process available, Mutie Khatib, facilities engineering manager, investigated and

Company Saves \$100,000/Year with New Coolant System

determined the need to develop a reliable and accurate coolant replenishment system for their large machine tool coolant sumps.

Challenges Faced

US Manufacturing was experiencing issues with their current chemical feed systems not providing consistent dilution of coolant resulting in foaming and bacterial growth in sump tanks. The sump tanks had to be cleaned out every two months, a time consuming, labor intensive project that interfered with production. They were also accumulating a significant amount of totes to transfer coolant from a bulk tank to machinery, with a filling standby time of 45 minutes. The risk of spills and heavy traffic of shuttling water and diluted coolant to each system multiple times a day, presented a safety and insurance issue.

Targets Identified

- Reduce sump cleanouts by 70 percent to twice per year
- Reduce handling and transfer time of coolant
- Ensure proper coolant level with correct dilution

The Plan

Mr. Khatib enlisted the aid of Edrich Products, their coolant supplier, and Engsol Incorporated, a manufacturer of custom coolant recycling and fluid handling systems, and local distributor of Dosatron International chemical metering equipment. Utilizing Edrich Products' 33-year history of providing high performance metalworking fluids and

Engsol's 21-year expertise in developing custom systems to respond to specific customer needs, the three gentlemen rolled up their sleeves and got to work.

Benefits

Jointly, they developed a system that incorporated Dosatron water-driven proportional dispensers to meter coolant on demand to 15 machine cell sumps when makeup was called for. An additional Dosatron unit was installed to meter coolant from a 4,000-gallon bulk tank into a new 1,500-gallon ready-for-use tank. This simplified the overall handling of product. Rather than handling over more than 100 totes that accumulated over time, the bulk deliveries require less handling and eliminate the cost involved in disposal of damaged totes. Because of the pre-mix ready-for-use tank, the standby time for filling a distribution tote has decreased from 45 minutes now to 8-10 minutes.

According to Fritz Esslair, president of Engsol Inc., "the product was chosen because of its low maintenance water driven design. The dispenser automatically compensates for changes in water pressure and flow delivering homogeneously mixed coolant at a consistent dilution at all times. In the past we have had problems with venturi type chemical feed systems maintaining consistent dilution because they require constant pressure and flow to operate properly." The unit selected was completely water-driven and required no air or electricity to operate.

It was also recognized that a consistent coolant sump level was criti-



Consistent coolant sump levels are critical to maintaining proper chip flush and conveyor operation.



US Manufacturing, a leading manufacturer of highly specialized axle housings for the automotive industry, operates out of a 625,000-square-foot facility in Warren, Mich.

cal to maintaining proper chip flush and conveyor operation. To address that concern, Engsol utilized an ultrasonic non-contact level sensor to control water flow to the unit when coolant was required. This type of sensor offers the benefit of detecting drops in coolant level to .25" without being affected by chips and debris that often cause failure of mechanical contact type float switches.

Rick Mattise, technical service engineer for Edrich Products, explained he had seen additional benefits since the change. "Our coolant is performing incredibly since the change. Because the new system is able to accurately and repeatedly dilute our product, foaming and bacterial growth caused by under-dilution has been eliminated. Because of the unvarying dilution provided, we have seen a reduction in coolant consumption of 30 percent, an equivalent of \$100,000 annually! Tool life is also more consistent and predictable, and chip conveyor operation is more efficient. USM reduced sump clean outs from every two months to every six months, realizing a substantial reduction in labor costs and also being able to reach their projected goal of sump clean-out on a semi-annual basis without interfering with production at all."

Reaching Their Goals

According to Mr. Khatib, "This is one of the most effective programs

implemented at this facility since I have been with US Manufacturing... This program was my short-term solution that was the most suitable for immediate cost reduction."

Mr. Khatib has expressed that his long-term goal would be to have central system utilized on his coolant metering, thereby once again simplify-

ing and creating an even more manageable, cost effective process. ⚙

Contact US Manufacturing via editorial@magellanpubs.com

To contact companies, enter **04335** for Dosatron, **05055** for Engsol Inc., and **05054** for Edrich Products on infoLink at ShopTalkMag.com

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