



Unconventional But Just What the Customer Needed

The Problem:

A tubing manufacturer needed to de-scale the interior of various sizes of stainless steel tubing that ranged in size from 1/8-inch ID to 2-inch ID and from eight feet up to 40 feet long. The customer was currently processing them manually with no recovery of used media and wanted to improve the process efficiency and production rate.

Green scale from the heat furnace covered the tubing interior, requiring pressure-blasting with aluminum oxide to remove it. The customer wanted to be able to blast up to five tubes at a time. Additionally, they were concerned about preventing scratches on the tubes during the process. Blasting was the final production process and the tubing would go immediately to packing and shipping, so it was imperative that the tubing be clean, dust-free, and customer-ready.

The customer sells their tubing into many different industries for a wide variety of applications, such as heat exchangers, military and aircraft applications, chemical processing, mechanical applications, heat transfer and monitoring, automotive, medical, and food processing applications.

The tubes must speed through the cleaning process and at the same time be handled gently within the manufacturing plant.

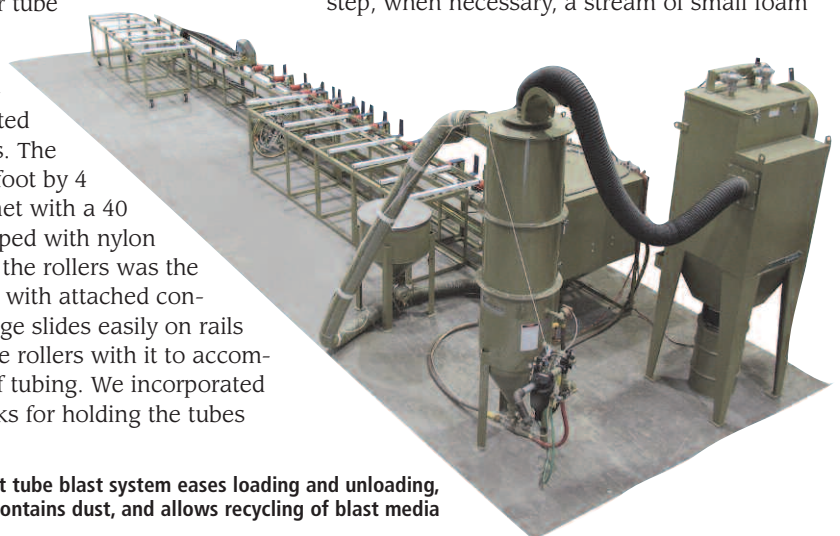
The Solution:

With decades of experience designing and building machines for tube blasting, we worked closely with the customer to incorporate features that suited their particular needs. The system included a 4 foot by 4 foot by 5.5 foot cabinet with a 40 foot long track equipped with nylon rollers. At the end of the rollers was the blast nozzle carriage with attached control panel. The carriage slides easily on rails pulling or pushing the rollers with it to accommodate any length of tubing. We incorporated two pipe-staging racks for holding the tubes pre-blast.

The system was fitted with two pressure blast machines of different capacities to accommodate their range of tube sizes. For the smaller tubes, a half-cubic-foot capacity machine with 1/2-inch piping, hose, etc., could blast up to five small tubes simultaneously. For the larger tubes, the second machine was a high-production six cubic foot capacity with 60-degree conical bottom.

The operator would load tubes in bundles of 50 or more on the racks. They would then roll each tube onto the track rollers made of UHMW nylon to protect the tube from external scratches. The exit end of the tube slides through a sealed opening on the side of the cabinet. After blasting, the operator rolls the tubes onto the support brackets attached to the side of each roller, allowing the control panel and blast nozzle carriage to be moved easily with one hand, and tying the support rollers and brackets all together. This system runs large quantities of tubes of varying lengths with virtually no setup time between parts.

Rubber nozzle inserts adapt the nozzles for different tube diameters so that the aluminum oxide media moves into and through the tubes, cleaning them in the process. Unlike a typical blast cabinet, in which blasting normally takes place, this system uses the enclosure to contain the media as it exits the tube. After blasting, the operator cleans the tubes by moving the end of the tube to a compressed air hose mounted next to the blast nozzle. As a final step, when necessary, a stream of small foam



Efficient tube blast system eases loading and unloading, contains dust, and allows recycling of blast media

Got a question about shot peening, abrasive blasting, or sample processing? Clemco can help.

Call Herb Tobben at 636 239-8172 or submit your request online at www.clemcoindustries.com

Herb Tobben is Sample Processing Manager for Clemco Industries Corp. He is a regular speaker at the EI Shot Peening Workshop.

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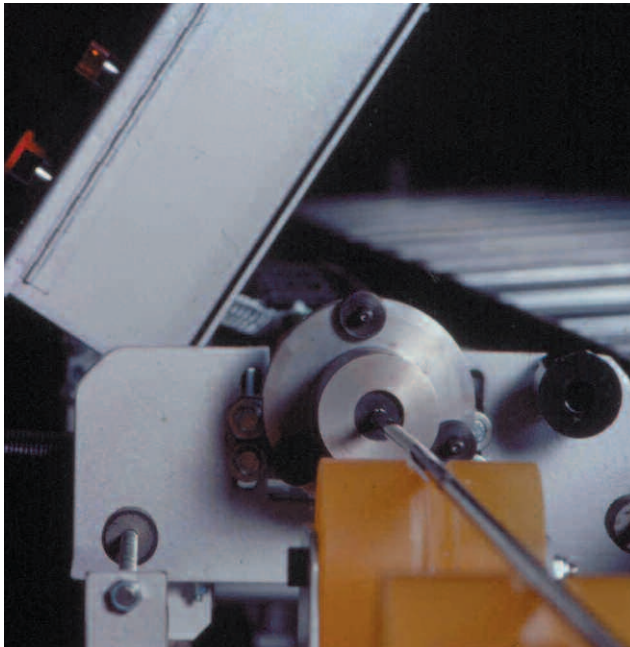
plugs is blown through the length of the tube to remove residual media and dust. The cabinet floor captures the foam plugs but allows the media to filter through, into the cabinet sump. An access door on the side of the cabinet allows workers to remove accumulated plugs periodically.

The system includes a media hopper with sight glass so that the operator can easily monitor the media supply, and a media-add system to refill the system automatically with new media. A 900 cfm rubber-lined reclaimer cleans the media for reuse and returns it to the blast machine. A reverse-pulse dust collector with photohelic sensor automatically pulses the cartridges clean and keeps the process environment free of dust.

Once we built the system, the customer tested the system in our facility and requested a few modifications before delivery. After installation, one of our field service engineers thoroughly checked the operation of the system and trained the customer's operators and maintenance personnel. The new blast system greatly increased the customer's production rate and quality, and reduced the amount of media waste and dust contamination around the blast system. And thanks to the ongoing communication between us, the new system was well-integrated into their existing plant. ●



Tubes enter a sealed opening on the side of the cabinet ensuring that media and dust are contained in the enclosure.



One of several special bolt-on nozzle adaptors, sized to suit tube ID, holds the tube in place at media-entry end.

eQuaLearn News

Second Quarter eQuaLearn Customer Satisfaction Reports

eQuaLearn reports on customer satisfaction with its professional development programs: 99% of attendees rated the instructors as excellent, very good or good and 99% of attendees responded that the instructors were extremely responsive, very responsive or responsive to their needs as students.

Eighty-three percent of attendees found the class they attended provided all or most of the information they needed. Ninety-eight percent found the quality of the course materials and presentation to be excellent, very good or good.

Ninety-nine percent believe that the course they attended was extremely effective, very effective or effective in helping them to acquire new skills.

The data is based on responses to post-class feedback forms from 401 eQuaLearn professional development course attendees for the period January – March 2008.

eQuaLearn is part of PRI's Customer Solutions and Support, which aims to identify and meet customer demand in all areas of business relating to quality.

eQuaLearn Launches New Problem Solving Tools Course



On July 1, 2008, eQuaLearn introduced Problem Solving Skills, a new course designed to teach participants to conduct a rigorous problem analysis, provide a structure to assist with small and large problems, and introduce tools that will help structure and make problem solving easier. Problem Solving Skills was developed by subject matter experts and has been designed to assist quality industry professionals. This new course complements the existing quality-focused courses already offered by eQuaLearn, such as Internal Auditing and Root Cause Corrective Action.

The first session was held in Pittsburgh, Pennsylvania USA on July 21, 2008. eQuaLearn is part of PRI's Customer Solutions and Support, which aims to identify and meet customer demand in all areas of business relating to quality.

About eQuaLearn

Having been involved quality industry auditing since 1990, the Performance Review Institute (PRI) has a unique and in-depth insight into opportunities for improvement in quality industry training and personnel qualification. With input and approval from quality industry leaders such as Alcoa, SAE International, Goodrich, Honeywell Aerospace and Rolls-Royce plc, eQuaLearn offers professional development courses in subjects such as Internal Auditing, Root Cause & Corrective Action and Introduction to Pyrometry. For more information, visit www.eQuaLearn.com

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