

Learning Zone

THE WHEEL BLAST MACHINE PROBLEM SOLVER SERIES

A Partnership Improves a Process

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A lustrous, soft gray coil of titanium can be a real eyesore when it's sitting idle on the feed roll of a blast cleaning machine. Just ask Larry Swiger, the Maintenance Planner at the Timet facility in Toronto, Ohio. "Descaling these 16,000 lb coils of titanium is the first step in the strip rolling process in our plant. This line feeds all the other lines in the coil department. When the blast cleaning machine is down, it's a real nightmare for our whole department," says Larry.

It was a reoccurring nightmare. Every couple of months, the line would grind to a halt for an eight-hour shift—that's the length of time it would take for Larry's line operators to repair the media valves on the machine. Two to three coils are descaled during an eight-hour shift. These coils are valued at \$300,000 each. Do the math on what it costs Timet to halt production for just one day and you will understand the magnitude of Larry's problem.

Timet is the world's largest supplier of high quality titanium. As a fully-integrated titanium manufacturer and distributor, Timet's capabilities span every phase of titanium research, manufacturing and sales. In three North American and two European mills, a Research and Development facility in Nevada and its world headquarters in Denver, Timet converts rutile ore into sponge; melts and refines ingot and slab; manufactures mill products and casting; and distributes their products globally. In Toronto, ingots are forged into slabs, billets and bars. The slabs are subsequently hot rolled to sheet and plate or cold rolled for strip and welded tube applications. Larry's responsibilities includes the maintenance of Timet's Sendzimir cold rolling mill, the only

dedicated titanium strip rolling facility in the world, and the continuous vacuum annealing facility, the only one of its type.

The Toronto, Ohio plant is nestled between the Ohio River and the foothills of the Appalachian Mountains. Its location put it in the path of Jim Elliott, a Senior Account Executive for the Pangborn Corporation. Jim is responsible for establishing and maintaining business relationships in Michigan and Ohio. In Jim's 31.5 years with Pangborn, he has assisted with the installation of many standard and custom-designed blast machines for cleaning, deburring, descaling, decoring, deflashing and peening. His experience has also given him the ability to recognize when he can save a company the expense of a new machine by retrofitting their present equipment.

That's what Jim discovered when he called on Larry two years ago. Timet's

30+ year-old Wheelabrator machine was a workhorse and Jim knew that he and Pangborn could give Larry an affordable alternative to a new



Jim Elliott, Pangborn, and Larry Swiger, Timet.



Timet's updated blast cleaning machine is more dependable and efficient.

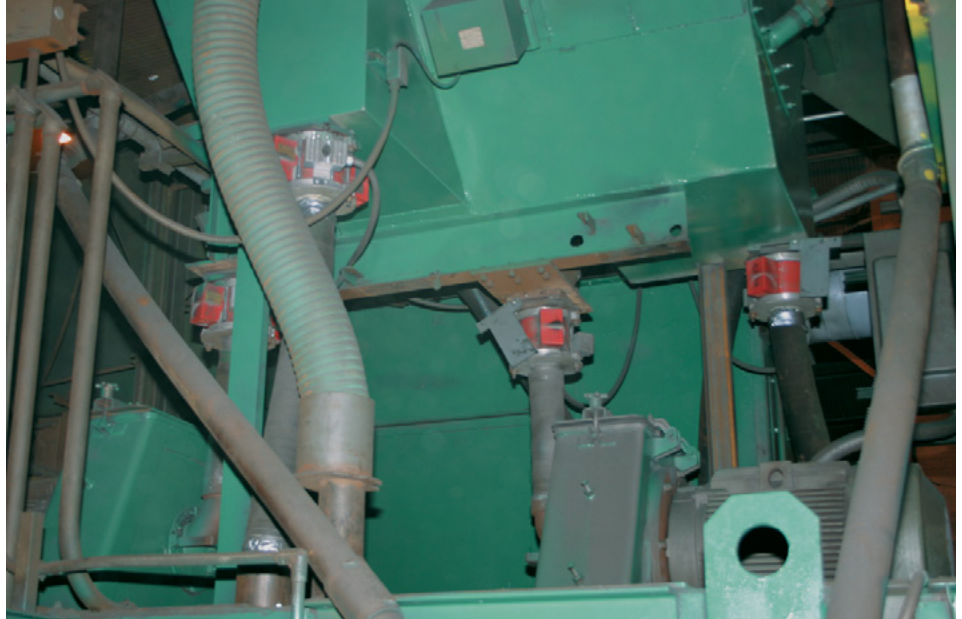
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machine and retrofit the machine to take advantage of innovations that would increase efficiency and reduce or simplify Larry's maintenance problems. Larry was seeking ways to improve production and quality and so began a good working relationship. "We work very well together," says Jim. "We are very open to each other's ideas."

Jim and Larry developed a retrofit plan that has included the installation of newly-designed separators and conveyors, the replacement of the original sheave-driven 19-inch wheels with 24-inch direct-drive wheels, the installation of manganese plate to reduce hot spot wear, and the expansion of the hopper to straighten the drop and improve media flow.

These changes improved efficiency but Larry's downtime nightmare didn't end until the installation of four MagnaValves®, a magnetic shot flow device. The original machine had conventional "dipper" valves that were modified with an electronic positioning device. The purpose of this device was to control the opening of the dipper valve and regulate the shot flow rate as displayed by motor amps. The devices were not reliable, requiring extensive maintenance that resulted in eight hours of downtime every couple of months. To help reduce maintenance attention and downtime, the operators would seldom request higher or lower media flow rates and therefore motor amperage was set to 50-60 Amps.

Since MagnaValve installation, Larry has had 100% uptime on this line. "As a Maintenance Planner, my goal is equipment reliability. We've achieved it with the installation of the MagnaValves,"



Four MagnaValves eliminated downtime in Timet's blast cleaning operation, gave the operators better control of shot flow, and optimized energy usage.

he said. In addition to increased productivity, the operators became confident that there would be no more maintenance disruptions, and they have experimented with various flow rates and amperage settings and discovered that thin gage material could be run at 70 Amps and thicker gage material could be run at 90 Amps. This resulted in running the strip line at higher speeds when needed.

Larry and Jim are working on the last phase of the retrofit program—they are designing a new main electrical control panel and a touch screen operator's station.

Now Larry always has the pleasure of watching those big coils of one of the world's most valuable metal products move through the blast cleaning process

and onto the rest of his department where they will be prepped to become aerospace, automotive and architectural products used throughout the world. ●

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