

CLOSE cooperation

Butech Bliss and **Universal Steel** worked together to develop "The Memory Eraser," a stretcher leveler that has no problem processing heavy materials

BY LAUREN DUENSING

quipment manufacturer Butech Bliss, Salem, Ohio, is located just an hour-and-a-half drive from The Universal Steel Co., Cleveland. According to Google Maps, a pedestrian could travel the distance in less than one day, although walking along highways is never a good decision.

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This proximity allowed the two companies to form a close relationship, which resulted in the installation of one of the "largest stretcher leveler lines out there," according to Jock Buta, executive vice president at Butech Bliss. "The heavygauge line produces flat, memory-free sheets with particular ease as a result of the cooperation between the end user and the builder," Buta says.

"I'm an engineer by training," says Richard Williams, president of Universal Steel. "In my travels, I spent a lot of time installing projects at LTV and J&L Steel, so [for this line] I was probably a little more involved than the average customer would be. Some people might just say, 'Here are the specs, please supply the line.' But we were directly involved with drawing review as well as discussing all the different options. It was fun, too. It was a nice diversion from the buying and selling of steel."

Stretching tough materials

Universal Steel, a member of the North American Steel Alliance, is a steel service center that supplies customers with hot-rolled, cold-rolled and coated carbon steels. The company has been serving the Midwest since 1926. Universal decided to invest in this line for three major reasons. "First was the growth in the laser-cutting end of fabrication," Williams says. "We know fabricators have a great need for memory-free steel, and we needed to be able to supply it. The second reason was we wanted to get involved in making discrete plate out of coils. Our stretcher leveler can stretch and cut ¾-inch materials up to 72 inches wide, Grade 50. We do a lot of ½-inch, %-inch and ¾-inch plate, especially in widths of 48 inches, 60 inches and 72 inches. The stretcher allows us to more actively pursue the plate market. And the third reason was we know the market's moving to these higher-strength steels, and our current equipment really couldn't deal with

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Grade 80 and stronger steels. This line lets us buy and participate in the processing of that kind of steel."

Universal Steel's wish list for the equipment included automation, low cost of operation and design flexibility. "They were specific in what they wanted; they really wanted a customized line," Buta says. "That's something we regularly do with our customers. We met with Universal up front, went to their existing line and observed their practices—what they liked and didn't like, what they'd like to keep in their new line and what they'd like to do differently," he notes.

"We wanted to have a line that would be a little bit more productive than typical stretching lines," Williams says. "Our line has a 50-foot bed, so we can stretch 50 feet of steel at one time. Most other beds are about 20 to 25 feet, so you have to stretch twice as often, and every time you stretch there's a time delay. Another key feature was the non-marking gripping system. You have to grab a piece of steel and yank it to stretch it, and we didn't want to touch the steel with metal that might scratch it. We actually use fiberboard inserts to grip the steel. The inserts can hold up to the gripping force we need to apply for stretching without marking. And, of course, we wanted the line to be more mill duty than service center duty. We wanted a good, strong line."



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Automated and low maintenance

Buta points out the line is full of features that make it highly automated and low maintenance. The line has a unique quickchange cartridge feature for its shear knives, an automatic dunnage inserter, quickchange gripper design and menu-driven software on the flattener and stretcher.

The software provides automation for



the line. Buta says the stretcher can "learn from previous runs, which makes it very easy to set up and customize certain features. We've also developed a unique shape detector that's in the bed of the stretcher, which detects when there is an edge wave or center buckle. As the stretcher pulls, the operator can monitor in real time how flat it's getting."

To start processing, an operator enters the coil data into the system. The software then "automatically sets up the line to precondition the material, sets the shear gap with both material thickness and strength, and the stacker itself sets up and automatically adjusts to the width and length based on the order requirements," Buta notes. "Usually, an operator would have to manually set all of these. Once he uploads the coil ID and the information for cut-length quantities, it automatically sets the features."

"All aspects of the stretch cycle are monitored and controlled," Buta continues. "That allows the operator to see what's happening on the screen with the stretch force, the position of the head, which also means the length of stretch, the speed of stretch, as well as the percent of stretch. We've worked with Universal and have found that there

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are advantages to approaching the cycle differently, depending on certain material characteristics: high strength, low strength and gauge. These differences dictate setting on not only the stretcher but also the flattener and the exit shear."

"When the operator has found the optimal settings for a certain material, he can just pull that up from the menu and set it in place," Williams says.

Butech Bliss' knowledge of the advantages of stretcher leveling technology has evolved in the last 60 years with more than 150 stretcher machines for sheet and strip materials as well as extrusions and long shapes. "We have 50 engineers with more than 1,200 combined years of experience who use finite element analysis and solid modeling to optimize all the designs," Buta says. "We design and build every piece of equipment in our lines. We understand addressing shape defects with a stretcher leveler line is not just about the stretcher leveler. It's also about the preconditioning of the material through the flattener or leveler before it even gets in there. It's not as straightforward as many would think. We have the engineering know-how and people who can draw on the shape correction expertise that's exclusively available from being the only equipment builder who supplies temper mills, roller levelers and stretch levelers. Between the flattener, the shear and the stretcher itself, we've put in a couple unique components, which gives us a whole solution."



A GOOD GRIP

■ Richard Williams, president of Universal Steel, Cleveland, describes the gripping system on his Butech Bliss stretcher leveler as "phenomenal." The company stretches both black steel and pickled and oiled steel, so he was concerned that "we wouldn't have enough power to grip the steel and not slide or scratch it because you need to grip it with so much force to actually stretch ¼-inch material. I thought that was a pretty difficult assignment. A lot of people use carpet and other things in their grippers to make that happen."

"The gripper design in our stretcher is non-marking and able to handle all product sizes and ranges," says Jock Buta, executive vice president, Butech Bliss, Salem, Ohio. "The other products out there are either marking the material or those that don't struggle with the different configurations to handle both pickled and oiled material, which is slippery, as well as dry hotrolled, as well as being easy to change. It's a real issue. If you were to go out and survey people, you would find that changing grippers can be expensive and time consuming, and the life of them can be an issue."

At Universal Steel, however, Williams says changing the top and bottom grippers in the entry and exit (four different grippers) takes about two minutes.

Williams says the grippers also make it possible to stretch tread plate until it's flat and memory-free. "People are happy with the regular products, but the floor plate kind of astounds them. It's traditionally not the easiest product to work with. It rumbles through the line, but it works well."

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Universal Steel's line has a 50-foot bed, which allows the company to stretch 50 feet of steel at one time.

That engineering expertise allows the equipment to produce high-quality material, which, in turn, has expanded Universal Steel's market reach. Williams says he can produce high-strength steel for applications such as defense, cranes, booms, heavy trucks and railroad. And he's ready for the continuing improvement in the steel market so Universal Steel can take advantage of the line's capabilities.

"We started this line up in April of 2010," Williams says. "We bought it during the worst part of the market—April 2009 is when we gave Butech Bliss the order—so we're ready for the current upturn. We're happy we bought it and believe it's a great addition for customers of Universal Steel. Sheets are our primary product, and we don't have any laser cutting; we prefer to cut the steel and let our customers do the laser cutting. We have a lighter-gauge line and now this heavy-gauge line, so we have the whole spectrum.

"Customer reaction to the product com-

ing off the stretcher has been outstanding so far," he continues. "Our laser-burning customers say they can notice the difference and that their production has been trouble-free."

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