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NEW PATTERNS

Roll bender answers customer calls for machines that don't need skilled hands to produce perfect parts and boost output

In 1543, Nicolaus Copernicus authored a paradigm shift in planetary motion when he presented his heliocentric theory in which the Earth and other planets rotated around the sun. Albert Einstein created a new paradigm when he moved beyond Newtonian physics, the description of mechanical events, with his theory of relativity and introduction of quantum physics, which is the study of atomic and subatomic particles.

As an exclusive North American distributor for bending rolls, ironworkers and tube punching equipment, Trilogy Machinery Inc. is also looking to change established patterns, in particular with new technology from its SweBend line of bending rolls. "Plate and angle bending rolls are traditionally machines that require an experienced eye," says Matt Weeks, product manager for Trilogy. "SweBend is finding ways to offer solutions that break that paradigm by providing equipment that can roll perfect parts without the need for skilled operators."

Weeks notes that certain SweBend models: the QF, quick forming 3-roll; PB2W, wedge style 2-roll; and LMB, complete rolling cell machine, have seen an increase in popularity over the last couple years due to several trends.

TRAITS

"These machines (https://trilogyl.ink/2V6GEjs) have been engineered with unique advantages, but they also share some common traits," he says. "Each has the capability to reduce cycle times and combine multiple operations into one process. These roll benders also require little to no skill to run."

"Interest in technology that reduces operator skill requirements, while increasing output potential, has been a growing trend in our industry for the last few decades," Weeks adds. "In 2020, these trends gained even more traction when labor shortages made skilled personnel even harder to find."

For the job shop with an appetite for processing anything that comes through the door, traditional roll and angle benders—equipment that requires a trained hand at the helm—offer greater flexibility.

"The specialty rolling machines from SweBend are geared to job shops and OEMs that have high production volume requirements spanning a more finite list of products," he says. "Our PLC and CNC controls take the guesswork out of rolling. You don't have quite as much flexibility, but you can make good parts with individuals who don't have a lot of experience. With most of these systems, you just put your blank in, push the button and make a perfect part."

While Trilogy does get equipment requests from the job shop that can shoulder any project, the North American distributor is also seeing interest from an expanding sector. Companies that routinely sourced parts from local job shops are experiencing longer wait times along with quality issues. Many are making the decision to bring work in house and are choosing to form material on a SweBend. "That's where these machines really shine," says Weeks.

The QF series offers 3-roll benders in two formats. The QFV (vertical model) is best suited for narrow strips of flat stock or round bar. Finished parts drop into a bin through a trap door. The QFH (horizontal) is a better fit for wider parts. Automatic ejection is used for part removal. Unlike a traditional 3-roll bender, the QF series has two fixed rolls with one large upper roll. The top roll is interchangeable. If a fabricator needs to roll stock in five different diameters, the bender's quick change assembly allows the operator to swap out the top roll with one that is a different diameter in a matter of minutes. The QF series is typically used for flat plate, but specialty versions can be supplied to process hollow pipe or tubing. "These machines can produce finished parts three to five times faster than conventional 3-roll benders," Weeks says.

Trilogy's SweBend PB2W 2-roll bender can also achieve faster cycle times than other roll benders on the market and is ideal for a repetitive series of parts. An adjustable, hardened bending shoe placed behind the two driven rolls provides the actual bending

Controlled by a simple PLC, a SweBend PB2W rolling machine features lifting roll support, sheet supports and powered part ejection.

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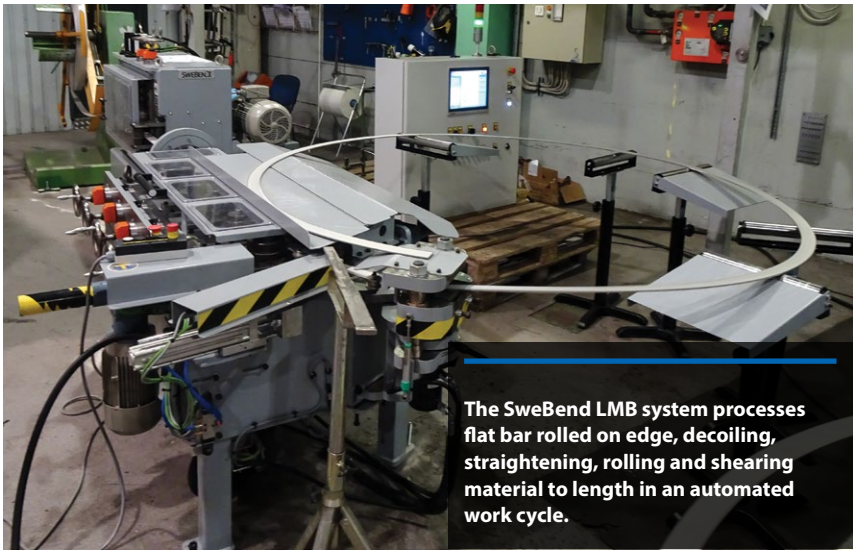
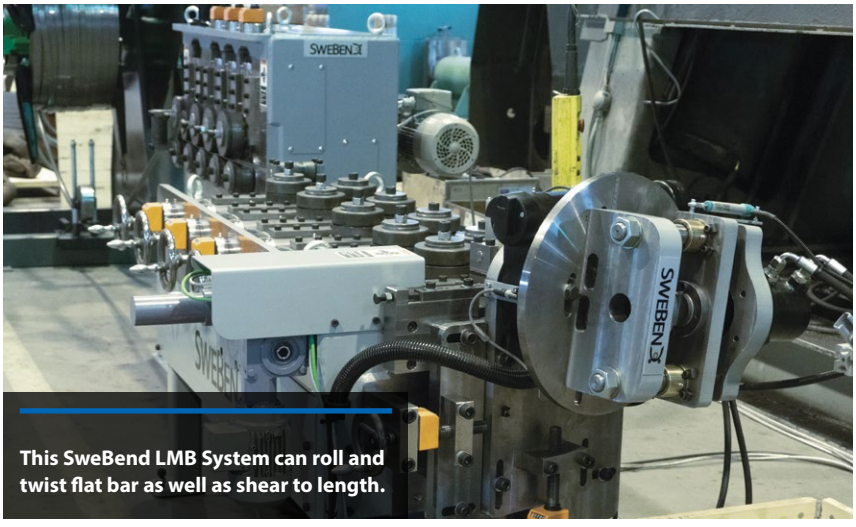


The SweBend LMB system processes flat bar rolled on edge, decoiling, straightening, rolling and shearing material to length in an automated work cycle.



This SweBend LMB System can roll and twist flat bar as well as shear to length.

diameter of the part. "The top and bottom rolls pinch the metal stock," says Weeks. "A wedge device makes contact with the material using its adjustable angle to create the bend or part radius. The technology is more flexible than the QF-style machines and allows a manufacturer to cover a broad range of parts."

INTEGRATION

Trilogy's SweBend LMB can be easily incorporated into a manufacturing cell. Raw, coiled stock is run through a decoiling unit and unrolled before it enters a straightener. Unrolled, straightened material enters the roll bender where it is formed to the required radius before an integrated shear trims the end. The line supports a continuous flow of production. A twisting device can be added prior to the shear for production of parts like lawn mower blades. "You can feed material through the cell and cut off perfect, finished parts. And buying stock in coils is much more cost effective than buying pre-cut sticks," Weeks says. "On a conventional section roll, you have to roll a longer piece than you need to accommodate trimming the ends. This integrated manufacturing line trims the flat ends and rolls a perfect part without the need for a secondary operation. These cells also lend themselves to a SweBend roll bender equipped with a CNC or PLC for automation. We have customers integrating these systems with robots and other advanced automation."

In an industry where roll benders have remained relatively unchanged, "we continue to take steps to equip fabricators and job shops to tackle economic challenges by combining reliable bending machines with an intelligent algorithm-based bending system that is powered by our nearly limitless SEVEN CNC control," Weeks says. FFJ

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