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PROSPECT STEEL

A DIVISION OF LEXICON, INC.

ROBOTIC WELDING SPARKS THE US STRUCTURAL STEEL INDUSTRY

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BUILDING STRONG IN SMALL SPACES

ON THE COVER: Prospect Steel, a division of Lexicon, Inc., is proudly the first fabricator in the United States to introduce a robotic structural steel beam assembler into their Little Rock, Arkansas facility.

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FABRICATOR SPOTLIGHT
Robotic Welding Sparks the US Structural Steel Industry

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Amidst the high and low cycles of the steel construction market within the United States, one thing that has remained constant and growing is the industry-wide shortage of skilled workers. In 2010, the American Welding Society (AWS) reported a shortage of 200,000 welders in the U.S. and projects by 2026 that number will nearly double at 372,000. The AWS further noted approximately 500,000 skilled welders are, on average, in their mid-50s and will soon retire at a more rapid rate than replacements can fill the vacancies. When assembly and welding can take up as much as half of the time to process a structural steel beam, what's a fabrication firm to do?

Machine tool technology within the structural steel market has evolved in such a way that many common fabrication processes have become automated. Long gone are the days of manual mag drilling and the time-consuming soapstone and tape measuring method for marking steel. With advancements in computer controlled operations such as drilling, cutting, coping and marking, automation practices have become internationally acceptable for processing structural steel profiles.

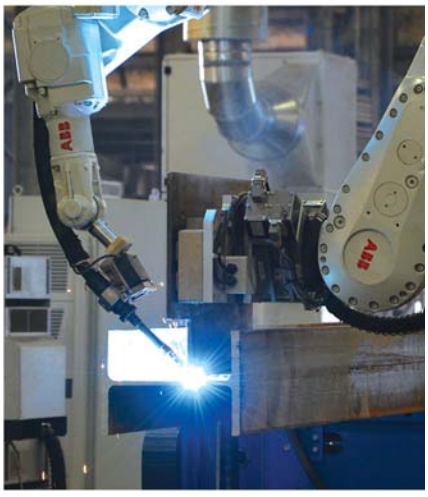
Industries such as automotive manufacturing have long-adapted robotic welding solutions to meet market demands. With benefits including faster, consistent cycle times, increased production, labor savings and better weld quality, the appeal of the robotic welding system has made its way to the structural steel industry. Prospect Steel, a division of Lexicon, Inc. in Little Rock, Arkansas, is proudly the first fabrication firm to introduce a robotic steel beam assembler within the United States.

Projects for the American Ironworker

Power plants, sports stadiums, hospitals, event centers and bridge work are just some of the areas in the wide scope of Prospect's steel work. Prospect Steel's extensive list of renowned projects is quite impressive. The 50-year-old company, founded by Tom Schueck, is just one of several companies operating under the Lexicon, Inc. brand. Prospect Steel has evolved into one of the largest structural steel fabrication and erection contractors within the United States. Specializing in heavy industrial fabrication, Prospect performed the work for the Ivanpah Solar Electric Generating System – the world's largest solar thermal plant – located in the Mojave Desert. Three towers, each 470 feet (140 meters) with a boiler at the top, were fabricated using 36 inch (90 cm) pipe columns with inch and a half thick (4 cm) walls.

The NASA rocket test stand at the Stennis Space Center is another significant project Prospect Steel is proud of but what really hits home for Patrick Schueck, President of Lexicon, Inc., is the work they've completed for the steel mill industry and for Nucor, one of Prospect's best customers.

"The work that we're capable of doing for Nucor," explained Patrick, "time and time again takes a little piece of my heart. It makes me feel good that we're doing something for the American ironworker."



Labor Shortage Hits Home

But this full-service construction company didn't reach their current successes with only an initial $800 dollar investment and a smile. Prospect Steel affirms their ability to seek and perfect new technologies in the market drives their competitive edge. By constantly researching industry trends, looking at innovative equipment, seeking new software packages and implementing all into their facilities, Patrick assures this empowers Prospect to provide the best product to customers.

"That sets us apart," Patrick confirmed. "It allows us [Prospect] to provide the best customer service possible and give the best price and the shortest lead time for the best outcome."

However, Patrick and the team at Prospect were not having the best outcome with sourcing qualified labor. With over 400,000 square feet (37,000 square meters) of fabrication space, Prospect did not lack the footprint for increased production, but were struggling with the man-hours required to produce the welding and fitting for successful projects.

Searching for a Solution

The Zeman robotic steel beam assemblers distributed by Peddinghaus Corporation captured Prospect Steel's attention as a solution to their labor shortage problem. Having an ongoing partnership with Peddinghaus, Patrick felt confident that although this newer technology hadn't quite made its way to the United States, this was exactly what Prospect needed for a competitive edge.

"The Zeman line stood out from others in the market because Peddinghaus represented it," Patrick stated. "As we move further and further into this global economy, we're not only going to be producing against people in the United States...We're facing production from people in far-off lands that have a better wage rate that can be as less as $5-$6 [USD] dollars per hour. How are we to compete with that if we don't have help from robotics? We have to be able to do that. We have to train our people to understand that we need these complex new technologies in order to be successful long-term. "

Patrick lined up a qualified team to assist in the implementation of robotic welding into their fabrication facility. With the help of Steve Grandfield, Executive Vice President, the Prospect team pushed forward with the SBA Compact+ system from Zeman.

Meet the 1st Steel Beam Assembler in the US

Since the robotic welding solution was recently installed, Prospect is already experiencing benefits from the new system. Steve reports that the

difference the Zeman system has made in production has been a dramatic savings in both fit and weld time. "The Zeman acquisition has allowed us to take welding and fit up information directly from the 3D [BIM] model to our shop floor," Steve explained. "It has allowed us to increase our productivity, decrease any fit up errors and create a better product for our customers while saving money."

"The Zeman [system] gives us another approach to be able to solve the huge problem in the steel fabrication business of finding labor," Patrick confirmed. "Day in and day out we struggle to hire people off the street, teach them how to weld ... and perform in the shop the way we need to perform. We don't worry about that with the Zeman system. It's here on time ... and there's even increased quality when it comes to welding. When we looked at the ratio of man-hours worked in the shop by human personnel versus what the Zeman system could produce, it was pretty much a no-brainer."

The Future with Peddinghaus and Zeman

Patrick, Steve and the Prospect team look forward to continuing their reputation as a national leader in high-quality fabrication and customer service. By taking risks and embracing new automation technology, Prospect proudly promotes their competitive advantage. Implementing any new piece of machinery can be a difficult and frustrating task. Prospect credits Peddinghaus and Zeman support with not only teaching but coaching throughout the training process.

"We got the machine up and running in less than four weeks," Patrick confirmed. "We were in production in less than six [weeks]. Our weld quality in the sixth week was impeccable. I think our ability to come to the market first is going to have a huge reflection on our competitiveness in the market."■

"The Zeman line stood out from others in the market because Peddinghaus represented it."

IN FOCUS | PROSPECT STEEL

LEFT TOP: Micah Lopez, Project Manager, Patrick Schueck, President of Lexicon, Inc. and Steve Grandfield, Executive Vice President of Prospect Steel

LEFT BOTTOM: The SBA Compact+ distributed by Peddinghaus can achieve up to 25 tons per year to assemble and weld.

RIGHT TOP: This design is the first choice for fabricators with a limited footprint yet high capacity.

RIGHT BOTTOM: The SBA Compact+ system consists of 2 robots to assemble, tack weld and finish weld.

Introducing the Zeman SBA Compact Steel Beam Assembler

Automated welding systems have long been providing manufacturing industries profitable advantages. Structural steel fabrication has recently been introduced to this innovative method. Higher production, increased accuracy, labor savings and a quick ROI are only some of the benefits of robotic welding solutions.

Meet the SBA Compact from Zeman – an international leader in steel beam assembling technology. Peddinghaus is proud to be the exclusive distributor for this technology for United States. The SBA Compact is one of seven steel beam assembler product lines available. Discover the flexibility of this cutting-edge technology with a variety of product lines to fit your needs.

SBA Compact Highlights:

- Beam Handling by Crane
- 1 Assemble, Tack and Finish Welding Robot
- Designed for Assembling
- Compact Design for Smaller Footprints
- Capacity up to 15,000 Tons/Year

How Does It Work?

1. The SBA Compact scans parts to be welded to the main profile.
2. Once all sections are scanned, parts are positioned by magnet to their weld locations.
3. The SBA Compact is capable of performing tack welds or full welds.
4. The profile is automatically rotated for continuous production.

Visit www.peddinghaus.com/zeman or contact todd-cordes@peddinghaus.com to learn more.


ASSEMBLE, TACK AND FINISH WELDING ROBOT


SBA
compact


DESIGNED FOR ASSEMBLING


COMPACT DESIGN FOR SMALLER FOOTPRINTS
GÜDEL


CAPACITY UP TO 15,000 TONS/YEAR