Linc-Cobot: a game changing welding automation solution

Lincoln Electric's Linc-Cobot welding system has been designed to complement the skills of human welders, while improving weld productivity, quality and repeatability in fabrication shops. Thulani Mngomezulu, Lincoln Electric Technical Applications Manager for the Middle East & Africa, explains.

R450 robotic welding platform and a precision worktable incorporated onto a single compact and portable platform, Linc-Cobot is ideal for those looking to add flexibility, workplace safety, consistency and cost-efficiency to its operations.

"Our Linc-Cobot welding series combines Lincoln Electric's welding expertise and its automation experience to meet real-world needs of fabrication shops all over the world," says Thulani Mngomezulu of Lincoln Electric. "We understand that humans are versatile and can easily adapt to new situations and set ups, but people are not all that consistent. Even highly skilled welders can have an off day.

"When using a Linc-Cobot, the human operator works out how best to weld a job and teaches the robot through direct interaction. Then the robot executes the welding program. A variety of welds can also be sequenced and repeated in the same order and with the same consistency," says Mngomezulu.

"Compared to traditional robot welding, however, using the system is easier than ever," he continues. "The whole integrated and compact system is mounted on wheels so it can be deployed in any area of the shop as easily as a stand-alone welding power source. And it can be programmed to weld



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in minutes," he says.

The system uses a Fanuc[®] CRX robot driven by the Lincoln Electric Power Wave[®] R450 power source for robot welding. The Power Wave software controls and monitors welding processes to deliver the highest levels of weld quality and productivity, which are both essential in the competitive fabrication environment.

The Linc-Cobot system is ideal for high-mix component welding; repair and remanufacturing work; part resurfacing and reconditioning; roof and bridge truss manufacturing; mechanical contracting and pipe welding; agricultural equipment manufacture; plant equipment fabricators; metal service centres; and welding training and educational programmes.

Key features include:

- Compact, easy to deploy and quick to program for repetitive welding tasks.
- Drag-and-drop and smart programming, allowing for straightforward robotic programming without complex training.
- Intelligent contact-sensing technology allowing Linc-Cobot to work safely, sideby-side with welding operators.

From a reliability perspective, the CRX FANUC Cobot features components and technology proven in the most rigorous industries for over 30 years. FANUC backs its reliability by providing a guarantee of eight years of zero maintenance on motors, reducers, sensors, cables, and grease.

Thulani Mngomezulu cites three key reasons why fabricators should consider adopting this technology:

First, he says: "The Linc-Cobot isn't a fully automated welding system, so fabrication shops that do not have much experience with automated systems can use the Linc-Cobot as a smart bridging tool between manual welding and full automation. It is an advanced, mobile, plug-and-play system to help fabricators start automating some of their simpler repetitive jobs."

Second, the system is ideal for partially



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automating tasks where dedicated cells do not quite work. "People often need a system that can be moved from one welding station to another, for example, and the Linc-Cobot is designed for that situation," he says, adding that the entire Linc-Cobot system can be moved into a welding bay to do specific difficult/critical welds, with manual welders completing other welds either before or after.

Most notably, however, he points out that the Linc-Cobot is ideal for high-mix, low volume work, which can become problematic when customers move to fully automated fabrication processes: "A big drawback of full robotic automation is in shops that face a lot of job variation. Production must stop for each changeover and for rewriting each new program for the different tasks, which is not that easy on an industrial robot. The Cobot allows a new program to be written quite quickly, making it far easier to changeover from one job to another.

"From a people perspective, rather than replace the welder in the welding booth, the Linc-Cobot system uses human skills to best effect: working out how best to weld a component using the Cobot, instead of having to rely on manual hand skills to manipulate a welding torch," Thulani Mngomezulu concludes.

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