Automation Solves Welder Shortage Issue For NPK

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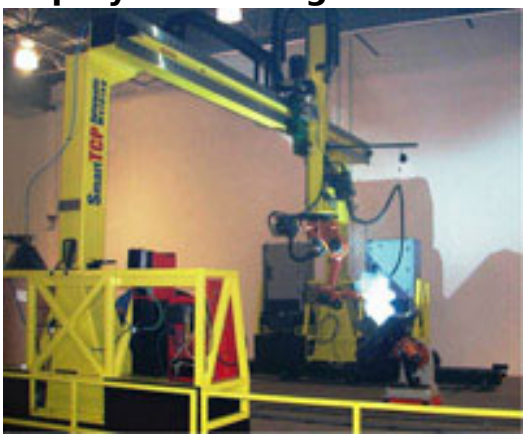

The industry shortage of qualified welding professionals has motivated many companies like **SmartTCP** to provide more versatile automated welding solutions.

NPK Construction Equipment Inc. (NPK), based in Walton Hills, OH, manufactures attachments for heavy machinery equipment. In the past few years, sales and production have grown exponentially, and the company's manual welding process was experiencing growing pains. NPK's staff of master welders were being taxed by the increase in demand and the availability of expert welders was decreasing due to a worldwide shortage.

To address these issues, NPK planned for a new manufacturing facility and began research on its options for automating the welding process. The company needed to find an effective automated welding solution to increase production, improve quality, and enhance employee working conditions.

With its products ranging in size and shape, and its inventory including multiple part numbers with minimal quantities per part, this small batch production process did not lend itself well to standard robotic welding systems. The company needed a solution that would accommodate working with various part sizes and shapes and would be able to flexibly adapt to each part's welding requirement. After extensive research the company found few solutions that could handle its unique issues.

"As we conducted our research, it was apparent that there was a lack of adequate

fast automatic programming options that would minimize our down time," says Dan Tyrrell, president of NPK. "We needed a solution that could reliably weld all of our large complex parts quickly and accurately with minimal robot programming time." The company turned to the SmartTCP Robotic Welding Solution from SmartTCP of Farmington Hills, MI.

"NPK knew they needed to automate, but with the company's high mix, low volume production line, conventional robot cell configurations and robot programming wasn't an option. It was too complex and time consuming," says Efi Lebel, founder and CEO of SmartTCP. "SmartTCP's hardware and software components create a system for small batch production that allows for extremely accurate, flexible and reliable robot welding at a much faster rate than other robot techniques being used today."

The SmartTCP Automatic Welding Solution automates both the robot programming and weld production. The system is a combination of hardware and software that features a flexible and modular working envelope that allows the manufacturer to weld any weld-able part. The hardware is composed of multiple industrial products including a gantry system from Gudel Inc., a robot system, external axis motors, control technologies and positioners from KUKA Robotics, and welding power supplies from Fronius. SmartTCP´s software automates the robot programming tasks.

The system can be composed of multiple axes which gives it the flexibility to weld a high variety of parts which range in size, geometry, and welding technologies. The base system is constructed of nine axes (six robot axes and three gantry axes), with additional manipulators of one or two axes as needed up to as many as 16 axes in two or more working zones. The system's best use is in an 11-axis configuration in each working zone for in-position continuous welding resulting in a higher quality and faster welding process.

The automated SmartTCP system helped NPK address the worldwide shortage of quality welding experts, save on labor costs, and shorten welding times, thereby significantly increasing manufacturing capacity and improving its bottom line.

As one example, NPK saw the welding of one part reduced from two and a half hours using the manual method to a 30 minute weld time using the SmartTCP system. In addition, the robotic welding process has improved the working environment for NPK's employees by reducing potentially hazardous tasks.

For more information, visit www.smarttcp.com [1].

Links:

[1] http://www.smarttcp.com/