

Laser spot welding quadruples production

Fantini Cosmi is a well established media company in Italy. Its extensive portfolio includes a range of pressure regulators for liquid and inert gas, suitable for steam boilers, dyeing machines, irrigation and more.

The pressure switches involve a membrane in contact with the fluid, in a stainless steel housing. To improve the welding production process the company chose to invest in laser technology, with a SL120 Nd: YAG laser system from Sisma.

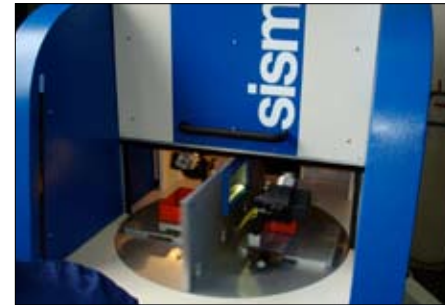
"Until 2007 we used conventional spot welding. It was a technology that was and would have been more than sufficient to support normal production requirements over the year, but that in periods when demand was higher, it could become problematic and insufficient for satisfy demand," said Gaetano Tavani, who is responsible for the Fantini Cosmi pressure switch range.

"One option would have been to establish a warehouse but this would require heavy investments. Many products are seasonal and our network is not always able to plan in advance. We decided instead on a laser welding system

designed by Sisma. In terms of yield, the (fully automated) cycle time per component is around 15 s, compared to around 30 s by hand. Also, to maintain good performance of the previous system, about 8 hours a week could be lost to replacing tips, every two hours (200 welds). Today, you turn the machine and the laser and you are able to produce," Mr Tavani stressed. "Allowing for set-up and maintenance time, we have achieved a quadrupling of yield," he added

The SL120 Q-switched Nd: YAG laser and fibre delivery has been developed by Sisma for welding in automated manufacturing processes that require great precision and speed of welding. Precisely because of its versatility and the use of fibre optics and focusing, it is extremely easy integrated onto production lines. The beam is split to simultaneously weld two components at once.

"The laser is in an enclosure typically used in marking applications," explains Antonio Venice, area sales manager Sisma. "A rotary table carries two workpieces, each mounted on a motorized spindle that allows the rotation of the workpiece under the fixed laser head.



In practice, a piece is placed on a spindle, the table rotates to position the workpiece under the laser source, and a circumferential weld is made."

"The stages of sampling the product and optimization of the process have shown that the adoption of laser Sisma offers significant advantages," said Gaetano Tavani. "In fact now we have a lot of available machine time that we hope to fill by increasing sales or diversifying production. The time taken to change to a new product line is much less than previously; indeed, it is quite insignificant.

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