

GSI/Ebtech Industries laser welding cell

Ebtech Industries Pty Ltd is a Melbourne, Australia-based engineering job shop that specialises in welding and marking processes. Established 30 years ago, the company provides electron beam welding and laser marking services to the automotive, aviation, manufacturing and general engineering industries.

Ebtech found that the electron beam welding process it was using for stainless welding or cutting was not suitable for high volume components. "Flexibility and the ability to manufacture components quickly is a great advantage for us, one that was worth investigating alternative methods for," said Mike Jenkins, owner of Ebtech:

Ebtech Industries began the search for a new process about three years ago. The company was made aware of the laser technological capabilities of GSI's laser products through a new supplier, Raymax Lasers®, based in Australia. Mike Jenkins flew out to GSI's applications laboratory in Rugby, UK to see the products for himself. This exposure led to the decision to proceed with laser processing and to purchase from GSI.

Ebtech selected the GSI JK450HP Nd:YAG laser system (peak power 10 kW, PRF 1000 Hz, 450 W average power), supplied by Raymax Lasers®. It is engineered for production environments and is capable of welding, drilling and cutting a wide range of metals. The reach of the robot allows components that can fit into a cubic metre to be cut or welded.

"We chose the 745 because it is a power machine with good flexibility to perform many different kinds of applications," said Jenkins. "We need that because we deal with many different kinds of processes every day. It fills a requirement for a hi-tech welding process that fits between the current electron beam welding process and general welding processes such as TIG and MIG"

The laser is delivered via a fibre optic to welding or cutting optics that focus the laser for the process. A Motorman 20kg Payload Robot manipulates the working optics. The working optics and robot are completely enclosed inside a work cell installed with full interlocks for safety. A rotary chuck allows circumferential welding and cutting of round jobs.



Since installation there has been a steady increase in interest and jobs for Ebtech. The company's laser welding applications' knowledge and capability has increased with the help of Raymax and GSI, resulting in even more work coming into the shop.

The GSI laser has increased the kind of work Ebtech can offer. Says Jenkins: "The higher throughput compared to electron beam welding has gained new jobs that we would never have had the opportunity to do due to time and cost. We can now offer new processes such as light, small-run cutting."

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