A custom-made welding machine has allowed Great Basin Industrial to complete projects in colder climates - with impressive results.

The company approached Koike Aronson, Ransome to adapt their automated electro-gas welding machines for field erected tanks with enhanced safety features as well as the ability to weld in colder climates but retain the same productivity and quality benefits. GBI executives also required a machine that could produce welds that would pass the stringent Charpy Impact tests – a requirement for operations in cold weather.

The bespoke Vertimatic machine allows GBI to complete jobs in colder climates with a greater degree of operator safety and ease of use compared to other machines and systems currently on the market.

In an interview with Tank Storage Magazine, Jeff Reading, GBI construction director explains that the two machines, which were completed and delivered in April 2016, have already been successfully used on five tank construction projects. “We used the machine for a tank construction project in Louisiana for a 130 foot tank. The shell thickness meant we could use it for the first three shell sections and the x-rays that we took on these wells have been phenomenal – they were very clean and required no repairs.

‘It saves us so much time, money and ultimately equates to less people on site. The time that we save can also be focused on other work.’

The machine can cut down welding time from several hours to minutes. For example, a one inch vertical seam on 10’ of sheet can be welded in 40 to 45 minutes – this would compare to 10 to 14 hours if welded by hands with a wire feeder and 20 to 28 hours if by stick weld. The automated welding is done in a single pass, with no need for multiple passes, back gouging or grinding.

GBI’s quality assurance/quality control director and welding engineer, Keven Henrie worked closely with Koike to develop the desired modifications to the machine. In addition, a custom enclosure was also developed to facilitate ease of transportation and storage of the units.

**ENHANCED SAFETY**

One of the modifications comprised a moveable operator platform for safety and ease of operation, which allows the operator to be on top of the controls and welder to make the necessary adjustments and monitor as needed.

Reading explains: ‘These machines are used at significant heights, and we wanted something that would enhance operator safety and ease of use. The previous machines required that an operator either
GBI completes work across the US and Canada, including cold-weather environments such as North Dakota, Alberta and Alaska.

‘The existing machines would have difficulty producing a weld that would pass Charpy impact tests required for cold weather operation,’ says Reading.

The Charpy impact test is a standardised high strain-rate test that determines the amount of energy absorbed by a material during fracture.

The units have been used in projects in Alaska, Wyoming, North Dakota and are currently being used on a project in Louisiana.

Reading adds: ‘The GBI core values of safety, quality, experience, people, integrity and competitive helped drive the decision to collaborate with Koike to develop a better automated vertical welding machine.’

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