



# From the practice

## Onwards and upwards with Cloos

Maximum Efficiency with High Performance Processes

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**Haiger/Zweibrücken – Since August, Carl Cloos Schweisstechnik GmbH welding machines have been in use at Terex Cranes Germany GmbH in Zweibrücken. The crane building specialists are anticipating huge increases in productivity from the Rapid Weld and Speed Weld processes.**

Terex Cranes Germany GmbH develops, manufactures and distributes cranes throughout the world. The leading innovator in the crane field produces, amongst other things, one of the largest cranes in the world which can travel under load: The CC 8800-1 TWIN can take on loads of up to 3,200 tonnes. With more than 1,700 staff at the three production sites around Zweibrücken, the company is one of most important employers in the region.



The CC 8800-1 with the BoomBooster extension arm system can take on loads of up to 3,200 tonnes.

### Welding technology as core competence

The production time for modular-built cranes varies considerably, from four weeks to six months. Welding technology plays a key role in their manufacture. So welding the CC 8800-1 TWIN, for example, requires 27 tonnes of raw weld metal and 300 to 600 hours of work. "Safety and quality are

our top priority" explains Harald Riedinger, Director Technology & Innovation at Terex Cranes. "Because the weld seams must provide what they promise" Riedinger continues. On top of that come the customers' visual demands, with the result that the weld seams must not only be safe but look good as well.

By using innovative technologies Riedinger wants to revolutionise welding technology at Terex, in order to expand its market leadership. "We want to produce cranes much more efficiently and, above all, at lower prices whilst at the same time increase quality even further", emphasises Riedinger.

### High Performance Processes for Rapidity and Quality

Since August, staff at the Bierbach works have therefore been able to use six new Qineo Pulse 600 welding machine from Cloos. In January four new machines were added and there are more to come. The welding machines can be used for welding push-beams for crawler cranes and large centre parts for the ground crane. The combination of the modified Rapid Weld spray arc and the tension-controlled Speed Weld pulse process in the Qineo Pulse guarantees optimum welding results.



The new Cloos machines used during the welding of push-beams for crawler cranes.

The special control of the Rapid Weld process generates a very stable arc with a very high arc pressure. With the help of special electrical parameters, both a wide arc and a narrow, focussed arc can be set thus exactly modelling the penetration profile. Thanks to this feature, the opening angle, for example, can be reduced for large material thicknesses. Filler metals, shielding gas, welding time and in particular heat input, can thus be reduced. Considerably less welding beads are necessary which also shortens the welding time. So whereas before three layers often had to be welded, now normally only one layer is needed.

The main advantage of the Speed Weld process is a very directionally stable and powerful arc. Thus relatively high welding speeds can be achieved with the Speed Weld pro-

cess. Due to the voltage regulation of the pulse phase the arc stabilises itself because of the internal control.



The Cloos arc convinces because of its stability and performance.

By investing in modern welding technology, Terex Cranes wants to speed up the manufacturing process considerably, to bring production costs down and to achieve reproducible welding results in the future. Riedinger is expecting the savings potential from the new technology to be more than 20 percent. This means that the crane building specialists are now able to meet the demands of its customers for increased productivity and quality.

### Staff is the main focus

With the new Cloos technology, Terex Cranes is saving not just time and costs. The welders, too, will benefit significantly from the new Qineo Pulse machines and the Speed Weld and Rapid Weld processes. Previously the welders had to groove out their welds regularly, meaning the welders were severely impaired by noise levels and the smells. Now the quality of work has improved considerably. To date, ten staff are welding with the new machines. They have also attend various workshops at Cloos in Haiger and at the Terex site in order to familiarise themselves with the new technology. In total, 90 welders work in the Bierbach factory who are now trained one by one.

Riedinger emphasises: "What's important to me personally is a unified approach, where the importance lies in the coming together of engineering, manufacturing and welding supervision, in order to make the most of the new technology". The ideas and suggestions put forward by staff in the various areas played an important role in the decision-making. As early as looking at the new technology, staff from the various specialist departments were heavily involved. That's because decisions about using the new technology must not be made just from an office. Components were welded under real conditions in workshops using machines from various manufacturers. Finally, the Cloos arc convinced the welders, above all through its stability and performance. In addition, the team was excited by the easy handling and simple menu guidance in the Qineo Pulse. The Cloos user-friendly operator interface means the welding machines can be operated simply, quickly and intuitively.

### Further Investment is Planned

"We shall also invest in new welding technology in the future" reveals Riedinger. "We want to set the welding standard for cranes at world level in order to ensure our competitiveness in the long term" continues Riedinger. In addition to solutions for manual welding, automation is also gaining increasing significance at Terex Cranes. Some automated welding plants are already in use at the Zwei- brücken and Wallerscheid sites and the potential is huge. "With automated processes the efficiency of our welding surely raises itself to a new level" assures Riedinger.



.Christian Porté (CLOOS Works Representative, Philippe Schweißtechnik), Oktay Sulusaray (Terex Cranes), Yahya Demirel (Terex Cranes), Harald Riedinger (Terex Cranes), Michael Merschbächer (Terex Cranes), Peter Leibrock (Terex Cranes), Ralf Wagner (Terex Cranes) (f.l.t.r.).



Video on YouTube

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