

MD Steel grows cutting capability through Cosmo

Michael Jacobs, CEO at MD Steel Services, and Petrus Pretorius of Cosmo Group talk about their relationship, that now includes the supply of state-of-the-art CNC laser cutting systems from Shanghai-based ACME-Laser.

Established in 2018 with a single plate roller in a 1 000 m² workshop with another 1 000 m² of laydown area, MD Steel has now moved into R28-million premises in Boksburg with 9 000 m² under roof and 11 000 m² of laydown area. “We specialise in metal processing: rolling, bending, cutting, drilling and fabrication. And despite having had to endure the COVID years, the demand for our services has and continues to grow,” Michael Jacobs, the CEO and founder of MD Steel Services tells AF.

“Broadly speaking we are a metal processing service provider that also has a fabrication workshop. We manufacture concentric and eccentric reducers for the piping industry, for example, and we do free issue fabrication, where customers supply the drawings and drop off the materials and we then do custom fabrication for them, delivering the final products to meet specifications and project schedules,” Jacobs says.

He cites a customer from China who is currently looking to erect an assembly facility in South Africa. “I did a quote for them for several hundred million Rands,

based on free-issue fabrication of all the medium to heavy steel sections needed to construct their assembly plant. We are seeing a lot of growth in Chinese motor vehicle manufacturing in South Africa, because these vehicles have all the modern features of the top vehicle brands, but they are a lot less expensive,” he adds,

“This is a big market for us and we have quoted for over R500-million worth of metal processing and fabrication work. We try not to buy the materials ourselves, but we do all the cutting, rolling, bending, drilling and welding work required to enable rapid on-site assembly,” he says, adding that the client then only pays for the labour involved.

On the quality side, he says that MD Steel is ISO 3834-certified by the SAIW and has two Level 2 weld quality inspectors to coordinate the fabrication work. “We have several welders, all coded for the processes we use, and we have a boom welding submerged arc system for long seams.

On the resourcing side, Jacobs says MD Steel bought a lot of its equipment second hand and then fully refurbished it to suit its modern needs. “This started with our plate rollers and we are now busy rebuilding



The bed is a heavy-duty, double-exchange, automatic feeding table that is precision milled. While cutting one sheet, the next sheet can be loaded ready to be moved into place.

another one that can handle 50 mm plate thickness, adding to the rollers we already have: for 6.0, 25, 40 and 50 mm plate thickness. We also have a 500 t bending brake that we can use to make plate girders or channel sections, or we can fabricate beams from plate using our submerged-arc system, if required,” he says.

Extending the cutting capability

MD Steel’s relationship with Cosmo began a few years ago with the refurbishment of two second hand CNC plasma cutting systems, one with a 9x5 m and another with a 12x3 m CNC table: “We asked Cosmo to take care of the full refurbishment, which involved coupling new Hypertherm plasma cutting technology with these CNC tables.

We were very pleased with the service and the results we received, and our boiler makers have since used these machines extensively for in-house fabrication work.

“Nowadays, though, many customers tend to prefer the cut quality of a laser cutter, so we approached Cosmo for a solution,” he adds.

This resulted in the supply of a state-of-the-art 6.0 kW ACME LP420H fibre laser cutting machine with interchangeable 2x3 beds, which was installed September. “We are now cutting material using a 20 mm nozzle that can handle a 20 to 26 mm cut, and the interchangeable beds mean that while cutting one sheet, the next sheet can be loaded ready to be moved into place,” he adds.

Petrus Pretorius goes on to describe the journey that led Cosmo Group to adopt ACME Laser’s for its South African clients. “We visited the ACME factory in Shanghai, China, about two years ago and we liked what we saw. They have a massive factory that builds quality machine using components from global brands such as SMC and Schneider Electric. ACME now has over 15 years of manufacturing laser welding and cutting systems and they export them all over the world,” he says.

“Chinese technology is really an eye opener. In Shanghai, almost 80% of the motor vehicles are fully electric. Technologically really is an advanced place,” Pretorius tells AF.

Describing the specific features of the ACME LP420H he says that the laser source is a Max 6.0 kW fibre laser, while the bed is a heavy-duty, double-exchange, automatic feeding table that is precision milled. “For thinner steel, the system uses compressed air at 15 bar to blow away the kerf, while oxygen is used for thicker section cuts – and for cutting stainless steel, nitrogen



A FScut 4000E control system that incorporates the CNC, cutting and nesting software ensures easy operation with fast, accurate and clean cut quality.

can be used instead, , but MD Steel isn’t doing much stainless yet,” he says, adding that the system has all of the typical CNC control and programming software and nesting features you would expect of a high-end automated cutting table – and it comes with approvals from TUV, CE, FDA, SGS, and ISO 9000.

“We developed a good relationship with MD Steel through our willingness to completely refurbish their plasma cutting systems, which we continue to service and supply with the consumables to keep the machines running 24/7. So they felt that they could trust us on the laser cutting machine, as well,” he says.

“On the training side, we were joined by an engineer from China via WeChat, which



The laser source is a Max 6.0 kW fibre laser, a premium Chinese brand, while the laser head is a 6.0 kW Raytools BM06 K.

worked out fine. And yes, despite some unexpected delays, everything went well and the laser cutting machine continues to perform well.

“We are also hoping to start supporting the fabrication side of MD Steels’ business, perhaps with one of ACME’s laser manual welding machines, which we think would make an ideal tacking solution for the boiler makers,” says Pretorius.

“From our side,” concludes Michael Jacobs, “the laser cutter gives us another string to our bow, and we are excited about the opportunities we are already seeking in taking the technology one step further.”

<https://cosmogroups.co.za>



MD Steel is now using the machine to cut material using a 20 mm nozzle that can handle a 20 to 26 mm cut.



MD Steel now has a state-of-the-art 6.0 kW ACME LP420H fibre laser cutting machine supplied and supported by Cosmo Group.