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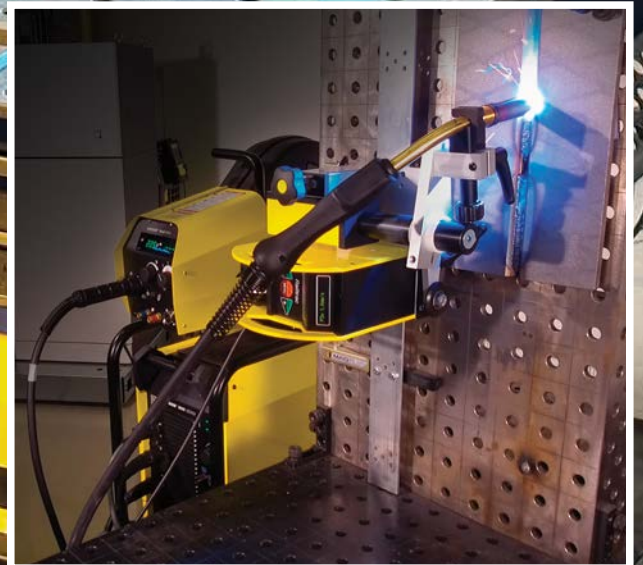


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Published three times a year, in March-April, July-Aug and November-December, circulated via email and posted online.

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Production & layout: Darryl James

Circulation: Brenda Grossmann

Printed by: Tandym Print, Cape



ESAB South Africa is launching a new and comprehensive automation range into South Africa this year, starting with the company's new COBOT solution, while also including dedicated solutions for bore cladding with a continuously rotating torch (CRT), a tank welder for jack-up tank construction, and several welding tractors for butt, fillet, rail and double-sided stiffener welding.

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March-April 2026

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Last month, we lost an extraordinary character, an exceptional teacher, a champion in the Inspection and NDT fields, and, to many of his students, an excellent mentor. On behalf of the SAIW, I would like to convey our sorrow and heartfelt condolences to Mark Digby's family and all his friends and colleagues. He will be missed, and at SAIW, we will strive to keep his legacy alive.

After stabilisation of the SAIW in 2025, we look forward to completing the third and final stage of our transformation process in 2026. Unfortunately, we have to revisit the executive director's position. Still, Confidence Lekoane has again stepped up as Acting Executive Director, with the support of the chairman and the board, and we have every confidence in her abilities.

We are also operating without a Certifications Manager to handle SAIW personnel certification and company certification schemes. Our General Manager, Shelton Zichawo, is successfully handling the ISO 3834 Certification workload, but we would like to give him more time to dedicate to general management.

We have added to our NDT offering for 2026 with several new Level 3 courses. Following the tragic loss of Mark Digby, therefore, we now also need to strengthen the NDT department, particularly at the higher levels. We would welcome applications or suggestions of suitable people to take on this role.

The key roles at the Institute have now been filled or are being covered by contractors, so there are no longer any risks to the delivery of SAIW training services, support for the welding community or to the Institute's sustainability.

The welding, NDT, inspection, and Certification services SAIW offers will be particularly important for meeting South Africa's immediate preparation and future needs in its

infrastructure redevelopment programmes, most notably the IRP 2025 plans for our energy transition.

IRP 2025 favours renewables, gas, and nuclear energy to achieve our net-zero targets. On the nuclear side, 5 200 MW of new nuclear capacity is a central pillar of the new strategy to replace coal and provide reliable baseload power. As our population grows, we will require more infrastructure and energy, in particular. So the Government has made the right decision to expand energy capacity using clean nuclear power at this stage.

At SAIW, we have been discussing future training needs in the nuclear field for some time, and with our transformation near complete, these plans are beginning to take shape. We intend to convene a stakeholders' meeting early in the year to develop a set of training modules that align with nuclear standards.

We hope to attract young professionals and recently qualified students from our universities and the SAIW. South Africa needs to upskill a new generation of professionals in preparation for the nuclear new build: nuclear engineers, welding engineers, welding inspectors, NDT professionals and safety personnel. These programmes will be impossible to achieve without considering the core execution teams, such as welders, who are critical for joining the materials. SAIW will look to coordinate and form ATBs across the country to deliver training for welders, boilermakers, and pipe fitters. In the nuclear industry, professionals need to be equipped with a niche set of high-level skills, along with a specific ethical culture regarding risk and safety.

Nuclear energy technology has proved exceptionally reliable and safe when all internationally required safeguards are implemented. The International Atomic En-

ergy Agency (IAEA) oversees these safeguards and verifies whether due diligence is being applied. This includes stipulating the regulations to be applied and the qualifications and competencies required of nuclear personnel.

SAIW has been an IAEA Regional Designated Centre (RDC) for many years, providing Non-Destructive Testing (NDT) training and certification. This has led to our collaboration to establish a Nuclear School of Excellence for NDT in South Africa, which is progressing well. We are therefore ideally placed to take our collaboration further, helping the broader industry in training a new generation of nuclear professionals.

We need to do it very soon, though. The first 1 200 MW unit is expected to be delivered by 2036, with a phased rollout of subsequent units planned for 2037, 2038 and 2039. This is an enormous task, but an exciting opportunity for the SAIW.

In addition, in the recent State of the Nation address, our President, Cyril Ramaphosa, announced a committee to review the delivery of new water infrastructure. This will require mechanical, welding and inspection skills. In addition to metallic welding, there is increasing use of high-density polyethylene (HDPE) for water pipelines. As part of SAIW's strategic approach to developing skills in materials suitable for specific environments, we have begun exploring plastic welding as a potential new offering.

I am pleased with the progress we have made and are continuing to make in preparing the SAIW for our future. And this future is looking like it will need the SAIW's services more and more.

Joseph Zinyana

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ESAB advances welding automation range

ESAB South Africa is launching a new and comprehensive automation range into South Africa this year, starting with the company's new COBOT solution, while also including dedicated solutions for bore cladding with a continuously rotating torch (CRT), a tank welder for jack-up tank construction, and several welding tractors for butt, fillet, rail and double-sided stiffener welding.

Welding automation, according to Jannie Bronkhorst, Technical Director for ESAB SA, enables fabricators to bridge the skills gap, increase productivity, and deliver consistent, high-quality welds. "We offer a diverse portfolio ranging from easy-to-program collaborative robots (cobots) for high-mix, low-volume work, to heavy-duty automated solutions, including submerged arc welding (SAW) tractors and custom-built column and boom systems," he tells *African Fusion*.

He says the cost of adopting automation solutions has been falling for several years, driven by developments such as collaborative robots (cobots) and by enterprises of all sizes seeking to stay competitive in an increasingly demanding market.

ESAB's new UR10e COBOT

ESAB UR10e COBOT is a fully self-contained, small-footprint and mobile robotic MIG/MAG welding system designed to help fabricators increase production volumes and quality without additional people.



Collaborative robots (cobots) are easy to program and ideal for high-mix, low-volume work in small- to medium-sized fabrication shops.

"These COBOTs are made for welders, not programmers," Bronkhorst assures.

Intuitive app-based software enables the welder to choose the weld type in the app on a phone or tablet before moving the cobot arm to key start and end points around the weld. Then, welding can start. "Rather than replacing them, this cobot empowers skilled welders to take advantage of the automatic manipulation a robot can deliver," he adds.

There is no need to swap skilled welders for skilled programmers. Powered by the Beacon app from Hirebotics, the ESAB COBOT uses familiar technology and terminology, enabling welding experts to quickly and productively deploy automation to achieve high-quality results.

The fully integrated multifunctional welding system includes a UR10e robot arm, a microcontroller cabinet, a colour teach pendant, an ESAB Aristo 500iX power source with the Aristo RoboFeed3804W wire feeder, and a TBI RM 82W-22° water-cooled welding torch. A worktable surface with workpiece fixing brackets is also included.

"Cobot automation systems are designed to be allocated and used by a shop floor welder in the same way as a manual welding machine would be. But instead of weld speed and quality depending on the consistency of the welder's arm, they become dependent solely on the welder's teaching experience," suggests Bronkhorst.

Bore cladding and CRT

On the fixed automation side, ESAB SA is introducing a hot-wire TIG-based column and boom cladding systems for high-integrity small-bore cladding of internal pipe surfaces. A



ESAB UR10e COBOT is a fully self-contained, small-footprint and mobile robotic MIG/MAG welding system.



On the fixed automation side, ESAB SA is introducing a hot-wire TIG-based column and boom cladding systems for high-integrity small-bore cladding of internal pipe surfaces.

key feature of this system is a continuous-rotating torch (CRT), which eliminates the need for a workpiece rotator.

Simple and complex internal bore shapes can be clad, with an arc voltage control (AVC) slide accurately maintaining the distance between the tungsten torch and the workpiece, regardless of the surface profile.

The system comes complete and ready to weld, with the column and boom mounted on a base plate, the CRT Head with an internal wire feeder, a 600 mm long torch lance suitable for access into internal bores above 50 mm (2-inches), the HMI interface for programming and process control, an ESAB Aristo 5000 iw welding system for powering the TIG arc, and an additional ESAB Rogue ES 200i for the delivery of hot wire into the TIG arc.

From a process control perspective, an in-built data logging system collects data from the system and transmits it to a wireless HMI/controller with a 10-inch multi-touch screen. Multi-page data displays and alarms can be accessed. In addition to the current, voltage and wire feed rates for each job, welding parameters such as weld deposition rate (kg/hr), layer thicknesses (mm), wire consumed (kg), and gas consumption



ESAB AGW1 series of tank welders is the best yet for 2G welding construction in jack-up fuel tank construction.

(ℓ/m) are recorded and displayed.

“This new high-precision system is ideal for bore cladding in the exotic materials needed for chemical, oil and gas, and nuclear applications, where uncompromising precision and very high-quality are required,” says Jannie Bronkhorst.

Jack-up tank construction system

“Our new ESAB AGW1 series of tank welders is the best yet 2G welding construction system for jack-up fuel tank construction,” continues Bronkhorst.

This construction method is a well-established top-down erection method for large storage tanks, where the roof and top shell are assembled first at ground level. Hydraulic jacks then lift completed sections, allowing each consecutive section of the shell to be welded underneath. The method eliminates the need for cranes and welding at height, increasing safety, speed and efficiency.

The ESAB Tank welder is a lightweight, tractor-based SAW welding system designed specifically for circumferential welds on storage tanks under construction. The new system uses a flexible aluminium rail attached to the shell using magnets. For welding, ESAB LAF1001 or LAF631 power sources can be used with the ESAB PEK Process Controller.

A flux belt is used to hold the SAW welding flux, as in other girth welding processes. This can carry a 20 or 30 kg flux hopper, and a built-in flux recovery system is included. For optimal wire feeding in the 2G position, 1.6 or 2.0 mm wire is recommended.

Interconnection cables of up to 50 m are available, depending on customer requirements.

Key advantages include easy assembly and preparation for welding, with no need for any welded brackets for mounting the track; digital process control and monitoring from the PEK Digital Process Controller for enhancing welding performance and

quality; smooth wire feeding from a 4-roll drive mechanism; and a very wide range of ESAB welding consumables is available for any specific welding application.

“Fuel tank construction is accelerating in South Africa due to our increased dependence on imported fuels, a worsening shortage of fuel

storage capacity, ageing infrastructure and rising energy demand. Well-designed welding solutions such as the ESAB AGW1 tank welder can make the construction of these storage facilities far more cost, time and resource efficient,” Bronkhorst notes.

Application-specific tractor solutions

In addition, three other new tractor solutions are being introduced into the South African market to help fabricators meet their quality and productivity needs. Each of these is purpose-designed to meet common mechanisation needs on shop floors.

The first is ESAB’s new Fillet Welder, a small, lightweight tractor designed for vertical, horizontal, and overhead butt and fillet weld seams, which delivers precise control of travel speed, weaving speed, weaving angle, and dwell times.

This versatile autonomous welding tractor is designed for rail-free operation across flat, vertical and overhead positions. With a dual-motorised 4-wheel drive, it offers precise steering and optimal traction, even on curved or uneven surfaces. The system is powered by a lithium battery pack that can supply 10 hours of continuous operation, so no external power supply is required. Easy to operate, the tractor/carriage is driven by a guide wheel and attached to the work surface via magnetic adsorption.

The second new tractor, the ESAB automatic Rail Welder, RW1, is a multi-function rail welding system for flat and vertical welding of flat, horizontal, vertical and overhead butt joints, using MIG/MAG or FCAW processes. Also wireless and powered by lithium-ion batteries, the system is designed to be operated by a welder, offering adjustment of the travel angle and weld torch position during welding. Tracked using a magnetic guide wheel and an adsorption clutch handle, the ESAB RW1 system can be used on both flat and curved surfaces.



The ESAB automatic Rail Welder, RW1, is a multi-function rail welding system for flat and vertical welding of flat, horizontal, vertical and overhead butt joints.

ESAB’s new HCD-500B Stiffener Welder, a double-sided fillet-welding tractor, is the third new mechanised solution being introduced by ESAB South Africa this year. Also rail-free, wireless, and battery-powered, this tractor can hold two welding torches to simultaneously place fillet welds on both sides of a stiffener strip. Configured to weld ribs up to 390 mm high, this system is ideal for manufacturing I-beams, T-beams, and reinforced ribs.

Underpinning all of the new mechanised solutions is ESAB’s Rustler EM 350C Pro Syn Pulse welding power source, a premium, full-featured modern welding machine. Equipped with the latest inverter technology, the Rustler MIG PRO combines low energy consumption with optimised welding performance in MMA and MIG/MAG/FCAW for all common base materials.

The machine includes welding programs for carbon steel, stainless steel, aluminium, brazing, and flux-cored wires, with the added benefit of synergic control, which saves setup time, promotes consistency, and helps less experienced welders produce optimal welds. “These new Rustlers have simple, intuitive controls and are ideal for small fabricators and welding fleets. This also makes them particularly well-suited for use with our extended mechanised tractor range. Rustler inverters are robust, reliable and energy-efficient, making them ideal for small fabricators and welding fleets, particularly those migrating towards automated or mechanised welding solutions,” says Jannie Bronkhorst.

“When it comes to welding automation, we at ESAB South Africa can offer best-fit solutions to meet almost any welding need, along with the support to ensure that our customers see the cost and quality benefits,” he concludes.

<http://esabsa.co.za>



SAIW reintroduced Level 3 NDT courses to its offering

Lemogang Maclean, SAIW’s Acting Training and Technical Manager, explains why the SAIW has reintroduced Level 3 NDT courses in Visual, Liquid Penetrant, Magnetic Particle, Ultrasonic and Radiographic Testing for 2026, motivated by the increasing need to secure the safety and integrity of new and in-service structures and industrial plants.

South Africa has an increasing number of high-risk industrial sectors where structural integrity is essential. We therefore need NDT inspectors with the knowledge and skills to validate the integrity of the welded connections in these structures, to minimise the risk of expensive failure and, more importantly, the potential for loss of life. Safety is the key motivation for NDT.

From a localisation perspective, offering Level 3 NDT training here at the SAIW also helps develop high-level technical expertise within the country, reducing reliance on external specialists and strengthening our national inspection capability.

This is particularly relevant to key industries the SAIW serves, including power

generation, oil and gas, petrochemical processing, mining, rail, pressure equipment and fabrication, where inspection reliability directly impacts safety, regulatory compliance and asset life.

The new Level 3 courses on offer

This year, we have introduced Level 3 courses in the common NDT Techniques: Penetrant Testing (PT), Magnetic Particle Testing (MT), Ultrasonic Testing (UT), Radiographic Testing (RT) and Visual Testing (VT). While these courses are not new, they have not been available locally over the past 4-5 years, so their reintroduction provides an important opportunity for professionals to upgrade their skills and progress into senior inspection roles.

- The Visual Testing (VT) Level 3 course covers the principles, techniques, and equipment used in visual inspection to detect surface defects. The course includes inspection procedures, evaluation and reporting, quality requirements, and developments in visual testing.
- The Penetrant Testing (PT) course provides advanced knowledge of liquid penetrant testing for detecting surface-breaking defects. Topics include testing principles, equipment, inspection procedures, results evaluation, quality control, and safety considerations.
- Magnetic Particle Testing (MT) Level 3 focuses on magnetic particle inspection for identifying surface and near-surface defects in ferromagnetic materials. The course covers testing principles, equipment, inspection procedures, evaluation, quality aspects, and safety considerations.
- Ultrasonic Testing (UT) Level 3 develops expertise in ultrasonic inspection for detecting internal material defects. Training covers the principles of ultrasonic testing, equipment operation, inspection techniques, result interpretation and quality assurance.
- Radiographic Testing (RT) provides advanced knowledge of radiographic testing for identifying internal defects in materials and welds. The course includes radiographic principles, equipment, inspection procedures, result interpretation, and quality aspects.

At Level 3, technicians progress from performing inspections to designing inspection plans, selecting and approving techniques, interpreting codes and standards, validating results, and taking responsibility for inspection outcomes.



This year, SAIW has introduced Level 3 courses in Penetrant Testing (PT), Magnetic Particle Testing (MT), Visual Testing (VT), Radiographic Testing (RT) and Ultrasonic Testing (UT).



Candidates who may benefit

These courses offer a career pathway for both private candidates and company-sponsored personnel seeking to upgrade their NDT skills and assume greater responsibility, as qualified Level 3 NDT personnel are highly valued by industry, authorised inspection service providers, inspection authorities, and professional bodies.

This course is ideal for NDT Level 2 personnel who want to advance their careers. Level 3 training elevates their expertise from mainly executing inspections to higher-level responsibilities, including interpreting standards, developing procedures, and making technical decisions. It prepares them to progress into senior roles such as NDT Level 3 specialists, and Responsible Persons, or Quality Managers within inspection and integrity management systems.

In addition, for engineers and managers, this training will provide a clear understanding of what NDT can and cannot do, as well as how inspections are used to manage risk. This will help them make better, well-informed technical and business decisions that affect safety, quality, and asset performance.

Advanced PAUT and ToFD course

While we are not yet ready to offer advanced Phased-Array Ultrasonic Testing (PAUT) or Time of Flight Diffraction (ToFD) this year, we are in the process of building our capacity to offer them in the near fu-

ture. Possibly, start with ToFD in 2027, once we have reestablished core Level 3 NDT training programmes that ensure that the curriculum, resources, and quality systems are well aligned with industry standards.

We are also planning to include the advanced Phased-Array ultrasonic technique in the near future. This need is closely aligned with South Africa's future energy infrastructure needs, particularly in light of IRP 2025, which includes plans for nuclear capacity alongside renewable and gas projects. These developments will require the construction and maintenance of high-integrity systems such as pressure vessels, piping, and structural components, all of which demand strict quality assurance, inspection, and safety compliance.

From an NDT perspective, these projects will increase the demand for highly skilled Level 3 personnel in all techniques, who can develop inspection procedures, interpret codes, and ensure reliability. So expanding advanced NDT training locally will be essential to support the country's infrastructure goals, enhance safety, strengthen regulatory compliance, and reduce reliance on international expertise.

Large-scale projects, such as nuclear power plants, pressure systems, pipelines, and heavy fabrication, require accurate and reliable detection of defects, which depends on expert interpretation of results, development of the most appropriate inspection procedures, and supervision of

lower-level inspectors to maintain safety and asset integrity.

Without highly skilled NDT personnel, the risk of undetected defects, equipment failure, or non-compliance with regulatory requirements increases, potentially compromising safety, causing costly delays, or leading to serious accidents.

The SAIW's reputation as a centre of excellence with decades of experience in technical training, assessment, and industry support makes it a training provider of choice for NDT, Inspection and Welding courses. We have passionate, highly qualified, and experienced instructors, which makes all the difference in delivering practical, hands-on learning.

We have also digitised our classrooms to make training more appealing, engaging and accessible, and to progress our standards to those typically used in the modern world.

SAIW training continues to open opportunities for career advancement, professional recognition, and increased employability.

An empowered employee with the right skills and knowledge is a real asset to any company. So, for companies, SAIW training assures quality and compliance, as our courses align with national and international standards, helping staff achieve the competence needed to deliver safe, efficient, and reliable results.

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Mark Digby: his legacy lives on

Mark Digby was born on 29 April 1961 in England and immigrated to South Africa in 1969. He matriculated in 1979 from Sunward Park High School. He married Helen in 1983, and together they had four children and four grandchildren, whom he loved dearly.

Mark loved sport. Whatever sport he pursued, he embraced with near-obsessive dedication. He was passionate about cycling and triathlon, and in later years, running and walking. He could join in any sport, anywhere, at any time, and was a talented and enthusiastic all-rounder.

He began his career in Non-Destructive Testing (NDT) at Hall Longmore, where he also completed his Electrical Trade qualification. He worked in the NDT field at CIS, HOWDEN, ESKOM, and the SAIW (on two separate occasions), and was self-employed for a period. He firmly believed that, as a trainer, it was essential to remain active in the field to continually update and strengthen one's practical knowledge.

Mark was a dedicated lecturer at the Southern African Institute of Welding (SAIW), a true master of NDT, a mentor, and a friend. He was more than an educator – he was a custodian of knowledge. His passion for NDT was evident in every lecture he delivered, every workshop he facilitated, and every student he guided.

He possessed a rare depth of technical understanding, combined with the practical insight that only years of industry experi-

ence can bring. As a lecturer, he had the remarkable ability to simplify complex principles – whether explaining ultrasonic wave behaviour, radiographic interpretation, or the finer details of penetrant and magnetic particle testing. His classroom was not merely a place of instruction but a space of inspiration, discipline and professional growth.

Mark's contribution to the NDT community extended far beyond course material. He shaped careers, strengthened industry standards, and instilled in his students the importance of integrity, precision and ethical responsibility. To many, he was a mentor. To others, a colleague. To all who knew him, he was a man of character, humility, and unwavering commitment to excellence.

Though he is no longer with us, his legacy lives on in every technician he trained, every inspector he certified, and every professional who carries forward the knowledge he so generously shared.

On behalf of colleagues, students, and the broader NDT fraternity, we extend our deepest condolences to his family and loved ones.

Rest in peace, Mark. Your contribution to the world of NDT will never be forgotten.

He will be deeply loved and profoundly missed by his family.





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SAIW Lab ISO 17025 renewal reaffirms testing excellence

The SAIW Materials Testing Laboratory is renewing its ISO/IEC 17025 accreditation through the South African National Accreditation System (SANAS), reinforcing the facility's role in supporting quality assurance, safety and technical compliance across South Africa's welding and fabrication industries.

ISO/IEC 17025 SANAS accreditation applies to SAIW's materials testing laboratory, which performs mechanical testing, provides welding qualification support, and conducts failure investigations for industry. In sectors such as mining, infrastructure development, pressure equipment manufacturing and structural fabrication, reliable laboratory testing is essential to ensure that welded structures and components meet required engineering standards.

ISO 17025 is the internationally recognised benchmark for testing and calibration laboratories. Accreditation confirms that a laboratory has the technical competence, equipment, procedures and quality systems required to produce valid and traceable results. In South Africa, SANAS independently audits laboratories to verify compliance with these strict requirements.

For the welding and fabrication sector, accredited testing provides independent verification that materials, welding procedures and finished components meet both national and international standards. This is particularly important for projects involving critical infrastructure, where structural reliability and safety are paramount.

Simulating real industrial conditions

SAIW Senior Lab Technician Kegomoditswe Dire explains that the laboratory plays an important role in validating welding procedures and material performance before fabrication work takes place in the field.

"Our laboratory essentially replicates welding and material conditions encountered in industry. Before critical components are deployed in applications such as bridges or heavy structural systems, we conduct controlled welding and mechanical testing to verify properties such as tensile strength and material toughness. This assures that both the materials and welding procedures will perform reliably under service conditions," she explains.

Mechanical testing of welded materials forms a critical part of engineering design and certification. Tests such as tensile



Walter Mahlangu sets up SAIW's high-definition digital microscope and measurement system to analyse weld test samples.

strength, impact toughness and bend testing help determine whether welded joints can withstand the stresses and environmental conditions they will encounter during operation.

The SAIW laboratory offers a range of services that support welding procedure qualification and technical investigations. These include destructive mechanical testing, metallurgical analysis and detailed examination of welded components.

The facility also works closely with other technical departments within the institute, including welding specialists and training instructors, who may assist with technical investigations or provide specialist insight during complex analyses.

Non-destructive testing (NDT) techniques used by the institute include radiographic testing, magnetic particle testing, penetrant testing and ultrasonic testing. These methods allow technicians to detect internal or surface defects in welded joints without damaging the component being inspected.

By combining welding services, NDT and mechanical testing capabilities within a single facility, SAIW can support companies through multiple stages of welding qualification and technical evaluation. This integrated approach helps reduce turnaround times while maintaining consistent testing standards.



SAIW Senior Lab Technician Kegomoditswe Dire.



Hardness testers in the SAIW Materials Testing Laboratory.

Failure analysis and industry support

In addition to qualification testing, the laboratory plays a key role in investigating failures when welded components or structures fail in service. When a failure occurs, companies often require independent analysis to determine whether the root cause lies in the base material, the welding procedure, fabrication practices or operational conditions.

Dire says the laboratory combines multiple testing techniques to provide a comprehensive assessment. "In addition to qualification testing, the laboratory conducts detailed investigations when welded components fail in service. By combining mechanical testing, metallurgical examination and non-destructive inspection, we can determine the root cause of a failure and provide recommendations that help prevent similar incidents in future."

Looking ahead, as South Africa continues to invest in infrastructure development, mining operations and industrial expansion, the availability of credible testing and certification facilities remains essential. By renewing ISO 17025 accreditation through SANAS, the SAIW aims to reaffirm the reliability of its laboratory services while strengthening the technical foundation of the country's welding and fabrication sector.

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Customised, specialised, high-quality manufacturing from GENMAC

African Fusion speaks with Keegan Govender, QA Manager at GENMAC (Pty) Ltd, about the niche, customised manufacturing and construction solutions offered by the company’s ISO 3834-2 certified facilities in Richards Bay, KwaZulu-Natal.

Keegan Govender, the Quality Assurance Manager of GENMAC (Pty) Ltd, studied Mechanical Engineering, specialising in structural design. “Before I joined GENMAC, I was at a local Titanium Dioxide plant, also as a quality manager, but with additional responsibilities on the ecology side,” he tells AF. He also holds an Outcomes-Based Assessment qualification from the Assessment College of South Africa, Welding Inspection Diplomas from SAIW in SANS 347 & PER Regulations, and for the Overview of ISO/SANS 3834 Part 2 course.

In 2002, GENMAC opened its Fabrication Workshop facilities in Richards Bay. Together with Directors Govy Govender, Keelan Govender and the rest of the Team, the company strives to maintain its mission statement: *‘To uphold and maintain a leading reputation by providing a quality service with the highest levels of professionalism, integrity, honesty & fairness to all stakeholders.’*

A niche customised offering

“The good thing about our business is that it is so specialised. We perform Fabrication work on large structures, such as furnaces, pontoons, barges, pressure vessels,

cranes, and conveyors, to meet the needs of minerals-handling and mining supply companies, including the Richards Bay Coal Terminal (RBCT), Rio Tinto, Sandvik, Metso, Tronox and many more, including cross-border companies.

Increasingly, though, a lot of the work passing through GENMAC’s Richards Bay workshops is for local and cross-border clients. He cites a recent success story for maintenance barges for a mineral sands operation in Senegal and Madagascar: “These are used to service the mines’ floating plants, which are pumping mineral-rich sands such as Ilmenite (FeTiO₃) from the ground. “We build the floating maintenance barges for moving equipment from the shore to the floating plant and back to shore,” Govender says.

This work involves significant structural fabrication, including plate work for the watertight hulls. “We also make conveyor systems, piping, safety walkways and stacking solutions for floating plants, pontoons and the barges that service them,” he adds.

On the pressure-vessel side, he says



A dredger manufactured and supplied for suctioning material from rivers or sea beds and sending heavy mineral concentrate directly to processing or separating plants.

that pressurised vessels are used to transport the titanium-rich, heavy material to shore. “There are two ways to transport mined material to shore: using a conveyor system or by loading the material into a pressurised vessel and then transferring it to shore via a pipeline,” he says.

“The barges we manufacture are fully equipped. The small one for Madagascar is 8 meters long and 4 meters wide. It has a full set of on-board hydraulics, a small crane, a skipper’s chair, propulsion systems, controls and a rudderless Z-drive propeller for manoeuvrability. It’s a purpose-built vessel for servicing floating mining plants,” he points out.

An interesting larger version was also manufactured for Senegal and delivered towards the middle of 2025. The 15x8 m barge had to be delivered from the Richards Bay facility to the Port of Senegal and then 21 km overland to the mine, passing through a residential area with an access limit of 6 m. So we had to manufacture the barge in two sections for transportation, then send a crew up there to weld the sections together, pressure-test it and float it to the mine’s pond.

“That barge is also equipped with two back actors, which are used to hold the barge to the shore during loading or unloading, and an on-board crane for loading and offloading pumps and anything else required for the plant,” says Govender, adding that “every application is different, so all of our work is uniquely customised to best suit the designs and needs of the plant and the customers’ requirements.”

“GENMAC has been specialising in barge



A GENMAC-manufactured and supplied barge equipped with two back actors, a crane for loading and offloading plant equipment, a full hydraulic system and a Z-Drive for propulsion.



Above: A 42 m boom manufactured and supplied for use on a ship-loader.



Right: A complex valve manifold system for a furnace that was manufactured, assembled and pressure-tested in GENMAC's Richards Bay facility to the client's specifications.

manufacturing for several years, and as a result, we have now made it easier for our customers. Customers can now order our small, medium, or large barges, and we will then spec them to meet their specific requirements," he tells AF.

GENMAC's Richards Bay facilities

From its Richards Bay facilities, GENMAC has the manufacturing capacity to process 200-250 t of steelwork per month. "Our facilities sit on 5,000 m² of land, with 2x1,000 m² under-roof workshops. For heavy fabrication, our first workshop is served by two 10-ton cranes and a 5-ton crane, where our welders and boilermakers manufacture and assemble various structures and components.

"Our second workshop, with one 5-ton and a 2-ton crane, is a fully fledged machine shop, where we machine various types of components," he says.

The value of ISO 3834-2 accreditation

Since February 2025, GENMAC has been an ISO 3834-2-certified company under SAIW's Welding Manufacturer Certification Scheme. "We have also held ISO 9001 and ISO 45001 accreditation for many years before that," he says.

"We like ISO 3834 because it is welding-related. The step-by-step processes you need to follow to ensure weld quality are made clear from the beginning. For much of our business, this certification is not necessary, but our clients are now interested in it. We showcase its value to them, with respect to better confidence in the quality produced and better traceability of the processes, procedures and materials used. It helps clients to understand welding as a complex process that has to be tackled in the right way from start to finish," he says.

"It also helps the welders to understand the whole welding process. I can tell the welder what needs to be done, and during the process, we put monitoring systems in place to ensure every aspect of a welding task is carried out thoroughly. At the end of the process, NDT and further quality checks kick in before we send anything to the machine shop or painting plant," he notes.

"ISO 3834 ensures that welding is done as a more in-depth, holistic process, which ensures much better results. On the quality side, problems can be detected much earlier, preventing costly rework. And regarding customers, we can call them in to witness each quality hold point, to demonstrate what we have done, prove we are on track, and provide an opportunity to take part in negotiations on how to take a project forward," Keegan Govender tells African Fusion.

Regarding SAIW's role in auditing and managing GENMAC's ISO 3834 accreditation, he is very satisfied. "From their side, the SAIW has been excellent, and we don't have any issues. Shelton and his team are a phone call away. But if they are unavailable, they always call back and are always helpful.

Welding choices and training

Since no two welding projects are ever the same, GENMAC prefers manual welding using the semi-automatic GMAW and flux-cored processes. "Manual processes are easier and quicker to implement and control, because robots and mechanised systems all need to be programmed, which takes longer for the type of work we do. We are shifting more and more towards using flux-cored welding wires, though, which, compared to solid wire GMAW, now accounts for 50% of our consumable use," he adds.

Regarding brands, he says that while premium welding brands such as ESAB are preferred, some clients have their own brand preferences, which GENMAC is happy to accommodate.

To retain and develop welding and boiler-making skills, GENMAC runs an apprenticeship training programme, using its own skilled welders to upskill and mentor young talent. "As well as being employees, we train our people here, and when they are ready, we send them for their welding or boilermaker trade tests.

"It takes about 2 years to train a learner, and they must first complete various theory modules. Once they get shop floor sign-off for their practical abilities, then we can start the process of getting them qualified as Red Seal artisans," he explains, adding that being a qualified assessor helps him to negotiate the paperwork required by apprentices to satisfy trade test requirements.

The future outlook

There are several titanium companies in the Richards Bay Area that all have expansion and local beneficiation plans in place. "Operations are also expanding, so we are very optimistic about future work.

"We are a quality-driven company, and we are fully committed to Richards Bay and its youth development. One of our subsidiaries invites youngsters from our local rural areas to training programs in swimming and sailing, ranging from small boats to large mono- and multihull sailing boats.

"At GENMAC, we make the structures often featured on the DSTV show presented by The Engineer, and we make these products with commitment to safety, quality, the environment, customer satisfaction, employers and the Richards Bay community," concludes Keegan Govender.

<https://www.genmac.co.za/>

Transforming production: from manual to automated welding

In this white paper, voestalpine Böhler Welding highlights, through case studies, the advantages of moving away from manual welding by adopting more automated solutions, using solutions such as the company's CO-BRO® FLEX collaborative robot, or mechanised solutions, such as railRunner.

Raising productivity at high-complexity levels, while meeting high-quality, flexible production and tight scheduling requirements are universal modern-day challenges for the welding industry.

Additionally, tough competition, along with growing skill and competence shortages, is driving a shift towards automation in this industrial sector. It should also be noted that optimum productivity does not only require the highest possible welding speed, but also fast setup, low downtime and high reliability.

As a trusted partner for automated welding solutions, voestalpine Böhler Welding supports fabricators worldwide in mastering their transition to automation with confidence and technical excellence.

With smart integration options, user-friendly interfaces, data-driven quality management, and global technical support, productivity gains can be achieved effectively. Whether starting with light automation, exploring collaborative robotics,

or scaling to high-performance industrial robotic welding, voestalpine Böhler Welding can deliver the tools and knowledge to transform production from manual to automated welding.

Collaborative robotics

For fabricating components in small batches in facilities where flexible production is the norm, industrial robotic solutions are seen as unattractive to welding shops because they are not versatile enough. Running a robotic welding cell requires significant setup time and program fine-tuning, which is only feasible for high-volume production cycles. There is an alternative, however, the collaborative robot.

The main difference between industrial robots and collaborative robots lies in how they interact with operators in the work area. Due to the lighter weight and slower arm movement of a collaborative robot, the operator can access the working area during operations, directly move the arm to



CO-BRO® FLEX from voestalpine Böhler Welding is a high-tech workstation for robotic collaborative MIG-MAG welding.

create a welding program, establish weld-path points, and make position adjustments. Consequently, collaborative robot solutions are 'plug and play'. They are easy to move around the workshop to meet the needs of different welding tasks.

A CO-BRO® FLEX success

As an example of a typical and successful collaborative robot user, one of voestalpine Böhler Welding's customers provides turn-key manufacturing solutions for more than 100 different types of small- and medium-sized steel components. The company implemented Böhler Welding's CO-BRO® collaborative robotic solution using the Uranos NX 3200 GSM welding power source in its manufacturing facility.

After a few hours of programming, using the Böhler Welding PulseDrive pulsed arc welding process, it was possible to increase bracket productivity from 250 to 400 pieces/day while maintaining high quality and reliability.

Light automation for longitudinal seams

Böhler Welding also offers wheeled- and track-based carriages for longitudinal seams, ideal for large tanks, beams, frames and shipyard applications. Typically, these solutions can reduce welding time by up to 90% compared to manual welding, particularly when using Böhler Welding's fully mechanised railRunners combined with flux-cored wires in the vertical-up position. This level of productivity is also achievable for longitudinal weld seams on larger tanks.

In a welding study involving a 9% Ni consumables for use on LNG storage tanks,



Böhler Welding's CO-BRO® collaborative robotic solution, using the Uranos NX 3200 GSM welding power source, is in use, welding 250 to 400 brackets per day.



The main difference between industrial robots and collaborative robots lies in how they interact with operators in the work area.

butt welds in the vertical-up or frontal positions were usually completed using SMAW. Manual welding for these applications is associated with clear limitations, however, due to the following issues:

- Frequent interruptions to exchange the stick electrodes and for slag removal.
- Material waste and the associated high cost of welding consumables.
- Skilled manual welders are necessary.
- Repeatability and meeting the requirements of established WPSs are seldom ensured.

To overcome these issues, GMAW and FCAW semi-automatic solutions have been adopted over the past few years, resulting in significant improvements across all the limitations mentioned above.

Flux-cored wires featuring a fast-freezing slag system to support the weld pool proved to be the most reliable and efficient welding consumables for positional welds on LNG tanks. The deployment of semi-rigid and flexible track-type mechanised welding carriages, in combination with flux-cored wires, resulted in a further enhancement, resulting in the benefits below:

- Higher production efficiency.
- Deposition rates as high as 85-90%: 5-8 times higher than that of SMAW.
- No electrode wastage.
- Higher weld quality.
- Greatly reduced numbers of stops and starts.
- Minimised critical weld failures and rework.
- Eliminated almost all weld grinding and cut-outs.
- Less welding skill is required.
- Mechanised equipment maintains pre-

cise control of the welding parameters. Modelling time and material efficiency for a typical butt weld of a 9% Ni steel LNG tank with SMAW, one may realistically achieve a process duty cycle – arc-on time vs total time – of about 20%, with a 1.5 kg/hr deposition rate and material losses of about 30% or more.

Based on those assumptions, as shown in Table 1, for a typical case of 25 mm plates with an X weld preparation, calculations for the SMAW process yield a total manufacturing time of 468 min and 3.34 kg of welding consumables per 1 m of welding.

In the case of the Böhler Welding mechanised solution, the process duty cycle can reach up to 80% for longitudinal non-interrupted welds, with a deposition rate of 3.4 kg/hr and a material efficiency above 90%. That leads to a very interesting scenario: the time to completion is only 49 min, compared to 468 min with SMAW, which is nearly 10 times faster. In addition,



When using the railRunner mechanised solutions with a flux-cored wire, the time to completion is only 49 min, compared to 468 min with SMAW, which is nearly 10 times faster.

consumable material usage is 2.6 kg, more than 20% less.

Table 2 provides details of the assumptions and calculations for SMAW, semi-automatic FCAW, and mechanised FCAW using railRunner.

Conclusions

Whilst selecting the correct equipment in combination with the correct welding consumables is essential to achieve these concrete benefits, synergic lines built into the welding equipment, tailored for use with the specific welding consumable products, in addition to the expertise offered by the welding solutions provider to overcome challenging welding applications is what ultimately makes the real difference between achieving the ‘Perfect Weld Seam’ or not.

Scan or click the QR code to access voestalpine Böhler Welding’s welding automation page.



Table 1: A comparison of the process efficiencies of SMAW, semi-automatic FCAW, and mechanised FCAW using Böhler Welding’s railRunner mechanised solution.

Process	Duty cycle	Theoretical deposition rate (kg/hr)	Effective deposition rate (kg/hr)
SMAW	20%	1.5	0.3
FCAW: semi-automatic	35%	3.4	1.19
FCAW: Mechanised using railRunner	85%	3.4	2.89

Table 2: The welding times and filler metal consumption calculations for the SMAW, semi-automatic FCAW, and mechanised FCAW comparison.

Process	Welding time (min)	Kilograms consumed (kg)	Efficiency
SMAW	466	3.34	70%
FCAW: semi-automatic	118	2.60	90%
FCAW: Mechanised using railRunner	49	2.60	90%



The Artis TIG range, known for its mobile and versatile Artis 170 and 210 TIG welding machines, has been expanded to include several variants of the new Artis 300.

Fronius has expanded its range of Artis TIG and Ignis MMA welding machines to better meet everyday requirements.

The Artis TIG range, already known for its mobile and versatile Artis 170 and 210 TIG welding machines, has been expanded to include several variants of

Fronius' new Artis and Ignis options

With the launch of the Artis 300 and Ignis 250 welding power sources, Fronius extends the power and capabilities of the Artis TIG series and Ignis MMA series.

the new Artis 300, designed to meet more demanding, precise welding requirements.

Similarly, for the flexible, robust, everyday-welding Fronius Ignis series, a new 250 A Ignis machine has been added, enabling manual arc welding anytime, anywhere at up to 250 A.

Both the new Artis TIG 300 and Ignis MMA 250 series machines from Fronius include all the familiar functions of their more compact models, but also offer higher performance and greater ease of operation. The Artis is also available in an extended XT version designed for mains voltages from 200 to 600 V and can therefore be used worldwide. Depending on the power category and the mains fuse, this enables maximum welding current in single-phase operation.

Artis 300: more power with added features

The Fronius Artis is a reliable TIG welding companion for many welders in their day-to-day work. The new Artis 300 adds a third device to the product family, offering greater power, improved user-friendliness, and an extended XT version for worldwide use. A water-cooled version is also now available. As usual, the numerous TIG functions of Fronius Artis welding machines enable high-quality welds with excellent surface finishes.

Whether used for pipe maintenance, handrail installation, machine repair, or hot water tank production, the Artis 300 is ideal for small- and medium-sized companies performing a wide range of stainless-steel welding applications. With the latest addition to the Artis series, manual TIG welding using up to 300 A is now possible. "The new Artis is the logical expansion of the Artis series and is specially tailored to users with higher power requirements," says Michael Eisterhuber, Product Line Manager at Fronius International.

The Artis 300 combines all the functions of the two more compact models and supports perfect weld quality and a high-quality seam appearance. These include TIG pulse welding up to 990 Hz, the TAC tacking function, spot and stitch welding, trigger mode, gas pre-flow and post-flow time settings, and touch high-frequency ignition for difficult access. If required, the Artis is also suitable for electrode welding, making it a real all-rounder.

To make the most of the Artis 300's advantages in everyday welding, the device is equipped with an optimised control panel that is easy to use, even with gloves on. Five EasyJob buttons allow important welding parameters to be saved, making recurring welds easier. An additional favourites button makes the most important background parameters available in just one step. During welding, the clear welding current display enables precise control of the entire process.

The Artis is available in a wide range of variants and can be adapted to individual requirements. A new addition is a dedicated welding machine variant with integrated water cooling. A new stepper motor pump concept with built-in temperature sensors makes the device particularly energy-efficient, with cooling only starting when needed. This makes it a great alternative to the familiar air-cooled version.

The new Artis 300 is the perfect addition to the Fronius TIG welding portfolio. Together with the iWave, which is also suitable for aluminium welding, Fronius covers both everyday welding tasks and more challenging applications. While the Artis series supports TIG DC welding, the iWave is designed for TIG AC/DC and industrial applications, including both automation and robotic welding, and features such as CycleTIG and TIG DynamicWire round off the range of special TIG functions.

The new Fronius Ignis 250 MMA

Flexible, robust, and made for everyday welding, that's what the Fronius Ignis series is known for. The new Ignis 250 expands this portfolio with a powerful machine



The Artis 300 version with an integrated water-cooler features a new stepper-motor pump and built-in temperature sensors, making the device particularly energy-efficient by cooling only when needed.



The Ignis 250 expands the compact Ignis 150/180 series with a powerful device that can also be used in regions with different mains voltages, thanks to the XT variant.

that enables manual arc welding at up to 250 A, anytime, anywhere. In addition to the familiar functions of the more compact models, the Ignis 250 boasts higher performance, greater ease of operation, and an extended XT version for worldwide use.

Each welding task has its own specific requirements, but the weld must always be perfect, and, depending on the application, also look good. Welders face challenges from varied environmental conditions, hard-to-reach areas, and power grid voltage fluctuations, especially during maintenance and servicing tasks or assembly work.

The Ignis series helps master welding tasks under adverse conditions by maintaining a stable arc. With the Ignis 250, this is now also possible for larger welding tasks that require more power, without compromising functionality or user-friendliness.

“When it comes to MMA welding, welders are confronted with an increasingly diverse range of tasks and materials. This calls for devices that meet these requirements in terms of performance,” says Eisterhuber.

Providing insights into the development process, he says the three-phase Ignis 250 extends the existing Ignis 150/180 series upward and offers maximum flexibility for electrode welding up to 250 A. This means that welding tasks with thicker materials or those requiring large electrodes can also be

completed optimally using familiar Ignis functions such as HotStart, SoftStart, anti-stick, MMA Pulse, and TrackingArc. The new Ignis 250 guarantees a stable arc and high-quality results, whether high up, far below, or in hard-to-reach places.

The Fronius Ignis is also available in country-specific variants. The extended version (XT) can be used worldwide due to its wider input voltage range and single-phase operation, and it can be operated with generators without issues. The Ignis XT variant is the right choice if there are challenges with input power.

The new machine also features a user-friendly control panel that provides an optimal overview. Weld repairs often have to be carried out quickly. Simple machine settings and parameter reading make handling this easier. Thanks to the new user-friendly control panel on the Ignis 250, welders can clearly see everything and change settings intuitively. The favourites button brings the critical welding parameters to the first menu level for quick and convenient access. In addition, up to five EasyJobs with current welding-relevant settings can be saved. The welding current display on the new interface also enables precise control throughout the welding process.

The Fronius Ignis 250 not only impresses



The large user interface on the Ignis 250 ensures intuitive and straightforward operation—even when wearing gloves.

with its perfect welds and easy handling, but also with its robust design. It is the perfect companion for outdoor use in harsh environments. The high-quality materials and sturdy housing ensure an extremely long service life.

Like all Fronius devices, the Ignis 250 is future-proof. MMA welding systems are often exposed to high levels of wear and environmental influences. It is therefore imperative that all components be easily accessible and that they can be serviced or repaired quickly in the event of a failure.

Fronius Artis and IguS welding machines, including the new Artis 300 TIG and Ignis 250 MMA systems, are now available in South Africa through official Fronius Distributors, Bolt & Engineering Distributors (B.E.D.) and Proac Engineering.

<https://www.fronius.com/en-za/south-africa>

The Magmix 3 Compact from Air Products

Air Products South Africa has launched a unique customer-owned 20 l welding gas cylinder, the Magmix 3 Compact, designed to meet the growing demand for compact, lightweight and affordable welding solutions, particularly for on-site maintenance, small businesses and the DIY markets. Jörg Scholz, Air Products South Africa's Business Manager for Distributors, and Sean Young, Air Products SA's Welding Specialist, introduce the offering.

Extensive market research and feedback from Air Products South Africa's distributors have identified a need for a more compact offering for Air Products' well-established Magmix 3 shielding gas for GMAW welding of lightweight steel.

"Advancements in technology have

enabled the manufacture of more compact, lightweight and affordable welding machines. This has given rise to a market that also requires a compact cylinder for MIG-MAG welding," explains Jörg Scholz, Air Products South Africa's Business Manager for Distributors.

Feedback also detected a shift away from the traditional cylinder rental model toward customer-owned cylinders, and a new market where on-site work and maintenance are required, with demand for a more manoeuvrable, compact cylinder for welding applications. "We are proud to introduce Air Products South Africa's new 20 l Magmix 3 Compact cylinder. We pride ourselves on staying up to date with new technology and have consulted with our European counterparts to bring this innovative solution to our customers. We believe the unique selling points we have built into this new offering meet the requirements of this growing market," says Scholz.

Sean Young, the Welding Specialist for Air Products South Africa, says that time and resources have been allocated to ensure customers receive the best possible solution. "We believe the Magmix 3 Compact is what the changing market has been looking for," he says.

What makes this product different?



An integrated flow optimiser (IFO) is preset to deliver the ideal flow rate of 15 l/min for this blended three-part gas mixture.



Sean Young, the Welding Specialist for Air Products South Africa, believes that the Magmix 3 Compact will be a game-changer.

The new Magmix 3 Compact gas cylinder uses built-in 200 bar regulator technology. This regulator features a pressure gauge indicating product content capacity, whilst a simple hand-wheel valve makes opening and closing the gas flow easy. The cylinder is designed for safe, economical operation and is easy to manoeuvre.

An added benefit is the cylinder's built-in positive-pressure valve, which maintains the product's integrity under extreme conditions. At 200 bar, the 20 l cylinder contains approximately 7.0 kg of shielding gas, 4 228 l, which, if consumed while welding at a gas flow rate of 15 l/min, will last approximately 4.7 hours.

An integrated flow optimiser (IFO) is preset to deliver the ideal flow rate of 15 l/min for this blended three-part gas mixture, consisting of argon (Ar), carbon dioxide (CO₂) and oxygen (O₂), which is the ideal shielding gas for welding light gauge carbon steel or mild steel in all positions. The IFO also features built-in surge protection, maximising gas availability and minimising waste. "Air Products' Magmix 3 Compact is well-known for delivering excellent arc stability, low fume emissions and low spatter volumes, and we believe that the Magmix 3 Compact offering is, undoubtedly, a game changer in the South African welding gas market," says Sean Young.

Jörg Scholz agrees: "These cylinders will be sold to customers through our extensive accredited distributor network, and when empty, replaced using the full-for-empty model. At Air Products South Africa, we listen, and I am confident that this new Magmix 3 Compact solution will exceed our customers' expectations."

Scholz concludes by noting that the Magmix 3 Compact has been launched nationwide and is now available in all regions of Southern Africa.

<https://airproducts.co.za/>



Top: The Magmix 3 Compact gas cylinder uses 200 bar built-in regulator technology with a simple handwheel valve, making it easy to open and close the gas flow.

Right: Magmix 3 Compact cylinders will be sold to customers through Air Products' accredited distributor network and, when empty, replaced under the full-for-empty model.



Scan or click this QR Code to view an Air Products video about the new Magmix 3 offering.



B.E.D. appointed as Harris Products distributor

Bolt and Engineering Distributors Group (B.E.D.) has been appointed as an authorised distributor for the Harris Products Group, representing its full portfolio of metalworking equipment and consumables in South Africa.

The appointment of B.E.D. as the authorised distributor for Harris Products establishes a single, nationally supported distribution channel for the company's cutting, gas control and associated products portfolio, supported by extensive stockholding, deep technical expertise and value-adding pre-and after-sales support.

The Harris Products Group is globally recognised for its industry-leading metalworking equipment and consumables for brazing, soldering, welding, cutting and gas distribution; as well as its engineering-led approach, with products designed for demanding industrial environments where safety, reliability and longevity are critical.

According to Anthony McGuinness, Sales Manager for the Harris Products Group in Sub-Saharan Africa, there is a strong operational and cultural fit with B.E.D. "South Africa is a market where robust technical understanding, safety compliance and product support are essential. B.E.D. brings an extensive national footprint, experienced technical and sales teams, and an established track record in supporting high-quality, high-performance industrial brands. This creates a solid platform for long-term customer support," says McGuinness.

Mike Giltrow, CEO of B.E.D., says that this milestone appointment marks a significant shift in how the Harris brand will be supported locally. "We have worked with and respected the Harris brand for many of our 42 years in the industry. However, this appointment takes our engagement to a whole new level with a direct relationship and full accountability for how Harris products are supplied, supported and positioned within key target sectors in South Africa.

"Echoing our tagline, 'the perfect fit', we believe that B.E.D. is the perfect fit for Harris locally," Giltrow points out, adding: "Harris products are engineered for safety, reliability and an impressively long service life. B.E.D.'s focus is on ensuring customers not only receive the correct product, but also the technical support and application

knowledge to realise its inherent, long-term value," he adds.

Quality, safety and compliance

The Harris Products Group's portfolio includes gas control equipment, cutting solutions, and associated systems, all engineered to meet international safety and performance standards. Many products are designed for use in high-risk, regulated environments, with an emphasis on durability, traceability and consistent performance over extended service life.

Marco Gianelli, Director of International Business for Equipment for the Harris Products Group, explains: "Our products are built to operate safely and reliably in extreme conditions, from heavy industrial fabrication to mining and energy-related applications. Full manufacturing traceability and compliance with international standards form part of our value proposition. Having a local partner that understands these technical requirements is essential."

Through B.E.D., customers will have access not only to Harris products but also to B.E.D.'s excellent technical knowledge and guidance on correct product selection, application suitability, and safe use, supported by trained specialists from the company's welding and cutting division.

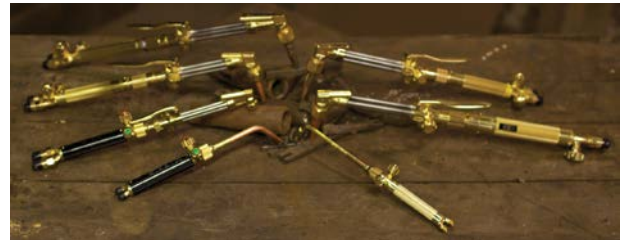
Local availability

A key focus of B.E.D.'s appointment by Harris is to ensure consistent product availability and responsive local support. B.E.D.'s countrywide branch network and logistics capability via these branches and from a national distribution centre enable customers to access Harris products with reduced dependency on extended supply chains, while benefiting from its local technical assistance.

Shaun Geyer, B.E.D.'s Harris Products brand ambassador and technical specialist, says that this partnership strengthens B.E.D.'s technical offering to its customers:



On the appointment of B.E.D. as an authorised distributor for the Harris Products Group are, from left: Anthony McGuinness, Harris Products Group; Marco Gianelli, Harris Products Group; and Shaun Geyer, B.E.D.'s Harris Products ambassador and technical specialist.



Harris gas torches are widely regarded as the industry standard.

"Harris products are engineered for safety, efficiency and a long service life. We are very excited to play our role in supporting our customers with the correct technical advice, application knowledge and pre-and after-sales support, ensuring that the equipment performs as intended throughout its lifecycle."

Supporting diversification

While the Harris Products Group has a strong legacy in the mining sector, the appointment of B.E.D. as an authorised distributor also supports its expansion into additional target sectors, including metal fabrication, oil and gas, petrochemical, agriculture, HVAC and light manufacturing. These sectors increasingly require compliant, high-quality gas control and cutting equipment, supported by knowledgeable local partners.

McGuinness adds: "The appointment of B.E.D. is not about rapid expansion, but rather strategically building a sustainable presence across multiple key target industry sectors. As such, B.E.D. is well positioned to support this measured growth, based on its industry track record, technical competence and established customer relationships."

"For B.E.D., this milestone appointment reinforces our strategy of selectively partnering with premier suppliers and manufacturers, whose products are defined by quality, safety and long-term value, to the benefit of our valued customers," Giltrow concludes.

<https://bolteng.co.za>

Steinmüller Kendal Team recognised for Transformative Community Investment

Steinmüller Africa's Kendal Power Station team has been recognised at the Eskom Managers Awards 2025 as a key player in Corporate Social Investment (CSI), earning praise for a community-focused approach that prioritises listening to local schools and responding with practical, high-impact support.

Eskom's recognition of Steinmüller's Kendal team celebrates a partnership-driven model that has seen the team step away from daily operations to visit neighbouring schools, identify critical needs, and deliver resources ranging from printers and textbooks to food parcels for disadvantaged learners.

From school visits to meaningful action

"It is an honour to partner with Eskom

to explore ways we can support local communities," said Nsovo Maswanganyi, Site Manager at Steinmüller Africa Kendal Power Station. "Our team takes the initiative to visit nearby schools and understand their needs firsthand. We often find that schools lack essential resources, such as textbooks, forcing educators to print pages for learners. Schools ask us for printers, learning materials and food parcels, and we turn those needs



Steinmüller Africa Kendal Site Manager, Nsovo Maswanganyi, and Senior Safety Officer, Given Thockey, receive the CSI recognition award as a key player in Corporate Social Investment (CSI).

into meaningful CSI initiatives that make a tangible difference."

Handover days that inspire

For Maswanganyi and the Kendal team, the most memorable moments come on handover day. "Schools arrange events

Steinmüller earns innovation award for Kriel Unit 6 outage reduction

Steinmüller Africa's crane-free rigging solution shortened the Kriel Unit 6 outage by 60 days, earning the company's site team the 2025 Eskom Kriel Managers Award for Innovation.

Following a fire incident in 2024 at Unit 6 of the Kriel Power Station, both the turbine hall roof and the overhead crane cables required repair. The roof work demanded a full-height scaffold assembly from floor level to 31 m, which physically obstructed crane access.

A rigging solution eliminated a critical bottleneck during the unit's post-incident recovery. When 31 m scaffolding for roof repairs blocked access to the damaged overhead crane, itself essential for turbine work, the team designed and installed a temporary rigging structure that allowed all three work fronts to proceed in parallel.

The conventional sequence of roof repair, scaffold removal, crane restoration and turbine work would have added an estimated two months to the outage.

"The scaffolding prevented overhead crane repairs that were necessary to support Eskom Rotek Industries' turbine maintenance on the unit," said Lonas Makhubele, Kriel Project Manager at Steinmüller Africa.

"The Steinmüller Africa team, together with the client, devised a rigging plan without the use of the crane for Rotek activities. We built a rigging structure that our team used to assist Rotek, saving over 60 days on the turnaround. The unit was returned to service notably earlier because of this innovation."

The purpose-built temporary rigging system decoupled the turbine work from crane availability, enabling concurrent execution across all critical paths and compressing the overall project schedule by more than two months.

Performance across the fleet

The Kriel award reflects broader operational performance across Steinmüller Africa's Eskom portfolio in 2024-2025.

On safety, the company's site teams at both Kriel and Majuba each surpassed 1 000 000 recordable-case-rate-free hours. The Kriel milestone ran from 11 August 2024 to 30 April 2025, covering



Steinmüller Africa's onsite team and the Kriel Power Stations celebrate their award of the 2025 Eskom Kriel Managers Award for Innovation.

the high-intensity Unit 6 recovery and concurrent outage work.

On quality and productivity, Steinmüller Africa completed more than 51 000 pressure-boundary butt welds to radiographic acceptance standards across Kendal, Kriel, Hendrina and Kusile in 2025, deploying up to 350 coded welders at peak capacity.

The Kriel Innovation Award adds to Steinmüller Africa's consistent record of client recognition, including being named Eskom Kendal Contractor of the Year in 2024 and securing six awards at the 2024 Eskom Welding Awards.

Industry context

The Eskom Kriel Managers Awards recognise measurable contributions to station performance across safety, reliability, innovation and operational excellence. The 2025 Innovation Award criteria prioritised solutions that demonstrably improved unit availability or reduced outage duration.

"This solution succeeded because of close collaboration, rigorous planning and disciplined execution," Makhubele said. "It's a model for how contractors and clients can work together to compress critical paths and improve project outcomes."

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with children performing, warm interactions with educators, and opportunities for us to speak directly to learners. We witness their determination and spirit despite the lack of resources. Seeing how well they're doing under challenging circumstances is truly inspiring. The gratitude expressed by the schools touches us deeply and reminds us why our CSI efforts matter. These are moments that stay with us."

Why CSI matters in power generation communities

The Kendal team operates in an environment where industrial activity directly affects surrounding communities, many of whom live on farms near the power station and face limited economic mobility.

"You will find hardly any local people in managerial positions at power stations; most are doing the hard labour," Maswanganyi explained. "Many communities are also affected by emissions. That is why it is important to give back, to support and empower them so they can go to universities, return in managerial roles, and improve these local communities."

Teamwork in action

The success of the programme depends on

the collective effort of site employees, who routinely volunteer to help distribute food parcels, often including 100 bags of maize, each weighing 50 kilograms.

"It's hard work that needs good teamwork," said Maswanganyi. "What I really admire is how site employees work together. They lift, carry, and organise everything with care and cooperation.

Their support for each other makes the job easier and shows how strong their sense of community is. It's inspiring to see how united and willing they are to lend a hand."

The collaboration with Eskom Kendal has been instrumental in scaling the team's CSI efforts from ad hoc initiatives into a coordinated, sustainable programme.

"Working together with Eskom Kendal has helped us turn community support from Steinmüller Africa's separate efforts into a well-planned and powerful programme," Maswanganyi noted. "This partnership makes a real difference for local people and brings value to the company. It highlights a strong relationship built on mutual trust, shared purpose, and a deep commitment to uplifting communities together, a relationship that goes beyond day-to-day operations."

Bus shelters for farm children

Looking ahead, the Kendal team is working on a bus shelter project to protect children who walk long distances from farms to catch the school bus, particularly during the rainy season.

"We are waiting for the municipality to grant us permission to install bus shelters in identified areas," said Maswanganyi. "These kids often walk long distances to reach the road, and it's especially hard during the rainy season. The shelters will help protect them from bad weather and make their journey a little easier."

Recognition by Eskom reinforces Steinmüller Africa's commitment to being a responsible corporate citizen, supporting education, empowering future generations and contributing to national development goals through measurable, community-led action.

"This achievement goes beyond simply receiving an award," Maswanganyi concluded. "It represents the true spirit of Steinmüller Africa. It honours the dedication, care and collaboration that define the Steinmüller Africa Kendal team and our drive to make a meaningful impact beyond our daily work."

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From manual to smart welding automation

Andrew Crackett, Managing Director at Yaskawa Southern Africa, highlights a quiet shift taking place in the South African fabrication due to advances in integrated welding cells, particularly those combining robotics with modern power sources and laser technology, that are lowering the barrier to entry for SMEs and manufacturers who previously felt robotics were out of reach.

For decades, welding across South Africa's manufacturing sector has relied heavily on manual process skills, which are adaptable and deeply embedded in fabrication environments from manufacturing businesses to large industrial plants. But a quiet shift is underway. Welding automation, once largely confined to high-volume automotive production, is becoming increasingly accessible to a broader range of manufacturers.

This shift is not simply about technology adoption. It reflects deeper structural pressures facing local industry: persistent skills shortages, rising input costs, global competition and growing expectations around quality and traceability. As a result, robotic and laser welding solutions are moving from a "nice-to-have" efficiency upgrade to a strategic tool for competitiveness.

Many organisations are seeing this transition firsthand as manufacturers explore scalable, flexible and financially viable automation pathways, even for mid-sized operations.

Automation moves beyond automotive

Historically, robotic welding in South Africa has been strongly associated with automotive manufacturing, where high volumes and repeatability justified significant capital investment. Outside of this environment, adoption was slower, often constrained by cost, complexity and perceptions that robotics were only suitable for large produc-

tion runs. That dynamic is changing.

Advances in integrated welding cells, particularly those combining robotics with modern power sources and laser technology, are lowering the barrier to entry. These systems allow manufacturers to program, monitor and control welding parameters directly through the robot platform, improving consistency while reducing setup variability.

Critically, newer solutions are designed with flexibility in mind. Instead of rigid, single-application installations, manufacturers can deploy modular cells that support multiple product types, shorter runs, and evolving production needs – realities that define much of South Africa's manufacturing sector.

"The conversation with customers has shifted noticeably in recent years," says Andrew Crackett, Managing Director at Yaskawa Southern Africa. "We are seeing growing interest from manufacturers who previously felt robotics were out of reach. The question is no longer whether automation is relevant – it is how to implement it in a way that supports real production challenges," he explains.

From cost centre to competitiveness driver

A key factor behind this shift is affordability, not necessarily that robotic welding is inexpensive, but that its value equation has become clearer.

Manufacturers are increasingly evaluat-

ing automation through a total-cost lens: reduced rework, improved throughput, lower scrap rates, better quality consistency and the ability to meet demanding customer specifications. In sectors where margins are tight and export opportunities depend on quality assurance, these factors are significant.

Accessible robotic and laser welding also helps manufacturers stabilise production amid skills constraints. South Africa's shortage of experienced welders remains a well-documented challenge, particularly for precision and repeatable work.

Automation does not eliminate the need for welding expertise, but it changes where that expertise is applied, shifting skilled workers toward programming, oversight, quality control and process optimisation. "Automation should be seen as an enabler for skilled people, not a replacement," explains Crackett. "It allows manufacturers to use scarce skills more effectively while achieving levels of consistency that are difficult to maintain manually."

Enabling SMEs to Enter Automation

One of the most significant implications of accessible welding automation is the expanding participation of small and medium-sized manufacturers. SMEs often operate in high-mix, lower-volume environments – conditions traditionally viewed as unsuitable for robotics. However, flexible robotic welding cells, simplified programming tools and faster deployment models are changing that perception.

For these businesses, automation is increasingly linked to growth rather than scale alone. The ability to deliver repeatable quality, shorten lead times and secure more complex work can open doors to new customers, including large original equipment manufacturer (OEM) supply chains.

This is particularly relevant in South Africa's localisation push, where local fabricators are expected to meet global quality benchmarks while remaining cost-competitive. "Many mid-sized manufacturers are looking at automation as a way to unlock new opportunities rather than simply reduce labour costs," says Crackett. "It can change the type of work they can take on."



Consistent welding quality affects product reliability, compliance, reputation, and export readiness.



The Role of Laser Welding in the Next Phase

Laser welding is emerging as an important part of this evolution. When integrated with robotics, it offers advantages in speed, precision and reduced heat input, particularly for thin materials and applications requiring high-quality finishes.

While laser welding was previously viewed as highly specialised, integrated robotic laser cells are making the technology more practical for general manufacturing environments.

This is especially relevant for sectors such as electrical enclosures, appliances, rail components and sheet-metal fabrication.

The combination of robotic control and advanced welding processes enables manufacturers to standardise output while maintaining flexibility, a critical balance in a market defined by variability.

A strategic shift for South African manufacturing

The move from manual to smart welding reflects a broader digital transition within manufacturing. Welding, often considered a traditional process, is becoming increas-

ingly data-driven, programmable, and measurable.

For South African manufacturers navigating cost pressures and global competition, this evolution carries strategic importance. Consistent welding quality affects product reliability, compliance, reputation, and export readiness, all of which are central to industrial growth.

Accessible automation, therefore, sits at the intersection of productivity, skills development and industrial modernisation. "Welding is a foundational process in manufacturing," adds Crackett. "When manufacturers improve welding consistency and efficiency, the impact is felt across the entire production environment."

Looking ahead

As technology continues to mature, the distinction between manual and automated welding will become less binary. Hybrid environments, where skilled welders work alongside robotic systems, are likely to define the next phase of adoption.

What is clear is that automation is no longer limited to large, high-volume plants. The tools are becoming more adaptable, more scalable and more aligned with the



Automation is becoming more adaptable, more scalable and more aligned with the realities of South Africa's manufacturing landscape.

realities of South Africa's manufacturing landscape.

For many manufacturers, the question is shifting from whether they can afford to automate to whether they can afford not to.

In that context, accessible robotic and laser welding represents more than a technology trend. It signals a structural change in how local manufacturers approach quality, skills, and competitiveness, as well as in how South Africa positions itself within global fabrication value chains.

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iBOTone and iROB: automation with creative freedom

Fabrication companies are facing a growing skills shortage. Experienced welding specialists are increasingly retiring, while there is a lack of young talent. ABICOR BINZEL believes that modern automations using robots or cobots can help relieve this burden.

With iBOTone® from ABICOR BINZEL, fabricators can benefit from a welding cobot unmatched for operational and user-friendliness, enabling almost anyone to weld with it.

Smart, fast and powerful are key ways to describe the advantages of iBOTone®. With its self-explanatory, intuitive operation, unmatched repeatability of within 0.02 mm across all applications, and exceptional flexibility, iBOTone® is an ideal solution for welding production environments. Welding specialists with experience of iBOTone® describe it as ‘colleague’.

Optimal solution for small batches

Thanks to its easy operation, iBOTone can automatically produce batches of any size or individual parts, depending on the welding task. iBOTone® takes on physically demanding, repetitive tasks for welders. This, in turn, allows them to focus on other welding tasks that require their expertise. The simple program structure minimises programming effort, so iBOTone® can quickly start earning money welding quality production parts.

Many cobots in the welding industry have fallen short: they are too complicated, too rigid and too costly. iBOTone® was developed to overcome these shortfalls and exceed expectations for modern cobot welding.

Medium-sized manufacturing companies face the daily challenge of delivering craftsmanship quality at mass-production prices, all while skilled workers are increasingly hard to find. iBOTone® provides a practical solution to overcome this hurdle. iBOTone® features include:

- **Easy teaching:** The Easy Teach Handle allows welders to guide the robot torch smoothly and, once set up, to program a welding sequence without a control panel.
- **Ease of use:** After just a few minutes of training, anyone can weld with it.
- **High stability and flexibility:** Its excellent repeatability and path accuracy ensure consistently high welding quality.

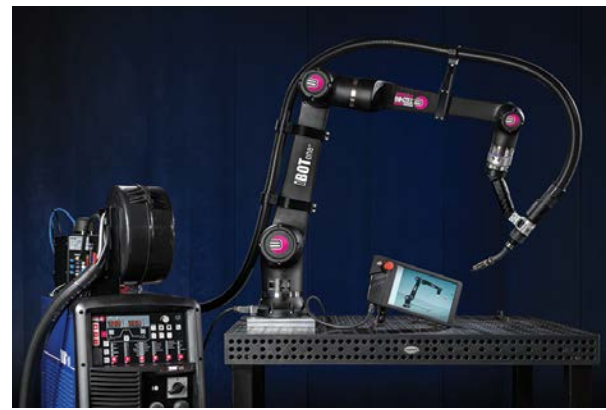
- **Use in harsh industrial environments:** High-quality aluminium die-cast components and suitable seals (IP66 protection) enable long-lasting use in extremely tough industrial environments.
- **Record path:** Moving through different weld geometries without collision has never been easier. Use the Record Path to move the cobot from one weld to the next. It will precisely follow this path.

iROB power sources

ABICOR BINZEL's iROB modular robot power source series, tailor-made for the iBOTone cobot system, provides the full range of welding power, with both air- and liquid-cooled options available, up to 500 A. This allows all materials, filler materials and wire diameters to be accommodated, along with preferred shielding gases, enabling fabricators to achieve the guaranteed, reproducible welding results they need.

The iROB® power source series offers all GMAW process variants, from standard short arc welding to high-performance spray arcs, with or without pulse technology. Electronically controlled special processes, such as ‘mX Clean’ and ‘mX Kinetic’, are also included, as are reversing wire-feed options, which are ideal for sensitive thin-sheet metal applications and aluminium welding.

For robust, heavy steel construction, the iROB power source can also deliver, lever-



With iROB power sources and Abicor Binzel's high-quality welding torches, Abicor Binzel can offer affordable solutions that exceed expectations for modern cobot welding.



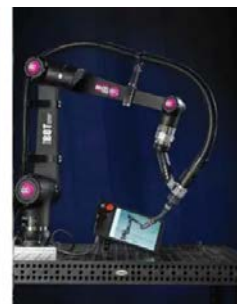
ABICOR BINZEL's iROB modular robot power source series, tailor-made for the iBOTone cobot system, provides the full range of welding power.

aging modern GMAW process characteristics available on the international market. This power source range offers reliability, versatility, connectivity and sustainability.

In addition, for more than 75 years, ABICOR BINZEL has been delivering the highest-quality welding torches. With the iROB® power source series, it is now possible to leverage the successful development of these torches for use with the iBOTone cobot system and an iROB power source.

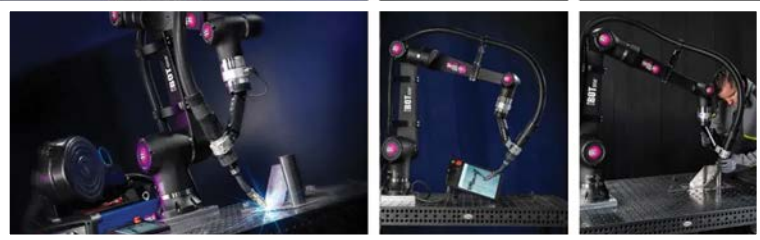
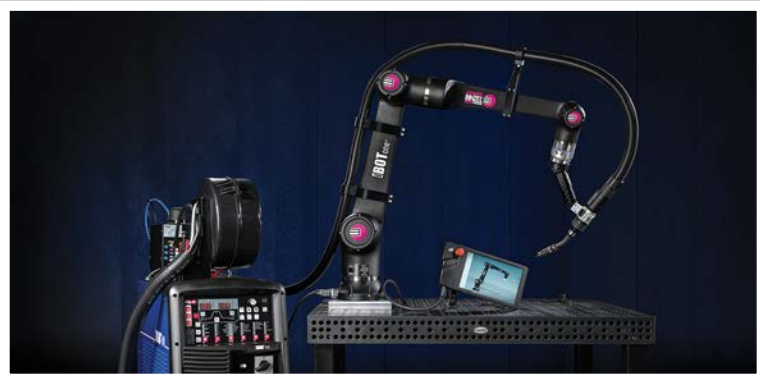
“From system setup to process optimisation and addressing ongoing questions or challenges, we at ABICOR BINZEL SA can provide installation, training and process optimisation specifically tailored to any client's needs,” concludes Christo Gelderblom of ABICOR BINZEL South Africa.

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With its self-explanatory, intuitive operation, unmatched repeatability of within 0.02 mm across all applications, and exceptional flexibility, iBOTone® is an ideal solution for welding production environments that require small batches of different products.

iBOTone[®] and iROB[®] for all-in-one welding automation



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Transformative 2025 for Aurex Constructors

Leading industrial construction, turnaround and maintenance company Aurex Constructors closed out 2025 on a strong footing, navigating shifting market conditions while delivering record progress across its renewables portfolio and expanding its geographic reach.

Aurex Constructors CEO Stuart Kent says 2025 demonstrated the strength of Aurex's diversified business model and its ability to adapt to a rapidly evolving energy landscape. "Our renewables business has delivered strong growth this year, even as oil and gas faced headwinds," explains Kent. "By redeploying core resources across sectors, we have maintained agility and positioned ourselves to capture emerging opportunities."

The continued decline of local refining capacity in South Africa has required operators to re-evaluate their strategic positioning. Kent notes that the importing of refined products remains necessary for South Africa, reinforcing Aurex's decision to strengthen its presence in tankage and terminals to support the storage and distribution of these fuels.

2025 Highlights: Driving Growth and Innovation

A central highlight of 2025 was the execution of eight renewable energy projects in parallel, each at different stages of engineering, construction and commissioning. "Delivering eight renewable projects in parallel last year was a milestone that speaks to our team's capability and commitment. It is also a clear indicator of where the market is heading, and we are well-positioned to lead that transition," Kent says.

Aurex has strengthened its ability to carry out solar PV EPC projects, which remain a major source of opportunity in the years ahead. This capability is supported by an engineering department established over the past 24 months, dedicated exclusively to the renewables sector.

In addition, the company completed the construction of two new fuel storage tanks in Durban and undertook the refurbishment of 29 tanks across seven geographical locations in three countries, reinforcing its expertise in tankage and terminals to support the storage and distribution infrastructure, critical as South Africa's refining capacity continues to decline and imports become essential.

Regional expansion into Namibia and Mozambique

Expansion into Namibia and Mozambique

has gained traction. "Establishing operations in these regions strengthens our presence and opens new opportunities in mining and energy. This positions Aurex strategically and creates a solid platform for sustainable growth in the years ahead," adds Kent. The company has already secured new project awards in these territories and continues to invest in local capability and training to address skills shortages.

At the heart of Aurex's success is a culture that embraces collaboration and agility. Kent emphasises that the company's people are its most valuable asset. "Our people are the foundation of our success. By investing in their growth, we empower them to create lasting value for our customers and communities, driving sustainable progress for Aurex."

Accelerating Digital Transformation

Digital transformation accelerated in 2025, with AI integration becoming a key priority to improve operational efficiency. "Digital transformation is accelerating across Aurex, with AI integration at the forefront. These technologies are enabling smarter, more efficient operations and unlocking new ways to deliver value," stresses Kent.

Commitment to ESG and Community Upliftment

Aurex maintains a strong commitment to community upliftment and ESG leadership. "Every project is an opportunity to make a positive impact. Our goal is to leave communities stronger and more empowered than when we arrived," says Kent.

The company engages early with community leaders and invests in education

and training initiatives that support long-term empowerment. Appointing an ESG champion reinforces our commitment to sustainability and accountability. It ensures these principles are embedded in our operations and transparently reported, adds Kent.



Stuart Kent, Chief Executive Officer, Aurex Constructors.

Looking Ahead to 2026

Kent expects both the oil and gas and mining sectors, as well as the renewables sector, to perform better in 2026. Aurex continues to pursue select prospects in the Middle East while strengthening its Southern African footprint. "South Africa's growing energy demands create opportunities for innovative solutions, from renewable power projects to small-scale nuclear, optimising ageing power stations, and improving transmission between regions," he says.

Strategic planning remains focused on a two- to three-year horizon to ensure Aurex stays agile in a rapidly changing environment. "Adaptability is a defining strength of our leadership team. We embrace change, learn from every decision, whether it works or not, and use these lessons to build resilience. The challenges make our success even more rewarding," reflects Kent.

Looking to the year ahead, Kent expresses confidence and excitement: "Our ambition is to be the partner of choice for customers, shaping the future of energy. We will continue to deliver, focusing on markets and relationships that align with our values and vision."

<https://www.aurex.com/>



Aurex expects Africa's oil and gas mining and renewables sectors to perform better in 2026.

Laser Welding: Precision, Power, and the Thermamax Pro

Unique Welding has launched the Thermamax Pro Laser Welding range to meet the growing demand for hand-held welding technology that is more accessible, practical and relevant to real-world fabrication environments.

Laser welding has quietly been reshaping modern manufacturing for decades. In automotive plants and Tier 1 supply chains, it is no longer a novel technology; it is embedded in daily production. Yet in many small and medium-sized fabrication businesses across Africa, it remains underutilised – often perceived as complex, costly, or reserved for high-volume factories.

That perception is changing rapidly. As manufacturing across the continent becomes more quality-driven and efficiency-focused, laser welding is moving from a specialist niche to a mainstream solution. With systems such as the Thermamax Pro Laser Welding range, the technology is becoming more accessible, practical, and relevant to real-world fabrication environments.

Understanding laser welding

Laser welding is closely related to laser cutting, as both processes use concentrated light to heat and melt material. The key difference lies in how the molten metal is treated and how gas is applied. In laser cutting, a focused assist gas jet blows molten material out of the kerf, creating a clean cut. In laser welding, the molten pool is



The hand-held swing welding head is designed for comfort and control, enabling operators to achieve clean, consistent welds across complex geometries.

protected rather than expelled. A gentle cover gas – typically an inert gas such as helium or argon – shields the weld bead from oxygen contamination, preventing porosity and oxidation.

In fact, running a laser cutting machine over a joint with very low assist gas can produce a weld rather than a cut. Changing the gas to an inert option produces a clean, shiny weld instead of a porous one. Adjusting the gas delivery from a high-pressure jet to a gentle shield flowing across the part results in a cosmetically appealing seam.

The process is remarkably stable. Because there are no electrodes and often no filler material, repeatability is extremely high. This stability makes laser welding ideal for automation, with many systems incorporating advanced robotic integration.

Heat input and precision

One of the most compelling advantages of laser welding is its low heat input. Compared to traditional arc-based methods such as TIG or MIG welding, laser welding introduces only a fraction of the thermal energy into the workpiece. Lower heat input delivers multiple benefits, including: reduced distortion, smaller heat-affected zones, narrower weld beads and less post-processing.

For manufacturers pursuing lean principles, this translates directly into efficiency. Reduced rework, less straightening, minimal grinding, and fewer consumables all contribute to improved productivity and cost control.

Laser welding heads: choosing the right tool

The three types of welding heads used for most laser welding applications are transmissive, parabolic and remote (scanning). Each has distinct advantages depending on power requirements, production speed and application complexity.

Transmissive heads use a removable focal lens and are commonly selected for simple, low-power applications. Parabolic welding heads are preferred for higher-power applications. Instead of a lens, they



The Thermamax Pro Laser Welding range, left the 3000W and its wire feeder. Right, the Thermamax Pro 1500W, with its wire feeder on top.

use a mirror that is more resistant to damage and easier to clean. The back of the mirror can be directly water-cooled, reducing thermal stress and maintaining consistent focal characteristics even as laser power varies. This design offers greater durability and stability in demanding production settings.

Remote or scanning heads are used for high-speed, high-volume welding, particularly in automotive body panel applications. For optimal results, remote systems require long focal lengths, high laser power, and excellent beam quality.

The Thermamax Pro Range's head is best described as a robust, operator-friendly welding head built around parabolic-type optics, balancing industrial durability with operator usability – delivering stable beam quality, consistent weld penetration, and the adaptability required for real-world manufacturing environments.

Its features include:

- It behaves most like a parabolic-style head in its durability and cooling – with fewer delicate lenses exposed – making it suitable for higher-power welding up to 3 kW.
- Because it's a hand-held swing head, it's inherently more practical and mobile than a remote/scanning head, which is typically used for automated, high-speed welding in complex geometries.
- It's also engineered to be compatible with a range of laser powers and materials without the fragility or alignment sensitivity of simple transmissive heads.

Focal length and beam quality

Two critical factors determine the shape and characteristics of a laser weld: beam quality and focal length.

A high-quality, 'bright' laser beam produces a small, intense focal spot, resulting



in a deep, narrow weld with strong penetration at a given power and speed. Lower-quality beams create wider, shallower welds. Focal length plays a similar role: shorter focal lengths produce smaller spots and deeper welds, while longer focal lengths yield wider spots and greater depth of field.

Interestingly, deeper welds are not always preferable. For thin materials where full penetration is easy to achieve, a wider weld joint may be ideal. A larger focal spot is also more forgiving with fixturing and alignment – a vital consideration when working with extremely small spot sizes, measured in thousandths of an inch. This flexibility makes laser welding a powerful design tool, enabling engineers to tailor weld geometry for structural needs, aesthetics and manufacturing tolerances.

The Thermamax Pro laser welding range

As laser welding technology becomes more refined and compact, it is increasingly practical for fabrication workshops of all sizes. The Thermamax Pro Laser Welding Machines represent this new generation of accessible, high-performance systems. Available in 1.5 kW and 3.0 kW models, they combine precision engineering with a user-friendly design, making them suitable for both small workshops and large-scale industrial environments.

At the centre of the Thermamax Pro system is the hand-held swing welding head. Designed for comfort and control, it enables operators to achieve clean, consistent welds across complex geometries. Compatible with fibre lasers ranging from 500 W to 3000 W, it delivers fast, controlled welds with minimal distortion. The focused beam produces narrow seams often requiring no post-polishing – a significant productivity gain compared to traditional TIG welding.

An optional automatic wire feeding system enhances penetration and eliminates overly wide seams commonly associated with manual laser welding, expanding the machine's application range while main-

taining precision and aesthetic quality.

Built for real-world applications

The Thermamax Pro handles a wide variety of materials, including stainless steel, carbon steel and aluminium alloys. Its versatility makes it ideal for industries such as sheet metal processing, construction and fabrication, household and industrial equipment manufacturing, and electrical and power systems.

The system thrives in scenarios requiring precision on complex or irregular parts.

Advanced welding gas system

Unlike some traditional systems requiring multiple gases, the Thermamax Pro typically operates with a single shielding gas, most commonly nitrogen. A fast-response digital servo valve and short gas supply line allow rapid pressure adjustments without interrupting welding. This streamlined system enhances repeatability, stability, and process control.

Choosing the Right Power

The 1.5 kW Thermamax Pro is compact, agile and energy-efficient, ideal for lighter fabrication, thin materials, and everyday production tasks such as sheet metal processing, furniture manufacturing, and kitchen equipment. The 3.0 kW model offers high-power performance for thicker materials and demanding, high-speed industrial applications such as automotive, aerospace, power distribution, and large-scale fabrication.

Both models offer speed, precision, low distortion and clean finishes, giving fabricators flexibility without compromise.

To ensure customers transition confidently into laser welding technology, Unique Welding has trained and certified technicians qualified to safely demonstrate, install and commission Thermamax Pro Laser Welding machines. From initial consultation and live demonstrations to full system installation and operator training, the company's technical team provides the expertise and support required to maximise performance, ensure safety compliance,

and deliver long-term reliability. This hands-on support ensures that fabricators can adopt laser welding with confidence, knowing they have the necessary technical backing to optimise their investment from day one.

Laser welding, why now?

Laser welding offers several advantages over conventional arc-based processes:

- High Precision: Narrow, focused welds with minimal heat-affected zones.
- Superior Speed: Welding speeds can be 2-10 times faster than traditional methods.
- Cleaner Finish: Smooth, polished seams with minimal spatter or discolouration.
- Versatility: Works across stainless steel, carbon steel, aluminium and various alloys.
- Lower Costs: Reduces consumables, minimises rework and improves operational efficiency.

As labour costs rise and quality expectations increase, manufacturers are seeking technologies that combine consistency with productivity. Laser welding delivers both.

Laser welding is no longer confined to high-volume automotive production lines. Advances in fibre laser technology, ergonomic design and digital controls have brought this capability to fabricators across diverse industries. Machines like the Thermamax Pro 1500W and 3000W integrate hand-held flexibility with intelligent monitoring, process memory, wire feeder integration and real-time system controls. They make laser welding practical, reliable, and cost-effective for both small workshops and large factories.

Laser welding is a mature, proven technology that continues to evolve. With accessible systems like the Thermamax Pro, laser welding is no longer reserved for automotive giants or high-volume Tier 1 suppliers. For African manufacturers seeking competitive advantage through precision, speed, and efficiency, laser welding is not the future – it is the present.

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Hardox® HiAce: where abrasion, corrosion and heat meet

Swedish-based special steel maker, SSAB, has introduced Hardox® HiAce, an innovative wear-resistant material engineered to outperform conventional abrasion-resistant (AR) steels, stainless steels and even ceramics in environments where wear, corrosion and elevated temperatures combine.

Steelmaker SSAB has taken innovation in wear-resistant materials a decisive step forward. Hardox® HiAce is engineered to outperform conventional abrasion-resistant (AR) steels, stainless steels and even ceramics in environments where wear, corrosion and elevated temperatures combine. It offers the same excellent hardness, yield strength and toughness as the renowned Hardox® 450 wear plate.

Unlike traditional materials that often excel only in one dimension, Hardox® HiAce delivers a combination of: Superior hardness and strength; Resistance to corrosive wear; High performance at high temperatures; and workshop-friendly fabrication that needs no special infrastructure.

High- or low-pH environments, combined with abrasion and impact, can create corrosive wear mechanisms that rapidly degrade conventional steels and damage equipment. Acids, sulphates, ammonia and salts can oxidise steel surfaces, accelerate wear rates and dramatically reduce service life. In these conditions, higher hardness alone is not enough.

Hardox® HiAce was developed to resist this complex degradation scenario. It provides the hardness needed for abrasion resistance while maintaining structural integrity in chemically aggressive environments. Typical industrial uses include: waste collection, pulp and paper, wood handling, recycling, mining, agriculture and transportation.

Why stainless steel falls short

Stainless steels perform well in purely corrosive environments. But when abrasion and impact are introduced, their lower



For Scania recycling and waste-disposal trucks in Sweden, Hardox® HiAce steel is now being used to extend the life of truck bodies.

hardness limits service life.

According to internal testing at SSAB, Hardox® HiAce outperforms both stainless steel S304 and AR400 steel under abrasive, pH 4 conditions. “The main reason Hardox® HiAce outperforms stainless steel is its significantly higher hardness and dent resistance,” says Jonas Allebert, Senior Wear Specialist at SSAB.

In the corrosive wear tests, Hardox® HiAce achieved:

- Up to 20% longer service life than stainless steel.
- No signs of pitting corrosion.
- A more cost-efficient solution compared to stainless steel.

Proven performance

Over six years and 106 000 km, SSAB monitored a garbage truck operated by the Swedish company Allmiljö, where Hardox® HiAce flooring replaced stainless steel S304. Only 40% wear was measured at the most exposed point; no pitting corrosion was observed; and the floor integrity remained intact.

“At this wear rate, the extended service life fully meets the operator’s requirements,” Allebert points out.



Hardox® HiAce steel was proven in extreme heat conditions at the exit from the coke plant of SSAB’s Oxelösund mill.

Pitting corrosion is a common cause of leakage and costly maintenance in garbage trucks using traditional AR steels. Hardox® HiAce eliminated this risk while extending operational life.

In addition, Hardox® HiAce can withstand heat up to 400 °C. Equipment operating at elevated temperatures can experience damaging heat spikes that can adversely affect conventional AR steels. Where these steels rapidly lose hardness and wear resistance, Hardox® HiAce maintains its excellent properties and wear resistance up to at least 400°C. This offers a dependable thermal buffer, long-term stability and reliable performance even during prolonged exposure.

This was proven in extreme heat conditions at SSAB’s coke plant. After red-hot coke exits the coal furnaces at SSAB’s Oxelösund mill, it is water-cooled and discharged onto sliding ramps while still extremely hot, creating a challenging environment because the coke is mildly to moderately corrosive and abrasive.

When one of the ramps required new liner plates, Hardox® HiAce was chosen for its combined resistance to abrasion, impact, corrosion and heat. After months of operation, wear levels were even lower than anticipated.

Other high-temperature applications for Hardox® HiAce in steel mills include quenching wagons, cooling beds, slag tip-pers and furnace inlet scrapers.

Additional high-temperature applications include:

- Dryer drums and lifter plates in asphalt plants.
- Clinker cooler plates and liner plates in cement plants.
- Ash-handling equipment and chain conveyors in power plants.
- Foundry scrapers and screeners.
- Crusher liner plates and clinker hammers.

At Conexpo 2026 in the Las Vegas Convention Centre during March, the superior performance of Hardox® HiAce and other SSAB Hardox® grades was on show.

www.ssab.com

Table 1: Life comparison results between stainless steel and Hardox® HiAce tested in pH 4 abrasive conditions.

Material	Hardness HBW	Typical toughness (J at -40 °C)	Relative service life corrosive wear*	Relative cost*
Hardox® HiAce	450	50	1	1
Stainless steel S304	≤201	60 J at -40 °C	0.8	2
AR 400 steel	400	45 J at -40 °C	0.5	1.7

*Service life and cost figures are relative and based on real-world conditions at the time of writing. They should not be interpreted as guaranteed outcomes for specific applications.

OmniScan™ X4 PAUT and ToFD Flaw Detector

The OmniScan™ X4, available in South Africa through Techtra Engineering Consultants, is a comprehensive multi-technology inspection toolbox that enables multiple ultrasonic testing techniques to be used to reliably detect and accurately assess flaws and corrosion damage.

Leveraging advanced imaging and measurement capabilities, the new OmniScan™ X4 is ideal for locating and assessing flaws and damage severity before it becomes critical, protecting the integrity of critical assets and infrastructure.

In addition to phased array ultrasonic testing and Time of Flight diffraction (ToFD) technology, all OmniScan X4 models come standard with phase coherence imaging (PCI), the total focusing method (TFM), and plane wave imaging (PWI), with their ease of use makes them more accessible for new users. Using these multiple tools, users can be confident that the information about indications in their assessments is accurate and complete.

Phase coherence imaging (PCI) enables NDT technicians to decisively identify and interpret challenging flaws, such as hook cracks, and clearly represent other hard-to-detect defects. Since phase-based PCI is far less susceptible to attenuation from adjacent flaws than amplitude-based techniques, accurate assessments of fine flaws such as stress corrosion cracking (SCC) become possible. This is because PCI accentuates tip diffractions of SCC, so each crack's depth can be more easily characterised, and the software can be used to quickly isolate the deepest flaws.

Up to 3x faster with TFM: Exploiting TFM's crisp definition and even focus enables significant productivity increases. Depending on the configuration, the OmniScan X4 series' TFM is up to three times faster than its predecessor, the OmniScan X3 64, when using the sparse firing mode.

Dual-Sided Weld Inspection with Twin TFM and PCI offers even greater efficiency. The individual attributes of PCI and TFM can be used to simultaneously and thoroughly investigate weld volume on both sides. Using two probes mounted on a scanner such as the AxSEAM™ long-seam scanner, NDT Inspectors can produce crisp TFM and PCI results in one pass.

Intuitive Application Presets: For Improved efficiency and consistency, OmniScan X4 application presets for common corrosion and flaw detection applications are available for HydroFORM™, RollerFORM™ or FlexoFORM™ scanners. Each option pro-

vides preprogrammed parameters that can be edited as desired. Even new users can produce and reproduce optimal setups for PA and PCI inspections in minutes.

The unique merged B-scan data view makes it easier to distinguish suspected flaws from geometric echoes. This data view combines all B-scans into a single view, exponentially increasing the efficiency of B-scan screening. Optimised B-scan layouts, including the B-S-A single-group and A-B-S multigroup, further improve an inspector's ability to identify suspect indications clearly.

For pipelines and large assets, the OmniScan X4 software's intuitive step-by-step scan plan and 3D graphics facilitate setup, from basic to complex. During inspection and analysis, real-world references, orientation correction, and a high data volume capacity help save time on scanning, analysing, organising the scan results, and producing the report.

- During setup, the scan axes can be given custom names to help manage scanning data post-inspection. In addition, a reference point on the scan plan relative to the asset's datum can be established to help position the scanning results within the asset schema.
- Thanks to the 1 TB solid-state drive (SSD), bigger parts can be inspected for a longer period of time, without having to pause mid-job to transfer data. All OmniScan X4 models are also equipped with a fast processor and expanded RAM, enabling them to process data rapidly and enhance the software's responsiveness, which is nearly instantaneous for common operations.
- From a reporting perspective, true orientation correction of each raster scan pass constructs an image of the data that accurately depicts the inspected area, making it easy to understand. A wider pulse voltage range



OmniScan X4 models come standard with phase coherence imaging (PCI), the total focusing method (TFM), and plane wave imaging (PWI), and their ease of use makes them more accessible to new users.

(5 Vpp–160 Vpp) makes it easier to identify the true signal peak, as low voltages prevent signal saturation and high voltages improve the signal-to-noise ratio (SNR) in attenuative materials, providing clean, high-quality images for better measurement reliability and consistency.

With OmniScan X4 onboard software (MXU 6), new features and enhancements that expand capabilities and improve user-friendliness can be downloaded quarterly, without reinvestment. Communication between an OmniScan X4 unit and external software is available via the free OmniScan Black Box app and the NDT Device API (application programming interface), which uses an open-code protocol developed by Evident.

Integrating an OmniScan X4 unit into your inspection ecosystem unleashes the potential to advance, diversify, and reach peak inspection productivity. Techtra, with over 30 years of experience serving and supporting the NDT Inspection sector across South Africa and its surrounding regions, is the exclusive distributor for EVIDENT OmniScan™ X4 solutions and several other leading brands.

<https://techtra-ndt.co.za>



OmniScan X4 application presets for common corrosion and flaw detection applications are available for HydroFORM™, RollerFORM™ or FlexoFORM™ scanners.

John Thompson re-establishes Australian presence

John Thompson Industrial Watertube Division, part of the ACTOM Group in South Africa, has announced a new partnership with Australian firm EDMS to reintroduce its world-class industrial solutions to the Australian market. The collaboration restores access to specialist boiler support for the sugar industry and opens new opportunities in the energy and industrial sectors.

Rebuilding a historic presence

John Thompson has a long history of engineering excellence dating back to 1824. Although its Australian division closed in the early 2000s, many of its boilers remain in operation across the country. With limited specialist support available in recent years, this partnership restores access to original parts, expert maintenance and technical upgrades.

“John Thompson is proud to be back in Australia,” says Quintus Engelbrecht, Business Development Manager of the Industrial Watertube Boiler Business Unit. “By working with EDMS, we are providing long-overdue access to the level of service and technical expertise our equipment requires.”

EDMS is an Australian company providing a diverse, complementary range of engineering, fabrication and site construction services to the sugar, agriculture, defence, marine, resource, renewable energy, tour-

ism and industrial sectors. It has built a solid reputation in the Australian sugar industry through its maintenance work and strong technical capabilities. By aligning with John Thompson, EDMS is now equipped to deliver a complete offering, from site support to project execution.

Service where it matters most

The collaboration has already delivered results. In a recent Queensland project in Australia, John Thompson engineers conducted an on-site investigation and manufactured replacement furnace panels. EDMS will handle the final inspection and installation locally to ensure seamless service for the client.

“There are very few boiler specialists left in Australia,” explains Engelbrecht. “With this partnership, we combine our engineering knowledge and equipment supply with EDMS’s strong local footprint. It’s a practical and scalable model for long-term client support.”

Through this arrangement, Australian clients will benefit from enhanced access to engineering insights, specialist services, and spares, including remote monitoring and virtual diagnostics, thereby improving plant reliability and efficiency.

Supporting more than sugar

While the sugar sector is the immediate focus, John Thompson sees strong potential for its boiler systems in other industrial



An ACTOM John Thompson K4 Boiler bi-drum industrial boilers manufactured by John Thompson Industrial Watertube Division.

applications, including power generation.

“Many Australian industries still rely on thermal energy, and their infrastructure needs expert support,” says Engelbrecht. “We are ready to meet that need with proven solutions, through a trusted local partner.”

This partnership signifies more than a return; it is a strategic step forward, combining local expertise with international engineering excellence to support Australia’s industrial future.

“We’re excited to align with a partner that opens doors to smarter, more efficient energy solutions for the Australian industry. With John Thompson’s proven technology and our local delivery footprint, clients can expect real performance improvements,” concludes Michael Hagen, EDMS Australia Managing Director.

<https://www.johnthompson.co.za>

GammaTech Elios 3 drone

GammaTech recently showcased the power of the Elios 3 confined space drone at one of Zimbabwe’s leading gold mines, delivering a breakthrough demonstration that left the customer amazed.

The test focused on inspecting confined stopes deep within the mine, a challenging environment where traditional methods fall short. The goal was to generate a full 3D point cloud using the Elios 3 equipped with its advanced survey payload.

In a quick seven-minute demo flight, the Elios 3 achieved more than 90% coverage of the target area. By comparison, the mine’s current scanning technology only manages around 40% coverage on average. Traditional scanning methods also require multiple points of entry, making the process time-consuming and incomplete, even after multiple scans.

Beyond mapping, the Elios 3 enabled complete visual inspection by capturing high-quality video and images throughout the flight. This allows mine teams to conduct detailed reporting with both 3D data and visual evidence within a single workflow. The drone can also detect potential blockages and hazards, giving survey and planning teams another layer of insight that hand scanners cannot provide.

The Elios 3 effortlessly navigated through tight, inaccessible areas, capturing a comprehensive 3D dataset in a fraction of the time. This not only improves efficiency but also eliminates the



The GammaTech crew is preparing the Elios 3 before launch. The Elios 3 Drone enables inspections in confined spaces to be done safely without putting underground personnel at risk.

risks associated with sending personnel into dangerous confined spaces.

For the mine, this demonstration showed a clear leap forward in safety, accuracy & productivity. The Elios 3 provides access & insight that existing tools cannot match, setting a new standard for underground inspections in mining.

GammaTech is proud to bring world-class inspection technology to another African mine, helping operations push beyond traditional limits while keeping safety & precision at the core.

Elios 3 can revolutionise inspections for operations still relying on traditional scanning methods.

<https://gemmatech.co.uk>

DEKRA Industrial RSA rebrands as Raysonics Industrial

Marking a pivotal new chapter for the company, DEKRA Industrial has transitioned to local ownership and rebranded as Raysonics Industrial, a name long respected in the South African non-destructive testing (NDT) and inspection sector. The sale was finalised on 26 November 2025.

According to Lothar Weihofen, Country Manager of DEKRA Industrial RSA, the decision to sell forms part of DEKRA's global strategic focus on Europe, Asia and North America. "By transferring ownership to a highly capable and experienced local consortium, we ensure continuity for employees and clients. The rebranding to Raysonics Industrial reflects the company's roots. It ensures the business continues to thrive locally as a powerful brand synonymous with quality, safety, expertise and credibility in the NDT and inspection sector," Weihofen states.

Building on a solid foundation

Raysonics Investment (Pty) Ltd is a shareholder consortium with decades of combined expertise across NDT, inspection, industrial services and South Africa's broader operational landscape. The consortium's

deep understanding of the industry and its technical challenges positions the company for long-term sustainability and growth.

"Our vision is to build on the foundation and reputation established by Raysonics, which was the local NDT and inspection market leader with an excellent reputation when DEKRA Industrial acquired it in 2013. That reputation remains strong today. Through this acquisition, the company will proudly return to its original name and legacy, while transitioning into an exciting new era under committed South African ownership," says Bennie Groenewald, the new board-appointed CEO of Raysonics Industrial. Groenewald will formally assume leadership of the company within the coming months, succeeding Interim CEO Maree de Bruin.

In line with the stated vision, the company will retain its skilled staff, management team, and service portfolio, ensuring uninterrupted delivery to clients in critical sectors such as energy, petrochemicals, mining and construction.

"Clients can expect the same trusted teams and service excellence, now supported by local ownership and decision-making, which is fully invested in South

Africa's industrial future," says Groenewald.

New ownership, same standard of excellence

Looking ahead, Raysonics Industrial aims to build on DEKRA Industrial RSA's portfolio by expanding its service offering, investing in innovative technologies and strengthening partnerships across Southern Africa.

The parties are also exploring continued collaboration between DEKRA internationally and Raysonics Industrial to support knowledge-sharing and ensure access to global NDT and inspection best practices.

"Through this acquisition, the company is building on a proud legacy of technical excellence and client trust, while positioning itself as a leading South African NDT and inspection provider with a global mindset: rooted in quality and safety, strengthened by experience, and driven by a future-focused vision," Groenewald concludes.

<http://www.raysonicndt.com>



Bennie Groenewald, the new board-appointed CEO of Raysonics Industrial.



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Fronius Velocity Assistant MIG/MAG welding

With the new Velo velocity assistant, Fronius is taking manual MIG/MAG welding to a whole new level. Velo offers assisted torch guidance and constant welding speed, supporting reproducible high-quality seams while reducing physical strain on welders.

Long welds pose challenges even for experienced welders, because while consistent speed and precise torch guidance are crucial for seam quality, they are difficult to maintain and, above all, strenuous over longer distances.

This is precisely where Velo comes into its own, as the Velocity Assistant enables control of welding travel speed during manual GMAW welding. As a result, it supports a wide range of applications, especially where long, even welds are required, for applications in commercial transportation, heavy-duty machinery or steel construction, for example.

Velo is suitable for thin-sheet applications as well as for thick-sheet welding in steel, CrNi, or high-strength steel.

At the heart of Velo is a second wire, the Velo wire, without an arc and without additional gas. This wire touches the workpiece in its solid state and generates a forward movement through friction. The travel speed of the Velo wire determines the welding speed.



The Velo wire 'pushes' the torch along the weld to maintain a constant welding speed and a constant contact-tip-to-workpiece distance.

The Velo wire also keeps the distance between the workpiece and the contact tip constant as it 'pushes' the torch along the seam, without requiring any special seam preparation. The Velo wire adds minimal additional material to the seam: the wire consumption exactly matches the seam length.

"If you allow yourself to relinquish some control, you can now produce perfect welds in manual welding at unprecedented speed by simply holding the torch," explains Franziska Eichhorn, Strategic Product Manager at Fronius International. "Test users confirm noticeably less strain and a significant increase in precision and welding quality."

Velo is a real game-changer: while beginners quickly achieve high-quality welds thanks to the supportive guidance, professionals benefit from the relief provided for long or complex welding tasks. Cramping and fatigue are a thing of the past, and the seam quality remains consistently high. Under certain conditions, Velo can achieve welding speeds comparable to robotic welding, significantly increasing productivity.

Velo is compatible with existing TPS/i welding equipment from 320 A and iWave Multiprocess PRO systems, and is easily retrofitted. All that is needed is:

- A wire feeder for the Velo wire.
- A suitable torch adaptor and a Velo wire feeding system.
- Corresponding software.

Integration into existing systems is quick and uncomplicated, without the need for complex conversions.

Ergonomic and flexible

The Velo holder can be rotated 360° without tools and locks securely into place. If accessibility is restricted, the Velo system components can be simply unclipped from the holder and set to one side. Thanks to its flexibility, the system is suitable for all positions, including pipe welds with 360° seams and multi-layer applications.

The five-meter-long Velo wire-feeding system ensures a large operating range. The system is activated directly on the welding torch, meaning it can be deactivated at any time to switch flexibly between manual and assisted guidance.



TPS/i devices from 320 A and iWave Multiprocess PRO systems can be retrofitted to include the wirefeeder for the Velo wire, the appropriate torch adaptor and Velo wire feeding system, and the corresponding software.

Velo

Precise guidance
for manual
welding processes

Long weld seams are a real challenge in manual MIG/MAG welding: maintaining consistent torch guidance and a steady travel speed is difficult. Velo – the Velocity Assistant from Fronius – supports both experienced welders and beginners in achieving high-quality seams on steel and chrome-nickel.



For more information,
please visit:
www.fronius.com/velo

The system is compatible with all Fronius welding processes: Standard, LSC, Pulse, PMC, and CMT. With the new components – OPT/i Velo, WF 25i Velo, and torch adaptation – Velo can be easily retrofitted into existing welding systems.

Velo enhances precision, minimizes errors, and saves valuable time. It's the ideal solution for companies looking to make their manual welding processes more efficient, consistent, and reliable.

Coreweld 46 LS: the low-silicon, high-deposition, low-heat-input consumable



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