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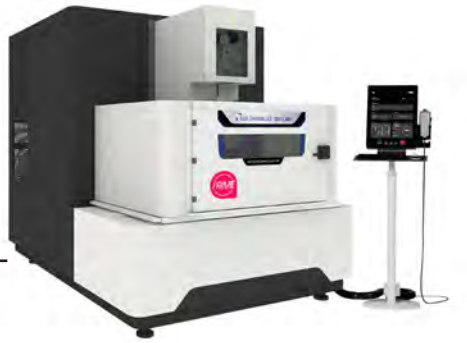
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Positivity thrives as JIMTOF 2026 concludes: When technologies take off, the possibilities are limitless



I have just returned from attending JIMTOF 2026 that took place in Tokyo, Japan, from the 26th – 31st of October 2026. The biennial event organised by the Japan Machine Tool Builders' Association (JMTBA) and Tokyo Big Sight Inc. brought together more than 1 100 exhibitors across more than 4 400 booths, and attracted 115 000 visitors from all over the world who were seeking to engage with the latest technological developments our industry has to offer.

Despite the current geopolitical and economic challenges facing the world, the energy amongst both attendees and exhibitors was palpable with many manufacturers using the opportunity to debut world premieres.

This year's theme – "When technologies take off, the possibilities are limitless" – was a fitting way to describe the technologies that were showcased by both Japanese machine tool builders and related component manufacturers as well as other exhibitors from around the world.

It really is astonishing to see what changes in the short space of two years since the previous JIMTOF exhibition took place.

A few years ago, you were going to start getting left behind if you weren't incorporating some kind of machine tool and cobot cell in your offering as a machine tool builder. Now, it seems you might be looking at being left behind if that same machine tool hasn't incorporated a cobot within the machine tool itself along with other multitasking capabilities, and of course, artificial intelligence (AI) solutions too.

AI-related solutions are standard now, from tooling usage monitoring and predictive machine tool maintenance to best practice energy optimisation, customers now expect this in some form or another to help them manage their shop floors.

There were many positives to celebrate at JIMTOF 2026 including surging machine tool orders for the local and export markets in Japan. September 2026 orders hit an all-time record high of ¥223.21 billion ($1.4 billion). A more than 60% increase year-on-year.

This growth has largely been driven by the demand for AI data centres and it is unlikely to be a short-term phenomenon as more and more countries and companies seek to safeguard data sovereignty. Orders from North America are up 71.8% and 61.7% from China.

Other areas of growth included semiconductor-related manufacturing equipment as well as demand from the aerospace industry.

A special exhibition featured the evolution of Kawasaki Heavy Industries' humanoid robot Kaleido, now in its ninth version, with work on the 10th version already underway. It is envisioned that this industry will be worth some ¥60 trillion ($380 billion) by 2040. Mainly brought about by labour and skill shortages, these autonomous mobile robots will be focussed on taking over the labour-intensive functions from humans across the shop floor.

Kawasaki doesn't envision these robots replacing humans entirely, but rather supporting a co-worker relationship where the mundane tasks are alleviated from humans. There has been rapid development of innovation in this area recently, particularly in China and the US, but we are more than likely still a decade away from seeing mass humanoid robot deployment. The technology and manufacturing processes are still evolving and the adaptable dexterity a human hand and mind offers – specifically with reasoning – still far outweigh what a humanoid robot is capable of.

The race for physical AI is on in the manufacturing and machine tool builders' world and this technology is being rapidly implemented. Some of it is still in its infancy stages, but some of it offers a glimpse into what will become standard across shop floors in the future. Of particular interest will be its applicability to job shops and its ability to facilitate optimised shop floor output.

It's going to be a game-changer in supporting shop floors with decision-making, verifying AI reasoning and decisions, enabling further automation and complete optimisation of production, from order taking, material and tool selection, energy conservation, to delivery to the customer, at the lowest cost and in the least possible time, this technology offers it all. Opportunity abounds.

My full report on JIMTOF 2026 will be out in our January 2027 edition of Metalworking News. It's going to be very interesting to see what is on offer in 2028.



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Beyond cyber protection:
Can companies operate through cyber disruption



Picture – Cybersecurity magazine

As cyber threats grow in scale and sophistication, the question for leaders is shifting from “How do we prevent every attack?” to “How do we continue operating when disruption occurs?”

In a new article for The European Business Review, my colleagues Giovanni Cozzolino, Yusof Seedat, and I explore why traditional cybersecurity approaches are no longer enough in today's interconnected digital landscape. Drawing on research with European executives and real-world recovery experiences, we outline why organisations need to move beyond protection-focused strategies and build resilience into the core of their operations.

This requires a fundamental shift: Identifying the essential operating core, testing recovery pathways, treating compliance as a baseline rather than the destination, and understanding the true business impact of cyber disruption.

Cyberattacks can no longer be prevented entirely, making resilience, not protection, the defining leadership challenge. This article argues that CEOs must shift from protection to resilience by identifying the essential operating core and rethinking compliance, recovery, governance, value-chain risk and the true economics of cyber disruption today.

Europe’s cyber threat landscape has changed dramatically since 2022. What began as cyber operations linked to the Russia-Ukraine conflict has evolved into a persistent campaign targeting critical infrastructure, including hospitals, energy networks, transportation systems and financial institutions. The European Union Agency for Cybersecurity, ENISA, reports that both the volume and consequences of attacks increased during 2023 and 2024. Its 2025 threat assessment documented nearly 4 900 incidents across the region.

Europe’s exposure to cyber threats is amplified by its deeply integrated cross-border supply chains, with manufacturers, logistics providers, financial institutions and critical service operators bound together across multiple jurisdictions. An attack on one central provider impacts every organisation across its network.

Rapid AI adoption is accelerating this vulnerability. AI increases the speed, scale and interconnectedness of digital operations, creating new pathways for disruption while making ▶

recovery more complex and accelerating the path from compromise to business impact.

In an era of escalating attacks and digital interdependence, complete prevention is no longer achievable. The challenge is growing. According to Accenture's data, 87% of organisations see cyber disruption as a recurring operating reality, while 72% believe preventing all disruption is no longer realistic given the complexity of modern technology ecosystems. These findings point to a shift in how businesses need to approach cybersecurity. Protection remains essential, but organisations must also be prepared to operate when their systems are compromised or unavailable.

Artificial intelligence (AI) is adding urgency to this challenge. The data shows an 89% year-on-year increase in AI-enabled cyberattacks in 2025. It also indicates that frontier AI models achieved an 83% success rate on their first attempt at finding and exploiting vulnerabilities, compared with rates that were previously close to zero. The time between discovering a vulnerability and exploiting it has narrowed considerably, in some cases from weeks to hours. This leaves organisations with less time to identify threats, make decisions and limit potential damage.

The implications are particularly relevant when critical processes depend on interconnected digital services. Cloud platforms, AI applications, business software and external technology partners can improve efficiency and enable growth, but they also create dependencies that may complicate recovery. The data shows that 69% of organisations believe their operations increasingly depend on complex internal and third-party digital ecosystems, while 61% say external dependencies influence their ability to sustain critical business operations.

A disruption affecting one provider or system can therefore have consequences across several business functions. An organisation may have effective security controls in place yet still struggle to process transactions, serve customers or restore essential operations if a critical dependency becomes unavailable. About 81% of leaders expect to operate under degraded system conditions during cyber disruption. Business continuity planning needs to reflect that possibility, rather than assume systems will remain fully available.

One of the most important barriers to resilience is the gap between executive expectations and operational realities. More than half of executives believe strong protection controls are sufficient to ensure business continuity after an attack. Meanwhile, 81% assume critical IT downtime in a serious incident will last 10 days or less, despite the research indicating that recovery averages three to six months.

For business leaders, resilience is becoming one of the defining capabilities of the digital age. ■

This is the viewpoint of Harpreet Sidhu, Accenture's Global Cybersecurity Lead in USA and Boland Lithebe, Cybersecurity lead for Accenture, South Africa. Read the article: https://www.europeanbusinessreview.com/beyond-cyber-protection-how-european-companies-can-operate-through-cyber-disruption/

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cover story

Retecon Group principles present new products to build the world

Connecting the technology behind automotive, aerospace, construction, agriculture and modern manufacturing.

Leading supplier of machine tool, tooling, consumables, services and accessories supplier to the metalworking and related engineering industries, the Retecon Group, which includes Retecon and Puma Machine Tools, has highlighted a number of new products recently released by the companies that they represent in South Africa. Some were launched at the EuroBLECH 2026 exhibition held in Hannover, Germany in October 2026 and IMTS 2026 held in Chicago, USA in September 2026.

The Retecon Group has serviced all the metal forming and cutting disciplines including milling, turning, gear cutting, boring, grinding, tube and wire, EDM, pressing, punching, laser cutting, bending and measuring for 56 years by importing quality well-known brands from all over the world.

Retecon Group's various products range from vertical and horizontal machining, turning lathes, multi-spindle lathes, universal milling and boring, tool and cutter grinding, laser cutting systems, bending systems, punching and forming machines, automatic sawing equipment, roll forming, wire and tube cutting and bending machinery, measuring equipment, fixtures and fittings, manufacturing lines and much more.

The Retecon Group represents a number of well-known international manufacturers including Trumpf, United Grinding (Studer), DN Solutions, Heller, United Machining Solutions, Chevalier, Citizen Machinery, Cosen, CSM, IEMCA, JFY, Parkson, Visionwide, Kasto, Ficep, Kapp Niles, Hexagon Metrology Group, Weber, Haimer, Renishaw, Haeusler, Alpha Laser and ENRX (previously EFD Induction).

Trumpf

At EuroBLECH 2026 Trumpf presented the new generation of its most productive punching machine, the TruPunch 5000. The high-tech company has focused in particular on improving the machine's reliability, productivity, and user-friendliness.

Michael Steimle, product manager at Trumpf, said: "We are seeing a growing demand for punched sheet metal parts, particularly in the energy and electronics industries, which are currently among the fastest-growing sectors. With the new TruPunch 5000, we're helping our customers produce high volumes cost-effectively and automatically."

The new machine control system – the integrated Vision Equipment Pro camera system – and a second monitor ensure greater transparency in production. The new machine control system transmits the machine's process and status data to Trumpf's Smart View digital service. Machine operators can view this information on a dashboard from any location and take early corrective action to prevent impending downtime. In addition, up to 10 integrated cameras capture the machine's work area.

Production staff can access these images at any time and from any location, for example at the setup station. Furthermore, a second screen can display production-related information, such as camera images of the machines or data



Trumpf's TruPunch 5000, a new generation punching machine



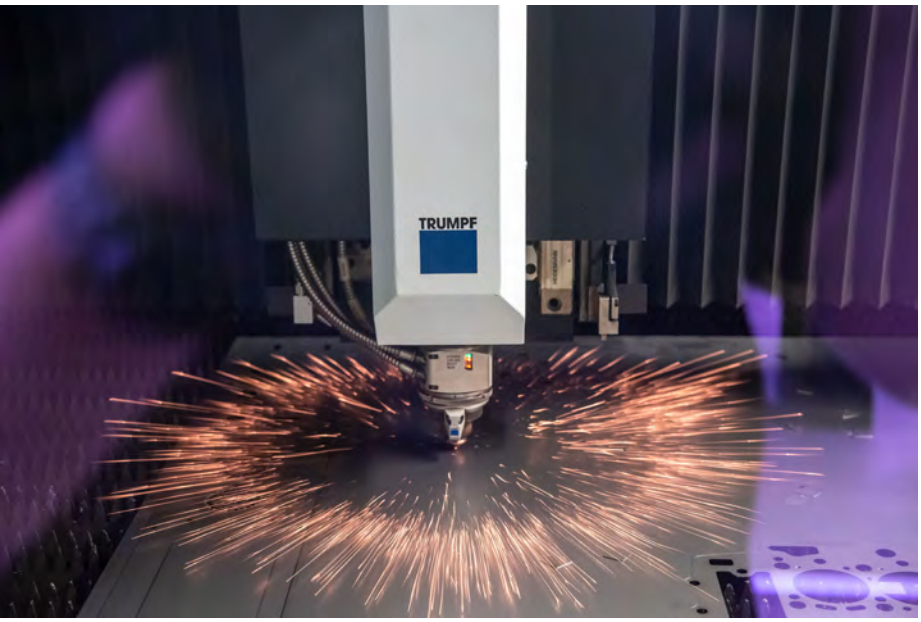
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The new TruPunch 5000 punching machine is specifically designed for use in the smart factory



Trumpf has launched the new generation laser cutting machine the TruLaser 5000



Active Speed Control monitors the cutting process in real time, detects quality deviations even during machining, and automatically adjusts the feed rate

from Trumpf's Oseon software. In the future, machine updates can also be installed without a service technician on site. Looking ahead, Trumpf plans to offer the Remote Operation Support service for the TruPunch 5000 as well. This will allow Trumpf to troubleshoot the machine remotely at the customer's site.

"This enables our customers, for example, to run production overnight without the need for on-site personnel," said Steimle.

With the new machine control system, Trumpf is laying the foundation for highly flexible and future-proof automation in the TruPunch 5000. At EuroBLECH, for the first time, the company showcased an AI-supported solution for the automated sorting of small parts. The intelligent cameras detect the position of the parts, allowing a robot to pick them up and sort them without any programming effort. This reduces downtime and increases manufacturing productivity.

With the new TruPunch 5000, Trumpf has significantly simplified operation. An improved safety concept shortens the operator's walking distances and reduces downtime. They have also made tool setup more user-friendly. The new ToolMaster Linear tool changer features an additional display located directly at the setup station. Operators can view all necessary tool information there and set up tools more quickly and safely.

With 22 metric tons of punching force, the machine processes sheet metal up to 8mm thick at a rate of up to 1 600 strokes per minute. In addition to punching, it also performs complex forming operations such as embossing and drawing. The open machine frame allows for high flexibility with different component sizes and ensures easy access to the machine – even in highly automated systems.

Furthermore, the active die on the TruPunch 5000 enables high-quality, low-scratch surfaces, greater forming heights, and higher process reliability for demanding punching and forming applications. The TruPunch 5000 is suitable for both small-batch manufacturers and high-volume producers. Typical applications range from control cabinet construction and components for data centres to intricate trim and functional parts.

Trumpf enhances transparency and efficiency in laser cutting with TruLaser 5000

Trumpf also launched the new generation of its most productive laser cutting machine series, the TruLaser 5000. The machine makes sheet metal processing operations more transparent than ever before. Integrated cameras, sensors, and continuous status monitoring provide users with a comprehensive overview of the machining process at all times. This allows companies to see at a glance when and where productive time is being lost and to take targeted measures to increase their efficiency.

Proven assistance systems for greater process reliability

For maximum process reliability, Trumpf relies on proven assistance systems for laser cutting in the new TruLaser 5000. Active Speed

Control monitors the cutting process in real time, detects quality deviations even during machining, and automatically adjusts the feed rate. A new feature introduced at EuroBLECH is that the system monitors the condition of the nozzle during cutting and initiates a check cycle if contamination is detected. This allows the machine to take corrective action early on, before scrap is produced. With the Smart Rerun function, the machine automatically detects interrupted cuts and resumes the cutting process at the correct point. In combination with Active Speed Control, the TruLaser 5000 can continue production even in the event of faulty cuts, without operator intervention. This reduces downtime and increases productivity.



A newly developed welding optic, approximately 40 per cent smaller, expands the TruLaser Weld 3000's range of applications. This makes it particularly well-suited for manufacturing deep components such as control cabinets

High-performance machine for demanding applications

With up to 24kW of laser power, it is suitable for all common materials used in sheet metal fabrication. Depending on the format, it processes sheets ranging in size from 3m x 1.5m to 6m x 2m. Users can economically manufacture both delicate precision parts and large-format components. Typical applications include mechanical engineering, agricultural machinery, commercial vehicle manufacturing, and contract manufacturing.

Accelerating part production with Trumpf's AI-powered laser welding cell

At EuroBLECH 2026, Trumpf introduced the new TruLaser Weld 3000, a compact robotic laser welding cell that can be programmed significantly faster thanks to AI while requiring very little space. Compact welding optics reach even hard-to-access areas within the component, ideal for companies with a wide variety of part variants and limited space

"The TruLaser Weld 3000 provides competitive advantages, particularly for companies that manufacture high-quality sheet metal assemblies and housings in small batches with a wide variety of variants. It enables stable processes, short cycle times, and thus a high degree of flexibility in production," says Moritz Berger, product manager at Trumpf.

With a laser power of 3kW or 4kW, the TruLaser Weld 3000 welds stainless steel and structural steel up to 8mm of material thickness, as well as aluminium up to 6mm. Typical applications include equipment and plant engineering, sheet metal components for data centres, medical technology, and the kitchen and food industries.

DN Solutions' AM2CNC cell turns metal additive preforms into finished parts in one workflow

At IMTS 2026 the company's center-piece was its AM2CNC cell, which integrates one of its five-axis DVF 5000 machines with a new, cost-effective pallet system and a DLX 450 additive machine. The AM2CNC platform seamlessly integrates additive manufacturing and CNC machining in a single workflow. DN Solutions ran a metal additive preform straight through to a finished, ready-to-use part on a single connected platform, demonstrated live with the DLX 450 metal additive system and the DVF 5000 2nd Gen 5-axis machining center with an automatic workpiece changer (AWC).

The DVF 5000 is a compact 5-axis VMC engineered for lights-out automation and intricate workpiece geometries. Spindles up to 20 000 rpm deliver up to 230Nm of torque for demanding applications, and the AWC keeps the machine cutting through unmanned, continuous operation-finishing preforms around the clock.

The DLX 450 builds the preform. Palletised automation delivers the stored parts directly to the DVF 5000, where the 5-axis mill performs the high-precision finishing and tapping that turn a raw preform into a finished part. The workpiece never leaves the workflow.

Hexagon

Hexagon's portable metrology division has introduced HYPERSCAN SR, a fully wireless optical tracking 3D scanner that makes professional optical tracking more accessible. By combining a fully wireless workflow, simple operation, and dynamic tracking in a portable solution, it can be used directly on the shop floor, at supplier sites, or in the field.

Industrial engineering teams increasingly inspect parts where they sit, on the production line, across multiple sites, and in service, rather than carrying them to a measurement room. Optical tracking holds a measurement steady when the part or its surroundings move, but it has typically needed cabling, careful setup, and a metrology specialist to operate. The HYPERSCAN system eliminates that setup burden with dynamic optical tracking – a technology that unifies the scanner and the part together in one coordinate system so that the scan remains stable even when the part moves or the setup vibrates.



Hexagon's portable metrology division has introduced HYPERSCAN SR, a fully wireless optical tracking 3D scanner



Agie Charmilles' new CUT E 600 PRIME, is a limited-time edition in the CUT E Wire EDM Series



Agie Charmilles' new FORM F 450 die sinking machine

HYPERSCAN SR is a fully wireless system, with WiFi 6 connectivity and swappable batteries built into the scanner and tracker, so no tethered wireless accessory is required and there is no cabling to route. It deploys with minimal preparation and is straightforward for non-specialist operators to run. When scanning, its dynamic tracking follows the part and the scanner together, so movement and vibration do not break the scan.

Target-free wide area scanning helps operators improve their productivity across small and medium parts such as welded machine frames, cast housings, tooling and fixtures, and vehicle interiors, with multiple scanning modes up to 4 million points per second, hole flash capture and edge detection. The scanner weighs only 1.3kg (excluding battery) with on-device controls and intelligent voice assistant operator support. Finished point clouds can be exported to STL and common file formats, with one-click data transfer to Geomagic or PolyWorks.

HYPERSCAN SR is the new entry point to the HYPERSCAN series, joining HYPERSCAN Ultra, the versatile production workhorse, and HYPERSCAN Super, which provides additional range for the largest parts and automated inspection cells.

HYPERSCAN SR is suitable for on-site and in-field inspection, supplier and incoming-goods quality, field service, maintenance and overhaul, tooling and fixtures, and decentralised quality control, in sectors such as automotive, rail, energy, construction, general manufacturing, industrial equipment, and consumer products.

United Machining (Agie Charmilles)

United Machining (Agie Charmilles), known for remarkably accurate and versatile EDM machines, showcased a trio of new arrivals at IMTS 2026. The first, the CUT E 600 PRIME, is a limited-time edition in the CUT E Wire EDM Series, ready to bring rapid return on investment to world-class and budget-aware EDM shops.

The FORM F 450 made its debut as well, bringing the die sinking repeatability and performance United Machining (Agie Charmilles) customers demand, plus any-application flexibility. Its scalable platform is designed specifically for shops whose needs will evolve over time.

Finally, the new CUT P 600 was also at the United Machining Solutions booth, a head-turning and premium addition to the wire EDM roster at United Machining (Agie Charmilles). The machine boasts remarkable control, incredible detail and repeatable results for demanding micro-machining applications that were previously thought to be impossible to accomplish.



DN Solutions and HELLER co-exhibited at IMTS 2026, the largest machine tool exhibition in the Americas and AMB 2026, one of Europe's premier metalworking exhibitions

Ficep

Ficep's software division Steel Projects has introduced Easy Check, an augmented reality solution that makes quality control faster, simpler, and more reliable. Using a standard iPad Pro, Easy Check lets you overlay your CAD models directly onto physical steel assemblies. In seconds, you can see whether what you built matches what you designed and identify deviations directly on the assemblies.

Ficep also introduced VALIANT, a CNC beam drilling machine built to process beams up to 2 000mm.

With MA.KE, FICEP introduces a new vision for industrial machines: A circular approach where every phase – from design to production, from operation to remanufacturing – becomes part of a continuous value loop.

United Grinding (Studer)

From hip prostheses to dental instruments – cylindrical grinding machines make a decisive contribution to medical technology with their high precision, reliability, and innovative grinding technology, strengthening the competitiveness of manufacturing companies worldwide.

Medical technology also places the highest demands on precision, surface quality, and cleanliness when it comes to the materials being machined. Studer's cylindrical grinding machines S121 and S131 are machines for internal cylindrical grinding to produce hip joint balls and hip sockets. These are key components of modern hip prostheses that enable patients to move pain-free again after osteoarthritis or severe injuries.

Today, Studer is no longer just a leading manufacturer of grinding machines, but also a technology company. In-house developed software such as StuderWIN, StuderPictogramming, StuderSIM, and integrated tools for profiling, measuring, or generating contours make even the most complex grinding tasks easy to execute.

Additionally, Studer cylindrical grinding machines now feature state-of-the-art sensor technology and C.O.R.E., the revolutionary hardware and software architecture from United Grinding.

JFY (a member of the Trumpf Group)

On display at EuroBLECH 2026 JFY (a member of the Trumpf Group) had a TPM+L bending machine, a BFC+ NXT fiber laser cutting machine, their JFY PLUS offline programming software and a MT+ 300E turret punching machine

The JFY MT+ 300E turret punching machine is a high-performance punching machine with high stability and low investment costs. The MT300E is among the leading turret punching machines in China with a market share of more than 20%.

The machine has a punching force of 30 ton, the main driving type is a single servo motor a maximum sheet processing size (with one-time repositioning) of 1250mm by 5000mm and is able to process sheet (mild steel) thickness between 3.2mm and 6.35mm.

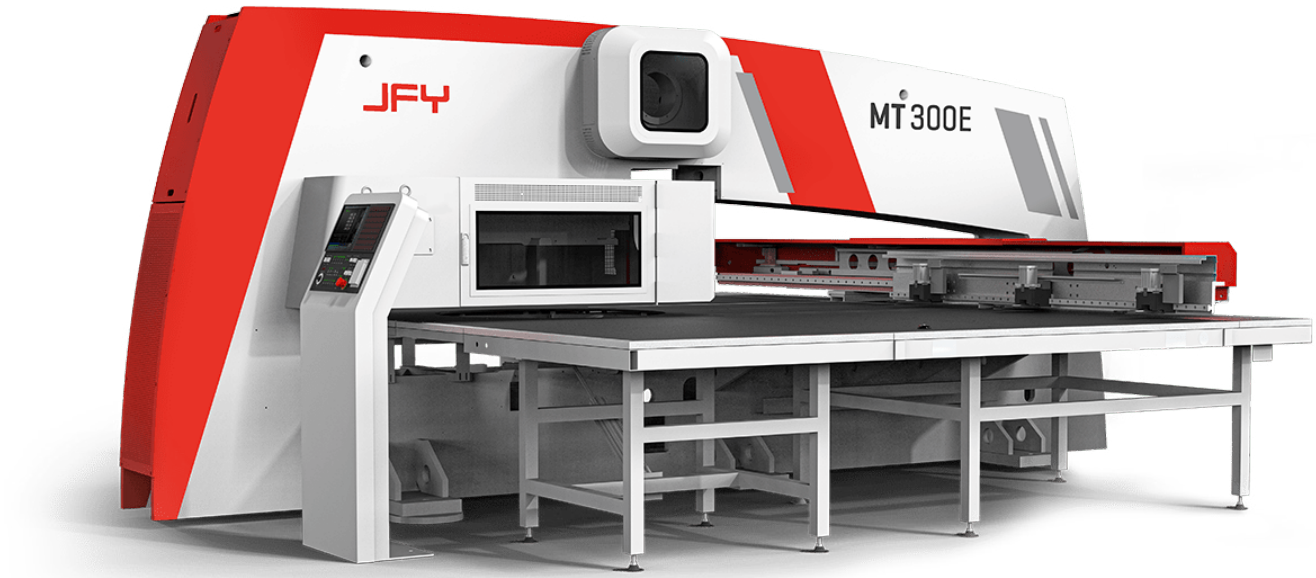
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Ficep has introduced VALIANT, a CNC beam drilling machine built to process beams up to 2 000mm



From hip prostheses to dental instruments Studer's cylindrical grinding machines make a decisive contribution to medical technology



The JFY MT+ 300E turret punching machine

IDC launches bold R10 billion steel buyout of AMSA

South Africa's state-backed Industrial Development Corporation (IDC) has agreed to an initial R10 billion rescue deal to seize control of ArcelorMittal South Africa (AMSA).

The transaction injects R3 billion in fresh cash and absorbs R7 billion of debt, marking Pretoria's most decisive industrial intervention in decades. Shares in the local unit jumped 21% in Johannesburg, lifting equity value to R1.3 billion.

The move unwinds billionaire Lakshmi Mittal's takeover of former state monopoly Iscor, returning strategic assets, including the key Vanderbijlpark mill alongside idled operations in Pretoria and Saldanha, to state stewardship after years of severe rail bottlenecks, power cuts, and plant closures.



The deal marks South Africa's most aggressive state intervention in heavy industry in decades

The deal marks South Africa's most aggressive state intervention in heavy industry in decades. Officials acted swiftly after years of severe operational decline, power shortages, and rail logistics bottlenecks crippled domestic steel production. Bringing the asset under state supervision aims to halt cascading job losses across the country's manufacturing rust belt.

Halting rust belt closures

The government intervention caps tense talks that erupted in November 2023, when the steelmaker threatened to shutter key mills. Those threatened plants supply high-grade metal indispensable to South Africa's rail, mining, and manufacturing sectors. Fearing a broader industrial unravelling, trade ministry officials stepped in alongside the IDC to finance the lifeline.

The state financier confirmed ongoing discussions to protect domestic manufacturing, pledging to release formal transaction terms once finalized. People familiar with the strategy noted the IDC will review entire operating divisions once the transaction closes. The lender then plans to invite private industrial partners to run or co-invest in specific facilities.

Rebuilding a fractured monolith

The steelmaker has already shuttered two mills and an iron ore mine, while idling plants in Pretoria and Saldanha. It currently runs a flagship plant in Vanderbijlpark, south of Johannesburg, turning out crucial flat-steel products. The IDC views restoring these neglected assets as essential to lowering raw material costs for downstream factory operators.

The deal unwinds two decades of foreign control over the former state monopoly known as Iscor. Billionaire Lakshmi Mittal acquired the business in 2003 before folding it into ArcelorMittal three years later. Returning the enterprise to government custodianship represents a dramatic reversal for South Africa's primary industrial infrastructure.

Unsustainable cost per job

"The argument for this buyout is preserving jobs, specifically the 3 500 positions in AMSA's long steel division across Newcastle and Vereeniging. The IDC has already poured R2.68 billion in loans into AMSA over the last two years. Add the R3 billion equity purchase price. Plus R417 million in TERS subsidies. That represents over R6 billion in public and state-backed commitments — working out to roughly R1.7 million per direct job," writes Sandy McGuffog on the Medium platform

"For a fraction of that capital, directed as catalytic equity or venture debt into high-growth, competitive sectors (like modern agro-processing, advanced light manufacturing, or renewable energy components), South Africa could generate far more sustainable, forward-looking jobs."

Meanwhile, a decade-long Black economic empowerment pact with Likamva Resources expires in December, with the partner unlikely to join the new setup. Once closed, the IDC plans to bring in private industrial partners to run or co-invest in specific facilities. ■

Minister Tau announces end of policy support for semi-knock-down operations in South Africa's automotive sector

The Minister of Trade, Industry and Competition, Mr Parks Tau, says South Africa plans to phase out current Semi-Knock-Down (SKD) operations and no longer provide policy support for any new SKD facilities in the country.

He was speaking at the SA Auto Week event in Durban, which also marked the first day of the KwaZulu-Natal Investment Conference hosted at the International Convention Centre (ICC). The speech was delivered on behalf of President Cyril Ramaphosa.

This decision comes as government working with naamsa – the Automotive Business Council, the National Association of Automotive and Component and Allied Manufacturers (Naacam) and organised labour unions, review the Automotive Production Development Programme (APDP2).

Tau explained that this development will exclude Medium and Heavy commercial vehicles.

"We will work to strengthen the legal definitions around what we determine as Complete-Knock-Down (CKD) manufacturing. We have agreed that the strategic competitiveness of South Africa's ladder frame LCV segment warrants formal investigation. There was also alignment that any additional protection should be accompanied by reciprocal commitments relating to production, localisation, employment, transformation, exports, and investment. I will be instructing ITAC to undertake this investigation to reach a final determination on the matter," he said.

During his address, he acknowledged that the current period is the greatest turning point this sector has faced in a century, and the way vehicles are powered, built, owned and used, is changing all at once.

He further indicated that New Energy Vehicles and South Africa's commitment to carbon emission targets, as well as the Critical Minerals Beneficiation Strategy, are key focus areas in placing the sector on a path to success.

"If we do not build the vehicles that markets such as Europe and the United Kingdom will buy, we will lose those markets, and with them our plants and our jobs. At home, in the first seven months of this year, South Africans bought almost as many new energy vehicles as in the whole of last year. The automotive industry is where the beneficiation strategy meets our reindustrialisation programme. Every new energy vehicle sold today will one day reach the end of its life, and so will its battery. Government has begun work on an End of Life Vehicle policy, as part of the decarbonisation pathway in our Industrial Development Strategy. Recycling batteries and giving them a second life is a new industry in its own right. South Africa intends to build it from the start," he said. ■



Diversification helps DTS

Security Products tap into new markets

When you have the machinery and engineering experience, what have you got to lose by tapping into those resources and exploring and growing your in-house manufacturing capabilities? That's the philosophy embraced by family-run business DTS Security Products as next generation family member Andrew Schmidt adds his touch to the business.

DTS Security Products, based in Spartan, Kempton Park, started out as an industrial hardware retail store but the family-run business has continued to evolve over the years and today boasts full in-house fabrication facilities that include fiber laser cutting, CAD work, bending and CNC turning.



DTS Security Products have boosted their manufacturing capabilities by venturing into fabricating container conversions, including modification of the container skid bases – and pretty much everything else involved with modifying a container. These containers can be used for a number of different storage options

The core focus of the business still remains where it started once the hardware store was sold off – manufacturing a range of security products – but now the company has taken its experience of fabrication and again spread its wings.

"We have been very fortunate to have continually experienced growth over the years and this has culminated into a move into our new facilities. The move has seen us go from 1 500m^2 to 3 000m^2," explains Andrew Schmidt, son of one of the original founding members of the business, Linton Schmidt.

"Part of the reason we needed to move was that we had simply run out of space because of a new venture the company had decided to get into – fabricating container conversions, including modification of the container skid bases – and pretty much everything else involved with modifying a container. It's a turnkey product that means we essentially rebuild the container from the bottom up, welding, painting and installing IsoBoard. It's a very manual process and involves a lot of traditional fabrication as you can imagine."

> "These containers can be used for a number of different storage options and these are specified by our customers."

"These containers can be used for a number of different storage options and these are specified by our customers. For instance, we are busy with a conversion project now where the container will be able to hold a significant amount of battery storage. This particular container will be a 6m high cubed container with dimensions of 2.9m x 6m x 2.4m and once finished it will weigh in the region of 34 tons."

"There is nothing standard about these container conversions – they will all be to client specifications and will have different requirements depending on the industry we will supply them into or the environment where they will be situated. These containers can also be stacked on top of each other to provide even greater storage options as well as space saving options, again this depends on what the customer wants or needs as a solution."

"We are able to source the containers ourselves, but



The company have recently installed a Bodor 12kW fiber laser that was supplied by Spectrum Machine Tools Africa. It has a bed size of 3 000mm by 1 500mm

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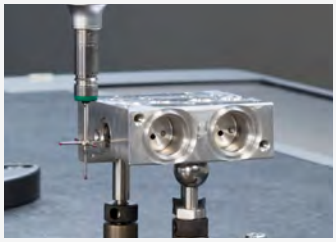
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DTS Security Products' KIATURN 21LM is still a workhorse on the shop floor helping to manufacture their range of gate wheels



"Our Amada Vipros 2510 King turret punch press is still working as it always has though we are using it differently these days – for the manufacturing of some of our polycarbonate components. I don't think there are many people out there that would be using a turret punch for manufacturing polycarbonate components but we have found it works very well."



The company has full in-house electrical assembly capabilities for its range of security products



Father and son, Linton and Andrew Schmidt

often the customer will supply them directly to us. Another custom solution we can provide is to work with bigger containers that we can then kit out with an internal crane in order for the customer to move whatever may be stored in the container around inside the container easily."

"Being a turnkey solution, the containers are fully waterproof and we have done a lot of research into the paint we will apply for instance as this will affect the longevity as well as the general appearance of the container."

"I suppose you could say that this was a bit of a natural evolution for us because we had already been custom manufacturing enclosure solutions – so why not make bigger ones?"

"Even though we have decided to really start pushing our manufacturing capabilities – I am a Mechanical Engineer by trade and am currently completing my Masters – we have still kept our core focus on manufacturing our range of components for our range of security products."

"These include our gate motors, gate wheels, garage door openers, electric fencing that incorporates various kinds of flat, round and square bars and tubes, rainshields, nylon and steel racks, base plates, goosenecks, angle brackets, battery boxes as well as various accessories and spares."

"The range also includes various receivers and transmitters, alarms, as well as the accompanying PC boards needed to run the components. We basically manufacture everything related to these products other than doing our own injection moulding. We even manufacture motorcycle wheel chocks now."

"We haven't needed to do too much in the way of capital equipment investment in recent years but we have recently installed a Bodor 12kW fiber laser that was supplied by Spectrum Machine Tools Africa. It has a bed size of 3 000mm by 1 500mm and has helped immensely with our cutting capabilities for our range of sheet metal enclosures. We will be using it for the cutting of our range of racks too. We are generally processing in the 0.8mm to 6.5mm range in aluminium and we will go up to 10mm in mild steel. Of course, we are also able to do custom cutting depending on customer requirements and this is why we went for a higher spec optical output power for the laser."

"At the same that we purchased the new fiber laser we also decided to invest in a 3kW Bodor Aqu Series self-cooling handheld laser welder and we have some exciting and innovative uses for it."

"Our Amada Vipros 2510 King turret punch press is still working as it always has though we are using it differently these days – for the manufacturing of some of our polycarbonate components."

"I don't think there are many people out there that would be using a turret punch for manufacturing polycarbonate components but we have found it works very well for manufacturing insulation components for one of our customers. We have also used it for shelving components. There is a little bit more involved when it comes to keeping it clean in terms of how it processes polycarbonate as opposed to sheet metal, but the results we are able to achieve for what we are doing are great."

"Are far as future plans go, we are currently installing our own powder coating plant and are in the process of developing an app that will allow you to control some of our security products."

"There is nothing that I will say to a customer that I can't do. I would rather try and find a solution and make it work," concluded Schmidt.

For further details contact DTS Security Products on TEL: +27 11 392 5540 or visit https://dtssecurity.co.za ■

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National Stainless Steel Centre now offers dished end processing



The Faccin dishing press supplied by Talmac Machine Tools

National Stainless Steel Centre (NSSC), one of the largest independently owned metal processing and fabrication centres in South Africa that specialises in stainless steel has announced the launch of its newly commissioned Dished End Division, adding to the many metal processes that the company already offers. These include laser cutting, high-definition plasma cutting, water jet cutting guillotine, CNC punching, bevelling, bending, conventional and CNC plate and section rolling, CNC milling, machining and drilling, CNC tube bending, polishing and surface finish including deburring and robotic welding. Additionally the company offers pre-fabrication for structural section, pipes and other services to client requirements and project planning, including in-house quality control.

"This strategic expansion enhances our capability to supply high-quality dished ends manufactured to exact standards for the pressure vessel, tank, food, beverage, dairy, pharmaceutical, and chemical industries," stated Managing Director Mischel Frljak.

"We are more than a service centre cutting metal to size. When we established National Stainless Steel Centre 21 years ago we knew we had to stand out from the rest. At the time many companies processing flat sheet and plate were finding that they had to offer some level of fabricating services to help them stand out among other metal processors. But we needed to be even more recognisable in a competitive and growing industry. This is one of the reasons why we chose to concentrate on stainless steel," explained Frljak.

"But it wasn't just about stainless steel. We figured the more metal processing processes you can offer the better it is for the client, whether it is cutting, forming, machining, joining and finishing methods to turn metal into finished components or structures. As we all know the cost of transporting today is of real significance when quoting. Allowing the client to virtually get full steel processing to their requirement from a single supplier offers clients a streamlined one-stop-shop experience. This approach simplifies the supply chain, reduces logistical headaches, and ensures consistent quality from raw material to finished component. This is what we

offer as stainless steel shop," explained Frljak.

"One of the metal processing services that we were missing from our portfolio was dishing or dished end manufacture."

"In industry there are numerous calls for barrel or vessel type fabrications that are needed and there are hundreds of manufacturers of tanks, silos, pressure and storage vessels, rail and road tanks and other metal rolled components. Most of these companies would need to source the ends that form the end of the tank or vessel and these are known as dished ends. The dished end is usually welded to the tank or vessel body to support the pressure inside. There are various types, sizes, depending on the specifications and what type of product, liquid or solid, that will be housed in the tank or vessel."

"Dish end manufacture is a specialised business within the fabricating world but the call for the use of dish ends is numerous. Pressure vessels are used primarily in the transport and storage industries and I can name hundreds of industries that require pressure vessels. The food and beverage, gas, petroleum, heating, chemical, cooling, water filtration and brewery industries, to name a few, all require pressure vessels in some form or shape. In fact, any industry that is using a pressure vessel or storage tank requires a convex end."

"Dished ends are also known as end caps and as I said are welded to the main body of a pressure vessel or tank."

"These dished ends are produced in different ways, and every method has its pros and cons. These methods include hot and cold forming, deep drawing, spinning, as well as the forming of heads in crown and petal segments."

"Another common method is called dishing and flanging, a technique that provides manufacturers with the flexibility, high productivity, and quality of the end product required in today's competitive market. A dishing and flanging line can form heads of any shape, be it flat, conical, standard, torispherical, semi-elliptical, or ellipsoidal. Material thicknesses range from 5mm to 60mm in the cold condition and up to 80mm in the hot condition. Diameters range from less than 1m up to more than 8m. This shows how versatile the production with a dishing and flanging line can be."

"Once the plate has been cut to size in a circular shape (using a circular shear, laser, plasma, or other method), the resulting dish is formed under a press that, with multiple hits distributed over the entire surface, will crown the plate. To make different types of dished ends and different diameters, a dishing press must be equipped with a set of dies shaped with different radii."

"Because of the situation of where and what these vessels and storage tanks are used pressure vessels are design to ASME and PD design codes and storage tanks to API 650, BS 2654, and associated specifications. We therefore have to adhere to these codes as well."

Faccin dishing press PPM-400/6

"We decided on a Faccin PPM series dishing press, which is a heavy-duty hydraulic dishing press designed for crowning metal plate ends. The PPM-400/6 has a 400-ton capacity hydraulic press configured for plates or throat capacities up to 6 000mm."

Faccin's PPM series of hydraulic dishing presses are built with the exclusive HPT system utilising two solid forged tie rods (permanently preloaded) to keep the frame connected to the top rail

"Faccin's PPM series of hydraulic dishing presses are built with the exclusive HPT system utilising two solid forged tie rods (permanently preloaded) to keep the frame connected to the top rail. Thanks to the HPT system, which is able to minimise frame deformation, dished heads presses of the PPM range assure forming precision and high reliability."

"The Faccin has been supplied and installed by Talmac Machine Tools."

NSSC was established just over 18 years ago in Jet Park, Gauteng. In 2013 the company moved into its own building that is made up of 10 000m² for processing and another 1 000m² for office space, in Pomona Road, Kempton Park. NSSC provides a comprehensive range of services for forming of sheets, plates, tubes and pipes, available in a wide range of stainless steel grades, diameters and thicknesses.

For further details contact National Stainless Steel Centre on TEL: 011 552 8800 or visit www.nssc.co.za ■



The Faccin knuckle cold forming machine used to manufacture dished heads, supplied by Talmac Machine Tools

Transnet Engineering and Wabtec Corporation sign material and technical support agreement



Transnet Engineering and Wabtec Corporation signed a long-term Material and Technical Support Agreement valued at approximately R6.6 billion to improve the availability, reliability and maintenance performance of Transnet's Class 43D and 44D locomotive fleets.

The agreement will provide critical components, technical expertise and advanced predictive maintenance capabilities, including digital condition monitoring, to enhance locomotive performance and reduce maintenance turnaround times across key freight corridors.

Beyond maintenance support, the partnership will drive technical collaboration, knowledge transfer and localisation initiatives to strengthen local rail capabilities, develop industry skills and support the long-term sustainability of South Africa's rail sector.

Commenting on the agreement, Transnet Group Chief Operating Officer, Solly Letsoalo, highlighted the importance of timely component delivery and increasing local manufacturing capacity.

The efficiency of South Africa's freight rail and ports is vital to its mining and export industries, and to reduce the number of trucks on the roads. Heavily indebted Transnet, however, has faced numerous challenges on its rail lines including limited resources, theft of train tracks and cables, and shortages of locomotives.

Transnet says the agreement with Wabtec is aimed at improving locomotive availability, reliability and maintenance performance across key freight corridors. The Class 43D and 44D locomotives play a critical role in moving export commodities, containers and general freight throughout South Africa.

The support package includes Wabtec's Expert-on-Alert digital condition-monitoring platform, which is designed to improve locomotive performance, accelerate maintenance turnaround times and strengthen lifecycle fleet management.

"This agreement supports Transnet's reinvent for growth strategy and represents an important step in improving the performance of our locomotive fleet," says Transnet Engineering chief executive Bessie Mabunda.

"The 43D and 44D locomotives serve critical freight corridors that move export commodities, containers and general freight across South Africa. Strengthening their reliability and availability will help improve service delivery, support freight recovery and enhance the country's logistics competitiveness."

The partnership extends beyond maintenance support and includes technical collaboration, knowledge transfer and localisation initiatives.

This partnership advances Transnet's Reinvent for Growth strategy, reinforcing efforts to restore operational performance, strengthen the country's freight logistics network and build local manufacturing capabilities.

Transnet Engineering is the engineering and manufacturing division of State-owned rail operator Transnet, while Wabtec is a global provider of equipment, systems, digital solutions and value-added services for the freight and transit rail industries, as well as the mining, marine and industrial markets. ■

StrucMAC Engineering goes big with Kenyou vertical boring mill [VIDEO]

Looking to cut cycle times from days to minutes.

No project too big or too small is StrucMAC Engineering's statement on its website. But if you delve down deeper and research the recently completed projects done by the company, big is more prominent than small. The same goes for the capital equipment purchases that the company has done in recent years. Large CNC machining machines now occupy a fair amount of shop floor space at the company. But then if you are repairing, rebuilding and refurbishing heavy industrial equipment with many large and heavy components and workpieces to machine, you need this type of equipment.

"We might not have purchased the largest vertical boring mill or CNC machine but it is one of the largest to be installed in South Africa in recent years. I know of machines that are working locally that have much larger tables and load capacities but they are all machines that were manufactured in the last century and if they were human they would be referred to as elder statesmen. However, besides the age of these machines they are still producing quality work," said StrucMAC's owner and founder Andre Hattingh.

"Since we introduced our first 'large' CNC machine in 2009 – a Sanco SDM 4225 L, which is a bridge type CNC double column machining center that has a table size of 4 000 by 2 000mm and can take a load of 12 tons – we have become known for manufacturing new and refurbishing large components and sub-assemblies."

Follow this link to watch the installation of one of StrucMAC's latest equipment purchases, the Kenyou VTM-4050GC vertical boring mill.

"When the company was established 30 years ago, we were machining small to medium size components. This still accounts for a large portion of the business and hence the continuing investment in the latest CNC equipment. However, with most of our clientele in the mining and construction industries we were getting more and more requests to manufacture and refurbish larger workpieces and components that in some cases can weigh many tons."

"Large-part machining presents different challenges. You can define large-part machining as any component that is too heavy or bulky for a single human being to move the part to another location quickly, or too large to fit within the work zone of the most commonly available CNC machine tools. Parts such as these could apply to almost any industry, though aircraft, construction, power generation, mining and oil drilling are ready examples of industries that commonly have a need for very large machined parts. In large-part machining, much of the challenge has to do with performing as much of the work as possible in a single setup. Today five-axis or 3+2 machining is often required to let a machining center reach many of the features of the part in a single setup."

"Subsequent to our first Sanco investment we purchased



StrucMAC's latest investment is the Kenyou VTM-4050GC, supplied by WD Hearn Machine Tools. With a 5m swing, a 4m table and a 2.4m component height, the machine can take a table load of 30 tons



The machine has milling and grinding functions, driven tooling, auto head changing, a FANUC control and Renishaw probes



A component is dwarfed on the table that has a 5m swing



StrucMAC have invested in one of the largest CMMs ever installed in South Africa by LK Metrology. The Aeros series comes complete with Renishaw head, Camio software and a huge host of Stylii and extensions. The machine was supplied by WD Hearn Machine Tools

another Sanco machine from WD Hearn Machine Tools, this time a CNC horizontal boring machine and then a Skoda FCW 140 horizontal floor borer that includes a spindle diameter of 140mm, which is large by any standards, and a 10 000mm X-travel and 5 000mm Y-axis travel."

"These were followed by an investment in a large Fermat twin table horizontal floor borer to handle large workpieces up to 40 ton. The machine has travels in the XYZ of 10 100mm by 3 500mm and 700mm respectively, with its W and ram travel V-axis having travels of 800mm and 700mm respectively. The T40 table size is 3 000mm by 3 000mm."

"We then invested in a Leadwell LTC-60LY with driven tool turning centre that has a 5m turning length and a 1m swing followed by our first Kenyou vertical boring mill with driven tooling. This machine can accommodate a component 2.4m high, has a 2m swing and the table load is 10 ton."

"Now we have installed a Kenyou VTM-4050GC vertical boring mill. Choosing the right machine depends on the workpiece size and job requirements. Horizontal boring machines excel at heavy-duty and large workpieces, providing stability and rigidity for long shafts or large castings. On the other hand, industrial vertical boring machines offer flexibility and ease of loading – ideal for medium to large discs, housings or precision bores."

"A vertical boring mill is a heavy-duty industrial machine tool that acts like a vertical lathe. It turns a massive, heavy workpiece flat on a rotating horizontal table while non-rotating cutting tools shape the internal bores or outer diameters. Vertical boring mills performs a variety of drilling and boring operations on large components. They are also very space efficient, easy to setup and provide easy access to various areas of the workpiece, including the top and sides. Vertical boring mills can perform most lathe operations like facing, boring, turning, tapering and thread cutting."

Kenyou VTM-4050GC with 5m swing

"Our latest investment is the Kenyou VTM-4050GC, also supplied by WD Hearn Machine Tools. With a 5m swing, a 4m table and a 2.4m component height, the machine can take a table load of 30 tons. The machine has milling and grinding functions, driven tooling, auto head changing, a FANUC control and Renishaw probes."

"The machine is imported from China and arrived in 10 off 40-foot containers and 2 flat racks. New foundations had to be put in for this machine. Size wise they were 9.5m wide, 13.7m long and 1.5m deep. That is a fair amount of concrete."

Vertical boring mills, also known as vertical turret lathes, are mostly used for machining of large circular or round parts like turbines components, pipe flanges amongst other components. Vertical boring mills can perform most lathe operations like facing, boring, turning, tapering and thread cutting.

For further details contact StrucMAC on TEL: 011 822 2399 or visit https://strucmac.co.za ■

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Wagner Systems expands fine-mechanics capability with South Africa's only FANUC Short Robodrill

Wagner Systems' recent investment in a FANUC Robodrill α-D21SiB5 ADV Plus marks an important step in expanding its high-speed milling capability for the production of micro, complex fine-mechanics components.

For the company, the commissioning of this new acquisition is about more than adding another CNC machine to its production floor. It represents an important step in expanding the Cape Town company's milling capability and building on more than 50 years of experience in the production of fine mechanics components and assemblies.



Wagner Systems' FANUC Short Robodrill α-D21SiB5 ADV Plus with operator at the control providing an indication of the compact size of machine

There is also a distinctly South African angle to the investment. According to FANUC South Africa, Wagner Systems is currently the only customer in South Africa operating a SHORT ROBODRILL.

For a company whose manufacturing capability has traditionally been weighted towards turning, the new machine opens the door to a broader range of milling applications while being specifically configured around the fine mechanics work for which Wagner Systems is known.

A machine selected for fine mechanics

The FANUC Robodrill α-D21SiB5 ADV Plus is a compact vertical machining centre with a relatively small footprint, designed for high-speed milling, drilling and tapping.

FANUC South Africa describes the Robodrill α-D21SiB5 ADV Plus as a super-compact machining centre capable of machining accurate parts using a high-power, high-speed spindle capable of reaching speeds of 24 000rpm. The Robodrill uses double-contact (BBT30) spindle taper tooling for additional rigidity and precision. Its Direct Drive Rotary unit (DDRiB) also enables simultaneous four-axis, high-volume machining.

For Wagner Systems, these capabilities are particularly relevant to the production of fine mechanics components, where small-diameter cutting tools, outstanding surface finish and dimensional consistency are important considerations.

The machine has a 630mm x 330mm table, XYZ travels of 300mm, 300mm (+100) and 400mm respectively, and a maximum table load of 200 kg. It can accommodate 21 tools, with rapid traverse of up to 54m/min. FANUC specifies positioning repeatability of less than 0.004mm.

The ROBODRILL has therefore not been selected simply as a general-purpose milling centre. Its configuration reflects the particular requirements of Wagner Systems' fine mechanics production, where components can be small and intricate, and where dimensional accuracy, surface finish and repeatability are critical.

For Wagner Systems, the significance lies not in any one specification, but in the way these capabilities have been combined in a machine suited to the type and size of components the company produces.

High speed for small-diameter cutting tools

The machine has been fitted with the high-speed spindle option, capable of running at up to 24 000 rpm. This is particularly relevant to Wagner Systems because the company will initially use the Robodrill primarily for the production of medical device components, many of which require the use of small-diameter cutting tools.

High spindle speed allows small tools to achieve the cutting speeds required for efficient machining without relying on excessive feed rates. It also supports the production of good surface finishes on small components – an important consideration in fine mechanics manufacture.

Rigidity matters when the tools get small

But high-speed machining with small tools also brings another requirement – rigidity.

When cutting tools become very small, even relatively minor vibration or deflection can influence the machining result. Wagner Systems therefore specified the machine with BBT30 double-contact spindle tooling.

Unlike a conventional taper connection that relies primarily on contact within the spindle taper, the double-contact arrangement provides an additional contact between the toolholder flange and the spindle face. The result is a more rigid tool-spindle connection, helping to minimise movement and vibration during machining.

FANUC lists BBT30 as an available spindle-holder configuration for the α-D21SiB5 ADV Plus.

For Wagner Systems, this combination of a high-speed ▶

spindle and rigid toolholding is particularly well matched to the demands of small-diameter cutting tools and the surface finish and dimensional consistency required for fine mechanics components.

Adding a fourth axis

Another important part of the machine's configuration is FANUC's DDRiB direct-drive fourth axis.

The DDRiB is a compact rotary unit designed specifically for the Robodrill. Its direct-drive servo motor provides fast and accurate rotary positioning and, in Wagner Systems' configuration, enables simultaneous fourth-axis machining. FANUC describes the DDRiB as a high-speed, high-accuracy fourth axis that occupies very little space on the Robodrill table.

Wagner Systems selected the DDRiB because it was considered particularly suitable for the type and size of components the company produces.

The practical benefit of a fourth axis is that the workpiece can be rotated under CNC control as part of the machining process. For small and complex fine mechanics components, this can translate into fewer setups, greater consistency and the ability to produce intricate geometries more efficiently and with greater flexibility.

A 100mm raised block has also been incorporated into Wagner Systems' machine configuration to accommodate the fourth-axis machining arrangement.

A move into milling

Perhaps the most significant aspect of the investment from Wagner Systems' perspective is not a particular specification of the Robodrill, but what the machine represents for the company.

Wagner Systems has traditionally had a strong turn-part capability. The acquisition of the Robodrill is an initial investment in further developing its milling know-how and capability.

This is an important distinction. The company is not simply replacing an existing milling machine with a newer one; it is deliberately building a new area of manufacturing capability around a machine selected for the requirements of fine mechanics production.

Producing fine mechanics components and assemblies for a range of demanding applications in markets that include medical devices, aerospace, radio astronomy and industrial applications, the company has, until now, developed a broad range of manufacturing capabilities encompassing CNC mill-turn, Swiss turning, CNC turning, CNC milling and specialised machining processes.

The new Robodrill, therefore, complements an existing manufacturing skill set while providing a platform on which the company's milling expertise can grow.

Technology around the machine

The Robodrill itself is only part of the investment. On the recommendation of FANUC South Africa, Wagner Systems also selected additional technology intended to improve setup and production efficiency.

A BLUM Z-Nano tool-length measuring switch provides rapid and accurate tool measurement. Combined with the machine's 21-tool capacity, this helps reduce setup time and improve production efficiency.

Following a market survey, Wagner Systems selected LANG Technik technology for workholding on the Robodrill, with its quick and accurate setup an important consideration.

These may appear to be relatively small details compared with a 24 000 RPM spindle or a fourth axis, but in a production environment they can have a direct influence on machine utilisation. Reducing the time required to prepare a machine for a job means more of the available production time can be devoted to actually manufacturing components.

The machine is controlled by FANUC's Series 31i-B5 Plus control. One operator-friendly feature appreciated by Wagner Systems' production staff is the ability to switch the user interface to the style of an older-generation FANUC control, if required. This provides a familiar operating environment for users who have experience with earlier FANUC systems.

A smarter approach to production

The Robodrill also forms part of Wagner Systems' strategic move towards smarter, more connected production.

A smart machine is not necessarily one that operates without human involvement; rather, it can monitor aspects



Inside the ROBODRILL, showing the machine's fourth-axis DDRiB rotary unit, LANG Technik workholding system and BLUM Z-Nano tool-length measuring switch



The ROBODRILL is set for machining a small fine-mechanics component, illustrating its application to the production of fine mechanics components using small-diameter cutting tools

of its operation and provide useful information to operators and production management. This can include machine status, tool usage, alarms, maintenance requirements, cycle times and machine utilisation. For Wagner Systems, this information can help operators understand how the machine is performing, identify potential problems and improve production efficiency and machine availability.

As the company develops its milling capability, the ROBODRILL provides a practical platform from which to build further experience with smart manufacturing technologies and their potential to support the company's production processes. One option being considered is the use of a cobot to extend the machine's operating hours and increase its production capacity.

Built around the component, not the machine

The choice of a machine tool is ultimately about what it enables a manufacturer to do with it.

In Wagner Systems' case, the selection of the Robodrill was driven by the nature of its work – small fine mechanics components, demanding machining requirements, and a growing need to develop milling capability.

The machine's compact footprint, high-speed spindle, BBT30 tooling, fourth-axis capability and integrated measurement and workholding technologies have therefore been brought together as a configuration suited to a specific manufacturing environment.

The initial focus will be on medical device components, an area in which Wagner Systems already has extensive experience. The company's ISO 13485:2016 certification reflects the quality-management requirements associated with its medical-device work.

For the broader South African manufacturing sector, the investment is also noteworthy because it demonstrates how a specialist manufacturer can use advanced machine-tool technology to expand its capabilities without moving away from its core expertise.

Wagner Systems is not simply adding milling to its production portfolio. It is building milling capability around the demands of fine mechanics manufacture.

And with South Africa's only Short Robodrill now operating at its Cape Town facility, that development gives the company a distinctive new manufacturing platform – one aimed at producing the micro, complex components where speed, rigidity and accuracy must work together.

Contact Lasni Millar from Wagner Systems on TEL: 021 715 8713, e-mail: wagner@wagnersystems.co.za or visit www.wagnersystems.co.za for more information. ■



The compact footprint of Wagner Systems' FANUC Short Robodrill α-D21SiB5 ADV Plus. Programmes are sent directly to the machine from the central CADCAM station



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Steelmaker adopts low-risk strategy as transformer goes online

The arrival of two power transformers at Coega Steels marks a significant milestone in the Nelson Mandela Bay company's journey to self-sustainability. The brand-new units, manufactured in China, reached Gqeberha, Eastern Cape in July 2026, with the first going online in September 2026.

This comes only months after the firm completed the largest commercial solar project in the Eastern Cape. The 11 484 newly installed panels generate up to 7MW of electricity, another step forward in the steelmaker's ongoing efforts to offset the industry's energy demands.

Coega Steels recycles scrap metal into what is globally referred to as green steel because the manufacturing process is more environmentally friendly than that of traditional coal-fired smelters.

According to a company spokesperson, it took meticulous planning to design the transformers and have them manufactured, delivered and installed by the due date. Both had to be custom-made to the exact specifications outlined by the Gqeberha-based mini-mill.

The first step was to shortlist manufacturers worldwide. Coega Steels then had to approve the prototype design before the units could go into production.

"It takes four to five months to manufacture one transformer and about 45 days to be shipped to the Bay," the spokesperson said. The entire operation could take up to nine months.

When the plant's transformer unexpectedly failed in August last year and put the livelihoods of roughly 600 employees at risk, the metro leased the steelmaker a spare unit for 12 months. This gave its largest electricity customer enough time to source a suitable replacement. Two units



Coega Steels has invested in two power transformers because the plant's transformer unexpectedly failed last year

arrived in separate shipments, around four weeks apart, after which the leased unit was removed and returned to the municipality.

"We have written a letter conveying our sincere gratitude to the city," the spokesperson said.

Installing, testing and energising the first transformer began in August and took around 15 days to complete.

The steel manufacturer decided to commission a second to provide "redundancy" in the event of an unexpected failure. It should be operational towards the end of the first quarter of 2027. Once online, the transformers will operate concurrently.

"It is purely to mitigate risk to the plant and the company's employees," the spokesperson said. ■



Coega Steels recycles scrap metal into what is globally referred to as green steel because the manufacturing process is more environmentally friendly than that of traditional coal-fired smelters

Iscar South Africa customer seminar in Israel

An exciting week of innovation, learning and connection.

A group of 20 South Africans involved in the engineering field of machining and metalworking visited Iscar's Global Headquarters and Central Manufacturing Facilities, which are located in Tefen, Israel, to attend the Iscar customer seminar programme, hear about the latest trends and innovations in cutting tool technology and to view what it entails to manufacture world-class products that machine shops use every day. The group was hosted by Iscar South Africa's MD Nico Duvenage and colleagues from South Africa.

"We recently returned from a memorable week-long customer seminar in Israel (10-16 October). A highlight of the visit was spending two days at Iscar's headquarters in Tefen, where our South African customers explored the latest cutting-tool innovations and the tooling solutions available to improve productivity in their own machine shops," said Duvenage.

"Through technical presentations, machining demonstrations and discussions with Iscar's specialists, customers gained practical insight into how selecting the right tooling and machining strategies can help reduce cycle times, extend tool life and achieve more consistent results."

> "Seeing the technology in action helped connect these developments to the challenges and opportunities they face in their daily operations."

"Seeing the technology in action helped connect these developments to the challenges and opportunities they face in their daily operations."

"The visit also gave customers a first-hand appreciation of the manufacturing expertise and commitment to quality behind Iscar's products, while providing valuable time to strengthen relationships with our team."

For further information, contact Iscar South Africa on +27 11 997 2700 or visit www.iscar.com ■



LCH Laser enhances high-yield metal fabrication with investment in an ACME 20kW tube channel and H-beam laser

Accommodates unique 15m loading and unloading lengths.

LCH Laser, a company within the Structa Group of companies, has recently invested in an ACME 20kW tube beam laser that is capable of processing beams and tube up to 15m in length, a unique length in the world of structural steel beams.

"The processing and cutting of steel structure beams according to the design requirements is normally commonly done by flame cutting, plasma cutting and mechanical cutting. Flame cutting is suitable for thicker steel plates and is cut by a flame sprayed with oxygen and acetylene. Plasma cutting is suitable for thinner steel plates and is cut by a high-temperature plasma arc. Mechanical cutting is cutting by mechanical equipment, such as a cutting machine," said Christo Marais, a Director of LCH Laser.

"Fiber laser processing of structural beams, such as H-beams, I-beams, channels and angles, is replacing traditional multi-step shop stations like saws, drill lines, copers and plasma systems with a single, automated 5-axis CNC laser head. Processes such as punching, shearing, drilling, sawing, milling and marking is possible all on one machine."

"Like CNC lathes and machining center operations the emphasis on doing more than one process on the machine has now become the norm on beam and tube processing machines rather than the exception. Today's systems function as advanced CNC tube and beam laser solutions capable of processing beams, angles and tubes within a single setup, delivering consistent precision and clean edge quality. This is all down to the 5-axis CNC head."

"With this in mind LCH Laser, a relatively new company in the group, set out to source a fiber laser that would offer more than the others. Standard structural steel beams, such as universal beams and I-beams, typically come in stock lengths ranging from 6m to 13m depending on the profile, grade, the supplier and the mill capabilities. But cut to length sizes of 15m for beams and channels are available."

"With the extra processing length available there are many advantages and cost savings. This is why we opted for acquiring an ACME 20kW beam tube laser from TRM Supplies."

"The machine was only installed in February this year and we have seen huge increases in productivity and processing times as against our drill beam line which does offer more than a drilling option."

"I would say the ACME is 10 times faster than the NC drilling line and easily 20 times faster than doing the processing manually."

"To give you an example on our NC line it could take 40 to 50 minutes to process one channel whereas we are now processing 17 of the same channels in one hour."

"We are drilling holes, stich cutting, engraving for traceability, bevel cutting and cutting-to-length all in one setup. And the 15m in and out length allows us to process longer beams and channels."

"An added advantage



LCH Laser, a company within the Structa Group of companies, has recently invested in an ACME 20kW tube beam laser that is capable of processing beams and tube up to 15m in length, a unique length in the world of structural steel beams



The ACME is built to process a wide range of structural profiles, including round and rectangular tubes, H-beams, I-beams, angle steel and channel steel in diameters from 80mm and up to 500mm and wall thicknesses up to 20mm gauge



LCH Laser are drilling holes, stich cutting, engraving for traceability, bevel cutting and cutting-to-length all in one setup. And the 15m in and out length allows the company to process longer beams and channels

is that the edge quality is far superior with the fiber laser cutting. The welding process, which is always associated with structural steel, has improved as has the structural integrity."

"The ACME is built to process a wide range of structural profiles, including round and rectangular tubes, H-beams, I-beams, angle steel and channel steel in diameters from 80mm and up to 500mm and wall thicknesses up to 20mm gauge."

"The machine can process mild steel, high-strength alloys and stainless steels. There is no need for special fixtures, which simplifies both high-volume production and low-volume prototype work."

"With the purchase of the ACME we wanted to offer a done-in-one fabrication service to the market. Capital improvements will better position the company to meet customer demand for tubular and rectangular structural steel components. Moreover, the machine is linked directly to the advanced CAD design software employed within the Structa Group, resulting in a seamless flow of design data from designer to final processed product. This in turn enhances the final quality."

"At this stage the machine is being utilised for the group requirements, with an expected uptake by outside clients once they become aware of the facility."

"Fiber laser cutting is transforming structural steel fabrication by integrating profile, tube and beam processing into a more efficient operation. Fiber laser technology is redefining how structural steel is processed. Beyond cutting speed, its real impact lies in the ability to integrate multiple operations and simplify fabrication workflows."

LCH Laser is based in Vanderbijlpark, Gauteng. For further details contact them on TEL: 016 986 1135 ■



Fiber laser processing of structural beams, such as H-beams, I-beams, channels and angles, is replacing traditional multi-step shop stations like saws, drill lines, copers and plasma systems with a single, automated 5-axis CNC laser head



An example of recently processed material on the ACME 20kW tube beam laser

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KEW FOUNDRIES

Principles of lean manufacturing lead Scientific Engineering to its 60-year milestone

Scientific Engineering is a leading manufacturer and design company specialising in commercial appliances and laboratory and scientific equipment. Established in 1966, the company manufactures its own range of products, which are marketed through a worldwide dealer network. In 1993, a South African catering distribution company approached the Scientific Engineering team with a proposal to develop equipment for the food service industry. The company branded its new range Anvil, and the name and products have since become synonymous with industrial food service equipment in South Africa and worldwide.



Some of the laboratory and scientific equipment that Scientific Engineering manufactures

"A strategy we have always adopted is to be progressive in how we operate. At board level, we are encouraged to invest in new technologies. This keeps us relevant in our industry," explains Bernard Parschau, Scientific Engineering's managing director.

"We are acutely aware of the need to create jobs, but at the same time we need to remain relevant by adopting technologies that assist and improve our manufacturing processes."

"We have also spent a great deal of time upskilling our operations and management teams. People need to be able to make their own decisions. A central-control approach just doesn't work, and we, as the executive team, believe people need to be able to grow. If you have the right people, all the other systems work. This has all been part of our 60-year journey."



"We have recently installed a Hugong HGPS-7025 fiber tube laser, supplied by TRM Supplies. Our Hugong HGPS-7025 fiber tube laser brings advanced cutting technology in-house. Processing round and square tubes from 20mm to 250mm in diameter or size, and full six-metre lengths, its repositioning chuck system delivers precision, efficiency, and versatility, expanding our manufacturing capabilities while reducing material handling."

"We are seeing growth in the custom products we can manufacture for our customers. We are finding that people are willing to pay a bit more for a premium product, and a lot of this is down to our experience in manufacturing. It's about adapting to change and taking advantage of opportunities as they emerge."

Continuous investment

"Looking to the future, we will continue to embrace our strategy of innovation and adopt technologies that fit our business requirements. We are currently formulating plans to upgrade certain aspects of our sheet metal processing. This is not limited to CNC machinery; we also pay close attention to time-consuming processes, which influence our decisions about the equipment and technology in which we invest."

"Two areas we are specifically looking at are our bending and welding departments. We have already been using fiber laser welding equipment extensively, and this technology is evolving rapidly. We will be visiting EuroBLECH this year to actively seek out these technologies."

"We have continued to invest in equipment over the years. Recent purchases include a 6kW Hugong fiber laser, supplied and installed by TRM Supplies. The laser has a bed size of 3 500mm by 1 500mm and is equipped with an automatic sheet loader and unloader, enabling accelerated production."

"We have also recently installed a Hugong HGPS-7025 fiber tube laser, supplied by TRM Supplies. Our Hugong HGPS-7025 fiber tube laser brings advanced cutting technology in-house. Processing round and square tubes from 20mm to 250mm in diameter or size, and full six-metre lengths, its repositioning chuck system delivers precision, efficiency, and versatility, expanding our manufacturing capabilities while reducing material handling."

"Another important investment is the SigmaNEST software. It is helping us maximise material savings and reduce the time needed to handle material after processing. Post-processing also needs to be optimised to achieve maximum yield; otherwise, it becomes a complete mess for downstream production operations."

"Bringing new and pioneering products to market is another part of our philosophy. We demonstrated this with the recent launch of our in-house-designed and developed Proinox Electrolytic Weld Cleaner and Passivator, which is designed to produce clean, corrosion-resistant welds for stainless steel fabrication."

"Electrochemical weld cleaning removes surface contamination and oxidation caused by welding. The Proinox electrolytic weld-cleaning machine cleans stainless steel welds quickly and efficiently. It eliminates the need for toxic pickling paste and less efficient weld-cleaning methods. Our cleaning fluids are low-risk and contain mild electrolytes. A conductive carbon-fibre brush and mild cleaning fluid clean and passivate the weld, leaving the surface with good corrosion resistance."

"Succession planning also needs to form part of this approach. Throughout our 60-year journey, this has been a key aspect we have emphasised. It comes down to investing in key people. When you've been in the game for as long as we have, you realise that everything revolves around people management," concludes Parschau.

Scientific Engineering forms part of the Universal Industries Group, a diversified organisation with a strong presence in the foodservice equipment, commercial catering equipment and refrigeration industries across Southern Africa and international markets.

The Group comprises several specialist businesses, including Colcab, Macadams, Staycold, CGIS, Foodserv and BCE Foodservice Equipment, with Group operational hubs extending into East Africa and Nigeria. Collectively, these businesses offer equipment, products and solutions for the commercial foodservice, retail and refrigeration sectors.

These capabilities reflect the Group's commitment to delivering integrated solutions, supported by industry expertise and technical knowledge.

A defining characteristic of the Universal Industries Group is its decentralised management structure. Each business unit operates with considerable autonomy, enabling it to manage its operations, respond to market demands and focus on customer requirements.

This model combines the flexibility and accountability of independently managed businesses with the collective strength, experience and resources of a larger group. Through this approach, the Universal Industries Group continues to support the evolving needs of the food equipment, catering and refrigeration industries across Southern Africa and beyond.

Scientific Engineering maintains ISO 9001:2015 certification, as well as various international certifications and conformity marks, including ETL for the US market, CE marking for the European market, and NSF for the US market.

The company operates from two sites. The main factory covers 12 000m² under roof, while the second site covers 2 500m². The company employs approximately 190 people.

For further details, contact Scientific Engineering on +27 11 473 1080 or visit www.scientific.co.za ■



Scientific Engineering have developed the Pro Inox Electrolytic Weld Cleaner and Passivator to achieve clean, corrosion-resistant welds

Transnet Freight Rail sets new record with 696-wagon iron ore train

Set a world record for the longest freight train, measuring 7.6km.

Transnet Freight Rail (TFR) has achieved a global freight rail milestone, safely operating a 696-wagon empty train on the Iron Ore Export Line from Saldanha to the Northern Cape. The train reached Loop 18 on 18 October 2026, successfully completing the journey of the longest train ever compiled and operated on the corridor, and establishing a new world record for freight rail operations.

The achievement represents more than a record-breaking accomplishment. It demonstrates the world-class engineering expertise, operational excellence and innovation that continue to position the Iron Ore Export Line among the world's leading heavy-haul rail systems, while generating valuable technical insights to support the future evolution of rail operations.

The initiative was led by TFR's Train Design Technology and Operations teams in collaboration with Transnet Engineering, the Transnet Rail Infrastructure Manager (TRIM) and the Railway Safety Regulator. The exercise was undertaken as a dynamic train evaluation programme with the dual objective of pursuing a world record and advancing technical knowledge in train design, train handling and operational performance.

The record train comprised 696 empty CR13/14 wagons configured in a Radio Distributed Power (RDP) arrangement and hauled by a combination of Class 15E electric and Class 43D dieselelectric locomotives. Through RDP technology, locomotives positioned throughout the train operate as a synchronised unit, enabling the controlled distribution of traction and braking forces across the train's entire length.

The record train comprised 696 empty CR13/14 wagons configured in a Radio Distributed Power (RDP) arrangement and hauled by a combination of Class 15E electric and Class 43D dieselelectric locomotives

This advanced technology is critical in managing the significant longitudinal forces generated by trains of this scale, ensuring safe train handling, enhanced operational stability and reduced stress on both rolling stock and rail infrastructure.

The operation was preceded by extensive planning, modelling and simulation work conducted by Train Design Technology specialists. Teams assessed train dynamics, locomotive placement, route readiness, operating strategies, communication protocols and infrastructure requirements to ensure the safe movement of the train. Specialist personnel accompanied the train throughout its journey to monitor train-handling performance and operational behaviour. In addition, locomotive data collected during the run will be analysed against simulation results to validate performance models and further enhance TFR's operating capability. ■



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Exhibitors from metalworking engineering industry positive about Electra Mining Africa 2026

Electra Mining Africa 2026 took place at the Johannesburg Expo Centre (Nasrec) from 7–11 September 2026, drawing 41 390 visitors and over 1 000 exhibitors. The exhibition is one of Southern Africa's leading platforms for mining, manufacturing, automation, power and transport innovation.

The record scale of the exhibition was reflected not only in the increased exhibition space and exhibitor numbers, but also in the level of engagement across the show floor. Exhibitors reported strong visitor interest, valuable business conversations and opportunities to connect with both existing and prospective customers.

While not a dedicated exhibition for the metalworking engineering industry some suppliers did exhibit and expressed a positive attitude about the experience.



Sandvik Coromant representatives Hamza Jaudar (Morocco), Gabriele Gadioli (Italy) and Dewald Swanepoel (South Africa)

Hein Nel Sandvik Coromant

"While this was certainly not our first participation at Electra Mining Africa, it is not an exhibition where Sandvik Coromant traditionally showcases its products. The event caters to a broad spectrum of industries and visitors relevant to the mining sector, extending far beyond machining alone."

"However, as part of the larger Sandvik Group, and specifically Sandvik Machining Solutions (SMS), we saw considerable value in showcasing the strength and breadth of the Group alongside other Sandvik companies, including our Mining division and Mastercam. This provided visitors with a comprehensive view of how Sandvik supports the entire value chain, from mining and materials extraction through to advanced manufacturing and machining solutions."

"From a South African manufacturing perspective, the decision was particularly relevant. A significant portion of the country's machining industry serves the mining sector, either directly or indirectly. Electra Mining Africa 2026 therefore offered an ideal platform to engage with customers, partners, and industry stakeholders, while demonstrating how Sandvik's combined capabilities contribute to productivity, innovation, and sustainability across these interconnected industries."

"While Sandvik Coromant is widely recognised for producing some of the world's leading cutting tool solutions and holding a position as one of the global market leaders, our approach extends far beyond the tool itself. Rather than focusing solely on product displays, we prefer to engage customers at a deeper level by helping them achieve their manufacturing objectives and business goals."

"At exhibitions such as Electra Mining Africa, our emphasis is therefore on demonstrating complete manufacturing solutions. This includes showcasing finished machined components, sharing machining strategies, productivity concepts, digital solutions, software, tooling systems, and ▶



The Hi-Tech Machine Tools stand



France Gueit of Kennametal

advanced work holding, CNC machine tools and clamping technologies. Our objective is to help customers understand how all these elements work together to create an efficient and optimised manufacturing process."

"We believe that true machining excellence is achieved through a holistic approach. When every aspect of the manufacturing process is aligned, from planning and programming to tooling, machine utilisation, and process stability, organisations can achieve what we at Sandvik Coromant refer to as Manufacturing Wellness. This philosophy helps our customers improve productivity, increase competitiveness, and achieve sustainable long-term success."

"We had excellent engagement with visitors from a diverse range of industries, including pump and valve manufacturing, mining equipment production, heavy vehicle and original equipment manufacturing (OEM), the energy sector, and representatives from the tertiary education and skills development sectors from all over the world. The exhibition provided a valuable platform to connect with both existing and prospective customers, exchange industry insights, and gain a deeper understanding of the challenges and opportunities facing these industries. It also highlighted the important role that advanced manufacturing and machining solutions play in improving productivity, efficiency, and innovation across South Africa's industrial landscape, reinforcing Sandvik Coromant's commitment to supporting growth throughout the value chain."

"It was particularly enlightening to engage with manufacturers that support the mining industry and to better understand where Sandvik Coromant fits within the broader value chain. These interactions reinforced the value we bring to our customers, not only through world-class tooling solutions, but through our ability to improve productivity, process security, component quality, and overall manufacturing efficiency."

"By working closely with our customers and understanding their operational challenges, we can deliver solutions that help them reduce costs, maximise machine utilisation, shorten lead times, and achieve their production targets. Seeing first-hand how our expertise contributes to the success of manufacturers serving the mining sector highlighted the important role Sandvik Coromant plays in creating sustainable customer value across the entire manufacturing ecosystem."

"We greatly enjoyed reconnecting with many of our valued customers, while also meeting a number of new potential customers who serve the mining industry and related sectors. The exhibition provided an excellent opportunity to strengthen relationships, exchange ideas, and showcase how Sandvik Coromant can support the evolving needs of South Africa's manufacturing and mining value chain."

"The event was made even more special by the participation of colleagues from Morocco and the Middle East, whose ▶



Luis and Claudia Torres of CML Machine Tools



Roelof Strydom, Rudi Green and Stepfan van der Kolff, all of Pferd Tools



Robert Milne and Mats Booysen, both of Mecad



Stephen, Mike and Trevor Clayton of Mesh Gear

presence highlighted the collaborative and global nature of the Sandvik organisation. We look forward to building on the connections made at this year's event and are already excited to participate in the next Electra Mining Africa exhibition."

Thys de Villiers TRM Supplies

"While it was not our first time to exhibit at Electra Mining Africa it allowed us the opportunity to increase brand awareness, showcase our latest manufacturing technology, engage with existing customers, and generate new sales leads."

"Because we only had a small stand, we could only exhibit one laser welder, some plasma machines and other smaller equipment. We also showcased the latest developments in our tube/beam and large format laser cutting, laser welding and metal fabrication equipment ranges, including solutions aimed at improving productivity and reducing operating costs, both on our laser machine range as well as Hypertherm plasma hand held and small robot cutting capabilities. The laser welding machine drew quite a bit of attention."

"We engaged with decision-makers who had genuine purchasing projects and investment plans rather than casual visitors, with the majority of them from South Africa, although there were a number from the rest of Africa."

"One of the highlights was the number of serious enquiries received from companies looking to expand their manufacturing capabilities through automation, laser cutting, welding and tube processing technology and more so on our Hypertherm plasma range of machines and consumables. Several of these opportunities are already progressing into active sales discussions."

"A noticeable trend was the increasing interest in automation, productivity improvement, energy efficiency, and technologies that help manufacturers remain competitive in challenging economic conditions. There was also strong interest in local service support and operator training, indicating that customers are placing greater value on long-term partnerships and reliability."

"We already booked the same stand and the one next to us for 2028. We view Electra Mining Africa as a valuable platform for engaging with the manufacturing, engineering, mining, and fabrication sectors."



Thys de Villiers of TRM Supplies with bothers Marco and Flavio Strappazzon



Grinding Techniques also exhibited. On the stand were Rui de Almeida, Deon Truter, Johan Basson, Kevin Hodgkinson and Nicolene Breitenbach

Warrick Lowther – Somta Tools

"Having exhibited once before, where the number of visitors was disappointing, we missed the exhibition in 2024. However, we decided to exhibit again this year after seeing a revival of the visitors."

"This year the exhibition lived up to its standards in terms of the number of visitors and we were able to connect with new and existing customers and showcase Somta's capabilities. The visitor quality was reasonably good, with several key decision-makers available for meaningful discussions. We engaged with visitors who had purchasing influence and decision-making responsibility within their businesses but they were very limited."

"Unfortunately, the location of our stand in Hall 1 was not our preferred choice. We would have liked a position in Hall 5, where we felt Somta would have been better placed alongside relevant industry exhibitors. We would consider exhibiting again, although stand location and the audience would be important factors. In my view, combining MTA (Machine Tools Africa exhibition) with Electra Mining Africa could create a particularly strong exhibition, attracting a broader range of industry sectors." ■



Fiona Petersen of Warren's Way Engineering, Nico Schoeman of HTPS, Warren Petersen of Warrens Way Engineering and Johann Scholtz of HTPS



The Somta Tools stand. Shadrack Leeto, Frikkie Hattingh, Trevor Blackburn, Ronan Olivier, Grant Penaluna, Wade Vandenberg and Manie le Corre

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Isuzu Motors South Africa invests R30 million in Gqeberha plant, reinforcing commitment to local manufacturing

Isuzu Motors South Africa (IMSAf) has invested close to R30 million in its commercial vehicle assembly plant in Gqeberha, strengthening local manufacturing capability and reinforcing the company's long-term commitment to South Africa's industrial and economic future.

The investment introduces targeted upgrades across the commercial vehicle assembly operation to enhance manufacturing capability and efficiency; strengthen quality and digital traceability; improve employee safety and ergonomics; and support more sustainable, future-ready production. Together, these improvements strengthen the plant's ability to manufacture commercial vehicles efficiently and competitively while responding to the evolving needs of customers in South Africa and across the continent.

"This investment is about more than preparing our plant for a new generation of trucks. It reflects our long-term vision for manufacturing in South Africa and our confidence in the country's people, industrial capability and potential," said Johan Vermeulen, Executive Vice President: Manufacturing and Product Engineering at Isuzu Motors South Africa. "By continuing to invest in our Gqeberha operations, we are strengthening the capability and capacity needed to remain competitive and respond to the evolving mobility needs of customers across Africa."

Strengthening manufacturing capability

Upgrades across the chassis and engine sub-assembly areas and cab marriage have strengthened the plant's manufacturing capability and operational flexibility. The extended chassis line enables the facility to accommodate additional stations for added content, while updated tooling and optimised production layouts improve the plant's ability to support a broader range of commercial vehicle applications.

Improving efficiency, quality and traceability

The investment also incorporates production and technology enhancements aimed at improving manufacturing efficiency and maintaining consistent build quality. Improved processes, tooling and digital traceability provide greater visibility across production and strengthen quality control, helping the plant manufacture vehicles more efficiently while maintaining Isuzu's build standards.

Investing in employee safety and ergonomics

Employee wellbeing formed an important part of the plant upgrades, with safety and ergonomics considered in equipment selection, workstation design, lighting and workflow improvements. New equipment, including a fuel-tank gripper, lift-assist devices, cab-marriage hoist, electronic torque tools, together with enhancements to the engine-dress process, is designed to reduce physical strain and support safer and more efficient working conditions for employees.

Supporting more sustainable manufacturing

Sustainability considerations have also been incorporated into the upgrades through energy-efficient tools and motors, improved equipment and optimised workflows designed to support more efficient use of resources. These improvements contribute to IMSAf's broader focus on continuously reducing the environmental impact of its manufacturing operations while improving operational efficiency.



Isuzu Motors South Africa (IMSAf) has invested close to R30 million in its commercial vehicle assembly plant in Gqeberha, strengthening local manufacturing capability and reinforcing the company's long-term commitment to South Africa's industrial and economic future. The investment introduces targeted upgrades across the commercial vehicle assembly operation to enhance manufacturing capability and efficiency

Building future-ready manufacturing capability

The investment also strengthens the plant's continued progress for evolving commercial vehicle technologies. The implementation of the upgrades involved employees and cross-functional engineering teams across the business, bringing together manufacturing expertise, technology and continuous improvement to ensure the enhancements respond to both current operational requirements and future manufacturing needs.

Through continued investment in its Gqeberha operations, IMSAf is strengthening the manufacturing foundation required to support its long-term growth while contributing to a competitive, resilient and increasingly sustainable automotive manufacturing sector in South Africa. ■

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Coega Steels unveils R500 million investment in production expansion

Coega Steels has inaugurated its new rolling mill in Nelson Mandela Bay as part of a R500 million investment to expand its steelmaking capabilities. The investment includes the R360 million rolling mill and additional refining processes at the steelmaker's existing melting facility. The development brings the total investment at its Zone 6 premises in Gqeberha's Coega Special Economic Zone to R1.5 billion.

Coega Steels began scrap-to-billet production in 2014, backed by a R400 million capital injection. The rolling mill now enables the company to transform steel billets manufactured from recycled scrap metal into finished products for the construction, manufacturing, engineering and infrastructure sectors. The facility, which has an annual production capacity of 150 000 tons, will produce reinforcing bars, angles, squares, round bars and flat bars.

Director Amit Saini said the development was particularly significant for the Eastern Cape, with the new facility being the only rolling mill in the province. The Eastern Cape had previously relied heavily on finished steel products from other parts of the country.

He said the province's lack of a rolling mill made it difficult for Coega Steels to compete in certain domestic markets because transporting billets to processing facilities elsewhere was costly.

"With the rolling mill, we can supply the Eastern Cape market and the coastline directly from Nelson Mandela Bay." The company could now sell its billets or process them into finished products, he said.

The new facility will employ about 300 people, with some positions already filled and the remainder expected to be taken up by the end of the year. Coega Steels' total workforce is projected to increase from about 750 to 900 over the next year, while its operations support more than 2 000 indirect jobs.

Saini said between 70 and 80 per cent of the rolling mill's workforce would comprise South Africans, and the rest consisting of skilled employees recruited from overseas. The company will continue developing local expertise so South African employees can increasingly take responsibility for operating the plant.

"We have developed a lot of skills locally over the years and I'm sure that in the coming years we'll train more locals and upskill them to run the plant independently," he said.

The company also remains committed to reducing its environmental footprint by using recycled steel and renewable energy. Traditional iron ore-based steelmaking can generate from 2.5 to 3.5 tons of carbon dioxide for every ton of steel produced, he said. By comparison, Coega Steels currently generates about 800kg of CO2 per ton.



The facility, which has an annual production capacity of 150 000 tons, will produce reinforcing bars, angles, squares, round bars and flat bars



Coega Steels has inaugurated its new rolling mill at their plant in Gqeberha's Coega Special Economic Zone

However, about 80 per cent of those emissions come from electricity purchased from the municipality, which is supplied by Eskom. The company is therefore expanding its investment in renewable energy to reduce its reliance on coal-based electricity. It currently has about 8MWp of solar capacity installed at its operations and plans to add another 19.8MWp by the end of 2027. The company has also installed 50MWh of Battery Energy Storage System (BESS), which was due to be operational by the end of October 2026.

The goal was very clear, Saini said. "To make Coega Steels one of the cleanest steel producers in South Africa so our customers here and in export markets that increasingly demand low-carbon emission products can build with confidence and a clear conscience."

The rolling mill, in development since March 2024, is currently undergoing production trials. It operates on a 12-hour shift, with plans to move to 24-hour production in the coming weeks.

Guest of honour Captain Salvatore Sarno, chairman of Mediterranean Shipping Company (MSC) SA and the Indian Ocean Islands, congratulated the company on its expansion. Sarno, whose company has supported Coega Steels' international exports, praised the vision and determination behind the development.

Nelson Mandela Bay mayoral committee member Thsonono Buyeye welcomed the investment and emphasised the importance of business-government cooperation in stimulating economic growth.

"For our cities to prosper, we need the business community to work with us." He said such investments showed the important contribution businesses could make in addressing unemployment and creating economic opportunities in the metro.

Coega Steels shareholder Ku Tha Ilangovan, representing India's Agni Steels, reflected on the company's growth over the past 12 years. "With R1.5 billion invested on this site, the rolling mill closes the loop from scrap to a finished product at Coega. As shareholders, we did not invest in a building or machinery. We have invested in people." ■



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P.Beulich Sheet Metal Manufacturers marks 50 years in metal fabrication

P.Beulich Sheet Metal Manufacturers is celebrating its 50th anniversary, five decades after grandfather Helmuth Beulich established the business, which at that time focussed on the manufacture of gutters, brackets and ducting. Helmuth's son Peter Beulich then acquired the business from his dad and more recently third generation Garth Beulich acquired the business in 2022.

"I have been involved in the company since my school days when, to earn extra 'pocket money', I worked at the company, operating and setting up the manual punching and bending machines and others, really learning the art of metal forming from the bottom up," said Garth Beulich, son of Peter.

"The business has always seen reasonable growth through the three generations but since Covid it has seen remarkable growth, mainly because we have upped our game in all aspects of the company – from the manufacturing side to the back end of quoting, scheduling, delivering and invoicing. Adapting to the modern software that is available and that centralises the data has been the core strategy of the business. You have to manage every interaction with current and potential customers and streamline processes throughout the company to drive sales, marketing and service," explained Beulich.

"You have all these tools at your disposal so make use of them. In my grandfather's and father's day, they were not around. Relationship management and process control software helps companies measure and get control of their lead generation, sales pipelines, production management and manufacturing and offers operational intelligence, far beyond traditional spreadsheets. It can also be used by management to obtain data and make qualified decisions."

"We have our own highly personalised business management and CRM system and have invested heavily in IT communications, manufacturing software, automation and AI capabilities. Our integrated system supports the business from quoting and customer management through production to finance. You can get software off the shelf but



A 3.5-ton Toyota forklift loading sheet metal into the Amada Ensis 3015 AJ fiber laser cutting system, integrated with an ASFH 3015G automated tower storage system

you will generally find it does not fit your business. So we've developed a package tailored to our operations. But you have to put in a lot of effort to get it to where you want it, and there are constant changes and upgrades."

"But what it means is that our efficiencies have improved beyond recognition and with that there is a noticeable improvement in quality and a reduction in lead times. And of course, this results in happy customers and besides organic growth you are able to grow the new business side too."

"We can now see every single job and every single component, where they are in the process. That includes every single nut and every single bolt – what's in stock and where it is in the system. It's all traceable, from quoting, to manufacturing, to finance, all in one package."

"We are also able to extract that information and send it to key areas in production so that production knows exactly what's going on. It is pointless if the office staff know what's happening but production is kept in the dark."

"The guy on the floor, the guy that sets the machine, all need to know what is going on. With this production information on hand, we can keep them fully informed. So that's where we've developed the business and it's definitely helped us, but we believe we still have a long, long way to go before it is a complete solution that suits our business."

"Dad retired four years ago. I had already taken on the CEO position in 2021, having started with the company in a full-time capacity in 2004. Prior to joining my dad's company, I did a bit of international travel in the UK and Europe. The first six years with the company I worked in the drafting department before moving into sales. During my time as a draughtsman, I also got involved with and learnt all about processing and production, how to operate the various machines that we have on the floor, as well as about all the other departments in the company. During my time working part-time at the company, while still at school, I enjoyed operating the laser cutting machines and supervising the welding and grinding department, for example. It was all about learning how Dad's factory operated much to the horror of my school teachers because my ambition was to work in a factory rather than become a professional."

"While our history includes products such as PC safe enclosures, the nature of our manufacturing has changed considerably over the years. Today, approximately 95% of our production is custom-made to clients' specifications rather than standard products from a catalogue."

"We manufacture for clients across a broad range of industries, including electronics, security, telecommunications, mining, banking, retail, commercial, logistics, construction, electrical power distribution, renewable energy, data centres, IT and networking infrastructure, as well as the hospitality and foodservice industries. Our manufacturing capabilities extend to products such as 19-inch network cabinets, electrical distribution enclosures, retail checkout and self-service checkout counters, and specialised equipment for the hospitality industry. Although we still produce IP55 and IP65 enclosures, approximately 95% of our production is custom-manufactured to our customers' designs and specifications, ranging from initial samples and small production runs through to medium- and high-volume manufacturing."

"These projects vary considerably in size, complexity and quantity, depending on the requirements of the customer."



Amada Ensis 3015 AJ fiber laser cutting machine with an integrated ASFH 3015G automated material storage and handling system



Amada LCG 3015 AJ 2kW fiber laser cutting machine, equipped with an MPL3015 automated sheet loading and unloading system



Amada precision press brake machines, including one HDS 1303 (130-ton, 3-metre) and two HG 1003 (100-ton, 3-metre) machines

"Our IP55 and IP65 enclosures remain an important part of our offering, with the required protection determined by the design and application of each enclosure."

"We process material from 0.5mm to 12mm thick, although the bulk of our production is in 1.2mm, 1.6mm and 2mm sheet, with much of our mild steel work falling in the 1.2mm to 3mm range."

"Our production is geared towards developing small sample runs and taking those products through to medium- and high-volume manufacturing. From time to time we also undertake very large production runs against specific customer orders."



A Haeger fastener insertion machine installing PEM PFH self-clinching studs into sheet metal components



Amada HFE 100-ton, 3-metre press brake forming stainless steel components

Surface preparation and powder coating

"To finish the fabricated components we have our own surface preparation and powder coating facilities. This gives us control over the finishing process, quality and turnaround times."

"Our surface preparation includes a seven-stage dipping process using a zinc phosphate solution. The powder coating plant has four spray booths and two batch ovens."

"Before components reach powder coating, they can undergo spot welding, MIG welding, TIG welding, robotic welding and laser welding. Our finishing department then handles rough and smooth grinding, polishing, buffing and brushing, depending on the finish required."

"We also have a polyurethane gasket sealing robot, which applies formed-in-place seals to the doors of our IP55 and IP65 enclosures."

"We offer a comprehensive assembly service, from fitting nuts, bolts, washers and locks to incorporating glass, concrete, customer-supplied electronic equipment and wiring. Our drafting department supports this process by preparing customer designs and specifications for manufacture. It is a production support function rather than a standalone drafting service."

"Our experience extends across mild steel, stainless steel, aluminium, copper, brass and galvanised steel, with material selection determined by the customer's requirements."

"And we don't just manufacture standard products. Most of our work is made to a customer's specific requirements, from initial samples through to medium- and high-volume production."

"We have been able to do this because we have invested in new equipment. When I acquired the company, I wanted to see noticeable growth. Besides looking at methods and process flow I knew the only way we could grow was to improve our productivity. A major enhancer of this would be new equipment."

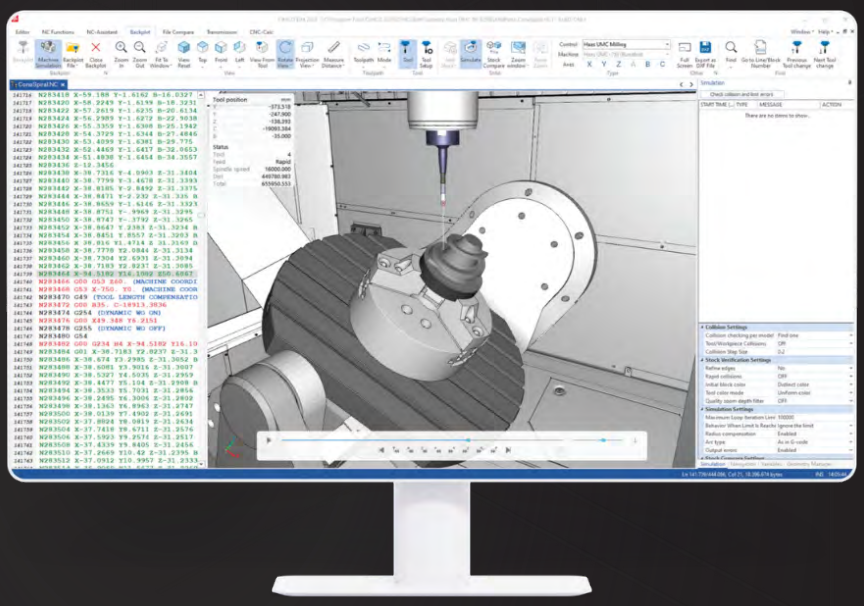


Overview of P.Beulich's laser cutting and precision bending facility, featuring advanced CNC machinery and automated material handling systems

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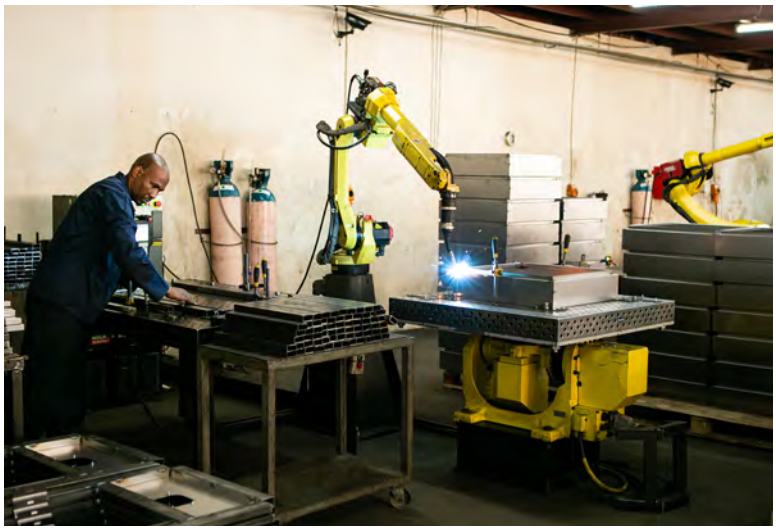
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MANUFACTURING

"Amada has been an important equipment partner over the years. We have Amada lasers, press brakes, punching machines and guillotines, which have performed to our satisfaction. But as sheet metal manufacturing technology advances, we continually evaluate the latest machinery and automation available, regardless of manufacturer. Our priority is to invest in equipment that improves speed, efficiency, quality and productivity."



MIG welding of 2.0mm electro-galvanised steel components using Miller welding equipment



Fanuc ARC Mate 100iC/6L robotic welding system, integrated with a Fanuc two-axis servo positioner and dual workstations for continuous production



Manual grinding and surface finishing operations, removing weld spatter and refining welded joints to achieve the required surface finish

"We already had an Amada LCG 3015 AJ 2kW fiber laser with a 3m by 1.5m bed. The Amada LCG 3015 AJ is a true flying optic laser system. The material remains stationary as the cutting head moves on all three axes (XYZ) to process the sheet. This translates into increased productivity and accurate parts at higher cutting speeds."

"This machine is coupled to a MPL3015 sheet manipulation system, which allows for unmanned production runs."

Amada Ensis 3015 AJ

"We subsequently purchased an Amada Ensis 3015 AJ 6kW fiber laser. This machine also has a 3m by 1.5m bed, which is adequate for us for the type gauge that we are cutting. The cutting system features Amada's proprietary ENSIS variable beam control technology. It dynamically adjusts the laser beam properties to handle everything from thin to thick sheets without requiring manual lens changes."

"The Amada Ensis 3015 AJ has been automated with a ASFH 3015G tower storage system for material storage and material handling."

"Years ago, a fabricator might have chosen a centralised approach to laser automation, with one tower or automated storage and retrieval system feeding several lasers. Now, there is a trend toward localised automation, with towers and part removal and sorting stations dedicated to a single laser cutting machine. A centralised automation approach still has its place. Determining which approach works depends on the kind of blanks, material nests, the sheet thicknesses the machines are processing, and the overall needs of part flow in the plant."

"The tower has 10 shelves and can store up to 2 tons of material per shelf. This allows for long, continuous operation with no interruption in loading/unloading of material."

Amada EMLZ 2515 AJe 3kW fiber laser punch combination machine

"The second machine we have purchased since I took over is an Amada EMLZ 2515 AJe 3kW fiber laser punch combination machine. The Amada EMLZ 2515 AJe is an innovative combination machine that utilises a 3kW fiber laser and a 33-ton turret punch press to enable accurate, high-speed operation. With punching, forming, drilling, tapping, countersinking and fiber laser cutting integrated, the EML AJe has expanded our capacity and capabilities by reducing secondary operations."

"It has been fitted with an Amada ASFH 3015 tower storage system, an automated material storage, loading and unloading system designed for Amada flat-sheet laser cutting machines so that you can have unattended, automatic operations."

Processing and material flow

"We also looked at our processing and material flow. When we moved into this building 14 years ago, we had plenty of space. But as the company grew, space utilisation increased and eventually you run out of space, which is where we are right now. With all that space available material flow was not a ▶

priority but as we became busier it started to be noticed. The addition of the new equipment did not help as well."

"In the case of the tower storage system, processing and material flow has improved greatly. But we also looked at the rest of the shop floor and have made many changes so that we don't end up with bottlenecks."

"We have also invested in Amada VPSS4i software for nesting and machine programming. Together with our automated material handling systems, this supports more efficient cutting and the ability to run unmanned cutting operations where appropriate. Production planning and scheduling are managed through our own business systems rather than the Amada software."

"Besides various programming options which includes nesting, the Amada VPSS4i software allows us to do offline programming for our bending machines, which includes automatic bending sequence creation, tool selection and real-time collision checking."

"We have also invested in Amada's V-Factory for machine monitoring. This forms part of our wider investment in production visibility, alongside our own manufacturing management systems and shop floor reporting. Our aim is to use reliable production information to identify inefficiencies and support better operational decisions."

Vertically integrated company

"At the end of the day we are a vertically integrated company. We procure materials, transform sheet into formed profiles, fabricate and weld components, prepare and finish the surfaces, powder coat, assemble and package the finished products for shipment. The key is a relentless focus on process control, eliminating inefficiencies and coordinating the many stages of production."

"A big plus is that we have our own surface preparation and powder coating plant. With seven-stage zinc phosphate pre-treatment, four powder coating booths and two batch ovens, quality control, consistency, lead times and flexibility are all kept within our own operation."

One-stop turnkey service

"Our processes include guillotining, saw cutting of square, round and rectangular tubes and solid bars, laser cutting, laser-punch combination processing, CNC press brake bending, pressed-in inserts, spot welding, MIG and TIG welding, robotic welding, laser welding, rough and smooth grinding, polishing, buffing, brushing, seven-stage zinc phosphate pre-treatment, powder coating, polyurethane gasket sealing and assembly."

"There are like-minded companies but not many, generally speaking, in our industry."

New assembly space

"With the increase in business in the last few years – we have regularly seen double-digit growth – space has really become a premium. Our laser cutting and bending factory covers 2 500m² under roof, our fabrication factory 4 500m² and our new factory a further 3 900m², giving us a combined 10 900m² of factory space under roof. These figures exclude our offices, parking and outside storage areas. All three factories are linked, allowing for an efficient production flow between the various manufacturing processes."

"Our rapid growth led to a few operational issues but we have addressed them and adapted quickly."

Contact P.Beulich Sheet Metal Manufacturers on TEL: 011 626 2409 or visit www.pbeulich.co.za for further details. ■



Seven-stage immersion pretreatment system with a dedicated drying stage, preparing metal components for powder coating



Three electrostatic powder coating spray booths providing durable, high-quality surface finishes across a wide range of manufactured components



Precision-manufactured mounting bracket produced from 1.6mm mild steel and finished with a durable black Ferrograin textured powder coating

Acepak – end-of-line packaging, reinvented [VIDEO]

Acepak, located in Montague Gardens, Cape Town, started in 1984 as a family-owned manufacturer, first with manufacturing PC boards for shrink wrappers, then progressing into the manufacturing of the shrink wrappers themselves.

"The heart of our business hasn't changed. We design and build complete machines here in Cape Town, with a very talented group of people, and we are proud of that. Over the years it has grown into the full end-of-line range, case packers, shrink wrappers, banding machines, pouch fillers and palletisers, running in factories here and overseas. We're a family business, my brothers and I run it together, and our growth came one customer at a time. People trusted us with their lines, and Acepak grew with them," said Matthew Grobler, Acepak's managing director.

"Two milestones stand out for me and my limited tenure at Acepak. Opening Acepak UK in 2017 was a major turning point. It gave us a proper base to export into the UK, and from there we have grown into a dominant force in the dairy end-of-line space. For a Cape Town machine builder, that means a lot. Another milestone for us was adding packing robots to our range. That moved us from standalone machines into properly automated systems, and it changed what we could offer our customers, while decreasing complexity and build cost."

Follow the link to watch one of Acepak's packing processes utilising industrial robotics and end-of-line packaging automation.



Acepak is a family-owned manufacturer of end-of-line packaging machines and turnkey systems for the packaging industry. The company designs, engineers and assembles turnkey packaging solutions including automated case packers, automatic packing machines, pouch fillers and automatic shrink wrap machines that also include robotic solutions

"Today we employ about 150 people. Head office and the factory are in Cape Town, and we have branches in Johannesburg and Durban with an agency in the UK for our export markets."

"Nearly everything happens under one roof. Design is done in-house on Solid Edge. Fabrication, machining, assembly, panel building, PLC programming and commissioning are all our own people, and many of them have been with us for years. That's a deliberate choice. Those are exactly the skills we want to keep in the company and in the country. And it makes better machines, because when something doesn't fit, the designer walks onto the floor and sorts it out with the team that same day," continued Grobler.

"End-of-line packaging is everything that happens after the product is made and in its own pack. Take a juice producer as an example. The bottle is filled and capped, now it has to get onto a truck. A case packer puts bottles into a corrugated case, it erects the case, loads it and closes it. A shrink wrapper groups products together, wraps them in film and runs them through a heat tunnel so the film pulls tight, sometimes on a tray, sometimes not."

"A banding machine puts a narrow band of film or paper around a group instead of wrapping the whole thing, which uses a lot less material. Pouch machines fill and seal pouches and



Serving a variety of industries and with over 40 years of experience, Acepak's products are now found in more than 36 countries

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www.specialsteels.co.za



Acepak counts world-leading brands like Nando's, Rhodes, Kellogg's, gsk, Cerebos, Clover, Eskort, Fair Cape Dairies, L'Oréal and Tiger Brands as customers, amongst others



The company makes use of a number of machining solutions including conventional milling machines, some of which have been retrofitted with NC control to improve operator accuracy



Though Acepak make use of the latest state-of-the-art CNC machinery, conventional lathes still have their place on the shop floor

premade pouches at high speed, with hygiene, product shelf life and accuracy in mind. And a palletiser stacks the finished cases onto a pallet in a set pattern so they can be wrapped and dispatched. On a full line these machines run one after the other, joined by conveyors. Most of the trouble on a line happens between the machines, not inside them."

"We try to keep it as simple as we can when it comes to design. In our industry, a simple machine is a better machine, it runs every day and the customer's own people can maintain it. Beyond that, it's a strong, rigid frame, with adjustments an operator can make with his hands instead of calling a technician, and parts the customer can actually get. A machine standing in a dairy at four in the morning can't wait for something to be flown in, so we use drives, pneumatics and sensors from brands with proper support in South Africa."

"Then each industry has its own needs. Take for example washdown in the food and dairy industries, we will design for those from the start, and bring our years of experience in many different industries to create a solution."

"We don't start from scratch every time when it comes to design, and we don't sell off the shelf systems either. The bones of a case packer or a shrink wrapper are proven designs. What changes on every order is the setup for that customer's product: The infeed, the collation, the change parts, the machine guarding, the controls."

"A fully customised design only comes in when the product or the speed is outside what our platforms handle, or when a customer wants a complete turnkey line and we take responsibility for everything from their production machine to the pallet," explained Grobler.

"Product dimensions, shapes, weights and packaging materials can vary considerably between industries. The first thing we ask for is samples. Real product, in every format it must run, not just drawings. Products behave differently physically than on paper. Then we need the basics: Sizes and weights, how stable the product is, what the primary pack is made of, the carton and case specs, film type, the speeds needed, all the formats, what sits before and after the machine, floor space, and the environment, wet, cold, dusty."

"It's a long list, but time spent here saves everyone pain later. Most problems that show up on site started as a small detail missed at the quoting stage."

"All of this will always start with the enquiry. We look at the product, the speeds and the pack formats and decide whether we have a proper solution. Then concept design, a layout, a spec and a budget price."

"Once the order is placed, detailed engineering locks it all down, mechanical, electrical and controls together. Then we make the parts, build the machine and programme it, all in-house. The big moment is the factory acceptance test. The machine runs the customer's own product at the quoted speed on our floor, with the customer there to see it, before anything gets sent out. Then we commission on site and prove it again in the real plant, with the customer's people running it following some in-depth training."



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One of Acepak's more recent investments has been in the 3kW Trumpf TruLaser Tube 3000 tube laser, supplied by Retecon, part of the Retecon Group. Not only does it eliminate the manual process of processing tube but the machine has been able to eliminate a few days' worth of work and condense that into 12 minutes for certain applications such as machine frame building



The 3kW Trumpf TruLaser Tube 3000 tube laser is able to cut tube up to 170mm in diameter and reduces the need for conventional processes like sawing, drilling, milling, deburring and tapping as the machine does it in one setup. It is able to process a variety of materials up to 6.5m in length and up to 8mm in thickness



A DN Solutions Puma DNT 2100M CNC lathe with XY travels of 230mm by 580mm, maximum swing diameter of 650mm, maximum turning diameter of 320mm and a maximum turning length of 513mm. The machine was supplied by Puma Machine Tools, a Retecon Group company

Manufacturing, automation and quality control

"Component manufacture happens in our own machine shop and fabrication bays. We cut, fold, machine, weld and finish in-house, and we keep investing on that side of the business, including converting some of our conventional machining centers to NC, which has improved operator accuracy as much as possible."

"One of our newest investments has been in a new 3kW Trumpf TruLaser Tube 3000 tube laser for cutting frames, legs and most of the skeleton of the machines. We also have two Trumpf CNC press brakes, a Bystronic BySmart 6kW fiber laser, two Unicam CNC routers, a Leadwell V-52AF 3-axis vertical machining center as well as a DN Solutions Puma DNT 2100M CNC lathe."

"For food, dairy and pharmaceutical work we build in food grade stainless. We do outsource additional processing like powder coating, electro plating and galvanising. We will build to a customer's required specification which often follows UKCA/CE design requirements."

"The mechanical build, the panels and the wiring run side by side and come together on the assembly floor. Wiring is the one job that's on every machine we build, whatever the type, so we take it seriously: Consistent standards, neat panels, and documentation that matches what's actually in the machine."

"We have also recently invested in our electrical drawing and planning with Eplan software. The real work of integration is getting conveyors, drives, pneumatics, sensors and safety circuits working as one machine, and we sort that out in powered testing on the floor. It's far easier to fix something here than at the customer's plant. Typical build times are from 8-12 weeks on the smaller semi-automatic shrink wrappers but up to 42 weeks on the full turnkey projects."

"Everything runs on PLCs, and we're flexible on the platform. We work with Delta, Allen Bradley, Lenze, Siemens and Omron, whatever suits the customer's plant and their existing standards."

"Machines come with touchscreens for the operator, variable-speed drives on the main motions, and sensors for product detection and faults. We write all our own software. The people who programmed your machine specified its operating platform, and they'll still be here in ten years to support it."

"Changeovers are recipe based, the operator picks the format on the screen and the machine sets itself, with manual changeovers required for different products. We also match the automation to the customer. A simple banding machine doesn't need the controls of a robotic line, and there's no point over-automating a plant that isn't ready for it. On AI, for us the practical value right now is machine data: Connectivity, condition monitoring and remote diagnostics, picking up a problem before it stops production. That's where we're focussing our efforts for now."

"As I said, nothing leaves our factory without running the customer's own product, and we like the customer standing next to the machine when it does what it's meant to do. The factory acceptance test covers running at the quoted speed with their product and their packaging materials, every format with the changeovers performed and ▶

monitored, pack quality checked against what we agreed, and the full safety test, guarding, interlocks and emergency stops. We also deliberately feed it difficult product to see what happens. All the settings get recorded, so the machine arrives on site with a known starting point."

"The product is the hard part when it comes to the main engineering challenges in achieving reliable, high-speed end-of-line packaging. The machine will do the same thing all day, the product won't. A floppy pouch, a leaking bottle, a carton blank from a new board supplier, that's where the trouble comes from."

"So, the big challenges are getting control of the product at the infeed, carton forming, film control and sealing, and keeping the stations in step so the machine slows down rather than jams when something hesitates. For me, the infeed is the one that counts. If the machine gets gentle control of the product right at the start, the rest follows. The correct amount of product back up and accumulation are similarly critical."

Industry and environment matter

"You will find our products in many different industries. The mechanical job is often similar, the environment is what changes. Food and dairy need hygienic design, food grade stainless, surfaces that drain, enclosures that handle washdown and food safe lubricants. Dairy is also cold and wet, which is tough on electrics. The beverage industry has speed challenges and wet bottles. None of this can be catered for afterwards, so we talk about the environment at the enquiry stage, not in assembly."

"Almost all our customers run more than one product or format, so changeover is designed in from the start. Format parts that swap without tools where possible, adjustment points with gauges so a setting is repeatable, and recipes in the controls so the electronic settings follow the format. Done properly, it's minutes of operator time."

"And yes, robots. That's where the industry is going and we've gone with it, we integrate robots into our case packing and palletising systems because they handle different formats well. But the robot is just one part. The gripper, the infeed and the product handling around it is still machine building, and that's still what we do."

"Quoted speeds are what the machine does with perfect infeed and no interruptions. Real output depends on everything around it: What the upstream process actually delivers, how the product arrives at the infeed, the conveying after the machine, changeovers, operators and stoppages. The packaging machine is rarely the limit on a decent line. The limits sit between the machines, which is why buffering matters. It lets the line ride through a short stop at one station instead of everything stopping. So, we look at the whole line, not just the machine speeds. That's how you can really optimise a line."

Turnkey product, turnkey service

"Part of the turnkey service means that we start at the customer's factory. We measure the real layout, see what the upstream process actually produces, and walk the product's route to dispatch. Then the line is designed as one system,



Acepak have two Unicam CNC routers on the shop floor



Acepak's Leadwell V-52AF 3-axis vertical machining center has a BBT40 spindle with coolant-through-spindle of 20 bar. It has a Siemens 828D control with travels of 1 270mm x 600mm x 610mm and ShopMill for conversational programming, and supplied and setup by WD Hearn Machine Tools



Sheet metal cutting is done with Acepak's 6kW BySmart Fiber laser. It is equipped with a 3m x 1.5m bed

which machines go where, the conveying and accumulation between them, and controls that let equipment from different suppliers talk to each other, line stops, backlog signals, speed following. We try to find the bottleneck on the drawing, and responsibility is simple. It's ours."

"We have thousands of machines out there, some decades old and still working every day, so support is half of our business. Those customers built Acepak with us, and we look after them. Service and spares run from Cape Town, with technicians in Johannesburg and Durban, and the UK agency looks after export customers. Every machine's build records are in our system, so we can supply the right part for a machine we built 20 years ago. We do preventative maintenance agreements, condition assessments, operator training and remote support. Some new machines go out with secure remote access, so our programmers can look inside a machine's controls within minutes of a call, whether it's in Durban or Dublin."

"Every machine in the field teaches us something, and what the service team sees goes back into the design office. On what customers want, the biggest challenge is flexibility. Runs are shorter, there are more products, and changeover time now sells machines the way top speed used to. Packaging material is getting lighter, thinner films, lighter board, banding instead of full wraps, and running flimsy material at speed takes real care."

"Energy matters more than it ever did. And customers want their machines to tell them what's going on. Flexibility and machine data are changing our designs the most: More servo drives, recipe controls, and connectivity built in from the start. Energy and space are getting more expensive, in turn we are designing more energy efficient machines with much smaller footprints. We have also just released some new models at Propak Cape 2026 that took place at the end of October."

"We love South Africa and we believe in it. Every machine we build in Cape Town keeps skills, jobs and money in South Africa, and we would like to see the whole machine building industry here grow, not just Acepak. There is no reason South Africa can't build world class machines. We see it on our floor every day."

"The opportunities are real. Local customers get support in their own time zone and spares without a customs delay, and those same strengths work for us in export markets. The challenges are also there, we compete against imported machines built in much bigger volumes, and the industry needs more artisans, machine builders and programmers, so training young people is something we take seriously."

> "We will keep investing in the factory, in our systems, in machine connectivity, and most of all in our people."

"We will keep investing in the factory, in our systems, in machine connectivity, and most of all in our people. We also know where our growth came from. We're a family business, and customers have trusted us with their production lines for 40 years. We're thankful for that, and we try to repay it with machines and service they can count on."

"What I would like the industry to know is simple: Locally built does not mean second best. Give the local machine builders a chance. The more of us that succeed, the stronger the industry gets, and the better for South African manufacturing as a whole," concluded Grobler.

Contact Acepak on TEL: +27 21 552 5999 or visit https://acepak.com for further information. ■



One of Acepak's two Trumpf bending machines is a Trumpf TruBend 1060 hydraulic press brake. It has a 4-axis backgauge for complex component positioning with a bending force of 60 tons

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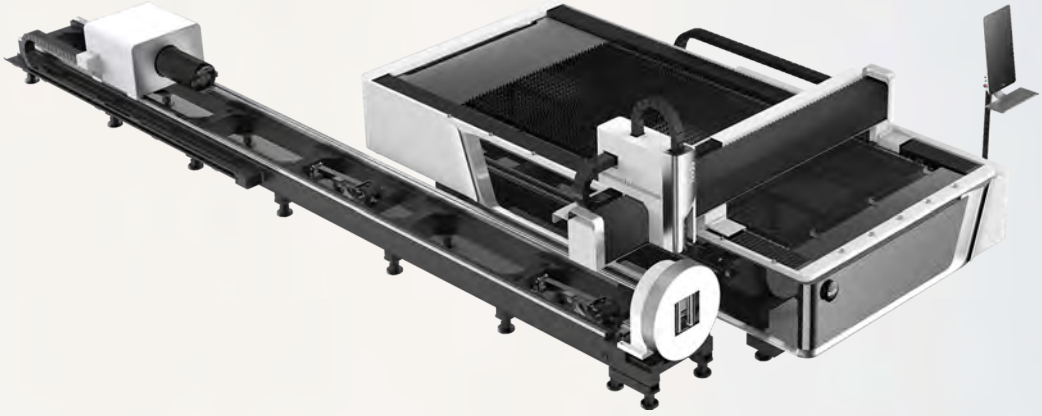
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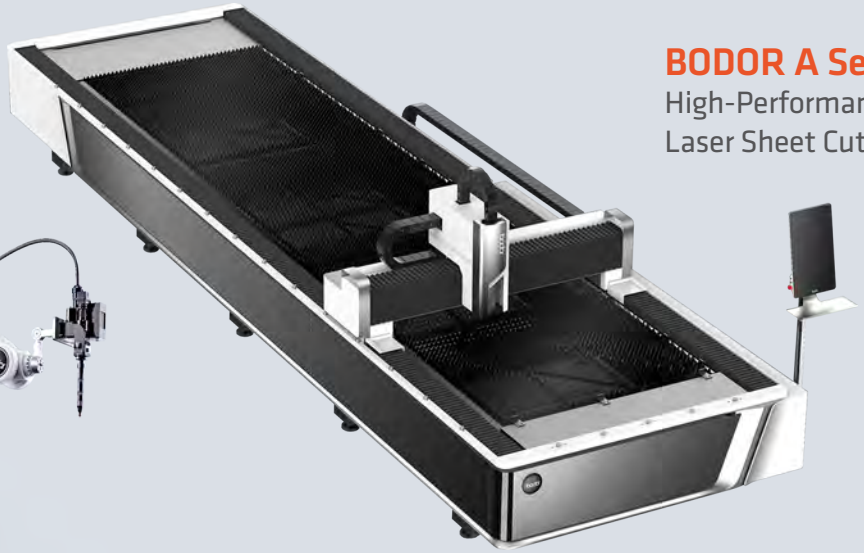
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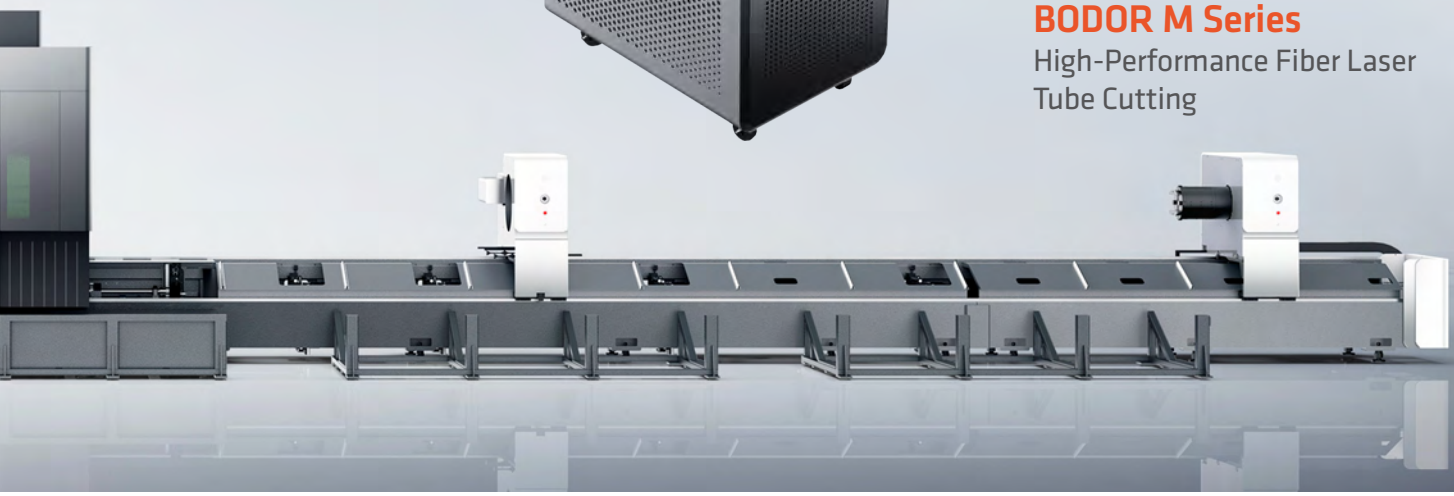
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Getting more from every gram
rethinking carbide efficiency in cutting tools



The importance of selecting the correct insert size was demonstrated by a chemical-industry parts manufacturer in Canada. When machining SAE 4140 at a cutting speed of 120m/min and a feed rate of 0.12mm/rev with emulsion coolant, the 2mm DO-GRIP XL insert delivered improved process reliability and lower tooling costs compared with a 3mm insert

Lately, the metalworking industry has faced a new challenge: rising tungsten prices on the international market, driven largely by China's tungsten-control policy, have significantly increased the cost of tungsten-carbide cutting tools. As tungsten carbide remains the dominant cutting tool material, tooling costs are particularly sensitive to fluctuations in the price of this critical raw material.

The resulting increase in machining costs calls for an appropriate response. It puts manufacturing processes, tool management, and, of course, the cutting tool itself under closer scrutiny. The cutting tool deserves particular attention, as it plays a key role in meeting these new challenges. Understanding that role, however, requires looking beyond the tool's purchase price and considering something more fundamental: the real value of a cutting tool.

For years, tool selection often came down to a single question: How much does it cost? But as machining demands grew more complex and competitive margins shrank, forward-thinking manufacturers began to ask a far more strategic question: What value does the tool deliver?

"Anything that just costs money is cheap," John Steinbeck is widely quoted as saying. In metal cutting, the idea has a very practical meaning: the purchase price of a tool is only one component of its real economic cost – the price is measured in money, but the tool value is determined by what happens on the machine.

True cutting economy is determined by cycle time, tool life, process reliability, machine uptime, and overall cost per part. Advances in manufacturing technology and the growing trend toward unmanned production have brought another aspect of tool-life performance to the forefront: predictability and stability, which in many applications may take precedence over maximum productivity.

Now, in an era of rising carbide prices, another consideration ▶

has moved to the forefront. The challenge is not simply to make carbide tools cheaper, but to maximise the output obtained from every gram of tungsten carbide. Such a perspective calls for corresponding solutions and changes the very definition of an optimum cutting-tool design: maximum machining value from the minimum amount of carbide required to deliver it.

Industry practice typically focuses on the cost per part, cost per cutting edge, tool life, and productivity, rather than directly correlating usable output with both the mass of the cemented carbide and the tool price. An additional parameter may offer a different perspective: how effectively a purchased quantity of carbide is converted into productive output.

This parameter may be defined as Carbide Utilisation Efficiency (CUE): $CUE = Q/m_c$

where: Q = usable tool output, for example, as the number of machined components, the volume of removed material, tool life, or material removal rate (MRR), m_c = carbide mass, g.

CUE, which is measured in "parts/g carbide", cm^3/g carbide, min/g carbide, or cm^3/(min·g carbide), shows how much productive output is obtained from each gram of carbide. Although principally a technical parameter, it can be a good indicator of how effectively the carbide contained in a cutting tool is utilised.

However, CUE does not take into consideration the cost of the carbide tool. Therefore, to estimate *economic efficiency of carbide*, one more parameter is proposed: Specific Carbide Economic Efficiency (SCEE): $SCEE = Q/(m_c \cdot C_t)$ where C_t = tool price, currency units, for instance USD ($).

Consequently, $SCEE = CUE/C_t$. Hence, SCEE, measured in "parts/(g carbide·$)", cm^3/(g carbide·$) etc. is an index shown the usable machining output obtained per gram of carbide and per currency unit of tool acquisition cost.

Therefore, in the context of today's rising tungsten carbide costs, CUE may actually be the stronger and more natural of the two discussed parameters, while SCEE serves as its economic extension. Taken together, these two indicators provide a more comprehensive characterisation of carbide tool efficiency: the higher their values, the more effectively the carbide resource is utilised and the greater the productive output obtained from the associated tool investment.

Taking this into consideration, today's reality sharpens a fundamental industry expectation of cutting-tool manufacturers: do not merely make carbide tools cheaper but make every gram of carbide deliver more. This leads to an apparent paradox: when carbide becomes expensive, customers may actually have a stronger reason to buy technologically advanced tools rather than cheap ones. Therefore, the response to expensive tungsten need not be 'downgrade the tool'. Quite the opposite. It can drive more sophisticated grades, coatings, optimised geometries, better coolant delivery, modular construction and systematic recycling, provided that each improvement demonstrably increases carbide use.

That translates into several requirements.

1) **Longer predictable tool life.** In the past, a 15% increase in tool life primarily translated into higher productivity. Given the significant rise in the cost of tungsten carbide itself, this advantage is now complemented by more efficient utilisation of the carbide resource. Consequently, the selection of carbide grades, wear-resisting coatings, cutting-edge preparation methods, and coolant delivery techniques takes on even greater economic significance.
2) **Improved cutting-edge utilisation.** For indexable tools, this involves maximising the number of available cutting edges per insert wherever technically feasible and economically practical, as well as using smaller inserts capable of carrying the same cutting load. For solid-carbide tools, key measures include increasing the number of effectively working teeth and providing greater available cutting depth without compromising performance.
3) **Lower carbide inventory per machine.** Manufacturers are likely to become more sensitive to the amount of capital locked into tool inventories. Multifunctional cutters and modular tooling systems capable of covering several applications may become increasingly attractive compared with maintaining numerous highly specialised carbide tools and insert geometries.
4) **Less carbide in tool designs.** The exchangeable carbide cutting-head concept is particularly well suited to this objective, combining efficient use of carbide material with high application versatility. Reconditioning to give carbide another cutting life. For solid carbide drills and end mills especially, resharpening, recoating, and controlled reuse become increasingly important economically as the value of the carbide blank rises.
5) **Recycling as a raw-material and cost factor.** Recycling is evolving from primarily a sustainability consideration into an increasingly compelling raw-material and economic imperative. Recycling is no longer merely a sustainability argument; with the rising prices of tungsten carbide, it is emerging as an increasingly important raw-material and cost consideration.

ISCAR's MAXOUT is a strategic initiative designed to meet these new challenges. It offers a series of highly engineered solutions aimed at redefining carbide efficiency. At the core of MAXOUT are three foundational pillars for achieving greater manufacturing value through enhanced utilisation of tungsten carbide. These are innovative tool design, advanced carbide-grade production based on progressive powder-metallurgy methods, and state-of-the-art coating technologies. MAXOUT products incorporate novel cutting geometries, introduced in the company's flagship families through ISCAR's recent NEOLOGIQ and LOGIQUICK campaigns, with a focus on optimising chip formation and evacuation, reducing cutting forces, and improving resistance to vibration. The products are based on premium carbide substrates and proprietary coatings, including nano-layered multi-metal compositions combined with novel post-coating treatments.

But most importantly, MAXOUT shifts the focus from the amount of carbide contained in a tool to the manufacturing value that this carbide is capable of generating.

In turning, for instance, the unique triangular double-sided D6NMG inserts of the LOGIQ-6-TURN family provide six cutting edges with a 55-degree nose angle (Fig. 1). Intended mainly for semi-finishing and finishing operations, these inserts ▶



Fig. 1 Triangular double-sided D6NMG inserts of the LOGIQ-6-TURN family provide six cutting edges with a 55-degree nose angle

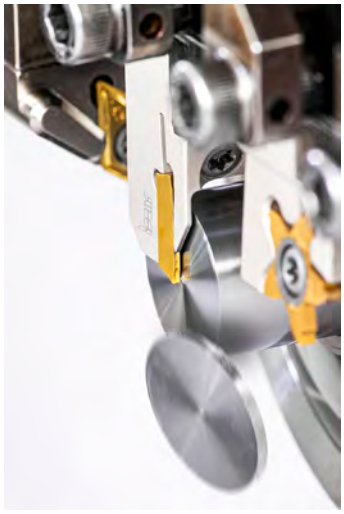


Fig. 2 The DO-GRIP family of cutting-off and grooving tools includes solutions for parting bars up to 22mm in diameter, using double-sided inserts with a cutting width as narrow as 1mm



Fig. 3 In face milling, HELIDO 800 tools carrying double-sided octagonal inserts with 16 indexable cutting edges offer a highly economical solution that improves cutting-edge utilisation, reduces tooling costs, and diminishes machining expenses



Fig. 4 The MILL-4-FEED family has now been expanded with new HFM tools featuring compact square inserts of size 06 having four indexable cutting edges

offer an advantageous alternative to conventional 55-degree rhombic DCMT inserts, which have only two cutting edges. Moreover, because the D6NMG insert can be mounted in standardised pockets of common ISO tools, it also offers an advantage over conventional 60-degree triangular TCMT inserts, which have only three cutting edges.

Another example is the DO-GRIP family of cutting-off and grooving tools (Fig.2). The family includes solutions for parting bars up to 22 mm in diameter, using double-sided inserts with a cutting width as narrow as 1 mm. This minimises material loss during parting while also enabling more rational use of tungsten carbide.

In face milling, HELIDO 800 tools carrying double-sided octagonal inserts with 16 indexable cutting edges (Fig.3) offer a highly economical solution that improves cutting-edge utilisation, reduces tooling costs, and diminishes machining expenses.

High-feed milling (HFM) is a productive method for roughing operations. It features shallow depths of cut and extremely high feeds per tooth. The MILL-4-FEED family has now been expanded with new HFM tools featuring compact square inserts of size 06 having four indexable cutting edges (Fig. 4). Tools in this family, with diameters starting from 16 mm, offer an attractive indexable solution in applications traditionally performed with solid-carbide high-feed end mills.

ISCAR's modular tooling systems with exchangeable carbide cutting heads, shanks, adapters, reducers, and extensions, such as MULTI-MASTER and SUMOCHAM, provide a cost-efficient substitute for the solid-tool concept, offering economic benefits, versatility, and easy customisation. Unlike the entirely carbide structure of a solid tool, these systems concentrate carbide mainly in the replaceable cutting heads. In hole making, for example, a SUMOCHAM steel body can accommodate exchangeable drilling heads with different cutting geometries designed for various engineering materials, including steel, cast iron, stainless steel, and others, as well as heads for flat-bottom drilling (Fig.5).



Fig. 5 A SUMOCHAM steel body can accommodate exchangeable drilling heads with different cutting geometries



Fig. 6 QUICK-D-MILL family combine milling and drilling capabilities in a single tool

"All-in-one" multifunctional indexable tools of the QUICK-D-MILL family combine milling and drilling capabilities in a single tool (Fig. 6). They support efficient machining with fewer tools, reducing tool inventory and the associated carbide investment.

These are just a few examples from the MAXOUT portfolio developed to deliver greater productive output through more intelligent utilisation of carbide.

Traditionally, cutting tools account for only 3% of total production costs, while the remaining 97% comprises raw materials (22%), machinery (26%), overhead costs (21%), and manpower (28%). Although cutting tools represent a relatively small portion of total cost, they have a significant impact on productivity, quality, and overall profitability.

The current situation, driven by the considerable rise in the prices of tungsten-containing materials, establishes a new principle for cutting-tool engineers: every tool should provide the greatest possible productive return from the carbide incorporated into it throughout its service life. MAXOUT represents ISCAR's response to the new challenges facing the metalworking industry. The company's initiative demonstrates that cutting tools should not be treated merely as an unavoidable overhead expense, but as strategic profit drivers. When the goal is to reduce cost per part, increase machine capacity, and ensure process stability, the best tool is never merely the cheapest one. It is the tool that delivers the greatest overall value by maximising the efficiency of every gram of tungsten carbide used in its cutting part.

For further details contact Iscar South Africa on TEL: 011 997 2700 or visit www.iscar.com ■

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STUDER

Amada celebrates 80th anniversary at EuroBLECH 2026

Amada celebrated its 80th global anniversary by highlighting integrated production systems and group synergies, allowing customers to experience the wide range of solutions available from one partner to help drive success.

Situated on stands D06/F06 in Hall 12, the company exhibited everything from autonomous mobile robots and fully automated production cells to the latest technologies in sawing and micro-welding applications and leading service backup. Experts were on hand to provide advice and discuss the many challenges facing manufacturers today, from technical issues to the difficulties recruiting skilled operators.

The 80th anniversary area allowed visitors to go on the journey from Amada's beginning, experiencing the many technological advancements pioneered along the way which have evolved through its 'Growing With Our Customers' mantra.

A fully integrated production concept featuring Amada's AMTES logistics solution linking automated fiber laser cutting with robotic bending and welding cells was at the forefront of the stand. Managed by LIVLOTS, which connects machines, software, and human expertise into a single cohesive ecosystem, the entire line allowed customers to visualise flat sheet to finished parts, all from a single supplier.

Under the Amada One group synergy action, the latest offerings for sawing and micro-welding were also on display, providing visitors with an insight into how their business can be driven into new sectors. Service and tooling solutions underpinned the machinery on display, highlighting Amada's exemplary IoT support and advanced punching and bending tool offerings. More details are provided below.

Blank-to-bend-to weld concept: Fully automated part processing from sheet to finished part

Focusing on customer benefits, a fully integrated sheet metal production concept was previewed by Amada. Incorporating innovative fiber laser technologies to process flat blanks which are automatically removed and palletised, to a robotic bending solution with vision cameras, to a fully automated fiber laser welding cell, everything is connected with Amada's AMTES Autonomous Mobile Robot (AMR) system.

The new EGB-6020ATCE press brake

Uncompromised productivity, extreme flexibility, and eco-conscious sustainability drive the new 60-ton model which made its European market debut at EuroBLECH. The new size of the EGB-6020ATCE all-electric press brake completes the company's premium line-up of top-of-the-range servo-electric bending solutions, following the European debut of the EGBe series (ranging from sizes 4010 to 1303) and the EGB-1303ATCe model at the 2024 show.



The new EGB-6020ATCE all-electric press brake completes the company's premium line-up of top-of-the-range servo-electric bending solutions

The LIVLOTS ecosystem

LIVLOTS is software developed by Amada to ensure advanced, real-time control of production, addressing the needs of digitalisation and automation and at EuroBLECH the company presented the latest version.

Designed as the digital backbone for modern manufacturing, LIVLOTS connects machines, software, and human expertise into a single cohesive ecosystem. At the show, Amada demonstrated how it combines core operational capabilities with cutting-edge autonomous features and tailored consulting services to drive digital transformation.

For further details contact Amada Johannesburg on TEL: 011 453 5459 or visit www.amadajhb.co.za ■

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Oak Ridge National Laboratory and Mazak collaborate to develop the VC-Ez WAAM additive manufacturing platform

Oak Ridge National Laboratory and Mazak partnered for the development of a convergent metal additive manufacturing platform that unifies metal additive manufacturing and high-precision machining within production-relevant workflows. Featuring two of Mazak's VC-Ez 20X Vertical Machining Centers, the technology allows manufacturers to deliver high-mix, low-volume parts with shorter lead times while maintaining an effective strategy for low-mix, high-volume production capability.

Engineered for the future, this manufacturing platform combines a high-accuracy Mazak VC-Ez 20X 5-axis machining center with a Fronius International Wire Arc Additive Manufacturing (WAAM) system designed to provide a flexible, high-volume, and expandable solution into a single automated manufacturing framework.

The Fronius WAAM system provides a highly efficient, large-scale metal 3D printing capability that uses electric arcs and standard welding wire to deposit metal layer by layer. It excels in speed, cost-effectiveness and design freedom compared to traditional manufacturing and powder-based 3D printing.

The system is designed for emergent operations and performs both additive and subtractive part processing operations. Once parts are grown through the additive operations, they move to the standard full 5-axis VC-Ez 20X milling machine for finish machining of the workpiece.



A Mazak automated palletised transfer system moves common pallets between each process to enable repeatable workpiece fixturing and efficient production. The platform supports applications ranging from structural repair to rapid tool production and near-net-shapes.

Mazak's VC-Ez 20X machines bring to the system accurate processing of small complex parts via 3+2 or full 5-axis machining on a 5-axis rotary/tilt trunnion table with roller gear cam technology. Axis travels measure for XYZ (800mm x 510mm x 510mm), with a rapid traverse rate of 32 000mm/m on all three axes.

The machines accommodate maximum workspace dimensions of 700mm in diameter and 580mm tall and weighing up to 400kg. The ergonomically designed machine requires only 2 650mm x 3 720mm of floor space, a 26.5% smaller footprint than other models, which makes them perfect for the WAAM system.

The VC-Ez 20X machines are outfitted with Mazak's MAZATROL SmoothEz5 CNCs that streamline programming. Within the control, EIA/G-code and MAZATROL Conversational programming languages provide a full range of programming options directly on the machine.

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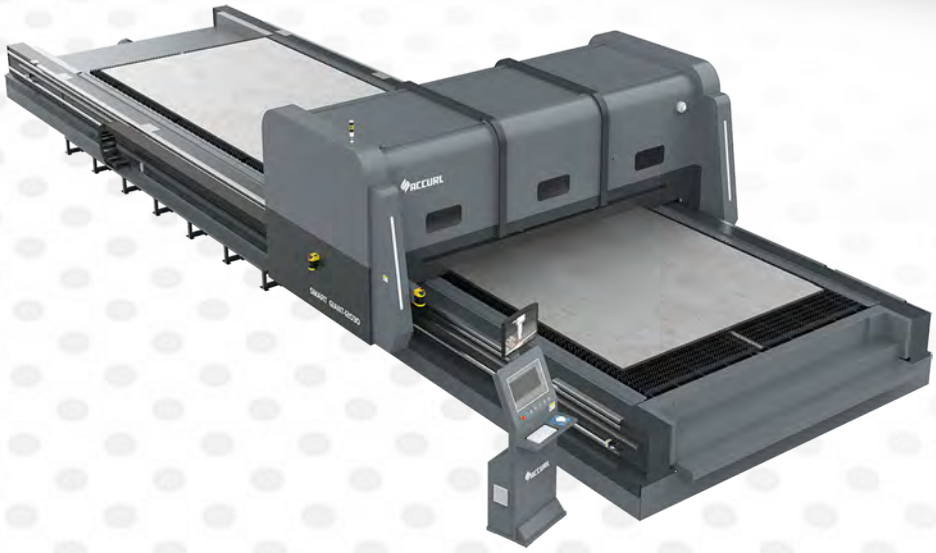
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Renishaw expands South Wales site as demand drives manufacturing growth

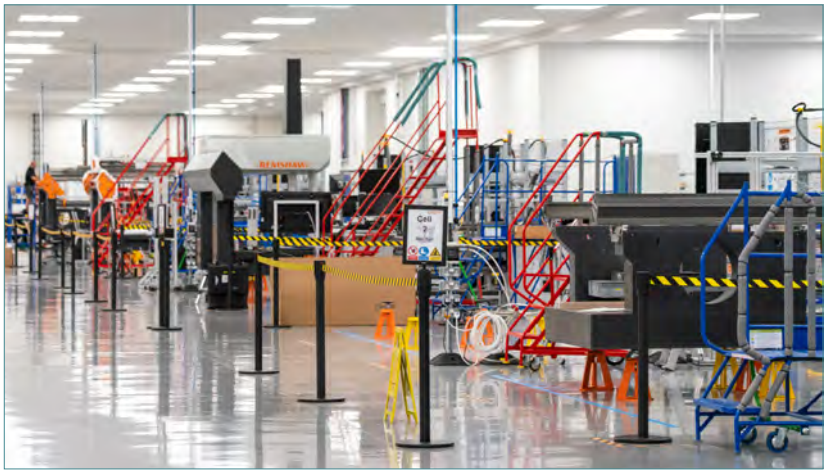


This year Renishaw is celebrating the 15th anniversary of the purchase of its Miskin site in South Wales, and the completion of the first phase of a further £70 million development of the facility. Announced in 2022, this is the largest capital investment project in the company's history, which will ultimately double the size of the Miskin site, giving the company space to expand manufacturing capacity to meet rising demand for its world-leading precision metrology, additive manufacturing and position measurement products.

Renishaw has been committed to the manufacturing of its own products since its formation and uses many of these products within its machining facilities. Whilst much of its production is performed in the UK, at its Miskin, Stonehouse and Woodchester sites, it has carried out the assembly of metrology products in Ireland since 1981, and also has a significant operation in Pune, India.

Renishaw completed the acquisition of the 193-acre site, situated to the west of Cardiff, from Robert Bosch Ltd in September 2011. It started modest operations in May 2012 with a single production shift, having refurbished around 15% of the 38 675m² total building space, which primarily consisted of two large production halls. By the time of the formal opening of the facility in October 2012 by then First Minister of Wales, employee numbers were around 25, compared to around 950 today. Following the completion of the first development phase (Hall 3), usable space has grown to 57 350m² and will total 81 765m² once Hall 4 is completed and operational, establishing the Miskin facility as one of the UK's largest advanced manufacturing sites.

Renishaw has continued to invest throughout its tenure, with around £150 million spent to date on acquiring the site, refurbishing legacy buildings, developing the new halls, and installing advanced manufacturing equipment. The latter currently includes 134 CNC machine tools producing around one million parts per month, three PCB assembly lines, robotic assembly and automated warehousing, with more equipment on order to support customer requirements.



A key feature of the Miskin expansion is its extensive use of on-site renewable energy generation, delivering an estimated 200MWh of clean electricity each year. Where additional electricity is required, renewable energy tariffs are used to further reduce the site's carbon footprint. ■

Sandvik Coromant:
Manufacturing has the tools to transform

Metal cutting and manufacturing supplier Sandvik Coromant, Sandviken, Sweden, has unveiled its first Manufacturing Wellness Report. Based on responses from nearly 1 000 global manufacturers, the report gives the industry an overall manufacturing wellness score of 49 out of 100.

The figure points to progress but also to a clear gap between recognising what good performance looks like and embedding it consistently across operations.

The company first introduced manufacturing wellness in 2023 as a way to describe what a healthy, future-ready manufacturing business looks like. It defines the concept as "the state of resilient, thriving manufacturing companies that have a positive impact on people and societies."

At its core are eight habits that help manufacturers move from good intentions to measurable progress, from developing people and embracing automation to using data more effectively, reducing waste, working with strong partners, and building more circular operations.

The report suggests manufacturers are taking steps to improve, but progress remains uneven. Nearly one in four organisations report having no access to manufacturing- or process-related data, while almost half say they do not have a clear understanding of the performance targets set for their teams.

Sustainability is another area where intent is not yet translating into structure, with only 19 per cent of organisations reporting a formal circularity policy. Automation follows a similar pattern: While 69 per cent of respondents report at least some automation in manufacturing operations, others remain less advanced.

The research also highlights the value of external partnerships. Organisations that collaborate with third-party partners score significantly higher on overall manufacturing wellness and are more likely to apply efficiency principles consistently.

"Our first global Manufacturing Wellness Report shows an industry with strong foundations but also significant unrealised potential," said Helen Blomqvist, president of Sandvik Coromant.

"Manufacturers are collecting data, investing in technology, and identifying skills gaps. The challenge now is to connect these efforts into a structured approach that improves performance across the whole value chain."

Despite these gaps, the report points to a manufacturing sector with solid foundations for progress. Many manufacturers are already collecting more data, investing in digital tools, exploring automation, and taking steps to improve circularity.

> The positive message from the report is that manufacturers are not starting from zero

The company argues that the next stage is not simply to adopt more technology but to connect existing tools, people, and processes through a clearer, more holistic strategy.

"The positive message from the report is that manufacturers are not starting from zero. Many already have the tools, technologies, and ambition they need to improve performance. The opportunity now is to make those assets work harder by connecting data across teams, reviewing technology more deliberately, developing people at every level, and building stronger partnerships. Manufacturing wellness is about helping companies turn existing progress into long-term resilience," said Blomqvist.

Contact Sandvik Coromant on TEL: 010 500 2295 or visit www.sandvik.coromant.com for further details. ■



Upward trend as German machine tool orders increase in Q2

The recovery of the German machine tool industry is taking shape. In the second quarter of 2026, incoming orders were up 12% compared to the same period of the previous year. After a rise of 15% in the first quarter, the first six months have seen an overall growth of 14%. Domestic orders increased by 16% and orders from abroad by 13%.

Bernhard Geis, head of economics and statistics at VDW (German Machine Tool Builders' Association), said: "Two quarters in a row with a double-digit order increase is an encouraging sign. The slump is behind us and we're now on course for better times. However, it's too early to give the all clear. The baseline was low and project business is still making a considerable contribution to growth. There are only limited grounds for talk of a widespread recovery of demand."

The development continues to vary considerably according to customer industry. Aviation and Defence appear particularly dynamic. There is also plenty of demand from the electronics industry and medical technology. The situation remains more difficult in metal processing and mechanical engineering, while the biggest challenges continue to be found in the automotive and supplier industry. Here, the share of total sales for the German machine tool industry dropped to 23% in 2025. The largest customer sector remains mechanical engineering with 27%. The aviation industry, on the other hand, has increased significantly: its share rose to reach 11% within a period of two years.

This recovery has not yet reached production. In the second quarter, calculations estimated a 6% drop on the previous year. In the first six months, production declined by a total of 7% to around 5.9 billion Euro. However, the improved order situation should make more of an impact over the remaining course of the year.

There are also signs of stabilisation when it comes to export activities. In the second quarter, exports were still 4% lower than the previous year. A far slower decline when compared to the first quarter. As the largest market, the US remains a key pillar of the industry. Deliveries to the US increased by 8% in the first six months. In contrast, exports to the second biggest market, namely China, fell by 24%. However, companies have recently reported signs of stabilisation and a slight revival of Chinese demand. In view of the intense price competition, the principle of "Local for Local" continues to be a key mantra for German manufacturers with their own on-site production facilities.

In Europe, German machine tool industry exports fell by a total of 6% in the first six months of the year. France saw positive developments with a plus of 25% and a return to its position as the third most important sales market. Positive developments were also seen in Poland and the Czech Republic. India stayed on course for continued growth and has since become the fourth largest market of the industry.

Domestic development remains strained, however, with domestic sales 10% below the figure for the previous year in the first six months. And yet there are positive signs coming from the increase in domestic orders. Economic indicators such as the ifo Business Climate Index and the Purchasing Managers' Index are also currently documenting a better industry outlook. With a drop of 2%, imports held up better than domestic sales. Japanese and South Korean manufacturers, in particular, were able to increase their sales in Germany. Overall, domestic consumption fell by 6%, demonstrating that sluggish investment on the German market has not yet been resolved.

Capacity utilisation has recently stabilised at around 75%. At the same time, the process of structural adjustment in the industry continues. Around 60 000 people were employed by companies in June, representing a good 6% less than the year before. Production figures are now currently around a third lower than the peak phases of earlier years. Bernhard Geis sums it up: "Total order intake has been heading in the right direction for six months now. It is crucial that this leads to a sustainable recovery." ■

Tungaloy and NTK Cutting Tools to merge in January 2027

Subject to legal and regulatory approvals.

Tungaloy Corporation and NTK Cutting Tools have announced that, effective 1st January 2027, NTK Cutting Tools will merge with Tungaloy, marking a new chapter for both organisations.

Following the merger, the integrated organisation will operate under the Tungaloy corporate name, while retaining the NTK Cutting Tools brand. NTK Cutting Tools will operate as a dedicated division within Tungaloy, building on the technology, heritage and expertise that have established its strong reputation in the cutting tool industry.

Alongside the integration, plans have been finalised for a new headquarters and state-of-the-art manufacturing facility for NTK Cutting Tools in the Nagoya area, Japan. This multi-million investment will increase production capacity, introduce advanced manufacturing technologies and provide a modern environment for manufacturing, engineering, marketing and corporate functions. The merger brings together synergy and complementary strengths from both organisations. Tungaloy combines a broad cutting tool portfolio with strong expertise in grade development and innovation, while NTK Cutting Tools is recognised as a global leader in ceramic cutting tool technology and miniature lines. The integration will also bring together the dedicated people and industry knowledge behind them. For customers and distribution partners, this combination will provide a broader range of technologies, application expertise and industry knowledge to support manufacturers worldwide.

Tungaloy Corporation is a leading global manufacturer of cutting tools and industrial solutions, supporting a wide range of industries including automotive, aerospace, energy, and general engineering. Founded in 1934 as Japan's pioneer in cemented carbide, Tungaloy combines advanced materials technology, innovative product development, and global engineering support to deliver high-performance machining solutions worldwide as part of the IMC Group. ■

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Tool Magazine

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Partnership driving the future of robotic machining | Siemens & Güdel

SINUMERIK Machine Tool Robot (MTR) overcomes traditional robotic machining limitations through CNC control, active vibration dampening, and integrated digital technologies.

Manufacturers can achieve process-stable steel machining, improve path accuracy, reduce cycle times, and expand machining applications across industries.

What happens when CNC control meets robotic technology? In an interview held at the recent AMB 2026 exhibition in Germany, representatives discussed how Siemens and Güdel are advancing robotic machining together. Umberto Neuwert, Product Manager from Siemens and Managing Director Matthias Marty from Güdel were interviewed about the industry trends that are currently driving the industry?

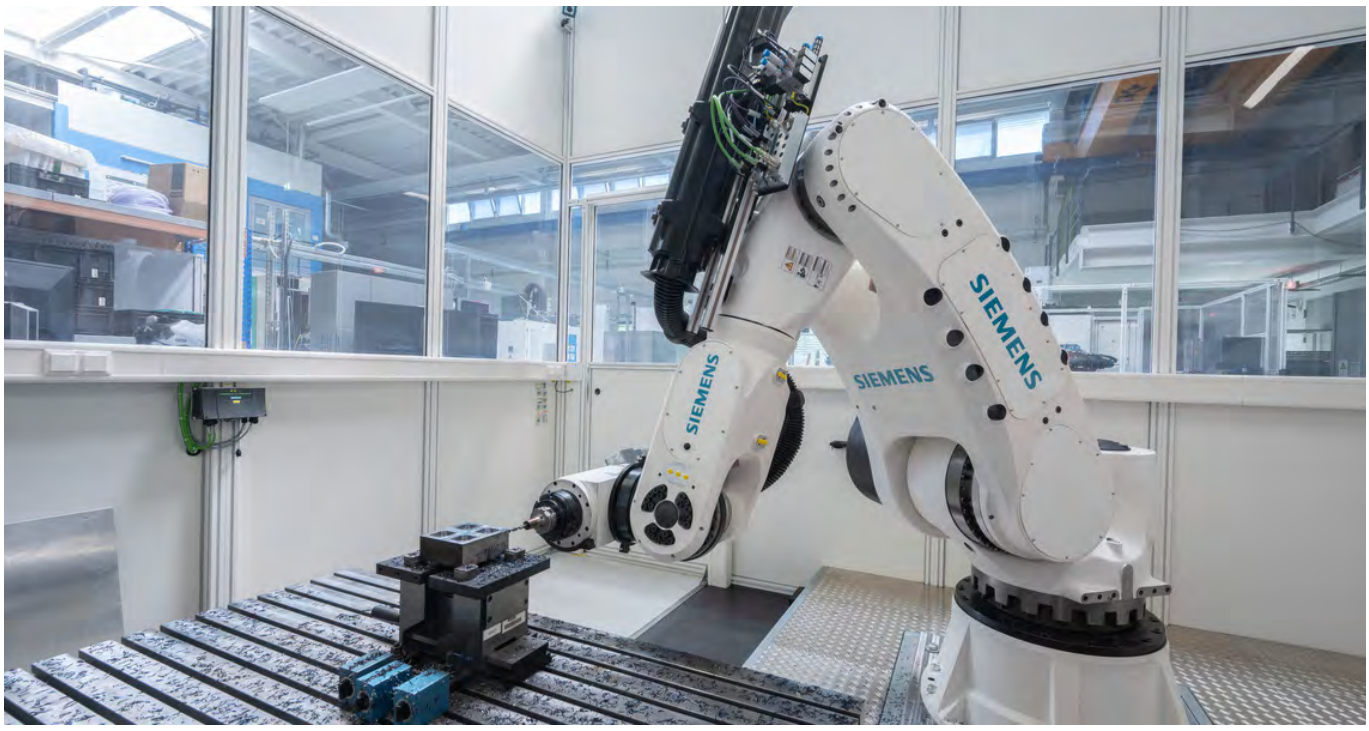
"We see a growing demand in applications where you have really big work pieces. So you need big machines to do these processes. And here's where we come in with our CNC robotics approach. We allow manufacturers to use the robotics flexibility with our CNC control to achieve the goal in machining, in additive, in non-destructive testing, and more applications from various industries such as aerospace, energy, space industry, infrastructure, for example."

"We have given the robots the possibility to have an active dampening system. We use our electromechanical components, our motors and our drives, as well as our CNC controller and software and we are able compensate any vibrations, which would normally occur on the tool in any process or at high-speed movements. And this can be compared, for instance, to a noise cancelling technology in our headphones. So no noises, which we don't want to hear come through, and this applies to the robot machining as well."

"We are able to mill steel with robots now because before, robots were too unstable, especially when milling steel. Previously they would vibrate and would very easily become unstable when using a standard robot with a standard robot control. We have an example where the milling of steel took a customer 40 minutes. When they used the Sinumerik machine tool robot they could machine the same component and same material in 5 minutes – 8 times faster than conventional robots. That's really a big benefit. And no vibration."

"Speed is definitely of the essence, but also, many customers are wandering about precision. With our robotics and all the compensations, we can achieve an absolute positional accuracy of 0.1mm in the complete workpiece. If you have big parts, you can really count on the accuracy of CNC robots to achieve that in a complete workspace. And for many other processes, this is accurate enough. But you might have some components where the 0.1mm is not enough. If you want micron accuracy, you still have to use a CNC machine."

To listen to the full interview visit: https://www.youtube.com/watch?v=a83I8SkFTNA ■



The Siemens SINUMERIK Machine Tool Robot (MTR) is a high-precision robotic machining system controlled by SINUMERIK ONE. It uses active drive damping to suppress vibrations, delivering up to 300% better path accuracy and allowing six-axis industrial robots to mill hard steel with tolerances under 0.1mm

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A smart vision system for fast, intuitive measurement



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Mitsubishi Electric links humanoid robots and machine tools directly via AI, aiming for unmanned factory by 2030

Mitsubishi Electric announced on October 21, 2026 that it has developed a machining system in which humanoid robots and CNC (computer numerical control) machine tools coordinate through “Physical AI,” which controls and optimises actions in the physical world. In the system, an operator issues instructions in natural language, and the AI assembles the process and allocates tasks between the machine and the robot. The company aims for practical application by 2030. According to Mitsubishi Electric, as of that date and based on its own research, it is the industry's first NC system designed around coordination with humanoids.

On manufacturing floors, demand for automation is rising against a backdrop of labour shortages, but tasks such as setting workpieces onto machine tools (setup), cleaning, transport, and inspection have been difficult to replace because they have been premised on human physical characteristics. Attempting to substitute conventional industrial robots could require capital investment to rebuild production lines to match robot movements. Even when introducing humanoids, communication functions and control sequences had to be developed individually for each model, which stood as a barrier to adoption.

The new system consists of three elements: An “AI Machining Task Planner” that analyses natural-language instructions and assembles tasks; CNC machine tools equipped with Physical AI; and general-purpose humanoid robots. The planner interprets the content of instructions and generates a work plan by combining necessary items from a pre-registered list of work tasks. Rather than endlessly generating unknown tasks, the design builds plans on the foundation of registered tasks.

Work is allocated to the machine tool and the humanoid according to the generated plan. The planner and the CNC side are equipped with newly developed Physical AI using the company's AI technology brand “Maisart.” Because the machine and robot exchange operating information in natural language while proceeding with machining, they can coordinate flexibly without depending on the robot model, reducing the burden of individual system integration, according to the company.



Online Editor Damon Crawford attended the JIMTOF 2026 exhibition in Tokyo, Japan where a display on the Mitsubishi Electric stand showed a machining system in which humanoid robots and CNC (computer numerical control) machine tools coordinate through “Physical AI,” which controls and optimises actions in the physical world

The system targets peripheral tasks that operators have previously handled directly around machine tools, such as setup, cleaning, tidying up, removing finished products, transport, inspection, and troubleshooting. By having humanoids, which can leverage human physical characteristics, take on these tasks, the aim is to replace a broad range of work.

On the economic front, the ability to curb large-scale line modifications and individual control design is drawing attention. If the time required for deployment can be shortened, it could become a realistic option for manufacturers seeking to advance automation while leveraging existing equipment. Amid simultaneous demands for more efficient capital investment and responses to labour shortages, its significance as a technology that lowers barriers to entry on the factory floor is not small.

Mitsubishi Electric plans to advance functionality and conduct demonstration experiments toward practical application in 2030. ■

Yamazaki Mazak and ABEJA to jointly develop physical AI implementation for machine tools

Machine tool giant Yamazaki Mazak and AI developer ABEJA announced on October 16, 2026, that they will begin joint development aimed at implementing physical AI on manufacturing floors. Leveraging ABEJA’s AI platform ABEJA Platform, the two companies will develop AI agents to optimise machining processes and production schedules, as well as build a robot behaviour learning environment. They aim to commercialise the technology by the end of fiscal 2028.

The two companies held a joint press conference in Nagoya on the same day. Yamazaki Mazak President Takatsugu Yamazaki said, “We highly value ABEJA’s technology that delivers stable ▸

operation and information protection. By combining Mazak's automation technology and expertise cultivated over many years, we aim to realise non-stop production."

ABEJA CEO Yosuke Okada said, "We want to leverage both companies' overseas bases to extend AI utilisation to manufacturing sites outside Japan as well."

Three pillars of joint development

The joint development will proceed on the premise of Human in the Loop, where humans and AI collaborate. The three pillars are as follows.

The first is the development of an AI agent responsible for optimising machining processes. It will automatically formulate and propose process designs, including machining methods, machining sequences, and cutting conditions tailored to the parts being machined. This will enable organisations to leverage process design know-how that has been accumulated as tacit knowledge by skilled technicians, leading to standardisation of work quality and shorter production lead times.

The second is the development of an AI agent responsible for optimising production schedules. Based on production plans, equipment operating status, parts inventory information, and on-site operational know-how, it will formulate and propose production schedules for machine tools and automation systems. The goal is to improve equipment utilisation rates by enabling rapid schedule revisions in response to sudden parts shortages or rush orders.

The third is the construction of a robot behaviour learning environment. From the collection and accumulation of operational data held by Yamazaki Mazak to AI model training, evaluation, and verification on actual machines, the companies will implement the entire pipeline consistently, aiming for automation and autonomy of robots and material handling equipment.

Intensifying competition in the machine tool market and the push for AI

The partnership comes against a backdrop of rapidly changing competitive dynamics in the machine tool market. As Chinese and South Korean manufacturers increase their presence, the market structure long dominated by Japan and Germany is being shaken. According to data from the German Machine Tool Builders' Association (VDW), China has overtaken Germany to become the world's largest exporter. Chinese machine tools are evolving their hardware technology while wielding low prices as a competitive weapon.

The Chinese government is promoting industrial applications of AI as a national strategy, and the National People's Congress has put forward an "AI Plus" strategy to apply AI across all industries. Japanese manufacturers have led in technology with high-precision numerical control (NC) machine tools, but they are now moving urgently to innovate Japanese technology by incorporating AI capabilities from startups.

Yamazaki Mazak is investing heavily in AI development and will invest approximately ¥16 billion (approximately $101.4 million) to build a new R&D facility near its headquarters in 2027. The new facility will include dedicated areas for joint development with research institutions and startups.

Diverging AI strategies among major Japanese machine tool makers

AI adoption efforts by major Japanese machine tool makers are diverging into two broad directions. Yamazaki Mazak has chosen to partner with ABEJA, an external AI specialist. Meanwhile, rival DMG Mori is reportedly exploring an independent approach leveraging its own proprietary data.

Cross-industry initiatives are also underway. Noetra, a startup launched in July 2026 to develop a Japanese-made AI platform, has received investment from major machine tool makers including Yamazaki Mazak, DMG Mori, and Fanuc.

In some cases, startups are taking the lead. Software developer Arum (Kanazawa City) is working with 20 companies including Kyocera to develop equipment using Arum's control systems for operating machine tools. The joint development initiative dubbed "Manufacturing AIX Avengers" includes participants such as Nidec Machine Tool and Kobe Steel, and is also advancing joint development of fully automatic cutting machines.

Yamazaki Mazak President Yamazaki said at the press conference, "Competition, including in development, has become unprecedentedly fierce, and competitors are increasing at a global level. What is needed going forward is comprehensive strength as a machine tool manufacturer." Whether collaboration between a long-established machine tool maker and a startup can help restore the competitiveness of Japanese manufacturing remains to be seen. The industry has entered a phase where AI utilisation capabilities will be put to the test.

ABEJA is an AI company headquartered in Minato Ward, Tokyo, with Yosuke Okada serving as Representative Director and CEO. Yamazaki Mazak was founded in 1919 and is headquartered in Oguchi-cho, Niwa-gun, Aichi Prefecture. Takatsugu Yamazaki serves as Representative Director and President.

For further details contact Hi-Tech Machine Tools on TEL: 011 608 0088 or visit www.hitech.co.za ■



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Mitutoyo unveils advanced scanning and touch-trigger probes for CMMs

Mitutoyo Corporation has announced the launch of two new coordinate measuring machine (CMM) probes designed to meet growing industry demands for higher accuracy, greater durability and improved measurement productivity. The company have introduced the MPP-002 small high-accuracy scanning probe and the MTP-002 small high-accuracy touch-trigger probe.

The new probes represent Mitutoyo's continued commitment to advancing precision measurement technology and supporting the future of manufacturing through innovative metrology solutions. In an official communication Mitutoyo state that the development of the MPP-002 and MTP-002 was driven by longstanding requests from CMM users seeking probes that combine high performance, exceptional measurement accuracy and long-term durability. Both products leverage Mitutoyo's proprietary technologies to deliver improved measurement capability while helping users reduce downtime and lower operating costs.

MPP-002: Compact scanning probe with high-speed accuracy

The new MPP-002 is a compact, high-accuracy scanning probe engineered to provide precise measurement performance and high-speed control. The probe incorporates Mitutoyo's proprietary sensing technology and patented structural design, enabling stable and highly accurate scanning measurements.

A key innovation of the MPP-002 is its internal structure, which employs independent detection springs for the XY and Z axes. This design significantly improves durability by reducing mechanical wear and minimising the likelihood of probe failures. As a result, manufacturers can benefit from increased machine availability, reduced maintenance requirements and lower overall running costs.

The probe also offers greater flexibility through its ability to accommodate a wide range of stylus lengths using a single probe body. This capability helps users reduce initial investment costs while maintaining versatility across different measurement applications.



MTP-002, a compact touch-trigger probe

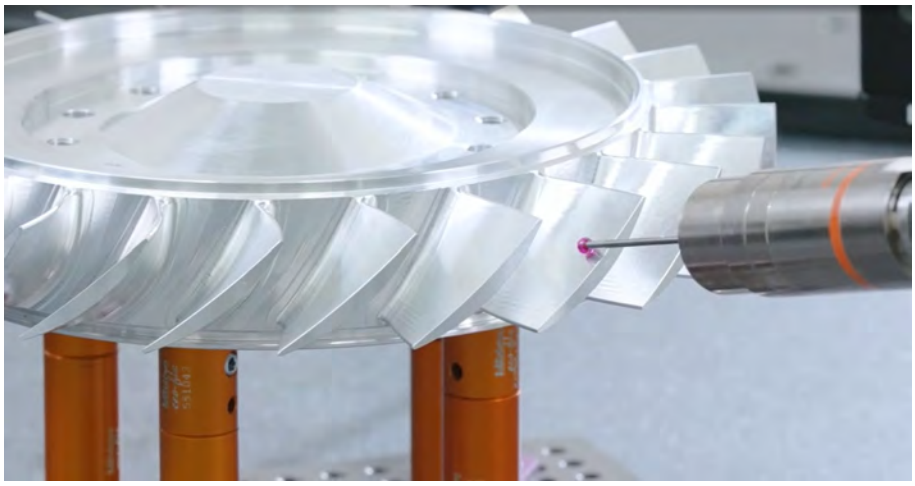
Alongside the scanning probe, Mitutoyo has introduced the MTP-002, a compact touch-trigger probe that combines high accuracy, durability and operational flexibility within an ultra-compact body measuring Ø13.5mm in diameter.

The MTP-002 achieves its performance through a combination of proprietary mechanical design and advanced signal-processing technology. The result is a touch-trigger probe capable of delivering reliable measurement performance even in demanding manufacturing environments.

One of the probe's most notable features is its software-based sensitivity adjustment capability. Traditionally, sensitivity settings often require hardware modifications at the probe or controller level. With the MTP-002, users can adjust sensitivity through software, making it easier to prevent false triggering when using long styli or operating in environments subject to significant external vibration.

The probe is also compatible with automatic stylus change systems, enabling fully automated measurement routines with seamless exchange of styli of different lengths. This capability contributes to improved productivity and supports unattended inspection processes.

Contact RGC Engineering on TEL: 011 887 0800 or alternatively visit www.rgcengineering.co.za for further details. ■



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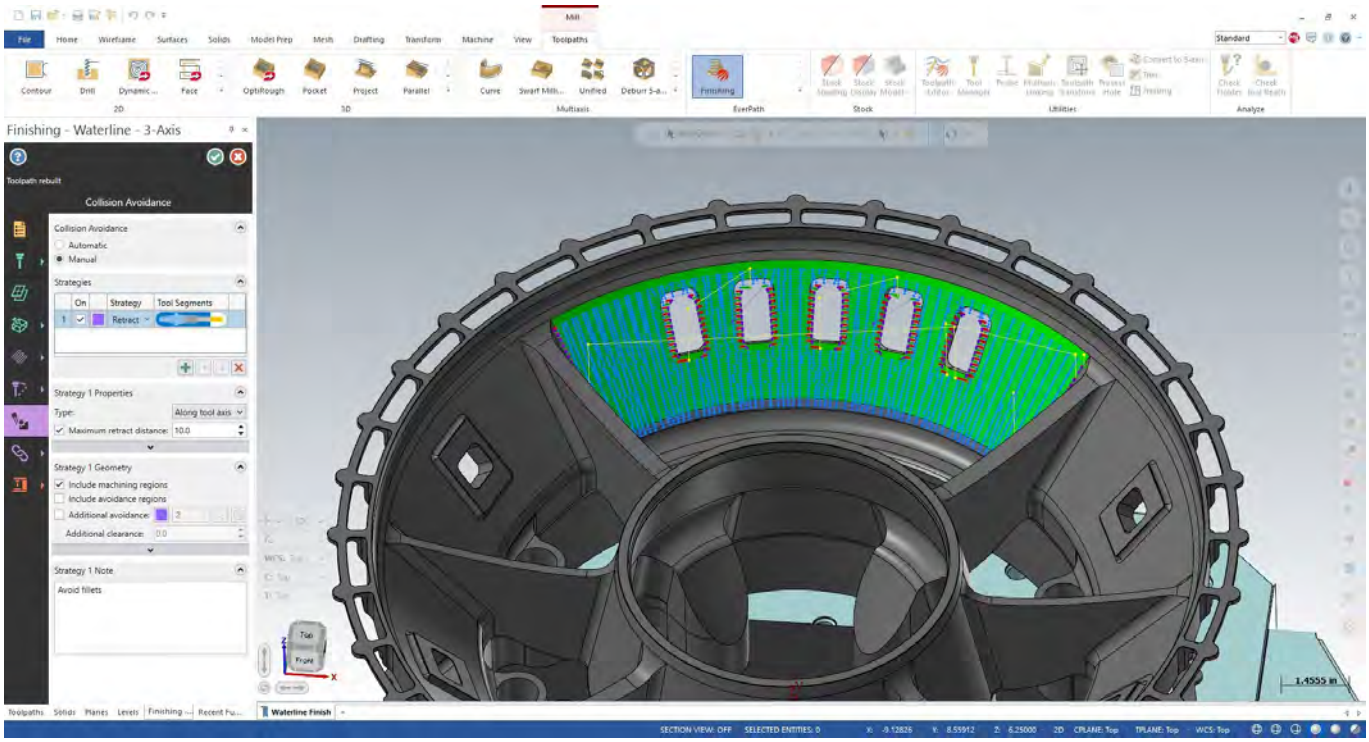
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Meet EverPath –
Mastercam call it CAM 2.0



For decades, CNC programmers using CAM software have worked within a familiar reality: every toolpath type has its own interface. Quoting takes too long. Programming takes even longer. Bringing a new hire up to full speed can stretch across months. And the difference between what veteran programmers know and what traditional toolpath programming software makes easy to do often feels wider than it should.

For many experienced CNC programmers, toolpath editing has always been a tug-of-war between precision and time. You know exactly what needs to change: a handful of passes trimmed back, a feed rate tweak in a tight corner, or a quick correction to a tool axis, but the fix rarely matches the effort. Historically, your choices have been limited: rebuild the operation, try to force a workaround, or accept a compromise that's "good enough" but not ideal.

These challenges are not new. They have been part of manufacturing reality for years.

Mastercam's EverPath Technology is the company's next-generation CAM platform, built from the ground up to rethink how toolpaths are created, edited, and validated. This is not a UI refresh. It is not a collection of incremental features. EverPath Technology represents a fundamental shift in the CNC programming experience, designed to help shops work faster, train better, and deliver more with the team they already have.

"We've taken everything we've learned over the last forty years in the industry and have rebuilt CAM from the ground up with this technology."

Mastercam EverPath lets you switch toolpaths from three-axis to five-axis instantaneously, generate results in real time, and get superior surface finish straight off the machine.

Add GPU-accelerated simulation running up to 10x faster, an AI Co-pilot that drives the software by voice, and a growing ecosystem of partners bringing AI quoting and live inspection directly inside the platform – and this is Mastercam's biggest leap in years.

EverPath Technology introduces a unified, color-coded workflow that works the same way for every toolpath: 2D, 3D, or multi-axis. No matter what you are cutting, the experience is consistent. Programmers do not have to learn a new interface for every strategy; they just follow the path.

For further details contact Mecad Manufacturing on TEL: 012 645 4300 or visit www.mecadmfg.co.za ■

One tool. Multiple applications.
Greater production efficiency.



The Maykestag Turbo-Twister is designed to meet the demands of modern CNC manufacturing through high-speed trochoidal milling. Its robust core, optimised helix geometry and integrated chip breakers work together to support reduced vibration and extended tool life, efficient chip evacuation and ▶

reduced chip accumulation, reliable machining, including in automated production, versatility across a wide range of materials and roughing and finishing with one tool solution.

The result? Greater process flexibility, fewer tool changes and the potential to reduce tooling costs while improving productivity.

The Maykestag Turbo-Twister is a solid-carbide trochoidal end mill developed as an all-round milling cutter for a variety of material groups. Its five-flute cutting geometry combines a 40° VARIO helix with unequal helix pitch and two chip breakers to provide controlled cutting during demanding milling operations. The long-series 3xD design provides increased axial cutting capability, while the SUPRADUR coating supports dependable performance under professional machining conditions. Available in sizes from 3mm to 20mm.

What is a trochoidal end mill? A trochoidal end mill is designed for machining strategies where the cutter follows overlapping curved tool paths while maintaining controlled radial engagement with the workpiece. This machining method can allow a greater portion of the cutting length to be used while controlling cutting forces and chip formation. The Turbo-Twister combines this capability with a five-flute, variable-helix design for productive machining across a wide range of suitable materials.

In the last ten years, trochoidal milling has come on leaps and bounds thanks to advanced software and computing power. In trochoidal milling, the tool follows an elliptical path in order to keep cutting forces constant and minimise the load on the milling cutter, which has a positive effect on tool life.

This milling method is particularly suitable for machining deep slots and shoulders. Due to the low radial depth of cut and the short cutting time per tooth, trochoidal milling produces fewer chips per revolution. This enables the use of more cutting edges and ensures efficient chip removal. Trochoidal milling offers significant advantages in terms of tool life, machining time and load, particularly when machining hardened materials or titanium alloys.

In manufacturing, performance is about more than cutting speed. It's about achieving a stable, repeatable and cost-effective process.

For further details contact Maykestag South Africa on TEL: 011 314 7711 or visit www.vermontsales.co.za ■



New range of deep-hole drills extends the versatile, reliable performance of Sandvik Coromant CoroDrill® Dura 462 to applications up to 30×D

Versatile drilling portfolio expands with deep-hole performance.



Manufacturers are under pressure to reduce production costs while maintaining component quality and process reliability across a diverse mix of materials and applications. To help simplify drilling operations, Sandvik Coromant has expanded its CoroDrill® Dura 462 family with a new range of deep-hole solid carbide drills, broadening the platform's capabilities from micro and short-hole drilling to applications up to 30×D and enabling more drilling needs to be covered by a single drill family.

Across industries such as general engineering, automotive, aerospace, oil and gas and pump and valve, manufacturers are looking for ways to do more with fewer tools. Reducing tooling inventories, simplifying tool selection and increasing machine utilisation have become key priorities as companies seek to improve efficiency while controlling costs. At the same time, reliability remains critical, particularly when drilling deep holes where tool stability, precision and chip control can directly affect productivity and profitability.

The new CoroDrill® Dura 462 deep-hole drill has been developed specifically to address these challenges. Designed for reliable multi-material drilling, it combines robust geometry, grade X2BM with Zertivo® 2.0 PVD coating and a micro-grained carbide substrate to deliver high performance across a broad range of applications. The new assortment includes drill lengths from 12×D to 30×D and complements the existing CoroDrill® Dura 462 portfolio, providing manufacturers with a consistent drilling solution from micro holes to deep holes.

A key focus during development was process reliability. Deep-hole drilling presents several challenges, including positional accuracy, stress and thrust force, and chip evacuation. To overcome these issues, the drill features an optimised deep-hole geometry with refined flute design, offset double margins, double gashes, blended root radii and a 135° point angle. Together, these features help improve stability, reduce cutting forces, enhance hole quality and support longer tool life.



"What we hear clearly from customers is that process security remains one of their top priorities. At the same time, many manufacturers aren't looking for an optimised tool for a single application. They want one solution that delivers reliable results across a wide range of materials and conditions. The new CoroDrill® Dura 462 deep-hole drill is designed to meet those expectations," said James Thorpe, Global Product Manager at Sandvik Coromant.

In addition to improving process security, CoroDrill® Dura 462 delivers proven productivity gains. In customer field trials where the deep-hole drill was tested against competitor tools, it achieved an average tool life increase of 45% while boosting productivity by 25%. These gains help manufacturers reduce cost per hole while maintaining consistent drilling performance across multiple materials.

The new deep-hole drill also helps simplify inventory planning. For applications above 15×D, manufacturers are advised to use a corresponding CoroDrill® Dura 462 short-hole drill with a depth of 3 or 5×D to create the pilot hole, eliminating the need for dedicated pilot drills. By aligning deep-hole and short-hole drill diameters within the same product family, Sandvik Coromant enables a more streamlined drilling strategy while reducing tooling complexity.

Sustainability and cost of ownership were also key considerations during development. The drill has been designed with reconditioning in mind, allowing multiple reconditioning cycles while maintaining original performance and cutting diameter. Together with the extended tool life delivered by the geometry, coating and substrate, this helps manufacturers reduce tooling consumption, lower costs and make more efficient use of resources.

"Every design decision behind CoroDrill® Dura 462 is rooted in practical machining realities "With this latest expansion, manufacturers can now tackle everything from micro holes and short holes to deep-hole applications using one trusted drilling family. That means fewer tooling decisions, reduced complexity and greater confidence in every drilling operation," said Cory Carpenter, Global Product and Digital Application Specialist at Sandvik Coromant.

Contact Sandvik Coromant on TEL: 010 500 2295 or visit www.sandvik.coromant.com for further details. ■

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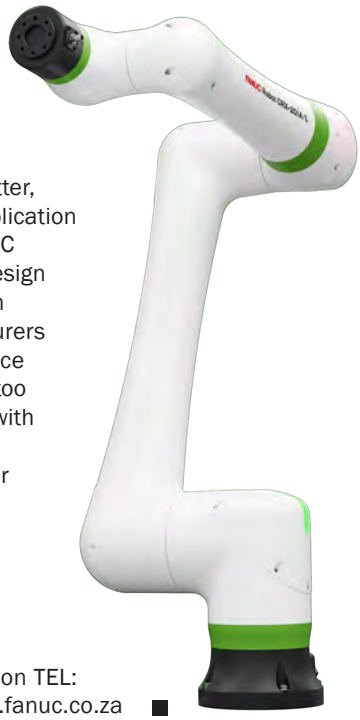


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Portable automation arrives with
FANUC ultra-light CRX-3iA Cobot



CRX-3*i*A lightweight cobot offers a portable way to automate jobs such as welding, part handling, small assembly, screw driving, tool positioning and inspection.

The CRX-3*i*A Collaborative Robot is an ultra-lightweight collaborative robot designed for manufacturers who need fast, flexible automation. Weighing just 11kg and offering a 692mm reach, the CRX 3*i*A can be carried with one hand and installed in tight spaces, making it an ideal solution for shipbuilding, welding, assembly, and other light duty applications.

The CRX 3*i*A's design makes it easy to relocate between narrow workspaces and adjust layouts effortlessly. The robot automatically detects its installation angle and can be combined with a magnetic base, allowing installation in any orientation and eliminating the need for bolt fastening. After relocation, operators can simply touch a wall with the torch wire, allowing the robot to automatically recognise its position and begin welding without re teaching. Its 3kg payload supports both a welding torch and welding sensor simultaneously, enabling automatic weld point detection and path generation. The CRX Series of cobots come with 8 years zero maintenance with the proven industrial reliability that FANUC customers expect.

"The CRX-3*i*A puts collaborative automation in the hands of operators – literally," explains Eric Potter, general manager, robot application engineering segment, FANUC America. "It's lightweight design makes it easy to redeploy in minutes, helping manufacturers automate jobs that were once too small, too scattered or too costly to justify. Combined with new capabilities across the CRX line-up, we're giving our customers more ways to apply collaborative robots safely and productively across their entire operation."

For further information contact Fanuc South Africa on TEL: 011 392 3610 or visit www.fanuc.co.za ■

TaeguTec is expanding
its CUT-SFEED and WIN-CUT product lines

TaeguTec is expanding its CUT-SFEED and WIN-CUT product lines, which are optimised for parting and deep-grooving applications.

The CUT-SFEED line features a unique insert design that provides high rigidity and exceptional clamping stability, delivering outstanding performance in parting operations.



In addition, the WIN-CUT line enhances productivity and tool life through the use of a reinforced triangular blade with three insert pockets and a dedicated clamping block for secure insert retention.

Parting and deep grooving operations demand stability, precision, and reliability. That's why TaeguTec has expanded its WIN-CUT and CUT-SFEED product lines, delivering greater versatility, wider insert options, and enhanced performance for today's demanding machining environments.

Featuring highly rigid insert designs, secure clamping systems, and expanded width ranges, previously available from 1.6mm to 3mm, from 1.4mm to 6mm, the new line-up helps manufacturers boost productivity, extend tool life, and tackle a wider range of applications with confidence. Whether you're cutting thin components or performing heavy-duty deep-grooving operations, the latest WIN-CUT and CUT-SFEED solutions are engineered to keep your production moving forward.

Furthermore, left and right-hand inserts with a 6-degree lead angle are being added, and the triangular blade width is being expanded to 5mm, providing an even more powerful solution for parting applications.

Contact TaeguTec SA on TEL: 011 362 1500 or visit www.taegutec.com for more information. ■

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Okuma launches MB-100V
for large-part machining



Okuma has expanded its vertical machining centre line-up with the launch of the MB-100V, a large-format machine designed to improve productivity, machining accuracy and ease of operation in the production of large precision components.

As the largest model in the company's MB-V Series, the MB-100V features a maximum table size of 3 000mm by 1 000mm and is aimed at industries requiring high-accuracy machining of large workpieces, including semiconductor manufacturing equipment, construction and agricultural machinery, industrial equipment and die and mould applications.

The machine combines Okuma's double-column machining centre expertise with the thermal stability and intelligent machining technologies developed through the MB-V Series.

The MB-100V has been designed to address several ongoing manufacturing challenges, including labour shortages, workforce mobility and the growing need to maintain machining accuracy regardless of operator experience levels.

One of the machine's major focuses is reducing production downtime during long machining runs. The MB-100V incorporates Okuma's Crossrail Shower Cleaning system, which flushes chips away from fixtures, workpieces and the machine interior to improve uptime and reduce manual cleaning requirements.

The machine also includes AI-based machine status monitoring designed to help detect potential issues before unexpected breakdowns occur.

Thermal stability is another major feature. The MB-100V maintains thermal deformation within a maximum of 7µm, even under ambient temperature fluctuations of up to 8°C. Okuma's Accuracy Stability Diagnostic Function and 3D Calibration system also allow accuracy deterioration caused by installation-level changes to be detected and corrected semi-automatically.

To improve workability during large-part machining, the machine includes a rear-side service door and sub-operation panel as standard, allowing operators to carry out setup work more safely and efficiently.

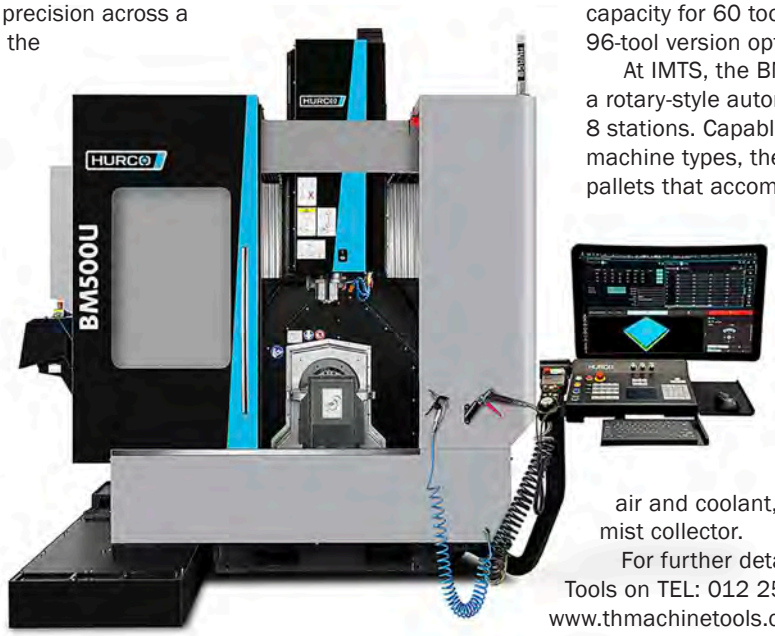
Despite its large machining area, the MB-100V has been designed with a compact footprint. Okuma said the double-column structure expands the machining area by 16 per cent while reducing installation space requirements by 32 per cent compared with the previous model.

For further details contact Spectrum Machine Tools Africa on TEL: 082 448 4991, 064 396 1273 or 079 335 2769. ■

Hurco launches BM500U 5-axis
machining center

Hurco Companies has launched its BM500U 5-axis machining center at the recent IMTS 2026 exhibition. Capable of maximising precision across a diverse mix of complex parts, the BM500U uses an integrated trunnion table design that helps ensure accuracy and allows for increased Z-axis clearance. With an exceptional work-envelope-to-floor-space ratio, the machine includes a 500mm rotary tilt table and XYZ axis travels of 850mm by 500mm by 500mm.

The BM500U provides the capability for 5-axis simultaneous and 3+2 5-axis machining. A 15 000rpm, 11kW BIG Plus direct drive spindle offers robust material removal rates. Precision and accuracy are enabled by 0.050µm-resolution absolute linear encoders. To further increase flexibility, an automatic tool changer provides capacity for 60 tools as standard, with a 96-tool version optionally available.



At IMTS, the BM500U was paired with a rotary-style automatic pallet changer with 8 stations. Capable of serving a range of machine types, the system uses 320mm pallets that accommodate parts up to 450mm in diameter and 400mm in height.

The BM500U also contains a broad range of standard features designed to boost productivity and flexibility, including linear scales, a spindle cooler, through-spindle air and coolant, flood coolant, and an air mist collector.

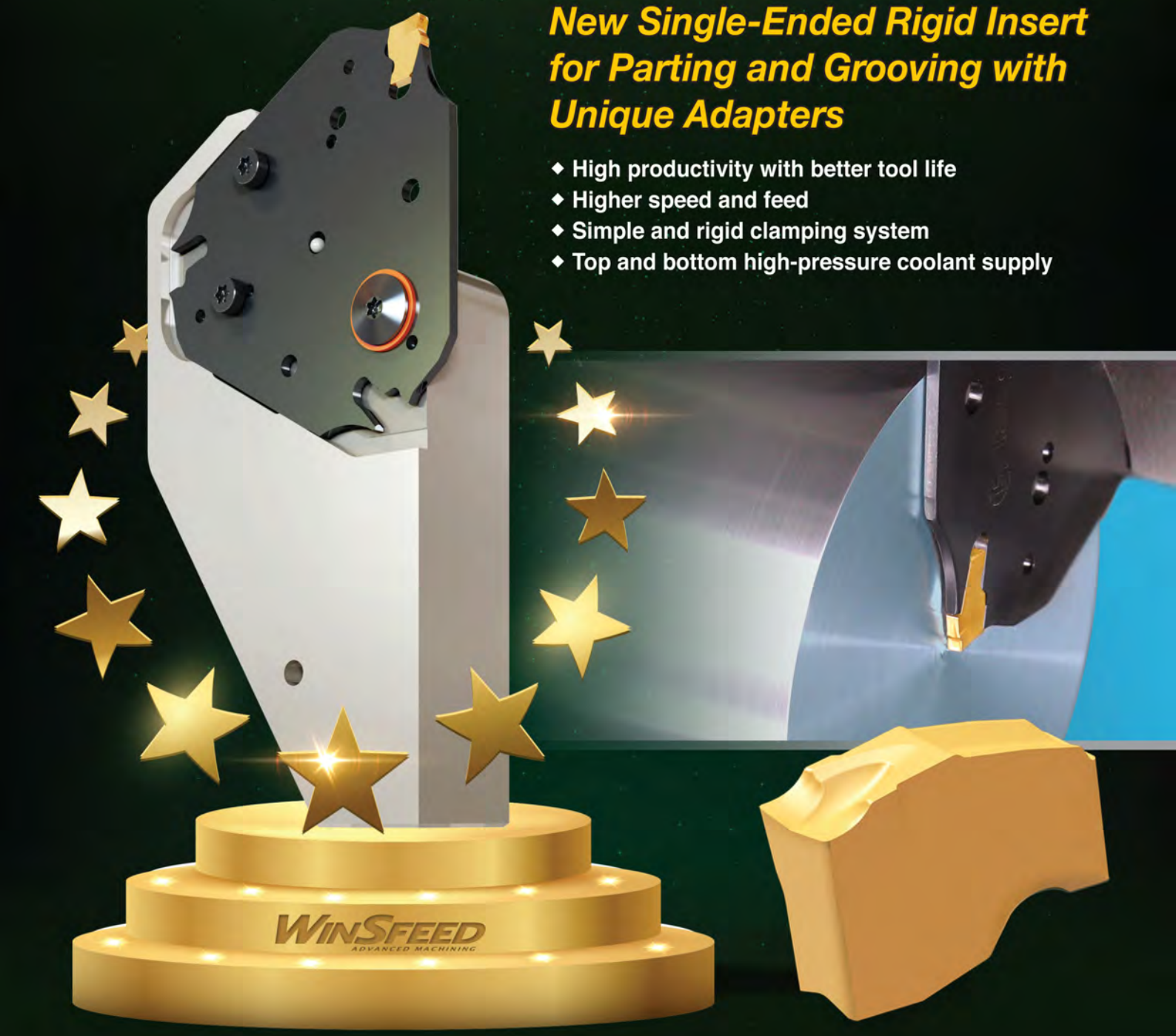
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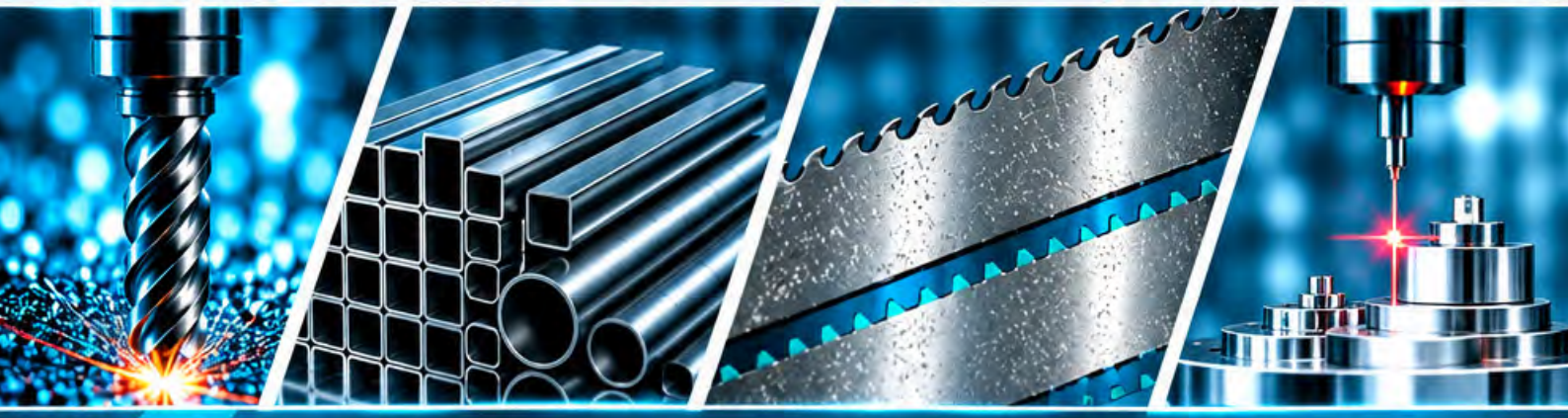
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