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Editor’s Comment

Viewpoint

Industry News
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New forged train wheel manufacturer; The Dished End Company;
WD Hearn; Chinese car plant in South Africa; Automotive policy;
Yaskawa celebrates 100th anniversary; Denel; Alstom;
SA Festival of Motoring; Spectra Carbide Tooling;
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Shopfront Focus
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Better Production
Why manufacturers should get ISO-certified

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Haas Automation; Trumpf’s 2D laser cutting;
Mitsubishi; Amada; Kitamura; Tungaloy
A challenging year ahead

We all like to start off a new year with a positive disposition, full of fresh ideas and high energy levels. Time off over the holiday period was certainly welcome, and now that we are experiencing some respite in certain parts of the country from the hot weather and drought conditions that we have experienced over the last few months, albeit a small amount of rain, we should all be smiling.

However, for the majority that only returned to work on the 11th January 2016 you would have been greeted with the news that overnight the South African rand had plunged as much as 9%, the most since October 2008, to R17.9169 per US dollar. It did recover later but this was still the biggest decline among 31 emerging-market and major currencies. The South African currency, which dropped 25% last year, had losses accelerated in December 2015 after President Jacob Zuma unexpectedly fired his finance minister only to alter the decision days later. One wonders why he has not been recalled especially on the back of his remarks that the reaction to his decision to sack Nhlanhla Nene as finance minister in December had been an exaggeration.

When one also considers that when he took office in 2009 the exchange rate was more or less between R8.20 and R8.40 to the US Dollar (R3.55 in 1994) it is not surprising that you could easily slip into depression. The President himself is not the sole reason for this decline, but during his watch the Rand has seen the biggest devaluation ever. One does not want to get into a political debate because there are many different viewpoints, but this is a sad legacy to leave behind and we assume that President Zuma will hand over the reigns after his second term. Although South Africa’s Constitution limits the president to a maximum of two terms, the ANC’s constitution has no term limits for its president.

Nevertheless there are still several positive stories in this issue. The Cover Story shows how we, as South Africans, can be players when it comes to major sporting events inspired by creative engineering in the automotive field.

This is followed by the proposed R1.8 billion investment in the ‘greenfield’ forged train wheel manufacturing plant. The project will also create the opportunity to export forged wheels out of South Africa, and with the current exchange rate this should make the manufacturer’s product very competitive, as it will do for most exporters.

There is also the story on ‘New contracts to boost Denel’s armoured vehicle business’, which is very encouraging considering where the SOE was five or so years ago. The not so encouraging story is about the Paramount Group entering into a R1 billion deal with the Kazakhstan government for the manufacture of armoured vehicles in that country. As the Group’s executive chairman Ivor Ichikowitz said “it was very difficult to raise capital in South Africa for these kind of investments. Paramount was therefore raising finance internationally because South Africa had no structures that allowed the sector to raise capital for the industry in the domestic market.”

The year ahead could be both very interesting and challenging, especially if you believe the analysts who are predicting that the Rand could be 19 and maybe even 20 to the US dollar by the end of 2016.
Cutting close to home

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What benefits can a company derive from collaborating with editors in developing informative and engaging editorial content? The rewards are many, both tangible and intangible.

I recently met with a group of application/sales engineers from a major cutting tool manufacturer. Although this company’s tools are marketed worldwide, these were U.S. regional representatives who’ve spent years building deep, abiding relationships with customers in their territories. The company approached me at Gear Expo about attending one of their meetings to explain how editorial content is developed for our various magazines. I’d like to share some of the highlights of our conversation with you.

The editors at Gardner Business Media — publisher of Modern Machine Shop, Modern Machine Shop Mexico, Production Machining and the newly launched Additive Manufacturing, among many other titles — rely on a network of industry contacts to identify companies at the leading edge of advanced manufacturing. We want to learn about the challenges they’ve faced, and the solutions they developed to overcome them, often with the assistance of their machine and cutting tool suppliers. That’s what makes these field representatives such a great resource in scouting out solid content.

During our conversation, we sought to answer a reasonable question: What does a machine shop stand to gain by cooperating with us on a feature? Here are a few observations:

- Showcasing a company’s machining expertise can help attract new customers and deepen relationships with existing customers;
- Exhibiting creativity in overcoming challenges adds to a company’s reputation;
- Depicting an environment featuring the latest technologies supports recruitment;
- Machine shops specializing in contract work can include media coverage in periodic reviews performed by their customers.

To this list of tangible benefits I would add a number of “intangibles.” One is how valuable our subjects generally find the interview experience, in terms of actually taking the time to explain the thought process behind certain decisions. A critical examination of an automated cell, or a chip disposal system, or how measurements are performed — in the lab, on the floor, both... why? - can lead to great ideas for further improvements, and at a moment when you least expect it. I have seen this happen time and again. I’ve also been able to provide helpful suggestions to current conundrums based on things I’ve learned working on past assignments.

More than anything, I wanted to convey what an organic process publishing can be. Consider the common press release. From that brief document, a creative Gardner editor might derive a blog post, a column, a case study, a new technology review, a Facebook entry or even the seed for an upcoming multi-page feature. In addition, articles are posted to our online archives as a searchable resource, enhancing a company’s reputation for years to come.

The key, of course, is communication. Some companies have valid reasons for keeping their operations behind curtains, but others realize that informing readers of new capabilities — “owning” it, in other words - actually supports a healthy return on capital investments.

Eds comment: Editors and journalists at business to business publications, such as those at Gardner Business Media, take great care in constructing stories that will interest their readers. We virtually put ourselves in the mind and eyes of the reader so as not to send out a boring message. Editorial styles of each individual are different and are built on years of experience. However the common goal is to be independent, credible and not be influenced by marketing and public relations staff who would rather see a sales pitch published.
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When the record shows that your lead entry has attained third place in its Dakar debut in 2012, went one better in 2013 with a second place, attained a fourth place in 2014, and another second place in the 2015 edition of the world’s most grueling motorsport event, you certainly have motivations to reach the pinnacle of the sport. With former Dakar winner South African Giniel de Villiers behind the wheel of the lead car your ambitions are even higher.

The Toyota Gazoo Racing SA team had De Villiers and his long-serving German navigator, Dirk von Zitzewitz in car number 301 as crew, South African Cross-Country champions Leeroy Poulter and navigator Rob Howie in car number 316, and Saudi racing sensation Yazeed Al Rajhi and German navigator Timo Gottschalk in car number 305.

The race, often billed as the toughest motorsport event in the world, took place from January 2nd to 16th in Argentina and Bolivia and this year’s edition was no different. The race saw the three Toyota Hilux vehicles from South Africa take part under the new team name of Toyota Gazoo Racing SA.

The Dakar-specification Toyota Hilux has seen significant developments over the last five years. The first version was essentially an evolution of the cross-country race bakkie, developed for the 2011 South African Off-Road Championship (as it was then known). Since then, the vehicle has seen constant evolution thanks to an extended testing programme and technological advances. The result is one of the most successful petrol-powered vehicles ever to take part in the Dakar Rally.
Visually, the new vehicle has seen the biggest change in its five-year history. The new body shell is designed to reflect the next generation Toyota Hilux, though in the case of the race vehicle the panels are rendered in ultra-lightweight composites, keeping the overall weight down as much as possible. Together with a striking new livery, the 2016 Dakar Toyota Hilux is an imposing beast of a machine.

But while the bodywork and livery might be the easiest changes to spot, the biggest change lies under the bonnet. This year the team fielded the all-new Lexus RC-F V8 engine — the most powerful 2UR-series engine ever built.

Upgrades

At the heart of the race version of the Toyota Hilux is the powerful and flexible Lexus IS-F V8 engine. In celebration of its racing success, this is the same engine that does duty in the Toyota Hilux Racing Experience vehicle. With more than 335 kW of power available at 6,000 rpm, this is most likely the most powerful Toyota Hilux ever built. However, the Hilux Racing Experience is much more than just a Toyota Hilux with a big engine — it is a finely crafted machine that embraces a host of technology used in Toyota SA Motorsport’s Hilux race vehicles.

The engine management system, for instance, has been replaced with a Pectel Cosworth system, making the most of the engine’s direct fuel injection. The sump was modified to make room for the production Hilux front differential that was equipped with a new gear ratio. The rear diff received similar treatment, and the inlet manifold was modified to Dakar spec, effectively boosting the torque characteristics of the engine.

A new alternator and power steering pump was fitted, together with a new air conditioning compressor. The entire wiring harness was upgraded to Dakar spec, a full tubular exhaust system was installed, and modifications made to the transmission’s bell housing, in order to mate the gearbox to the IS-F engine.

“So the modifications are pretty comprehensive,” says Glyn Hall. “But you can’t just add all that power and toys without ensuring that the vehicle can handle it.”

As such, the suspension system was also upgraded, with fully adjustable front and rear dampers, and the entire vehicle was lowered by 50mm over the production version. The steering ratio was increased for faster movement and large 18x9” wheels were fitted.

“All of this comes together with the AIM electronic dashboard, which is fully integrated with the Pectel engine management system and provides the driver with a vast array of engine information in true motorsport fashion.”

“The result is a well-balanced bakkie (South African description for a small truck) that offers supreme performance without compromising handling — in essence, a road-going Toyota Hilux injected with motorsport DNA, which offers the driver the very essence of Toyota SA Motorsport’s race vehicles.”

Manufacturing

Years of dedication and planning go into the
manufacture of the Dakar-specification Toyota Hilux and Edgecam CAM software plays a pivotal role in swiftly producing high precision parts for these top-performing motorsport cars, developed in the high-tech ‘garage’ of Hallspeed. This is located on the perimeter of the famous South African Kyalami Race Track that is currently undergoing a R100 million overhaul in a bid to attract top international motor racing series back to South Africa.

“Each car must have between 4000 and 5000 components that make up the finished vehicle. Approximately 80% of these components are manufactured inhouse on our CNC lathe and machining centre with the balance, which are mainly specialised components, outsourced to local machine shops and a few that are based internationally. For example, a camwheel and pinion for the axels is manufactured by a South African who is now based in the UK,” said Hall who is also the MD of Hallspeed.

“With so many components, and a number of them highly complex components, being manufactured by ourselves, we need reliable software that can swiftly manufacture the components on our CNC machines. We finished pre-race testing in temperatures that soared to 45 degrees under the Kalahari sun in the desert north of the town of Upington in the Northern Cape Province of South Africa.”

“The purpose of the final test session was to sign off on a number of suspension setups and smaller details, and to lock down the configuration of the latest generation Toyota Hilux for the 2016 Dakar.”

“Not only did the race vehicles perform as expected, but they also showed their toughness by completing lap after lap of the challenging test route that comprised fast, flat sections, rocky jumps, and soft, sandy dunes — the perfect combination to accurately emulate the conditions found on the Dakar Rally.”

“Even so, we kept working and refining things until the flag dropped for the start of Stage One. This is where it is important to have software such as Edgecam. We have had a relationship with their South African distributors Stillam CNC Programming Solutions since 2006 and they have been very helpful in providing us with the latest version as it is released.”

“By their very nature, racing cars are never really finished and components always need to be modified. Designs are created inhouse and the solid model imported seamlessly into Edgecam. This allows us to accurately visualise the part, apply material, analyse it, and decide what cutting tools we’re going to use and which machine tool we’ll programme it for. Edgecam helped us accelerate our sign-off process for the race.”

“All our metal components are machined from block in special aluminium and steels that not only provide strength but reduce weight. Only the engine block of the 5 litre engine is supplied by Toyota Motor Corporation in Japan. The rest is made up by ourselves.”

“An interesting fact is that the race version of the Toyota Hilux will use 100 litres of petrol per 100 kilometres in sand racing conditions and 55 litres per 100 kilometres in Dakar Rally simulated conditions, whereas the road-going Toyota Hilux can average out at about 4,5 litres per 100 kilometres.”

“Seven tons of components were shipped to Buenos Aires and a further two tons were airfreighted, along with the cars, on the 8th of December 2015. Essentially we took spares and components that could make up between another three to four vehicles. Experience tells us that it is not easy to get a specially designed component manufactured in Argentina and Bolivia.”

“We took 28 staff this time around, which included management, support staff, mechanics and engineers. Each car had four dedicated mechanics and additionally there was one engine specialist, one sub-assembly specialist and two engineers that took care of all three entries.”

“It is not a cheap exercise. Each entry costs Euro 3000, each support vehicle Euro 2500 and Euro 10 000 per staff member involved. This is over and above the other logistical costs involved.”

2016 Dakar route
The Argentine capital of Buenos Aires played host to the start of the 2016 Dakar, on January 2nd, 2016. This was followed by 13 tough stages, stretching away from Buenos Aires and into Bolivia, before turning southwards again to the finish in the Argentine city of Rosario on January 16th, 2016.

The 2016 route was changed as a result of the country of Peru withdrawing from the race. This meant that the bulk of the Dakar took place in Argentina this time, though the stages on the high plains of Bolivia (altiplano) added the element of extreme altitude to this edition of the race. “The Dakar remains an amazingly tough race. There are many surprises along the way, and winning it is never easy. With that said, the latest evolution of our race Toyota Hilux, together with a highly talented and motivated crew, certainly gave us a great shot at it. But if there’s one thing you can count on at Dakar, it is that there’s no such thing as a ‘sure thing’,“ concluded Hall.

The Dakar Rally is one of the greatest races on earth. It all started in 1977, when the founder of the race, Frenchman Thierry Sabine, got lost in the Ténéré Desert while competing in the Abidjan-Nice Rally. By the following year, the Paris-Dakar was born, and 182 vehicles competed in the first event. 600 competitors entered the 2015 Dakar Rally.

A total of 42 different Toyota vehicles competed in the car category of the 2016 Dakar Rally. While most of them were Toyota Hilux race vehicles, developed and manufactured by Toyota Motorsport South Africa, only the three vehicles entered by Toyota Gazoo Racing SA were part of the official factory entry.
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Stillam provided the latest software for the development of the Toyota Gazoo Racing SA cars — Edgecam’s new high speed all-format 3D viewer — PartXplore

The latest release of Edgecam software includes a new high speed 3D viewer which directly displays and evaluates 3D CAD files without the need for the original CAD application.

Edgecam PartXplore has been created to efficiently import and analyse all file types and sizes at high speed. It often takes less than half the time to open a file compared to the original CAD application.

Users can build virtual unified prototypes or 3D models imported from a wide range of file formats, including Catia, Parasolid, SolidWorks, Solid Edge, STEP, IGES and many more.

The software saves the native CAD data in its own lightweight format, meaning manufacturers can carry out tasks such as calculating surface areas and volumes, and measuring thickness, dimensions and angles without requiring the original CAD information.

And it makes sharing files extremely simple, as users can transmit 3D parts and assemblies to their own subcontractors, customers and other project members via the internet with a standalone, lightweight application. The recipient can also immediately display and work on the model without requiring the original CAD data.

**Measurements:** Even staff who are not CAD experts can quickly master the software’s wide range of 2D and 3D measurement functions, by using predefined selection modes such as points, 2D entities, planes and surfaces. Measurements can be automatically included as entities and anchored to characteristic points of the part. Entity labels automatically pivot to remain visible at all times.

Specialist functions allow more experienced CAD users to recover point clusters from 3D measuring equipment or machine probes, and to quickly check revisions against the original CAD geometry. Point files can also be generated easily for sending to 3D measuring equipment and NC machines.

**Annotation:** Ideas, observations, instructions and change requests can be conveyed quickly and easily. The need for 2D drawings is minimised, as users add dimensional and geometric measurements, annotations and labels directly to the 3D model.

**Analyse:** A full range of specialist analysis tools assist with quotes, diagnostics, assembly notes, and preparing 3D models. Much of the analysis functionality is normally only associated with more expensive CAD solutions.

The inside of parts and assemblies can be explored with high performance sectioning; the section plane rotated, panned or following a guide curve, simply by mouse clicks.

Curvature radius and plane face analysis is a valuable tool for giving fast cost and production times. And drafts and undercuts can be calculated and displayed extremely quickly, even on large components.

**Animation:** Animations are set up by initiating basic movements such as translation, rotation or following a guide curve.

**Collision detection:** Dynamic collision analysis ensures real-time control of mechanism interoperability or process control. Short videos can also be generated.

**Documentation:** Screen captures illustrate technical documents and assembly sheets...and a large number of images can be readily managed and distributed.

PartXplore Product Manager Massimo Vergerio says: “PartXplore’s intuitive, easy-to-use interface enables novices and experienced users alike to explore any type of 2D/3D CAD file. It gives access to the full set of core functions to ensure everyone can be up and running with the software instantly. This new high speed collaborative viewer makes it easy to visualise analyse and share files without needing access to the original CAD data.”

For further details contact Stillam CNC Programming Solutions on TEL: +27 (0) 11 663 2600 or visit www.stillam.com or www.edgecam.com
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Anticipation builds for Machine Tools Africa 2017

Exhibition space is at a premium with 62.9% already booked and reserved.

Nasrec Expo Centre, Johannesburg will be the venue for metalworking suppliers and manufacturing companies to exhibit their products from 9 to 12 May 2017.

Anticipation levels are already building despite there still being 16 months to go before the doors open for Machine Tools Africa 2017, South Africa’s premier metalworking supplier and manufacturing technologies event.

“We already have 62.9% of the exhibition space in halls 6 and 7 booked and reserved. This is a remarkable response as the announcement of the exhibition was only made four months ago. It has exceeded our expectations and the committee of the MTMA (Machine Tool Merchants Association of Southern Africa), the association behind the concept to resurrect the stand-alone machine tool and related industry exhibition after an absence of 20 years, and we are encouraged by the interest shown,” said Hans-Peter Neth, current Chairman of the MTMA.

“As previously said it is the intention to make it an all encompassing exhibition for the niche, but very important, area of industry that we operate in. We will be encouraging all the related suppliers and manufacturers to participate so that we put on a united and professional front. This includes tooling, software, metrology, additive manufacturing, foundries and many others.”

Machine Tools Africa 2017 will be unique in the sense that it will showcase live working machinery including milling, turning, metrology, tooling, laser cutting and other sheet metal and plate operations, to name but a few. The exhibition will also bring together the industry’s finest manufacturers across a range of technologies.

“In a sense, the exhibition will offer visitors the opportunity to view the latest developments in our industry from design concept to finished product. Whether you are planning to purchase capital equipment to manufacture your own components or products or you are interested to source the very same, there will be an exhibitor to help you with your solution,” continued Hans-Peter Neth.

“The Nasrec Expo Centre has a number of other halls available for us to use, and these will be opened up for exhibition space as the demand grows.”

Visitors to Machine Tools Africa 2017 will include all those involved in machine tools across various sectors including general mechanics, machine tools, mining, manufacturing, automotive, metallurgy, paper/pulp, research and engineering, aeronautics, aerospace, railways, energy, electronic and IT.

A series of free-to-attend technical seminars co-located with Machine Tools Africa 2017 will enhance the visitor experience and add value to the programme.

Machine Tools Africa 2017 has all the hallmarks of being a fantastic showcase for South Africa’s advanced metalworking manufacturing technologies sectors. With working demonstrations of machinery, a compelling seminar programme and some of the finest names in manufacturing all under one roof, visitors to this edition of the exhibition will need more than one day to experience everything the show has to offer.

For more information email the MTMA on mtma@mtma.co.za or contact John Sterley, Sales Executive at Specialised Exhibitions on TEL: 011 835 1565, Direct: 010 003 3053 or Cell: 084 828 0034 or Leatitia van Straten, Marketing Director at Specialised Exhibitions on email leatitiavs@specialised.com
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Four years ago a friend of mine, who at the time had some insight into the rail industry in South Africa, asked me: “Why do we import so many wheels when we could be manufacturing them locally?”

My answer was guarded as I knew that we do manufacture cast wheels locally under license to a US rail transport and engineering company. I can now proudly inform him that yes we will in the near future be able to replace those imported forged wheels with those that are manufactured locally. And yes, the big difference is that they will be forged rather than cast.

Background

Naledi Inhlanganiso (Pty) Ltd (Naledi) is a 100% black owned industrial group in the basic iron and steel manufacturing sector. In 2012 Naledi, through a consortium that included the Industrial Development Corporation (IDC), acquired a majority stake in the then listed Dorbyl Ltd. The only operational division in Dorbyl at the time was Guestro Automotive and Machining. The company included the existing foundry operations in Benoni, Gauteng, which are currently undergoing a R100 million upgrade to equipment and processes, and the machine shop.

In 2013 Naledi submitted a bid in a public tender process for the supply of 34” cast and/or forged train wagon wheels to Transnet Engineering, a division of Transnet SOC (Transnet).

After various stages of negotiations, the bid for the manufacture of forged wheels was awarded in September 2014 and the final supply agreement was signed end of March 2015.

Section 12I Tax Allowance Programme

Then in November 2015 it was published in the Government Gazette that The Minister of Trade and Industry, Dr Rob Davies - in terms of section 12I (19)d of the Income Tax Act, 1962 (Act 58 of 1962) as amended (herein after referred to as the Act) and the Regulations promulgated in the Government Gazette No. 33385 of 23 July 2010, had approved an application received by Naledi for the 12I Tax Allowance Programme.

The 12I Tax Incentive is designed to support Greenfield investments (i.e. new industrial projects that utilise only new and unused manufacturing assets), as well as Brownfield investments (i.e. expansions or upgrades of existing industrial projects). The incentive offers support for both capital investment and training.

The objectives of the incentive programme are to support investment in manufacturing assets, to improve the productivity of the South African manufacturing sector and training of personnel to improve labour productivity and the skills profile of the labour force in South Africa.

“The award of the Transnet Engineering tender has provided Naledi with the opportunity to significantly expand its footprint in the industry and advance its vision of creating a significant industrial concern in the metals and engineering sector,” said Sibusiso Maphatiane, Executive Chairman of Naledi Inhlanganiso (Pty) Ltd

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The 12I Tax Incentive is designed to support Greenfield investments (i.e. new industrial projects that utilise only new and unused manufacturing assets), as well as Brownfield investments (i.e. expansions or upgrades of existing industrial projects). The incentive offers support for both capital investment and training.

The objectives of the incentive programme are to support investment in manufacturing assets, to improve the productivity of the South African manufacturing sector and training of personnel to improve labour productivity and the skills profile of the labour force in South Africa.

“The award of the Transnet Engineering tender has provided Naledi with the opportunity to significantly expand its footprint in the industry and advance its vision of creating a significant industrial concern in the metals and engineering sector,” said Sibusiso Maphatiane, Executive Chairman of Naledi Inhlanganiso (Pty) Ltd

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to invest close to R1.8 billion in this project. The South African SOEs in the rail transport environment have multi-billion rand rail infrastructure projects that are currently being implemented. South Africa’s railway system is set to flourish under a boost of record investment aimed at turning the country into a key player in the global freight industry."

“Transnet, for example, has six factories in South Africa where it has capacity to manufacture 4 000 new wagons and refurbish 3 000 wagons per year. Transnet Engineering also has capacity to build over 500 locomotives and refurbish 300. All of these facilities are going through major capital investment and production system investments."

“According to reports the rail network in South Africa accounts for about 80% of the entire continent. Standard Bank estimates that Africa would need to invest $50 billion over the next decade to develop 4 000km of additional rail infrastructure. Rolling stock requirements are expected to be just as substantial.”

“Additionally there are a number of projects involving investment in the rail network for operators throughout Africa. All of this will involve locomotives, rolling stock and passenger cars that need wheels.”

“Besides Africa there are opportunities with other emerging countries, particularly in South America.”

“Various studies reveal details that the regional markets with the highest growth rates over the next six years are Latin America, Asia/Pacific and NAFTA. This is driven by major investments in rail projects in Brazil, Colombia, China, and the U.S. The Africa/Middle East region is expected to maintain its current high market level in the upcoming years. The total world market will amount to approximately €176 billion per year by 2017-2019.”

“New analysis from Frost & Sullivan’s Executive Analysis of the Global Rail Industry 2014 finds that passenger traffic is set to increase from 3 196.28 billion passenger-kilometers (pkm) in 2013 to 4 739.18 billion pkm in 2020, and rail freight traffic to increase from 10 168.37 billion ton-kilometers (tkm) in 2013 to 12 332.84 billion tkm in 2020.”

International IP and investment

The project will be implemented through a new company, namely Naledi Forgings (Pty) Ltd. The entity was initially 100% owned by Naledi. However, Naledi have now partnered with the IDC who together with a Chinese technical partner is expected to own a 40% equity stake.

The agreement with the Chinese company will allow Naledi to benefit from international IP, manufacturing practices, skills development and manufacture to AAR and ENI standards.

The Chinese company was established in 1964, has three manufacturing plants in China producing over one million wheels in 300 different variations a year, as well as two manufacturing plants in France where wheels are produced for the high-speed rail market and for the European metro and light rail markets.

“Railway wheels belong to the most stressed components of railway vehicles. They carry axle loads of up to 25 tons and more. They guide the train on the track, through curves and switches and are subjected to wear processes. They transfer acceleration and deceleration forces to the rails, and are exposed to thermal stressing due to sliding and block breaking processes. Moreover, considerable centrifugal forces are acting especially on high-speed wheels,” explained Maphatiane.
“This agreement is crucial to the project. We want to be recognized as a world player for the manufacture of wheels in future, and without a well established international partner this project could have been doomed.”

The forged wheel project
The project will result in the localisation of forged wheels manufacturing in South Africa. Currently all forged wheels are imported, mainly from Europe. The setup and establishment of the South African forged steel wheel manufacturing plant has a capital budget of R1.8 billion over the next three years.

The plant will be the first of its kind in Africa and as such will introduce new technology to the country and the continent’s heavy manufacturing industry.

More specifically the wheel production line is expected to have the capacity to produce 90,000 units per annum. The production range includes freight train wheels, passenger train wheels and locomotive wheels with sizes focusing mainly on 34” and 36” forged railway wheels, although the plant will be able to accommodate a range up to 40”.

The project will include the latest international technology in order to provide Naledi with the production efficiencies, which enables global competitiveness in the railway wheels market.

The project will be implemented in two phases — the first being the construction of the machining line or the cold manufacturing line, and the second is the construction of the forging or the hot manufacturing line. These phases will run concurrently in order to meet the contractual deadlines for local manufacturing.

The wheels will be produced from steel billets specifically designed for the purpose of the manufacture of forged steel wheels. The composition of the steel billets determines the properties of the steel and, ultimately, the final product. The special steel billets are not currently available in South Africa and is exported be imported from China. In order to produce 90,000 units per annum, 51,835 tons of steel billets is required per annum.

Turnkey manufacturing
The production facility will encompass the entire process to manufacture the wheels from hot forging to the wheel inspecting line. This includes the cut to size of the billet, pre-heating, forging and rolling, slow cooling, heat treatment, quenching, machining and finishing, testing and inspection.

“With the advantage of starting off with a clean slate it gives us an excellent opportunity to invest in the latest technology and make the South African plant the most modern forged wheel manufacturing facility in the world. We are busy with the procurement process and have started to approach the recognised equipment manufacturers. All equipment purchased will be the latest available,” explained Maphatiane.

Employment and training
“The plant will create more than 150 direct new jobs in the manufacturing industry which will include skilled and semi-skilled. Employees will benefit from training programmes which will involve visits to our IP partner’s plants in China and France, to internships and apprenticeship programs once the plant has been established.”

“The project will also create the opportunity to export forged wheels out of South Africa, and we are investigating the possibility of localising the production of the specialised steel billets required for the production of forged wheels,” said Maphatiane.

“We are very excited and happy that the IDC has joined the project as a partner and we look forward to working with them in establishing the new industry in South Africa.”

“We are also looking forward to supplying the other rail players in the South African market like Grinrod, as well as the mining sector with its forged wheels requirement.

In addition the project would also assist companies like Alstom and Gibela in its localisation objectives.”

“There will be no concessions made on this project. With trains getting faster and freight wagons requiring heavier loads, wheels have to be manufactured using the latest technology. Worldwide the market remains competitive as the products are highly traded in international markets. Naledi will therefore strive to be competitive to its key local customer Transnet and those that we acquire in our export drive,” concluded Maphatiane.

For further details contact Naledi Forgings on TEL: 011 845 1546 or visit www.ni-forg.co.za
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The Dished End Company consolidates Gauteng manufacturing operations

The Dished End Company has announced that it has amalgamated its two Gauteng manufacturing operations for its dished end products, and moved to a new site in Greenhills Tunney Ext 7, Elandsfontein, Gauteng to consolidate its activities.

“When we established the company our original manufacturing operation was set up in a 1000m² facility in Greenhills Industrial Estate, Elandsfontein, Gauteng,” said Noel Saunders MD of The Dished End Company, a company he founded four years ago in 2011.

“Then the opportunity arose to purchase Tank Ends, a well-known and respected company in the industry that had been operating for over 40 years. The company was based in Booysens Reserve, Johannesburg and supplied dished ends required in many industries throughout the country, including the petrochemicals, mining, road and rail transport, metallurgical, food and beverage, and the pulp and paper industries.”

“The Dished End Company had been very successful in capturing a sizeable portion of the market but we lacked capacity. This was the main reason why we acquired Tank Ends for over 33 years before I sold my shareholding in the company, did also have an influence.”

“We took control at the beginning of August 2013 and the company continued to operate from the 1700m² facility in Booysens Reserve,” continued Saunders.

“However that facility was not very user friendly as it had become extremely spread out in a run-down building over the years. One of the machines was even housed in a separate building down the road. This was not ideal and it was only a matter of time before we would become frustrated with the situation.”

“More importantly we are always looking for ways to increase productivity and increase our penetration in the market. Generally, the more that operations can be consolidated, the less part handling is required. Combining different operations also can improve part accuracy.”

“We found this 3700m² facility and began moving both operations into it at the beginning of November 2015.”

The new facility, which consolidates the company’s two existing sites, has been renovated and upgraded and now includes a new 10 ton overhead crane, which has been added to the existing two 5 ton cranes, and a new 216 KVA generator to alleviate any load shedding problems.

The format of the new facility is in the shape of a rectangle with no obstructions to disrupt workflow. The move has also given The Dished End Company the opportunity to arrange machines performing similar operations into cells.

This includes the 3D CNC robotic profile plasma machine, which the company believes is the only one of its kind in South Africa. Besides cutting the discs to form a dish end it also prepares and cuts nozzle holes, bevels nozzle holes to required specifications, prepares for welding symmetrically to the nozzle centre line, trims straight flanges and bevels straight-flange edges. The machine guarantees CNC quality and accuracy prior to fitment of the dished end onto the barrel or pressure vessel, and adds value to the fabricator.

**Boldrini press**

New on the floor since the move is a Boldrini press which was recently imported from France. The two-column Boldrini hydraulic press has a distance of seven metres between the columns and can accommodate material widths up to 6.5 metres.

“We don't have much call for this size dish end but at least it gives us the option if needed.”

“Dish end manufacture is a niche 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, 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,” explained Saunders.

“Dished ends are the end caps welded to the main body of a pressure vessel. They are produced using a variety of production methods depending on the type of dished end required, which will also need to reflect the characteristics of the end product. The cap starts off as a flat disc with the material being a suitable grade for the application required.”

“In most cases the client will supply his own material to the dished end fabricator already cut to the diameter disc required. We can also supply the customer with the required sizes if necessary. We can also source the required material for the customer ourselves and supply to the customer a completed product from start to finish.”

The company’s most popular products include a range of dished ends with inside diameters between 400mm to 5.5 metres and a maximum thickness of 30mm cold formed, and 30mm to 50mm hot formed.

“Hefty competition usually drives companies to consolidate to achieve economies of scale. However in our case we needed additional space and more control,” concluded Saunders.

For further details contact The Dished End Company on TEL: 011 822 4550 or visit www.dishedendco.co.za
WD Hearn Machine Tools will host a grand opening event at its new purpose built CNC Technology Centre from 14 to 16 March 2016. The Centre, which will be located in Bonaero Park, will also be the new home for the company’s Gauteng branch.

“We are continuously looking at ways to serve our customers with solutions for improved manufacturing and productivity so as to remain competitive,” said Graeme Cooper, Sales Director at WD Hearn Machine Tools.

Citing improving demand for its machine tool products, technical services and related equipment in the Gauteng area, Cooper said the strategy of the company was to be a single source supplier of manufacturing solutions for a wide range of industries including high speed machining for the die mould and automotive industries, as well as production machining for a tool room environment and general engineering.

“Over the last 18 months we have also added Swiss type lathes and multi spindle machines, precision measuring tools and equipment, laser sources and systems for welding, marking, 3-D and cutting, portable measuring, articulated arms, optical inspection and mechanical 3D metrology solutions, complemented with vision measuring instruments, machine tool probing, waterjet cutting systems and EDM and WEDM to the list of metal working technological services portfolio that we supply.”

Previously MD Ray Cooper had said “Our continuing mission is to provide a market-driven services portfolio inspired by an intimate understanding of our customers’ needs, while at the same time keeping our commitment to a “Different Thinking is Better Thinking” policy.”

“The new Centre will not be just another machine showroom. Rather we would like to portray it as a solutions centre for those companies that are already involved in CNC technology or are thinking of getting into it,” continued Graeme Cooper.

“Investing in CNC technology is a strategy and can seem unfamiliar, even a little scary. We will take a bold approach to justification that will show shops that they need to jump in if they want to compete.”

“Additionally we want to show customers that despite a CNC machine being a useful tool there is a range of technologies that will compliment it so that they can machine their components more efficiently and effectively.

“Our existing and potential customers will be able to use the centre like a lab to research and develop new, relevant technologies as they become available, conduct test cuts, apply different processes, experiment with cutting tool designs, and prove out CNC programs. They will also be able to try different integrated in-process quality control devices and software. The Centre’s resources will help them determine the best strategies and solutions for their specific needs in their own factories.”

“With this in mind we will initially be displaying a Kitamura 5-axis machining centre, a Mitsubishi WEDM, Leadwell CNC lathes and machining centres, a Nikon portable arm for 3D metrology, Renishaw probing systems, Sisma laser welding and marking machines and Starret video measuring equipment. As and when new machines or technologies are launched they will also be incorporated.”

“The Centre will also house a Siemens training centre where customers can learn about and how to use the latest CNC controls, as well as a Siemens service centre, which will be run by our current partners EJE Industrial Electronics.”

For further details contact W.D. Hearn Machine Tools in Gauteng on TEL: 011 970 7005 or Marius Conradie on 083 285 1655, the head office on TEL: 021 534 5351 or visit www.wdhearn.co.za
A proposed R12 billion Chinese car plant in South Africa could make an important contribution to the domestic motor industry achieving its ambitious production goals, says Nico Vermeulen, director of the National Association of Automobile Manufacturers of SA.

It will also be the first major new manufacturer to enter the South African market in more than 40 years, joining BMW, Ford, General Motors, Mercedes-Benz, Nissan, Toyota and Volkswagen.

Trade and Industry Minister Rob Davies announced late last year that the local Industrial Development Corporation (IDC) had signed a deal with Beijing Automobile Works (BAW) to build BAW cars in SA. The R12 billion deal was the largest in a package of South African-Chinese investment agreements totalling R94 billion.

Apart from IDC CE Mvuleni Qhena saying that the new plant would create 2,500 direct and 7,500 indirect jobs, few details of the project have emerged. Early betting, however, is that the plant will be in the Eastern Cape, where Volkswagen, Mercedes-Benz and General Motors all build vehicles, and Ford has an engine-manufacturing plant.

Another Chinese company, FAW, has spent R600 million on a truck factory near the Coega port outside Port Elizabeth. FAW has said it may eventually also build passenger vehicles. BAW already has a minibus-taxi assembly plant in Springs, east of Johannesburg. The IDC is also a partner there.

Mr Vermeulen said the new venture was “not entirely unexpected”. It is no secret that several Chinese motor companies have been eyeing SA as a possible African manufacturing base. He said that with BAW now committed, others would probably follow.

It is believed the investment has nothing to do with Mr Davies’s recent announcement of changes to the government-administered 2013-20 Automotive Production and Development Programme.

From 2016, the minimum annual production threshold at which motor companies will be able to claim incentives will fall from 50,000 to 10,000. For R12 billion, however, the new plant is expected to be capable of building well over 50,000.

Sources say the deal was agreed some time ago, but the announcement was delayed to coincide with the state visit to South Africa by Chinese President Xi Jinping late last year.

Local BAW officials have declined to comment, but it is understood the firm will start to import cars this year, to establish a market presence, while sources say construction of the factory may also begin this year.
Automotive policy: Suppliers worried

Local automotive component companies fear they are being excluded from the benefits of a growing motor industry, writes David Furlonger of the Financial Mail.

Predictions that a review of automotive policy would produce a “damp squib” have been proved wrong by a government announcement that could result in new vehicle manufacturers investing in South Africa.

Component suppliers, however, are disappointed that the review has failed to address their concerns that they are not seeing the promised localisation benefits of more SA assembly. Ken Manners, president of the National Association of Automotive Component & Allied Manufacturers, says that not only is average local content in South African-built vehicles dropping, but the 2013-2020 Automotive Production & Development Programme (APDP) is failing in its mission to “deepen and broaden” South African involvement in motor manufacturing.

Components companies that supply parts direct to vehicle assembly lines are almost all foreign-owned. There is more South African ownership among companies that supply subcomponents. Manners says that it is at this level that “real employment, skills development and transformation opportunities lie”.

Trade & Industry minister Rob Davies admits he wants to see “meaningful transformation” in the industry “through the inclusion of previously excluded groups”. But that’s not going to happen with this review, says Manners. With no significant concessions to suppliers for the remaining five years of the APDP, “we are concerned that component manufacturers will find it more challenging to compete on a sustainable basis”.

Even the possibility of new vehicle manufacturers entering the market will do little to turn the industry’s shrinking share of local content around.

The most important change coming from the department of Trade & Industry’s review of the APDP is a reduction from 50,000 to 10,000 of the minimum production threshold at which companies can claim incentives for building cars and light commercial vehicles — potentially opening the door to low-volume producers that previously considered South Africa too big a risk. French carmaker Peugeot, which has considered and rejected South Africa as a production base before, may reconsider. Local MD Francis Harnie says: “It’s too early to be conclusive but it is worth looking at South Africa again.”

NB: The loss of the motor industry to South Africa would cost the country 670 000 jobs, R44 billion in taxes and 6% of GDP, says a report.

The industry’s perpetual trade deficit — the value of imports has exceeded that of exports every year since modern automotive policy began in 1995 — has prompted some critics to call for government incentives to end. They say the sector is a drain on the exchequer and that SA should follow Australia’s example by withdrawing support and letting the industry die a natural death.

The 90-year-old Australian industry will effectively cease to exist after 2017.

But a report by the economic consultancy Econometrix says a similar course in South Africa would have a “devastating” impact on the economy. Not only would the automotive industry collapse but it would take other sectors with it.

For example, 58.8% of the total output of the South African carpet industry is sold to motor and components companies, which also take 55.2% of all leather products manufactured in South Africa, 28.1% of rubber, 16% of iron and steel, 14.1% of radios, 8.5% of glass, 6.5% of plastics and 5.4% of paints.

Many service industries also rely on automotive business. The motor industry is responsible for 11% of revenue in trade services, 8% of real estate, 7.5% of postal and courier services, 5.7% of legal and accounting, 5.1% of insurance and pensions, 3.7% of telecoms and 2.3% of all freight transport.

The report was commissioned by the National Association of Automobile Manufacturers of SA (Naamsa), to measure the motor industry’s socioeconomic contribution to South Africa.

Its publication came two weeks after the department of trade & industry (DTI) announced that it would continue to support the industry after the current policy, the automotive production & development programme (APDP), ends in 2020. The APDP, which is designed to reward production and exports, was introduced in 2013, to build on the impact of the 1995-2012 motor industry development programme.

During that period, the industry has never enjoyed a trade surplus. In 2014, it recorded a R15.8 billion deficit, after exporting R115.7 billion of vehicles and components, but importing R131.5 billion.

Manufacturing accounts for 54% of total automotive GDP. Were South Africa to abandon support for motor companies, they and their components suppliers would become uncompetitive and go out of business, costing R186.8 billion in GDP, 588 000 formal jobs across all industries, 82 000 informal jobs, R84.5 billion in wages, and R44 billion in personal, corporate and sales taxes.

In the Eastern Cape — which is home to Mercedes-Benz, General Motors and Volkswagen vehicle plants, a Ford engine plant and dozens of components companies — one-third of the R28.6 billion exports in 2013 were automotive.
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Yaskawa Electric Corporation (Yaskawa), headquartered in Kita-Kyushu, Japan, commemorated their 100th anniversary during 2015 across all global locations in 28 countries. In addition to the centenary celebration, Yaskawa designed a new corporate logo and identity as a symbol of evolution and future growth.

Yaskawa was started in 1915 as a producer of coal mining equipment by Daigoro Yasukawa, known today as the founder. During the 20th century, Yaskawa developed technology innovations such as the super synchronous motor, minertia motor and Motoman L10 robot. Today, Yaskawa is one of the leaders in developing and manufacturing robotics and automation solutions, with approximately $3 billion (US Dollars) in annual revenue and over 14 000 global employees.

“Celebrating our 100-year anniversary provides an opportunity to reflect on the values that have made us successful,” said Junji Tsuda, chairman and president of Yaskawa. “Our ability to develop products that help society progress will ensure a prosperous future for Yaskawa and our customers.”

In celebration of the anniversary the industrial giant unveiled its “Robot Village” complex where visitors can view and interact with its advanced robotic technologies, which includes a renovation of the Kita-Kyushu Headquarters.

The highlight of the renovated manufacturing and headquarters facility is the Yaskawa Innovation Center, which houses around 50 or so state-of-the-art robots that are used in medical research, manufacturing and other fields. Some can perform complicated human arm movements.

The company spent more than 10 billion yen ($80 million) on the redevelopment project to commemorate the 100th anniversary of its founding this year, and hopes the facility will prove popular with local residents, particularly children.

“We want to show children the future and its potential, and something they will not learn in school,” said Junji Tsuda. “Even though we are a global company, we want each of our offices and facilities to take root in the region where they are based,” he said.

“We want the ‘robot village’ to blend in with the local community and become a model for our other businesses in and out of Japan.”

“For any organisation, company or brand, the ability to stay relevant and provide value to customers for a century is an extraordinary accomplishment,” said Terry Rosenberg, Managing Director of Yaskawa Southern Africa.

“For Yaskawa, we feel fortunate to provide products and solutions that help advance society and alleviate people from jobs that are dirty, dangerous or dull.”

“We are a very customer-centric organisation. We have and will continue to invest in people, products and technology that prioritises customers, and their satisfaction, to the highest level.”

About Yaskawa Southern Africa

Founded in 1991 as Robotic Systems (Pty) Limited the company was acquired by Yaskawa in May 2012. Yaskawa and Robotic Systems had previously worked together on the basis of a supplier/distributor partnership since Robotic Systems’ establishment. The company also represented Motoman Robotics, a wholly owned subsidiary of Yaskawa since inception of the company. Motoman offers both general purpose and application-specific robots for a wide range of applications, including arc welding, assembly, coating, dispensing, material cutting, material handling, material removal, packaging, palletizing and spot welding.

In November 2015 Yaskawa Southern Africa, which is based in Longmeadow Business Estate, Modderfontein, Gauteng hosted an event for local clients and dignitaries from Europe and Japan to mark the milestone. Below are a selection of photos from the evening.

For further details contact Yaskawa Southern Africa
TEL: 011 608 3182 or visit www.yaskawa.za.com
“Celebrating our 100-year anniversary provides an opportunity to reflect on the values that have made us successful.”

Iain Liddell of Combination Products, Hans-Peter Neth of Retecon Machine Tools and Alfred Grau of AGM Maschinenbau

Uli Retter of Kare Sheet Metal with Claudio Ferrari and Sietse Walma van der Molen, both of Budget Sheet Metal

Colin and Lisa Brings of Yaskawa Southern Africa with Peter Erasmus of Directech

Peter Middleton of Fusion, Sean Blake of SAIW and Mark Gutridge of Brink Towing Systems

Charl Weyers of CRH, Kurt Rosenberg of Yaskawa Southern Africa and Eric Kaefflein of Afropak

Graham Hartly and Antonio Villanella, both of Efficient Engineering with Kristi Kruger of Yaskawa Southern Africa
New contracts to boost Denel’s armoured vehicle business

Denel Vehicle Systems has concluded a contract of more than R900 million with NIMR in the United Arab Emirates for the development and supply of advanced mine-protected vehicles.

South Africa’s State-owned defence industrial group Denel has announced that its recently acquired subsidiary, Denel Vehicle Systems (DVS – previously BAE Systems Land Systems South Africa or LSSA) had finalised a R900 million contract with United Arab Emirates group NIMR. The deal covers the development and supply of the N35, formerly known as the RG35, an armoured vehicle with superior mine protection and combat capabilities and can be used in command, ambulance and recovery roles.

This contract for the N35 is one of the largest received by Denel Vehicle Systems in recent years and will provide work for two of the company’s major divisions for the next 24 months.

Zwelakhe Ntshepe, Group Executive Business Development says the new contract confirms Denel’s leadership role in landward mobility and mine-protected vehicles. It is one of several contracts awarded to DVS since it joined the Denel Group earlier this year.

“We are delighted to work with NIMR, one of world’s leading manufacturers of wheeled armoured vehicles,” says Ntshepe. “There is a strong synergy between our companies and products and we are confident that we can, together, develop and improve the N35 to be among the best in its class.”

Ntshepe says the contract with NIMR follows on the awarding of several other contracts to Denel’s landward defence business in recent months amounting to over R1,5 billion in total.

These are:

- The OMC division, within Denel Vehicle Systems specialises in wheeled armoured and mine-protected vehicles, received a development contract for the N35 from NIMR.
- A production contract for 24 RG-31 mobile mortar platform (MMP) vehicles. The contract includes vehicle manufacture and technical support and will be delivered in the next 12 months.
- Contracts from Armscor for maintenance of - and the supply of spares for both combat and support vehicles.
- The Gear Ratio division, within Denel Vehicle Systems is working on a contract from NIMR for the assembly of driveline components.
- A contract was also concluded with Steloy Castings for components used in the new Transnet electric locomotives.

For further information contact Pam Malinda of Denel on TEL: 012 671 2970 or visit www.denel.co.za
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Mastercam’s embedded Dynamic Motion Technology dramatically shortens production times while extending the life of your machine and tools.
Rail group Alstom has announced that it has signed an agreement to purchase 51% of South African rail company Commuter Transport & Locomotive Engineering (CTLE) for an undisclosed amount. CTLE, specialising in the modernisation of trains, was previously known as Union Carriage and Wagon (UCW). UCW participated in building the rolling stock for the Gautrain project. Current shareholders, Commuter Transport Engineering and the Industrial Development Corporation, were to remain shareholders of the restructured group.

Once the sale agreement was finalised, Alstom would launch an “integration project” to strengthen CTLE’s structure through the development of local competencies, the group said in a statement. This integration project would broaden the scope of CTLE’s activities, enabling it to offer a complete rail-product portfolio, including infrastructure, signalling, trains and components, as well as services, “to better address Southern Africa’s railway transport needs”.

Based in Nigel, east of Johannesburg, CTLE employed 450 people. It owned an 80 000 m2 manufacturing facility and generated a turnover of more than €15 million in 2014. Alstom said in a statement that the acquisition would strengthen its own presence in the region, allowing it to “offer a broader range of rail products and solutions to better address the region’s transport needs”.

CTLE was expected to benefit from Alstom’s “global leadership in rail transport, new technologies, as well as its world-class tools and processes. It will also support the creation of jobs and enable skills development among the existing staff. Moreover, the partnership will enable the company to obtain stronger financing capabilities to develop its business in both domestic and export markets”.

“We are delighted to sign this agreement with our South African partners,” said Alstom Middle-East and Africa senior VP Gian-Luca Erbacci. “This is a win-win partnership that will strengthen the rail sector in South Africa, boost its economy and, in the long term, address the needs of other countries in the Southern African region.”

Alstom signed an agreement to purchase a 51% share in the South African rail company CTLE (Commuter Transport & Locomotive Engineering), specialised in the modernisation of trains, from South African companies CTE and IDC which will remain shareholders.

Alstom’s first X’Trapolis Mega commuter train for PRASA has successfully arrived on time at PRASA’s Wolmerton depot. This is the first train of the 600 ordered.
South African motoring fans will have to permanently bid farewell to the Johannesburg International Motor Show. Originally scheduled to take place in October 2015, the biennial event was cancelled in May 2015, owing to rising costs.

However, the National Association of Automobile Manufacturers of South Africa (Naamsa) and South African Shows Messe Frankfurt has announced that the South African Festival of Motoring will replace the Johannesburg International Motor Show on the motoring calendar. The event will also move from the Nasrec showgrounds to the refurbished Kyalami Grand Prix Circuit & International Convention Centre.

The festival will take place from August 31 to September 4, 2016. Naamsa said in a statement that the new venue is ideally located between Pretoria and Johannesburg, offering “outstanding exhibition, entertainment and conference facilities”.

The Festival of Motoring is inspired by the Goodwood Festival of Speed, in the UK, and will include entertainment for the whole family, motorsport demonstrations, a vintage car parade, good food, as well as vehicle demonstrations and drive opportunities.

A technology lab will present future automotive trends, including hybrid and electric vehicles and the impending reality of the connected car. Suppliers of aftermarket automotive accessories, as well as service providers to the automotive industry, will also be represented.

Naamsa president Dr Johan Van Zyl said that the SA Festival of Motoring “represents a new concept, provides new opportunities in an ideal location and will definitely attract motoring enthusiasts and the general public. The event will feature prominently on the agenda of the South African automotive industry and represents a must-attend show.”

The event remains a joint venture between South African Shows Messe Frankfurt and Naamsa, with broad support from local automotive companies.

“Depending on the success of the 2016 festival, it could well become an annual event offering an enhanced experiential showcase for the local automotive industry,” noted Naamsa. It is anticipated that WesBank will continue as the platinum sponsor for the Festival of Motoring.”

For further details contact Pula Dippenaar, South African Shows Messe Frankfurt on TEL: 011 494 4217 or email pula.dippenaar@southafrica.messefrankfurt.com or visit www.safestivalofmotoring.com
Specialist solutions provider for metal turning, milling, threading, tapping, drilling, broaching and grooving requirements Spectra Carbide Tooling have added Gleason Cutting Tools and Gesac Cutting Tools to the range of international manufacturers that they represent in South Africa.

In addition the company will now market Norton Saint-Gobain products after being appointed a distributor.

“Since 1999 when the company was established it has concentrated on supplying the engineering industry in South Africa with their tooling needs and tool management systems. We have sourced quality products from well known international names such as Walter, Ceramtec, PH Horn, Mapal, Cimcool, Oest and Schnell Teknik,” said Dave Goodman, Managing Director at Spectra Carbide Tooling.

“We have also been very successful with our Tool Management division which was formed to look after the growing tool management program and sole supplier partnerships being negotiated with several OEM and large customers.”

“We have now decided to add a few more product ranges to our portfolio including a couple of new product ranges that we have not been involved with before.”

“We will now represent Gleason Cutting Tools Corporation, a manufacturer of tools for bevel and cylindrical gear manufacturing and Gesac Cutting Tools, a manufacturer of various kinds of tungsten powder, cemented carbide and cutting tools. The third company is Norton Saint-Gobain for whom we have been appointed as a distributor to market their products countrywide.”

**Gleason Cutting Tools**

Gleason Cutting Tools Corporation is major international name in the field of gear manufacturing supplying machinery for the production, finishing and testing of gears, as well as a worldwide support system which provides cutting tools, workholding, replacement parts, field service, application development services, gear design and inspection software, training programmes, engineering support and machine rebuild and upgrade services.

Spectra will be marketing the company’s gear tools for cylindrical and bevel gear manufacturing. Included in the cylindrical cutting tool range are hobs, power skiving tools, shaper cutters, grinding and finishing tools, shaving cutters, honing wheels and dressing tools, milling cutters and other cutting tools.

**Gesac Cutting Tools**

Gesac have been in business since 1989. They manufacture and export a range of cutting tools for turning, milling and drilling.

**Norton Saint-Gobain**

Norton Saint-Gobain is a world leader in abrasives providing solutions for industrial manufacturing and maintenance, auto repair, construction and the home improvement market.

Products include cutting and grinding wheels, coated and bonded abrasives, super abrasives and diamond blades. The products come in many variations but mainly cover the processes of grinding, cutting, sanding, blending, finishing and polishing.

“We are very pleased that we now have a broader range of products to offer our clients. The potential to acquire new clients in industries where we have not been active in before is also the strategy behind our recent developments. We have the infrastructure to seamlessly incorporate the new product ranges, and with offices in Port Elizabeth, Cape Town and Johannesburg we can service the whole of South Africa,” explained Goodman.

For further details contact Spectra Carbide Tooling on TEL: 0860 23 23 23 or visit www.spectra-sa.co.za
Ekurhuleni unveils aerotropolis plan

Twelve projects will form the pillars of Ekurhuleni’s Aerotropolis Master Plan which will be implemented over the next 30 years.

After 18 months of putting its plan together, the City of Ekurhuleni has unveiled the Aerotropolis Master Plan to the local and international business community at the recently held Aerotropolis Industrial Cluster Development and Investment Conference.

The plan seeks to guide the City’s approach towards defining critical paths that would drive its economic growth, development, transformation and prosperity through the implementation of a systematic and progressive development approach.

The master plan is set to present potential and current investors with a myriad of economic opportunities around OR Tambo International Airport. It includes projects that are investments and developments within hubs in the Ekurhuleni area, clustered according to related industries namely transport, logistics, advanced manufacturing, aviation and aerospace, digital technology, research and development and skills development.

Aerospace firm Denel has expressed its support for the development of the aerotropolis, with Denel Aerostructures CE Victor Xaba noting in a statement that the growth of an "airport city" in Ekurhuleni would bring major benefits to industry and the high-tech manufacturing industry in the province.

"This can be a catalyst for growth in the broader aviation sector to revitalise the economy of Ekurhuleni."

Denel would host aerospace manufacturing and aviation training facilities in Bonaero Park, while the area would also host a jewellery manufacturing facility.

The Aerotropolis Master Plan embodies hubs of economic activities and community focal points, emphasising a mixture of public and private investment. Each hub features and economically supports the most complex key catalytic projects.

Twelve identified projects envisaged to breathe life into the Aerotropolis include:

- Riverfields Development Project;
- Plumbago Industrial Park Development Project;
- South African National Training and Simulation Centre;
- Green Reef Mega Projects;
- Gauteng Jewellery Manufacturing Precinct IDZ;
- Denel Kempton Park Campus;
- Germiston Station Intermodal Transport Facility;
- Ekurhuleni Integrated Rapid Public Transport Network (IRPTN);
- Gautrain Expansion and Extension Programme;
- Digital City Development;
- Tambo Springs Inland Port and the
- Gibela Rail Manufacturing Plant and Supplier Park.
South Africa extends steel tariffs

Duties on wire rod, rebar levied in addition to 10% tariff.

South Africa extended tariffs on some steel imports as producers continue to battle a glut of cheap supply from China, according to the local unit of ArcelorMittal, which is selling shares, cutting jobs and closing plants as it seeks to return to annual profitability for the first time since 2010. Further duties on wire rod and rebar products will be levied, in addition to a 10 percent tariff that the government introduced in August on imports of products the same as those that are also locally produced, ArcelorMittal South Africa Ltd. said in a statement. AMSA, as the unit of the world’s largest steelmaker is known, is still awaiting the outcome of a further seven applications made to the country’s International Trade Administration Commission for protection from imports, the company said. Final decisions are expected early this year.

The steelmaker is selling shares for 4.5 billion rand ($281 million) to reduce debt and invest in plants, and has asked the government to source steel exclusively from local producers for infrastructure projects.

“The company still faces challenges and future profitability is highly dependent on the above initiatives being successfully concluded,” AMSA said. Without additional tariffs and government support, “the steel industry and the company will need to undertake significant structural change.”

The stock increased on the announcement but it declined 83 percent in 2015 and 29 percent the previous year.

US calls for 256% tariff on imports of steel from China — Imports from South Korea, India and Italy also face tariffs. However Taiwan found not to have dumped steel in U.S. markets

Corrosion-resistant steel imports from China were sold at unfairly low prices and will be taxed at 256 percent, according to a preliminary finding of the U.S. Department of Commerce.

Imports from India, South Korea and Italy will be taxed at lower rates, the agency said in a statement. Imports from Taiwan and Italy’s Marcegaglia SpA will not face anti-dumping tariffs. The government found dumping margins of 3.25 percent for most South Korean steel imports, with Hyundai Steel Co.’s shipments subject to duties of 3.5 percent. Imports from Italian companies excluding Marcegaglia will be taxed at 3.1 percent. Indian imports are subject to duties from 6.6 percent to 6.9 percent.

“We’re concerned that the dumping that’s occurring is at higher levels than these determinations reflect,” Tim Brightbill, a partner at Wiley Rein LLP, a law firm representing U.S. steelmaker Nucor Corp., said in an interview. “We have serious concerns that these preliminary duties are not enough at a time when unfairly priced imports continue to surge into the U.S. market at unprecedented rates.”

U.S. producers including Nucor, U.S. Steel Corp. and Steel Dynamics Inc. filed cases in June 2015 alleging that some products from China, India, South Korea and Taiwan had been dumped in the U.S., harming domestic companies. In November 2015, the government found that all those countries, except Taiwan, subsidised their domestic production by as much as 236 percent of its price.

Import barrier
These tariffs, combined with countervailing duties as high as 236 percent announced in November, create a barrier to imports of these steel products from China, said Caitlin Webber, an analyst at Bloomberg Intelligence in Washington.

“A 500 percent duty is obviously prohibitive,” Webber said in an interview. “The lower ones are much less prohibitive and would probably have a lower impact on imports.”

U.S. steelmakers have filed three sets of cases against imports of hot-rolled, cold-rolled and corrosion-resistant steel after deliveries from abroad surged. The price of hot-rolled steel coil, the benchmark product, is down about 40 percent, with domestic mills idling as much as 38 percent of capacity after imports climbed by 38 percent in 2014.

Imports of all steel products through October 2015 rose 3.9 percent in 2015. The Commerce Department estimated that the value of imports of anti-corrosive steel - coils of the metal which have been coated with zinc or other treatments to prevent rust - from the target countries to be $2.16 billion.

Calls to the spokesman’s office at China’s Ministry of Commerce in Beijing weren’t answered. An official who answered a call to the China Iron & Steel Association couldn’t immediately comment.
GE has commenced production of its “most African” locomotives. Once completed, the 233 GE Evolution Series locomotives will have 55% local content, making them the “most African” locomotives of their kind.

In March 2014, Transnet announced an agreement to purchase 1,064 locomotives from four original equipment manufacturers, including GE. GE was awarded a contract to build 233 diesel locomotives as part of this agreement. Approval to begin local manufacturing was granted following delivery of the first six Evolution Series locomotives, which were manufactured by GE in the United States. Those locomotives will act as blueprints for the remaining 227 locally-built locomotives that GE will deliver as part of Transnet’s locomotive fleet renewal programme.

“We are building these world-class locomotives here in South Africa because we are committed to growing the local supply chain, and establishing South Africa as the rolling stock hub for the continent,” says Thomas Konditi, President and CEO of GE Transportation Africa.

“Over the past six years, we have developed relationships with some of the best local suppliers in the industry. Booyco, based in Germiston, is building the air-conditioner for the locomotive’s main cab. Duys, with the head office in Pinetown, KwaZulu-Natal, but with branches across South Africa, is manufacturing the fuel tank. There are many other companies that we are honoured to partner with in building what will be our “most African” locomotive.”

Transnet Engineering will be manufacturing and assembling the platform, traction motors, bogies and alternators at its facility in Pretoria. Wabtec South Africa, based in Kempton Park, will manufacture the radiators for the locomotives. The local manufacturing of content supports local industry through the creation of jobs and the revitalisation of the rail industry.

“This project illustrates the potential of business partnerships between our two countries. Like 600 other American companies operating in South Africa, GE is making a long-term investment in the country,” says US Ambassador to South Africa Patrick H Gaspard. “GE is protecting 9,000 jobs, creating 5,000 new jobs, and providing more than 100,000 hours of training for South Africa’s next generation of engineers. The company is making these contributions while providing one of the world’s most advanced locomotives, improving South Africa’s competitiveness and driving exports for both of our countries. We are proud that this American company is contributing to economic growth and greater prosperity in South Africa.”

**About the Evolution Series**

Powered by GE Transportation’s 12-cylinder diesel engine, the Evolution Series Engine produces 4,200hp. This 45-degree, 12-cylinder, 4-stroke, turbocharged engine provides efficiency, fewer emissions and extended overhaul intervals. The engine uses enhanced cooling and higher-strength materials to dramatically improve reliability and allow for future increases in power and efficiency.

The Evolution Series locomotive represents one of GE’s most prominent Ecomagination™ products. Ecomagination is GE’s commitment to build innovative products that maximise environmental and economic impact. Products with GE’s Ecomagination™ designation undergo a rigorous process to prove they measurably help customers’ performance and bottom lines, while simultaneously improving their environmental performance.
That South Africa has become an investment destination of choice to the world’s biggest companies is not by mere chance. We have consistently remained on the radar of international big business due to deliberate action on the part of government that can be traced to interventions such as the New Growth Path and the Industrial Policy Action Plan.

Recently, the single biggest investment in the local automotive sector was made by German car maker BMW to produce the new-generation BMW X3. The company will invest R6 billion in its Rosslyn plant in the north of Pretoria to manufacture the vehicles for the South African and export market.

Through the Automotive Production Development Programme government has created the environment that makes the country one of the best places in the world to manufacture vehicles.

BMW’s investment follows a string of other manufacturers who have shown confidence in the country. Japan’s Nissan Motors indicated that it planned to build a new model bakkie at its local plant which will increase its production to 80 000 vehicles a year.

In 2014 Chinese company First Automotive Works invested R600 million in a truck assembly plant in the Eastern Cape. To attract more manufacturers in this segment, the government is working to establish an Investment Support Programme for medium and heavy vehicles.

But it does not stop there, similar plans that turned the motor manufacturing industry sector into an investment hub are being rolled out across other sectors of the economy.

Through Operation Phakisa government is unlocking the economic growth potential in marine transport and manufacturing, offshore oil and gas exploration, aquaculture and marine protection. We have also recently extended this to include the mining sector.

South Africa is becoming a frontier for new sectors of investment such as the green economy, oil and gas, shipbuilding and the ocean economy. Through our Renewable Energy Independent Power Producer Programme the country has emerged as one of the biggest markets in the world for renewables.

These various sectors offer companies opportunities to invest and partner with South Africa. Our foreign direct investment numbers show that many companies are already doing so.

Speaking during a state visit to Germany in December 2015, President Jacob Zuma said: “Inward flows also continue to grow and over the last five years South Africa accounted for the bulk of new investment projects in Africa with investment arriving from the US, European Union, China, India and other Asian countries.”

Foreign direct investment in South Africa accounts for about 42 percent of our gross domestic product.

Investors looking to invest in the country are encouraged by the 2015/16 World Economic Forum’s Annual Global Competitiveness Report in which South Africa climbed up seven places from 56 to 49 countries of 140 countries.

South Africa’s biggest improvements were recorded in the areas of health and primary education, efficiency, technological readiness and innovation.

Furthermore, the country boasts a stable democracy, sound financial system and highly regulated banking sector. We are also supported by world-class infrastructure, exciting innovation, research and development capabilities and an established manufacturing base.

South Africa offers investors the stability of a developed country along with the lucrative opportunities of a vibrant emerging market.

Importantly, these investments significantly contribute to our national goals of socio-economic development as they create sustainable jobs and the opportunity for skills development and training.

In the tough local and global economic conditions, government is doing all it can to draw in more investors so that it can grow employment, reduce poverty and turn the economy around.

However, the responsibility to create the environment that attracts inward investment is not the government’s alone. South Africans as shareholders in South Africa Inc have a vested interest in promoting the country in a globally competitive environment.

We all have a patriotic duty and responsibility to build and promote our country.

*Rob Davies is the Minister of Trade and Industry
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- Box Sideways for heavy cutting
- Mechanic Casting for high reliability
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Powerful spindle motor coupled with gearbox

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The award of a contract to supply HVAC systems for the 240 Bombardier TRAXX Africa, TFR’s Class 23E locomotives being built by Bombardier Transportation for Transnet Freight Rail for General Freight Business (GFB), is testimony to Booyco Engineering’s international reputation for engineering specialised HVAC solutions.

The HVAC systems are an evolution of the previous systems which were engineered for the 15E and 19E locomotives. These systems have an established track record for reliable performance under the harsh operating conditions in South Africa, making them suitable for even the most demanding environments worldwide.

“What is of great significance is that Booyco Engineering is dealing with sophisticated international players whose standards and specifications are at a very high level. This contract underlines our ability to perform at this level, and firmly positions us to participate in the international market on an ongoing basis,” says Booyco Engineering managing director, Jeremy Pougnet.

Booyco Engineering’s successful track record is underpinned by verifiable data from the in-field operation of the HVAC systems, which shows that MTBF (mean time between failures) is exceeding expectations.

The new HVAC systems incorporate a number of innovations which include an integrated fresh air control that allows the fresh air inlet to be temporarily closed when the locomotive travels through areas where the ingress of the outside air is undesirable. In addition, the maximum ambient temperature specification was raised and the condenser heat rejection capacity was increased accordingly. The 8,3 kW cooling system is rated for an ambient temperature of 50°C, with a 4,5 kW heating system. In addition to being designed to achieve low noise levels, the Booyco Engineering units are also extremely robust, affording optimal reliability and availability.

In addition to the HVAC systems for the locomotives, Booyco Engineering secured the order for the 480 cooling towers which provide cooling for the transformer and converters on the locomotives. “It is our ability to understand heat transfer, air dynamics, fluid flows, pressure drops, and structural design that positioned us to secure this additional order,” Pougnet said.

South Africa needed to create financing institutions with capacity to fund the defence industry as it was an important feeder of jobs into the hi-tech environment, Paramount Group executive chairman Ivor Ichikowitz said recently.

The Paramount Group has announced that it has entered into a R1 billion partnership with the Kazakhstan government for the manufacture of armoured vehicles in that country.

**Raising capital**

Ichikowitz said it was very difficult to raise capital in South Africa for these kind of investments. Paramount was therefore raising finance internationally because South Africa had no structures that allowed the sector to raise capital for the industry in the domestic market.

“It’s not necessarily a matter of legislation. I think the issue is that South African institutions like the Industrial Development Corporation operations are restricted from providing capital to industrial projects. South African banks are also very much adverse to funding hi-tech projects in the defence industry,” he said.

Paramount opened a new armoured vehicle factory in Kazakhstan with capacity of more than 200 armoured vehicles a year, creating 150 skilled jobs in partnership with the Kazakhstan government.

Kazakhstan Paramount Engineering is the first armoured vehicle factory in that country and the first defence plant with this scale of capability in central Asia. It also presents a new way of in-country defence manufacturing, where it transfers technologies and skills to its customer countries, creating joint projects, research and development, production and jobs.

The factory has started production of an indigenous version of Paramount’s armoured combat vehicle, the Marauder.

The new variant of the Marauder, called Arlan, is built for winter conditions and snow. It was designed and developed after extensive collaboration with the Kazakhstan military and rigorous trials to meet the Kazakhstan military’s specific operational requirements.

Ichikowitz said one of the biggest challenges the defence
industry had in South Africa right now was that the government had a shrinking budget, and the amount of business that it was giving to the industry was declining.

“We have had a big loss of skills in the industry. It is critically important for both ourselves, Denel and other defence companies in the industry to find foreign markets so that we can grow our customer base and increase the number of jobs that we are creating, which then allows us to bring in new graduates into our business,” he said.

He said locally Paramount was running a bursary programme and a mentorship programme to bring young graduates into the industry, not only to teach them technically but also to teach them the business.

He said Paramount had a strategic alliance with the University of Potchefstroom, the University of Pretoria and Wits University where it provided bursaries to students at these institutions. In addition it was looking at much closer strategic collaboration to build curricula that better met the needs of the defence industry.

**Industry future**

“The future of our industry depends on our ability to train new entrants into the industry, and it is the single biggest priority that Paramount has. That is why projects of this nature are very important to us because if we can get the business, get the orders, it helps the ability to create new jobs,” he said.

He said despite the limitations it faced such as being privately instead of publicly owned, Paramount was pursuing strategic partnerships with corporations including Boeing.

“This is not just a breakthrough for Paramount, it is as well for Denel, as well as other privately-owned defence companies that are doing pioneering work; it will take South Africa’s defence industry to another level,” he said.

For further details visit www.paramountgroup.biz

order. Added to that, we have a solid understanding of the harsh operating conditions for rolling stock, which include shock and vibration,” Pougnet points out.

“The order includes two cooling towers per locomotive application and the units have successfully passed all qualifications tests to date, including thermal testing in Europe. Final acceptance will be based on the vehicle test on the locomotive,” says Pougnet.

The new systems were scheduled for serial production in the fourth quarter of 2015, with the final units being delivered at the end of the first quarter of 2018.

For further details contact Jeremy Pougnet of Booyco Engineering (Pty) Ltd on TEL: 011 974 8640 or visit www.booyco.co.za
Most service centres and fabricators adjust their manufacturing processes significantly to compete in today’s hotly contested race to gain new customers and keep existing clients happy, while at the same time they look for opportunities to cut production time and maintain, or even improve quality.

All customers have to be accommodated whether they place small (sometimes just one piece) or large orders. The situation is exasperated with customers requiring short lead-times (often just hours) and the demand from them for low prices.

In this environment, you must ensure that your machines aren’t just “running” but actually producing the required components at peak efficiency. An operator running punching and/or bending systems may look extraordinarily busy “running” the machines. But running the machines is not the same as producing good components ready for downstream forming, joining and assembly.

Likewise, increased attention must be given to adding services and capabilities (machines that offer different forming and fabricating, or metal removal machines for example) to your business that will compliment, enhance or just simply add value to your existing manufacturing processes.

Competitiveness within the market and a willingness to accept new technology to make a profit are also two big motivators. You may have to ask yourself if you are frightened by the notion of intelligent machines dominating humankind? History suggests that humans eventually harness technology, not the other way around.

Depending on the type of CNC machinery that exists in the shop, and the knowledge base of the owners and staff, the initial addition of new equipment can be either daunting, or a seamless integration.

By examining your market, and the competitors that you have, you may be able to find a niche to fill. This niche could be in material type, size, or thickness, and each will dictate the type of equipment that is needed.

Bringing material cutting in-house, for example, can cut costs, delivery times and adds a host of unforeseen benefits. Adding laser cutting capability can change the culture of a shop overnight and can be a monumental decision in any shop’s life. As with any major investment, whether it’s for capital equipment or something else, due diligence is needed. Adding a laser cutting machine to your shop floor can mean a lot of research to fully understand the current state of this technology. However, cutting components on a laser machine can increase throughput by almost a factor of 10.

One company that has decided to...
bring laser cutting in-house is Technipunch CC, which was established back in 2007 by Johan Steyn. The main focus of the company is to supply precision sheet metal components to a vast variety of markets, including the aviation, shopfitting, security, electronics and wine industry.

Cutting was previously outsourced to a shop with laser cutting capability.

"Outsourcing the cutting added two to three weeks to the lead-time as well as logistical complexity, which meant a sizeable parts inventory was simply unavoidable to ensure a quick response to customer demand," said Steyn.

"We knew we had applications for plasma, waterjet, and laser. We considered all the possibilities. The laser had a significantly higher cost and required high volume to be economical."

"While the initial cost of a laser can be much higher than a plasma cutting machine, the rate a shop or OEM can charge for laser cutting is also relatively higher. The benefits of running a laser cutting operation, when compared to other forms of cutting, can also be easily measured."

"In order for any manufacturer of fabricated sheet metal to remain competitive, a laser cutter should be on hand. No other tool offers the flexibility and ease of use like a laser. No other tool can offer the profit margins available with laser cutting because of the ease of setup and changeover from one material to the next."

Considering Steyn’s background it was just a matter of time before Technipunch expanded into laser cutting. After researching the laser machine market, they decided on the Ermaksan Fibermak Momentum Gen-3 fiber laser, supplied and installed by Machine Tool Promotions.

After studying and qualifying in mechanical engineering at Cape Technikon, Steyn’s first position was with another well known Western Cape metal cutting and fabrication company where he got his first taste of lasers, and the impact that laser technology could make on metal manufacturing.

"I spent three years with the company between 1997 and 2000. They were one of the first companies in the Western Cape to deploy a laser cutting machine into their manufacturing operations. This happened while I was there and most of my time spent with them was working as the programmer on the laser. I got to know the technology, and the experience I gained was a solid foundation for my next position."
"I worked in a similar environment for the next seven years before establishing Technipunch. In the back of my mind I always wanted to run my own shop. Today we employ 30 staff and operate from a 1200m² factory with ample space to expand. In fact we have just increased and moved the material storage area by 400m², which has given us space for the fiber laser."

Originally Steyn had a partner but he came to an agreement to purchase the company outright in 2011.

For someone that has spent his career around lasers, does Steyn wonder if he missed out by not purchasing the latest fiber laser equipment sooner?

He doesn’t think so.

"The business has been growing steadily by 20% over the last few years, and during this period we have had to double the factory floor space every two years. We had to make sure that our punching capacity was maximized before we expanded into any other market. You have also got to take into consideration the cost of financing a machine as compared to the amount of work that was being outsourced. You can only consider purchasing new equipment when you attain the point where it becomes feasible to purchase your own machine. We had reached the crossroads, and business was robust enough to warrant investing in a laser cutting machine."

"Initially the machine will be running a little below its capacity but as we bring the outsourced work inhouse, seek more service work and develop more of our own products this capacity will soon be taken up. Who knows, maybe in a year we will be sourcing another laser?"

Punch your way forward

"Punching was once considered simply a tool for large production runs.

But now even small job shops are automating to free operators to perform other tasks, or prepare machines for their next job. Trumpf punching machines have been a timeless piece of equipment throughout the years and do not seem to have lost their appeal in an ever-changing market. We have built our business on CNC punching and bending."
Introducing

the new MAX5 control

To find out more scan the QR code or go to HURCO.com/MAX5
“We also offer powder coating, electro plating, anodizing, silk screening and stud welding, but these services are all outsourced.”

Diversification — establishing Technipunch Products

“In business, success is often the product of a company’s vision — the aspirations for the future and the plans for creating opportunities and managing growth. Differentiation from the competition is an important factor in uncovering and realising those opportunities.”

“This typically means doing things better, more efficiently, and more economically than anyone else. Continually challenging the way things have been done in the past and viewing them from a new perspective ultimately leads to innovation and a strong competitive edge.”

“Our diversification began back in 2010. The tennis club I belong to needed to replace its existing braai. I said I would help out and tackled the task with the idea of manufacturing a braai in its simplest form possible that did not involve welding, but could still be used as an effective cooking tool.”

“It was a very rewarding exercise that led to the birth of Technipunch Products, which is a company that markets products to retailers and the braai and camping industry.”

“We have now built up a portfolio of products, all manufactured by Technipunch, that include braai tongs, built in and portable braais, camp cone kettles and tables, fire place spades, jam jar and bottle openers, pizza accessories, slow combustion ovens, postboxes, meat casseroles, fish scale scrapers, jerry can holders and house numbers.”

“Most of the products are manufactured in stainless steel and this business is growing at a rate of 25% per annum.”

“You could say that initially Technipunch Products was a hobby type business but with potential. My wife Jenny reluctantly became involved on the sales side, and now she fights with us to manufacture more products and to give her more storage space,” said Johan with a smile.

The Kuils River, Western Cape based metal cutting and fabrication shop is not a job shop, where anyone with an idea for a metal contraption might walk through the front door. In fact, his business doesn’t even have a sign indicating to the passerby what type of manufacturing might be happening behind the closed doors.

This was not the case in the beginning though, and Steyn is still appreciative and respectful to all those clients that he engaged with in the beginning. Over the years the company has found its niche and is now comfortable with the range of businesses that they deal with, which is over the 450 mark.

The business has grown, serving companies that operate in a number of different industries. They need quality components and fabrications delivered in a timely manner.

The purchase of the Fibermak Momentum Gen-3 fiber laser was initially not an easy decision, but with the recent exchange rate changes and the devaluation of the rand, Steyn is very grateful that he did make the decision.

“The Fibermark Momentum Gen-3 fiber laser is the beginning of another chapter in the business. It is only the second Ermaksan fiber laser to be sold in South Africa and the first to be sold in the Western Cape. After visiting the factory in Turkey I was reassured that I was buying quality, and it is the latest generation product that Ermaksan manufacture. We did not walk blindly into this capital equipment purchase. We took our time and understood exactly what was going to happen when the new fabricating technology hit our shop floor.”
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The new Fibermak Momentum Gen-3 fiber laser is fitted with a Precitec ProCutter cutting head, which is equipped with a highly-sophisticated sensor system that monitors the cutting process, and provides the user with all the relevant information to achieve optimal cutting quality. When using a ProCutter head, flexibility can be increased in the case of varying processing requirements, particularly in the case of varying sheet metal thicknesses.

The Fibermak Momentum has a 3kW source, a bed size of 3000 by 1500mm and can cut mild steel up to 20mm, stainless steel up to 10mm, aluminium up to 8mm and copper and brass up to 6mm.

Additionally, the Fibermak Momentum is fitted with a Precitec ProCutter cutting head, which is equipped with a highly-sophisticated sensor system that monitors the cutting process, and provides the user with all the relevant information to achieve optimal cutting quality. When using a ProCutter head, flexibility can be increased in the case of varying processing requirements, particularly in the case of varying sheet metal thicknesses.

“Besides the extra capacity that is now available to us with this type of machine, it will also give us the opportunity to offer customers more options that we were not able to do before, and to deal with demand variability. Like any machine, the best productivity comes from straight-line cutting, which can take full advantage of the cutting speed offered. However, the modern laser is equally fast at cutting part variation. When I first encountered laser work 18 years ago I did not envisage what we can achieve on one now.”

“The addition of a laser cutter will change mine and the working lives of company’s employees. Even the staff that do not directly work on the laser cutter need to think differently to maximize the success of the machine.”

“Understanding how a laser works is not as necessary as it once was. As these machines become easier to run, and controls become more powerful, knowing how a resonator works and how a beam is created, are not necessary to create components.”

“What everyone needs to fully comprehend and appreciate is the efficiencies and quality that the laser will bring to the shopfloor. Downstream operations are going to be put under pressure to deliver because the time frames and speed of delivery are going to change drastically.”

“It is a scenario I am looking forward to. My staff, most of whom have been with me from the early years, are innovative and will enjoy the challenge to adapt. Life won’t be mundane at Technipunch going forward.”

Technipunch has as its core focus the use of CNC sheet metal punching, bending and laser technology in the manufacture of precision metal components. If you require your product to be designed by Technipunch, they can offer you a 3D design option. The company uses the latest software available for design, nesting and quoting including Tops.

For further details contact Technipunch on TEL: 021 905 0894

The second machine purchased by Technipunch was a Trumpf Trumatic 5000 R punching machine, supplied by Retecon Machine Tools. The machine is known as ‘Amazing Grace’.

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The name TW Tube Laser and Processing (Pty) Ltd might not be a household name yet. That is because the company was only established in December 2014, and started to supply clients with product in August 2015, but is now processing hollow sections, open structural sections such as H, I, angle and channel as though there is no tomorrow.

The company’s origins stem from TW Profile Services, an Ekurhuleni, Gauteng based company whose services include laser cutting, profile cutting, plasma cutting, guillotining, rolling and bending, which has been in operation since 1994. The shareholders include Managing Director Tharin Stuart, Director Joost Smuts and Director Robbie Carelse who oversees production and logistics.

“The idea to establish the company TW Tube Laser and Processing was conceived in 2013 and it took nearly two years to get everything in place before we could start production,” explained Tharin Stuart.

“TW Profile Services management believed that there was a gap in the market to process-in-one the larger sections of material. Although TW Profile Services is equipped with the latest technology machines, it was decided to set up a new facility to handle the type of material that we are processing today.”

“We spent time in clients’ production facilities and studied what they were doing and saw that the way they were processing tube and sections today is the same as the way they were doing it 20 or more years ago, especially where part joining is concerned. It is still being done with saws, drills, milling machines, hand-held cutting and plasma torches. Some pieces of tube and sections are being handled six or seven times to achieve a fully processed part ready for assembly. We looked at that and said, ‘there has to be a better way to do this.’”

So TW Profile Services management set out to find a better way to process hollow sections (tubing) and open structural sections. Going into their search, they had several requirements:

Because they had made laser cutting as one of the company’s core competencies, they would only consider a laser solution. They would favour an automated system that required minimal attendance. The solution had to fulfill current customers’ needs, so that they would not have to find new customers initially.

This is when Stuart and Carelse came into the picture. Both have vast experience gained over many years working in the fabrication industry on a wide variety of projects for the medium to heavy engineering industries including the steel making industry, mining, materials handling, power and general structural engineering. This background provides the necessary insight into complex cutting requirements.

“The prospect of establishing and working on a ‘greenfield’ project with the luxury of setting up a new facility,
which would for the most part have a single, seamless process with minimal human intervention, was certainly enticing. Not many companies in the metal processing industry get this opportunity," said Stuart.

A factory location was decided on - Kent Rd, Boksburg, Gauteng — and construction of the 2000m² facility began in early 2015.

In the mean time, the Directors researched leading brands of large section tube lasers, visiting manufacturers and seeing demonstrations. They reviewed the specs and capabilities before making a decision.

**BLM Lasertube LT 14**

As previously stated, the requirements were on precision and speed synonymous with laser cutting, full CNC automation and the machine had to process large hollow sections, open structural sections such as H, I, angle and channel with minimal human interface. Additionally it had to offer the following processes, all done-in-one operation:

- Cutting to length
- Mitre, cope and shape
- Chamfer
- Drill (laser)

The BLM LT 14 is a system that can be used to cut round, square, and rectangular tubes, as well as non-tubular open structural sections (open profiles, H and I beams, angle, channels and special profiles) in diameters from 38mm and up to 355mm with a wall thickness of up to 20mm, and it can handle sections 13 metres in length, both on the in feed and the out feed.
The decision was taken to purchase the Italian manufactured BLM Lasertube LT 14. The LT 14 is a system that can be used to cut round, square, and rectangular tubes, as well as non-tubular open structural sections (open profiles, H and I beams, angle, channels and special profiles) in diameters from 38mm and up to 355mm with a wall thickness of up to 20mm, and it can handle sections 13 metres in length, both on the in feed and the out feed. Its input source is 4,5 kW Rofin — more than enough power for this type of material processing.

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

All loading, cutting, and unloading operations are controlled by CNC, and the system control software automatically selects the best cutting method. Because all machine operations are performed by programmed commands, no manual setups or fixtures are required. Once tubes are placed on the loader, they are moved one by one into the feeding line with its automated chuck system.

Tubes are positioned under the five-axis cutting head according to the programme parameters. The interpolation of the cutting head in combination with the tube movement allows for processing anywhere along the length of the part.

The machine uses the principle of a main drive chuck and two supporting steadies near the cutting head. These supporting steadies also drive and rotate the part in unison with the main chuck. The machine can cut in front or behind the leading steady, or in between the two steadies, or between the second steady and the main chuck.

**Cutting head**

The multi-axis cutting head can perform inclined cuts, weld preparations and chamfered holes without needing to move the tube, ensuring excellent productivity and cutting quality.

**Integrated probe advantages**

An integrated touch probe on the cutting head measures and compensates for tube distortions to ensure cut features are correctly positioned whilst maintaining the required tolerances.

*Although we did not have any job commitments for the tube laser, we were confident about our decision. We knew automation would give our company a competitive advantage compared to the labour intensive, manual methods of processing tube and sections that our customers are using. Plus, there are other hidden costs in multiple processes. Each operation, especially if it’s a manual one, creates more possibility for processing inconsistency. Inconsistencies in*

*The capability of the machine to efficiently, accurately and consistently create virtually any cut geometry in tube and sections opens up new fields in industry for TW Tube Laser and Processing. These include agricultural equipment, heavy construction equipment, shipbuilding, the oil industry, conveying and crane lifts*
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processing affect downstream operations. If you set up for one size part and the next one is slightly different, you need to take time to adjust for the difference. The tube laser is a smart way to process tube and open sections efficiently, more accurately with consistent quality, reduced lead times and greater throughput. All of this means higher profits for us and our customers,” said Stuart.

A specially designed BLM software programme called Artube is used to manage the cutting on the tube laser. This software imports client parts from drawing programmes such as Tekla which may be saved as IFC files. Other formats include STEP and IGES.

Electronic drawings are programmed into the machine, allowing prototypes to be produced quickly, saving time and money on further processing and providing greater opportunities to redesign joint fit-up and refine the cutting requirements. BLM says the time saving can be up to 70% over traditional methods of processing. The LT 14 will complete a cutting operation in one minute or less as compared to one hour if a boilermaker had to tackle the same task. The effect on the schedule that accelerated processing produces results in massive savings. This service puts a whole new meaning to just–in-time with the time consuming processing taken care of, and lower skilled personnel can assemble precision cut parts in record time.

The capability of the machine to efficiently, accurately and consistently create virtually any cut geometry in tube and sections opens up new fields in industry for TW Tube Laser and Processing. These include agricultural equipment, heavy construction equipment, shipbuilding, the oil industry, conveying and crane lifts.

The machine arrived in South Africa in June 2015 and by August local agents First Cut and engineers from the manufacturers BLM had it processing material.

An example of a large diameter tube cut on the 6-axis BLM LT 14. The machine can process mild, high-strength, alloy and stainless steels. There is no need for special fixtures, which simplifies both high-volume production and low-volume prototype work.

The agents say that the LT 14 is the first of its size and capability to be installed in South Africa.

The arrival of the BLM LT Fiber tube laser

While TW Tube Laser and Processing’s initial criteria for a tube laser was the machine’s diameter range to cater for larger part sizes and the heavy engineering market, the company has not neglected a segment of the market that is very vibrant and has huge potential.

“The market for round and square tube cutting below 140mm is well catered for. As was the case with our LT 14 we had to think of what more we can offer the market, what advantages can the LT Fiber have over the other machines out there, what will make us different?”

“The LT 14’s diameter range and capabilities are on the upper scale, making the cost of cutting a smaller range of materials on it very expensive. However, we still wanted full CNC automation, minimal human interface and fast loading and unloading features.”

“Laser cutting of reflective materials is a relatively new capability. These include aluminium, copper and copper alloys, which reflect the laser beam generated by CO2 lasers, but absorb that emitted from fiber-optic lasers. The mirrors in CO2 lasers are usually made from copper, which is a favoured material because of its combination of reflectivity, high thermal conductivity, and high heat capacity.

An example of a section cut on the BLM LT 14 system

A selection of tube and sections that have been processed on the 6-axis BLM LT 14 tube laser
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Copper and its alloys reflect the laser beam, so the beam can’t cut the material. However, the laser beam delivered by a fiber-optic laser is at a different frequency, one that is absorbed readily by copper, copper-based and aluminium alloys,” explained Stuart.

“Another consideration was the state of the market. Fiber-optic tube and section lasers are relatively new to the South African market so it made sense to invest in unique technology.”

“In short, we wanted a flexible system that offered all of the above while enabling us the opportunity to process a wide variety of open profiles including channel, angle and flat in a fully automated cycle. One that would allow us to offer clients a creative cutting experience by using the fiber-optic capabilities to the full, whether it be for complex cuts or just on the joints. Our aim is to simplify production processes, finishing, doing away with intricate welding jigs and assisting with the speed of final assembly. We can now offer high volume output while creating ‘kits’ of components ready for assembly, and faster processing of complex tube slotting and drilling which reduce production schedule times thus saving the client time and money.”

Ultimately, TW chose BLM’s LT (laser tube) Fiber. LT Fiber is the new system of the Lasertube family specifically designed and developed for cutting tubes of any section, with the fiber laser source.

The new technology of the fiber laser offers significant advantages in terms of a wider range of materials that can be processed - among them also high-reflective materials such as copper and brass. Aluminium and galvanized iron also become easy to cut.

A considerable productivity increase is obtained on small thicknesses of stainless steel.

With a capacity up to 152mm and a raw tube available in two lengths - 6500mm and 8500mm - the LT Fiber laser cutting system is characterised by the following additional advantages: programmable and automatic set-up where automatic changeover can be done in just two minutes, reduced electric energy consumption and installed power, higher beam quality guarantees a much faster cutting speed to laser power ratio and reduced maintenance costs.

The machine, which was installed by BLM in January 2016, comes equipped with ActiveScan, a measurement system that measures the deformation of tube (twist and bow) along the tube’s axis. Small diameter tubes are more likely to become deformed during the handling and transport. With ActiveScan such a deformation can be measured and the cutting programme can be automatically corrected.

Another function of the machine is Active Speed, a function that automatically modulates the cutting parameters to always obtain the best possible cutting results. For cutting complex shapes, where once the expertise of an experienced operator was necessary, now the Active Speed has simplified the process and hence anyone can obtain good cutting results.

“In a competitive environment, differentiation is the key to success. The differentiator can be just about anything – specialised knowledge or accumulated experience to handle new or unusual projects; sufficient production flexibility or capacity to handle urgent orders; or a combination of technologies that competitors don’t have.”

“TW Tube Laser and Processing is a company that has invested in unique technologies. It is up to us now to educate the market so that they take advantage of these new technologies and capabilities that are on offer locally.”

For further details contact TW Tube Laser and Processing on TEL: 087 985 0643.
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Constant change leads to success at Fabrinox

Fabrinox has grown its metal fabricating business aggressively in recent years. The latest machine tool technology has accelerated growth, and the employees have ensured the company stays in control and on course.

Fabrinox, with a workforce of nearly 200 employees, is a sheet metal and tube fabrication company based in Paarl in the Western Cape. Fabrinox’s main focus is as a sheet metal component and sub-assembly manufacturer, as well as manufacturing capital equipment under license.

Equipment and services
On the manufacturing side the company uses Trumpf’s TruTop package to maximize machine usage and efficient material nesting.

Trumpf LiftMaster 2040
Just installed at Fabrinox is a Trumpf LiftMaster 2040 that will handle the material requirements for the company’s Trumpf TruLaser 5040 Fiber L47 machine. “The LiftMaster takes over the strain of loading and unloading the machine and there is an increase in work safety. With different set-up options, the LiftMaster features high flexibility and a wide range of automation functions. These range from simple loading and unloading to pallet handling to part removal. The basic building block of the LiftMaster is the suction frame. It is comprised of suction cups that transport the raw sheets as well as rakes to transport processed sheets,” explained Production Director Ben Steenkamp, who has been with the company since 1998.

New Trumpf TruBend 5230 S press brake
In December 2015 a new Trumpf TruBend 5230 S press brake was installed by Retecon Machine Tools. The fully CNC controlled TruBend has a bending width of 4250mm, a 2300kN (230 ton) press force, a throat of 420mm and up to 6 CNC-controlled backstop axes.
The FiberLas series
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A Fiber Laser system with a very high efficiency which can process a variety of materials with fiber laser or a combination of fiber laser and plasma. The machine is perfectly suited for the production of high precision parts at high cutting speeds. It needs astonishingly low maintenance and has very low operating costs. The superb dynamics of the FiberLas series is achieved by a low gantry, digital AC motors and precision planetary gear.

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In 2015 Fabrinox installed a GSM CNC milling machine supplied by WD Hearn Machine Tools. This is the company’s first CNC metal removal machine and it joins the other two conventional lathes, a milling machine and two radial arm drill presses in the fitting and turning department. The GSM 800 comes with a Siemens 828D control with Shopmill Conversational programming, has an 8000 RPM spindle, 16 position ATC, table of 355 x 1270mm, XYZ travels of 800 x 400 x 450m/m and can take a maximum load of 500 kilograms.

“This is our third Trumpf press brake, and with our 175 ton Heli press brake it takes us to four machines. We are now able to bend components up to 8mm in mild steel and 4.5mm in stainless steel.”

“The press brakes complement our two CO2 Trumpf lasers (5kW and 3kW) and the latest one which is a Trumpf TruLaser 5040 Fiber L47 machine, with a maximum laser power of 3 kW. All the machines have bed sizes of 4 by 2 metres and we can cut up to 12mm in aluminium, 16mm in stainless steel, 25mm in mild steel and 6mm in copper and brass,” continued Steenkamp.

Weber deburring machine

Also installed in December was a Weber PT1350 DP6D deburring machine. The Weber PT is a universal grinding machine of a new generation for deburring, rounding, descaling and surface grinding of thin sheets and heavy plates. Up to four grinding stations allow for various machining applications with workpiece thickness of between 1.6 and 100mm. This machine has been supplied by Retecon Machine Tools.

GSM CNC milling machine

“Earlier in 2015 we installed a GSM CNC milling machine supplied by WD Hearn Machine Tools. This is our first CNC metal removal machine and it joins our other two conventional lathes, a milling machine and two radial arm drill presses in the fitting and turning department. The GSM 800 comes with a Siemens 828D control with Shopmill Conversational programming, has an 8000 RPM spindle, 16 position ATC, table of 355 x 1270mm, XYZ travels of 800 x 400 x 450m/m and can take a maximum load of 500 kilograms.

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Fabrinox is a sheet metal and tube fabrication company offering solutions, which include custom tailored project management, global installation, procurement, and technical advice along with manufacturing design and documentation, based in Paarl in the Western Cape.

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table of 355 x 1270mm, XYZ travels of 800 x 400 x 450m/m and can take a maximum load of 500 kilograms.”

Motoman robotic welder
“In 2009 we commissioned our first Motoman robotic welder. At the same time we also purchased a stainless steel bead-blasting booth. We found it necessary to purchase the second Motoman robotic welder because of the bottlenecks we were experiencing in this area. Both robots are equipped with Mig and Tig welding applications.”

BLM Elect 80 tube bender
“Just prior to that we had purchased a BLM Elect 80 tube bender from First Cut. The fully CNC programmable machine can bend up to 88.8mm OD and 3.05mm wall thickness in stainless steel and mild steel tube, and operates in a push and pull bending sequence with a long radius roll.”

In between all of this capital expenditure Fabrinox has also added an ACF corner-forming machine and a Faccin four roll two metre plate roller.

ACF Multiflex corner-forming machine
“The ACF Multiflex corner-forming machine is the first of its kind in the Western Cape. The machine uses a cold process to form corners and is significantly more cost effective for control cabinets. The machine can be used for the corner forming of various metals, including mild steel of up to 4mm, stainless steel of up to 3mm and aluminium of up to 5mm. Other features of the machine include the benefit of eliminating the need for welding, grinding and finishing the corners of cabinet doors, panels and baking trays,” explained Steenkamp.

Faccin CNC four roll two metre plate roller
“Nothing is new about the demands driving bends in roll bending. Four roll plate bending rolls are considered to be the most versatile, precise and easy to use plate roll. We chose the Faccin CNC 4 HEL four roll model, which was supplied by Talmac Machine Tools, because it is ideal for heavier thickness and the challenges that the new metals and materials with higher yield strengths pose today and allows various shapes to be formed.”

The manufacturing premises from which Fabrinox operates consists of a production area of approximately 5000m² in full view of the Boland and Stellenbosch mountain ranges. Assembly, packaging and distribution are housed in a 4300m² facility in close proximity.

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Why manufacturers should get ISO-certified

Reasons, benefits, and steps to certification.

As ISO certification becomes increasingly more important to the manufacturing industry, every manufacturer should consider getting it.

ISO is an acronym for International Organisation for Standardisations. It was established in Switzerland in 1947 by a host of technical committees focused on providing guidelines for a vast range of organisations in the manufacturing, processing, service, printing, and electronics industries.

In 1979 an ISO Technical Committee was formed to create a set of guidelines that would unify and standardise all industries. In addition to its acronym, ISO also comes from the Greek word isos, which means “same as,” with the implication being that customers will get what they expect: consistent product quality whereby each manufactured piece is the same as each part previously produced.

The three main reasons to consider ISO certification

The etymology of ISO, therefore, points to some of the primary reasons your manufacturing operation should consider obtaining an ISO certification:

• To ensure products and services meet customer requirements;
• To guarantee consistency in the day-to-day operations of your manufacturing facility’s output;
• To guarantee processes are repeatable and predictable.

Other reasons to consider ISO certification

Here are some other reasons that your manufacturing facility should consider ISO certification:

• Customer acquisition: Many customers require that both their manufacturer and its subcontractors are ISO-certified. If your company is not ISO certified, you will not be able to do business with many high-profile clients, which means less money for your enterprise.
• Marketing: Manufacturers can use their ISO certification to seek out new customers and open up new markets. Once you have passed your ISO certification audit, you can advertise your newly achieved standing to bring in more business.
• Fewer customer complaints: Customer complaints can kill your business via word-of-mouth. Time and money are wasted reproducing products that did not meet customer expectations. Fewer complaints mean a better reputation for your plant.
• Quality improvement: By creating quality objectives and a set of formal metrics, you can better understand your business and focus on problem areas to improve overall product quality and productivity.

Advantages of ISO Certification

Many manufacturers do not have benchmarks and formal metrics in place to monitor whether they are meeting quality objectives. Having these can prevent your organisation from repeating the same embarrassing errors. Here are some advantages of ISO certification:

• Improved company culture: You can improve your company culture and employee empowerment with clearer expectations, better tools, and better feedback, which will result in a more professional staff. Again, objectives and metrics not only keep your customer happy with your plant’s quality, they create a better work environment where employees actually have the tools needed to do their jobs.
• Improved consistency: Quality variations hurt your business. Few, if any, customers tolerate quality fluctuations.
• Increased team focus: The ISO certification process often results in a more focused management team and better overall employee performance, thanks to internal and external auditing. Your products will only be as good as the team producing them. Auditing keeps everyone on their toes.
• Better efficiency, reduced waste, and cost savings: Every manufacturer should continually be looking for ways to increase output and reduce waste. ISO processes aid these endeavours.
• International recognition: Your certification could result in industry-specific honours and awards, which can then be used to promote your products and services around the world.

Reasons not to consider ISO Certification

There really is only one reason to eschew ISO certification, and that is the cost involved. The most prohibitive of these expenses include employee training and consultation fees. Still, the long-term benefits far outweigh the short-term costs of certification.

Offsetting costs

Since the costs of becoming ISO-certified are considerable, you have to offset these expenses. Here’s how it’s done:

• Increased efficiency: ISO certification helps you streamline your processes, which increases productivity. The faster your operation can produce quality products, the more money it makes.
• Higher employee morale: The more employees you can retain and keep productive, the more aggressive and motivated your staff becomes.
ISO certification gives your team credibility and builds staff members’ confidence — tremendous morale boosters by any estimation.

- Expanded market penetration: ISO certification is an internationally recognised designation that has the potential to open entirely new markets. The more markets you penetrate, the more impressive your annual reports look.
- Better supplier relations: Efficiency guides everything. The less time wasted correcting quality issues, rerunning jobs, and reordering supplies, the stronger your supply chain, your reputation, and your business relationships.
- Consistency: Customers do not want to roll the dice each time they buy from your company. Runs that are completed on time and executed correctly the first time improve your customer standing and elevate overall production quality.
- Customer satisfaction: Let’s face it, the customer must be satisfied or your reputation within the industry suffers. A poor reputation can potentially be catastrophic and virtually irreversible.

The four principles of ISO
Each of the four ISO principles can help your plant achieve greater levels of performance:

- A customer focus: ISO is all about the customer's needs.
- Good leadership: If your management team comprises great leaders, your ongoing ISO certification audits can yield stellar results.
- A process approach to quality management: Maintaining ISO certification involves scrutinising your processes and updating them as needed to ensure quality.
- Continual improvement: Ongoing audits create innovations that prevent your plant from entering a state of stasis and foster continuing improvement.

Tips for getting certified
Thinking about certification yet? Here are tips that can help:

- Conduct a cost-benefit analysis: This analysis is not just the resource you need to help you become certified, it also provides insight into any additional overheads your organisation might incur. It can also identify new companies and markets you can potentially do business with when certified.
- Involve staff: Attaining certification is a team initiative, so be sure your staff understands the value of certification. Enlisting your team’s help and gaining staff member buy-in can go a long way in ensuring the success of the initiative. Plus, because team members must be trained in ISO best practices, they are more apt to embrace the changes if they’re involved early. Consider offering incentives to everyone for passing the audit the first time.
- Hire a quality assurance expert: Some companies promote someone from within for this role. Others hire an outside specialist on a part-time or full-time basis. Since ISO certification is an ongoing process, it is best to hire someone on a full-time basis from the outset.
- Document: Certification requires documenting all of your organisation’s processes and procedures, which are altered and refined as your ISO certification development unfolds. Make sure that all procedures are written in such a way that a new employee without years of experience in your industry can understand them.

Written by Edward Jones, Marketing Manager
John Evans’ Sons
Laser manufacturer Trumpf has established a broad base in the field of additive manufacturing. The company has launched new 3D printing machines for metal parts, including laser metal fusion (LMF) and laser metal deposition (LMD) machines. To achieve this, the company has established a new division at the headquarters site in Ditzingen and has been working even more intensively on new systems for 3D printing.

The results and developments derived from the joint venture founded together with Italy’s largest laser system maker, the Sisma company, have supported the efforts carried out by Trumpf in Ditzingen. The technology behind the new 3D printers is also known as additive manufacturing. In this process component parts are generated, layer by layer, from metal powders. The system uses data taken directly from the CAD program.

"The introduction of these new 3D printers is an essential first step, since additive manufacturing will not only supplement production techniques in the future, but will also exert a formative influence on them," explains Dr.-Ing. E.h. Peter Leibinger, Head of Trumpf Laser- und Systemtechnik GmbH.

"We will be offering rugged and highly productive machinery with which small and medium-sized parts incorporating complex structures can be manufactured," Leibinger adds.

Every technology skill in a single location

Market demand is growing for 3D printers generating metal components suitable for use in the industrial environment. Trumpf is the world’s only manufacturer to have both of the pertinent technologies - LMF and LMD - in its product range. The choice of the process best suited will depend on the details of the specific application. LMF systems generate parts layer by layer in a bed of powder. These printers bring their strengths to bear when making up parts which are geometrically complicated and extremely elaborate. In LMD systems, the laser creates a melted pool on the surface of a part and fuses the powder, added simultaneously in a powder stream, to achieve the desired shape. LMD systems are distinguished by the fact that they can add closely defined structures to existing tools and components, doing so at high processing speed.

"LMF and LMD are the two leading technologies in the additive manufacture of metal parts - and we have them both," states Peter Leibinger. He then adds: "Our customers procure not only the machine and the laser from a single source but - in addition to extensive service support - intensive technology and applications consulting, too. No matter whether you are dealing with injection nozzles, turbine blades, tools or even medical implants - with our broad range of technology we are offering the best solution for virtually every application."
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ATA allows tool length to be changed and adjusted automatically, improving production efficiency in the bending of both batch one and parametric parts.
Hexagon Metrology becomes Hexagon Manufacturing Intelligence

Rebranding to reflect increasing capabilities in data-driven industrial manufacturing solutions.

In a move to reflect its growing expertise and solutions for integrated industrial manufacturing, Hexagon Metrology has rebranded to become Hexagon Manufacturing Intelligence. The change also aligns the business more closely with Hexagon’s overall strategy to offer software-centric information technology solutions that improve quality and productivity across entire industry workflows.

As a leading measurement equipment provider, Hexagon Metrology set out to offer complete quality assurance solutions, building an extensive portfolio of metrology equipment through a combination of innovation and acquisition. The company’s investment in research and development has yielded technology revolutions that first moved measurement from the quality room to the point of production, and then brought metrology data into the wider factory workflow. Recent acquisitions, including the CAD/CAM specialist Vero Software and statistical process control expert Q-DAS, have further expanded the business’ offering into broader manufacturing technologies — prompting the decision to rebrand as Hexagon Manufacturing Intelligence.

“The approach of our business is to listen to customers and evolve to meet their needs, and our rebranding is the next stage of this evolution,” explains Hexagon Manufacturing Intelligence President and CEO, Norbert Hanke. “Manufacturers need to work with speed and confidence, which is why they prefer integrated systems and single-supplier solutions that give them the process efficiency they need to compete and lead their industries.”

“As Hexagon Manufacturing Intelligence, we are ideally positioned to support these aspirations. We have moved beyond the isolated data capture of traditional metrology, enabling customers to analyse and leverage data for more informed decision making — sensing, thinking, and acting, as we call it. We intend to focus our research on connecting these capabilities to offer customers a closed-loop manufacturing approach where quality drives productivity, as well as continuing to develop our core competencies in dimensional metrology.”

Hexagon Manufacturing Intelligence operates through a network of local service centers, production facilities, and commercial operations across five continents. Hexagon Manufacturing Intelligence is part of Hexagon, a global provider of information technologies that drive quality and productivity improvements across geospatial and industrial enterprise applications.

Kennametal completes sale of seven businesses

Kennametal Inc. has moved forward with plans to reduce its manufacturing footprint by up to 25 percent.

The Latrobe-based company said it has completed the sale of seven noncore businesses to Chicago based holding company Madison Industries. These are related to certain castings, steel plate fabrication and deburring operations, Kennametal said.

The deal, announced in November 2015, includes US based Extrude Hone, Tricon, Landis, along with the Swiss based business of Kennametal Infrastructure (located in Biel/Bienne), and the German and Italian based businesses of Kennametal Stellite (Koblenz, Germany and Milan and Bellusco, Italy). An earlier statement valued the transaction at approximately $70 million in cash.

Madison is a Chicago-based holding company led by former C-level executives and entrepreneurs who invest their own money to build businesses.

Madison Industries claims to be one of the largest and most successful privately held companies in the world, with market leading businesses in filtration, medical equipment and industrial solutions.

The former Kennametal businesses joined the Madison Industrial Solutions segment.

Kennametal previously announced its strategy to simplify its portfolio and focus on the long-term growth of its core manufacturing and technology processes.
During its meeting held on 3 December 2015 in Brussels, the CECIMO General Assembly elected Luigi Galdabini as President of CECIMO for a period of two years. Succeeding in this role Jean-Camille Uring, Executive Board Member of Fives and President of Symop, Mr. Galdabini has been entrusted with the responsibility of leading the European Association that represents 39% of the world machine tool (MT) production.

Who is Luigi Galdabini?
Born in 1958, Luigi Galdabini has a degree in mechanical engineering from the Polytechnic of Milan. Since 1990, he has been the managing director of Cesare Galdabini spa, a company with headquarters in Cardano al Campo (VA), leader in the manufacturing of metal forming technology machine tools and machine testing equipment. The company has now reached its fourth generation, and has been an associate member of UCIMU-Sistemi Per Produrre since 1948. In June 2012 Galdabini was elected president by the Assembly of this association.

He is chairman of AITA (Associazione Italiana Tecnologie Additive), the association involved in the field of additive manufacturing. He is vice president of UNIVA, Associazione degli Industriali della Provincia di Varese, and member of the General Council of Confindustria.

Luigi Galdabini was a member of the Board of CECIMO prior to his appointment as President. He will be assisted by Dr. Frank Brinenk (Switzerland), Chairman of the Economic Committee, Juha Mäkitalo (Finland), Chairman of the Technical Committee and George Blaha (Czech Republic), Chairman of the Communication and Advocacy Committee. Dr. Frank Brinenk is the Vice-Chairman of Starrag Holding AG, Juha Mäkitalo is the President of Finn Power OY (Primapower) and George Blaha is the General Manager of Schneeberger Mineralgusstechnik, s.r.o.
Airbus and Autodesk’s design studio, The Living, have designed and developed the largest 3D-printed metal part for a commercial airplane in history, what they call a “bionic” partition that is 3D-printed from a direct metal laser sintering (DMLS) “printer” that uses a new super-strong alloy called scalmalloy to achieve the lightness of aluminium with the strength of titanium.

Already used for small parts, often with complex shapes, the Airbus/Autodesk project brings additive manufacturing into the plane’s cabin. The assembly is for a partition that separates the passenger cabin of an A320 from the rear galley.

The resulting “bionic” replacement is a stronger partition compared to the current model that also saves 55 pounds in weight. If one final test is passed, the new partition will be in every new A320 in 2016. The companies estimate that using it will remove 96 000 tons of CO2 a year thanks to less jet fuel being burned to transport the lighter partition system.

“The partition is a difficult assembly of components,” said David Benjamin, principal of The Living.

“The goal was to reduce its weight by 30%, so generative design was really a necessity. We had very clear goals and constraints. The partition can only attach to the fuselage at four points. You need to be able to cut out parts of the partition to allow a stretcher into a cabinet if necessary. We combined biology, computation in design and a living organism plan followed.”

Based on organic structures, the new partition is a weblike assembly of connected nodes that uses a small amount of material. It’s not just efficient, but redundant in that the structure could still hold up if one or more weblike nodes are knocked out or off in a crash, or if there was an incident inside a plane’s cabin.

The 122 parts that make up the assembly are printed in seven batches to make one entire partition. The finished assembly uses a mixture of materials including scalmalloy, aluminium and magnesium in a DMLS printer.

“Scandium (a rare earth additive in scalmalloy) gives it its strength performance,” said Bastian Schaefer, Innovation Manager at Airbus.

“It has a very high-yield of strength. We tested it up to rupture and it performed better than any other current alloys.”

Schaefer said printing speed is still an issue, but that his team believes that better DMLS printers can solve that problem in the near future.

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Ponsse was the winner of the 2015 international Swedish Steel Prize. The prize was awarded for the new generation of harvester, the Scorpion, which utilises the properties of high-strength steel.

“Ponsse has not only significantly improved operator ergonomics, but also enhanced functionality and safety, and increased productivity with this new design,” says Gregoire Parenty, chairman of the jury, and Executive Vice President and Head of Market Development SSAB.

Since the 1980s, harvesters have remained pretty much the same. They have traditional designs that focus primarily on function. Scorpion, however, was built around the operator, with a focus on ergonomics, which also improves both performance and harvesting quality. For improved comfort, the crane is located behind the cabin, which offers an unobstructed view of the working area. In Scorpion, the operator sits right in the middle, both from the point of view of the machine’s structure and operation.

“High-strength steel gives several benefits. We have been able to reduce the total weight, which in combination with the low surface pressures, makes harvesting with Scorpion more environmentally friendly, especially in soft terrain. Our machines are used under extreme conditions, including very low temperatures, where steel needs to offer high impact ductility and reliability,” says Juha Inberg, Ponsse’s Director of Technology and R&D.

The Swedish Steel Prize was awarded for the 17th time in conjunction with a three-day event at which 700 participants from around the world gathered to share the latest innovations on high-strength steel. Among 77 candidates, an external panel of experts selected the four finalists, including Facil System from Brazil, Milotek from South Africa, and Terex Cranes from Germany. The Swedish Steel Prize was established by SSAB in 1999 to inspire and disseminate knowledge about high-strength steel and how it can be used to develop stronger, lighter and more sustainable products.

The South African company Milotek’s Futran rail transportation system was a finalist.

Milotek Futran rail transportation system

The Futran system is a modular elevated track with self-propelled trains that can carry heavy loads. It has few moving parts and modularised components, with a simplified design for easy installation and minimised maintenance costs. Each section of track has an 18-meter span that uses suspension bridge technology with bogies that are clamped to the track. These can travel from horizontal to vertical up to 90km/h while carrying as much as 20 tons each.

The track itself weighs only 37kg per metre and it can carry two tons per metre. Effectively, when moving two tons per metre at 50km/h or more, this means that it has a higher capacity than even the heaviest rail systems in the world.
In a claimed world first, automated machining of a part based on start and finish material geometry information alone has been realised by a research group led by Professor Keiichi Shirase of the Kobe University Graduate School of Engineering.

The prototype development, based on a Kitamura 6G double-column machining centre (Leader CNC Technologies), entrusts the machine tool with the machining operation — a “world first”. Requiring the creation of no NC program, using a 3D model and a material model of the component, the machine tool will determine the optimum machining process, using a database of machining information and cutting conditions. This development could potentially pave the way for intelligent manufacturing systems, reduced costs, and faster production times, say the developers.

A prototype set-up was exhibited at the EMO biennial manufacturing technology show held in Milan last October and the process has been likened to a 3D printing version of subtractive cutting.

In metal 3D printing, for example, final geometry (modified with support structures as necessary) is created directly by melting powder, building a part up layer by layer. In similar fashion, the machine tool prototype requires no intermediate NC program to drive it to produce final geometry, just start and finish shape data, with the machine then cutting away material. (In fact, CAD data requires some preparation prior to metal 3D printing, as metal additive manufacturing expert EOS makes clear.)

By avoiding the creation of an NC program, the researchers say that “in addition to the huge amount of labour required to create each program, this method has potential issues, as the machines cannot make adjustments to the machining process or respond to unforeseen problems”. It goes on to say: “Metal components can also be shaped using metal 3D printers, but this too has disadvantages: the metal powder used as a raw material is extremely expensive, and the surface of the finished component is poor quality.”

This new development could speed up the manufacture of custom-made products such as dental implants and artificial bones, potentially shortening production times and reducing costs, it is suggested.

The intelligent machine tool is an output of one of three Kobe University ‘Innovative design and manufacturing technologies’ projects that have been selected for Japan’s “Strategic Innovation Promotion Program (SIP), a project headed by the Japanese Cabinet Office’s Council for Science, Technology and Innovation.

For further details visit www.kobeu.ac.jp/en/NEWS/topics/2016_01_05_01.html

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Cut with confidence®
Mastercam CADCAM software author CNC Software Inc and global cutting tool giant Sandvik Coromant are to work together to integrate Sandvik Coromant’s Adveon tool library within Mastercam.

Adveon software is described as the first pure ISO13399 application directly connected to CAM software. Adveon reads and consumes ISO13399-compliant data from any tool vendor.

The resulting ‘open catalogue’ area within a CAM system allows for a drastic reduction in time spent on finding and defining cutting tools, eliminating the need to search for information in catalogues or interpret data from one system to another. This in turn helps manufacturers gain rapid access to required cutting tool information in order to source the most suitable machining solution paired with the most efficient cutting tool selection.

Through Adveon, users can select the tools used in their daily operations, maintain and amend the assortment, and create their own tool libraries by copying and pasting from the catalogue area. Virtual tools can be assembled in a fast and secure manner and data can be quickly exported for CAM programming and simulation.

According to previous customer studies, the automated input of cutting tool data to CNC systems can increase the productivity of NC programming through CAM systems by as much as 20%.

In brief, Adveon allows users to:
• Develop their own tool library/database
• Select tools for production
• Oversee and maintain the assortment
• Build tool assemblies quickly and safely
• See immediate results in 2D and 3D models
• Instantly export to Mastercam Tool Manager

Adir Zonta, Adveon product manager at Sandvik Coromant, comments: “Our partnership with CNC Software creates a great opportunity for Mastercam users to increase their productivity and quality on NC programing by providing qualified tool assembly data and true to scale 3D models to Tool Manager Library. Additionally, we are able to provide the digital manufacturing world our metal cutting competence.”

David Boucher, director of product development at CNC Software, adds: “By partnering with Sandvik Coromant, we will be able to directly use ISO13399 tooling data and models inside the Mastercam application, and this will improve our mutual customers’ workflow and efficiency, while reducing the potential for programming errors from the need to duplicate tooling information.”

For more information contact Sandvik Coromant on TEL: 0860 101 008 or Mary-Ann Haylett on TEL: 011 570 9615, or email: mary-ann.haylett@sandvik.com or visit www.sandvik.coromant.com, and Mecad Systems on TEL 086 111 2236 or visit the website www.mecad.co.za

CNC Software Inc and Sandvik Coromant working to integrate Adveon open tool library software within Mastercam

Autodesk takes chance on cloud based subscription only licenses for desktop products

Autodesk is drawing a line in the sand, a definitive cutoff for the availability of perpetual desktop licenses. Month to month subscription to cost more.

Autodesk is ending the sale of the AutoCAD licensing model. Effective January 31, 2016 Autodesk will discontinue selling new perpetual (standalone or network) licenses of most standalone products and transition AutoCAD Products to subscription only. AutoCAD is the flagship product of Autodesk that has helped design professionals globally to create designs and documentation work.

“The subscription model will allow greater flexibility as Autodesk is offering consumers ways to align the software according to individual/business needs, along with low cost trials and multiple machine/device access and immediate cloud access,” said a spokesperson.

New licenses for these products will be available for multi-year, annual and quarterly terms. Active maintenance subscription agreements on previously purchased perpetual licenses will continue to be renewable. In the first phase of this transition, new seats of most standalone desktop software products will generally be available only as a desktop subscription beginning February 1, 2016.

Customers with perpetual licenses purchased prior to the cutoff date can continue to use their products with support from Autodesk. If these customers are on maintenance contract, Autodesk is expected to keep their perpetual desktop titles current with updates.

“Paying month to month costs more [over time] than annual subscription, but we’re finding that some customers stay on that — 12, 13, 14 months, and so on — because it’s just better for them,” said a spokesperson.
Global industrial decline felt by EU machine tool sector

The European Machine Tool Industry Association (CECIMO) estimated 2% growth for the region’s machine tool sector in 2015, up to €23.6 billion ($25.7 billion) on the strength of regional industrial demand increases, which it added would support growth expectations for 2016.

As recently as early October, the same group had predicted the sector’s 2015 growth would hit 3%. CECIMO is a union of trade associations for over 1,500 companies across the European Union, companies who are responsible for 97% of machine tool production in the region. They also comprise over 33% of the world’s machine tool production capacity. In addition to documenting trade and production developments, the group works to articulate policies for the machine tool sector.

European machine tool builders rely heavily on exports, which have accounted for as much as 40% of all shipments in recent years. CECIMO noted that the decline in global industrial demand during 2015 has limited growth for its members, but it also emphasised that “strong business sentiment” in Europe is driving capital investment there, “and makes up for the external markets’ contraction.”

Following a 10% expansion in shipments in 2014, EU machine tool consumption is forecast to continue growing in 2015, but more modestly at 4%, or €14.2 billion ($15.5 billion.)

CECIMO noted EU machine tool consumption was strong in the second quarter of 2015 but slowed in the second half of the year. Still, the group maintains that European machine tool consumption will continue growing by 3.5% annually for the next four years.

Meanwhile, domestic machine tool consumption also promotes EU machine tool imports, and the “weak” Euro makes importing new machines more expensive. The group expect imports to increase 4% for 2015, to €9.2 billion ($10 billion), thanks to regional industrial demand.

Exports, too, are forecast to increase for 2015. Though declining demand in China and other industrial nations has hindered the growth rate for CECIMO’s machine-tool exports, the group expects exports to expand by 3% to €18.7 billion in 2015. “CECIMO exports to almost 200 different countries. In the key machine tool consuming markets, we are a leading supplier of manufacturing solutions which proves that our machines are not only the most competitive but also very often irreplaceable. Nonetheless, we need a level playing field and an effective EU trade policy,” explained Dr Frank Brinnen, the Chairman of CECIMO Economic Committee and Vice-Chairman of Starrag Holding AG.

Doosan Infracore to spin off its machine tools business

South Korean machine giant Doosan is to be spun out of parent Doosan Infracore, it has been announced, but control is to stay with the parent company.

Doosan Infracore, the construction equipment making unit of struggling Doosan Group, is set to unload its profitable machine tools division to secure much-needed cash, company officials have said. The separation will be completed by December 22, 2015.

Multiple entities, including Kohlberg Kravis Roberts (KKR) and MBK Partners, have expressed interest in acquiring the division, according to the officials.

Doosan Infracore, headed by CEO Sohn Dong-youn, seeks to get more than 2 trillion won for the division. However, the bidders are reportedly willing to pay no more than 1.5 trillion won.

A Doosan Infracore spokesman said the company had no other choice but to downsize its operations, hit hard by the prolonged global economic downturn. In particular, a slowdown in China, the world’s largest construction market, has wreaked havoc on Doosan’s bottom line.

The company sold about 6,900 construction vehicles in China in 2014, down 69 percent from 2010, with its Chinese market share plunging to 8.2 percent.

“Expecting the global construction market would continue to boom, we invested lots of money until 2012 to expand our production capacities. But this came back to bite us as China lost growth momentum,” the spokesman said. “We now have to sell some of our operations to raise cash and downsize our workforce to save costs.”

The machine tools division has been Doosan Infracore’s most profitable unit for the past four years, generating over 10 percent of its operating profits. The decision to dispose of its cash cow shows how desperate the company is to secure liquidity.

Its sales and operating profit have fallen since 2011 as China’s construction boom chilled, with little sign of recovery.

Doosan Infracore’s third-quarter profit fell to 20.2 billion won, down from 98.8 billion won in the second-quarter. It also posted a 212 billion won net loss, reflecting its deteriorating financial health.

Earlier the company unveiled a wide range of cost-saving measures in a bid to bolster its worsening bottom line. To save about 300 billion won annually, it decided to cut the number of executives by 30 percent and dismiss hundreds of employees through a voluntary retirement program.

The firm also decided to stop the operations of its money losing plants in Brazil and other countries.

“It is projected that the global construction equipment market will shrink by more than 25 percent in 2015 from 2014 and the Chinese market by 50 percent,” the spokesman said. “The world’s No.1 company has dismissed 30,000 workers and closed 20 plants. Through 2018, it plans to dismiss 10,000 more workers. This shows how bad the construction equipment industry is.”
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The Italian machine tool industry, one of the largest in the world, finished 2015 with “double-figure increases” in production volume, total sales, and exports, according to the year-end summary issued by UCIMU-Sistemi per Produrre. The trade group also predicted that continued strong results for 2016 are expected.

UCIMU is a confederation of designers and manufacturers of machine tools as well as automation products. While Italian and other machine tool manufacturers in the region have struggled for several years to maintain steady growth, 2015 has seen some stability in industrial demand.

The economic studies arm of UCIMU reported that preliminary figures for 2015 show total production of the Italian machine tool industry rose to €5.43 billion ($5.93 billion), up 12.2% over 2014 total production. The group attributed this to improvements in both exports and domestic deliveries that began to be demonstrated last year.

UCIMU described the growth in Italian machine-tool consumption as “really remarkable,” reaching €3.595 billion ($3.9 billion), a 31.3% increase compared to 2014. The revived demand was evident in both domestic manufacturers’ deliveries, up 21% to €1.92 billion ($2.1 billion); and in imports of machine tools, which increased by 45.5%, to €1.675 billion ($1.83 billion).

The group also reported that its members’ 2015 exports increased 7.9% over the previous year, to €3.51 billion ($3.8 billion.) According to the available data, the U.S. was the top export market (€248 million / $271 million, +10.8%) for Italian machine tool manufacturers in 2015, followed by China (+0.5%), Germany (+7.1%), Russia (+38.1%), and France (+23.5%).

UCIMU also reported that rising demand from the domestic industry meant that Italian machine tool manufacturers’ export/production ratio slipped to 64.6% over the past two years, compared to 75.4% in 2013.

Even 2016 will be a favorable year for the Italian industry of the sector, which, according to the forecasts, will experience a growth for all main economic indicators. Production will achieve €5,820 million euro (+7.2%), getting close to the “record” value of 6 billion euro registered in 2008.

For the year ahead, UCIMU predicted its members’ production volume will rise 7.2% over the current year, to €5.82 billion ($6.36 billion); exports will rise 6.6% to €3.74 billion ($4.09 billion); and that domestic consumption will rise 8.3% to €2.08 billion ($2.27 billion).

According to Luigi Galdabini, president of UCIMU: “2015 was a positive year for the Italian machine tool industry which was able to take full advantage of the consumption recovery, and of the improvement with regard to the national and international situation, recording increases for all main indicators.”

“However,” he continued, “EMO Milano 2015, on one hand, and the measures of industrial policy provided for by the government authorities on the other hand, further boosted this recovery by making it stronger and more stable.”

EMO Milano 2015 was held at the new slick, sprawling Fiera Milano Exposition Centre and promoted by CECIMO, the European Association of the Machine Tool Industries, and organised by UCIMU-Sistemi Per Produrre, the association of Italian manufacturers of machine tools, robots and automation systems.
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Global machine tool group emerges after MAG takeover

F

air Friend Group, a Taiwan-based industrial portfolio reported it has cleared all regulatory requirements and completed its takeover of MAG Group, the manufacturer of industrial systems and discrete machinery, in particular for automotive engine and chassis components. The parties have not revealed the value of the transaction.

Luigi Maniglio, chairman of FFG Europe, called the acquisition “an ideal and complementary strategic fit for both FFG’s machine tool division and MAG. FFG will strengthen its machine tool offering in the automotive industry and its footprint in Europe, while MAG Group will increase its access especially to Asian markets.”

While the MAG brand will remain, Maniglio indicated that combining the businesses would establish FFG among the top tier of the world’s machine tool manufacturers.

Dr. Reiner Beutel, CEO, said MAG would benefit from FFG’s global footprint and financial strength, and customers would benefit from the sharing of methods and technology between the companies, increased production capabilities, and local service.

“With our combined offering both groups will increase their attractiveness as business partners,” Beutel said.

MAG is known primarily as a designer and builder of machine tools, including turning, milling, and honing machines, with related automation and software programs, and systems integration services. Among its product lines are VDF Boehringer, Hessapp, Hüller Hille, Modul and Witzig & Frank. In March 2014, it parted with several North American lines (Giddings & Lewis, Cincinnati, and Forest-Liné), in a deal with Paris-based Fives Group.

FFG is a conglomerate with holdings in machine tool technology, printed circuit boards, and industrial equipment. Most of its turning, cutting, and grinding machines are distributed under the Feeler brand, but its assets also include the Takamatsu, Citizen Miyano, Waida, Toyota Tsusu, Marubeni, F.T. Japan, EMC Japan, Takeuchi, Mectron, and Yamamoto Sumizawa lines.

When the deal was announced more than a year ago, it was seen as a channel for FFG to accelerate its expansion in the EU market. It will gain seven machine tool manufacturing plants, giving it a total of 51 worldwide, in Taiwan, Germany, Italy, Hungary, Japan, South Korea, China, Switzerland, India and the U.S.

Gleason acquires gear cutting tool business from Hurth Infer in Brazil

Gleason Corporation announced that it has acquired the Gear Cutting Tools Business from Hurth Infer Indústria de Máquinas e Ferramentas Ltda. (“Hurth Infer”), located in Sorocaba, Brazil.

The gear cutting tools business newly named as Gleason Indústria de Ferramentas Ltda. includes shaving cutters, shaper cutters and chamfering and deburring tools, accompanied by tool sharpening services for such products. The acquired business has assumed the current employees supporting the design and manufacturing of these products and will operate in a separate facility at its current location.

John J. Perrotti, President and Chief Executive Officer of Gleason said, “While the economy in Brazil is currently depressed, it remains a significant market for us, offering longer-term growth opportunities. We have long-standing relationships with most of the gear producers in this region and expect that expanding our local manufacturing capabilities will further strengthen those relationships.”

Aniello Milone and Rafael Funaro, Managing Directors of Hurth Infer, commented, “We have great respect for Gleason and believe they will continue with the fine tradition of customer service that Hurth Infer has developed for these products in the Brazilian market. We will work closely with Gleason to assure a smooth transition and maintain a close cooperation to create maximum value for our customers. With this transaction, Hurth Infer expects to focus on and strengthen the manufacturing and support of Hurth Infer’s other products, such as broach tools, round tools and related services, and heat treatment services, which were not included in this transaction, in all its facilities located in Sorocaba, Joinville, and Cachoeirinha, Brazil.”

Gleason Corporation’s mission is to be The Total Gear Solutions Provider™ to its global customer base. Gleason is a leader in the development, manufacture and sale of gear production machinery and related equipment and automation solutions. The company’s products are used by customers in automotive, truck, aircraft, agriculture, mining, energy, construction, power tool and marine industries and by a diverse set of customers serving various industrial equipment markets. Gleason has manufacturing operations in the United States, Brazil, Germany, Switzerland, India, China and Japan, and has sales and service offices throughout North and South America, Europe and in the Asia-Pacific region.

Hurth Infer founded in 1963 is located in Sorocaba, Brazil, and is a leader in the design and manufacture of a variety of cutting tools including broaches and round tools including drills and milling cutters. The company serves a wide range of customers in various industries within Brazil and abroad.
Partnership with GM could give Lyft a boost over its rival, Uber Technologies, which is working on its own driverless cars. General Motors and Lyft have announced a long-term strategic alliance to create an integrated network of on-demand autonomous vehicles in the U.S. GM will invest $500 million in Lyft to help the company continue the rapid growth of its successful ridesharing service. In addition, GM will hold a seat on the company’s board of directors.

“We see the future of personal mobility as connected, seamless and autonomous,” said GM President Dan Ammann. “With GM and Lyft working together, we believe we can successfully implement this vision more rapidly.”

“Working with GM, Lyft will continue to unlock new transportation experiences that bring positive change to our daily lives,” explains John Zimmer, president and co-founder of Lyft. “Together we will build a better future by redefining traditional car ownership.”

GM made the investment as part of a $1 billion round of fundraising by Lyft. The companies plan to open a network of U.S. hubs where Lyft drivers can rent GM vehicles at discounted rates. That could expand Lyft’s business by giving people who don’t own cars a way to drive and earn money through Lyft. It also gives GM a leg up on competitors like Daimler AG and Ford Motor Co., who are developing their own ride-sharing services. It would also put more young drivers behind the wheel of a Chevrolet, Buick, GMC or Cadillac.

GM and Lyft strategic partnership - General Motors President Dan Ammann (center) with Lyft Inc. co-founders John Zimmer (right) and Logan Green (left)

Long term, GM and Lyft will work together to develop a fleet of autonomous vehicles that city dwellers could summon using Lyft’s mobile app. Partnering with GM could give Lyft a boost over its archrival, Uber Technologies, which is working on its own driverless cars. Beginning immediately, GM will become a preferred provider of short-term use vehicles to Lyft drivers through rental hubs in various cities in the U.S.

For more information, visit www.gm.com.

GM bets $500 million on building self-driving cars with Lyft

9th International Exhibition for Metalworking Technologies takes place from 23 to 27 February 2016 in Düsseldorf, Germany. For 36 years, METAV in Düsseldorf has been the venue where technology providers can present to the trade world their metalworking, automation, production instrumentation, and software innovations for added value in the field. This presentation of current developments becomes the stage for future investments.

METAV provides a platform for metalworking subjects aligned to users, for the automotive and vehicle industries, machine and plant building, aerospace, medical engineering, power and environmental technologies, precision mechanics, optics, electrical and electronic engineering, to mention but a few.

METAV 2016 is relaunching and from 23 to 27 February 2016 will be reinvigorated with a fresh new look. It’s positioning itself as the “19th International Exhibition for Metalworking Technologies”. Its core remit is the entire value creation chain involved. The focus here is on machine tools and production systems, high-precision tools, automated material flows, computer technology, industrial electronics and accessories.

Four complementary fields will as from 2016 will be included as areas of trade fair themes with their own nomenclature: Quality Area, Moulding Area, Additive Area and Medical Area.

“We are confident that both the tighter focus and the expansion of the METAV’s profile will benefit all exhibitors,” said Dr. Wilfried Schäfer, Executive Director of the METAV organisers VDW (German Machine Tool Builders’ Association).

For further details visit www.metav.de
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The 15th edition of Wire — the international wire and cable fair — and Tube® — the international tube fair — will simultaneously present their technology highlights for their respective industries from 4th – 8th April 2016 at the Düsseldorf Exhibition Centre, Germany.

Covering a net exhibition space of currently 58,600m², Wire will feature machinery for the production and finishing of wire, tools and auxiliary materials in process engineering, as well as materials, special wires and cables. The trade fair will also cover innovations in measurement and control engineering, test engineering and special areas.

Wire will occupy Halls 9 to 12, 16 and 17 — with the halls featuring wire, cable and glass fibre machinery, as well as wire and cable products, and the wire and cable trade. Innovations in metal forming will be shown in Hall 15. Hall 16 will open its gates to mesh welding machines and spring making technology. So far 920 companies from 46 countries have registered.

Traditionally, the countries that are particularly well represented by exhibitors are Italy, Belgium, France, Spain, Austria, the Netherlands, Switzerland, Turkey, the UK, Sweden and Germany. But a large number of registrations have also been received from the United States, South Korea, Taiwan, India, Japan and China.

Tube has so far received registrations for over 48,000m² of net exhibition space, covering the full range of pipe and tube manufacturing, processing, treatment and trade. The spectrum includes raw materials, pipes, tubes and accessories, machinery for the production of pipes and tubes, pre-owned machines, as well as tools in process engineering, auxiliary materials, measuring and control engineering and test engineering. The line-up also includes pipelines, OCTG technology, profiles and machines and the Plastic Tube Forum (PTF). So far 741 exhibitors from 41 countries have registered.

Tube will focus on pipe accessories in Halls 1 and 2, while the pipe trade and pipe manufacturing can be found in Halls 2, 3, 4, 7 and 7.1. As before, the China Pavilion will be in Hall 2. Metal forming will occupy Hall 5, and Halls 6 and 7a will feature tube processing machines. Mechanical engineering and construction will be presented in Hall 7a. Halls 1 to 7 will also have profiles for a wide range of applications. The special show PTF (Plastic Tube Forum) will be presented in Hall 7.1.

Up-to-date details of the two trade fairs can be found on their respective web portals: www.wire.de and www.Tube.de

Trade Fair Travel and Metalworking News tour to Wire and Tube 2016

Travel with Metalworking News and Trade Fair Travel, in association with the Southern African German Chamber of Commerce and Industry, to view the latest metalworking technology at these internationally recognised metalworking related exhibitions.

Trade Fair Travel, a specialist travel agency for trade fairs internationally, has put together a very reasonable tour to visit this exhibition. The tour includes return airfare Johannesburg/Düsseldorf, airport taxes, airport/hotel transfer, accommodation, full breakfast daily and medical and travel insurance.

For more details see the advertisement further on in this issue, and for a booking form contact Trade Fair Travel on TEL: 031 916 1414, Fax: 031 916 5674, or email peter@tradefairtravel.co.za or visit www.tradefairtours.com.
Dr. Heinz-Jürgen Prokop has been elected unanimously as the new Chairman by the Executive Committee of the VDW (German Machine Tool Builders’ Association) and the Sector Association Machine Tools and Manufacturing Systems within the German Engineering Federation (VDMA) in its autumn meeting. He will thus effective from 1 January 2016 succeed Martin Kapp, who in accordance with the bylaws will be stepping down after six years once his second term of office comes to an end.

“I am grateful for the confidence placed in me, and am looking forward to my future remit in the VDW,” said Heinz-Jürgen Prokop after his election. “The German machine tool industry is on the right track for success. For the VDW, the task now is to support its member companies in future-shaping issues as well, like internationalisation, energy-efficiency, securing new recruits, additive manufacturing processes and Industry 4.0, and smoothing their path. I want to make a proactive contribution towards this,” he added.

Heinz-Jürgen Prokop is 57 years old, and as a member of the board at Trumpf Werkzeugmaschinen GmbH + Co. KG in Ditzingen is responsible for development and purchasing. After passing his abitur and obtaining a degree in process engineering, and being awarded a doctorate at Stuttgart University, he began his career as a Design Manager at Trumpf Lasertechnik GmbH + Co. KG. In 1993, he joined Krupp Maschinenotechnik GmbH in Essen for nine years as a General Manager. This was followed by further posts as a General Manager of Fritz Studer AG in Switzerland and Frigoblock Grosskopf GmbH in Essen. In 2011, he returned to Trumpf in Ditzingen as Managing Director.

Heinz-Jürgen Prokop has been actively involved in the VDW since 2012, initially on the Technical Committee, and since 2015 on the VDW’s Executive Committee as well.

The VDW has for almost 125 years acted as the spokesperson for the German machine tool industry, and is headquartered in Frankfurt am Main. Together with the Machine Tools and Production Systems Association in the German Engineering Federation (VDMA), it has around 300 members, who have joined the organisation voluntarily. They represent about 90 per cent of the sector’s total turnover of approximately 15 billion euros.

For further details visit www.vdw.de
Change to a smarter way of working - Vericut

The thought of change can be quite daunting, and we can all defend the reasons why not to change with excuses such as “we have always done things this way” or “if it’s not broken, then why fix it”. Many companies then carry on without looking for or considering ways to improve operations.

But what makes an average company, a good, or even a great company?

Normal characteristics of companies that do very well are they have a competitive edge, dynamic management and are market leaders. A key element, however, is that they are always evolving and proactive in looking for ways to make things better and easier.

When manufacturing CNC machined components the normal process would be to receive a 3D CAD model, prepare a quotation for a customer, and receive a purchase order from the customer. Next would be to manufacture engineer the process by identifying any special fixtures or cutting tools, and selecting the most appropriate and efficient machine to manufacture the component.

So with all this information in place, the process engineering can take place in earnest, CNC programs are generated; fixtures, tooling and material billets are prepared and loaded onto the CNC machine. All is ready to go and up to this point this is how most companies would plan their CNC production. The key to success, however, is producing parts that are dimensionally correct, manufactured efficiently and are repeatable.

So how many companies can honestly own up to manufacturing parts 100% right first time?

This is where most companies fall short and end up going through lots of CNC program revisions to get a good part machined, which all takes time. This can have a negative effect on scheduled production or, even worse, an accident in the CNC program prove-out and damage to the CNC machine, causing unplanned expenditure and machine down time.

A company ends up being reactive to problems or issues. By working smarter all these problems can be overcome by applying proven software technology in the form of Vericut CNC simulation, G code verification and optimisation. This proactive approach to manufacturing uses Vericut as a guard to ensure that only good CNC programs are run on the CNC machine, anything else is rejected. This instantly means that the overall production efficiency of any CNC machine is improved, as only...
production intent CNC programs are run.

By Vericut being the guard between the company’s CAD/CAM system and the CNC machine, all CNC part programs are simulated in a virtual environment, ensuring that no damage to the machine or operator occurs, and no scrap or rework is produced. Any program errors can be quickly fed back to the CAM programmer to be rectified. Another added advantage of using Vericut is that the CNC program can be optimised to run faster, by anything between 15% to over 50% of its original time. Vericut can simulate all machine tools and seamlessly integrates with all major CAD/CAM systems.

One company working smarter with Vericut is Cape Town based, Daliff Precision. Christiaan van Schalkwyk, Managing Director, said “Machining cycle times have been reduced by over 20% since using Vericut”.

So the next time you ask yourself: how can we improve the way we work? Take a proactive approach to manufacturing and work smarter with Vericut.

TDM Solutions preferred partners include Stillam, Intrynays, Product One, Aztech and Sandvik Productivity Centre SA which can provide you with information on how to integrate Vericut into their CAM solutions.

CGTech and MachiningCloud have jointly introduced a feature that enables users to import an entire tooling package into Vericut 7.4.

Users can directly download all the tool assemblies within a defined tooling package on the MachiningCloud cutting tool and workholding database. Vericut’s connection with MachiningCloud is said to make OEM tool geometry more easily accessible for part program simulation, with simulation-ready tool models representative of the commercial tools users actually purchase and use.

According to CGTech, a tool can be added for use within Vericut in fewer steps than manually configuring it for a simulation session.

For more information on how Vericut can help improve your CNC machining processes, reduce scrap, prevent collisions or optimise your CNC machines to run faster contact TDM Solutions on TEL: 011 234 6019 or email info.za@cgtech.com

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The latest release of Siemens’ Solid Edge software (Solid Edge ST8) includes enhancements and new functionality that help users increase design speed and improve their ability to leverage synchronous technology, while providing greater flexibility in the choice of platform and purchasing options. In addition, the full version of Solid Edge ST8 can now be installed on tablets running Microsoft’s Windows® 8.1 operating system, giving users more freedom to design anytime, anywhere. In conjunction with the release of Solid Edge ST8, Siemens’ product lifecycle management (PLM) business also launched a new Solid Edge App, Marketplace mobile app.

Improvements to synchronous design intent management, complex sketching and 3D feature recognition enables users to focus on designs, rather than the design tools, resulting in an accelerated modeling process. Flexible modeling incorporating synchronous technology frees the user to intuitively produce realistic, accurate designs faster, reducing time-to-market. Synchronous technology combines the speed and flexibility of direct modeling with the precise control of dimension-driven design. In addition, simplification of large and complex assembly capabilities in Solid Edge ST8, combined with its ability to accurately simulate and predict kinematic conditions, greatly accelerates the assembly design process and significantly reduces the need for physical prototypes. Solid Edge ST8 also provides extended access to in-product learning tools, online community and the new Solid Edge App Marketplace.

For further details contact Esteq on TEL: 086 123 7837 or visit www.solidedge.co.za

Iscar’s Helido 800 makes short work of steel and cast iron face milling

Iscar has expanded its popular Helido 800 line by introducing effective new face mills SOF45-R18 with 45° cutting edge angles. Intended for machining mainly steel and cast iron components at high metal removal rates, the new face mill family offers users an extremely cost-effective tool for productive milling across a range of cutting conditions.

The versatile face mills can carry in the same pocket either the S845 SNMU 18 square, double-sided insert with eight cutting edges or the ONMU 07 octagonal, double-sided insert with 16 cutting edges.

**S845 SNMU 18 insert features**
- Square double-sided insert
- Eight helical right hand cutting edges for machining up to 8mm D.O.C.
- Strong and durable construction, positive rake face, resulting in low power consumption and smooth cutting

**ONMU 07 insert features**
- Octagonal double-sided insert
- Six cutting edges for machining up to 5mm D.O.C.
- Outstanding durability
- A wide wiper for high surface finish
- Great economy regarding price per cutting edge

The inserts are produced from the Sumo Tec carbide grades. They are secured in their pockets by angled screws that provide rigid and highly reliable clamping. The mills are available in a wide-diameter range 50 to 315mm.

The advanced tool design that combines a strong insert structure, a durable cutter body, secure mounting and progressive Sumo Tec carbide grades, provides the customer with an innovative solution for 45° face milling operations.

**SOF45-R18 milling cutter features**
- Versatile face mills carrying inserts with eight cutting edges for up to 8mm D.O.C. or inserts with 16 cutting edges for 5mm D.O.C.
- Advanced cutting geometry that reduces cutting forces, and by extension power consumption, resulting in smooth cutting
- Well-secured inserts by means of angled screws
- Coarse and fine pitch configurations of the tools
- Coolant holes (in up to 125mm cutters), directed to each cutting edge, for efficient cooling
- Highly economical solution regarding price per cutting edge
- Excellent performance under various machining conditions and interrupted cutting
- Productivity - high metal removal rates
- High process reliability

For more information contact Iscar South Africa on TEL: 011 997 2700 or visit www.iscar.com
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Sandvik Coromant has launched a new series of end mills designed to deliver high performance and security in side milling and pocketing operations. The CoroMill® Plura HFS (high feed side milling) end mills are developed for steels and stainless steel applications, but they can also enhance productivity in difficult-to-machine materials such as heat-resistant super alloys and titanium.

Today's modern machine shops utilise the latest milling strategies, for example trochoidal milling, to enhance productivity and process reliability. The tool path is often generated with CAM software for constant maximum chip thickness and a short arc of contact, allowing high feed rates, minimum vibration and longer tool life. CoroMill Plura HFS is designed with these strategies in mind. By utilising the complete cutting length of the end mill, it achieves a higher metal removal rate with smaller diameters, compared to indexable milling and traditional milling strategies. This reduces tool costs and improves overall productivity.

CoroMill Plura HFS features include:

- an unequal helix flute design that assures a variable angular pitch in every axial section to increase the chatter-free material removal rate
- an asymmetrical chip-breaker profile that improves chip evacuation and minimises the risk of edge chipping and tool breakage
- a conical core shape with a smaller core diameter at the face to improve chip evacuation capabilities, with a larger core diameter at APMX for maximum stability

Its tough GC1740 grade is developed to manage large ap/ae combinations and resist the bending forces generated when using a 4xDC length of cut.

Ultimately, the new Tailor Made offered by Sandvik Coromant includes CoroMill® Plura end mills for manufacturers or machine shops needing a 5xDC length of cut.

**Advanced face milling tool for automotive industry**

With CoroMill® 425, Sandvik Coromant offers an eight-edge finishing tool designed for face milling that greatly improves the metal removal rate and tool life in the ISO K application area. Due to its innovative setting system, it is particularly user-friendly.

Sandvik Coromant has introduced CoroMill 425, a finishing tool for the face milling of cast materials. With its eight edges it is ideal for face milling components such as engine and cylinder blocks, axle housings, brake carriers and crankcases made of GCI, NCI and CGI materials. Due to its patented setting system, the tool features highly precise, reliable insert positioning that makes set-up very simple.

On the CoroMill 425, the same inserts can be used as working or as wiper inserts. The wiper inserts are mounted in cassettes on the face of the tool. The insert version with a 25° entry angle and optimised chamfer is designed to reduce breakouts and burr formation on the workpiece. A choice of wear-resistant GC1010 PVD insert grade for dry milling and K20W grade for wet milling enables especially long tool life in CGI materials.

For further details contact Sandvik Coromant on TEL: 0860 101 008 or Mary-Ann Haylett on TEL: 011 570 9615, or email: mary-ann.haylett@sandvik.com or visit www.sandvik.coromant.com
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TALMAC
MACHINE TOOLS
Due to the huge success of the RhinoRush family of tools, TaeguTec has announced the addition of a new line of inserts and holders to the RhinoRush family. RhinoRush, which is known for its smaller more robust double-sided design, is introducing a “V” type 1304 insert that enables excellent chip breaking performance on a range of turning applications.

The VNMX 1304 chip breaker is now available in FS, FG, FM, MK, PC and MT types.

The new range of holders includes improved clamping systems that enhance rigidity and stability required in high MRR operations. The improved clamping systems cover hook lever, T-holder and screw type holders.

The new VNMX 1304 insert line, coupled with the holder’s clamping systems and extended turning range provides end-users in external turning and boring applications the same productivity and economy now enjoyed by current RhinoRush customers.

**YNMG 1304 insert**
TaeguTec has announced the expansion of the RhinoRush line with the introduction of a new geometry, the YNMG 1304 insert.

The newly launched YNMG 1304 insert is designed with a 25 degree geometry shape enabling several profile and groove machining applications under 35 degrees, as well as uninterrupted undercut machining applications. Available as standard items, the YNMG 1304 FS chip breaker has a sharp cutting edge and wide shape appropriate for finish machining with excellent chip control ability.

Additionally, the new YNMG 1304 inserts are interchangeable with the recently launched VNMX 1304 insert’s holders.

The idea behind the RhinoRush line is to introduce a series of mini tuning inserts that meet the manufacturing industry’s needs of reduced machining costs and competitiveness while keeping an eye on the environment. The smaller size, combined with its unique rigid clamping has been instrumental for many a revolution on the shopfloor and has led to immense savings for customers, according to TaeguTec.

For more information contact TaeguTec SA on TEL: 011 362 1500 or visit www.taegutec.com

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Hypertherm unveils new waterjet profiling components

Sheet metal profiling company Hypertherm has introduced a waterjet abrasive management system, a new generation of CNCs, and two new air plasma options. Hypertherm’s abrasive management system is comprised of two products – the PowerDredge abrasive removal unit available now and its EcoSift abrasive recycling unit available in 2016. The PowerDredge increases waterjet productivity and profitability by automating abrasive clean-outs, reducing both labour costs and system downtime. The EcoSift helps companies recycle their used abrasive, up to 60% of which can be reused without impacting cut quality.

Hypertherm is also unveiling a new generation of so-called Edge Connect computer numeric controls. Enhancements include the newest version of Hypertherm’s Phoenix software with the company’s popular CutPro Wizard for fast and easy job set up; and for the first time, an introductory version of ProNest CNC nesting software that enables the creation of a part program directly on the CNC. Hardware upgrades include a large 19 inch touchscreen on Hypertherm’s full featured unit, a quad core processor, solid state disk drive, and EtherCat connectivity. On average, these new controls are 65% lighter and use 70% less electricity than Hypertherm’s Edge Pro line of CNCs. Customers can choose from among three Edge Connect offerings including a mini CNC and a full featured CNC beginning in early 2016.

Two other new products support cutting and gouging in remote locations. Hypertherm’s Freedom 38 PPA is a completely autonomous, all-in-one unit that combines a powerful 125 amp plasma system with a generator and air compressor for cutting in areas without access to electricity. The Powermax30 AIR features a 30 amp plasma system and air compressor in one compact unit for ultimate portability.

For further details contact Craig Sterley of Hypertherm on email craig.sterley@hypertherm.com or visit www.hypertherm.com

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New offerings for RhinoRush — TaeguTec

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Bystronic has introduced the BySmart Fiber 3015, a new fiber laser cutting machine designed for users looking for quality machine performance at a lower investment cost. Equipped with the powerful ByVision control, BySmart Fiber laser cutting machine operators quickly and easily learn to control the entire cutting process. BySoft 7 software ensures a seamless integration into the manufacturing process chain for an optimised solution.

The newly developed machine platform delivers outstanding cutting results with just a few operating steps. To achieve this, the BySmart Fiber's performance package focuses on the core competency of a fiber laser: laser-cutting parts in the most simple, quickest and cost-effective manner possible.

Available with a Fiber 2000 or Fiber 3000 laser source, the BySmart Fiber can process a wide range of materials and thicknesses, from steel and stainless steel to aluminium and non-ferrous metals such as copper and brass.

In the thin range of sheet thicknesses, the BySmart Fiber uses the full potential of the high energy density provided by the fiber laser beam. Here the machine significantly speeds up the cutting process compared to a CO2 laser. In the thicker material range the BySmart Fiber also proves its capability for cut quality and speed. In addition, users benefit from comparably low operating and maintenance costs. Hence, for users this means: faster cutting processes, lower costs, and higher profits with every cut part.

Simple operation
Operators control the cutting process on the BySmart Fiber using the ByVision 22-inch touch screen control interface. The powerful ByVision controls the entire manufacturing process with just a few swipes of the finger. While cutting, ByVision controls all the processes on the machine and provides the user with the most important process and machine data on-screen. Hence, the user always has an overview of all the relevant information: the current cutting plan, the position of the cutting head, and the machine status.

With BySoft 7, Bystronic offers the ideal software package in order to ensure the BySmart Fiber's seamless integration into the user's process chain. This allows the overall concept of an optimised manufacturing environment to be established around the fiber laser, in which users can realise the finished sheet metal part in a fast and efficient process.

For more information contact First Cut on TEL: 011 614 1112, email info@firstcut.co.za or visit the website www.firstcut.co.za
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Salvagnini has introduced FlexCell, a concept linked to the optimum management of a cell that can be tailored to meet specific needs. The system starts with bending and can be extended upstream to cutting, to optimise the workflow management of a cell comprising two or more stand-alone machines, controlled entirely by a single software program: OPS-FlexCell.

According to the manufacturer, the system lets users extend the feasibility of what they can produce by combining a panel bender and a press brake, but going beyond the classic cell-based approach to production organisation.

The system was recently displayed in one of many possible combinations: a P2lean panel bender combined with the B3.ATA press brake. The cell is fed by an L5 fiber laser cutting system with automated loading/unloading and part separation, which automatically routes parts to the cell for processing.

The three units combine with the software to allow management by one operator. The software guides the operator through the operating process and optimises laser cutting nesting patterns, while achieving the most suitable bending sequence for the parts on the press brake and panel bender.

For further details contact Potgieter Industrial Machinery on TEL: 011 022 4648 or visit the website www.industrialmachinery.co.za
With cutters that can be used for shoulder milling, profiling, face milling, slotting, ramping, helical interpolation, and circular interpolation, all while achieving true 90-degree shoulders, the Victory Shoulder Mill (VSM) 17 platform from Widia is a robust and versatile job-shop winner.

Designed for low horsepower draw and free machining, the VSM17 delivers an effective one-two punch of reduced horsepower at the machine, and higher speed and feed rates that mean more parts per shift. “For a wide range of work materials, the entire VSM 17 platform is optimised to provide higher productivity for job shops,” says Adarsh Sowcar, global product manager, indexable milling.

VSM17 cutter bodies have an integral chip gash design for excellent chip evacuation, along with hardened-steel construction and hardened pocket seats which provide high resistance to deformation. VSM17 offers aggressive ramping capability up to 8.8° and a maximum 16.45mm depth of cut. VSM17 is available in shell mills, screw on cutters, cylindrical shank and Weldon shank end mills with internal air and coolant capability.

VSM17 inserts have strong cutting edges, multiple corner radii, and positive rake faces that provide a true 90-degree wall while providing excellent wall and floor surface finish.

VSM17 starter kits are available now through local authorised WIDIA distributors. These kits feature a cutter body and ten inserts. For more information, visit http://www.widia.com/

**Featured in Novo**

Moreover, the VSM17 platform is available through Novo™, Widia’s digital process knowledge application. With powerful process knowledge available on iPad™ and other digital devices, Novo helps users define machining features, such as ramping or slotting in specific work materials, and then immediately reduces the product set to those like VSM17 that can do the job. This provides far more useful process knowledge than any online catalogue alone, all obtained in a fraction of the time.

For more information contact Widatech on TEL: 087 150 3266, email: info@widatech.co.za or visit www.widatech.co.za or visit www.widia.com/novo

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**SafanDarley 44-ton electric press brake**

SafanDarley has expanded its E-Brake Ergonomic press brakes series, a compact, portable, high-speed electric press brake, with a 40 ton metric (44 US ton) model that offers higher capacity and a longer working length of 1600mm. The Ergonomic 44 ton has an open height of 585mm standard and a stroke of 305mm standard.

The ergonomic series is designed for bending small parts. Rapid acceleration and deceleration of the electrical servo-driven ram delivers approach speeds up to 10,9 MPM. The machine has a compact footprint of 2565 by 1750mm.

SafanDarley offers three models of ergonomic machines in the range of 22, 39 and 44 ton.

**E-Control EC30**

The SafanDarley E-Control Touch Screen system is the most efficient and simple Man-Machine Interface of its time. Only the buttons required at that moment are visible on the 17” screen. The E-Control is the new standard for ergonomic intuitive operation.

Another feature is the optional second screen on which additional bending information can be displayed for the operator. The controls simply run on a PC under Microsoft Windows®. The software was developed based on the Microsoft.net Framework. The unit is fitted with a 100 MB Ethernet UTP network connection as standard. The new E-control EC30 offers 3D programming with graphical bend simulation and the ability to import DXF-files.

For further details contact CML Machine Tools on TEL: 086 142 2423 or visit www.cmlmachines.co.za
In a manufacturing world of growing complexity, a straightforward solution that works excellently and saves money can be a breath of fresh air. In grooving and cutoff, Beyond Evolution™ from Kennametal is that solution.

“What would it take to launch the world’s best grooving and cutoff system?” asks Kennametal senior product manager Mark Filosemi. “We began with the expected — longer tool life and higher cutting speed. But our customers added something different. They wanted simple. That was it. They wanted to stop leafing through hundreds of pages of catalogues and thousands of items because it was difficult, time-consuming, and expensive.”

Easy to choose, easy to use became the foundation of Beyond Evolution’s development. The goal to offer a system that was less complicated to navigate and select, complimented by an equally simple approach to using it.

“But we didn’t stop there,” Filosemi adds. In developing Beyond Evolution, the team questioned every detail to enhance their customer’s experience. With deep design and innovative engineering experience, Kennametal pioneered the most versatile high-performance platform to enter the market.

Proprietary Triple V
Beyond Evolution is a single-sided grooving and cutoff system for deeper grooving capability than double-ended systems. A proprietary “Triple V” design with top, bottom, and backside V-shaped seating in the holder pocket creates a pull-in effect for exceptionally high stability for deep grooving, face grooving, side turning, and profiling, among other applications.

The results
Beyond Evolution will groove deeper than double-ended systems, turn with 90% of the stability and allow interchangeability regardless of geometry or application. It offers tighter indexing tolerances, longer cutting depths, and new plunge and turn geometries.

The most visible result of Beyond Evolution’s “one system for all applications” design is the most requested — fewer items, up to 35% compared to competitors. This makes Beyond Evolution easy to choose in addition to easy to use, reducing inventory and expenses. And where conventional product launches focus on a single line item, Beyond Evolution will be launched in multiple grades for dozens of applications — a full line offering that promises higher performance and reduced costs immediately.

Innovations 2016 and Novo
Whether you’re digitally native or prefer print, much more information, including grade descriptions, feed and speed recommendations, and full ordering information is available in the new Innovations 2016 catalogue from Kennametal — an invaluable resource for the latest advances across the entire range of Kennametal applications. For downloading the digital version or requesting a print copy, visit www.kennametal.com.

Moreover, Beyond Evolution is available through Novo™, Kennametal’s digital process knowledge application. With powerful process knowledge available on iPad™ and other digital devices, Novo helps users define machining features, such as profiling or grooving in specific work materials, and then immediately reduces the product set to those like Beyond Evolution that can do the job. This provides far more useful process knowledge than any online catalogue alone, all obtained in a fraction of the time.

For more information contact Kennametal South Africa on TEL: 011 748 9300 or visit www.kennametal.com
DMG MORI’s Lasertec 4300 3D hybrid machine incorporates additive-directed energy deposition (blown powder) into a five-axis turn-mill machining center with a working area of 600 x 1 500mm. This is the company’s second hybrid machine for additive manufacturing via powder nozzle plus milling and turning. It says the six-axis blown powder method is as much as 20 times faster than a powder bed. This machine is designed to exceed the capacity for prototypes and small parts for additive/subtractive machining, as well as to enable the creation of parts with multiple alloys via laminations or gradual transitions. A component can be built up in several additive steps, and milling can be interspersed with the additive process to machine areas of the part that would no longer be reachable once the component is fully grown.

Equipped with a mirrored C axis, the machine can transfer workpieces in order to work on all six faces of a cube. Additionally, the machine’s lower turret can be used as a virtual fixture, rigidly supporting the part during the subsequent machining process only when and where it is needed. As many as five deposition heads can be automatically parked in a secure docking station while turning or milling operations are being carried out on the machine. These heads can be prepared for ID or OD deposition, large- or small-diameter deposition, heat treating, surface hardening, or welding, providing flexibility in manufacturing strategy. For more information contact Retecon Machine Tools on TEL: 011 976 8600 or visit www.retecon.co.za
The MicroStep ProfileCut series —
tailor-made for precise and efficient processing
of profiles of any kind

Profile cutting machine for closed and open sections, i.e. I- beams, U-channel, angle iron, pipe, rectangular and square tube. Can be equipped with a cutting table for sheet metal processing.

For cutting of open sections, such as I, H, U or L profiles, MicroStep has recently launched a new product — ProfileCut. Its specialised 3D rotator with a tilt of ± 120° enables cutting of structural sections without the need for their rotation in the cutting process. In addition to cutting of open profiles, ProfileCut machines can be equipped with more cutting zones, e.g. for processing of hollow profiles (cutting in the same way as on a PipeCut machine) or for sheet cutting like on a standard flat-bed machine. The functionality of ProfileCut can be enhanced by adding a drilling head for drilling up to Ø 40 mm hole diameter, with automatic tool exchange and internal cooling of drill bits, or by various marking devices.

In addition to the processing area, the ProfileCut the system can be equipped with a cutting table for sheet metal processing. This allows for cutting of profiles, beams, plate and sheet on one machine. This will give your production the flexibility and saves the purchase of a further cutting or drilling machine. The possibility of the ProfileCut series to fully automate makes it interesting for mass production as well as for manufacturing with smaller batches.

To enable precise division as well as cut-outs in required spots on the beam, the machine is equipped with a laser scanner for measuring of the exact shape of profile in the place of cutting which allows the control system to adjust the movement of tool according to the true shape of the profile. In addition, the machine offers drilling and marking operations on beams.

3D profile and beam processing of up to 1000mm in height and 12 metres in length
Through the generous work surface profiles can be easily edited up to 1000mm in height and 12 000mm in length. In addition to common carrier forms such as I, H, L, T, round tubes or square profiles can also be edited.

Full flexibility thanks to 120 ° bevel cutting
The new 120 ° rotator allows for full editing of profiles without an additional axis of rotation in the editing area. Therefore I, H, U, L, T profiles and beams are fully customisable and can also be separated.

Laser scanner for precise determination of the shape and position
With the help of the standard laser scanner, the ProfileCut determines the exact position and shape of a profile. Material deviations from the ideal shape are detected automatically and efficiently.

Integration of technologies
The ProfileCut series can be flexibly adapted to your production need. The system can be equipped with a drilling support for the precise placement of holes, cuts and threads. Labelling technologies for the identification of final support
sections can also be integrated.

Fully automated beam processing

For maximum productivity, the machining process can be fully automated which allows for feeding of the to be machined profile, determination of position and compensation for any differences in the shape with a laser scanner, fast and precise cutting of profiles, automatic discharge of the finished pieces and seamless access to inventory management, and the Micro Step Production Management — MPM.

The range has many variations and includes machines with a working length of between 1500 and 50 000mm, working widths between 1500 and 8000mm, maximum number of tool stations 6 (8G), positioning speed up to 23 m/min (depends on version), pipe diameter range between 100 and 1500mm, hollow profile 100 x 100mm and 600 x 600mm and maximum H profile HEB 1000.

The maximum thickness of material cut by plasma is according to the plasma source and the maximum thickness of material cut by oxyfuel is 300mm.

For further details contact MicroStep South Africa on TEL: 011 397 6356 or visit www.microstep.co.za

The Okuma Multus U series of multitasking lathes — New features for higher productivity

Satisfying the highest demands, the Okuma Multus U series of multitasking lathes are based on a solid orthogonal flatbed and are ideal for process-intensive and complete machining in complex applications. The enormous productivity of these multitasking machines has improved once again thanks to several new features.

Now equipped with the 5-axis auto tuning system the Multus U series is built to manufacture extremely precise components with high speed.

Two machine sizes are available:
The Multus U3000 offers a maximum diameter of 650mm and bed length of 1000mm, while the Multus U4000 offers a maximum diameter of 700mm and bead length of 1500mm.

The series is capable of flexible CNC machining from all directions with a rigid traveling column that enables cutting along the entire Y axis. The lathes are equipped with Okuma’s thermo-friendly concept to enable stable machining accuracy with structural design and thermal deformation control. The design enables easy tool loading from the machine front, improved spindle access for faster setup times and smooth chip discharge for better flows, the company says.

The THINC OSP-P300S control is said to reduce keyboard operations and maximize uptime with its collision avoidance system. The series also can be equipped with Okuma’s Machining Navi for maximising tool performance by selecting optimal speeds to avoid chatter. Extended specifications, including 17 variations with multiple bed lengths, an optional W subspindle and optional lower turret, enable a range of applications.

For further details contact F & H Machine Tools on TEL: 011 397 4050 or visit www.fandhmachinetools.co.za

Namaqua Engineering in Vredendaal, Western Cape have purchased a MicroStep ProfileCut Series machine

For further details contact MicroStep South Africa on TEL: 011 397 6356 or visit www.microstep.co.za
For shops wanting more bar capacity without the space requirements of a larger-footprint lathe, Haas Automation now offers a complete line of big-bore turning centres. The newest, and smallest, addition to the company's big-bore line is the ST-15 — a compact solution loaded with full-size features.

The ST-15 is a small-footprint, big-bore turning center with a 63.5mm bar capacity. The machine provides a maximum cutting capacity of 356 x 406mm, with a swing of 406mm over the cross slide. It is equipped with a 210mm hydraulic 3-jaw chuck and a 12-station BOT turret. The ST-15’s A2-6 spindle nose has a 88.9mm bore and a 63.5mm bar capacity. The machine’s 14.9 kW vector dual-drive spindle turns to 4000 rpm, and provides 203 Nm of torque.

On-the-fly wye-delta switching yields a wide constant-horsepower band for constant surface feed cuts, and 30.5 m/min rapids and fast turret indexing reduce cycle times.

Standard equipment on the ST-15 includes rigid tapping, a 15” colour LCD monitor, and a USB port. Available high-productivity options include 6000-rpm live tooling with C axis, a belt-type chip conveyor, a tailstock with hydraulic quill, an automatic tool probe, an automatic parts catcher, high-pressure coolant systems, and much more.

The ST-15 is extremely rigid, highly accurate, and very thermally stable. All castings were optimised using finite element analysis (FEA) to produce the most rigid designs, while improving chip and coolant flow, and simplifying maintenance and service. The spindle head features a compact, symmetrical design for thermal stability and rigidity, and the 45-degree wedge design greatly increases the tool-mounting envelope and improves chip flow.

For shops wanting additional capability for secondary operations, a Y-axis version of the ST-15 is also available. The ST-15Y has the same footprint and specifications as the ST-15, with a maximum capacity of 305 x 406mm. The machine is equipped with a Y axis that provides ±51mm of travel, and includes 6000 rpm live tooling and a servo-driven C axis. A 12-station hybrid VDI/BOT turret is standard.

**Haas Factory Outlet — South Africa Open Day**

Haas Factory Outlet — South Africa will be holding an open day at its existing premises - 60 Loper Avenue, Spartan, Gauteng - on Thursday the 11th of February 2016 from 09:00hrs to late afternoon. A whole host of machines will be on display. All are welcome. Haas Automation manufactures a full line of CNC vertical and horizontal machining centers, CNC lathes, rotary tables, mini mills, super mini mills and 5C indexers.

**New premises from 1 March 2016**

Haas Factory Outlet — South Africa will be moving to new premises on 1 March 2016. The new address will be: Unit 4, Abbeydale Park, 15 Innes Road, Jetpark, Gauteng. For further details contact Haas Factory Outlet — South Africa on TEL: 011 974 2301 or visit www.haassa.com
The performance capacities of the 2D laser machines and the solid-state lasers made by Trumpf continue to advance. Worthy of special mention are the BrightLine fiber function, which turned the solid-state laser into an all-purpose tool, and the CoolLine feature. The latter stabilises the cutting process for thick mild steel by way of closely defined cooling. This makes it possible, for instance, to cut extremely tight curves.

At the Blechexpo Trade Fair in Stuttgart Trumpf once again introduced new innovations that will make a decisive advance in laser cutting. Among these features is the intelligent beam monitoring system — Smart Beam Control. It lends even greater reliability to the solid-state laser machines in the TruLaser Series 5000. Smart Beam Control automatically regulates the laser’s focal position during the cutting process itself. This function makes for constant superior reliability and makes it possible, in addition, to carry out a diagnosis of the cutting system. This can also be done from a remote location, using Teleservice.

The new Condition Guide function for the TruLaser Series 5000 enhances transparency. A single glance is enough to determine the machine’s status. A traffic light system provides information on the condition of key elements that affect the machine’s cutting capacity. The Condition Guide can, if desired, provide information on corrective actions to be taken by the operator. Line charts show the history of the particular condition and simplify forecasting the need for intervention. Consequently, maintenance work can be planned both efficiently and in harmony with actual needs.

Trumpf also showed the TruLaser 5030 fiber in Stuttgart with new laser power. In addition to the three, five and eight kilowatt power levels offered in the past, the machine is now also available with the six kilowatt TruDisk 6001 laser. Especially at medium and heavy sheet metal gauges this makes for quick processing. Using the TruDisk 6001 and the functions cited here the TruLaser 5030 fiber cuts mild steel, stainless steel and aluminium up to 25 millimeters thick and copper and brass as much as 10 millimeters thick, both quickly and with enviable dependability.

For more information contact Retecon Machine Tools on TEL: 011 976 8600 or visit www.retecon.co.za
Nickel based heat resistant alloys such as Inconel 718 are regarded as formidable opponents for the cutting tool industry. However, the composition of these materials sees them soften when heated to temperatures beyond 800 degrees C, making them easier to machine. To efficiently carve through these difficult to cut materials, Mitsubishi Materials has now developed its innovative new line of ceramic end mills, the CESRB Series.

Whereas cemented carbide end mills deteriorate drastically when working beyond 800 degrees C, the new range of ceramic end mills retains their strength. This enables them to conduct high speed machining with large depths of cut and at high feed rates on difficult to cut materials such as Inconel. Capable of working at parameters beyond that of carbide end mills, ceramic end mills can double tool life whilst machining at feeds and speeds up to 10 times higher than conventional tools.

The concept behind this new range is that it should run without coolant at high speeds and feeds with relatively heavy depths of cut to generate higher frictional heat. By generating an increase in temperature, the component material softens and enables the end mill to work more efficiently. As such, the Mitsubishi R&D department suggests that these new end mills operate at speeds from 13000 to 26000rpm depending upon tool diameter, with feed rates in the region of 1.5 to 2m/min.

Ideal for Inconel applications in the aerospace and power generation sectors, the performance of the new CESRB range is credit to its ceramic composition and the innovative geometry. The creative geometry design incorporates an optimised helix angle that reduces cutting forces and prevents the ‘pull-out’ effect that is common during heavy machining.

Furthermore, Mitsubishi has utilised its seamless grinding technology to deliver a higher edge chipping resistance, even during extreme roughing applications. These features are supported by a strong negative flute and specially developed rake edge that withstands high temperatures and loads.

Further enhancing the performance characteristics is the fact that they are available with a four-flute designation for pocketing and slotting operations, whilst a six-flute design is available for face and profile machining. The four and six fluted end mills are available in diameters of 6, 8, 10 and 12mm with a corner radius of 0.5, 1 and 1.5mm depending upon the chosen diameter. The respective diameters are provided with a 6, 8, 10 and 12mm shank. To maximise rigidity and performance, the ceramic CESRB series has a stub length design with an overall length of 50, 60, 65 and 70mm and a cut length of 4.5, 6, 7.5 and 9mm for the selected diameters.

Due to the high performance characteristics of this new ceramic range, Mitsubishi recommends that customers utilise a robust machine tool with a sturdy tool clamping configuration such as a precision hydraulic chuck.

For further details contact Multitrade Distributors on TEL: 087 803 2377 or visit www.multicarb.com
Amada HFE-1003 3i press brake with offline programming and scheduling software

The Amada HFE-1003 3i has a 19-inch, 3D multi-touch screen control, with smartphone-like operation. All programme information is available on a single screen. The company’s new BendNavi 3D system enables fast programming by importing DXF/DWG/IGES cad files directly into the machine. Further improvements to job set-up time are made possible with features such as Sgrip tool clamps, bar code program input and tool navigation.

From an environmental perspective, a new, energy-saving drive with stop-start technology is designed to save both electricity and oil.

A large working envelope delivers fast processing speeds of 15mm/s for folding and 200mm/s approach. It also offers sheet follower options for processing large work, delta X backgauges for gauging complex parts, and a new automatic laser angle measurement system for material up to 20mm thick.

The range offers bed lengths from 2.0 to 4m and press capacities from 50 to 220 tons as standard.

The VPSS 31 offline software automatically selects press brake tools, creates tool layouts and bend sequences. Automatic batch processing then generates the programmes without operator intervention, utilising a common tool layout for a maximum of 99 parts, saving time, reducing tool set-up and increasing machine uptime. Combined with Production Designer CAD software and the 3D part view on the AMNC 3i press brake control, the software streamlines the whole bending process.

For further details contact Amada JHB South Africa on TEL: 011 453 5459 or www.amada.com
Designed specifically for manufacturers and subcontractors that demand the utmost in machining flexibility and the capability of processing precision complex parts, Kitamura has launched the Mytrunnion 4G.

This powerhouse 5-axis machining centre ensures the highest level of precision with unbeatable accuracy levels of +/-0.002mm and a repeatability of +/-0.001mm. For customers that require precision coupled with speed and rigidity for machining small to medium components, this unparalleled level of precision is achieved by hand-scraping of all major sub-assemblies, coupled with linear scale feedback on all axes.

The new Mytrunnion 4G from Kitamura has a maximum work-piece diameter of 500mm on its rotary trunnion table and 400mm work height in the Z-axis, with the ability to accept billets up to 200kg. This ultra-high precision, simultaneous 5-axis machine has a tilting table that rotates -120 to +30 degrees in the A axis, with a C-axis rotation of 360 degrees, both having a minimum indexing command of 0.001 degree.

The design of the Kitamura trunnion table delivers incomparable stiffness and rigidity that provides the ability to position the work-piece very close to the spindle for optimum machining performance. To carry most of the machining load it employs a trunnion type cylinder in the A-axis supported by double column bridge, with both sides of the cylinder system mounted squarely against the centre of the C-axis, thus offering a higher level of rigidity and accuracy. The Mytrunnion 4G uses a high precision roller gear cam mechanism in the 4th & 5th axes that further enhances the in-built zero-backlash capability of the machine.

This rigid machine design enables the powerful 15kW directly driven spindle, with a BT40 taper (HSK63 optional), to maximise material removal rates. With the world’s fastest accelerating spindle, the Mytrunnion 4G gets to a maximum speed of 15,000rpm in just 2.3 seconds.

The 9000kg machine has a compact 3.7M by 2.2M footprint that provides a compact powerful machine package, further enhanced by the efficient Kitamura Arumatik-Mi CNC control. This user friendly control system, driven by a high speed Mitsubishi processor and with its large 19 inch LCD screen, includes multi work setting displays, maintenance support functions, in-built diagnostics and video guidance, making the Arumatik-Mi the most innovative, feature rich and user friendly control unit available.

Coupled with engineering and applications support, this Kitamura machine / control combination is unique in that it provides the operator with a practical, user friendly work station. The super-fast and smooth data processing, quality of build and enhanced machine features all give the user the confidence of machining complex work-pieces in an efficient and cost effective manner.

For more information contact W.D. Hearn on TEL: 021 534 5351 or visit www.wdhearn.co.za

This powerhouse 5-axis machining centre ensures the highest level of precision with unbeatable accuracy levels of +/-0.002mm and a repeatability of +/-0.001mm.
Tour itinerary with Emirates Airline

Sun 03 Apr  
Depart Johannesburg International Airport  
EK 764  
19:15

Mon 04 Apr  
Arrive Dubai  
EK 055  
08:30

Arrive Düsseldorf  
13:25

On arrival in Düsseldorf, you will be met by our driver who will transfer you to the 169 roomed Ibis Hotel Düsseldorf Hauptbahnhof. As the name implies the Ibis Hotel is located only 50 metres from the main station (Hauptbahnhof). Travel time to Messe Düsseldorf takes only 20 minutes and holders of trade fair entrance tickets can travel free on the Regional Transport Network Rhein-Ruhr (VRR). In the hotel clients also benefit from a free internet terminal in the lobby, 24 hour lobby bar and extended breakfast times. The 2 star hotel offers modern rooms with air conditioning, a desk and private bathroom with hairdryer. All rooms face the peaceful inner courtyard. The breakfast which is included in the tour price is served from 04:00 to 12:00 daily. Drinks and snacks are served at the 24 hour bar. The famous Konigsallee shopping street and Düsseldorf’s Altstadt (Old Town) can be reached in under 15 minutes on foot.

Under own arrangements to visit Trade Fair until:

Fri 08 Apr  
Depart Düsseldorf  
EK 058  
21:25

Sat 09 Apr  
Arrive Dubai  
EK 763  
10:15

Arrive Johannesburg  
16:25

TOUR PRICE

R20, 235 p.p. sharing a twin room and
R25, 567 for a single room

NB. In order to offer clients the best available airfares and flight connections, we have used the flights of Emirates Airline. No flights have been booked and we advise that we have used the current (23 November 2015) cheapest available "published" fare. Reservations will be made on application and the appropriate fare and taxes will be charged at that time. The airline will hold reservations for 2 days, by which time we will need to pay for and issue the tickets. Should you wish to use another airline, we will be pleased to offer alternative suggestions.

• Accommodation is held on option until 10th February 2016, by which time all unconfirmed rooms will be released back to the hotel. Requests after this date will be made to the hotel on an individual basis. No reservation will be confirmed without a completed and signed booking form and a deposit of R2,300 per person. The tour booking form and tour booking conditions can be found by on our website below.

• Rates of Exchange Prevailing at 23 November 2015 and final tour costs will be recalculated 6 weeks before departure when we will send our final invoice.

PRICE INCLUDES

• Return economy class airfare Johannesburg to Düsseldorf
• Current airport taxes and fuel surcharges
• A one way transfer on arrival to the hotel
• Accommodation for 4 nights in this Hotel Düsseldorf
• Full breakfasts daily
• Medical/cancellation/travel insurance
• Düsseldorf city maps

PRICE EXCLUDES

• All passport and visa fees
• Return transfer from hotel to airport on 8th April
• Trade Fair entrance ticket (price unknown at time of preparing this tour)
• All items of a personal nature such as laundry, bar bills etc.
• A small amount not included in itinerary

N.B.

• No refunds given to passengers not utilising airport transfers
• Rates of Exchange Prevailing at 23 November 2015 and are subject to change
• We regret to advise that credit cards cannot be accepted

TRADE FAIR TRAVEL

Please return a completed booking form which can be downloaded from the website www.tradefairtours.com to Trade Fair Travel,
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www.tradefairtours.com
To enhance stability and longer tool life for the end user, the Tungaloy Corporation has developed the new Tungaloy TungSix-Drill for highly reliable machining credit to the strongest cutting edge. This world's first indexable drill with double sided inserts has been designed to create an economical drilling solution for customers with 6 true cutting edges per insert that doesn't compromise performance.

By adapting an obtuse angle relief on the corner part of central-edge side, insert increases strength and improves fracture resistance. The newly designed insert also has an optimal spacing between edges on the same side to eliminate the overlapping of damaged edges that can destabilise tool life. Complemented by a positive land geometry, the TungSix-Drill reduces the cutting forces to levels comparable with the competitor indexable drills.

Additionally, the new drill utilises Tungaloy's DJ type chipbreaker that has a thick width and gentle curve on the central-edge side to prevent chip packing, while the high rake angle and breaker on the peripheral-edge side ensures remarkably low cutting forces and excellent chip control.

With a diameter range from 20 to 54mm in 1mm increments, the Tungaloy TungSix-Drill is the ideal tool for drilling a wide variety of materials with a diverse selection of applications. The new drill increases tool life by 1.5 times compared to inserts with four cutting edges while delivering comparable speed and feed rates. The new drill design consists of a central and peripheral insert that are interchangeable. This innovative concept ensures the end user only has to manage one insert type to simplify inventory.

Despite utilising a double sided insert, the TungSix-Drill reduces cutting forces drastically and its unique geometry design gives each cutting edge unparalleled strength. With an optimised cutting balance between the central and peripheral cutting edges, and combining this with twisted oil holes and Tungaloy's revolutionary new AH9030 grade, the new TungSix-Drill is the ideal solution for steel, stainless steel and cast iron drilling.

To deliver outstanding tool life, the Tungaloy TungSix-Drill adopts the revolutionary AH9030 grade that has a PVD coating that guarantees excellent wear and oxidation resistance. With Tungaloy’s exclusive special surface technology “PremiumTec”, chip adhesion is drastically reduced to promote smooth chip flow.

The exciting new drill is available for machining at a length to diameter ratio of 2, 3 and 4D with shank diameters of 25, 32 or 40mm, and an overall length from 145 to 233mm for the L/D 2 and 173 to 287mm for the L/D 3 drills, and 155mm to 327mm for the L/D 4. Capable of machining carbon steels, low alloy steels, alloy steels, stainless steel, grey and ductile cast iron at high speed and feed rates, the TungSix-Drill is the economical, high performance drill of choice.

To further improve productivity, the new drill is compatible with Tungaloy’s TDXCF series of chamfer rings.

For further details contact Star Tooling on TEL: 011 818 2250 or visit www.startooling.co.za or www.tungaloy.com.
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