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Machine Tool Market

SOUTHERN AFRICA

March/April 2020

Volume 29 No.2

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all over South Africa

Machine Tool Market
MTM SOUTHERN AFRICA
March/April 2020 Volume 29 No. 2

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- Machine Model : LF3015CNR
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- Repeated position accuracy: +- 0.02mm
- Specified voltage and frequency: 380V / 50Hz / 60Hz



Unit 6, 25 Ingwe Road, Sebenza, Edenvale, South Africa Tel : 011 609 9508

DUAL DRIVER GEAR RACK FIBER LASER CUTTING MACHINE

- Machine Model : LF3015LN
- Laser Power: 500W to 15000W (Optional)
- Dimension: 4600mm x 2450mm x 1860mm
- Working area: 3000mm x 1500mm
- Repeated position accuracy: $\pm 0.02\text{mm}$
- Maximum running speed: 80m/min



AUTOMATIC TUBE FIBER LASER CUTTING MACHINE

- Machine Model : LF60M
- Laser Power: 500W to 15000W (Optional)
- Dimension: 11900mm x 1580 mm x 2260 mm
- Maching range : Hold Diameter: 20 - 220mm
- Repeated position accuracy: $\pm 0.03\text{mm}$
- Specified voltage and frequency: 380V / 50Hz / 60Hz



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**Hartford CNC Mill
with Fanuc control**

Table size 1 000mm x 330mm



Dahlih MCV 1250

Spindle Taper BT50 (geared head)
Spindle Speeds – 4 500 RPM (two gears
variable head)
Travels 1 250mm x 650mm x 700mm
Max Table Load 1 500kgs
Machine Weight 10 500kgs



**Supermax VMC FV56T with
swing table 12 000rpm Fanuc**

Travels 560mm x 410mm x 450mm



Supermax YCM-V56A Fanuc

Travels 560mm x 410mm x 450mm
10 000rpm



Topper TMV850A

850 x 500 Travel, Twin Arm Tool Changer
8 000rpm
6.2 tons



**Fanuc Stama MC 010
Fanuc Centre**

Travels x – 500mm and y – 380, 2300



Victor Machining Centre

800 x 500mm travel
Twin Arm tool changer
Fanuc Control



Leadwell V25

Travels 650mm x 410mm x 410mm



Leadwell V40

Travels 1 000mm x 500mm x 500mm



**Hwacheon Hi Eco 21HS
Fanuc Control**

Max Turning Diameter 280mm
Length 400mm



Quicktech AT25

3 Axis CNC Production lathe
Includes 1.2m bar feeder
Bar capacity 60mm



Quicktech GT3-60

3 Axis CNC Production lathe
Includes 1.2m bar feeder
Bar capacity 60mm



Leadwell LT25

Max Turning
Diameter 450mm x Length 680mm
Bar Capacity 75mm
10 inch chuck



Victor VT26 Slant Bed CNC Lathe

670mm x 1 080mm with a Sub Spindle
Power Turret (milling)
FANUC 18i Control



Maximart V35 Spark Eroder

Table Size 700mm x 350mm
Travels 400mm x 300mm
Z-Axis 200+250mm
Max Workpiece weight 600kgs
60 Amp Machine



Microcut Challenger

1500mm B.C
8 Station Turret
Fagor Control



15 Ton Die Splitter

Splitter has been refurbished
Hedin Lagan from Sweden
Contact us for information



Fastcut FC1540 CNC Lathe with a polygon ATT



Gasparini 6mm x 2 000mm

CNC Guillotine



Leadwell T6 CNC Lathe

6 inch chuck – 420 turning length
Fanuc control



JFY CNC

Punching Machine



Magnum Guillotine

8mm x 3 200mm
NC Control



63 Ton x 2 500mm

Press Brake



250 Ton x 4 200mm

Press Brake

Loznado Surface Grinder

350mm x 150mm

Ingar Surface Grinder

(500mm x 200mm) 2 Feeds

Jacobson Surface Grinder

(450mm x 200mm) 2 Feeds

TOS Universal Mill FGS 25/32

Huron Type Head with accessories

Correa Universal Mill

Table Size 1 400mm x 340mm



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COMPLETE MACHINING OF ADVANCED MATERIALS WITH ULTRASONIC 20 LINEAR

Sporting a new look, and more capacity throughout for all functions, the new ULTRASONIC 20 *linear* impresses with ultrasonic machining of advanced materials.

For many years, DMG MORI has been offering high-performance machine tools with ULTRASONIC technology for 5-axis machining of complex workpieces made of advanced materials. With the new ULTRASONIC 20 *linear*, this series now captures a completely new class. Spindle speeds with optionally up to 60,000 rpm, more powerful drive motors, an even smaller footprint plus CELOS with apps specifically developed for the ULTRASONIC are all part of the innovations which users from the fields of optics, precision engineering and clocks, medicine and high precision mould manufacturing will benefit from in the future.

Reduced process forces for filigree structures, surface qualities up to $Ra < 0.1 \mu m$ and longer tool service life

Included with the most important technological innovations of the ULTRASONIC 20 *linear* are a new, completely digitally controlled ultrasonic generator and the ULTRASONIC actuators with higher capacity and rotational speeds of up to 50,000 rpm. The tool holders with adapted actuator technology can be easily and fully automatically replaced in the milling spindle. Each of these holders is equipped with piezo elements, which are activated via a program-controlled induction system with high frequency between 20 and 50 kHz. The original tool rotation is thus superimposed with additional tool movement with defined amplitude in longitudinal direction. The resulting deflection of the cutting edges or grinding areas is controlled via the NC program and can be in a range of up to $10 \mu m$ or even higher. During grinding, drilling and milling, these superimposed vibrations have a direct, positive impact on the process forces, the removal volume and the tool service life and thus result in reduced costs and higher productivity.

In detail, the ULTRASONIC technology achieves a higher removal volume, more precise edge processing and up to 40 percent reduced process forces during machining of advanced materials like glass, ceramics, sapphire, hard metal and composite materials as well as carbide. The precision of the workpieces and reliability of the process are increased at the same time. Furthermore, the oscillating interruption of the tool contact with the workpiece results in an improved lubrication and cooling of the cutting edges and the optimum removal of stripped particles from the work area. The outcome is longer service life of the tools and excellent surface quality of up to $< 0.1 \mu$ for hard-brittle high-performance materials. The ULTRASONIC 20 *linear* ideally combines



*The option MT for the internal and external cylindrical grinding of the ULTRASONIC 20 *linear* enables complete machining of rotational-symmetric workpieces with grinding and drilling as well as internal and external machining in a single setup.*



*Included with the most important technological innovations of the ULTRASONIC 20 *linear* are a new, completely digitally controlled ultrasonic generator and the ULTRASONIC actuators with higher capacity.*

high speed cutting with highly efficient ULTRASONIC grinding of advanced materials on a single machine. It enables the machining of an unprecedented range of different materials.

Intelligent ULTRASONIC technology with process-optimized amplitudes

"ULTRASONIC Parameter Detection" of the ULTRASONIC 20 *linear* ensures automatic detection of the ultrasonic frequency most suitable for the actuator and tool with powerful functions for process monitoring. Another function used for the first time worldwide is the monitoring and tracking as well as of frequency and amplitude during the ongoing machining process. For this purpose, UAT (Ultrasonic Auto Tuning) automatically tracks the frequency response and compensates all exterior influences like the dampening of ultrasonic vibrations by means of the primary process forces. This way, a consistent readjustment to the nominal amplitude or the value specified in the NC program can be achieved. With this, users can fully exhaust their processes and increase tool utilization, reduce cycle times and, particularly by reducing the process forces, achieve even more filigree, precise and high quality machining results.

Highly dynamic, long-term stable 5-axis machine concept – compact on just $3.5 m^2$ footprint

With the ULTRASONIC 20 *linear*, DMG MORI relies on a long-term stable gantry machine design, to be able to safely meet all demands of ultrasonic machining. Despite this, the machine tool manufacturer was able to reduce the footprint of the machine to only $3.5 m^2$. A double drive for the Y-axis and the concept of integrated cooling, which uses the temperature monitoring of drives, spindles and the control as well as all media guarantee highest precision and workpiece quality. The linear measuring systems from MAGNASCALE are a good example for the high-tech components which DMG MORI has used here.

DMG MORI has significantly increased the capacity of the drives for the new development: by 47 percent for the A-axis, 27 percent for the C-axis and 34 percent for the Z-axis. The linear drives achieve maximum acceleration of more than 2 g and provide rapid traverse speeds of up to 40 metres



per minute. Due to the large swivel range of the A-axis of the work table, ranging from -15° to 130° and the fully integrated 360° endless rotation axis – both with torque technology, the ULTRASONIC 20 *linear* is optimally suited to 5-axis simultaneous machining. The rotational speed of 1500 rpm that can optionally be achieved for the C-axis also enables circular milling/circular grinding as well as turning/milling operations.

After the revamp, the ULTRASONIC 20 *linear* can now be used with larger tool diameters of up to 50mm and an increased maximum workpiece weight from 10kg to 15kg. The basic version of the machine is equipped with a powerful 15 kW motor spindle and a HSK-32 tool holder, the maximum rotational speed is at 42,000 rpm. Higher demands on the rotational speed can be achieved with an optional spindle, which reaches an impressive 60,000 rpm. The range in this segment is rounded off by an HSK-40 spindle with permanent lubrication.

The modular concept of DMG MORI enables a wide-ranging application-specific configuration of the machines – of course this also applies to the ULTRASONIC 20 *linear*. For example, the machine can be supplied with a 1,500 rpm turning/milling table, which extends complete machining of rotation-symmetric workpieces in a single setup to the operations of milling, turning and grinding. In addition to the tool magazine with 24 pockets and minute wheel, a 60-pocket chain magazine is optionally available.

Unique integration of technologies

The ULTRASONIC 20 *linear* with its special features enables the use of ultrasonic support for specific materials, namely the milling and drilling of nickel or titanium *super alloys* or of materials like magnesium, tungsten as well as composite materials. Process forces have been reduced for milling applications in titanium by up to 30 percent. For steel, double feed speeds are possible, for other materials, like magnesium, the feed speeds can be increased by up to five-fold. In addition, an improved surface quality can be achieved. The ULTRASONIC process has a significant impact on chip breaking behaviour and chip removal from the tool. Further to shorter chips, this also results in drastically reduced tool wear, making the technology interesting for almost all future-oriented target markets with high-tech products. The specific benefits associated with the option of using the ULTRASONIC technology have also taken the flexibility to a new level. It is now possible to machine workpieces from very different materials from soft to hard-brittle, in five axes for mould making, medical technology, the automotive and aerospace industry.

ULTRASONIC 20 *linear* with new design and CELOS

High-quality, long-lasting covers as an external distinguishing feature with functional added value thanks to optimum accessibility are the most important properties of the new standardized DMG MORI design. The ULTRASONIC 20 *linear* also has this new look, whose impact on value retention must not be underestimated and furthermore, the machines offer CELOS. This user interface with its unique multi-touchscreen can be used as easily as a smartphone. The user friendliness is further increased by CELOS apps which were specifically developed for ultrasonic machining. They visualise the ULTRASONIC technology cycles and the most important process parameters like frequency, amplitude and output power. At the same time, the apps monitor the process forces of the actuators and also support configuration of the tools.

For more information, please contact
Retecon – Tel: 011 976-8600.

DMU 75 MONOBLOCK® WITH CELOS®/MAPPS WITH FANUC

The DMU 75 monoBLOCK® combines top features for five-axis simultaneous machining and a large working space with 750mm X-travel. Equipped with CELOS® with MAPPS on FANUC from DMG MORI. Highly demanding industries require machine tools that are up to the challenge of realizing best quality in the most economical way. The monoBLOCK® series developed by DMG MORI has set a benchmark in almost every sector: aerospace, automotive or medical, among others, relies on the machine tools' precision, stability and flexibility. With the new DMU 75 monoBLOCK® the world leading machine tool manufacturer addresses in particular price-conscious as well as innovation oriented customers. Therefore, the package contains the latest five-axis simultaneous machining technology, 60 pockets as magazine, speedMASTER® spindle with 20.000 rpm and as CELOS® with MAPPS on FANUC.

The extremely compact footprint of less than 8m² and the spacious working area (X/Y/Z: 750/650/560mm) suitable for various work pieces of up to 840mm diameter and 600kg are the most obvious characteristics of the DMU 75 monoBLOCK®. Since the easily accessible working area can be loaded with a crane from directly above, the table users are provided with a maximum of comfort during their work. Apart from that the working area is cased with durable stainless steel for a long-term value. Another user-friendly factor that additionally guarantees best working results is the optimized chip fall and chip disposal from the machine to the rear.

Looking at the inner values of the DMU 75 monoBLOCK® DMG MORI has ensured a maximum of precision. Whereas direct scale feedback allow exact machining, a one-piece stand, stable slides, 45mm roller guides in all axes plus a FEM optimization of all components stand for highest rigidity. The stability is continued in the swivel rotary table with its large bearing as well as the large ball screws in all axes, whereas weight optimized X- and Y-slides as well as the Z-ram promise highest dynamics. The linear axes achieve rapid traverse speeds of up to 40 m/min and an acceleration of 6 m/s². Consequently, the table is the basis for reliable and challenging five-axis simultaneous machining of complex work pieces.

The DMU 75 monoBLOCK® package is completed by a powerful SK40 speedMASTER® motor spindle with 20,000 rpm, 130 Nm (40% ED) and 35 kW (40% ED) and a vertical chain magazine for 60 tools. Offering CELOS® with MAPPS on FANUC, DMG MORI is able to meet the preference of even more customers.



DMU 75 monoBLOCK® with MAPPS on Fanuc.



CRAFT MACHINE TOOLS – DEFINING THE ART OF MILLING

The term 'Milling' can be used to describe the art of cutting or shaping metal with a rotating tool. In today's industrial mechanical business industry, traditional or conventional milling machines have become in most cases second choice to the Computer Numerical Control (CNC) milling machines which have helped many companies to produce wide spectrum of components on a large scale with greater precision and accuracy. The CNC innovation has proven that these machines have the ability to boost a company's productivity and profitability.

Source: <http://EzineArticles.com/5896245>

CNC mills can perform the functions of drilling and often turning. CNC Mills are classified according to the number of axes that they possess. Axes are labelled as X and Y for horizontal movement, and Z for vertical movement.

The complexities of the component design will determine the number of axes required. The number of axes refers to the simultaneous movement of the cutting tools. If you are planning to perform positioning work on complex multi-parts over a long period of time, then you need to have advanced machining centers to perform intricate parts production operations. If your business only requires 3-axis CNC milling machines, it means that you are only capable to produce low difficulty components.

Source: <http://EzineArticles.com/5896245>

Craft Machine Tools (Pty) Ltd, has over 40 years experience in the milling industry and has partnered with the leading manufacturers in Taiwan to provide YOU with the optimum CNC Milling solution.

Craft Machine Tools covers three primary areas of CNC Milling, namely:

1. Entry Level low complexity components
2. Niche large component applications
3. Production

Feeler, performance beyond expectations

DESCRIPTION	LINEAR GUIDEWAYS		BOX WAY	
	FVP Range	VMP Range	NBP Range	VB Range
TABLE SIZE (mm)	950 x 425 – 1 680 x 800	420 x 650 – 1 420 x 600	950 x 520 – 1 500 x 600	1 300 x 600 – 2 400 x 960
X TRAVELS (mm)	800 – 1 600	580 – 1 300	800 – 1 300	1 100 – 2 200
Y TRAVELS (mm)	500 – 800	420 – 610	520 – 610	610 – 1 000 (4 ways)
Z TRAVELS (mm)	505 – 800	510 – 600	505 – 600	610 – 800
TABLE LOADS (kg)	800 – 1 000	300 – 1 500	500 – 1 300	1 000 – 2 700
SPINDLE MOTOR (HP)	7.5/11 – 9/11	7.5/11	7.5/11 – 15/18.5	6/11 – 11/18.5
SPINDLE SPEEDS (rpm)	10 000 – 8 000	10 000	10 000	4 000

Moving more towards the production arena, Craft Machine Tools have a large range of Feeler CNC milling machines. Feeler is an award winning manufacturer having received accolades for Excellence in Research and Innovation, Quality and Service and being selected in the top 100 of 'Taiwan's Top 100 Brands'.

Feeler is a global company, boasting over 13 brands and 23 companies in its machine tool division with representation worldwide. Feeler strives to provide the world with quality machine tools at affordable prices through the synergy of its 4 000 dedicated employees. Feeler are

The Craft S – 1654 R CNC Bed Type Mill

If you are looking for a machine to fit your general low complexity milling application The Craft S – 1654 R CNC Bed Type Mill complete with the Sintec control is a quality entry level 3 axes (4th axis is available as an optional extra) milling machine built to rigid construction standards.

GSM CNC Bed Type Mill

DESCRIPTION	CRAFT S-1654R
TABLE SIZE (mm)	400 x 1370
X, Y, Z TRAVELS (mm)	1 000 x 508 x 600
TABLE LOADS (ton)	1
SPINDLE MOTOR (HP)	10
SPINDLE SPEEDS (rpm)	50 ~ 6 000 (up to 12 000 opt)

For companies specializing in large component milling in a low production environment Craft Machine Tools offers the GSM 3086R CNC and the GSM 2473R CNC complete with the Fanuc control system. There are very few other machines on the market that can offer these capacities at such competitive prices and without sacrificing quality and precision.

GSM CNC Bed Type Mill

DESCRIPTION	2473R	3086R
TABLE SIZE (mm)	610 x 1 854	813 x 2 185
X, Y, Z TRAVELS (mm)	1 520 x 720 x 700	2 000 x 874 x 700
TABLE LOADS (ton)	1.5	1.8
SPINDLE MOTOR (HP)	10 / 15 (opt)	15
SPINDLE SPEEDS (rpm)	50 ~ 6 000 (up to 12 000 opt)	6 000 (up to 12 000 opt)

*Specifications are subject to change without prior notice

For all your milling requirements contact Craft Machine Tools (Pty) Ltd at (011) 845-2030.

Specials

Guillotines and Plate Roll



MG MODEL AK320C HYDRAULIC PLATE POLL 3 ROLL –
bending capacity 3100mm x 20mm,
pinch type bend 3100mm x 16mm



CINCINNATI MECHANICAL GUILLOTINE –
capacity 1800mm x 10mm



ELGA HYDRASHEAR MODEL SBD1216
HYDRAULIC GUILLOTINE – complete with
front supports, capacity 1200mm x 16mm



SAFAN HYDRAULIC GUILLOTINE –
4200mm x 8mm



EDWARDS MECHANICAL PRESS
BRAKE – 1800mm x 40 ton



SIMPLON UNIVERSAL MILL –
table size 1300mm x 300mm



CHIEN YEH 450/1500 GA VED CENTRE LATHE –
swing over bed 450mm,
between centers 1500mm,
spindle bore



TOS FA 3V UNIVERSAL MILL –
table size 1250mm x 300mm,
complete with slotting attachment,
arbor and supports



FUSHVU SLOTTER



GEBRÜDER 15 TON ECO PRESS



RADIMATIC SCREWING MACHINE



VOEST 520 LATHE

MACHINE TOOLS (PTY) LTD
CRAFT

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THOMPSON
MACHINE TOOLS
Used Machine Tools

MTM®



FROM CONVENTIONAL MILLING TO CNC MILLING

In a market where skilled artisans are becoming more and more scarce, it has become necessary to look at alternative ways of machining, whether it be for general engineering, tool-making or production work.

CNC machining is quicker and certainly more accurate than conventional milling machines and there is no need for constant monitoring while in use. Taking this into account, MJH Machine Tools have a solution to suit customers' needs. Featuring an entry level CNC control, our Ctek CNC milling machine is the first step to CNC machining.

As long as the operator has basic knowledge on using a DRO, he can, within a few hours be taught how to program and run the machine. There is no need for G code knowledge as the control is conversational using a question and answer format. The software is simple to use with graphic input in basic machinist language. The control has options for standard operation modes such as drill, tap, bore, contour and pocket programming, which is ideally suited to general engineering work without a need for external programming packages.

The latest Ctek's come with linear guides on all three axes for better accuracy and speed, as well as a direct spindle drive motor and an



Ctek CNC Milling Machine.

improved Z axis motor with inline break which eliminates the need for a counterbalance. The Ctek can be fitted with a 4th axis within a matter of hours and programmed from the standard Ctek control.

The Ctek range has six x-travel sizes, 800mm, 1 000mm, 1 500mm, 1 800mm, 2 000mm and 2 500mm. These machines are available in open type or fully enclosed depending on the customer's requirements. All spares are available ex stock at a fraction of the cost compared to other controls. With hundreds of these machines sold throughout South Africa since 1997, it is not surprising that Ctek CNC milling machines have been the first step to full CNC machining in many workshops.



Akira Seiki Milling Machine.

Should there be a requirement for a high performance machining centre for super fine finishing and accuracy, the Akira Seiki is the machine to consider. Spindle power ranging from 15HP on the Junior series to 42HP on the Super Vertical range and spindle speeds from 9 000rpm to 15 000rpm guarantee high quality surface finish.

Akira Seiki machines come standard with spindle oil chillers, inner spindle air chiller, coolant through spindle, pneumatic counter balance, chip screw conveyor, quick change ATC and 4th axis preparation.

For further information, please contact MJH Machine Tools – Tel: (031) 705 7514.

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FANUC ROBODRILL ADVANCED VERSION

Versatility, Speed & Intelligence

The new-generation Advanced Version ROBODRILL promises unrivalled quality and precision at great hourly rates.

With an unbeatable tool change time of 0.7 seconds and a turret capable of handling tools weighing up to 4kg, the new advanced version is both the fastest and strongest Robodrill yet. With by far the shortest cycle times on most machining operations, all ROBODRILL machines offer incredible performance and unbeatable efficiency.



Designed to meet every need, the ROBODRILL α-DiB5 series comprises of six completely redesigned models in Space Saver, Medium and Long sizes, available in either standard or advanced versions. With a rigid servo drive control and a highly dynamic BT30 spindle, these high-speed all-rounders are suitable for all vertical machining applications, from short production runs requiring fast turnaround times to flawless mass production. With well over 200 000 machines installed worldwide, its future-proof versatility and easy adaptability make the ROBODRILL the best-selling machine in its class.

Spreading your machining work across several ROBODRILLS instead of relying on a dedicated transfer machine, allows you to benefit from cheaper production and higher flexibility in the face of changing production numbers. Inherently adaptable, FANUC ROBODRILL also represents a great addition to your production facilities, since you can use it to absorb extra demand, thereby freeing up your larger vertical machining centres for bigger jobs.

The Advanced Version offers many unique improvements:

Improved swarf evacuation

To maximize uptime, the ROBODRILL α-DiB5 series can be fitted with a number of swarf evacuation options: from the coolant tank and chip flush methods to a piping system for wall coolant. Advanced versions minimize swarf interference with a mountain-shaped Y-axis front cover. It also offers an optional fully-enclosed spindle cover that separates the machining area from the mechanism.

Stronger Turret for bigger Tools

At the heart of every ROBODRILL is a patented high-speed tool changer that can carry up to 21 tools and offers the best reliability in its class. Its manufactured efficiency lies in its solid metal construction and optional BIG-PLUS BBT30 spindle.

This makes it extremely resistant to radial forces and enables it to deliver unbelievably efficient machining.

Advanced version ROBODRILLS feature an even stronger turret. Offering even more versatility, this enables the tool changer to handle heavy, customized cutting tools weighing up to 4kg while still realizing ultra-quick tool changing times.

Power Failure Backup Module

Power interruptions can be costly. Avoid unnecessary workpiece damage or tool damage with FANUC's Power Failure Backup module. This will prevent the tool from dropping into



the workpiece or the axis from slowly decelerating to a stop potentially causing a collision with the spindle, or jigs and fixtures.

All of the new model ROBODRILLS can be fitted with the improved Direct Drive 4th axis with built-in brake. For ultra high speed indexing, or 4 axis simultaneous work, the new DDRiB offers unrivalled speed and accuracy.

When you have longer workpieces or want to put many on the table at the same time, the new DDR-TiB offers a factory built 4th axis with tail support, base plate, and angle brackets for a swing plate. Available in 300mm, 500mm or 700mm in X direction, this allows maximum use of the ROBODRILLS travel space.



Need a 5 axis machine? No problem!

ROBODRILLS are available with 5 axis simultaneous control allowing machining of complex workpieces. Control functions like Tool Center Point Control and smart smoothing functions mean you can manufacture high quality parts quickly and accurately.

Smart Automation and Robotization

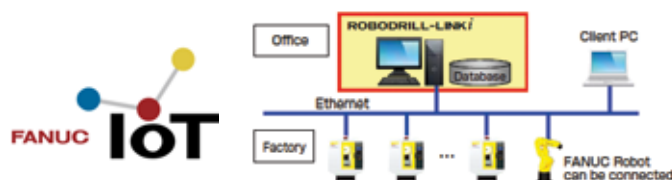
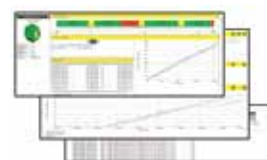
As the world's largest manufacturer of industrial robots, FANUC offers the advantage of full automation and robotization from a single supplier.

Through a single Package called QSSR, or Quick and Simple Start of Robotization, robot loading can be quickly configured.



IoT and Information Management

In today's world information is everything. FANUC offers a solution for production monitoring for the factory floor. Information from each machine is gathered and presented graphically. Production count or time, tool life information, alarm diagnosis, program details, feed & speed details etc can be viewed and stored for every machine connected to the system.



FANUC's legendary reliability coupled with easy preventative maintenance procedures keeps downtime to an absolute minimum. And thanks to their extreme longevity, ROBODRILL machines also provide an unbeatable return on investment.

FANUC ROBODRILL is proudly made in Japan and comes with a 2 year mechanical and control warranty.

For more information, please contact FANUC South Africa – Tel: 011 392 3910.



ROBODRILL High Speed Machining Centre

- ◆ FANUC 31iB5, 5 axis Nano CNC Control
- ◆ Easy to use iHMI interface with touch screen
- ◆ AI Contour Control look ahead as standard
- ◆ Easy Conversational Programming with Manual Guide *i*
- ◆ Optional high speed Direct Drive 4th axis
- ◆ 54 m/min Rapid Traverse
- ◆ Full 2 Year Mechanical & Electrical Warranty



ROBOCUT High Precision Wire EDM

- ◆ 5 axis wire EDM
- ◆ FANUC 31iWB CNC control
- ◆ Large 15 inch touch panel with USB I/O
- ◆ Advanced power conservation functions
- ◆ Faster cutting & better surface finish
- ◆ Fast air jet Automatic Wire Feed
- ◆ Optional Fully Submersible Rotary Axis
- ◆ Full 2 Year Mechanical & Electrical Warranty



ROBOSHOT High Precision Plastic Injection Molding Machine

- ◆ From 15 to 450 tons
- ◆ Fully electric driven machine
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NEWAY CNC VERTICAL MACHINING CENTRES

Neway CNC Equipment Co offers a cost effective range of vertical machining centres, which are manufactured at the company's modern manufacturing plants in Suzhou China.

Neway's excellent manufacturing and quality control capabilities are maximized by the use of latest equipment from well-known international brands including Zayer, Kellenberger, Starragheckert, Swiss SIP, Renishaw and Shenck. They hold ISO and CE certification.

Neway's Chinese manufacturing operation is supported by the group's head office in Texas USA and a sales and support centre in Germany.

Neway CNC Equipment currently offers a range of moving table vertical machining centres which range in table size from 750 x 420mm to 1800 x 800mm. This range is available in the following table sizes, VM740 – 750 x 420mm, VM950 – 950 x 520mm, VM1150 – 1100 x 520mm, VM1260 – 1200 x 600mm, VM1360 – 1350 x 600mm, VM1580 – 1500 x 800mm, VM1780 – 1700 x 800 and VM1880 – 1800 x 800mm.

The VM740, VM950 and VM1150 models are fitted with BT40 spindle tapers. These three models are available as a lower specification S series with a Fanuc Oi-Mate-MD controller or a higher specified H series which are supplied with a Fanuc Oi-MD controller. The VM1260 and VM1360 models are fitted with BT 40 spindle taper as standard and can be supplied with a BT50 spindle taper as an option. The VM1580, VM1780 and VM1880 are only available as H series specification with Fanuc Oi-MD controllers and have BT50 spindle tapers as standard. With the exception of the VM740, which has a 20 tool magazine, all models in the range come with a 24 tool magazine and arm type tool changer.

The complete series of models from VM740 to VM1880 in the S and H range have linear guideways on all three axis. The additional HR series which is available in sizes from VM950 to VM1780 feature box guideways as opposed to linear guideways. Full enclosure guarding and chip conveyors feature as standard equipment across the entire range.

Factory fitted optional equipment includes 4th axis rotary tables, through spindle coolant, workpiece measuring and toolsetting probes systems. Spindle oil cooling systems and coolant water/oil separators are available on request.

To complement the range of vertical machining centres, Neway CNC Equipment offers the VM640D drilling and tapping machine. This machine has a table size of 650 x 400mm, a 16 position cam type tool changer with a 1.6 second tool change, a spindle speed of 15 000 rpm, X and Y axis rapid feed rates of 48 meters per minute and a Z axis rapid feed rate of 60 meters per minute. They come fitted with the Fanuc Oi MD controller.



Neway Vertical Machining Centre VM1150.

For more information, please contact Machine Tool Promotions – Tel: 016 931 1564.

NEW MULTI-MASTER FACE MILLING HEADS

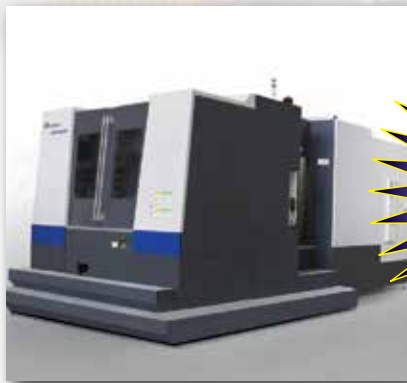
ISCAR is introducing MULTI-MASTER solid carbide heads, designed for face milling applications that require small diameters. The new MM FM MULTI-MASTER solid carbide face milling heads are intended for face and shoulder milling in narrow and confined areas, as well as on small milling machines or mill-turn machine tools.

MM FM MULTI-MASTER milling heads are available in 12 to 25 mm diameters, featuring 6 flutes, 3.6 to 7.5 maximum milling depth, excellent surface finish and high tooth density, which enables very fast table feed. The milling heads can be used with all MULTI-MASTER adaptation options and are less expensive when compared to solid carbide endmills

ISCAR recommends using the tools with a short overhang to achieve maximum stability, which influences surface finish and tool life.



For more information, please contact ISCAR South Africa (PTY) LTD – Tel: 011 997-2700.



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Vertical Turning Centers



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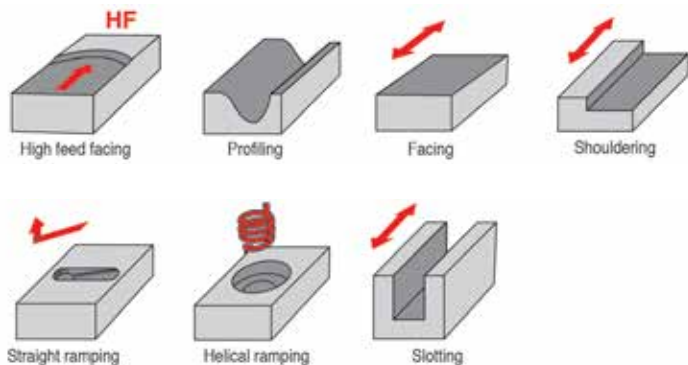
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MTM®



VERSATILE HIGH FEED MILL WITH STRONG 4 CUTTING EDGE INSERT

To meet market demand, TaeguTec has released an expansion to the CHASE-4-FEED family – BLMP 04, 11 inserts and cutters. They are, smaller double-sided four corner BLMP 04 inserts for small and high feed machining applications.



The smaller size inserts mean more inserts can be mounted to the same diameter cutters, which will greatly improve productivity over the existing BLMP 06 type under similar conditions. Available in Ø8(1z) and Ø10(2z) sizes, these are an alternative to solid end mills for roughing operations.

While both the **BLMP 11** and BLMP 13 cover a similar machining range, the BLMP 11 inserts give an advantage as they make it a finer pitch same diameter cutter for better productivity.



The cutters come in all types, including face mill, end mill and modular types.

While, as part of the new campaign, the design for the new **CHASE-4-FEED** line highlights TaeguTec's new direction, the new **CHASE-4-FEED** logo will be applied to the BLMP 06, 09 inserts and cutters as well.

ECONOMICAL 14 CUTTING EDGES –

CHASE² HEPTA

6mm INSERT



M Geometry



MM Geometry



ML Geometry

As the need for machining smaller volume work pieces made from cast iron and steel has grown, so has the need for smaller size tools that can enhance productivity and reduce operating cost. Therefore TaeguTec offers a smaller size insert for its highly popular Chase2Hepta milling line.



The Chase2Hepta 6mm inserts and cutters are available to meet the challenges posed by technical trends in forging and casting technologies which is demanding higher productivity and economical tools that can handle lower depth of cut conditions.

The Chase2Hepta line is renowned for offering 14 corners on one insert. The double-sided and highly effective 45 degrees entry angle is the ideal solution for high performance on cast iron and steel machining, while its positive cutting edge geometry lowers cutting loads during rough machining making it an efficient and smooth set of tools. Covering a wider range of machining applications, the dual usage TaeguTec Chase2Hepta 6mm inserts are screw type.

The line of mini cutters comes in three geometries – the **M**, **MM** and **ML**.

The **M** geometry 6mm Chase2Hepta line is used for roughing applications of steel and cast iron work pieces and its smooth machining with good tool life is due to its reinforced, positive rake angle.

For general cast iron machining applications, the optimized cutting edges of TaeguTec's **MM** geometry chip breakers on the Chase2Hepta 6mm line means low cutting forces in cast iron machining.

The **ML** geometry for the 6mm line is ideal for cast iron light machining and difficult to cut materials such as stainless steel and heat resistant alloys. Its sharp, positive cutting edge was designed for minimal cutting force.

For further information, please contact TaeguTec -Tel: 011 362 1500.

CHASE4FEED
HIGH FEED MILL

Versatile high feed mill with strong 4 cutting edge insert

- ◆ High feed insert with strong geometry
- ◆ High productivity with maximum no. of teeth
- ◆ High positive rake angle
- ◆ Good chip evacuation
- ◆ Various insert options and cutter range



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HIGH PERFORMANCE TAPS FOR HIGHER CUTTING SPEEDS AND TOOL LIFE

NORIS taps for processing a wide variety of steel alloys, cast iron and various non-ferrous alloys are well known under the names SALOREX UNI for blind holes and STABIL UNI for through-hole. REIME NORIS now extends the UNI series to high performance taps made of HSSE-PM (HSS-PS) with improved cutting geometry and TiCN coating.

NORIS SALOREX UNI – the specialist for deep blind hole threads up to 3 x D thread depth – has 42° right-hand helix flutes. These provide secure chip removal against the cutting direction.

NORIS STABIL UNI stands for the production of through hole threads up to 4 x D thread depth. The special STABIL-flutes move the chips in the cutting direction.

The drills are available in metric sizes from M3 to M20 and M8 x 1 to M16 x 1,5 in stock.

In both versions, the use of powder metallurgical high-speed steel permits higher cutting speeds while increasing tool life. The user benefits by increasing the cycle times and a reduction in tool costs. With the ability to process a very wide range of materials, additional cost of storage and tool investment can be reduced. The proven cutting edge geometries were further optimized in detail. They are specially adapted to the characteristics of the HSSE-PM substrate and the coating. REIME NORIS thus promises significant performance gains and expects especially in the production of small- and medium-sized series, the greatest economic advantages of using these high performance taps.



NORIS STABIL UNI HSS-PS TiCN in machining situation through hole: Chips are evacuated in the cutting direction.

For more information, please contact Duncan Macdonald – Tel: 011 444-4345.



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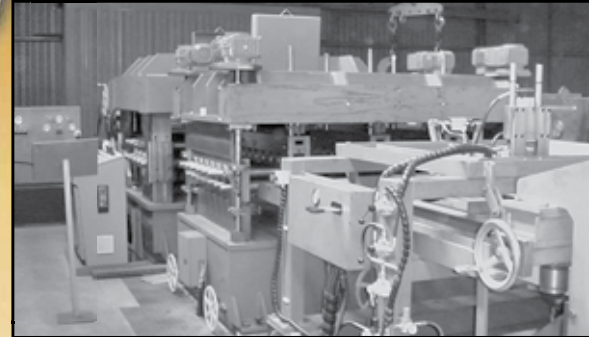
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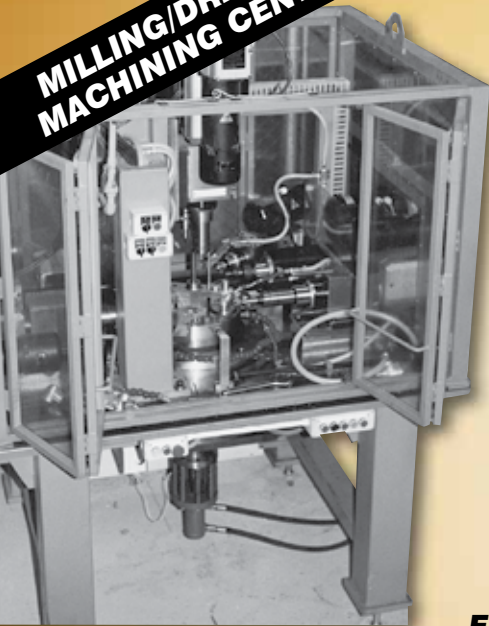
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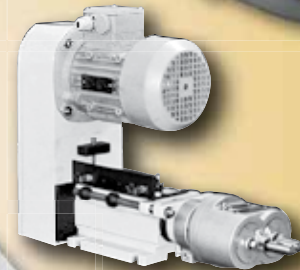


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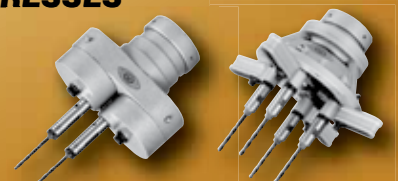


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PARTING 4 PRODUCTIVITY WITH TANG-F-GRIP

Always at the cutting edge of developments in the field of cutting tools, ISCAR introduces a revolutionary system for parting and grooving operations.

Parting and grooving are essential aspects of the turning process and the metalworking industry faces a constant challenge to integrate methods that will increase efficiency and decrease downtime for these popular operations.

ISCAR fully understands the importance of parting and grooving operations in the turning process and that multiple factors need to be considered for every application, including machine tool selection, the type of material being parted/grooved, required depth of cut, and feed and speed rates. ISCAR has responded to these complex needs by developing a comprehensive range of highly effective parting and grooving solutions that include an extensive choice of insert geometries, chip breakers, and carbide grades – and the range continues to expand.

With Industry 4.0 demands and standards fueling industry development at extraordinary rates, ISCAR has introduced new parting and grooving technologies capable of integrating seamlessly with the new wave of machining centers that work with incredibly high feeds. TANG-F-GRIP has been designed to answer these needs and to achieve high productivity and lower costs.

A revolutionary parting system designed for increased productivity, TANG-F-GRIP comprises a robust tool block carrying square blades that feature four pockets, with a unique parting concept capable of parting off up to 120mm bar diameter to optimize performance.

TANG-F-GRIP is simple to mount and operate on all machine types, including multi-task and machining centers on X-AXIS, without any need for special adjustment. The system enables the mounting of both TANG-F-GRIP and DO-GRIP blades on the same blocks.

The square blades possess a support system that provides totally vibration-free grooving and parting. TANG-F-GRIP also saves on setup time as, in cases of pocket damage, the block's configuration allows a blade to be rotated to a new pocket without setup.

TANG-F-GRIP is intended for high feed parting. It extends insert life, improves surface finish and part straightness, and features high stability – especially when parting large diameters. The new patented blades

reduce cutting time and also enable significant material savings – for instance, a 120mm bar can be cut with a 3mm blade with HF (high feed) inserts at a feed rate of up to 0.4 mm/rev (.0157ipr).

The HF tangential single-ended insert was developed to enable highly efficient parting at very high feed rates, by use of a unique chipformer technology. The insert features a new insert chipformer to allow unobstructed chip flow, which increases insert and blade tool life and leads to very high productivity gains.

All TANG-GRIP inserts can be integrated into the TANG-F-GRIP system, which is also compatible with DO-GRIP DGN double-sided twisted geometry parting inserts, to provide an extensive choice of parting widths for all application ranges. ISCAR offers a wide variety of chipformers and advanced grades to ensure unbeatable performance and extended tool life.

A revolutionary secure clamping method using a tangentially orientated pocket facilitates pocket life that is three times longer than that of any other conventional self-grip system. The robust clamping method enables machining at high feed rates and provides excellent straightness and surface finish characteristics, while the flat top configuration prevents chip obstructions under all possible machining conditions.

The JETCUT system incorporates ingeniously designed through coolant channels to deliver coolant close to the cutting edge, which improves chip formation and slashes flank and cratering rates.

When machining materials such as stainless steel or high temperature alloys, the temperature near the cutting edge area becomes extremely high. In addition, these material types tend to adhere to the tools cutting edge, causing built-up edge. These problematic phenomena can be moderated by targeting high pressure coolant directly to the cutting zone.

ISCAR maintains its unrelenting progress as a result of the company's continuous development of innovative, high-quality products, based on the talented work of the company's R&D Department and prompted by the evolving needs of global industry. This desire to provide customers with the very latest, most efficient metal cutting technology is reflected in the introduction of TANG-F-GRIP solutions to ISCAR's comprehensive GRIP range of parting and grooving tools.



DOGRIP Tool.



TANGFGRIP Insert.



DOGRIP insert.



DOGRIP Tool.



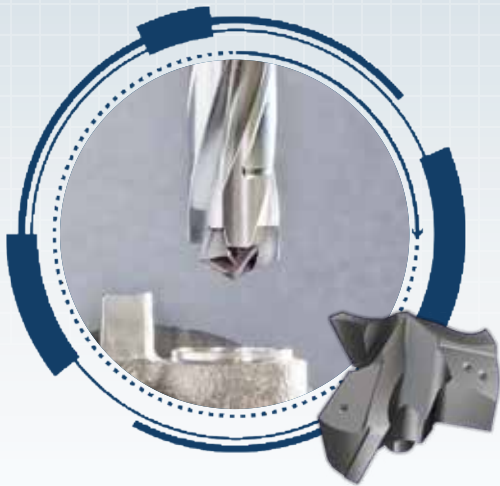
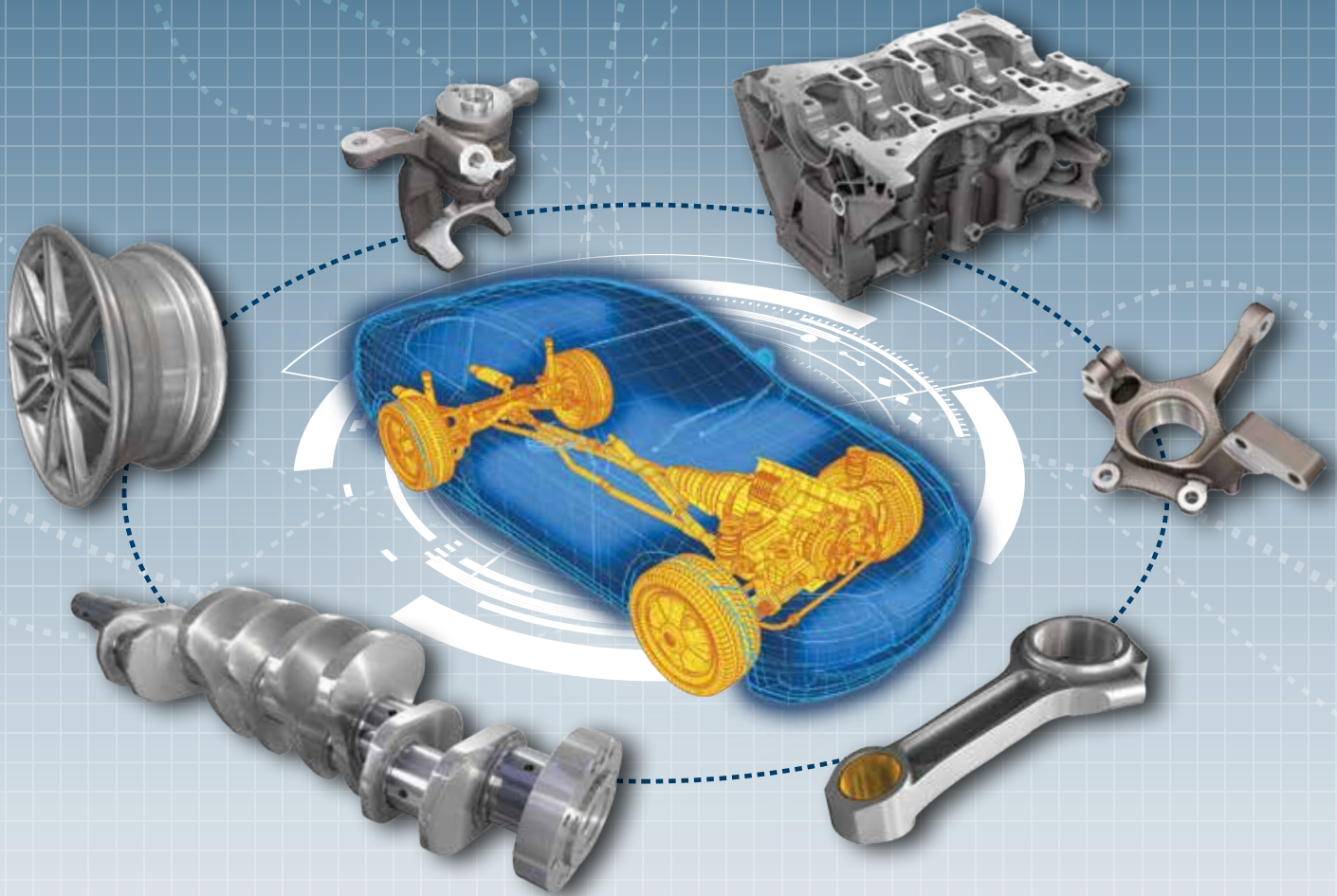
TANGFGRIP Application.



DOGRIP Application.

For more information, please contact ISCAR South Africa (PTY) LTD – Tel: 011 997-2700.

ISCAR The Driving Force Behind **Automotive** Part Production



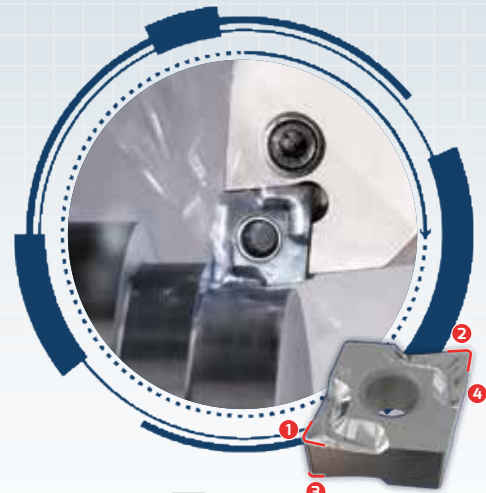
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THREE FLUTE CHAMDRILL

3 Effective Cutting Edges
for Higher Drilling Productivity



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RHINORUSH EASES MACHINING OPERATIONS

Screw Clamp Type Boring Bar, ML Chip Breaker



TaeguTec's range of boring bars with screw clamping function is available to suit C, T, V and W shape RhinoRush inserts.

With the screw clamping type boring bar, the current hook lever, T-Holder and wedge clamp types, the RhinoRush line of boring bars meets the needs of more demanding machining applications.

The screw clamping type boring bar has a simple clamping structure, minimizes chip evacuation interference during internal machining and is stable plus durable during demanding operations.

Advantages of the ground type ML chip breaker include reduced cutting force due to its very sharp cutting edge and extended tool life



with improved surface quality due to minimal built-up-edge during machining.

By combining the chip breaker's sharp geometry and polished uncoated grade, this addition makes the RhinoRush line the perfect choice for aluminium and super alloy machining.

RhinoRush's mini turning inserts are very popular across many sectors within the manufacturing arena as they reduce machining cost and increase output.

RhinoRush is characterized by a tough and smaller double-sided insert that enables improved machining time and better surface finish.

FS AND MK RHINORUSH CHIP BREAKERS

The process of properly controlling chip formations is important in order to prevent loss of production due to frequent halts in the machining process, as well as damage to the tools and work-piece.

The RhinoRush MK chip breaker is ideal for medium applications while machining stainless steel and heat resistant materials.

The MK chip breaker is a more stable insert that offers long tool life because of its sharp edge design that minimizes built-up-edges during machining operations.

Case studies prove the effectiveness of the MK chip breaker with tool life being increased by over 300 percent.

For example, during the product testing phase of a workpiece made from SUS 304, the MK chip breaker coated with TaeguTec's TT9080 grade witnessed an increase of tool life by 343 percent during continuous cutting conditions with speeds of 160 meters per minute and same cutting conditions.

During another continuous cutting test, on difficult-to-cut Inconel 718, tool life was increased by 159 percent with all cutting parameters the same.

The RhinoRush FS chip breaker is specifically designed for excellent chip control on steel finish turning with superior evacuation under low feed and low depth of cut applications, while the insert's sharp cutting edge drastically reduces machining load resulting in minimal vibration during operations.



MK CHIP BREAKER

For more information, please contact TaeguTec – Tel: (011) 362-1500.

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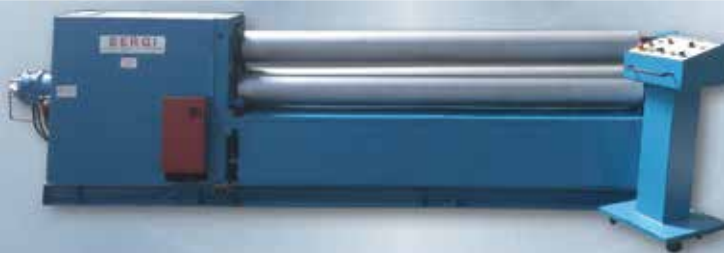
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HEAVY DUTY MACHINING OF UP TO 600kg WORKPIECE ON 8.9m²

The new CLX 750 impresses with its stability, a powerful spindle and forward-looking equipment options for digitalized production.

Designed for workpieces up to 600kg and a turning length of 1 290mm, the universal turning center is particularly suited to the machining of large shafts. With DMG MORI technology cycles, the IoTconnector as standard and modern 3D control technology, the CLX 750 is ready for any forward-looking production. Customer-specific automation solutions complete the range of equipment.

Up to 1 290mm turning length and a maximum turning diameter of 700mm or 640mm in the version with the Y-axis make the CLX 750 a very versatile turning center in a wide range of industries. In the production of shafts, an optional steady rest supports turning operations up to a diameter of 430mm. A Y-axis traverse distance of an impressive ± 80 mm is available for the eccentric machining of complex workpieces, while a sub spindle enables 6-sided complete machining. On spindle side, the CLX 750 impresses with regard to heavy-duty machining: 2 000 Nm torque and 46 kW power speak for themselves.

DMG MORI has made the CLX 750 future-proof in view of the growing digitalization in machining operations. Modern 3D control technology



from SIEMENS or FANUC is available, while exclusive DMG MORI technology cycles like alternating rotational speed, the Easy Tool Monitor 2.0 or the Multi-Threading Cycle enable easy and efficient machining. The IoTconnector is part of the standard equipment of all CLX machines. It enables digital networking of the machines, provides the highest possible protection by means of integrated firewall and enables pioneering service solutions with SERVICEcamera and NETservice.

Future-oriented manufacturing is increasingly accompanied by automated production – a trend which is consistently followed by DMG MORI. This way, productivity of the CLX 750 can be improved lastingly with customized automation solutions – and in the well-known DMG MORI quality.

DMG MORI CTX BETA 800 TC

Thanks to the possibility of 5-axis machining, the CTX beta 800 TC closes the gap to the classical universal lathes as far as the high-performance area in the direction of maximum flexibility for chuck components, such as in mechanical engineering or in the fluid or hydraulics industry.

Its automatic tool changer provides outstanding flexibility in classical turning operations involving workpieces up to $\varnothing 500 \times 800$ mm. The highlight of the CTX beta 800 TC is the turning-milling spindle. The Y stroke of 200mm and the new compactMASTER ultra-compact turning-milling spindle open up a wide range of applications to users of Turn & Mill complete machining to the extent of 5-axis simultaneous machining. The compact design of this spindle with integrated release cylinder for the tool clamp makes it possible to have torque of 120 Nm with an impressive length of just 350mm. In comparison with a conventional spindle the increase in work area is 170mm, with 20 percent more torque at the same time. The B-axis is also equipped with a direct drive, which makes highly dynamic machining possible with a swivel range of $\pm 110^\circ$ and rapid traverse speeds of 70 rpm.

For complex milling operations right through to 5-axis simultaneous machining, the HSK-A63 (optionally Capto C6) compactMASTER turning-milling spindle has performance data of 12 000 rpm, 120 Nm and 22 kW. A 20 000 rpm high-speed version is also available as an option. The DMG Mori high-tech modular building block system allows customers to equip the machine individually in line with their particular range of components. Among other things, this includes different tool magazines with a capacity of up to 80 pockets rather than the 24 as standard.



The CTX beta 800 TC.

In the standard version the machine has a main spindle, designed with a liquid-cooled integral spindle motor (ISM76) with 380 Nm and 34 kW or optionally as ISM102 with 770 Nm and 38 kW and an NC-controlled tailstock. The machine can also be equipped with a counter-spindle instead of the tailstock for 6-sided complete machining. The ISM52 PLUS with 6 000 rpm and 170 Nm is provided for this purpose. Chucks up to 400mm diameter can be used on the machine in conjunction with the ISM102 spindle motor. Steady rests, available for workpiece diameters of up to 200mm, are recommended for the machining of long workpieces.

The sturdy travelling column design stems from the larger CTX beta 1250 TC and has long since demonstrated its quality. Maximum stability and accuracy are achieved by means of combining with the direct measuring systems in all axes of the travelling column. The machine concept also has impressive ergonomics. Whereas the CTX beta 800 TC has a large work area, its advantages with regard to accessibility and space requirement are also remarkable. The 350mm distance from the front of the machine to the centre of the spindle is the ideal prerequisite for easy loading and unloading. The footprint is just 8.5 m² or 10.7 m² including chip conveyor.

For more information, please contact Retecon (PTY) LTD – Tel: 011 976-8600.

HIGHLIGHTS

- + 4 models and sizes – with Siemens or Fanuc control – for any kind of application – as turning, milling, y-axis and sub-spindle specification!
- + Direct measuring system in standard for the highest precision: in X-axis for V1 and V3 version in X/Y-axis for V4 and V6 version
- + IoTconnector in standard – ready for digitised and connected production processes
- + Compact design with large working area for the machining process of wide parts variety
- + Max. turning diameter
 - CLX 350 – \varnothing 320 mm
 - CLX 450 – \varnothing 400 mm
 - CLX 550 – \varnothing 480 mm
 - CLX 750 – \varnothing 700 mm

CLX Series



HIGHLIGHTS

- + 30-pocket tool magazine in standard with quick tool change within 2.4 sec. tool-to-tool
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 - CMX 1100 V – 8.4 m²

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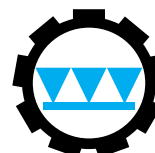
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HURCO CNC LATHE – CONSIDERATIONS AND TERMINOLOGY

By Michael Cope, Senior Applications Engineer & Product Specialist
at Hurco Companies, Inc.

When purchasing a CNC lathe, there are several questions that you need to ask yourself before you begin the process. Some of these questions will be quite obvious: How much axis travel do I need? What size chuck should I look for? How many tool stations are on the turret? What is the spindle bore size, etc.? However, there are other specifications that are just as important, but not always so obvious: What is the maximum swing distance that my work will require? What is the maximum turning diameter necessary for my family of parts? What kind of spindle horsepower and torque will my type of work consume? The first set of questions above is relatively easy to answer, but the second group requires a better understanding of lathes in general.

I am often amazed at the number of highly skilled CNC machinists and operators who can accomplish almost anything on a milling machine, but who are very uneasy and intimidated around a lathe because they don't really understand the meaning of basic lathe terminology. That is the purpose of this article. I will try to clarify the meaning and benefit of a few of the "not-so-obvious" features that exist on a typical lathe spec sheet, and attempt to clarify their definition and explain why they might be an important consideration when purchasing a CNC lathe.

Maximum Turning Diameter: This simply indicates the largest size of part that can be turned on the machine – using standard length tooling – without interference or collision with guarding or other machine components.



With the X-axis retracted all the way positive, what size of part can be turned safely, as it relates to X-axis travels of the machine tool. For example: if you are looking at a machine with a max turning diameter of 16", and the

parts that you run on a regular basis are 15" in diameter or larger, then you would probably want to look at a machine with a larger maximum turning diameter.

Even though, in our example above, the part would technically "fit" in this case, you must realize that you are running on the very edge of the envelope, and if you had to hang a tool out of the turret farther than normal – for one reason or another – you would likely NOT have enough X-axis travel to accommodate the part.

Maximum Swing: Refers to the largest diameter part that can be spun in the chuck without mechanical interference with guarding, cross-slide, or other machine components located near the chucking area. Depending on the style and design of the machine tool in question, this value could be larger than the maximum turning diameter mentioned above, however this does NOT mean that you can turn a part larger than that specified in the maximum turning diameter specification.

Horsepower & Torque: Horsepower and torque are obvious considerations when purchasing a new machine, but their necessity may not be so obvious in all cases. If you are running work such as castings and forgings,



drilling large diameter holes in steel, or generally turning features on large diameter parts, then horsepower and torque are going to be very important to you, and you should be certain that the machine in question has enough for your application. However, if you are more focused on high production or general turning of small to medium sized parts, then spindle RPM may become more important than power in your case.

Just as we have seen in the milling arena over the past several years, high-speed machining is quickly making its way into turning as well. As the technology of turning tooling is advancing, and through the tool coolant options are more prevalent, the principles of cutting shallower but faster are becoming more common. Spindle speed, rapid traverse, and maximum programmable feed rates become much more important than sheer horsepower and torque.

Maximum Turning Length: Very similar to the maximum turning diameter, this specification indicates the longest part that can be turned based on the mechanical limitations and axis travels of the machine tool. Keep in mind – the effective maximum turning length, for a particular part, can be less than specified by the use of larger or deeper chucks, or tooling that sticks out from the face of the turret farther than what is considered "normal". In both cases you would be introducing the possibility for mechanical interferences – which would restrict the length of the part that could be machined, even though the physical travels and limits of the machine have not been changed.

Bed design

Now let's discuss the ins and outs of the two main bed designs – the true slant bed and the flatbed "flying wedge" configurations.

First we will dive into the *true slant bed* design. Unlike the flatbed *flying wedge* design – where the *slant* is achieved by the addition of a bolt-on wedge that is mounted on the cross slide – the true slant bed machine casting is manufactured with the slant built in. This not only offers more rigidity and thermal stability, but also proves to give the casting more overall mass, and means you have a much heavier machine with a smaller footprint. Typically the true slant bed design is offered in one of two slant angles, 30 degree and 45 degree, but there are also some 60 degree models available.

There are many advantages to the true slant bed design, and it is probably the most common configuration in modern CNC lathes. One of the most well-known and obvious advantages to the true slant bed is better chip evacuation. As the chips are created during the machining process, they are immediately washed down toward the chip bed by gravity and the normal flow of the coolant. This keeps chips



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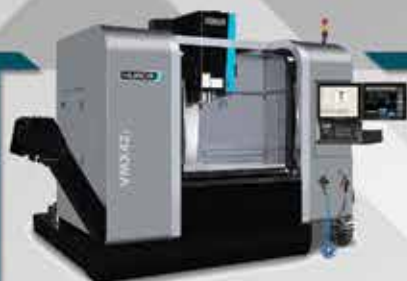
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☞ Cont. from page 30

from accumulating on flat surfaces, which not only helps control the chips in high volume production applications, but can also aid in prolonging the overall life of a machine – by reducing undue wear on the ways and other moving parts.

Another advantage to the true slant design is larger X-axis travels. Unlike the flatbed lathes where guide rail length is limited to the horizontal depth of the casting, the true slant bed design allows for longer X-axis rails. Just like in a square box, the straight sides of the box are one specific length, but the angular distance from one corner to the other is much longer. The same is true for the slant bed casting design which obviously means a larger part capacity in a smaller machine footprint. Although the *flying wedge* design, with the bolt-on slant, can also offer

some increased X-axis travels over traditional flatbed machines, it can also magnify the lack of rigidity that is present in the bolt-on approach. You just cannot substitute for a sturdy casting design.

Thermal dynamics are also a big consideration in any machining process. The angular configuration of the base casting, and extended X-axis guideways, also offer better rigidity and part accuracies. Since the linear rails are longer, the base saddle casting that carries the turret can also be longer, providing a much sturdier base of support for the turret. And as the machine components begin to heat-up during the machining process, the headstock, tailstock and cross slide will all begin to grow along the same 30, 45, or 60 degree plane as the X-axis – unlike the flatbed *flying wedge* design, where the X-axis is mounted on a slant, but the rest of the machine components are mounted on the horizontal flatbed plane.



For more information, please contact TH Machine Tools – Tel: 012 259-1375.



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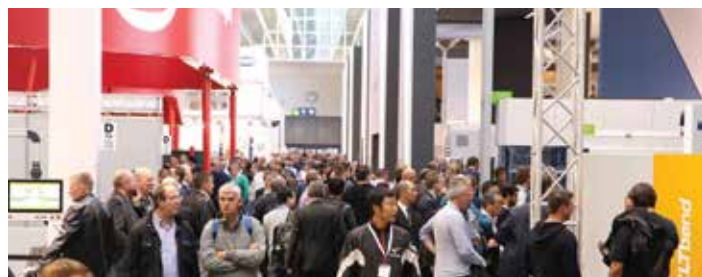
EUROBLECH 2020 – MORE THAN 95 000m² NET EXHIBITION SPACE ALREADY BOOKED

The 26th edition of the International Sheet Metal Working Technology Exhibition, EuroBLECH 2020, will take place from 27 – 30 October 2020 at the Hanover Exhibition Grounds in Germany. The show organisers, Mack Brooks Exhibitions, have now announced the expansion of exhibition space for EuroBLECH 2020 with the addition of a ninth hall for the first time in its history. This reflects a further increase in exhibition space compared to the previous event in 2018, which covered a total of 89 800 square metres.

“Around nine months ahead of the show the demand for stand space continues to be very strong”, explains Evelyn Warwick, Exhibition Director of EuroBLECH, on behalf of the organiser Mack Brooks Exhibitions. “With the directly neighbouring hall 26, we are now able to offer additional stand space for the exhibition to meet the demand of exhibitors to display their latest machines in the various technology sectors. The additional hall will host exhibitors of joining technology, as well as surface and tool technology, which have previously been located in hall 13. The ninth hall is giving us the possibility to assign stand space to additional exhibiting companies within the entire sheet metal working technology chain represented at EuroBLECH. The growth to a ninth exhibition hall reflects the increasing demand for stand space at the leading industry event and offers even more capacity for businesses to present their innovations to an international audience”, continues Evelyn Warwick.

Currently, more than 95 000 square metres of net exhibition space have been booked or reserved at the world’s leading sheet metal working technology exhibition. This represents an increase of almost 6% in stand space compared to the previous show in 2018. The biggest exhibitor countries include Germany, Italy, Turkey, China, Switzerland, the Netherlands, Spain, Belgium, Great Britain and the USA.

For EuroBLECH 2020, the main topics represent the latest industry trends, including smart sheet metal working as well as automation and



digitalisation of the manufacturing chain, with the objective to increase output and efficiency. For exhibiting companies in this industry sector, it is a vital time to present their machines, systems and solutions for networked manufacturing to an international audience.

Every two years, the world’s largest sheet metal working technology exhibition attracts top industry professionals from all over the world. The show targets specialists at all management levels in small and medium-sized companies as well as large enterprises from all key industry sectors. Featuring an enormous amount of live machine demonstrations, EuroBLECH is renowned with international sheet metal working professionals as the most important event to find smart solutions and the right machines, equipment and materials for their companies. A total of 56 307 international trade visitors attended the previous show.

The EuroBLECH exhibition profile is clearly structured and covers the entire sheet metal working technology chain: sheet metal, semi-finished and finished products, handling, separation, forming, flexible sheet metal working, joining, welding, tube/section processing, surface treatment, processing of hybrid structures, tools, machine elements, quality control, CAD/CAM/CIM systems, factory equipment and research & development. The organisers recommend companies interested in exhibiting to reserve their stand space as soon as possible in order to be placed within their respective technology sector.

The latest exhibitor list as well as further information on the exhibition is available at www.euroblech.com.

TIPPER BODY MANUFACTURER INSTALLS UK’S LARGEST TRUMPF BENDING MACHINE

The Thompsons Group, the UK’s number one manufacturer of tipper bodies, has taken delivery of a TRUMPF TruBend 8600-80 bending machine at its Blackburn facility. The machine, which is the largest TRUMPF TruBend in the UK, is being used to form tipper side panels from 4mm thick Hardox® abrasion-resistant steel.

Thompsons, which has UK sites in Croydon, Blackburn, Dover and Edinburgh, says that it builds and sells more tipper bodies than all of its competitors combined. Since 2000, the business has expanded five-fold.

Following its inception in East London 45 years ago, Thompsons has manufactured over 30 000 tipper bodies, of which around half are still in operation today. The bodies cover the full range of commercial vehicles, from 3.5 to 44 tonnes GVW (gross vehicle weight). Thompsons’ customers not only come from the construction industry, but sectors such as waste, environment, highways, utilities and rental. Top of the rigid range is the Loadmaster, some 15 000 of which have been delivered in the past 20 years.



TRUMPF TruBend 8600-80.

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"With order volumes rising there is a constant need to keep pace with production and invest in our future," explains Director Neil Griffin. "We recently installed a robotic welding cell, which shifted the bottleneck to bending. In addition, even though our existing press brake offers a capacity of 400 tonnes, we needed more to help us process 4mm thick Hardox®, which is a tough, wear-resistant steel with a hardness of 450HB."

Griffin and his team scrutinised three potential bending machine suppliers, but it was TRUMPF that impressed the most. "We went to the TRUMPF factory and saw the machines in action," he says. "Once they assessed our application, the TRUMPF team recommended the TruBend 8600-80, which we knew immediately was the right machine. At the same time we purchased the TRUMPF TruLaser 3030 laser cutting machine."

The TRUMPF TruBend 8600-80 impresses not just with its precise versatility, but its large open height, throat depth and press force. Users can process particularly large and heavy parts. Thompsons' TruBend 8600-60 offers a 600 tonne press force, and to fulfil the customers' requirements TRUMPF customised the machine with an additional 8m bending length option.

"After profiling, the side panels of the tipper bodies each require up to 12 bends, which is where the tonnage of the TRUMPF TruBend 8600-80 really comes into its own," says Griffin. "Having capability of this type in-house is a real market advantage as we don't have to rely on subcontractors, and thus avoid all the associated costs and lead-time issues that strategy brings. Moreover, all Thompsons' tipper bodies are manufactured specifically for each customer, who can specify the height, length and width of the tipper bodies they require. As we manufacture in-house, meeting these needs could not be simpler."

Thompsons manufactures circa 25 Hardox® tipper bodies on a weekly basis, which means 50 sides to bend, plus floors and tailgates. The new TRUMPF TruBend 8600-80, located at the Blackburn factory, is currently working a single day shift but a night shift maybe required to keep up with demand.

"Having the higher tonnage machine makes light work of the Hardox® panels," reports Griffin. "In addition, the machine is more accurate than our existing press brake. As a company, we are always looking to improve and innovate, so machines such as the TRUMPF TruBend 8600-80 serve to future-proof our business."

Parts arriving at the TruBend 8600-80 for bending will likely have been profiled on the company's TRUMPF TruLaser 3030 laser cutter. Importantly, the TruLaser 3030 features the optional TRUMPF Highspeed Eco function, which allows faster profiling with up to 70% less gas consumption. "Furthermore, the cut quality on all parts up to 25mm thick is better than anything we've achieved previously," states Griffin.

When acquiring the TruLaser 3030, TRUMPF simplified the process by buying and removing the company's old laser cutter. "We've had nothing but a very positive experience with TRUMPF, both from a machine and people perspective," concludes Griffin. "As a result, we have high hopes for a successful partnership together moving forward. Any high-quality, market-leading product inevitably has leading-edge technologies behind it, and tipper bodies are no exception. Every year, over £1 million is invested back into our factories as we look to continuously improve on the service we provide to customers. The TRUMPF machines are a good example of this policy in action."

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Drill



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• Horizontal Bandsaw
280mm, 380mm



• Radial Arm Drill
1000mm Arm, 32mm Drill
1600mm Arm, 50mm Drill



• Lathe
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1000mm B/C, 400mm swing, 52mm Spindle Bore



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AIRBUS DEMONSTRATES FIRST FULLY AUTOMATIC VISION-BASED TAKE-OFF

Airbus has successfully performed the first fully automatic vision-based take-off using an Airbus Family test aircraft at Toulouse-Blagnac airport. The test crew comprising of two pilots and two flight test engineers took off on 18 December last year and conducted a total of 8 take-offs over a period of four and a half hours.

"The aircraft performed as expected during these milestone tests. While completing alignment on the runway, waiting for clearance from air traffic control, we engaged the autopilot," said Airbus Test Pilot Captain Yann Beaufils. "We moved the throttle levers to the take-off setting and we monitored the aircraft. It started to move and accelerate automatically maintaining the runway centre line, at the exact rotation speed as entered in the system. The nose of the aircraft began to lift up automatically to take the expected take-off pitch value and a few seconds later we were airborne."

Rather than relying on an Instrument Landing System (ILS), the existing ground equipment technology currently used by in-service passenger aircraft in airports around the world where the technology is present, this automatic take-off was enabled by image recognition technology installed directly on the aircraft.

Automatic take-off is an important milestone in Airbus' Autonomous Taxi, Take-Off & Landing (ATTOL) project. Launched in June 2018, ATTOL is one of the technological flight demonstrators being tested by Airbus



Airbus demonstrates first fully automatic vision-based take-off.

in order to understand the impact of autonomy on aircraft. The next steps in the project will see automatic vision-based taxi and landing sequences taking place by mid-2020.

Airbus' mission is not to move ahead with autonomy as a target in itself, but instead to explore autonomous technologies alongside other innovations in areas such as materials, electrification and connectivity. By doing so, Airbus is able to analyse the potential of these technologies in addressing the key industrial challenges of tomorrow, including improving air traffic management, addressing pilot shortages and enhancing future operations. At the same time Airbus is leveraging these opportunities to further improve aircraft safety while ensuring today's unprecedented levels are maintained.

For autonomous technologies to improve flight operations and overall aircraft performance, pilots will remain at the heart of operations. Autonomous technologies are paramount to supporting pilots, enabling them to focus less on aircraft operation and more on strategic decision-making and mission management.

AIRBUS BELUGAXL ENTERS SERVICE ADDING XL CAPACITY TO THE FLEET



Airbus BelugaXL

The BelugaXL has entered into service, providing Airbus with 30% extra transport capacity in order to support the on-going production ramp-up of commercial aircraft programmes.

The aircraft, which is an integral part of Airbus' industrial system, made its first operational flight, recently. This is the first of six BelugaXL to begin work alongside the BelugaST predecessors, with the additional aircraft being introduced between 2020 and 2023.

Launched just over 5 years ago, the entry into service milestone marks yet another successful achievement for the internal aircraft programme which was awarded Type Certification by the European Aviation Safety Agency (EASA) in November 2019, following an intensive flight test campaign that saw the BelugaXL complete more than 200 flight tests, clocking over 700 flight hours.

At 63 metres long and 8 metres wide, the BelugaXL has the largest cargo

bay cross-section of all existing cargo aircraft worldwide. The BelugaXL can carry two A350 XWB wings compared to the BelugaST, which can only carry one. With a maximum payload of 51 tonnes, the BelugaXL has a range of 4 000km (2 200nm).

The BelugaXL is based on an A330-200 Freighter, enabling the re-use of existing components and equipment and is powered by Rolls Royce Trent 700 engines. The lowered cockpit, the cargo bay structure and the rear-end and tail were newly developed jointly with partners, giving the aircraft its distinctive look.

The BelugaXL is the latest addition to Airbus' transportation portfolio. While air transport remains the primary method for transporting large aircraft components, Airbus also uses road, rail and sea transport to move parts between its production sites. Like the BelugaST, the aircraft will operate from 11 destinations in Europe, continuing to strengthen industrial capabilities and enabling Airbus to deliver on its commitments.



BOEING ROLLS OUT FIRST SPACE LAUNCH SYSTEM CORE STAGE FOR DELIVERY TO NASA

Boeing recently delivered the core stage of NASA's first Space Launch System (SLS) deep space exploration rocket, moving it out of the NASA Michoud Assembly Facility in New Orleans to the agency's Pegasus barge.



The event marks the first time a completed rocket stage has shipped out of Michoud since the end of the Apollo program. SLS Core Stage 1 is the largest single rocket stage ever built by NASA and its industry partners.

The rollout follows several weeks of final testing and check-outs after NASA's declaration of "core stage complete".

NASA will transport the SLS core stage to its Stennis Space Center in Bay St. Louis, Mississippi, for "Green Run" hot-fire engine tests later this year. After inspection and refurbishing for launch, the stage moves to Kennedy Space Center in Florida. At Kennedy, the core stage will be integrated with the Interim Cryogenic Upper Stage (ICPS) and NASA's Orion spacecraft for the uncrewed Artemis I mission around the moon.

"The Boeing SLS team has worked shoulder-to-shoulder with NASA and our supplier partners to face multiple challenges with ingenuity and perseverance, while keeping safety and quality at the forefront," said John Shannon, Boeing SLS vice president and program manager.

SLS is the world's most powerful rocket, evolvable and built to carry astronauts and cargo farther and faster than any rocket in history. Its unmatched capabilities will deliver human-rated spacecraft, habitats and science missions to the moon, Mars and beyond as part of NASA's Artemis program.

"We are applying what we've learned from development of the first core stage to accelerate work on core stages 2 and 3, already in production at Michoud, as well as the Exploration Upper Stage that will power NASA's most ambitious Artemis missions," said Shannon.

BOEING STARLINER COMPLETES FIRST ORBITAL FLIGHT TEST WITH SUCCESSFUL LANDING

The Boeing CST-100 Starliner's first mission ended historically when it became the first American orbital space capsule to land on American soil rather than in an ocean, recently.

The spacecraft's crew module landed at the U.S. Army's White Sands Missile Range at 5:48 a.m. Mountain time, after spending just over two days on orbit and checking off a number of flight test objectives. The last time a spacecraft landed at the historic White Sands Space Harbor runway was in 1982, when Space Shuttle Columbia touched down, ending its STS-3 mission.

Shortly after its December 20 launch and separation from its booster rocket, Starliner experienced a mission timing anomaly that made it use too much fuel to reach the intended destination of the International Space Station. Flight controllers were able to address the issue and put Starliner into a lower, stable orbit. The vehicle demonstrated key systems and capabilities before being signaled to return to Earth.

"The Starliner team's quick recovery and ability to achieve many mission objectives – including safe deorbit, re-entry and landing – is a testament to the people of Boeing who have dedicated years of their lives working

toward the achievement of commercial human spaceflight," said John Mulholland, vice president and program manager of Boeing's Commercial Crew Program. "Their professionalism and collaboration with our NASA customer in challenging conditions allowed us to make the most of this mission."

The Starliner landing demonstrated the robustness of its landing systems, including its innovative parachutes and airbags.

Although this Starliner carried no people, it did have a passenger. An anthropometric test device, named "Rosie," was in the commander's seat for the entire mission. She was outfitted with about a dozen sensors that collected data to help prove Starliner is safe for future human crews.

Next, this crew module will be returned to Florida for data retrieval, analysis and refurbishment for future missions. It is the vehicle chosen to fly NASA astronauts Sunita "Suni" Williams and Josh Cassada, along with two international partner astronauts, on the first operational mission. In parallel, Boeing's Starliner team is finalizing the vehicle that will fly Boeing astronaut Chris Ferguson and NASA astronauts Mike Fincke and Nicole Mann on the Crewed Flight Test.



Boeing Starliner landing first look.



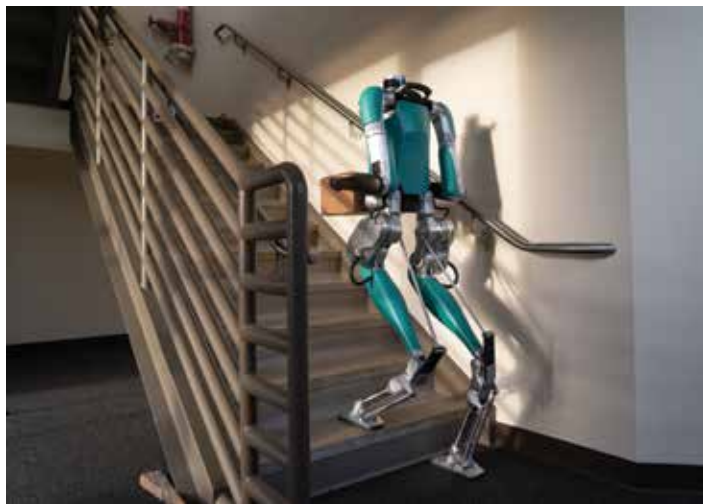
Boeing Starliner landing chutes (infrared).



FORD ACQUIRES DIGIT – WORLD'S FIRST COMMERCIALLY AVAILABLE HUMANOID ROBOT

Agility Robotics is launching Digit, a robot with arms and legs to work with humans and in human spaces, for commercial sale. Ford Motor Company is the first customer, receiving the first two robots off the line. This cooperation continues the existing partnership between Agility and Ford (www.agilityrobotics.com/ford-partnership) to explore ways to help commercial vehicle customers, including autonomous vehicle businesses, make warehousing and delivery more efficient and affordable for their customers.

Key applications for further exploration are indoor or first-mile logistics and last-50-feet delivery. The research also will focus on how Ford's commercial vehicles and Digit "talk" to each other and their surroundings through advanced connectivity technologies. For example, Ford's connected



vehicles can continually update cloud-based maps that can be shared with Digit so it doesn't have to recreate the same type of information.

The team expects that, as Digit will be part of a package delivery service, this communication channel will also provide delivery specific information such as where a customer prefers packages to be left, or

other individual package delivery needs. This communication channel also allows Digit to ask for help if something unexpected is encountered.

"As online retailing continues growing, we believe robots will help our commercial customers build stronger businesses by making deliveries more efficient and affordable for all of us," said Ken Washington, vice president, Ford Research and Advanced Engineering, and Chief Technology Officer. "We learned a lot this year working with Agility, now we can accelerate our exploratory work with commercial Digit robots."

Since the first Digit prototype was shown in May 2019, Agility Robotics has tested it extensively, refined the design, and added features to be ready for production and sale to customers. Upgrades and improvements include more advanced feet that allow Digit to balance on one foot or carefully navigate obstacles, new sensors to perceive and map the world for robot navigation, and customer-ready, powerful onboard computer hardware. "We're excited about the technical capabilities and advanced legged mobility of Digit," said Dr. Jonathan Hurst, CTO of Agility. "Videos

Cont. on page 38

TOYOTA DEVELOPS FUEL CELL SYSTEM FOR MARITIME APPLICATIONS

Former racing catamaran turned ship of the future, Energy Observer has made waves as it has been navigating its six-year odyssey around the world as the first energy-autonomous hydrogen vessel. Today, Toyota, official partner of Energy Observer and an avid supporter of their project from the start, announces that it has developed a fuel cell system for maritime applications, with its first delivery destined for Energy Observer.

Embarking in June 2017 from Saint- Malo Port in France, Energy Observer is an electrically propelled vessel of the future that is operated using a mix of renewable energies and an on-board system that produces carbon-free hydrogen from seawater. The operators of the vessel are on a mission to go and meet people in 50 countries and 101 ports during their voyage who are designing the future, with an aim to prove that a cleaner world is not only possible, but that the innovations can open some doors to a new economic expansion. Their activities also demonstrate and share potential solutions to champion an ecological and energy transition, as well as support tomorrow's energy networks as they encourage providers to make the networks more efficient and applicable on a large scale.

Previously, Toyota's fuel cell system, which was first introduced in the Toyota Mirai, the world's first mass-produced hydrogen fuel cell electric vehicle, proved its value as a propulsion system for automobiles. However, the company has more recently been exploring the use of its fuel cell system in other applications such as buses and trucks.

Toyota, a company aiming to develop a hydrogen society based on its challenge to "Establish a future society in Harmony with Nature" as stated in its Environmental Challenge 2050, was able to align with Energy Observer's mission and activities. From that common ground, the two have worked closely together on how a hydrogen fuel cell system could be adapted to maritime applications, which eventually led to the introduction of Toyota's maritime fuel cell technology and system.

The maritime-specific fuel cell system was developed by Toyota Technical Center Europe in a mere seven months. It required a re-design of the system, followed by the build and installation of the compact fuel cell module. This was accomplished using components first introduced in the Toyota Mirai which were fitted into a more compact module suitable for marine applications. The project successfully demonstrates the adaptability of the Toyota fuel cell technology to a variety of applications, including those outside of land-based vehicles.

"We are very proud to embark the Toyota Fuel Cell System on our oceans passages, and test it in the roughest conditions. After three years and nearly 20 000 nautical miles of development, the Energy Observer energy supply and storage system is now very reliable and we look forward to the

Cont. on page 38



Cont. from page 37



next step of the project : Get a reliable and affordable system available for our maritime community. We believe that the Toyota Fuel Cell System is the perfect component for this, industrially produced, efficient and safe. Being an ambassador for the Sustainable Development Goals (SDGs), our mission is to promote clean energy solutions and we share with Toyota the same vision for a hydrogen society."Victorien Erussard, founder and captain of Energy Observer.

The Toyota Fuel Cell System has proven its benefits already for many years in the Mirai, but more recently also in other applications such as buses and trucks. Using it for maritime transportation is again another step closer to the development of the hydrogen society. Toyota believes that hydrogen is the catalyst for energy decarbonisation and the technology acceptance can accelerate with the Toyota Fuel Cell System modular solution, which can be considered for a multitude of applications.

Cont. from page 37

can show a solid proof of concept - but this robot is ready to go out in the world in the hands of customers, and start to really explore pragmatic use cases."

Agility sold its breakthrough robot Cassie as a bipedal research platform from August 2017 through July 2019 and has spent the latter half of 2019 transitioning production over to Digit. "Digit represents a major milestone for Agility," said Dr. Damion Shelton, CEO of Agility. "For the first time, a full humanoid robot, with both mobility and manipulation capabilities, will be available for customer applications in a wide variety of industries, both indoor and outdoor. We look forward to showing off our work on both logistics and non-logistics tasks in the coming months."

Digit has been designed to walk upright without wasting energy, so it has no issue traversing the same types of environments most people do every day. Digit's unique design also allows it to tightly fold itself up for easy storage in the back of a vehicle until it's called into action. Once a vehicle arrives at its destination, Digit can be deployed to grab a package from the vehicle and carry out the final step in the delivery process. If it encounters an unexpected obstacle, it can send an image back to the vehicle to leverage additional computing power. The vehicle could even send that information into the cloud and request help from other systems to enable Digit to navigate, providing multiple levels of assistance that help keep the robot light and nimble. Digit's light weight also helps ensure it has a long run time, which is essential for delivery businesses that operate continuously through the business day.



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INNOVATION, SKILLS AND LEARNING – MACHINE TOOLS AFRICA 2020

As the biggest trade exhibition of its kind in Africa, Machine Tools Africa is all about innovation with its focus on additive manufacturing, automation and control, CNC machinery, cutting tools, machines, robotics and more. Taking place from 12 to 15 May at the Expo Centre in Johannesburg, it's a showcase of everything that twists, turns, rotates, cuts, forms, bends or shapes.

Reflective of the South African machine tools market, the exhibition has been designed in partnership with the Machine Tools Merchants' Association of South Africa (MTMA), and has their full commitment and endorsement. Although the local machine tools industry has been experiencing tough trading conditions, there is an understanding of the value of exhibiting and the importance of an industry showcase of this nature. Support from industry has been positive with 92% of floor space already sold.



*Gary Corin, Managing Director of
Specialised Exhibitions Montgomery.*

As a value-add for visitors, the Seminar Theatre, hosted by the South African Institution of Mechanical Engineering (SAIMEchE), will see top industry experts presenting topics covering latest innovation, industry trends and future technologies. These seminars are free to attend.

Another visitor attraction will be the ATI Skills Zone, where the future of skills development will be in the spotlight. Developed in partnership with the Artisans

Training Institute (ATI), this area will be a fully functional workshop where learners will demonstrate trade skills learned at ATI including electrical, instrumentation, welding, and fitting and turning, amongst others.

The South African Capital Equipment Export Council (SACEEC), representing the capital equipment and project sector both for new projects and for the aftermarket, has partnered with Machine Tools Africa and will be supporting the 'new products and technologies' walk-way with its demarcated stands.

Also committed to the show is the South African Institute of Welding (SAIW), a non-profit technical organisation dedicated to furthering standards in welding-fabrication and related technologies.

"We are heartened by the response we have had to Machine Tools Africa 2020," says Gary Corin, Managing Director of Specialised Exhibitions, the organisers of the show. "We are mindful of the current economic trading conditions, and so it is very encouraging that we have had such a positive response from exhibitors, while we are also delighted to work alongside the Machine Tools Merchants' Association of South Africa again this year and to have the support and endorsement of the South African Institution of Mechanical Engineering, the South African Capital Equipment Export Council and the South African Institute of Welding. This support will bring further value to the exhibition experience," says Corin.

"High performance machine tools touch every aspect of our lives. We're looking forward to Machine Tools Africa 2020 and seeing the very latest in global machine tools technology," Corin concludes.

For more information about Machine Tools Africa 2020, visit the website www.machinetoolsafrica.co.za



CSIR PARTNERS WITH 3SIXTY GSG AND TAUTOMER TO ACCELERATE TECHNOLOGY COMMERCIALISATION

The Council for Scientific and Industrial Research (CSIR) will work with 3Sixty Global Solutions Group (3Sixty GSG) a subsidiary of NUMSA Investment Company (NIC), and Tautomer to fast-track the commercialisation of CSIR technologies.

The organisations entered into a tripartite agreement through NIC's subsidiary 3Sixty GSG and their partner company, Tautomer, to explore any investment and collaboration opportunities at the CSIR.

The agreement was signed by CSIR Chief Executive Officer, Dr Thulani Dlamini, 3Sixty GSG Chief Executive Officer, Mr Khandani Msibi and Tautomer Managing Director, Mr Martin Magwaza, in Pretoria, recently.

The agreement will pave a way for investment in research and development, and enable the organisations to respond to the challenges faced by industry and society, and thus contribute to economic growth, thereby boosting job creation in the country.

The research collaboration agreement will also provide 3SixtyGSG with an opportunity to invest in CSIR technologies that are at or close to commercialisation in research areas such as pharmaceuticals, wireless mesh networks, bioplastics, biopharming, traditional medicines and energy.



CSIR CEO Dr Thulani Dlamini and 3Sixty GSG CEO Mr Khandani Msibi.



FORD RANGER REMAINS THE TOP LIGHT COMMERCIAL VEHICLE EXPORT FROM SOUTH AFRICA

Local production of the Ford Ranger continues to make a significant impact on the South African economy. Overall, Ford Motor Company of Southern Africa contributes over 1 percent to the country's GDP and tops the country's light commercial vehicle exports, with Rangers exported from Ford's Silverton Assembly Plant in Pretoria to more than 100 global markets.

"Since we began building the current-generation Ranger in 2011, 400 000 units have been exported around the world," says Ockert Berry, VP Operations at Ford Motor Company of Southern Africa (FMCSA). "Locally assembled Rangers are exported to the Sub-Saharan Africa region, North Africa, the Middle East, Europe and several other countries, which



positions our domestic operations on a truly global scale.

"Along with domestic sales having surpassed 225 000 Rangers to date, we are on track to build our 700 000th Ranger in 2020," Berry adds. "This is a fantastic achievement for our local plants, our employees and the extensive network of suppliers that support our business." Ford employs around 4 300 people in South Africa, and supports over 50 000 jobs in the total value chain.

In 2019, the Ford Ranger continued its leadership of exports in the pickup segment, with 65 908 vehicles supplied to international customers 24.9 percent, or 16 402 units, more than its nearest rival.

This strong demand was primarily from Europe where Ranger notched up its best-ever sales of over 52 500 vehicles – an achievement that helped Ford record its best year for commercial vehicles in the region for the past 25 years.

SOUTH AFRICA A LEADING SUPPLIER OF CATALYTIC CONVERTERS FOR FORD GLOBALLY

Ford Motor Company of Southern Africa (FMCSA) is one of South Africa's top vehicle exporters and the leader in the pickup segment, with the locally assembled Ford Ranger exported to over 100 global markets. It is also a significant supplier of components to Ford manufacturing plants internationally by managing the local manufacturing and export of catalytic converters.

Annually, more than 1.8-million catalytic converters are supplied from South Africa to 25 Ford vehicle manufacturing plants around the world, along with two aftermarket divisions – with more than 18-million units exported over the past decade. The catalytic converter is an essential exhaust emissions control device that reduces toxic gasses and pollutants from diesel and petrol internal combustion engines, thus contributing towards cleaner emissions and reduced environmental impact.

FMCSA has nine local catalytic converter manufacturers – six of which are based in Port Elizabeth, two in Cape Town and one in Germiston – which support Ford's global vehicle assembly operations for a variety of models. A single supplier located in Ibdien, Hungary, is also contracted by FMCSA to supply customer plants in Europe.

"Catalytic converters have been a crucial part of our export business since this division was established in the mid-1990s," says Ockert Berry, VP Operations at FMCSA. "The programme ramped up significantly in 2002, and through to the end of 2019 we have supplied almost 37-million catalytic converters to Ford plants around the world."

"As a highly specialised industry, the catalytic converter business is an important contributor towards investment and employment in the local

economy and currently supports several thousand jobs at our nine local supplier companies."

In 2019 alone, over 160 000 catalytic converters were fitted to Ford Ranger pickup and Everest seven-seater sport utility vehicle (SUV) models produced at the Silverton Assembly Plant in Pretoria and destined for the domestic and export markets. Catalytic converters are also exported to Ford Ranger assembly plants in Argentina and Thailand.

South Africa supplies catalytic converters to Ford plants in Europe that assemble the Fiesta, Figo, KA, B-Max, EcoSport, Focus, Mondeo/Fusion, C-Max and Transit/Tourneo.

Locally manufactured catalytic converters are also shipped to North America for use in the Ford Fusion which is assembled in Oakville, Canada, along with the Transit van produced at the Kansas City plant in the US.



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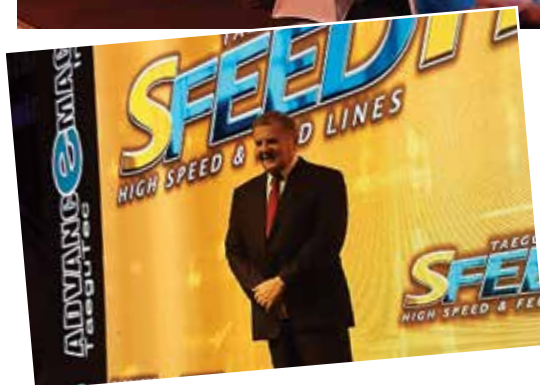
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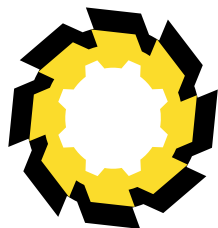
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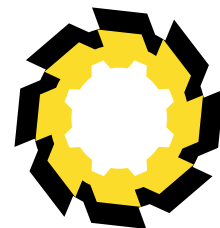
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When you let a TS three-dimensional touch probe cross the start line, your machines quickly win productive time. It not only lets you set up your workpieces quickly and precisely, it even inspects them between machining steps. Its optical switch, which operates without contact and therefore without wear, guarantees a consistently high probe repeatability of $\pm 1 \mu\text{m}$. So with the TS 3-D touch probes from HEIDENHAIN, your machines will work more quickly. And your race will always be a sure thing. MAFEMA SALES SERVICES C. C., 107 16th Road, Unit B3 Tillburry Business Park Randjespark, Midrand 1685, phone (011) 314-4416, fax (011) 314-2289, e-mail: mailbox@mafema.co.za

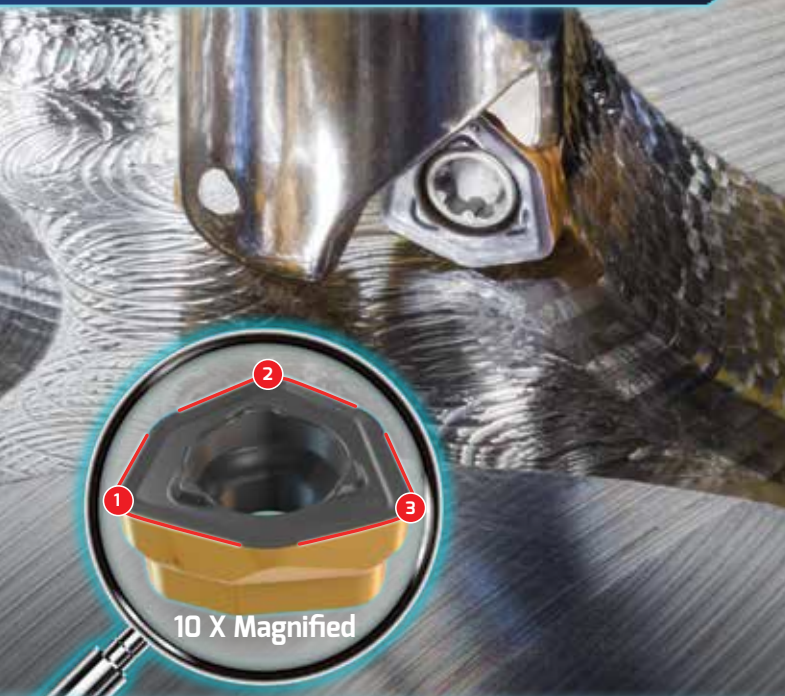
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