

Index Traub

OFFERS PROCESS RELIABILITY AT IMTS 2014

The new Index G220 Turn-Mill Center includes a motorized five-axis milling spindle and a tool turret with Y-axis, providing maximum machining flexibility for turning and milling complex parts in a single setup. Index will demonstrate the machine at IMTS 2014, Booth S-8136. The G220 provides a distance of 1,280 mm between the main and counter spindle and a maximum turning length of 1,000 mm. Operators have easy access to the main and counter spindles, the turret and the motorized milling spindle, as well as the operating panel.

The fluid-cooled, identical main and counter spindles feature a clearance of 65 mm (chuck up to max. 250 mm diameter), and provide power of 20/24 kW, a torque of 135/190 Nm and a maximum speed of 5,000 rpm. A tool turret is located in the lower part of the machine, can accommodate VDI 25 and VDI 30 tool mountings in 18 or 12 stations, all of which can be equipped with individually driven tools (power 6 kW, torque 18 Nm, speed 7,200 rpm).



The G220's fluid-cooled, five-axis motorized milling spindle (with power of 11 kW, torque of 30 Nm and speed up to 18,000 rpm) comes equipped with hydrostatic bearings in the Y and B axes. The stable circular guide further ensures excellent rigidity and damping. The Y-axis features a +/-80 mm stroke. The B-axis, driven directly by a torque motor, has a swivel range of -35 to +215 degrees. With a large travel distance in the X-direction, machining at up to

30 mm below the turning center height is possible.

The motorized milling spindle operates using a one- or optionally two-row tool chain magazine, which features space for 70 or 140 tools (HSK-A40). The double-row tool magazine enables setup during machining time. The compact machine features a CNC-controlled programmable gantry-type removal unit for finished workpieces. It can unload remnants from the main spindle as well as finished parts from the counter spindle.

The G220 is equipped with the latest generation of the Index C200 SL controller. Based on the Siemens Sinumerik 840D sl (solution line), it features an 18.5 inch touchscreen.

Additionally, the new Traub TNL42 automatic lathe will have its North American debut at IMTS 2014, Booth S-8136. Developed for high production precision turning, the new 42-mm TNK42 fixed headstock automatic lathe adds to the series of CNC fixed/sliding headstock automatic lathes, the TNL18 and TNL32. The new machine is for production of turned parts up to 250 mm in length and of geometrically complex workpieces in large and medium volumes.

With two tool turrets, a main spindle with C-axis and 42 mm bar capacity (7,000 rpm, max. 29 kW and 65 Nm) and a swivel counter spindle with C-axis for extensive rear end machining, the TNK42 offers high production rates with only 5.5 m² footprint (without bar loader). The vertical design of the machine permits unobstructed chip flow and better ergonomics for setup operations. The stable, vertical cast machine bed is mounted on a heavy cast iron machine base, providing excellent damping properties for high-precision cutting.

The upper tool turret has 10 stations with slide travels of 140 mm in X and 300 mm in the Z axis. All stations in the upper turret can be equipped with live tool holders. Turret indexing is accomplished with an NC rotary axis with a direct measuring system, avoiding the need for any mechanical lock, thereby allowing fast positioning of the turrets at any angle. This way, multiple tools can be assigned to each station, so that the upper tool carrier can be equipped with up to 20 tools.

The standard built-in Y-axis for the two turrets is formed by the interpolated movement of the CNC turret indexing H-axis and simultaneously the C-axis of the work spindle as well as the X-axis of the tool carrier. Through this combined motion along with the powerful tool drives (with max. 5 kW/8 Nm/12,000 rpm), the TNK42 provides a large Y-travel for all turrets, e.g., to mill surfaces and grooves on workpieces or to drill axis-parallel, off-center holes. Traub has also reduced idle time with its innovative optional "Dual Drive" system for the upper turret, where two separate drive trains are used to ramp up the speed for the next tool while still cutting with the current tool. This means the new tool is indexed to the machining position at full speed, reducing secondary processing times and extending the service life of the live tool holders.

Apart from its function as a lower tool turret with 9 stations and identical functionality as the upper tool turret, the lower cross-slide serves as a swivel counter-spindle for rear-end machining of workpieces. The swivel movement of the counter spindle is achieved through the CNC turret indexing axis (H-axis), thereby providing a counter spindle with a C-axis that can be moved in three axes (X/H/Z), allowing unrestricted counter spindle machining at 7,000 rpm (max. 12 kW and 22.5 Nm) and 42 mm spindle clearance.

For more information:

Index Traub
Phone: (317) 770-6300
www.indextraub.com

Hainbuch America

PRESENTS TWO QUICK CHANGEOVER SYSTEMS AT IMTS

The centroteX System allows changeover of any workholding device on a machine within five minutes while maintaining accuracies, eliminating the need for an operator to indicate the workholding system during changeovers and dramatically decreasing machine downtime. This system has a common flange plate that is fitted to the machine spindle along with a bayonet mount on the drawtube. The sub plate with chuck or fixture is then coupled to this interface, rotated 15 degrees and locked via quick connect fasteners. The centroteX System

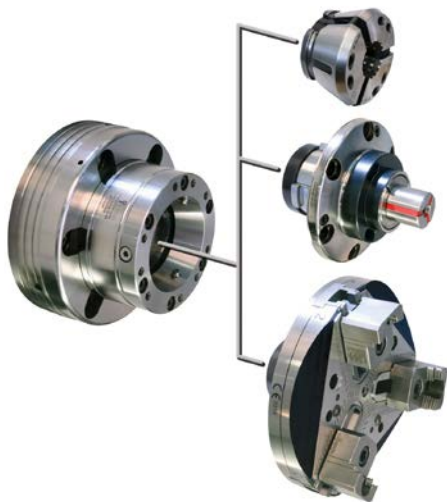
ity of 0.003 mm is possible. This can be accomplished without adjusting.

New to the Hainbuch modular system is the Jaw Module, which is small and flexible; can be quickly changed and covers a large clamping range. The result is a quick-change clamping solution for all situations. The new Jaw Module completes the circle of modularity and gives a new clamping dimension that opens

up even more possibilities for users. All this with less weight and a smaller interference contour. In short: ID clamping, OD clamping and 3-jaw clamping all-in-one. Hainbuch America will be at Booth W-2413 in the Tooling & Workholding Systems Pavilion.

For more information:

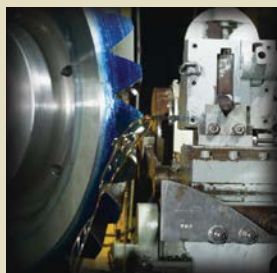
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can be mounted on any CNC machine and with most any workholding or fixture device, allowing manufacturers to schedule production scenarios according to their customer needs and not according to the workholding set-up on the machines. .

The second quick change system is Hainbuch's Spanntop Modular Chuck System. This system utilizes Hainbuch's original 10-second collet change for OD clamping. What if you want to change over from OD clamping to precise ID clamping, without changing the clamping device? Not a problem with the Mando Adapt mandrel. Place the mandrel in the mounted clamping device and tighten three screws to lock the mandrel in the clamping device for extreme rigidity and precision. For rotating products, concentricity of 0.005 mm between taper and mandrel taper can be achieved. For stationary clamping devices, repeatabil-

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Sunnen Products

OFFERS HEAVY-DUTY BORE GAGES

Sunnen (Booth N-700) GR-2245/2241 bore gages combine rugged design with precise, reliable measurement to 0.0001" for heavy-duty large-part machining. Standard models are capable of checking bore diameters from 2" (50.8 mm) to 12" (300 mm) and bore lengths up to 24" (600 mm) with appropriate attachments, while special-order models can measure bores up to 65" (1650 mm) long. GR-2245/2241 gages are suitable for energy industry components, such as flow meter tubes, liner hangers, drill pipe, mud pump liners and sucker rod pump barrels. Available with analog dial readout or electronic indicators, the gages feature long wearing, replace-

able carbide gaging points to withstand extreme wear conditions with rough workpieces or abrasive materials. The gages feature patented wear-proof ball cranks for long-term repeatability and retractable or non-retractable gaging points. Models with retractable gaging points prevent scratching of the bore during removal. The gages are designed with a dust/water protection level of IP42 or IP53, and a specially designed shock shield protects the dial from hand heat and jarring to ensure reliable readings.

The gages use adjustable centralizers to ensure proper positioning over the entire diameter range, resulting in accu-

Siemens Industry, Inc.

INCREASES CNC TECHNOLOGY AT IMTS

With the introduction of the 808 at IMTS in 2012, Siemens brought power, flexibility and reliable performance to the job shop. Already accepted as an OEM component by numerous mill and lathe builders, the 808 provides job shops the unique opportunity to apply advanced CNC power to their existing machines, breathing "new life into old iron," as the saying goes. The 808 rounds out the growing family of CNC models from Siemens, which now spans the range from the

most basic three-axis machines to most advanced five-axis machining centers, with full robotic integration, secondary ops management and transfer line capability, all on a single control, the 840D. This and other Siemens innovative products will be on hand at IMTS 2014 at Booth E-5010.

For more information:

Siemens Industry, Inc.

Phone: (800) 743-6367

www.siemens.com



rate centering action, even if the gage is tilted off the bore axis. A simple twist adjusts gaging tension, allowing the head to go smoothly in and out of any size bore. A right-angle attachment is available for conditions where the gage is difficult to read or total gage height is an issue. Blind-hole probes allow measurements to within 0.5" (13 mm) of the bottom the blind bore.



Standard dial-equipped gages read out in tenths (0.0001"/0.002 mm), and models with five-tenths read outs (0.0005"/0.010 mm) are also available.

Gages with electronic indicators are accurate to ± 0.00012 in. (± 0.003 mm) with 0.00005 in. (0.001 mm) resolution, and provide the ability to perform scaling calculations, judge tolerance, hold data and perform general comparison measurements. Operators can easily toggle between inches and metric measurement readouts. A data output cable enables direct transfer of bore measurements to a computer, making the gages ideal for fast SPC data collection at multiple points in a bore during long production runs. Gages can be preset with upper and lower tolerance limits for

GO/ \pm NG judgments, which are then displayed in full-size characters.

The electronic indicator displays the spindle's absolute position via an absolute linear encoder capable of relocating the origin, even after the power is turned off, for quick-start, multi-point measurement. The positive/negative count resulting from the spindle's up-and-down movement can be toggled, and the indicator face can be rotated 330

degrees, for easy reading at virtually any angle. Battery life, under normal use, is approximately 5,000 hours.

All gages come packed in sturdy, custom-fitted boxes with all tools and wrenches required for setup and adjustment.

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Walter USA LLC EXPANDS CUTTING TOOL TECHNOLOGY

Walter will showcase several new technologies in Booth W-1700 at IMTS 2014. The exhibit will feature the new Walter Blaxx F5055 slitting cutter, the latest addition to its Blaxx family of high-performance milling cutters. The mill incorporates similar technology to the Walter Cut SX grooving system, which is based on self-gripping, form-locking indexable inserts that provide ideal cutting force for the tool. The SX parting and grooving system also features coolant supply through the tool for optimum cooling of the cutting edge for all monoblock tools in the SX system.

Also featured will be Walter's expansion to its range of tough, reliable and long-life standard solid carbide deep-hole drills with the introduction of Walter Titex X•treme D40 and the X•treme D50 drills, which provide 40xD and 50xD drilling depths respectively. Walter's XD technology (XD stands for extremely deep) enables holes to be drilled in one operation without pecking, in steel, cast iron or non-ferrous metals. The display will also include New Tiger•tec Silver high performance cutting material with new positive rake 7° and 11° geometries for steel machining along with new geometries for cast iron machining will also be on hand. The new geometries include a classic flat top with a stepped plateau, as well as a robust geometry for maximum process reliability, even for interrupted cuts.

Further, the company will feature its new range of Walter counter-boring and precision boring tools for diverse

machining applications. The new line has been expanded with Capto adaptors in addition to the existing NCT and ScrewFit adaptor program.

New Prototyp Prototex Eco Plus from Walter, also on display, is a versatile through-hole tap that delivers superior performance and tool life. Designed for through-hole threads up to 3.5xD, it can be used on steel, stainless steel, and cast iron and non-ferrous metals such as aluminum and copper.

The exhibit will also highlight Walter Xpress and Walter Multiply. Walter



Xpress is an incredibly fast ordering and delivery system for high-quality special tools. Walter Multiply is a multi-level networked and customized program that assists users in the optimization of tool selection from planning, manufacturing, maintenance, logistics and training. A variety of cutting fluids and coolants available from Walter, including its newest low foaming options, will also be displayed.

For more information:

Walter USA LLC
Phone: (800) 945-5554
www.walter-tools.com

Jenoptik

OFFERS VERSATILE MOBILE SURFACE MEASUREMENT SYSTEM

The Jenoptik W10 mobile surface roughness measuring system (IMTS 2014 Booth E-5545) is ideally suited for measurements on the production line or machining cell. The new instrument's remote measuring capability brings the measurement lab to the shop floor. Light and compact in design, easy to operate with long-lasting battery power, the W10 is simple to use. Operation is intuitive through the easy to understand graphic user interface. More than 800 measurements with one battery charge guarantee a high level of reliability even during frequent use. Measuring results may be quickly printed out on the integrated printer—wirelessly via Bluetooth technology. Capable of checking more than 40 roughness and waviness parameters using an extensive array of probes and accessories, the new W10 can match the performance of more expensive stationary systems with its accuracy and precision.

The new Jenoptik W10 is ergonomically designed, with the device easily fitting into the user's hand making it simple to precisely position on the workpiece. The wireless device can be used for transverse probing, overhead measurement, mobile measurement on small shafts, perpendicular measurement, and is equipped with tripod legs to adapt to small workpiece height. An integrated V-groove securely positions small shaft type parts on the unit for measuring.

The W10 is capable of tracking eight separate measurement programs, including one for device verification, up to 100 separate profiles, with a total storage capacity of up to 10,000 completed measurements. The integrated click wheel allows the operator to intuitively select device functions. In conjunction with the large color display with graphic interface, this makes operation of the W10 simple and transparent, delivering easy to see results and tolerance evaluations. The roughness probes and measuring instrument electronics are calibrated independently from each other at the factory.

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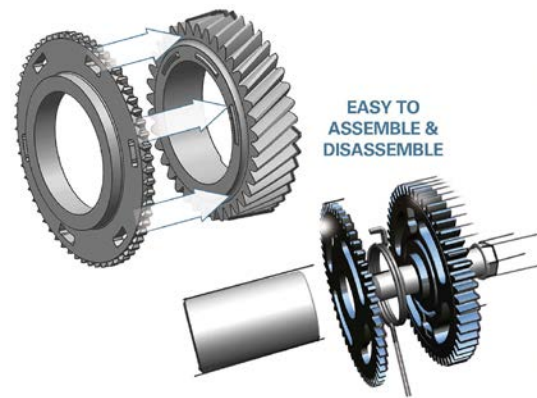
GKN Sinter Metals

OFFERS POWDER METAL ALTERNATIVES

GKN Sinter Metals is a developmental partner of the automotive industry, producing the widest range of sintered drivetrain components from metal powder worldwide. Powder metal production processes are environmentally friendly, producing safe and quiet-running components with a long ser-

vice life — the engineers at GKN Sinter Metals see these products as the future trend of gearbox design.

GKN's TechCenter at Radevormwald, Germany, is supporting this trend. For many years, the engineers at the TechCenter have been working to optimize manual and automatic gear-



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boxes with universities and renowned research institutions, like the Laboratory for Machine Tools and Production Engineering (WZL) of RWTH Aachen University, that specialize in materials science and drivetrain technologies

During the VDI Drivetrain Congress, held from June 24-25 in Friedrichshafen, Germany, GKN presented its product portfolio, field-tested gear developments and technological trends such as light-weight design.

Antonio Casellas, vice president of GKN Sinter Metals Global Product Management, said, "Powder metallurgy is a pioneering technology. It offers a variety of process options with specially designed metal powders to meet the increasing demands of the various drivetrain applications. Powder metal offers new possibilities in geometry, such as undercuts, 'green-in-green' technology or helical gears to innovate gearbox design."

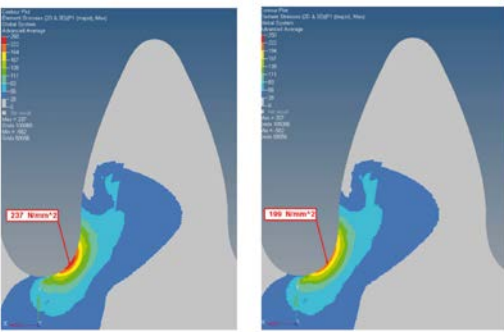
Four examples of GKN technology include:

Conventional compaction. Conventional compaction of selected metal powders on GKN developed powder presses using 'closed-loop' technology ensures densities above 7.2 g/cc with a homogeneous material structure. The 'closed-loop' method developed by GKN allows geometries such as undercuts or the innovative 'green-in-green' technology. The surface density is further improved by a subsequent sizing operation.

Warm compaction. Utilizing warm compaction, a technology developed by GKN, a density of more than 7.35 g/cc is achieved. The powder has been engineered to be compacted in heated tooling. Again, the 'closed-loop' process is used.

ORIGINAL

MODIFIED



Selective rolling. Rolling of selected functional surfaces serves to achieve full density in highly stressed contact areas of the drivetrain component. Helical gears can be provided with a heavy-duty surface area and an elastic core with a supporting strength to optimize application performance.

Powder forging. Due to its outstanding design flexibility and excellent performance with good geometrical precision, powder forging is an ideal technology for producing drivetrain components because a nearly full density is achieved across the entire volume of the part. In this process, a PM part having a compact density of approximately 7.0 g/cc is fed directly from sintering into a forging press. It is then brought to full density by hot forging.

Powder forged synchronizer rings and passenger car connecting rods represent a selection of high volume components that GKN produces for drivetrain applications. An extension to this technology is the development of powder forged gearbox components with helical teeth. The various processes described here represent only a small selection of our technological and economic solutions. These are complemented by our extensive experience in the development of metal powders, powder presses, compaction tooling, sintering and heat treatment for advanced drivetrain applications.

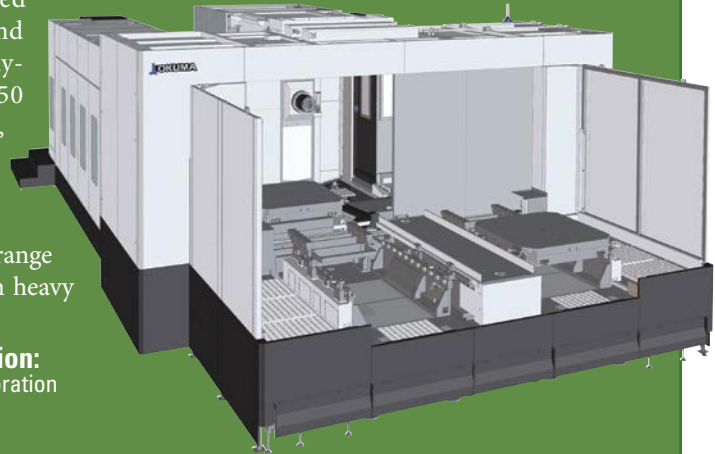
For more information:
GKN Sinter Metals
Phone: +(44) 1527 517715
www.gkn.com

Okuma

DEMONSTRATES SPEED AND POWER WITH MA-12500H MACHINING CENTER

Okuma's MA-12500H horizontal machining center will be on display for the first time at the 2014 International Manufacturing Technology Show (IMTS), Booth S-8500. The hallmark of this machine is its ability to provide a good balance of speed and cutting power for machining of aluminum alloys, cast iron and difficult-to-machine materials. This makes it well suited for large part aerospace machining. The MA-12500H is so fast and powerful, it's the machine of choice for building lathes at the Okuma DS1 plant in Oguchi, Japan. Built on an integral bed and base, and designed with reinforcing ribs for increased stability and load carrying capacity, the MA-12500H incorporates Okuma's exclusive Thermo-Friendly Concept to achieve unparalleled thermal stability and accuracy. Standardly-equipped with a 50 taper 6,000 rpm, 60/50 horsepower spindle, it is also available with either a 12,000 rpm wide range spindle or 4,500 rpm heavy duty spindle.

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Zeiss

CONTURA OFFERS ADDITIONAL MEASURING RANGES

The latest generation of the successful Zeiss Contura is now entering the market. Zeiss introduced the coordinate measuring machine at the Control show in Stuttgart, Germany. This system provides a platform for flexible, reliable and uncompromising quality assurance. It is even more precise than its predecessor and offers a large package of optical

sensors on top of additional measuring ranges. Zeiss Calypso reference software and a highly tuned overall system enable Zeiss Contura to maintain its place as the standard in its class.

Like no other Zeiss coordinate measuring machine, Zeiss Contura has made high-performance measuring technology available to the masses. The latest

generation will continue on this proven path. A reliable measuring system is the result of the interaction of its components: design, sensors, software and service. "With Zeiss Contura, customers receive a well-balanced system and thus a guarantee for stable, reproducible precision. Put simply: results you can rely on," says Andrzej Grzesiak from Zeiss Industrial Metrology business group. Thanks to its robust design, Zeiss Contura can also be used near production. The latest and most powerful scanning sensors from Zeiss are available for the machine.

Tailored sensors

In tune with the various customer requirements, sensors are available in the direkt, RDS and aktiv versions. With the Zeiss Vast XXT probe, the direct model enables scanning. This configuration is ideal for small workpieces, for



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which a small single or star stylus is sufficient. Scanning makes it possible to efficiently and precisely measure the form in addition to the size and location. For parts with different angular positions, the RDS sensor model is the right choice. The RDS articulating probe holder can be freely positioned in 2.5 degree increments, resulting in more than 20,000 possible positions. Thanks to the RDS-CAA, the data from every single position can be mathematically calculated in just a few minutes. "This drastically improves the utilization level of the machine and results in additional possibilities to immediately measure even complex angular positions," states Grzesiak. Its sensor interface permits the flexible use of contact and optical sensors, including the new Zeiss LineScan sensor. It enables the fast optical measurement of features.

The active configuration is recommended when long styli are needed for measurements deep inside a part or for additional demands on precision and speed.

The Zeiss Vast XTR gold and Vast XT gold premium probes are available. This active regulation enables highly accurate measurements with very long, heavy stylus systems. "Active scanning is a unique value added by Zeiss," emphasizes Grzesiak. navigator technology from Zeiss, which enables a tangential approach without a stop & go, as well as circular or helical scanning, results in added productivity.

Choice of measuring ranges

Another new feature is the range of measuring volumes. The Zeiss Contura family has eight different sizes starting with a measuring volume of 700 × 700 × 600 mm up to 1200 × 2400 × 1000 millimeters. From a design standpoint, Zeiss Contura is based on proven features: its efficient, highly precise air bearings are an in-house development. Zeiss AirSaver can also be integrated for additional savings. This technology reduces com-

pressed air consumption by up to 60 percent depending on how it is used.

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Seco Tools

HIGHLIGHTS MILLING, TURNING AND THREADING AT IMTS 2014

Seco Tools, LLC (Booth W-1564) will unveil several new milling, turning, threading and tool holding products that were developed with material advancements in mind, including a square shoulder cutter that enhances side-milling operations, a multi-edge system that meets the industry's demand for narrow cutting-edge grooving and parting-off tools, an insert that provides high-performance threads in a single pass, and toolholders with special vibration damping capabilities.

Milling

Seco will spotlight several milling insert grades including the new MS2050 that utilizes an advanced coating technique and substrate to bring enhanced process reliability and higher cutting data to applications involving titanium alloys. The special PVD coating on the MS2050 not only strengthens the insert's wear resistance but also eliminates reac-

tion with the workpiece material for increased cutting speeds and tool life and a lower cost per part. MS2050 is available in a variety of positive geometries for square shoulder milling, face milling, copy milling and high-feed milling.

With its four cutting edges and innovative cutter design, the new Square T4-08 shoulder milling solution that will be on display at IMTS balances economy and performance when machining cast iron and steel. Made for roughing and semi-finishing operations, the Square T4-08 brings smooth cutting action and good surface finish to slotting and contouring applications. The tangential mounting of the tool's inserts increases the surface area of contact between the inserts and cutter body, resulting in increased rigidity and machining stability. Additionally, such a mounting design directs the cutting forces to the thickest part of the inserts, providing highly robust milling performance and



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increased metal removal rates with small diameters.

IMTS attendees will also see the latest in flexible, cost-effective modern end-mill design by way of the Minimaster Plus replaceable milling tip system. Engineered with speed, precision and complete versatility in mind, the system offers a large selection of inserts and shanks for a multitude of tough milling applications, including those that involve steel, stainless steel, cast iron and aluminum materials. Most recently, Seco made this system even more adaptable by adding internal coolant capability to all three of the diameter sizes of its new high-feed milling heads.

As more manufacturers opt for stronger, lighter composite materials instead of steel to reduce the weight of the parts they produce, Seco has developed dedicated tooling for the rapidly growing use of this material. Among those products are the Jabro JC840 and JC845. The JC840 double helix end mill cutter effectively machines laminated materials by directing its cutting forces inward and toward the component filler material during slotting and side milling operations. The JC845 solid end mill reduces delamination, pressure build up and heat in the cutting zone when slotting and side milling carbon fiber reinforced plastics.

Turning

Regarding advanced turning inserts for different materials, Seco will exhibit its Duratomic-coated TK1001 and TK2001 carbide grades that bring exceptional wear resistance and faster cutting speeds to cast iron applications as well as the TP1030 cermet grade that maintains tight tolerances and high surface finish in high-volume threading operations involving steels and stainless steels. From its Secomax line, the company will highlight CBN010, an uncoated PCBN grade that has high resistance to edge chipping when cutting hardened steels, and CBN060K for turning case hardened steels within the application area defined by H10 – H20 ISO designations.

Seco's X4 multi-edge system meets the industry's demand for narrow cutting-



edge grooving and parting off tools. At IMTS, attendees will see how the company has added smaller shanks to the short reach system so that it can accommodate an even broader range of machining applications such as Swiss parts. Overall, the X4 consists of indexable tangential inserts with three-dimensional chipbreakers and a highly stable clamp design. These strong, dependable system components achieve high accuracy, repeatability, productivity and surface quality in external grooving and parting-off operations involving small parts, slim bars and tubes made from a wide variety of common materials.

Threading

The new Thread Chaser inserts that Seco will have on display at IMTS incorpo-

rate multi-tooth patterns to allow push and pull threading of OD and ID features with one or two passes. The inserts incorporate precise thread patterns that quickly and reliably generate high-accuracy, consistently perfect thread pitches. Through-coolant holes and chip formers direct high-pressure coolant precisely to the cutting edge to optimize chip formation, provide efficient chip evacuation and extend tool life. These inserts will provide substantial value to manufacturers working with pipes and couplings made from a wide range of material hardnesses for the oil and gas industry.

For more information:

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