Junker

BUILDS NEW PLATFORM FOR CYLINDRICAL AND NON-CYLINDRICAL GRINDING OF WORKPIECES

Junker recently built a new platform for cylindrical and non-cylindrical grinding of workpieces. The platform has a swing diameter of 470 mm and a part length capacity of up to 4,800 mm, and it will first be used in the Jucrank series for grinding large crankshafts.

As these weigh up to 1,000 kg, it is a challenge to set the parts up for the process. To adjust the table assemblies, Junker has developed a slide with an integrated length measuring system. As a result, the setup technician first brings the work heads into position, then the steadies.

To enable the processing of such unstable workpieces, Junker had to develop its own steady. The new patent-pending steadies are CNC-controlled and have only one axis each. This increases their stability and stiffness. Each of up to a maximum of 11 steadies can be controlled individually and applied to a section at any time — even during the process. This key feature allows for higher sequence flexibility of the grinding process. To make this possible, Junker applied its control concept to a larger, high-performance control system.

Large crankshafts are mainly produced in small batches, and in some cases as single pieces. Junker has added an integrated measuring system to overcome these challenges.

First, the two grinding wheels, each mounted on a wheelhead with its own X and Z-axis, pre-grind the main and pin bearings. The diameters are measured during the process. The grinding machine also measures the entire workpiece after pre-grinding.

Based on the measuring data, the Jucrank 8 finishes the grinding process while using the WK axis developed further by Junker: During grinding it swivels the grinding spindle, compensating for tapers in the process. With this technology the grinding machine can provide each main and pin bearing with its own profile shape, i.e. if necessary with specific crowning. With this functionality, the machine then also grinds the two shaft ends if required. These often feature a taper and not a flange or post end.

As a result, the forged crankshaft is completely ground and ready for installation after only one set-up. Another possibility of applying the new Jucrank technology is for the re-grinding of used crankshafts.

For more information:
Junker Group
Phone: +49 (0)7838 84-0
www.junker-group.com

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New Tongati MT Series Lathes

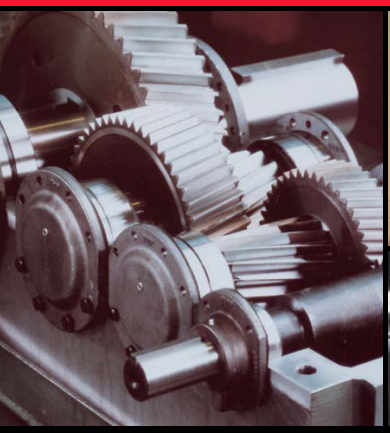
HAVE TWIN SPINDLES AND INDIVIDUAL MACHINING ZONES

Tongtai's newest MT Series Lathes were developed for improving cycle times and turning processes for the automotive industry, where small parts are typically made within 60 seconds. Tongtai developed the MT series for precision turning, high-production volume, automatic production, and insertion into mass-production lines. Tongtai machines are available from Absolute Machine Tools, Inc., headquartered in Lorain, OH.

The MT Series has twin spindles and two individual machining areas. The turrets and spindles are designed parallel to each other. This design makes parts on one machine that usually need two processes to be finished. The addition of a gantry-type robot saves floor space and improves labor flexibility. Depending on cycle time, a single robot arm/single stocker or twin robot arms/twin stockers for high production chucking work are both available on these lathes. The Tongtai MT lathes come equipped with either 6" or 8" chucks on spindles that rotate at 6,000 or 4,500 RPMs respectively. The control system offers a robot teaching function so that the operator can adjust positioning. The function coordinates the robot arm, on-screen positioning diagram, input coordinates, number and names of positions, three-axis settings and single-axis settings.

The work area on the main foundation of the lathes has two individual working areas with separate bed structures. This design decreases the transferring of harmonic vibration, contributing to improved machining accuracy and high-quality surface finishes. The compact design allows for a short cutting flow from start to finish, which enhances machining rigidity and heavy cutting ability. Maximum swing diameter is 210 mm with a machining diameter of 210 mm or 120 mm (with robotic arm), and machining length of 145 mm or 100 mm (with robotic arm).

The MT series lathes are equipped with workpiece positioning protection to ensure sealing between the workpiece surface and chuck. Pneumatic pressure leaks can be detected, and if this occurs, the robot arm will reload the workpiece. The gantry type robotic arm is able to process three axes of movement and is







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driven by a servo motor. The programmable arm allows the operator to adjust positioning points and moving routes. Rapid traverse speeds for the robotic arm are 160 m/minute in X, 120 m/minute in Y, and 35 m/minute in Z. The rotary axis moves at 180° in one second.

The pallet stacker comes in three types: three poles and a center, three poles, and a central pole type. The number of pallets can be 10, 14, or 16 with allowable part diameters from 30 mm through 150 mm.

The MT series comes standard with coolant through the spindle, A2-5 or A2-6 spindle nose, 0.001" indexing increments, 4,500 RPMs or 6,000 RPMs optional. With cutting feed rates of 0.001–5,000 mm/minute this horizontal turning center is designed for high-production, fast-paced manufacturing environments.

For more information:
Absolute Machine Tools, Inc.
Phone: (800) 852-7825
www.absolutemachine.com

Schunk EGN Safety Gripping System

CONTINUOUSLY POWERED EVEN IN A SAFETY STOP

The EGN Safety is the first certified safety gripping system from Schunk for use with human and robot interaction. It is certified in accordance with DIN EN ISO 13849 specifications.

If the production process is interrupted by an emergency shut-off, the Schunk EGN goes into either a safety speed mode or a safe stop mode, depending on the activated protection zone.

Unlike other options on the market, the Schunk safety gripping system is continuously powered even if in a safety stop, and will safely hold the gripped part. As soon as the protection zone is released, the gripper switches back to the regular operating mode without having to be restarted.

[www.geartechnology.com]

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Bourn & Koch 600H Extended Hobber

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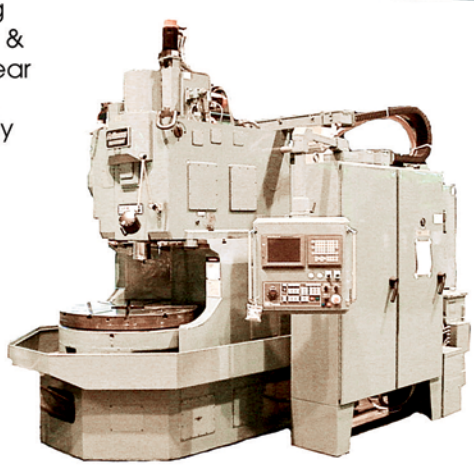

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The EGN gripper is modularly designed and covers a wide range of applications. The gripping force, speed and finger position can be flexibly controlled during the handling process. All sizes have multi-toothed guidance and are controlled by the Schunk ECM controller equipped with standard connector technology with either Profibus or CAN bus.

To use the certified SLS, SOS, and STO functions, the Schunk safety module is added to the gripper and the controller. Because of its modular design, existing EGN applications can be retrofitted with the safety functionality at any time.

For more information:
Schunk Intec, Inc.
Phone: (905) 712-2200
www.schunk.com

Emuge EF Series Drills

INCORPORATE SPECIAL GEOMETRY FOR FASTER PENETRATION AND LONGER TOOL LIFE

Emuge Corp. recently announced the North American debut of its line of high-performance solid carbide drills. The new Emuge EF series drills incorporate special geometry, proprietary carbide grades and a PVD coating design. The result is three to five times faster penetration rate than conventional carbide and cobalt drills, in addition to high-quality threads and longer tool life.

"We are excited to roll out this major introduction to the U.S. and Canadian marketplace," said Bob Hellinger, president of Emuge Corp. "It makes perfect sense for Emuge to have a drill product line to complement our leading line of taps and thread mills, and it provides our customers the best holemaking solutions for their tapping applications."

In addition to the drill line introduction, beginning in the fourth quarter of 2015, Emuge will be offering complete grinding/reconditioning services for all drill products at their West Boylston, MA facility.

The EF solid carbide drills, engineered and made by Emuge in Germany, feature a double-margin flute design for added stability and rounder/straighter holes. A unique flute construction enables improved chip evacuation, and a self-centering design allows drilling in one shot, eliminating peck cycles and pre-spot operations. Emuge drills are made of a sub-micron grain carbide grade for increased abrasion resistance and durability, and a multi-layer PVD coating resists chipping/cracking for longer tool life.

For more information:
Emuge Corp.
Phone: (800) 323-3013
www.emuge.com

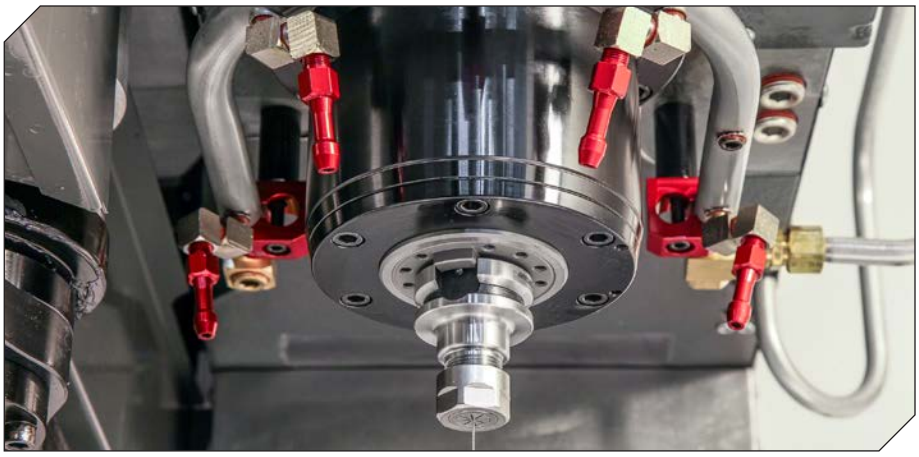
Haas DT-1 Drill/Tap Center

ALLOWS RIGID TAPPING TO 5,000 RPM

The DT-1 Drill/Tap center from Haas Automation, Inc., is now available with a 20,000-rpm inline direct-drive spindle, giving customers the ability to run higher feed rates for small tools and high-speed machining operations.

The optional 20K spindle is for applications that require high spindle speeds, and powerful enough to mill hard-to-machine materials. It allows rigid tapping to 5,000 rpm, with up to four times retract speed to reduce cycle times. The spindle is powered by a 15 hp vector drive system that yields 16 ft-lb of cutting torque, and the motor is coupled directly to the spindle to reduce heat, increase power transmission, and provide improved surface finishes.

The DT-1 is a lean-style machining center with a compact footprint that allows multiple machines to be placed side-by-side, allowing for the most efficient use of shop floor space. It features a 20" × 16" × 15.5" work cube and 26" × 15" T-slot table, while maintaining a very small footprint. The machine provides cutting feed rates to 1,200 ipm for high-speed milling, and the 20+1 side-mount tool changer swaps tools quickly to reduce non-cutting time. High-speed 2,400 ipm rapids combine with high



acceleration rates to shorten cycle times and increase throughput.

For efficient chip removal, the DT-1 features steeply sloped internal sheet metal. Optional twin chip augers transport chips to exit at the rear of the machine, allowing multiple machines to be placed close together. A 45-gallon flood coolant system is standard, with options for a programmable coolant nozzle and high-pressure through-spindle coolant systems.

For more information:
Haas Automation, Inc.
Phone: (805) 278-1800
www.haascnc.com

Sumitomo Turning Grades for Machining Stainless Steels

FEATURE ABSOTECH GRADE COATING

Sumitomo Electric Carbide Inc. recently released new AC6030M and AC6040M turning grades for machining stainless steels.

The AC6030M and AC6040M grades feature Sumitomo's new Absotech grade coating. Absotech coating improves wear resistance, adhesion resistance and fracture resistance, which extends tool life. The AC6030M possesses a new TiB_2 surface layer that creates adhesion and chipping resistance. The AC6040M has an optimized Ti and Al composition resulting in improved flank and notch wear resistance.

The AC6030M and AC6040M grades have an expanded chipbreaker lineup highlighted by the newly developed EEM breaker, which provides improved chip control when roughing.

For more information:
Sumitomo Electric Carbide Inc.
Phone: (800) 950-5202
www.sumicarbide.com