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MAXXTURN 65: A proven machine with a new design, new control system, and increased productivity.

HALLEIN – The time-tested Maxxturn 65 is now available in a new sheet metal design with a modern look, user-friendly textured finish, and new interpretations of the EMCO colors. However, the machine has not simply had a cosmetic makeover - its ancillary times have also been significantly optimized by increasing rapid speeds and acceleration while reducing tool change times.
The control system has also received an overhaul and now comprises the Siemens Sinumerik 840D-sl. The state-of-the-art control technology afforded by the Sinumerik 840D-sl and its OPERATE® user interface are apparent from the numerous refinements to the operating interface, which make the machine significantly easier to operate and program. Examples of these improvements include the USB port for data transmission, clear and intuitive controls, animated input aids, extensive technology cycles, high-performance 3D simulation, and Ethernet as standard. The latest generation of SINAMICS® drive and servo control from Siemens is also included.

The MAXXTURN family comprises five members: the MAXXTURN 25, 45, 65, 95 and 110. While the smaller three high-performance universal lathes with their counter spindle represent the perfect solution for the economic complete machining of barstock and chuck parts, the MAXXTURN 95 and 110 concentrate on the machining of shafts and flange parts. Fitted with a Y axis, driven tools, a high-precision C axis and very high rapid-motion speeds, the MAXXTURN series offers everything the customer desires, to not only manufacture complex machined parts in high quality, but also cost-effectively – true to the EMCO maxim: Design to Cost.

One of the characteristics which distinguishes the entire MAXXTURN line is that the Y axis is integrated in the body of the machine. This ensures **maximum stability,** as well as **utmost precision** of all parts manufactured. The extremely wide distances between

the guides make for stable turning and offer the operator **additional possibilities for complete machining**.

The compact counter spindle is an additional highlight, taking over workpieces position-oriented and with utmost precision for machining the reverse side. This avoids having to clamp workpieces a second time, thereby avoiding wait time, which in turn **increases productivity** and makes for **shorter part delivery periods**.

The tool turret with single-motor engineering offers space for 12 VDI30 tool holders. Each station can accept driven tools. A servo motor powers the driven tools and the swivel movement, respectively. The tool holders, equipped with EMCO joggling plates, allow **easy tool insertion with repeatable accuracy without the need for time-consuming adjustments**.In the course of **modular assembly** customers can choose between a SIEMENS (incl. ShopTurn dialogue interface) and a FANUC control interface (incl. Manual-Guide-i control interface).

Tailored automation

A swing loader is included for automatic loading and feeding out of the machined parts. This extremely compact and integrated loader is controlled via the machine control. Two linear axes with high feed rates and an additional B axis in the swivel head, guarantee short loading times and fast setup. As a result, preformed raw parts can also be inserted position-oriented into the clamping device. The gantry loader transports the finished workpieces from the machine and places them on an accumulating conveyor.
EMCO has two different versions of bar loaders on offer for bar work: a classic 3-meter loader (EMCO TOP LOAD 8-65/3300) and the EMCO short bar loader LM1200 for limited floor space.

Depending on the make, the MAXXTURN 65 forms the basis for efficient machining of precision and machined parts. The range of manufactured workpieces ranges from hydraulic / pneumatic components, to machines as well as engine and automotive parts, all the way to components from the field of biomedical engineering or the fields of materials and bulk material handling. Friction and antifriction bearing parts are just a few more examples of the nearly endless possibilities.

Technical details/ Concept of the machine:

Machine base:

The 40° inclined bed is the core of the machine. The very rigid and compact welded-steel construction provides an extremely solid basis for a **precise as well as economic production**. The advantages of steel, in comparison to machine casting, are on the one hand its higher rigidity and on the other hand the superior thermal behavior of the lathes during warm-up. For optimum damping of the vibrations and resonances which naturally occur during machining, the machine base of the MAXXTURN 65 is filled with special vibration-damping material. A perfect turning finish and true running accuracy are the result.

Reinforcing materials provide additional rigidity in zones that are often subject to intense stress.

The MAXXTURN 65 is equipped with roller guides which are free from wear and bedded without play. They are delivered with highest possible prestress and are bolted onto high-precision, ground bearing pads. Perfect guidance qualities without any stick-slip effect guarantee best surface qualities for all machined parts. Covers along the guides, as well as additional telescope covers made of stainless steel increase **operational safety** and **durability**.

Main spindle:

The **high driving power of the spindle** combined with optimal torque curve ensures **economic efficiency** in cutting steel, as well as high-speed cutting of aluminum. The main spindle guarantees a bar capacity of up to 65 mm and is supported with extra large precision bearings. These allow for a wide range of speeds with **extremely good running truth**. A symmetrical headstock with fitted cooling fins ensures **optimum thermostability**.

Tailstock:

On the MAXXTURN 65 with tailstock, the tailstock is set up on the linear roller slide and can be positioned automatically within a range of 500 mm. The rolling centre with MK4 shaft is directly integrated into the tailstock and can be removed using a pressure wedge.

Counter spindle:

On the **MAXXTURN 65 S**, which is equipped with a counter spindle, the counter spindle headstock is placed on a separate linear roller slide and can be positioned within a range of 580 mm. A stroke-monitored parts ejector, flushed with coolant, ensures **safe removal of the finished parts**.

Tool holder:

The tool holder consists of a 12-position VDI30 radial turret with single-motor engineering and quick-change system. All 12 stations can accept driven tool holders. A servo motor powers the driven tools and the swivel movement, respectively. The machine operator may adjust the slewing speed at any time, using a feed-override switch. The turret can be used on both spindles and switches with direction logic. This means that it always takes the shortest way when swiveling to the next tool. The tool holders, equipped with the EMCO joggling plate and DIN 5480 coupling, allow easy tool insertion with repeatable accuracy **without time-consuming adjustments**.

C axis/main spindle (model-specific):

The C axis is part of the machine's standard equipment. The spindle can be positioned with a resolution of 0.001°. Since an integrated spindle motor is used, instead of a belt drive, the C axis is perfectly suited for **precise contour milling**.

Y axis (model-specific):

The Y axis is integrated in the standard build of the machine and is positioned at an angle of 90° in relation to the X axis. Extremely short protruding lengths are the basis for **solid lathing and drilling operations,** as well as for milling without receiving imprecise contours.

Feed drive:

Highly dynamic three-phase drives in all linear axes, with preloaded circulating ball spindles, provide **high feed forces** and positioning with **repeatable accuracy**.

Measure system:

Incremental measure systems in the feed motor are integrated in all linear axes.

Positioning variation according to VDI3441 in **X/Y/Z: 0.0035/0.0035/0.004 mm**

Clamping unit:

The clamping unit is a hydraulic clamping system with a bar capacity of up to ø 65 mm, including a programmable chuck stroke monitor and direct measure system. Time-consuming adjustments with the tools are thereby substituted by a simple training in Teach-In-Mode.

Lubrication:

The MAXXTURN 65 uses an automatic centralized lubrication system with **lubricant-saving impulse lubrication** due to its integrated pressure and quantity monitoring.

Coolant device:

A central coolant supply through the VDI interface at the turret and through the tool holder ensures optimal cooling and lubrication during the machining process. An additional coolant pipe has been installed to clean the clamping devices and the work area.

Hydraulic system:

The hydraulic system is a high-pressure compact hydraulic system with a pump and a fine filter in the head pipe, with which the chucking pressure can be more finely adjusted, which is an absolut must for clamping sensitive work-pieces in the main and the counter spindle. Thanks to its **compact construction** it only has a small footprint.

Casing:

The casing of the machine is completely closed. Its door is monitored with safety switches to prevent operator injury and features a sizeable viewing window made of laminated safety glass.

Finished parts pick-up unit (optional):

The pneumatically operated pick-up unit removes finished parts from the main or the counter spindle. The parts are gently transported into a finished parts container outside of the work area. Max. length of finished parts: 175 mm; max. ø 65 mm; Max. weight: 4.5 kg

Technical Data:

MAXXTURN 65	
Max. bar capacity [mm]	∅ **65** (optional: ∅ 76)
Max. speed [rpm] Main spindle Counter spindle Driven tools	 **5000** (optional: 5000) **7000** **5000**
Max. drive power [kW] Main spindle / counter spindle	**29** / **22**
Max. travel in X/Y/Z [mm]	**260** / **80** / **610**
Rapid motion speed X/Y/Z [m/min]	**30** / **15** / **40**
Number of tool adapters	**12 x VDI30 (VDI40)**
Number of tool positions	**12**

Models:

- Choice of control: Fanuc or Siemens
- **MT 65 MY**: Tailstock version with driven tools and Y axis
- **MT 65 S**: Counter spindle version without driven tools
- **MT 65 SM**: Counter spindle version with driven tools
- **MT 65 SMY**: Counter spindle version with driven tools and Y axis

About EMCO
The Salzburg machinery company EMCO is one of Europe's leading manufacturers of machine tools. Its two commitments "Made in the Heart of Europe" and "Design to Cost" are the main factors in the success of the international company, which stands for functional design and the highest quality standards. EMCO is part of A-TEC Industries AG and currently employs some 800 staff at a total of 4 production facilities in Austria, Germany and Italy.

About A-TEC Industries
Vienna listed A-TEC Industries AG is a Vienna-based international industrial group with successful operations in drive systems, plant engineering, machine tools and metallurgy. The Group currently employs around 11,500 people in Austria, Germany, Switzerland, France, Spain, Italy, Croatia, the Czech republic, Slovakia, Poland, Great Britain, Serbia and Montenegro as well as in the USA, India and China.

Further information can be found online at www.emco-world.com and www.a-tecindustries.at.

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