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Flexible as a boring mill – compact as a machining center:

## Foundation-free compact boring mill TM 125



The TM 125 combines the advantages of a boring mill with those of a machining center thanks to the patented Monolith™ technology

**UnionChemnitz presents the TM 125, the world's first compact boring mill with patented Monolith™ technology. With this expansion of the product range, UnionChemnitz taps into the market of machining centers, though it breaks away from the competition with two unique selling points – the foundation-free Monolith™ machine bed and the boring spindle. The machine bed made of special damping concrete allows for the uncomplicated set-up directly on the floor, just like a machining center. Thanks to the boring spindle and the fact that the boring unit is attached to the side of the column, the machine also offers larger degrees of freedom and a greater traverse range – the advantages of a boring mill.**

Smaller companies in particular are often challenged by frequently changing market conditions. The workpiece range that has to be machined in the future is usually unclear in terms of quantity, dimensions and accuracy. In order to be prepared for all possible requirements, the investment in a boring mill is the ideal solution from a technical point-of-view, as it offers the greatest flexibility when compared with standard machining centers. Nevertheless, the cost and effort of setting up a boring mill in the production facility are not always feasible. The lack of space and infrastructure may instead lead to a decision in favor of a machining center. Thanks to the TM 125, these compromises belong to the past.

### The best of two worlds

The TM 125 combines the advantages of a classic table-type boring mill with the characteristics of a machining center and offers the ideal solution to this problem.

The compact machine with a boring spindle diameter of 125 mm is designed for the efficient and economical machining of medium-sized workpieces up to 10 t with a set-up area of up to 2,500 × 2,000 × 1,600 mm. It is based on the successful UnionChemnitz T-Series of boring mills in classic table-type design. On the one hand, the compact machine has a great traverse range, large degrees of freedom concerning machining and accessibility, and a great table load-bearing capacity of up to 10 t. Thanks to the optimized components such as the tool changer, milling heads or table components that have been 100% designed and built within the Herkules-Group, the TM 125 achieves the same productivity as a machining center.

On the other hand, the TM 125 does not need a foundation and can be set up directly on the floor in one single, complete unit. That simplifies assembly and the machine can later be transferred without any hassle. This is achieved with the help of the patented Monolith™ technology, used for a boring mill for the first time. It has been developed by Herkules, a sister company of UnionChemnitz, and implemented successfully in roll grinding machines hundreds of times since 2001. The torsionally rigid and thermostable machine bed in sandwich design consists of a welded, ribbed top, a fiber-reinforced, high-performance mineral concrete middle section and a floor plate made of steel and special damping elements. As there is no metal connection between the top and bottom sections, vibrations are effectively damped. An additional advantage: the set-up space is minimized.

The compact machine has been designed for the manufacture of prototypes and the production of small, medium and large series. The TM 125 achieves even greater flexibility with optional equipment, such as a lateral milling head for five-axis machining manufactured in-house, or a Capto interface that



# Editorial

Dear readers,

We have registered a strong increase in projects in Germany, Europe and overseas. In the past months, we have received several orders for new machines, for example by German ASD Schieck GmbH and the Chinese companies Wuhan Hangda Aero Science & Technology Development Co. Ltd. and Qinhuangdao Tobacco Machinery Co., Ltd., and we are looking forward to further positive development in the next months.

In the energy industry in particular, we are happy to record a strong demand for our horizontal boring mills. A similar development is taking place in the area of transport, most notably in China and India, and in the general engineering sector.

We proudly present our latest development, the TM 125. The compact machine is based on our successful table-top machine series, but offers all the advantages of a foundation-free boring mill with its Monolith™ technology.

We are going to participate in this year's big industry trade fairs AMB in Stuttgart, Germany and the IMTS in Chicago. In North and South America, our customers benefit from our production unit in Ford City, Pennsylvania, USA. It is equipped with modern machines, among them machine tools made by WaldrichSiegen and Union-Chemnitz. In addition to modernizations and revamps of machine tools, the employees in Ford City manufacture new machines covering the entire product range of the HerkulesGroup, including assembly and commissioning. Additional advantages for our customers are a 24/7 service hotline and a spare parts storage facility in Ford City.

We would be happy to welcome you at the upcoming trade fairs or at one of our facilities and personally introduce our new and further developments to you.

Klaus Engeland  
President & COO

» permits turning operations in combination with the high-speed rotary table. "The TM 125 is the ideal machine for all users who want to achieve average to very precise machining results," says Thorsten Mehlhorn, Member of the Executive Management of UnionChemnitz. "With this machine, customers are also equipped for their future workpiece range."

## Technical data TM 125

Dimensions	5,000 × 5,000 mm
Boring spindle diameter	125 mm
X-axis traverse	2,000 mm
Y-axis	1,600 mm
Z-axis	1,000 mm
W-axis	600 mm
Table load, max.	10 t
<b>Power</b>	
Main drive, max.	34 kW
Torque, max.	1,660 Nm
Speed, max.	6,000 min <sup>-1</sup>



Great traverse range and large degrees of freedom in terms of machining and accessibility: the TM 125

## Seventh KU 150 for the machining of landing gears



The KU 150 machines a landing gear

**In September 2019, the seventh planer-type boring mill by UnionChemnitz will start operation in a Chinese market segment that requires the highest degree of technical sophistication: reworking landing gears.**

It is the second order of a KU 150 with a carefully customized machine concept for Wuhan Hangda Aero Science & Technology Development Co. Ltd., based in the province Hubei. In order to meet the extremely high requirements in terms of machining accuracy and surface roughness, the rechromed landing gears are machined in several steps: boring and milling operations are followed by grinding. For the latter, UnionChemnitz uses a grinding device that has been developed in-house and can be attached manually. It is driven via the boring spindle and reaches 10,000 min<sup>-1</sup>. In order to achieve the parameters required for the grinding process, the KU 150 is equipped with increased precision, temperature compensation and a coolant temperature control.

Thanks to the sophisticated machine concept, Wuhan Hangda Aero Science & Technology Development does not need to invest in an additional grinding machine. The combination of a flexible boring mill, integrated NC facing head and dockable grinding device developed by UnionChemnitz allows for the repair of landing gears to be performed almost completely on one single machine – a concept with a bright future in this promising market.

From ship motors to coolant pumps: universally applicable PCR 160

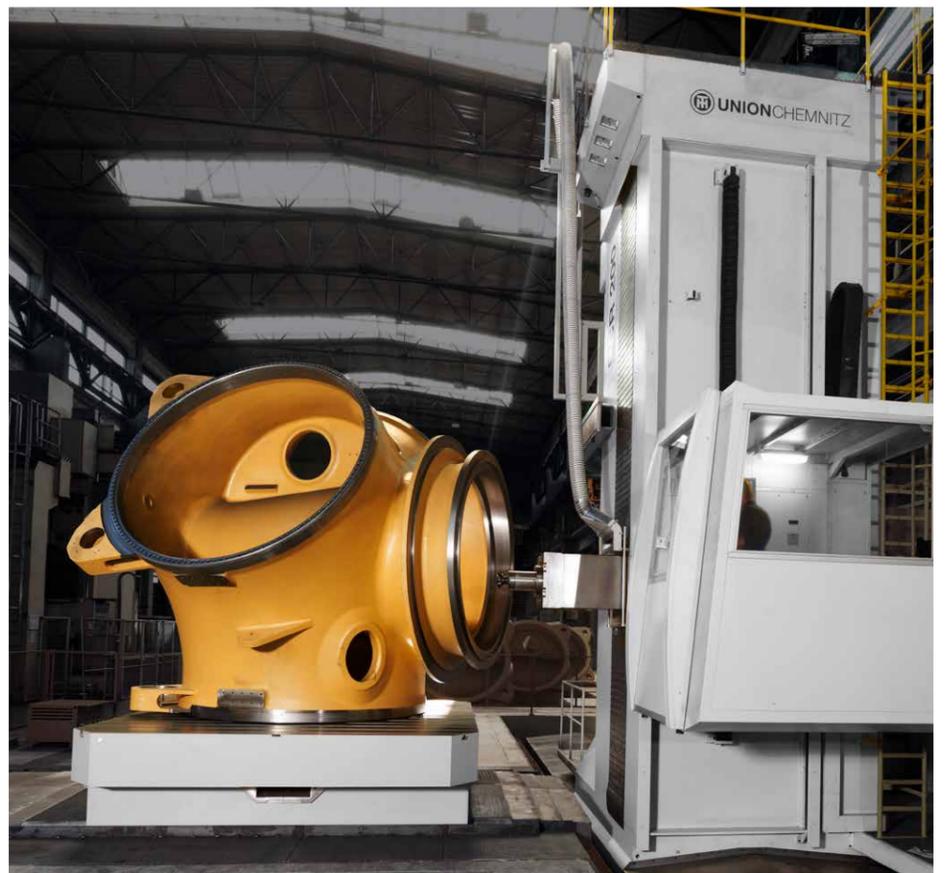
## Powerful, precise and extremely flexible

**High machining precision, great drive power and a broad field of applications: not for the first time, a renowned customer in the US-American defense and energy industry decided to invest in the advantages of a floor-type boring mill PCR 160 by UnionChemnitz.**

The main drive with a power of 110 kW maximum (torque 6,700 Nm, speed 2,500 min<sup>-1</sup>) and the use of hydrostatic guidance rails in all machine axes allow for consistently precise machining results in combination with a high cutting performance. The guidance system is almost wear-free (fluid friction only) and, combined with the extremely stiff structural components of the machine, guarantees excellent damping behavior. Both the workpiece quality and the tool wear benefit greatly from these advantages.

From ship motors to reactor coolant pumps, the customer's workpiece range covers very different requirements. The PCR 160 adapts to the varying machining tasks with a ram and a boring spindle diameter of 162 mm. The fully hydrostatic rotary and traversing table is designed for workpieces up to a weight of 75 t. They are machined with the help of specially manufactured machining units. These are designed and built within the group of companies and can therefore be resupplied anytime. Among them is an NC fork-type milling head, equipped with two NC axes, and an elongated, very slim and compact horizontal milling head for machining operations deep within the workpiece.

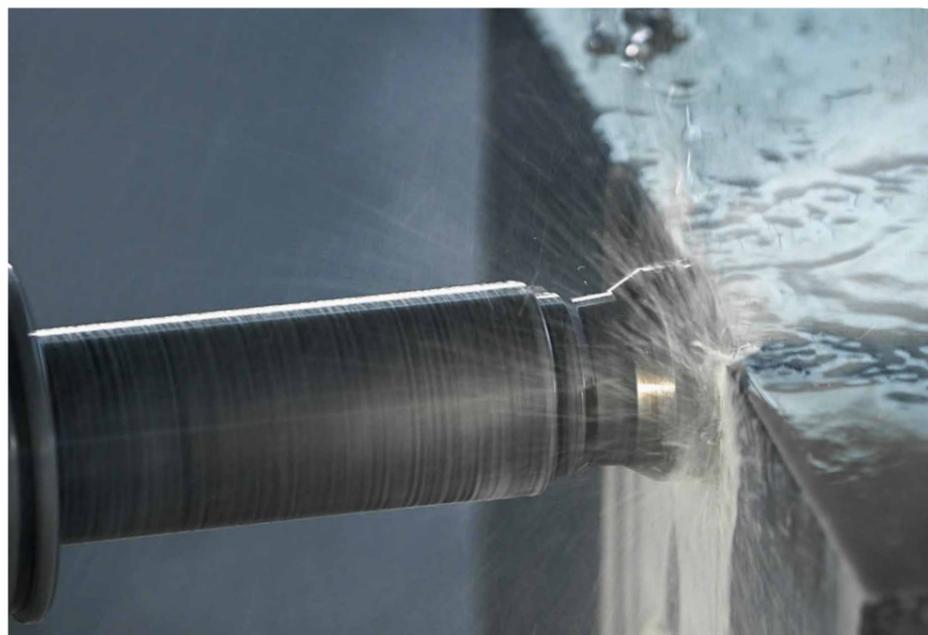
In addition to the machine itself, which will be delivered in mid-2019, the UnionChemnitz service package includes training of the maintenance and operating personnel and support in introducing the post-processor. The UnionChemnitz experts are available for any additional service requirements in Ford City, Pennsylvania anytime.



Floor-type boring mill made by UnionChemnitz with 110 kW drive power for universal applications

Reinforced performance data for maximum machining efficiency

## More stable and more powerful: boring mill K 130 S



Maximum performance data are available even beyond the middle of the table: the K 130 S

**In order to stay competitive, contract manufacturers need ever more powerful, stable and universally applicable machines. UnionChemnitz meets these requirements with constant further development of proven machine concepts. Last year, we introduced the optimized floor-type boring mill PR II S "Strong" – now we follow suit with the next evolution stage of the planer-type boring and milling machine K 130 S.**

The further development of the K-series machine offers two major advantages. Firstly, the significant expansion of the highest available speed, torque and power. That also includes much higher axis feed rates and rapid traverse (see technical data).

Secondly, the optimized bearing of the boring spindle is extended to provide for much better stability. This particularly applies to machining operations beyond the middle of the workpiece table. While other machines have to reduce the milling power if the boring spindle is extended too far in order to avoid chatter and vibration of the system, the boring spindle of the K 130 S, thanks to the new concept, reaches close to the middle of the table even when it is not extended. Machining operations can therefore be performed at maximum power even beyond the middle of the table without any trouble. The result: maximum power and stability combined with an extended application range.

### Technical data K 130 S

#### Main drive

Drive power	49 – 73 kW
Torque	2,226 – 3,312 Nm
Speed, continuous	3,200 – 4,000 min <sup>-1</sup>
Number of steps	2

#### Axis drive

Infeed/rapid traverse for X/Y/Z-axis	18,000 – 28,000 mm/min
Infeed/rapid traverse for W-axis	15,000 mm/min

#### Table

Load-bearing capacity	10 – 45 t
Set-up area	1,250 × 1,600 to 3,000 × 4,000 mm

#### Work area

Column across (X-axis)	2,500 – 6,000 mm
Headstock vertical (Y-axis)	2,000 – 3,500 mm
Column (Z-axis)	1,500 – 3,200 mm
Boring spindle (W-axis)	800 mm
Table rotation (B-axis)	360 degrees

#### Boring spindle

Diameter	130 mm (respectively 150 mm)
Max. position beyond middle of table (Z 0; W -800) (depending on table dimensions)	340 mm

## Investing in the future: TC 130 takes production to the next level

**When is the right time for an investment in the machine inventory? Andreas Schieck, CEO of ASD Schieck GmbH in Eastern Germany with around 50 employees, is specialized in the production of sheet metal constructions, especially for the machine construction industry. He plans to transfer the successful business to his children Stefanie and Daniel – well equipped for the future – and invested\* in a new boring mill.**

ASD Schieck has invested in a future-proof machine specification with the TC 130. In addition to an extended traverse range, the boring mill is equipped with a universal milling head UC-U40 and a tool changer – both are manufactured within the HerkulesGroup. The milling head positions completely automatically and is attached to the machine via a table pick-up station, significantly increasing the flexibility of the boring mill. Milling operations are thus performed from different angles without any losses of the main drive.

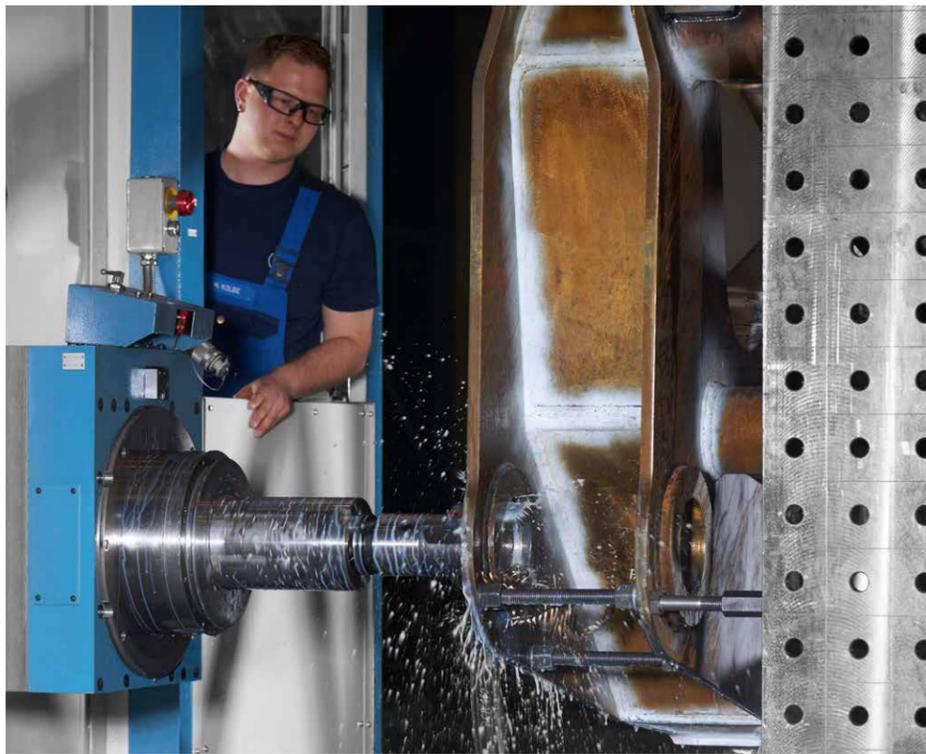
The machine technology is not the only advantage that convinced the management team of ASD Schieck to work with UnionChemnitz. Live machine demonstrations during visits at HerkulesGroup production facilities and fast availability of service when needed were also deciding factors in favor of UnionChemnitz.

*\* This measure is co-financed by tax resources based on the budget determined by the Saxon federal state parliament.*



A flexible boring mill to meet the requirements of the future: the TC 130 made by UnionChemnitz

## KC 150 for crane manufacturer: customized high-speed project



The KC 150 offers 96% availability – guaranteed

**UnionChemnitz is going to supply a customized planer-type boring mill to a renowned crane manufacturer within five months. The boring mill KC 150 is going to start machining heavy and complex loading crane components with maximum availability and the highest efficiency in late 2018. It is equipped with a number of special functions and boasts 96% availability.**

Loading crane components like crane arms and slewing rings are large, heavy and bulky; nevertheless, they must be machined with the highest precision, for example when flip-over machining fits. With its large work area, the KC 150 offers ideal preconditions for that. The machine operator has free access to the work area. The special operating cabin traverses up and down and allows for excellent control of the demanding machining operations.

The KC 150 features great flexibility in combining different machining tasks. An automatic tool changer with 120 tools in the magazine permits both horizontal attachment to the boring spindle and vertical attachment to a vertical milling head. Taking into consideration a number of special customer requirements, such as an additional rinsing pistol, UnionChemnitz developed a machine concept that is perfectly customized to the last detail. The concept does not only feature efficiency and flexibility – UnionChemnitz also added telephone service. In case of failure, this ensures fast and professional service and thus guarantees 96% availability.

## Trade fairs with multimedia highlights: IMTS and AMB

At this year's IMTS in Chicago from 10 – 15 September and the AMB in Stuttgart, Germany from 18 – 22 September, UnionChemnitz will present its latest development, the boring mill TM 125. Highlights of the booth shared with our sister company WaldrichSiegen at the AMB are 3D models of the TM 125, the horizontal boring and milling machine PR II, the vertical turning lathe ProfiTurn V and the milling machine ProfiMill compact combined with an informative OLED display.

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