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Multi-Million Order**

High-class machining facility
for British steel producer

Roll Shop Roll Grinding

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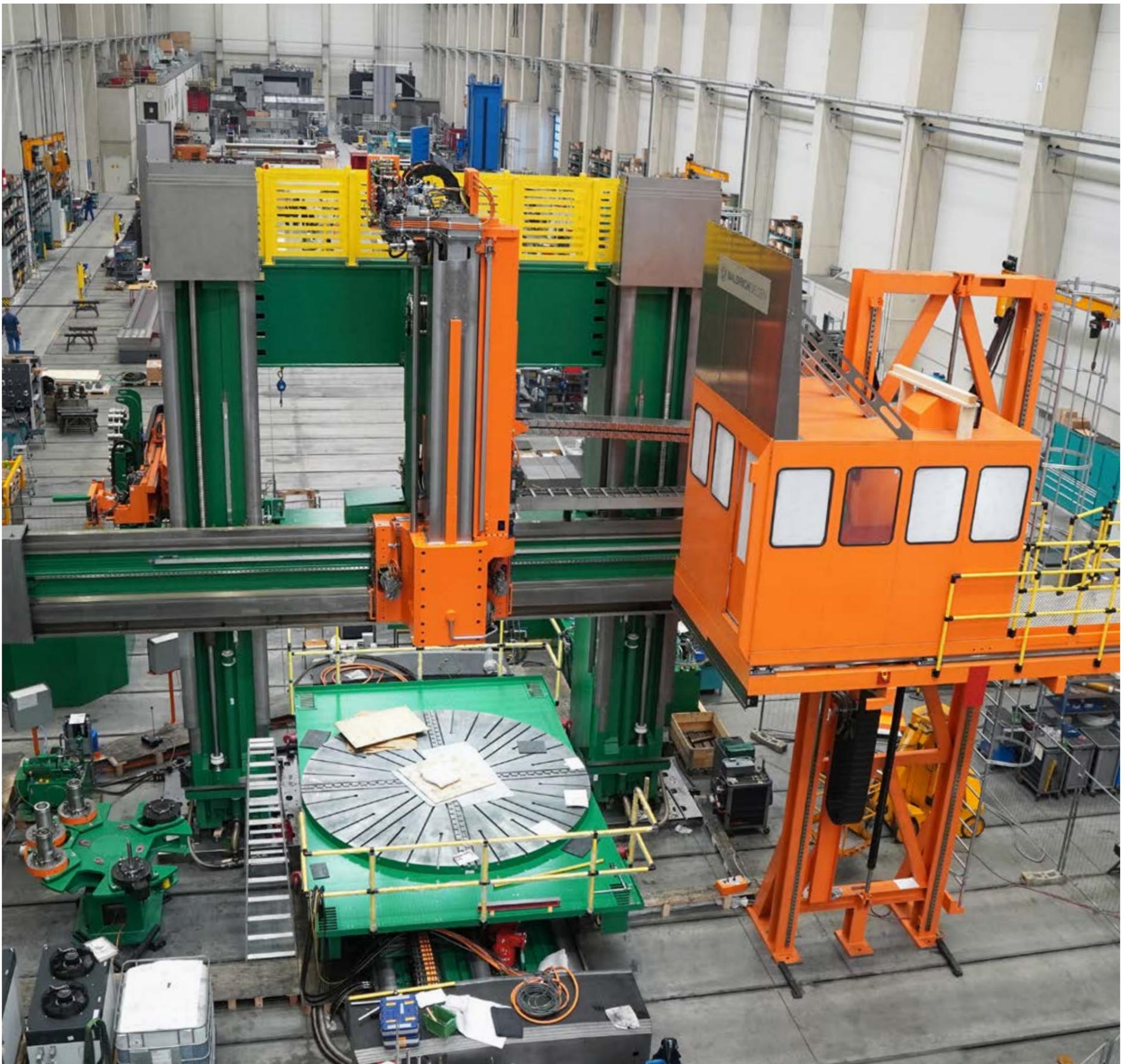
Industry Reports Worldwide

Unique machine concepts

Retrofit & Modernization

Increased durability, continuous
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Passion for Perfection and High-Precision Solutions



High-Class Machining Facility for British Steel Producer

Sheffield Forgemasters Enters Long-Term Partnership with WaldrichSiegen



“The partnership will create a highly efficient machining line, enabling us to dramatically reduce processing times for complex components and delivering new levels of capability and production management.”

Gareth Barker,
COO Sheffield Forgemasters

Sheffield Forgemasters have signed a long-term partnership with the leading machine tool supplier, Waldrich Siegen GmbH & Co. KG for lifetime support of its proposed new machining facility.

WaldrichSiegen will deliver a ten-year, through-life and production-support contract, plus the design, supply, manufacture, installation and commissioning of 17 new machining centers to create highly accurate, complex shapes required for ultra-large, steel castings and forgings.

The machining line will be housed in a proposed new building at the Brightside Lane site, and includes a series of large-scale, 5-axis Vertical Turning Lathes (VTL), which form part of a recapitalization investment of up to £400 million over ten years.

Gareth Barker, Chief Operating Officer at Sheffield Forgemasters, says: “We have entered into a partnership agreement for a ten-year, through-life and production-support contract with WaldrichSiegen, who will take a permanent base at our site.”

“The supply and support agreement creates a fundamental mechanism for driving increased performance from this investment, by working in a long-term business partnership with the machine tool supplier.”

Work has already commenced on the detailed design phase of the project and the first machining centers are already into manufacturing, with the first machine scheduled for delivery to Brightside Lane by the beginning of 2025.

Barker adds: “We currently operate the UK’s largest 5-axis VTL and each new VTL is larger and more technologically advanced, with all machining digitally analyzed through a tool-life management system.”

WaldrichSiegen is supported by UK Agents, McDowell Machine Tools Limited, who are key to the installation and commissioning sections of the programme and will also be embedded in the through-life and production-support contract, with a permanent presence on the Sheffield Forgemasters site.

Dr. Thorsten Mehlhorn, President & CSO of WaldrichSiegen, says: “We are delighted to be partnering Sheffield Forgemasters as the company expands its capabilities in the manufacture of highly complex forgings and castings. This partnership is built on the principles of lifetime support and will deliver the most advanced facility of its kind within the UK.”

As part of the service contract, WaldrichSiegen will maintain a Sheffield Forgemasters base for management of a full spares package, and significant supporting facilities which will contribute to the lifetime maintenance of the machines and full suite of 116 machining heads.

The full suite of machines is scheduled to be delivered by the end of 2028 and includes seven Heavy Duty VTL’s ProfiTurn V with 5 m to 8 m table diameter, three ProfiMill Gantry Mills with machining length of 6 m to 16 m and integrated turning tables, three UNION RAM Hydrostatic Boring Mills, three ProfiTurn H Heavy Duty Horizontal Lathes with 24 m to 27 m beds, and one Gantry Band-Saw.



The modular machine program of the ProfiTurn V offers an extensive range of designs, which allows the machining of a wide portfolio of workpieces



Sheffield Forgemasters’ Chief Operating Officer – Gareth Barker, Chief Financial Officer – Stephen Hammell and CEO – David Bond, join the CEO of the HerkulesGroup – Maximilian Thoma, the President & CSO of WaldrichSiegen– Dr. Thorsten Mehlhorn and Stuart McDowell, Managing Director at McDowell Machine Tools Ltd., to sign a lifetime partnership agreement for 17 new machines

WaldrichSiegen – From Machine Manufacturer to Integrated Lifetime Technical Partner

Machine tool manufacturers are technology companies driven by a need for innovation and continuous development of machines and their manufacturing environments. “When ordering WaldrichSiegen’s sophisticated products our customers expect to purchase more than just a state of the art machine. They expect a production solution tailored specifically to their individual manufacturing tasks with the highest degree of automation, innovative process integration and close networking in the customer’s production environment,” explains Marco Tannert, Chief Technology Officer (CTO) of the companies within the HerkulesGroup.

In the future, WaldrichSiegen will go one big step further. The focus is on the long-term technology partnership with our customers – Lifetime Technical Partnership. “We understand this to mean much more than the pure customer-supplier relationship with machine delivery, service and spare parts business. Our vision also goes beyond being a system provider for networked manufacturing solutions. Our vision is a seamless and collaborative data-driven manufacturing environment as part of a long-term partnership between customer and

machine supplier – Connected Manufacturing,” Marco Tannert explains. “Through the permanent collection and evaluation of machine and production data, permanent on-site service personnel and in conjunction with the machine and application know-how that we have as a machine manufacturer, our customers will also be able to really exploit the full potential of the production machines.”

The objective is therefore no longer simply to supply a customer with a new machine – for theoretically higher productivity or production autonomy at the time of purchase. The goal is a mutual continuous improvement process throughout the customer’s entire production chain, from application engineering advice in parts programming and tool selection to best practice training of the machine operators, coupled analysis and interpretation of production and machine data, all the way to joint evaluation and further development of new technologies, such as simulation and workpiece measurement on the machine. “In addition to steadily increasing the profitability and sustainability of the investment, this approach also makes it possible for the first time to influence the customer’s production cul-

ture. This development is essential to utilize the full potential of the machines,” says Marco Tannert.



The HerkulesGroup Technology-Team

Back row (from l. to r.): Ralf Tschersche, Marco Tannert, Berthold Kaufmann, Thomas Feussner, Steffen Georg; Front row (from l. to r.): Selina Eggers, Harald Kraft, Karl-Achim Scheffel, Stefan Schmidt

Automation and Digitalization Solutions for Productivity and Process Stability

- Fully automatic tool and milling head change with interface cleaning
- Automatic measurement, control and compensation of milling heads
- Post processors as well as process and collision simulation
- Digital twins (in connection with SIEMENS Sinumerik ONE)
- Integration of the machines into MES / PPS / ERP systems (via OPC UA)
- Integration or delivery of FMS systems from various suppliers
- Tool breakage control and measurement
- Workpiece measurement
- Pallet changing systems
- Teleservice

The Monitoring and Diagnostic System from WaldrichSiegen – Preventive Maintenance and Guided Troubleshooting for Minimum Downtime of the Smart Machine Tool

The Monitoring and Diagnostic System from WaldrichSiegen offers much more than just error messages or information on the status of the machine. In the basis, all important machine settings can be intuitively and visually displayed for and

changed by the customer’s startup or service personnel, e.g. for machine axes, chip conveyors or coolant and the sensor system in the machine. In the maintenance area, in addition to digital maintenance schedules with display of runtime data and maintenance intervals etc., there is also a menu for storing and removing milling heads for maintenance purposes.

The extended diagnostic system offers intuitively guided troubleshooting. Live sensor and status data, errors and mes-

sages are displayed on the process screen in the various areas, such as hydraulics, coolant system or hydrostatics. A direct link to fluid and circuit diagrams is included, as well as the visualization of the component’s installation location on the machine. The ability to run the system on the go on a tablet allows our customers’ service and maintenance teams to take preventive maintenance or guided troubleshooting to a whole new level. All with the aim of reducing production downtimes to a minimum.

Innovative Roll Grinders for High-Quality Steel Products

The steel industry is one of the largest and most important industrial sectors in the world. The numerous innovations in this economic sector and its close links with other industrial sectors contribute to the successes of the automotive industry or mechanical engineering. Other important customer groups include electrical engineering, the construction industry as well as the steel and metal processing. At the same time, a large number of environmentally relevant products such as wind farms, highly efficient turbines for power generation, or lighter automobile bodies are manufactured from innovative steels.

In addition to the USA and Germany, Asian countries in particular, such as India, Japan, China and South Korea, are at the top of the list of international crude steel producers and therefore place their trust in the innovative products from WaldrichSiegen. Most recently, the specialist for large machine tools won the contract for two new Greenfield projects in India, which aim to optimize their production facilities with roll shops equipped with fully automated systems.



Enormous Increase in Efficiency and a High-Quality Standard for Best End Product Quality

“Our customer JSW Steel Vijayanagar has placed an order with WaldrichSiegen for the fully automated roll shop for the new hot rolling mill comprising three ProfiGrind 2000 and two ProfiGrind 7500,” explains Jannik Schneider, sales representative at WaldrichSiegen. When it comes to grinding work and back-up rolls in the fully automated roll shop, the ProfiGrind series of machines is a particularly good choice: It boasts a high level of quality with regard to the extremely precise grinding results in the μm range and an exceptionally robust design, rigidity and excellent damping thanks to the use of cast components.

“A special feature of the machines is the B-axis integrated in the grinding saddle, which is used for grinding the various curve shapes on the roll barrel and which achieves infeed increments of up to 0.0001 mm by means of eccentric grinding axis bearings,” Jannik Schneider explains. “It guarantees the utmost precision at the highest cutting forces and stock removal rates.”

To prevent downtimes due to roll defects, the ProfiGrind grinders at JSW Steel Vijayanagar are equipped with a CP measuring device for fully automatic measurement of the roll geometry. It enables the horizontal alignment of the roll to be precisely determined.

Another large steel manufacturer, that has also chosen WaldrichSiegen’s roll grinding technology, is Jindal Steel Odisha Limited in Odisha, India.

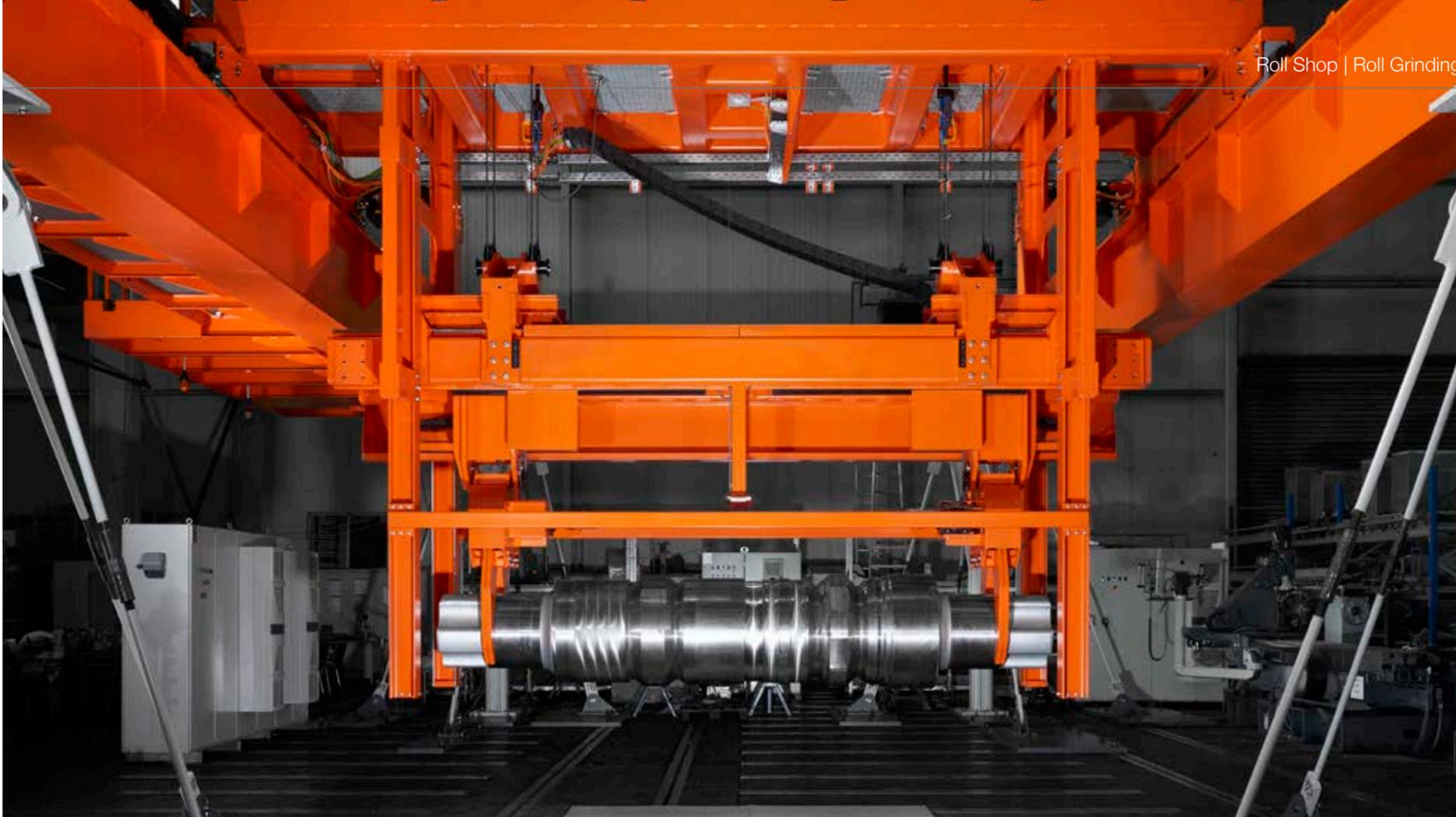
The customer has purchased three ProfiGrind 2000 work roll grinders with distance of up to 6,500 mm between centers, roll diameters up to 900 mm and a roll weight of 20 t, as well as two ProfiGrind 7500 back-up roll grinders with widths of up to 7,500 mm between centers, roll diameters up to 1,600 mm and a roll weight of 75 t for its new steel rolling mill.

“All these machines will be installed as a roll shop in the new mill,” explains Jannik Schneider. “The fully automated equipment also includes our Modular Roll Shop Management System (MRS) for controlling the roll shop, as well as a loader for

handling the rolls and an extensive roll shop equipment package consisting of a washing unit for the bearings, a cooling station for the rolls, a de-chocker and a chock tilter to guarantee proper machining of the rolls.”



Jannik Schneider
Sales & Project Manager Roll Machining



Roll shops comprehensively manufactured by WaldrichSiegen: If you need more than just a powerful roll grinding and texturing machine, WaldrichSiegen is your partner for equipping complete roll shops

WaldrichSiegen Wins the “Golden Ticket” on the Steel Market in Japan

For the expansion of their steel mill, a Japanese customer has ordered a fully automated roll shop with a total of six ProfiGrind roll grinders, thereby awarding one of the largest and most important steel mill projects in Japan in recent years to WaldrichSiegen.

“Thanks to our long-standing cooperation with Primetals and the excellent reputation of our machines and services in Asia, we were finally able to sign the contract, which is a great success for us,” explains Jannik Schneider.

For grinding the rolls in chocks from the hot rolling mill, Primetals has purchased four ProfiGrind 2500 work roll grinding machines. These grinders take work rolls and machine them up to a total length of 6,500 mm, a diameter of 65 to 900 mm, and a workpiece weight of 25 t.

“With two additional ProfiGrind 5500 universal roll grinders, it is now possible to additionally machine back-up and intermediate rolls with and without chocks with a roll length of up to 7,000 mm and a maximum weight of 55 t,” says Jannik Schneider. Another special feature is that, in addition to conventional grinding, smaller turning operations can also be carried out on new rolls thanks to the turning tool holder.

All machines are also equipped with HCC/KPM's excellent measurement and control systems.

To minimize downtime in the rolling mill, it is important to detect defective rolls at an early stage. Cracks and other defects near the roll surface, that cannot be seen with the naked eye, are reliably detected with

HCC/KPM's outstanding surface inspection technology (Eddy Current and Ultrasonic). The Eddy Current measurement reliably locates open cracks and changes in the roll's microstructure. Since the Eddy Current sensor is integrated into the roll measuring system, all measurements take place “on the fly” and thus without loss of time. A separately running Ultrasonic inspection detects manufacturing and fatigue defects inside the roll.

The horizontal alignment of the roll can be accurately determined with the aid of the CP measuring arm for fully automatic measurement of the roll geometry. The calibration ring also enables accurate centerline alignment and an absolute diameter reference. The fully automatic roll shop also includes two automatic loaders with a loading capacity of 25 t for loading and unloading the ProfiGrind 2500 work roll grinders. Both loaders operate simultaneously in the automated zone with travels of 97 m in length and 10 m in width and are controlled and monitored by the MRS. In addition, the loaders can rotate the chocks of the rolls by 45°.



ProfiGrind Roll Grinder

High-End Technology Provided by WaldrichSiegen



Unrivaled quality, outstanding results and an extremely long service life: The ProfiGrind has been impressing customers all over the world for decades

Robust, Modular and Perfectly Tailored to the Customer's Needs

- Grinding wheel power up to 500 kW
- Workpiece weight up to 300 t
- Workpiece length up to 21,000 mm
- Workpiece diameter up to 2,500 mm
- Concentricity of 1 µm
- High grinding power at the grinding wheel more than 130 kW
- Hydrostatic bearings of all main components, including the grinding shaft

In the hot rolling mill, either long products, such as tubes, rods or rails, or flat products (sheet, strip) are produced. In this process, the raw, continuous cast products are heated in a furnace to a temperature above the recrystallization temperature. This is followed by descaling and the actual rolling process.

Due to the high temperatures and rough environmental conditions, rolls used in hot rolling mills must meet much higher

requirements than with other machining processes, while at the same time providing excellent production performance and meeting the highest quality standards. To ensure that the rolls meet these requirements for decades to come, market-leading steel companies rely time and again on roll grinders from WaldrichSiegen – for the best prerequisites for the production of high-quality hot strip and high machine availability.

The ProfiGrind roll grinders from WaldrichSiegen are characterized by their extremely robust cast construction. All main components are machined within the company's own group of companies with tolerances in the µ-range. This creates the basis for an extremely long service life, maximum reliability, stability and excellent damping properties.

WaldrichSiegen Roll Shops

The Best Choice for Excellent Results Even in the Most Difficult Conditions

From the individual roll shop component to the fully automatically controlled roll shop, WaldrichSiegen is the optimal contact for a customized solution meeting your requirements perfectly.

- The Modular Roll Shop System (MRS) connects all equipment to a complete information network, controls the process steps and evaluates the data.
- With a roll loading device (loader), manual operations, such as transporting the rolls to and from the roll deposit or loading and unloading the machines, can be significantly minimized.
- The B-axis, invented and patented by WaldrichSiegen, makes it possible to machine the demanding curved shapes of the work rolls while taking tight manufacturing tolerances into account.
- Massive construction and high-quality mechanical components of the machines as well as two separate machine beds for support and workpiece side for highest possible precision and very high accuracies.
- Matching roll store equipment from WaldrichSiegen, such as a cooling station for the rolls from the hot rolling mill, a washing system for cleaning the roll bearings, transport carts, racks, tilting chairs or combination dechecker, perfectly round off the package.

Always on the Cutting Edge with Texturing Machines from WaldrichSiegen

ArcelorMittal/Nippon Steel (AM/NS) Acquires ProfiTex for its Own Roll Shop

The ProfiTex series from WaldrichSiegen is strictly designed for the greatest possible customer benefit. It contributes to the specific requirements for the production of sophisticated flat products. Therefore, our American customer ArcelorMittal/Nippon Steel (AM/NS) in Calvert, AL, USA, has decided to purchase a ProfiTex 60S texturing machine with 26 electrodes for the cold rolling mill for the production of flat products with special coatings.

The work rolls for the AM/NS cold rolling mill are textured there. The process, which gives the roll surface a defined structure by means of an electrical discharge process, is used for the high-quality surfaces of the rolls, thus producing a high-precision roughness for the rolling process (EDT process) with a programmed uniform roughness depth (R_a = center peak-to-valley height) and a defined peak number (RPC) of the cold rolling mills.

The machines of this series are designed by WaldrichSiegen for the machining of up to 1,100 rolls per month. Characteristic for this series are the compact design and the flexible adaptation of the machine's capacities to the required production volume.

Thanks to the number of individually controlled electrodes, the processing capacity can be increased significantly and guarantees an absolutely homogeneous texture all the way to the end of the barrel.

The machine will be integrated into the existing roll shop of the customer ArcelorMittal/Nippon Steel. Thanks to the state of the art control and programming technology, the interface link to the existing system in the roll shop is not a problem.

Moreover, the ProfiTex 60S will be installed without a foundation. It will machine rolls up to a total length of 5,000 mm, a barrel length of 2,200 mm, and a maximum weight of 8 t.



ProfiTex machines are designed to the highest degree to ensure homogeneous surface roughness of the roll within the tightest tolerances – with optimum height, density and distribution of the tips

WaldrichSiegen Sells 17th Machine to Angang Steel Co., Ltd.



Another great success for WaldrichSiegen and Stefan Elze, Head of WaldrichSiegen Beijing Office: The ceremonial signing of the contract at the CIIF

Once again, Angang Steel Co., Ltd., one of China's largest steel producers, has decided to purchase a WaldrichSiegen machine – and can now call the 17th machine its own. The customer has been placing its trust in the quality, reliability and performance of machines from WaldrichSiegen for around 20 years and is once again expanding its machine park with a ProfiTex 60.

“The double-row EDT machine is used for texturing rolls that roll sheets for the automotive industry,” explains General Manager Stefan Elze. “Thanks to the technical features of our EDT machine, the customer is convinced that our machines will meet the increasing demands of the automotive industry.”

And also, in the direct performance comparison, the machines from WaldrichSiegen are clearly ahead. Thanks to the state of the art control technology, the machine can be easily integrated into the fully automatic operation of the roll shop. Equipped with 54 electrodes, the machine textures up to 1,100 rolls per month with a barrel length of up to 2,210 mm and a total length of 5,300 mm. “In the customer's roll shop, the performance of our machines can be directly compared with those of our competitors. Here, we are clearly in the lead with our performance. A resounding victory for us,” Stefan Elze summarizes.

In addition to the tremendous machining performance, the service is another reason

why Angang Steel has once again decided in favor of WaldrichSiegen. “The problem-free handling of the orders as well as the good relations we maintain here locally with the customer have significantly influenced the decision,” explains Stefan Elze.

Mr. Meng Jin Song, Deputy General Manager of Ansteel Holding, as well as Mr. Dai Zhi Hao, President of Ansteel Group, and other high-ranking representatives of Benxi Iron & Steel Group and Panzhihua Iron & Steel signed the contract together with the head of the WaldrichSiegen Beijing Office Mr. Stefan Elze and our colleague Mr. Baldoo Bao at the China International Import Expo (CIIE) in November 2022.

High-Precision Machining Processes for Steel Structures

Croatian Customer Magma d.o.o Buys PCR I 150, Achieving Perfect End Results



More than 2,500 steel grades are now on the market, ranging from structural steels to (non-)alloy steels, tool steels and (high-)tensile steels to stainless and special steels.

However, steel is also a material with a wide range of advantages for components in a wide variety of applications, such as steel structures for bridge segments as well as containers such as silos, tanks and steel housings or steel piping for industrial plants.

In order to be able to machine this wide range of workpieces in the best possible way, our Croatian customer Magma d.o.o. has opted for a UNION PCR I 150 mobile column boring mill with movable RAM for its new mechanical production facility. The boring mill impresses with excellent dynamics in the linear axes as well as high accuracies at maximum travels of 13,000 mm in the X-axis and 4,500 mm in the Y-axis. With an additional RAM longitudinal adjustment of 1,300 mm and

an NC universal milling head, deep-lying boreholes and milling operations can be optimally machined in precisely specified angular positions and a wide range of machining processes can be achieved with high-precision results.

The machine will be assembled and put into initial operation on site. The operators undergo training and receive four weeks of on-site support from our specialists.

From stable heavy-duty cutting to precise surface finishing, the P-Series offers the highest level of efficient 5-sided machining

Optimal Integration of Existing Equipment and Innovative Boring Mill Technology

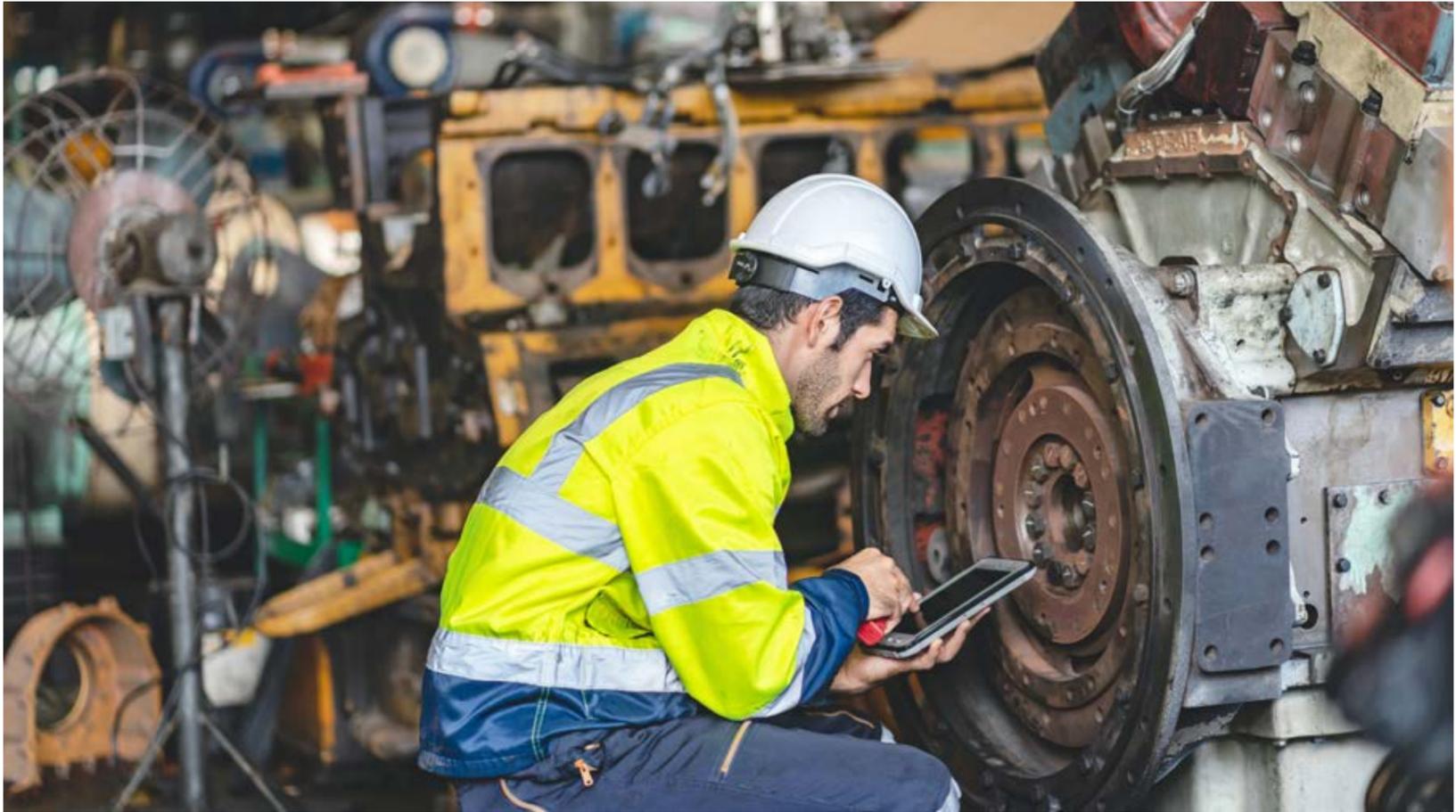
Our customer Zhejiang Fuchunjiang Hydropower Equipment Co, Ltd, a Chinese hydropower equipment supplier specialized in the research, manufacture, installation and service of advanced hydropower equipment technologies, products and services for the Chinese and international markets, has decided to purchase a UNION brand PR II 200 S fully hydrostatic horizontal boring mill.

The machine impresses with its robust and stable design: The reinforced design with larger RAM cross-section and generously dimensioned machine bed achieves a high machine rigidity, which enables heavy-duty cutting to high precision and low-vibration machining. This means that excellent surface finishes are always achieved across the entire machining area.

With a spindle diameter of 200 mm and torques of 9,700 Nm, the boring mill also achieves maximum performance. The travels of 10,000 mm in the X-axis, 5,000 mm in the Y-axis and 2,000 mm in the Z-axis enable large and complex workpieces to be machined. Furthermore, the additional RAM allows machining to be done inside workpieces with a plunge depth of up to 1,400 mm (W-axis).

The boring mill is supplemented with a rotary shift table and a floor plate provided by the customer. The already available equipment will be integrated by WaldrichSiegen into the existing overall machine concept as well as into our machine control. As a manufacturer of custom machines and customer-specific solutions, we thus demonstrate, as so often, a high degree of flexibility when it comes to the ideas and wishes of our customers.





Boring Mills from WaldrichSiegen for Effective Operations in Maintenance and Repair



The K-Series in planer design is the ideal solution when it comes to complete machining of large, heavy workpieces with particularly high requirements in the area of accuracy

Similar to contract manufacturing, maintenance involves conducting a wide variety of work processes on different workpieces in succession or in parallel. The vast range of services within vehicle maintenance includes, among other things, overhauls and general inspections, accident and needs-based repairs, right through to conversion and upgrade work.

Effective maintenance and servicing with high-quality machines therefore influence the service life of the transport vehicles as well as their operational safety and reliable usage. For this reason, more and more operators of maintenance facilities are putting their trust in the experience and expertise of our employees and are increasingly deciding to purchase WaldrichSiegen machines in order to ensure the greatest possible flexibility in the machining of a wide variety of spare parts at all times.

For example, the K-Series in planer design is ideally suited for the machining of a wide range of workpieces. Different boring spindle diameters and drive powers, a modular design and numerous customer-specific equipment variants and options allow the

boring mill to be perfectly adapted to the customer's specific needs. The K-Series guarantees high dynamics with maximum reliability and precision.

This was the reason why one of our customers recently decided to purchase a UNION KC 130 with travels of 4,000 mm in the X-axis, 2,500 mm in the headstock vertical adjustment (Y-axis) and 1,500 mm in the Z-axis. With a table clamping area of 2,000 × 2,500 mm, wheel sets or gearbox housings with a total weight of up to 20 t can be machined precisely and reliably. The automatic tool changer with 60 pockets optimizes the workflow and ensures fast and flexible machining of a wide range of workpieces.

Thanks to the compact linear guideways, the machine also requires very little maintenance and guarantees virtually vibration-free machining of the workpiece to achieve precise results.

Increased Durability, Continuous Reliability and an Enormous Cost-Benefit Advantage

Retrofit Concepts Completely Winning Over WaldrichSiegen's Customers

If machines and systems no longer meet the technical requirements after many years of use, many operating companies are faced with the question of whether they should be replaced or whether upgrading the machinery makes more sense. With an upgrade order, the decision is made in favor of a more cost-effective and sustainable alternative to a new purchase. The result: reduced operating costs, lower maintenance costs, increased productivity, and higher performance.



The sophisticated design of outdated machines and machine components can be brought up to the latest state of the art through targeted upgrading to increase service life and performance for many years to come. The inimitable and durable design of WaldrichSiegen's products provides high conservation value.

China Steel Corporation (CSC) modernizes two roll grinding machines type WS III and WS V in its existing roll shop

China Steel Corporation Commissions WaldrichSiegen with Modernization of Two Roll Grinding Machines

China Steel Corporation (CSC), based in Taiwan and one of the largest international producers of steel and aluminum products, decided to upgrade its existing WaldrichSiegen grinders.

The company does not want to do without the excellent quality, precision and performance of the machines located in the roll shop and has therefore placed an order with WaldrichSiegen.

In 1991, CSC invested in two roll grinders of the WS III and WS V series from WaldrichSiegen for its roll shop and has now decided to have both machines upgraded to the latest technological standards.

The WS III C 40 × 6000 is used as a universal machine and grinds work rolls as well as back-up and intermediate rolls. The WS V C 10 × 5500 grinds work rolls for the cold rolling mill. "This upgrade order is a good example of how durable and reliable our machines are without sacrificing performance or precision, which is mainly due to the excellent robustness of our machines," reports Jannik Schneider, responsible sales rep-

resentative for the project. "Instead of purchasing a new machine, it was particularly important to the customer to keep the existing roll shop machines, as they meet the high requirements the customer has for precision, performance and, above all, the solid and highly rigid basic construction."

Accordingly, the actual condition of the machines was determined and the components that needed to be upgraded were agreed upon together with the customer. State of the art technology will ensure safe and smooth production processes in the future and furthermore, thanks to the newly installed components, will ensure a high availability of spare parts for a long time to come. A final safety inspection ensures that the machine also meets the highest safety requirements.

The mill already had one machine in the roll shop upgraded in 2013. "The outstanding communication between our sales, assembly and service staff left our customer in no doubt that they would be upgrading the remaining machines to the state of the art technology as well," adds Jannik Schneider. "The cooperation with the customer went smoothly, both interpersonally and in terms of know-how."

The upgrade order includes the electrical and mechanical components of the machine thus bringing them up to the current standards of modern technology.

But upgrading is not only an important matter for our customers. The company-owned machines are checked and monitored meticulously and extensively as well and are subject to constant development and improvement.



Even after decades of constant use, the roll grinding machines from WaldrichSiegen produce reliable and precise results

In-House Modernization of an Ingersoll Bohle Portal Milling Machine

Joint Project of Maschinenfabrik Herkules and WaldrichSiegen

Retrofit and upgrading projects are just as an important topic for our customers as they are for the companies of the HerkulesGroup. Due to the extremely high in-house vertical range of manufacture, enabling us to produce the precision and cast parts of our machines on our own, the Herkules and WaldrichSiegen production machines are also of incredibly high quality and fully satisfy our high requirements in terms of precision and performance.

In order to continue to guarantee this high quality standard within the production for decades, the employees of the maintenance team of Maschinenfabrik Herkules, together with the expertise of the specialists from the Electrical Engineering Department and the Mechanical Engineering Department of WaldrichSiegen, have upgraded an Ingersoll Bohle gantry milling machine from 1992, which is used to machine precision parts such as grinding carriages and tables, so that it is now state of the art.

This upgrade is already the second "joint venture" project of the two global market leaders: The sister machine was already upgraded in 2013, and now the second machine can also be made state of the art so that it can be integrated seamlessly into the modern production process.

At the beginning of the planning phase, the entire machine condition was elaborately assessed, and a condition report of all electrical and mechanical parts was prepared. "This was then passed on to the mechanical and electrical work group of the engineering department so that the experts there could evaluate what needed to be renewed or completely replaced," explains Lars Bohland, Head of the Maintenance Department at Herkules. "Basically, all motors and measuring systems were brought up to the latest standards, but individual components of the milling machine, such as parts of the telescoping cover, were re-machined so that they continue to perform reliably as usual."

A common machine control system was also installed to increase the machine's productivity. "Accordingly, all operators are able to work on all machines and can rotate which entails a corresponding flexibility. This gives us greater flexibility in the event of illness or vacation. In addition, the machining programs can be exchanged between the machines, allowing us to process all workpieces on every machine," explains Lars Bohland.

Furthermore, the electrical system has been completely upgraded to latest standards, which contributes to an increased productivity of the machines and significantly reduces downtimes due to failures.



1. Important components and wear parts of the portal milling machine have been conscientiously checked and overhauled by our experts



2. The outdated machine control system (at the top front of the picture), just like the software, is being brought up to date

3. Thanks to the new machine control with intuitive touch panel and machine wide software for machining a wide variety of workpieces, the portal milling machine is now equipped for the years to come

"The enormous know-how and the good cooperation of the colleagues from WaldrichSiegen and Herkules are an important feature that makes us the world market leader!"

(Lars Bohland)

Once again, the decisive factor for the upgrade instead of a new purchase was the extremely solid construction and the exceptional accuracies that are so indispensable for the machining of our workpieces. "For more than 30 years, the gantry milling machine has been working reliably and with high precision, producing precisely the results that are so essential for our production," says Lars Bohland. In addition, the machine is perfectly tailored to the space conditions in the production shop.

The production personnel are also benefiting from the upgrade measures. "The optimal training of our employees in the handling of all control and operating systems leads to an enormously high depth of knowledge, which is indispensable!"

New Full-Workspace Protection and Compact Coolant System for Greater Efficiency and Machine Safety

At their Berlin factory, Siemens Energy Global GmbH & Co. KG manufactures components for turbine rotors, generators and compressors for power generation and transmission in both the conventional and renewable energy sectors.

To ensure that the workpieces are machined precisely and efficiently, the reliable and powerful UNION table-type horizontal boring mill T 110 has been set up in 2009 to supplement the machine park in Berlin. In order to ensure continued availability and efficiency for the next few years of production, the machine was modernized and moved within the factory by our experts. In the process, a compact coolant system – manufactured by Herkules Meuselwitz – and a full machine enclosure with extraction system were retrofitted, for the best possible machine safety and protection of the employees from dust, cooling lubricant and noise.

Thanks to excellent care and maintenance as well as the outstanding quality in construction, design and materials, the machine is still in almost perfect condition after 13 years and continues to achieve the highest machining accuracies.

The machine impresses with travels of 2,000 mm in the X-axis, 1,600 mm in the Y-axis, 1,500 mm in the Z-axis and 550 mm in the W-axis. The work table with a clamping surface of 1,250 × 1,600 mm and a loading weight of up to 6 t max. ensures precise positioning of the workpiece to be machined. With an associated 2-axis universal milling head, complex components can be machined reliably and precisely.

The T-Series of the UNION brand is used worldwide where absolute precision and efficiency are required and qualitative compromises are no alternative. The T-Series machines are the ideal 5-axis controlled machines for efficient multi-sided machining of medium-heavy workpieces weighing up to 10 t. The solid construction of the wide 4-lane bed and the cast iron column combine robust design and high rigidity, for high-precision results with virtually vibration-free operation.



The T-Series CNC horizontal boring and milling machine for effective and economical machining of medium-heavy workpieces (up to 10 t) with a working area of up to 2,500 × 2,000 × 1,600 mm