

NEWS **KOHLER**

COMPETENCE CENTER
LEVELING

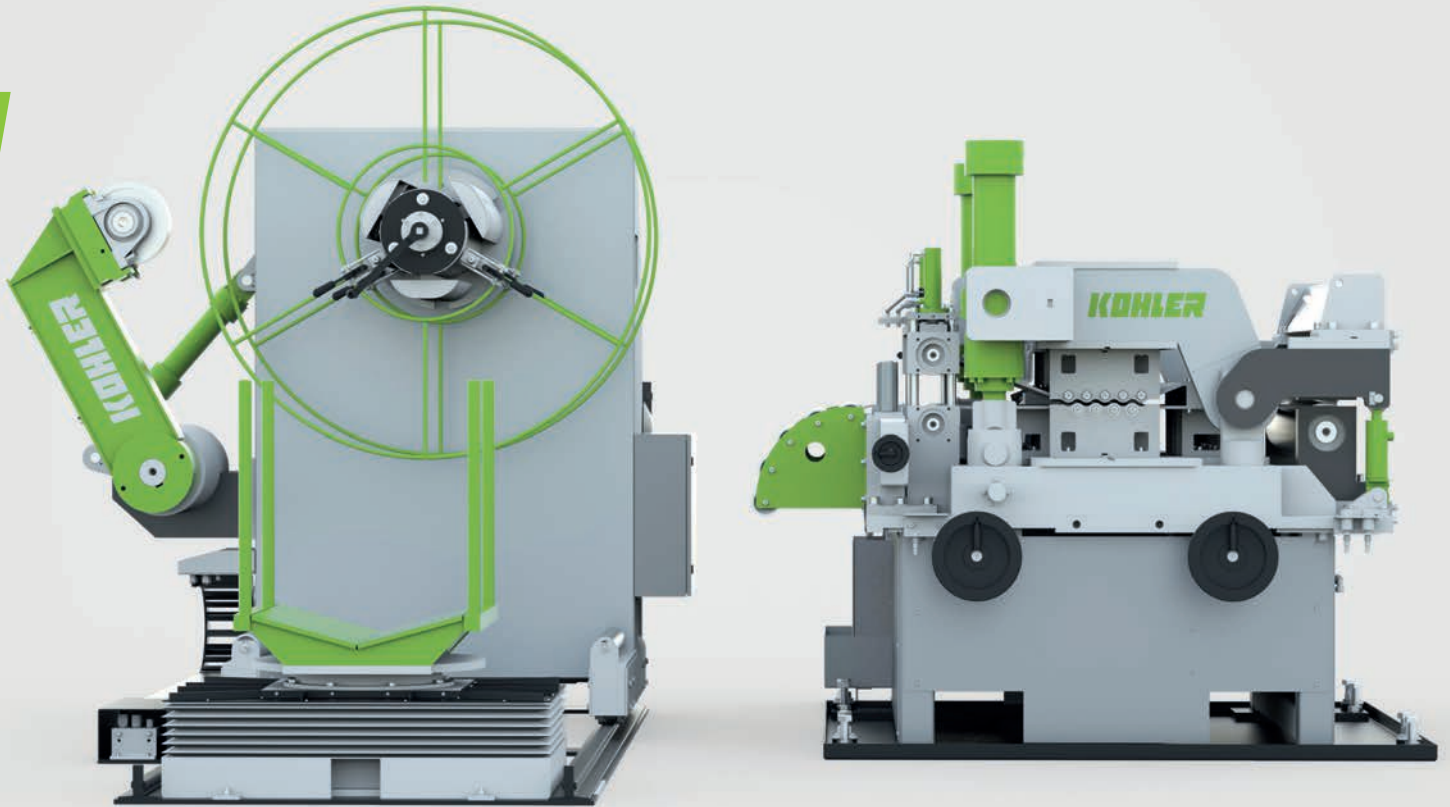
EDITION 27



New: Innovative compact strip feeding line

Strip leveling line for the production of wheels and rollers

Leveled metal sheets from stainless steel

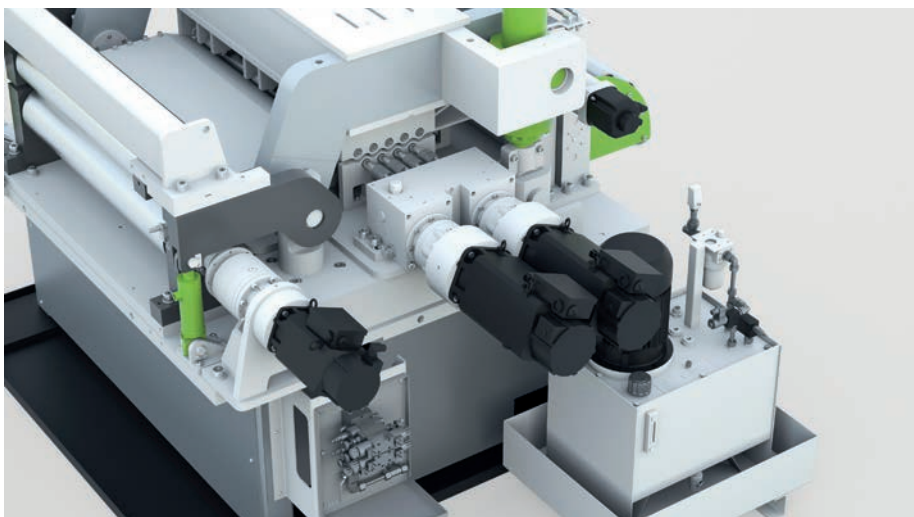


The new strip feeding line from KOHLER in a compact design combines compact dimensions, economical operation, and innovative solutions.

PRECISION LEVELING EVEN WHERE SPACE IS LIMITED

KOHLER INTRODUCES AN INNOVATIVE COMPACT STRIP FEEDING LINE

KOHLER Maschinenbau GmbH presents another innovation: the new strip feeding line with a compact design. At the heart of this new line with decoiler and pinch rollers lies the next generation of feed leveling machine. The line meets customers' requirements for economical precision leveling technology, which offers both compact dimensions and high efficiency.



The space-saving direct drive for the leveling rollers without cardan shafts reduces wear and increases the leveling area.

“The market is placing ever increasing demands on the leveling capability of levelers in ever smaller production areas. The performance density of our machine concept for the strip feeding line with compact design is the perfect solution for these requirements.”

Volker Ihling, head of strip feeding line sales at KOHLER

Compact design ideal for limited space

The new strip feeding line in a compact design from KOHLER comprises a decoiler, pinch rollers and the newly developed feed leveling machine, which levels sheets with a strip width ranging from 100 to 1,300 mm and a thickness ranging from 0.5 to 8 mm.

Since there is no strip transfer bridge from the leveler to a downstream press, the entire line is extremely compact and therefore ideal for limited space.

The decoiler can accommodate coils with a weight of 4 to 20 t. Alongside the standard equipment with a coil loading chair, if desired KOHLER can also supply the line with a coil loading car to suit customers' operating concepts and applications.

Innovative direct drive has the edge over conventional solutions

The nine leveling rollers on KOHLER's feed leveling machine deliver a high-precision leveling result. The lower leveling rollers

of the leveler are directly driven via geared motors rather than by conventional distribution gears and cardan shafts. This newly developed direct drive from KOHLER reduces the leveling rollers' slip on the leveled material, thereby ensuring gentler machining of its surface.

The space-saving drive concept also reduces wear as there are fewer movable parts. At the same time, the drive train is more energy-efficient and as the concept does away with cardan shafts, it also eliminates the need to lubricate them. The leveling rollers' direct drive enlarges the leveling area by 20% in comparison to a leveler with a conventional drive, whilst maintaining the same leveling roller diameter. The generously dimensioned supporting rollers provide exceptionally firm support for the leveling rollers, thereby ensuring precise concentricity, higher power input, and reproducible leveling results.

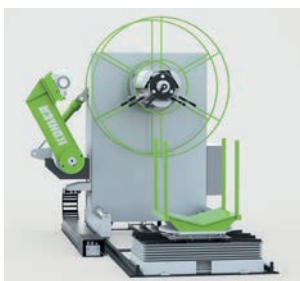
KOHLER can implement a variety of optional features on request, such as operating concepts with customized levels of automation or an electrical drive for the pinch rollers for thick and wide strips.

Economical in every respect

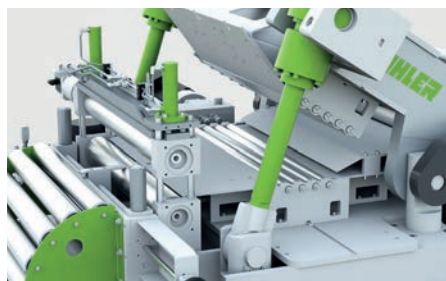
The compact design reduces the overall investment costs – since there is no loop, no expense is incurred for constructing a pit. What is more, the direct drive consumes considerably less energy during operation than a drive with distribution gears and cardan shafts, so ongoing energy costs are reduced.

As the design of the machine avoids open oils and is thus very low maintenance, productivity is increased due to less downtime.

The user-friendly maintenance concept also includes an upper roller frame which can be swiveled upwards by 35°. The leveling rollers are thus readily accessible and can be cleaned very quickly and easily. ■



The decoiler can accommodate coils with a weight ranging from 4 to 20 t and a strip width ranging from 100 to 1,300 mm. KOHLER can supply a coil loading car in place of the coil loading chair on request.



The upper leveling frame which can be swiveled upwards by 35° provides easy, quick, and safe access to the leveling rollers for maintenance and cleaning.

“By working closely with our customers, we have been able to develop an innovative and sought-after product which meets two of their main requirements: high performance and costeffectiveness,”

Dr. Markus Blust, head of engineering at KOHLER.

ADVANCEMENTS IN MANUFACTURING

WITH HIGH-PRECISION LEVELING TECHNOLOGY FROM KOHLER

Blickle Räder+Rollen GmbH u. Co KG manufactures its products entirely in-house in order to reliably control quality and delivery dates. To ensure the optimum performance levels from the presses used on its production lines, Blickle has recently opted for leveling technology from KOHLER Maschinenbau GmbH in Lahr. The new strip leveling line is allowing Blickle to process material up to 12 mm thick for the very first time.



High-tech for mobility – the promise that Blickle Räder+Rollen GmbH u. Co KG – a family-owned company based in Rosenfeld, Baden-Württemberg/Germany – delivers through its global workforce of more than 950 people. With over 30,000 standard and many special products, Blickle is one of the world's leading companies in the wheels and rollers market.

Blickle Räder+Rollen GmbH u. Co KG is headquartered in Rosenfeld, a Swabian town lying between Stuttgart and Lake Constance in Germany. As a typical representative of the „Mittelstand“ – a collective term for globally successful SMEs from Germany – the family-owned enterprise has grown in just two generations from a small craft workshop to one of the world's leading suppliers of wheels and rollers, with annual sales of over 200 million euros and more than 950 employees around the world. The company holds more than 30,000 catalog products for a practically endless number of applications. Blickle has secured its outstanding position on the global market by implementing customer-specific solutions, for example rollers with a load-bearing capacity of up to 50 tons.

Equipped with its own state-of-the-art and high-performance production facilities, Blickle reacts quickly and flexibly to customer and market requirements. At the heart of its production operation are the 6 press lines with automatic strip feeding lines. The automatic stamping machines have a press force of up to 630 tons. Using progressive composite tools designed and manufactured in-house, Blickle produces steel and stainless steel components that can be incorporated directly into the automatic assembly line without any further processing. KOHLER Maschinenbau GmbH came out ahead of the competition to supply a strip leveling line following Blickle's recent decision to expand



Walter Wager (left), CEO at Blickle, and David Blickle (middle), third-generation junior director at Blickle, are comprehensively advised by Tobias Frank (right), expert for strip feeding lines and automation at KOHLER.

its production capacities. In accordance with the customer requirements, KOHLER supplied the line configured with coil loading chair, decoiler, strip leveling machine, and the strip transfer bridge to the downstream stamping and forming line. „In future, we will process 2,500 to 3,000 tons of steel per year on KOHLER's strip feeding line. It enables us to process sheet thicknesses of up to 12 mm, which had not previously been possible,“ explains Matthias Senn, assistant to the management board at Blickle.

A customer-specific system concept from start to finish

The stationary coil loading chair (type CS 8000) can be moved up and down by 700 mm in order to load



„Coil handling“ video accompanying the report on YouTube:
<https://youtu.be/DXoNKAzoi-Y>



coils weighing up to 8,000 kg on the mandrel of the movable coiler. The coil support of the loading chair has been shaped as a prism. To stabilize very narrow coils, KOHLER has also adopted plug-in tilt protection devices.

In accordance with Blickle's requirements, KOHLER supplied the coiler as a single-sided decoiler (type 8000.1 H). It has a load-bearing capacity of up to 8,000 kg and can accommodate coils with an outer diameter of up to 2,000 mm. The coil is fixed on the mandrel with an expansion range of 470 to 530 mm, or with the corresponding top shells, up to 630 mm. This is achieved by a tried-and-tested hydraulic sliding wedge system with automatic re-tensioning system, developed by KOHLER. In addition, two conical rollers hold the strip in its guide, which automatically position themselves according to the width of the respective strip.

Strip thicknesses of up to 12 mm require an automatic threader. Threading is supported on the one hand by a pressure roller, which prevents the coil from springing open when the coil lacing is removed, and on the other hand by a holding-down roller and a strip lead-in wedge. „We can control both from the operator panel simply, quickly, and conveniently,“ explains Senn. „Additionally, the threading is very safe. It offers the best possible protection – to people and materials alike.“

Hydraulic concept reduces costs

„As far as hydraulics are concerned,“ says Senn, „for the first time we have installed a servo-motor hydraulic pump that adjusts the pump output according to the oil volume required by changing the speed. This makes a significant contribution to cutting energy usage.“

Tobias Frank, an expert in strip leveling lines and automation at KOHLER, confirms this assessment: „Thanks to this proven hydraulic concept from KOHLER, we can deliver a welcome advantage in the economic efficiency of the entire line.“ The cost savings are essentially two-fold: on the one hand less energy is needed during operation, and on the other, the customer only needs a smaller – and therefore more cost-efficient – hydraulic pump at the time of the initial investment.

Strip leveling with maximum precision

The centerpiece of the KOHLER strip feeding line is the ultra-precise strip leveling machine, which in this case is a 65.800/9 model. It is equipped with a set of double pinch rollers and nine hardened and finely ground leveling rollers, each with a diameter of 65 mm. Further advantages include the adjustment of the roller frame to the respective strip thickness with a precision of 0.01 mm and the cleaning and quick-change device developed by KOHLER that has proven its worth in many lines. Here the roller bearing and the roller supporting are mounted on a guide plate. After the powered raising of the upper roller



Blickle processes several thousand tons of steel and steel materials every year in its own production facilities. In order to meet future requirements, the company recently invested in a modern and efficient strip leveling line from KOHLER Maschinenbau GmbH.

„A coil change on the KOHLER strip feeding line,“ says Senn, „usually takes around 8 minutes and runs completely smoothly.“ Depending on the product to be manufactured, this happens at Blickle about eight to ten times a day.

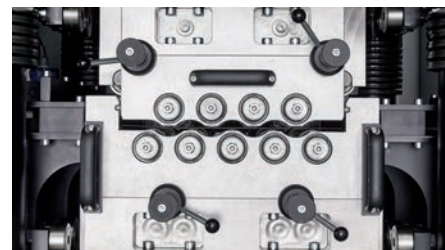
Matthias Senn, Assistant to the Management Board Blickle Räder+Rollen GmbH u. Co. KG

frame, the guide plate moves sideways out of the machine by means of an electric motor. The front roller bearing bar is removed and the rollers are taken out of the rear fixed bearing, so that the rollers and supporting rollers can be cleaned easily and quickly outside the machine. For Matthias Senn, the time saving is also decisive here: „In just a few minutes, our operator has cleaned the leveling rollers and supporting rollers.“ The line's Expert Calculation System optimizes the roller frame setting according to the individual material parameters by means of an exact precalculation and is adapted to machines with PLC control and visualization systems.

After the leveling process, the strip is passed via the loop guidance to the downstream press or punching machine. The loop guidance is designed as a loop with a radius of 2,000 mm and was simultaneously designed by KOHLER as an optional strip transfer table, whereby the strip is then transferred horizontally.

Investment with a view to the future

Walter Wager, CEO of Blickle Räder+Rollen GmbH u. Co. KG, sees the investment in the KOHLER strip leveling line as a means of helping to secure the company's future while simultaneously expanding its current production capacities; not least because the ability to now process sheets up to 12 mm thick will allow the Blickle product range to



The strip leveling machine from KOHLER is equipped with a set of double pinch rollers and nine hardened and finely ground leveling rollers, each with a diameter of 65 mm. The processing width is designed for 800 mm and the adjustment accuracy is 0.01 mm.



The strip is transferred to the downstream press or punching machine via a loop pit with a radius of 2,000 mm. If required, the strip can be transferred horizontally via a strip transfer table.

grow even further. Looking back, he notes: „The entire project with KOHLER, including the advice and technical support that was tailored exactly to our needs, was managed excellently“. Senior managers in Rosenfeld can rest easy knowing that KOHLER stands ready in Baden-Württemberg to continue to provide advice and support.

PART LEVELING MACHINE

PRODUCES SUPERIOR QUALITY IN STAINLESS STEEL PROCESSING

KOHLER Maschinenbau GmbH supplied a Peak Performer part leveling machine to a customer in Spenge, North Rhine-Westphalia /Germany. With the purchase of the Peak Performer MODERSOHN® Stainless Steel expands its machine park and increases its manufacturing capacity.

Wilhelm Modersohn GmbH & Co. KG has a number of worldwide notable renowned reference projects, including notable works such as the restoration of the Berlin Palace or the reconstruction of the Dresden Frauenkirche. In Berlin, for example, MODERSOHN® custom support bracket anchors made from high-quality stainless steel were used to secure the natural stone facade elements, some of which are incredibly heavy, to the structure.

Second-generation pioneers of fixing systems

Wilhelm Modersohn GmbH & Co. KG from Spenge in North Rhine-Westphalia is the last family-run business in this market. The company is one of the largest manufacturers and suppliers of custom and heavy duty fixing systems for masonry and concrete facades in Germany. Founded in 1970 by Wilhelm Modersohn Snr., the company is now run by the next generation, Wilhelm Modersohn Jr., together with Jürgen Matzelle. Having helped to pioneer developments in stainless steel and high-strength Lean Duplex steels, MODERSOHN® occupies an outstanding market position today.

Stainless steel impresses with its longevity, durability, and high strength. MODERSOHN® processes stainless steel using machines that deliver precisely what the customer has requested, and which are operated by its excellently trained workforce of 125 people. In order to optimize manufacturing processes even further, the company has now invested in new, more efficient and energy-saving machines and systems.



CEO of the leading stainless steel specialist, Wilhelm Modersohn, recognizes the increase in the quality of his precisely leveled products

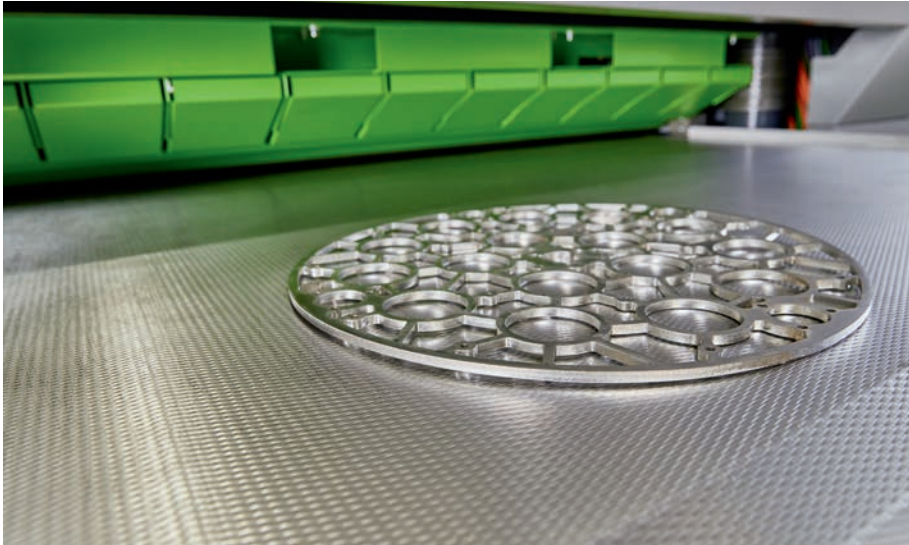
Peak Performer part leveling machine optimizes the manufacturing process

One of the company's most significant investments of 2018 is the 50P.1600 Peak Performer part leveling machine from KOHLER in Lahr / Germany. MODERSOHN® uses the machine to level and reduce tension of both simple and complex parts, blanks, and entire metal sheets up to a material width of 1,600 mm and a material thickness of 0.6 to 16 mm with incredibly high precision and in a wide variety of batch sizes. The materials to be

leveled range from pre-processed sheets, such as perforated sheet metal, or blanks from the water jet line or the laser cutting line.

Some of the sheets leveled by the machine will also undergo additional manufacturing processes, such as edging or welding. Leveling these workpieces reduces the tension in the sheet to a minimum – which has the significant advantage of making subsequent manual





Going forwards, MODERSOHN® will use the KOHLER part leveling machine to level parts for a water treatment system from Xylem



Increased precision and quality: parts of a water treatment system from Xylem. Left: Before leveling. Right: After leveling



Bottom: An un-leveled plate of the MOSO® individual support bracket, system product of the facade fastenings for masonry. Top: The same product after being processed by the Peak Performer part leveling machine

leveling unnecessary, thus increasing productivity while also improving quality. This puts the stainless steel specialist in an even better position to meet the discerning quality expectations of their customers.

” Using the Peak Performer part leveling machine allows us to provide our customers with products of the highest quality.”

Wilhelm Modersohn Jnr, CEO,
Modersohn GmbH & Co. KG

The punctual delivery and straightforward commissioning of the Peak Performer in Spenge was preceded by a comprehensive consultation phase, during which KOHLER ascertained MODERSOHN®'s individual requirements for processing stainless steel. In addition, Wilhelm Modersohn visited the KOHLER leveling center in Lahr, where he witnessed the benefits of the machines first-hand during leveling trials. MODERSOHN®'s decision to buy a part leveling machine from KOHLER was motivated by the pioneering technology and the excellent price-performance ratio.

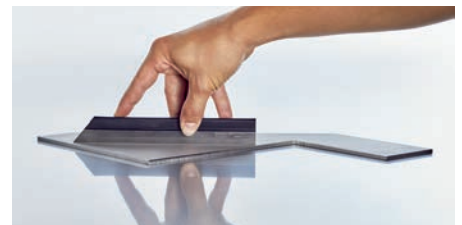
Persuasive arguments: cleaning system, turnable leveling rollers, and intuitive user interface

As well as producing incredibly precise leveling results and being straightforward and simple to operate, the Peak Performer ordered by MODERSOHN® Stainless Steel from KOHLER also has notable features such as a combined electric motor-driven cleaning system for leveling rollers and supporting rollers. The upper and lower leveling cassettes can be completely removed from the machine independently of each other, allowing the machine operator to carry out inspections and cleaning tasks quickly and easily, saving time and money.

An important advantage of the Peak Performer part leveling machine for MODERSOHN® is the turnable leveling rollers. They significantly increase the service life of the leveling rollers when leveling narrow parts on machines with comparably large processing widths. In addition, the special arrangement of the supporting rollers displaces the point load on the leveling rollers once they have been turned. This also helps to increase the service life of the leveling rollers.

The intuitive user interface makes material-specific adjustment of the part leveling machine much quicker. A modern multifinger touch display allows the machine operator to save the selected settings and call them up again as required.

Sascha Berg, production manager in Spenge, summarizes his positive experiences of working with the Peak Performer: “Operating the part leveling machine is easy,



The results speak for themselves. A precisely leveled plate of the MOSO® individual support bracket, system product of the facade fastenings for masonry

which increases safety as well as our productivity. The advanced cleaning system allows removing the leveling cassette all the way out of the machine in order to clean the leveling and supporting rollers, which saves us time and money during operation.”

Precision and innovation

MODERSOHN® customers in the plant and mechanical engineering sector, the environmental engineering sector, and architects and planners from the construction and civil engineering sector rely on the precision and long-lasting, reliable durability of MODERSOHN® products. The leading stainless steel specialist meets these expectations by only using high-quality materials alongside a powerful and innovative machine park. By investing in the Peak Performer part leveling machine manufactured and supplied by KOHLER, MODERSOHN® have gained a significant advantage over their competition at a key point in the manufacturing process. ■



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