

NEWS **KOHLER**

COMPETENCE CENTER
LEVELING

EDITION 30



Level stamped and bent parts economically

Contract leveling in the KOHLER leveling center

Perfectly leveled perforated sheets



The precision leveling machine convinces with high rigidity. Depending on the operation up to 21 leveling rollers in different diameter ranges can be installed.

ECONOMIC LEVELING: NEWEST GENERATION STRIP FEEDING LINE CONVINCES IN THE FIELD

GLOBAL PLAYER KERN-LIEBERS HAS CHOSEN KOHLER FOR
LEVELING OF STRIP STEEL FOR STAMPED PARTS

Efficiency, sustainability and economy: This is the foundation KOHLER uses to drive the further development of its machines and lines forward. The company relies on proven technology paired with innovation and new design with the new generation strip feeding line. Kern und Liebers GmbH & Co. KG, technology leader in manufacturing highly complex parts and assemblies, invested in two identical strip leveling systems at the same time for its facilities in China and India.



Located in Schramberg, KERN-LIEBERS is one of the large independent family owned companies in Germany. The group manufactures precision products out of strip steel and wire at over 40 locations worldwide with more than 7.700 employees. In approx. two thirds of all passenger cars there is a part from KERN-LIEBERS.

As supplier to the automotive, textile and consumer product industry the company generates a yearly turnover of nearly € 700 million.

The new KOHLER strip leveling lines at the sites Taicang (China) and Tumkur (India) play a large role in the flexibility of the customer specific production, the process safety and in making the most of the potential for optimization. Stamped parts which KERN-LIEBERS produces for its customers must fulfill high quality standards and meet strict specifications. This requires that the sheets are leveled and relieved of stress before punching and bending. Only precision leveled sheets build a base for tool-friendly further processing in highest quality without cost intensive rework.

”Continuously increasing customer demands inspire KOHLER again and again to look for new technological solutions and to implement these successfully.”

Volker Ihling, Head of Sales Strip feeding lines at KOHLER

The strip leveling lines at KERN-LIEBERS level aluminum and steel with a thickness of 1,5 – 12 mm and a width of 50 – 450 mm. The coil loading chair and decoiler have a capacity of 5 tons. The decoiler is designed so that that the strip can be decoiled from the top and the bottom. Following the customers demand, KOHLER integrated a so called nibbler – a device for cutting material – between the decoiler and the leveling machine. This allows to cut the already decoiled strip in front of the leveling machine manually. This comes in handy especially when a coil is not processed completely. In such a case only the cut strip between leveling machine and decoiler has to be rewound not however the portion which is in the leveling machine or in the strip loop – time savings not to be underestimated. The strip transfer on both lines is above floor. To ensure that the leveling and support rollers can be cleaned and maintained in an uncomplicated manner both strip leveling lines were equipped with the proven advanced cleaning system from KOHLER. With this system the upper respectively lower sliding plate with leveling and support rollers can be moved out

Facts regarding the strip leveling lines and material at KERN-LIEBERS:

- Strip leveling lines:
- Coil loading chair, capacity 5 tons
- Decoiler with lateral movement, capacity 5 tons, designed for decoiling from the top and the bottom
- Leading in device, designed for decoiling from the top and the bottom
- Nibbler- slitting device, between decoiler and leveling machine, for strip thickness of up to 12 mm
- Precision leveling machine with 21 leveling rollers chromium plated, roller diameter 65 mm
- Direct drive for leveling rollers
- Advanced cleaning and quick change device
- Pinch rollers with own direct drive
- Strip transfer bridge, above floor

Material to be leveled:

- Aluminum
- Strip steel
- Tensile strength: up to 600 N/mm²
- Material thickness: 1,5 – 12 mm
- Material width: 50 – 450 mm

of the machine via motor independent of each other. Cleaning can now be done effortlessly by a KERN-LIEBERS associate.

Innovation, precision and economics go hand in hand

Center piece of the strip leveling line is the precision leveling machine guarantying best leveling quality with high rigidity and 21 hard chromium plated leveling rollers. This leveling machine does not use the regular distribution gearboxes for driving the leveling rollers. Instead KOHLER uses an energy efficient drive system with direct drive without cardan shafts. This reduces maintenance efforts significantly as the absence of cardan shafts no longer requires an oil bath lubrication. And: the innovative direct drive of the leveling rollers increases the leveling range with material processing that goes easy on the surface at the same time. It is also used for the pinch rollers meaning that also here no cardan shafts are used for driving. The consequent implementation of the new drive concept lowers the energy consumption – saving cost in operation.

The line is controlled via Siemens S7 TIA and is operated by a state of the art operating panel with touch screen. The intelligent machine control is Industry 4.0 ready, has an OPC-UA interface and can be integrated in existing communication environments.

All KOHLER machines have wide support rollers: these have a significantly longer lifetime and in comparison with the market

standard slimmer support rollers do not have to be exchanged as often. Additionally the leveling quality is increased.

KOHLER pairs proven technology with innovation and new design on the new generation strip leveling lines. On the one side the drive concept was renewed on the other the design was modernized and optimized. The new strip leveling machine required nearly 20% less floor space. This reduces space requirements significantly.

Special attention was given to an easy accessible and neat inside area. Should inspection or maintenance work be required, the drive motors are easy accessible.

More flexibility through options

KOHLER strip leveling lines can be equipped flexibly: material with a thickness from 0,2 – 14 mm and a width from 50 – 2100 mm can be processed. The precision leveling machines can be delivered with up to 21 leveling rollers. Depending on the application the diameter is between 40 and 65 mm. Intermediate rollers can be added optionally. They allow for gentle processing of sensitive surfaces. The 9” display can optionally be exchanged by a 15” version. Also a machine cover can be added. Individual configurable strip loops can also be equipped.

Lines with conventional drive can also be delivered with leveling rollers having a diameter from 18 – 30 mm. The product portfolio encompasses strip leveling lines in long and short version for strip widths from 35 to 2,000 mm and thickness from 0,1 to 12 mm, upgradeable with camber leveling devices. ■



Coil loading chair and decoiler can be delivered with a capacity of up to 35 tons.

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IT'S WORTH IT!

CONTRACT LEVELING IN THE KOHLER LEVELING CENTER

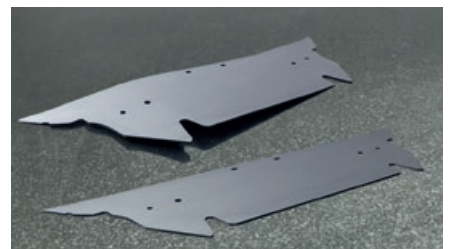
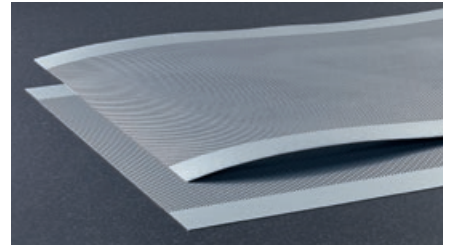
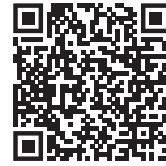
High leveling precision without an own leveling machine: contract leveling at KOHLER is the efficient alternative to an investment in an own machine. Best leveling quality, quick and flexible handling as well as a supportive partnership define the service from KOHLER. Experienced personnel performs various contracted leveling tasks on state of the art Peak Performer part leveling machines. "We approach the customer and together we evaluate how we can best support him with our contract leveling service", this is the motto of the KOHLER service team. The team in the leveling center always find a solution to deliver the customer optimally leveled material. The leveling center has multiple Peak Performer part leveling machines in

different power ranges in order to be able to cater to the varying customer inquiries and requirements. The leveling is always performed material friendly. This is also ensured by periodic and diligent cleaning of the support and leveling rollers which can be performed quick and easy by the advanced cleaning system.

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Website Contract Leveling



E-MOBILITY

KOHLER STRIP FEEDING LINES CONVINCED IN THE PRODUCTION OF ROTORS AND STATORS AT KIENTLE + SPIESS



Electrical motors have become an integral part of the automotive industry – more even since the start of the mega trend E-Mobility. At three locations the specialist Kientle + Spiess manufactures rotors, stators and other components for the drives which are in high demand.

In order for the stamped parts, made from electrical sheet metal coils, to meet the high precision standards required in this field, the company uses, among others, strip feeding lines from KOHLER. For more than 40 years Kientle + Spiess profits from high class customized lines as well as a competent and reliable service. "Leveling of sheet metal strips is an important process as the winding of the coil generates various tension such as curvatures, arches and torsion in the material", explains Holger Rentschler, machine developer at Kientle + Spiess. "This makes the further processing more difficult and also influences the quality of the final product." These stresses are eliminated by the leveling machine. "KOHLER has supported us significantly to implement an efficient, highly precise and virtually operator free production process successfully", praises production manager Zibold. Approximately 40 strip leveling lines have been installed at Kientle + Spiess locations in the meantime.

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STEEL SERVICE CENTER

LAURA METAAL INVESTS IN PEAK PERFORMER



The corporation from Maastricht is specialized in processing steel coils into custom-made sheets. In the continuing process of modernizing the machine portfolio, a KOHLER Peak Performer 100P.2500 with roller bending will be used in the future.

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PEAK PERFORMER PART LEVELING MACHINE CONVINCES AT SME

QUALITY, PRODUCTIVITY AND DELIVERY TIME IS IMPROVED WITH THE NEW PART LEVELING MACHINE FROM KOHLER.

In sheet metal processing perforated plates are usually a challenge. Each punch, no matter how it is made, creates stress and unevenness in the plate. This must be eliminated as best as possible before further processing in order to avoid time-consuming manual reworking. BriMetal SA in Quartino/Ticino in Switzerland faces this task on a daily basis.

The company with 23 employees, which has been in business since 1988, has a long history as job shop in the field of sheet metal processing. After having been taken over in 2018 by Adi Bachmann, constant investments into the expansion of the machinery are made. Therefore a broad spectrum of services around metal processing can be offered to BriMetal's customers which mainly come from metal construction, industrial equipment and the window and siding industry.

Besides cutting sheet metal on the fiber laser cutting machine and production of customer specific stamped parts and perforated plates on cutting presses, bending operations on an automatic bending



Happy about their decision for the Peak Performer from KOHLER: Guido Wicki, managing director, and Adi Bachmann, owner of BriMetal (left to right).

machine are offered. With a fully automatic laser cutting machine loading-inscribing-cutting-sorting-unloading can be done in one processing step.

The manufactured sheet metal parts – with a growing number of perforated plates – are sent all over Switzerland and can be found in various construction projects, in metal constructions and facades i.e. as guard rail or balcony fillings.

However not even the most diligent manufacturing process can avoid that stress and unevenness occurs during punching. Depending on the material, thickness, length and width of the sheet varying conditions occur. This makes it nearly impossible to further process the sheets directly. Perforated sheets must be leveled to become flat and have reduced stress.

Economically and ecologically worthwhile, especially for smaller mid-size enterprises

The order volume for perforated sheets increased significantly over the last few years for BriMetal – a reason to start looking for a part leveling machine. A fundamental argument for this investment of course was the higher profitability, reached by reducing production time. While parts used to be sent away to be leveled on a hydraulic leveling machine BriMetal can now do this themselves on the KOHLER Peak Performer. This shortens production time by nearly one week.

“The purchase of the part leveling machine allows us to level parts ourselves. This shortens our production time by multiple days and makes us more competitive,” states managing director Guido Wicki.

” We were especially excited that besides all the technical features the KOHLER Peak Performer offers, we invested in a machine that completely runs without hydraulics and therefore requires less maintenance and fewer wear parts.“

Guido Wicki, CEO

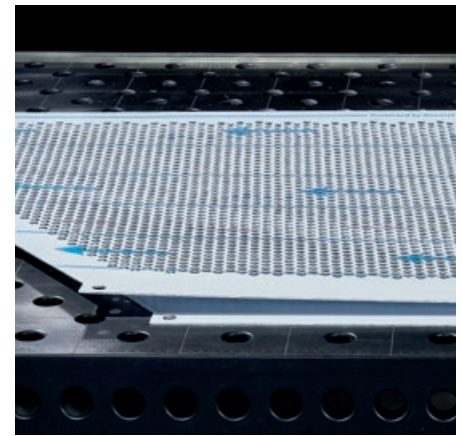
Owner Adi Bachmann and managing director Guido Wicki made it to their goal during the purchasing process to check a wide range of options and to compare competing offers. The decision was clear: BriMetal invested in a KOHLER Peak Performer 50P.1600

Four decisive points convinced the people in charge: The Peak Performer operates entirely without hydraulics. Therefore the maintenance efforts are much lower and





BriMetal uses a KOHLER Peak Performer for leveling. Sheets with a width up to 1600 mm and a thickness up to 17 mm can be leveled.



The difference can be seen easily: on the bottom a leveled, on top a non-leveled perforated sheet

at the same time the energy efficiency higher. Not to underestimate the fact that there can be no leaks.

In addition, the machine is equipped with the patented KOHLER electromechanical gap control, which results in constantly optimal leveling results and further reduces energy cost. For easy cleaning of the leveling and support rollers the advanced cleaning system is ideal. The press of a button by an operator lifts the upper roller frame by motor drive. Now he can slide out the upper and lower guide plate with the leveling and support rollers, the rollers are now easily accessible. The operator cleans them quick and uncomplicated. This is especially helpful when switching from black to stainless steel.

A further feature convinced the people at BriMetal: the employees operate the machine intuitive via the Multi-Finger-Touch-Display – their orientation was completed in shortest time. Further, settings can be specifically stored to be reused or optimized with repetitive or similar leveling tasks. Guido Wicki further points out: “We were especially excited that besides all the technical features the KOHLER Peak Performer offers, we invested in a machine that completely runs without hydraulics and therefore requires less maintenance

and fewer wear parts. This lowers our operating cost and is part of our success for the future. On top of that it is environmentally friendly!”

“ Especially as midsize company BriMetal has to think about the future. We are completely satisfied with the Kohler Part Leveling Machine and well prepared”.

Adi Bachmann, owner

Perfect leveled perforated sheets in short time at economic prices.

After leveling with the Peak Performer the sheets are flat and have reduced stress. All further processing steps are therefore safer and more efficient. The repeatability of the bending angle when creasing is more precise, when welding the parts fit together instantly because they have less distortion. This allows BriMetal to meet high customer expectations with an economic price.

Facts on the machine and leveled parts

- Part Leveling Machine:
- Peak Performer 50P.1600
- Inlet table
- Outlet table, tilting
- Leveling rollers smoothly ground
- Electromechanical gap control
- Advanced cleaning system

Material to be leveled:

- Steel
- Aluminum
- CrNi
- Brass



Video: Perfectly leveled perforated sheets

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